Planning, Industry & Environment

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

10/05/2021

Dear Mr Cerone,

Sydney Metro Chatswood to Sydenham (SSI-7400)
Waterloo ISD Station Design and Precinct Plan

I refer to the Waterloo ISD Station Design and Precinct Plan submitted to the Department for approval, as required under condition E101 of SSI-7400. I also acknowledge your response to the Department's review comments and request for additional information.

I note that the Waterloo ISD Station Design and Precinct Plan:

- 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
- contains the information required by the conditions of approval for SSI-7400

Accordingly, as nominee of the Planning Secretary, I approve the Waterloo ISD Station Design and Precinct Plan (Revision I, dated 27 April 2021) in accordance with 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 the approved plan is placed on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact Brittany Golding on 02 9995 5742.

Yours sincerely

Jake Shackleton
A/Director - Infrastructure Management

As nominee of the Planning Secretary

Waterloo Station Design and Precinct Plan

City & Southwest Chatswood to Sydenham project

SMCSWSWL-JHG-SWL-UD-PLN-000001

Revision	Revision date	Status	Brief reason for update	Name/ position/ company	Author/ Reviewer/ Approver	Signature
A	04/07/20	WIP	First Review	John Holland	John Holland	
B	21/07/20	Draft	90-95% Version	John Holland	John Holland	
C	24/07/20	Draft	Pre-submission to SM Review	John Holland	John Holland	
D	30/07/20	Draft	SM Review	John Holland	John Holland	
E	24/08/20	Draft	Updated to address SM comments from the 17/08/20	John Holland	John Holland	
F	21/12/20	Draft	Updated to address DRP and SM comments	John Holland	John Holland	
G	11/02/21	Final (draft)	Updated to address SM comments	John Holland	John Holland	
H	25/03/21	Final	Updated to include endorsement from DRP	John Holland	John Holland	
I	27/04/2021	Final	Amended to include comments from DPIE	John Holland	John Holland	

Table of contents

Executive summary

This Station Design and Precinct Plan has been prepared to fulfil Condition of Approval (CoA) E101 of the Chatswood to Sydenham project approval SSI 15_7400 for the new Sydney Metro Waterloo integrated station development (ISD) with a specific emphasis on the Waterloo Station design and precinct elements.

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), UrbanGrowth NSW, the Department, Chambers of Commerce and the local community. The SDPP(s) must present an integrated urban and place making outcome for each station or end state element. The SDPP(s) must be approved by the Secretary following review by the DRP and before commencement of permanent aboveground work…*
>
> *…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 new Waterloo Station located in the suburb of Waterloo which forms part of a larger ISD. This SDPP has been prepared by the Waterloo Station contractor which is led by John Holland and supported by qualified and experienced architects and landscape architects.

Separate SDPPs have been or are being developed for:

- Crows Nest Station
- Victoria Cross Station
- Barangaroo Station
- Martin Place Station
- Pitt Street Station
- Central Station
- Waterloo Station
- Sydenham Station
- ancillary infrastructure, comprising the Chatswood dive, Marrickville dive, Artarmon substation, Sydney Metro Trains Facility South and new noise walls along the rail corridor.

This SDPP presents an integrated urban and place making outcome for the new Waterloo Station precinct. This outcome is achieved through detailed design stages where the project team has extensively coordinated and consulted both internal and external stakeholders, customers and interface parties to ensure a design that is able to address as many needs, concerns and requirements as feasibly achievable.

1. Introduction

1.1. Purpose of the Station Design and Precinct Plan

This plan has been prepared to document the Station Design and Precinct Plan (SDPP) for the Waterloo metro station component of the Sydney Metro City & Southwest Chatswood to Sydenham 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. This outcome is achieved through detailed design stages where the project team has extensively coordinated and consulted both internal and external stakeholders, customers and interface parties to ensure an integrated and coordinated design that is able to address as many needs, concerns and requirements as feasibly achievable. This includes extensive consultation with the Design Review Panel (DRP) throughout the design process. The DRP is a panel of independent industry design experts assembled by Sydney Metro, which reviews the design against established criteria for excellence and quality.

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 people including:

- Fanos Panayides – Director, John McAslan + Partners Architects
- Kate Luckcraft – Studio Director, Aspect Studios
- Jamie Kemp – Senior Associate, Aspect Studios.

Their curriculum vitaes (CVs) are provided in Appendix D.

1.2. Project overview

Sydney Metro is Australia's biggest public transport project. There are four core components:

Metro North West Line (formerly the 36-kilometre North West Rail Link)

Services started in May 2019 in the city's north west 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.

Sydney Metro City & Southwest

The Sydney Metro City & Southwest project includes a new 30-kilometre metro line extending metro rail from the end of the Metro North West Line 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 Barangaroo, Crows Nest, Victoria Cross, 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.

Sydney Metro West

Sydney Metro West is a new underground railway connecting Greater Parramatta and the Sydney CBD. 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.

Sydney Metro West stations have been confirmed at Westmead, Parramatta, Sydney Olympic Park, North Strathfield, Burwood North, Five Dock, The Bays, Pyrmont and the Sydney CBD. Further planning is underway to determine the locations of the Pyrmont and Sydney CBD stations.

Sydney Metro – Western Sydney Airport

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. Six new stations will be delivered at St Marys, Orchard Hills, Luddenham, Airport Business Park, Airport Terminal and Western Sydney Aerotropolis. The Australian and NSW governments are partners in the delivery of this new railway.

From a planning approvals perspective, Sydney Metro City & Southwest has been split into two parts – Chatswood to Sydenham and Sydenham to Bankstown. The Chatswood to Sydenham part involves the delivery of approximately 15.5 kilometres of metro rail line between Chatswood and Sydenham, including connections to the existing rail network, ancillary infrastructure, metro platforms at Central and Sydenham stations and the following new metro stations:

- Crows Nest Station
- Victoria Cross Station
- Barangaroo Station
- Martin Place Station
- Pitt Street Station
- Waterloo Station.

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:

- The new Waterloo metro station will sit beneath a public plaza at the centre of the Waterloo community.
- The station will consist of six levels with public access to the street, concourse and platform levels.
- The remaining floors are largely technical and plant spaces.

For customers, the journey starts at street level through the station entrance located at the corner of Raglan and Cope streets with another entrance located off the Cope Street plaza. From here, passengers will be intuitively directed down the light-filled escalators to the concourse level, an orienting space before taking the escalators or lifts down to the platform level where they will be able to catch the metro trains. A longitudinal cross section of the new metro station is provided in the following image.

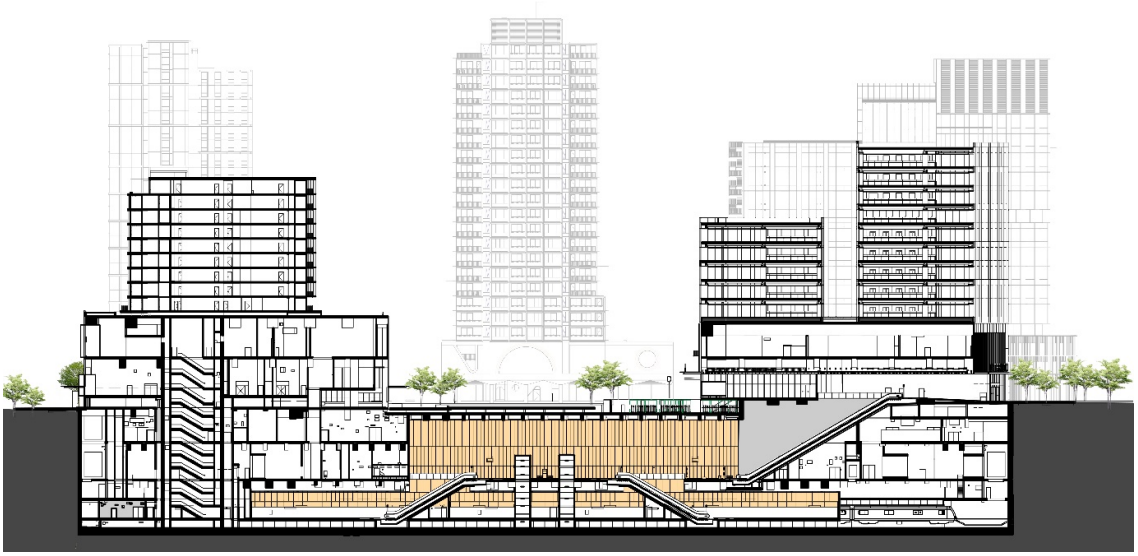


Figure 1.3.1: A longitudinal cross section of the new Waterloo metro station

The Waterloo metro station will provide further capacity to develop and expand the Global Economic Corridor between the Sydney CBD, Green Square and Sydney Airport. The station supports the continued renewal of the Waterloo, Redfern and Alexandria areas providing key connections to the Australian Technology Park and Redfern Station. Additionally, the metro station will be a major contributor to evolving plans to renew the Waterloo housing estate.

Figure 1.3.2: Waterloo metro station will support renewal of the surrounding area

John Holland is the station contractor that will deliver the Waterloo Station scope of works summarised in the table on the following page.

Table 1.1: Waterloo Station scope of works

Waterloo Station scope of works	
Station works	The works for the new underground metro station include: • detailed excavation and drilling required for sumps, track sub-invert, on-site detention tanks, drainage, services and foundations to support structural works • waterproofing of the station box • all primary and secondary structural works, including the entire station box, entrances, all services, utilities, systems, fit-out elements, concourses, station platforms, over-track exhaust plenums and vertical transport • track invert slab including underline crossings, earthing mats and drainage • plant and equipment rooms • public and staff toilets • all back-of-house areas • architectural fit-out • low-voltage electrical, fire, hydraulics, lighting and mechanical systems • building management control system • provisions for works by interface contractors • provisions for advertising and vending machines • lifts and escalators • signage and wayfinding • landscaping, kerbs and precinct activation works • bike parking facilities

	• public art (within the station lot) • security measures.
Local area works	Resurfacing or reconstruction of affected roads, footpaths, cycle ways or other public amenities, and signage, traffic control signals, street lighting, flood mitigation and traffic and transport management.
Utility service works	Identification, protection, diversion, reconstruction or repair of affected utility services, new utility service connections and other general provisions.
Property works	Protection and adjustments to affected existing buildings and property, including demolition of built features.
Station retail works	The works for the base build of the retail spaces within the station lot, but excludes the retail spaces in the over-station development (OSD) lot, (the OSD is also known as the Waterloo Metro Quarter (WMQ)), including: • shell of the retail space tenancy units (including storage areas) • base building services including low voltage (LV) power, cold water supply, chilled water loops (for air conditioning), fire systems and sewage facilities • grease traps and ventilation exhausts (where appropriate) • waste collection facility for the retail areas • loading bay for the retail areas • telephone and data systems • glazed shopfront finishes.
Waterloo Metro Quarter development enabling works	The works to be performed for WMQ areas located within the station box footprint and below the WMQ transfer level. These are required to integrate the WMQ works with station works and enable further construction of WMQ works without disruption to the operating station. The WMQ enabling works include but are not limited to: • a waterproof, secure and operable building envelope, including station roof • foundations and structures to support the WMQ • entry and exit points and any other Building Code of Australia compliance required to support the WMQ works.

The Waterloo metro station is located along Botany Road in the block bounded by Raglan, Cope and Wellington streets. As part of the Waterloo Urban Renewal Precinct, the metro station will enhance accessibility to businesses and residential communities with related over station development (OSD) enhancing local retail, accommodation and community facilities.

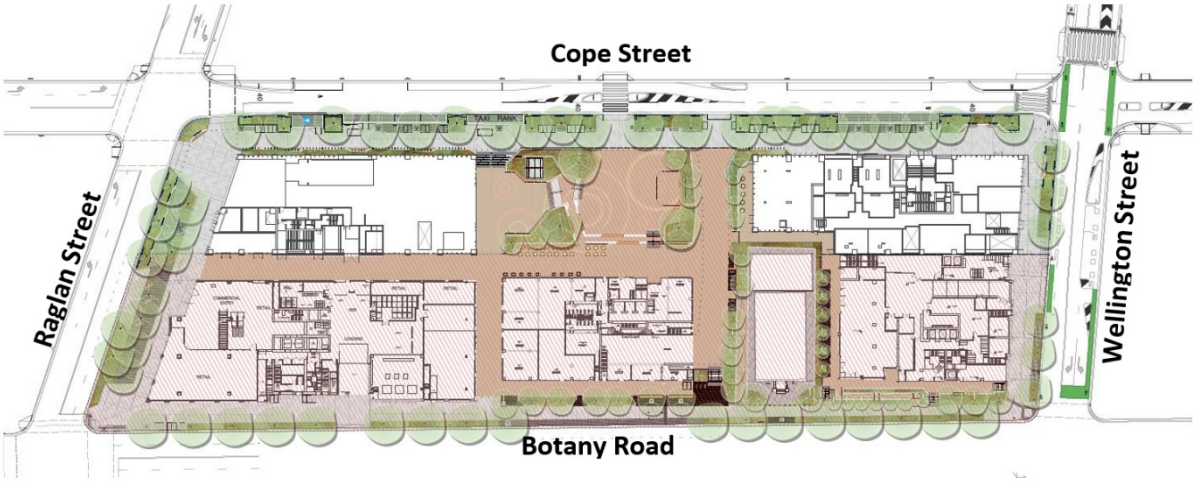


Figure 1.3.3: Precinct site plan

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 the area within which works identified in this SDPP will be delivered as part of the project.

The scope split on the Waterloo ISD project between the Waterloo station contractor (John Holland) and Waterloo developer (a joint venture between John Holland and Mirvac) is detailed in the diagram on the following page:

- RED areas reflect scope that is part of the station contractor's contract and includes the station structure.
- GREEN areas reflect scope that is part of the station contractor's contract but is under City of Sydney Council (CoS) and TfNSW (previously RMS) jurisdiction.
- PURPLE area reflects scope that involves joint delivery between both the station contractor and Waterloo developer.
- YELLOW area reflects part of the Waterloo developer's scope.

It should be noted that WMQ works do not fall under the CSSI approval and are subject to separate planning approvals currently being sought by the Waterloo developer. Therefore, the over station development buildings and design are not related to this SDPP. However, the ground plane and precinct elements of the WMQ works have been considered as a whole in this SDPP.

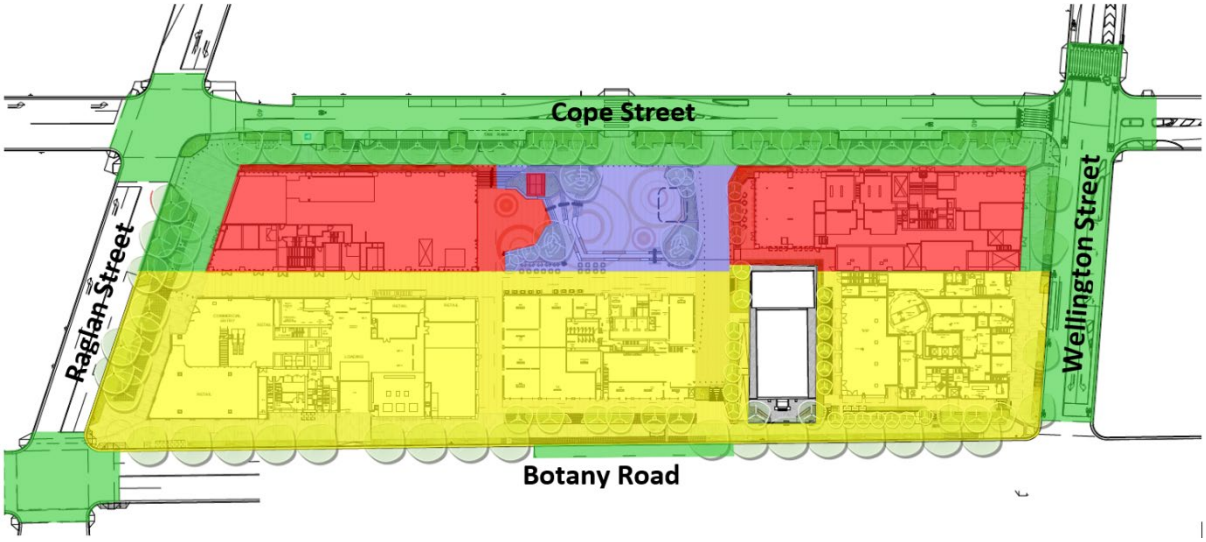


Figure 1.3.4: Scope delineation of the Waterloo integrated station development

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 in this plan 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 Secretary of DPIE. This updated SDPP would be prepared at the end 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 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 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.

Table 1.2: Conditions of approval requirements

Requirement of the conditions of approval	Where addressed in the plan
Condition E6	
The CSSI must be designed to retain as many trees as possible and provide replacement trees such that there a net increase in the number of trees. The Proponent must commission an independent, experienced and suitably qualified arborist to prepare a comprehensive **Tree Report** before removing any trees as detailed in the EIS, as amended by the documents listed in A1. The **Tree Report** must include: a) a description of the conditions of the tree(s) and its amenity and visual value b) consideration of all options to avoid tree removal, including relocation of services, redesign or relocation of ancillary components (such as substations, fencing, etc.) and reduction of standard offsets to underground services c) measures to avoid tree removal, minimise damage to, and ensure the health and stability of those trees to be retained and protected. This includes details of any proposed canopy or root pruning, root protection zone, excavation, site controls on waste disposal, vehicular access, materials storage and protection of public utilities. In the event that tree removal cannot be avoided, then replacement trees are to be planted within, or in close proximity to the CSSI or other location in consultation with the Relevant Councils and agreed by the Secretary. The size of the replacement trees will be determined in consultation with the relevant Council. A copy of the Tree Report must be submitted to the Secretary before the removal, damage and/or pruning of any trees, including those affected by the site establishment works. All recommendations of the Tree Report must be implemented by the Proponent, unless otherwise agreed by the Secretary. The Tree Report may be prepared for the entire CSSI or separate reports may be prepared for individual areas where tree removal and/or pruning is proposed.	A Tree Report has been prepared in accordance with Condition E6. Section 6.2 provides details of the landscaping strategy and planting that will be completed for the precinct.
Condition E93	
In developing the Interchange Access Plan(s), the Proponent must consider: a) traffic and accessibility requirements 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 6 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, 5.2, 5.3 and 5.4.

Requirement of the conditions of approval	Where addressed in the plan
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. Section 3 details the consultation that has occurred during preparation of the plan. This is supported by the consultation evidence provided in Appendix A.
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(s) must be approved by the Secretary following review by the Design Review Panel (DRP) and before commencement of permanent above ground work.	The plan will be submitted to the Secretary for approval. Section 3 details the review undertaken by the DRP.
Each SDPP must include, but not be limited to:	
a) identification of specific design objectives, principles and standards based on: i. the project design objectives as refined by the DRP ii. maximising the amenity of public spaces and permeability around entrances to stations iii. local environmental, heritage and place making values iv. urban design context v. sustainable design and maintenance vi. community safety, amenity and privacy, including 'safer by design' principles where relevant vii. relevant urban design and infrastructure standards and guidelines (including relevant council standards, policies and guidelines) viii. minimising the footprint of the project (including at operational facilities).	Section 4 identifies the design objectives, principles and standards.
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.

Requirement of the conditions of approval	Where addressed in the plan
e) details on the location of existing vegetation and proposed landscaping (including use of endemic and advanced tree species where practicable). Details of species to be replanted/revegetated must be provided, including their appropriateness to the area and habitat for threatened species f) a description of the CSSI design features, including graphics such as sections, perspective views and sketches for key elements of the CSSI g) the location, design and impacts of operational lighting associated with the CSSI and measures proposed to minimise lighting impacts	Section 6 details the station design and precinct plans. The station/element design in Section 6.1 details the key design features, including station operational lighting. The precinct plan in Section 6.2 details the location of existing and proposed landscaping within the precinct/public realm plans and operational lighting within the precinct.
h) details of where and how recommendations from the DRP have been considered in the plan	Section 3 details the feedback from the DRP and where and how the recommendations have been considered.
i) the timing for implementation of access, landscaping and public realm initiatives 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	Section 7 outlines the implementation of the plan, including timing and monitoring and maintenance.
k) evidence of consultation with the community, local councils and agencies in the preparation of the SDPP(s) and how feedback has been addressed before seeking endorsement by the DRP.	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.
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.	Refer to Section 7 which details implementation of the plan.
Note: The SDPP may be submitted in stages to address the built elements of the CSSI and landscaping aspects of the CSSI.	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.
Condition 102	
The SDPP must achieve a minimum visual impact rating of at least 'Minor Benefit' as defined in the EIS, as amended by the documents listed in A1, for all design elements of the project, where feasible and reasonable. Where it can be demonstrated, to the DRP's satisfaction, that a 'Minor Benefit' is not achievable, then a 'Negligible' visual impact rating must be achieved as a minimum.	Section 8 provides the visual impact assessment and identifies the rating achieved. Section 3.3 discusses relevant input from the DRP on this rating

2. Design development process

The design for the Sydney Metro City & Southwest Chatswood to Sydenham project has developed from an initial scoping design through to the detailed design (refer to flowchart 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 have been refined in consultation with the Sydney Metro Design Review Panel.

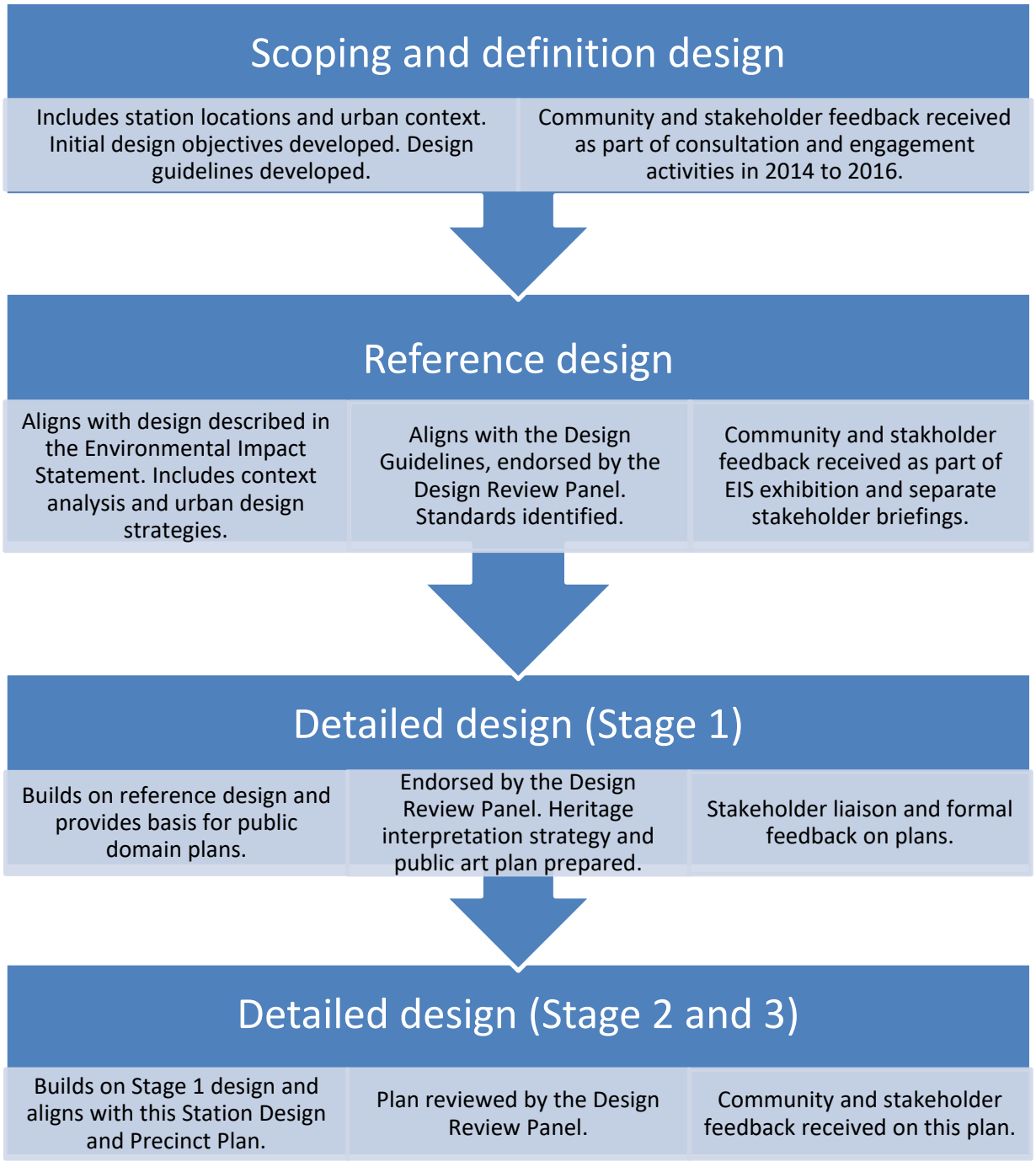


Figure 2: Design development process flowchart

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 Waterloo Station 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 other relevant planning approval and associated design processes.

The station design considers the over station development design and vice versa with the same designers and consultants engaged on both designs for certain aspects. This is further underpinned by the signed interface agreement between the Waterloo station contractor and the Waterloo developer which will ensure the two designs are integrated and coordinated from an integrated development perspective.

In addition, both the station contractor and Waterloo developer have been actively involved in regular presentations to the Design Review Panel and stakeholder consultations throughout the design phases. These have demonstrated that a coordinated and integrated design has been achieved across the precinct.

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 were documented in the Chatswood to Sydenham Environmental Impact Statement (EIS) and the Chatswood to Sydenham Submissions and Preferred Infrastructure Report (SPIR).

Consultation was carried out with the community, local councils and government agencies as part of the EIS exhibition for Chatswood to Sydenham (CSSI-7400). The Preferred Infrastructure Report addresses the key issues raised in submissions.

The submissions from Urban Growth and the Land & Housing Corporation (LAHC) (the agencies leading the renewal plans for the adjacent social housing estate) and the City of Sydney are the most relevant to the Waterloo SDPP. The key issues raised are summarised as follows:

Urban Growth and Land and Housing Corporation

- Integrate Waterloo Station with surrounding land uses to support renewal process for the area.
- Support location of station entry, lobby and services, and retention of the Waterloo Congregational Church building.
- Location of pedestrian crossings, cycle routes and bus stops should support future character and the role of Botany Road and Cope Street.
- Potential additional green/cycle link through Wellington Street is being considered as part of the Central to Eveleigh Urban Transformation and Transport Program (C2E) and CoS.
- Support iterative and integrated approach to station design to ensure future over station development and renewal of social housing estate can achieve design excellence, optimal connectivity and amenity outcomes for residents and public spaces.

City of Sydney

- The station design should include uses such as retail to support appropriate densification of the Waterloo community.
- Council recommends the introduction of a second entry to the south of the station box and consideration of a third entry towards Botany Road to benefit transport interchange.
- Both the landscape and visual impact of the metro at Waterloo could be significantly improved if the eastern edge of the development block was to be set back from Botany Road.
- Replace all trees which are to be removed.
- Development of this scale and intensity requires a higher quality public domain to cope with the additional pedestrian volumes and circulation. Reinstatement of streetscapes should consider this and apply an appropriate quality of finish in line with the City of Sydney Streets Code, including furniture.

- Cope Street should be a slow zone with pedestrian and cycle priority, providing access to the services contained in the station development and integrating with the adjacent residential precinct.
- CoS strongly recommends that the metro consider implementing a second entrance to the south of the station box to capture demand from the south of the intensified Waterloo Estate, to customers along McEvoy Street, and to the north of Zetland.
- The design of the station and the associated buildings should consider the scale and form of the northern and southern intersections with Botany Road.
- The block from Raglan to Wellington streets is long measuring about 215 metres. The CoS recommends inclusion of an on-grade, mid-block, through-site link between Cope Street and Botany Road at Waterloo Station.
- Further work needs to be undertaken by metro to resolve interventions to the public domain required to accommodate additional or altered pedestrian numbers and movements in the CBD and Waterloo. CoS recommends an expanded area beyond the immediate vicinity of stations should be considered, to ensure that interchange from the stations to other transport destinations is adequately captured.
- The ground- and first-floor building design is critical to the successful integration of the stations and associated development.
- Any security bollards deemed to be necessary at stations should be accommodated within the building line as footpaths are highly constrained by services, fixtures and pedestrian movement.
- The increased natural light of stations below is not an appropriate offset for the loss of public space. Skylights in the public domain in the CoS are an inefficient use of space.
- All stations within the CoS must accommodate infrastructure within the station box (or associated development) to manage flood levels safely and efficiently.
- All works to the public domain, including footpaths, trees, furniture, signage, kerb extensions, will require CoS approval. Provided the CoS's policies, plans, codes and standards are applied, then the outcome of any application is often straightforward.
- The integration of public art into an infrastructure project of this scale is encouraged and the guidelines outlined in the documents are sound.
- The CoS provides the following recommendations in relation to public art:
    - engage with artists early, in the design development stage, to ensure a successful art strategy for the metro
    - engage an experienced curator to develop a Public Art Strategy
    - ensure the strategy outlines a process for engagement with artists, the CoS and other relevant stakeholders, including Arts NSW.

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 has also been reviewed by the Sydney Metro Design Review Panel. The consultation undertaken and how feedback has been addressed in the plan is detailed in the following sections.

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

John Holland is committed to being open and transparent in all its interactions and made genuine efforts to consult with all relevant stakeholders and the community about the station design and plans for the precinct. It is recognised that while there is wide community support for the station there are varying views about the nature of change that is occurring more broadly throughout the Waterloo area.

The timeframe for engagement coincided with the restrictions imposed to respond to the COVID-19 pandemic. Engagement activities were modified to comply with requirements to minimise community exposure and transmission. Opportunities to conduct face-to-face engagement were limited, however John Holland held a series of online webinars in June and July 2020, so stakeholders and the surrounding community could provide feedback on emerging ideas and the station designs.

While John Holland is committed to thorough engagement, many key aspects of the project were already determined and approved. Stakeholder and community engagement for the SDPP was not seeking to revisit these aspects of the project, and this was explained to participants during the webinars.

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

- Transport for NSW
- City of Sydney Council
- Road and Maritime Services
- Sydney Coordination Office
- Ausgrid
- Sydney Water
- Jemena
- Sydney Buses
- NSW Fire
- NSW Police
- NSW Ambulance
- Department of Planning, Industry and Environment
- Public Art Working Group
- Design Review Panel
- Customer Experience Sydney Metro
- Waterloo Congregational Church
- Land and Housing Corporation
- Department of Communities and Justice
- Traditional Owners and Aboriginal stakeholders

- Ethnic Communities Council
- local community, which includes people who live and work within 500 metres of the site or those registered to receive email updates.

3.1.1. Key stakeholders' consultation

Key stakeholders were consulted about the station design and precinct plans over a six-month period from February 2020 through to July 2020 with consultations continuing until the end of the design phase towards the end of 2020.

These consultations were undertaken via reoccurring and specifically required meetings with eight key groups. They consisted of a wide range of stakeholders that all had input and influence on the final Waterloo Station Design and Precinct Plan.

A summary of key stakeholder engagement undertaken while preparing the SDPP is outlined in the following table. A detailed breakdown of the nature of feedback and it has been addressed in the design is provided in Appendix B.

Table 3.1: Key stakeholder engagement summary

Stakeholder	Meeting name	Chaired by	Meeting frequency	Purpose and outcome
Sydney Coordination Office (SCO)	Traffic Control Group (TCG)	Coordination group chaired by SCO (part of TfNSW) with representatives from Sydney Roads (formerly Roads and Maritime Services (RMS) under TfNSW, Sydney Metro, SCO and councils	Fortnightly	Forum for Waterloo contractor to table planned works and traffic management methodologies in advance of tabling at the Traffic and Transport Liaison Group meetings.
Sydney Coordination Office	Traffic and Transport Liaison Group (TTLG)	Chaired by SCO (part of TfNSW) with representatives from Sydney Roads (formerly RMS and now under TfNSW), Sydney Metro, SCO, councils and emergency services (police, ambulance and fire)	Monthly	Under the State Significant Infrastructure (SSI) approval, a Construction Traffic Management Plan (CTMP) must be prepared in consultation with the TTLG. The CTMP is then issued by the Waterloo contractor to TfNSW for approval.
City of Sydney (CoS)	Waterloo contractor and City of Sydney design workshop	CoS and Waterloo contractor	Fortnightly	Waterloo contractor presents work in progress designs to CoS for review and comment. Waterloo contractor formally issues design stage submission to CoS for formal review and comment.

Stakeholder	Meeting name	Chaired by	Meeting frequency	Purpose and outcome
City of Sydney	Local Pedestrian, Cycling and Traffic Calming Committee (LPCTCC) (also known as Traffic Committee)	CoS	Monthly	Waterloo contractor agrees the design proposal with CoS during the design workshop. Forum for station contractors to present their final design for approval by the LPCTCC.
AusGrid	Waterloo contractor and AusGrid design workshop	Waterloo contractor	Monthly	Waterloo contractor presents work in progress designs to AusGrid for review and comment. Waterloo contractor formally issues design stage submission for formal review and comment.
Sydney Water	Waterloo contractor and Sydney Water design workshop	Waterloo contractor	Monthly	Waterloo contractor presents work in progress designs to Sydney Water for review and comment. Waterloo contractor formally issues design stage submission for formal review and comment.
Jemena	Waterloo contractor and Jemena design workshop	Waterloo contractor	Monthly	Waterloo contractor presents work in progress designs to Jemena for review and comment. Waterloo contractor formally issues design stage submission for formal review and comment.
TfNSW (State Transit)	Waterloo contractor and TfNSW design workshop	Waterloo contractor	Monthly	Waterloo contractor presents work in progress designs to State Transit for review and comment. Waterloo contractor formally issues design stage submission for formal review and comment.

3.1.2. Local community consultation

The local community was consulted about the station design and precinct plan over a two-month period in June and July 2020 with 77 people involved in 21 sessions.

Planning for the consultation period involved defining who was considered to be a part of the Waterloo community. Members of the community were identified as:

- Traditional Owners and Aboriginal stakeholders
- landowners, residents, businesses and their employees who live and work within a 500-metre radius of the Waterloo metro station site

- key stakeholders, such as the Waterloo Congregational Church, South Eveleigh, local community organisations and service providers, and City of Sydney staff who are active within the Waterloo area but do not have a formal advisory role
- people and groups registered with Sydney Metro for regular communications about Waterloo metro station and the OSD.

Engagement occurred through a series of online forums, targeted emails to stakeholders, teleconferences and invitations to contact the community and stakeholder manager. This gave people the opportunity to find out about the station and precinct designs, provide feedback and ideas, and raise any concerns. As the station is part of an integrated development, the consultation also included information about evolving designs for the over station buildings and public domain.

These engagement events were notified by:

- notices to about 1100 email subscribers
- flyers distributed to 5000 properties within 500 metres of the Waterloo metro station site, to reach residents, landowners and businesses
- invitations to Traditional Owners and Aboriginal stakeholders
- invitations to community-based groups and organisations.

Aboriginal placemaking consultancy Murawin also undertook a specific program to engage with Aboriginal stakeholders.

Community engagement undertaken while preparing the SDPP is outlined in the table below.

Table 3.2: Community engagement summary

Date	Events	Participation (attendees no.)
TELECONFERENCE		
29 May	South Eveleigh	1
05 June	Meeting with City of Sydney – Community Infrastructure Team	4
COMMUNITY WEBINARS		
16 June 1–2pm	Owner investor – Botany Road, Waterloo (opposite site)	1
17 June 9–10am	Local business, Botany Road, Waterloo	2
17 June 1–2pm	Custodian, Waterloo Congregational Church	2
17 June 2.30–3.30pm	Waterloo Redevelopment Group (Inner Sydney Voice was part of the group)	10
17 June 6–7.30pm	Body corporate – Botany Road, Waterloo (opposite site)	3
18 June 6–7.30pm	REDWatch	12
19 June	Land and Housing Corporation	2

Date	Events	Participation (attendees no.)
1–2pm	Department of Communities and Justice	2
20 June 10.30–11.30am	General community webinar	2
22 June 6–7pm	General community webinar	4
23 June 1–2pm	South Sydney Business Chamber	1
24 June 6–7pm	General community webinar	3
1 July 6–7pm	Ethnic Communities Council	2
14 July 6–7pm	General community webinar	1
15 July 6–7pm	General community webinar	5
18 July 11–12pm	General community webinar	0
15 July 2–3pm	Aboriginal stakeholder consultation webinar	3
FACE-TO-FACE CONSULTATION		
16 July 10–11am 2–3pm	Aboriginal stakeholder consultation – two sessions	8
EMAIL FEEDBACK		
May to July	Responses and feedback received from eNews or flyer distribution	9

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

3.2. Review by the Design Review Panel

This SDPP was presented to the Sydney Metro Design Review Panel (DRP) for its review during 10 sessions held between February and October 2020. The DRP provided feedback on a range of aspects in the plan. The recommendations received during the DRP reviews, and where and how they have been considered in the SDPP, are outlined in Appendix C.

Condition E102 states that all design elements must achieve a minimum visual impact rating of at least ‘minor beneficial’ where feasible and reasonable. If it can be demonstrated to the DRP’s satisfaction that a ‘minor beneficial’ rating cannot be achieved, then a ‘negligible’ visual impact rating must be achieved. As outlined in Section 7 of this SDPP, the design elements considered in this plan will achieve a minimum ‘minor beneficial’ visual impact rating.

Evidence of the DRP review is provided in Appendix C.

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), 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, and 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.

Sections 4.2 to 4.6 details the design principles relevant to the aspects identified in Condition E101(a) and the 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 station design places the customer at the heart of a vibrant, interconnected precinct: a place for people to work, live, play and socialise. The metro station is an architectural expression of light, openness and the history of the area's first people and with materiality that connects to the history, scale and character of Waterloo and the local architectural character.

Customers circulating from platform level onto the concourse will be guided by a high degree of intuitive wayfinding. Emerging into the station concourse area, customers are met with a bright, high-ceilinged space. This has been achieved by removing the bulkhead from the Stage 1 design to create greater height and volume through the concourse and increasing natural light into the station at entry and concourse levels. These modifications provide customers with a more open and intuitive path towards the escalators.

The design combines smooth wayfinding through light and openness with embedded interpretive elements that express aspects of Waterloo's history and culture, as part of a broader precinct-wide story, leading customers up through the station and into the wider precinct.

John Holland has ensured that the design of key approaches to the station, such as Raglan Place and Waterloo Place, is simple, legible and uncluttered. Trees are provided for shade, along with seating, and stopping and resting points for a more comfortable journey to and from the station.

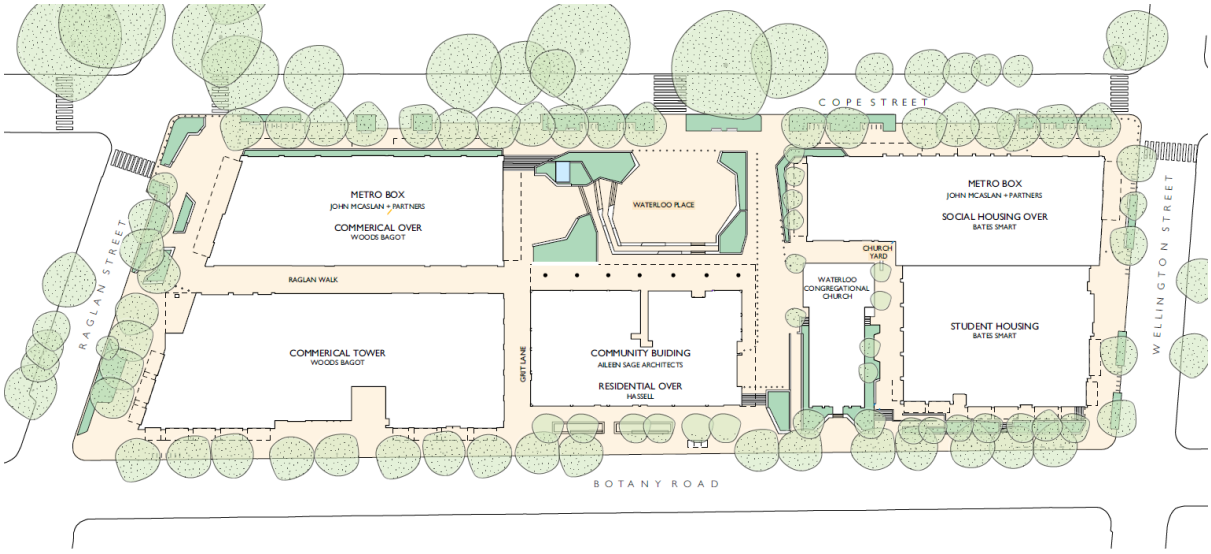


Figure 4.1.1: Waterloo Metro Quarter (WMQ) precinct

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.

The design for the Waterloo Metro Quarter prioritises clear and legible connections with other public and active transport modes within the wider metro network. Full integration – physical and visual – is fundamental to the design solution.

The above-ground buildings and public realm have been designed with a high level of integration with the station infrastructure, allowing the easy and unimpeded flow of people into and around the site.

The design achieves an uninterrupted public domain with a collection of community spaces clustered around its open space and gardens and allows greater natural light into the Cope Street plaza. Linked by a network of lanes, this inclusive and accessible public space also provides the opportunity to blur indoor and outdoor spaces, enabling flexible and open spaces with generous building edges.

Key to the design is the:

- creation of two open-to-the-sky east-west connections through the site (Church Square and Grit Lane) from Botany Road to Waterloo Place
- stronger east-west integration of Botany Road bus stops, Cope Street taxi and kiss-and-ride zones and the southern entry to the metro station
- relocation of the secured bike parking immediately next to the station entry
- creation of Raglan Walk between Raglan Street and Waterloo Place, providing users with an additional public connection through the site.

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.

Waterloo Metro Quarter is a landmark opportunity to regenerate and reinvigorate Waterloo with a world-class mixed-use integrated station development. By changing the usage mix from the Stage 1 design, it will create a more diverse, vibrant and activated mixed-use development. This will contribute positively to Waterloo and the wider area, by providing increased jobs, community uses, and day/night activation. Fully integrating the station with the new development means the project can be delivered site-wide and provide day and night activation, increasing connectivity through Waterloo and with surrounding precincts, and creating a distinct heart to the local community.

The design also expands public space provision and provides more active frontages across the site. These spaces will be co-designed with community involvement through the Waterloo Precinct Leadership Group, comprised of local community members alongside John Holland, the over station developer and long-term investors. To ensure public art, heritage and community programs meet local needs, these elements will be developed by public art and heritage consultants, through a collaborative process that involves local community partners and artists.

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.

Waterloo is a place for locals, who make up an established, engaged and active community. There is a network of community spaces and diverse services throughout the neighbourhood – for young and old, vulnerable communities, and creatives and entrepreneurs.

The proposal is to create a holistic station precinct that takes a 360-degree approach to the surrounding neighbourhood and the diverse local character through enhanced connectivity, responsiveness to heritage items and the distinct urban character of the area.

Specifically, the design integrates the expanded Waterloo Place with the future regeneration of the Waterloo housing estate. This will be done through strengthened east-west connections, the Cope Street crossing and a program of community events in the public plaza, including daytime activation to surprise and delight users. The walkability, amenity and character of Raglan and Wellington streets has been enhanced to provide users with key connections to residential, employment and open spaces. Connection to surrounding precincts and amenities will be further strengthened through inter-precinct wayfinding programs undertaken during the construction phase with community partners.

The design carefully considers the human-scale street experience, providing users with weather protection, design for activation, and carefully considered materiality. Through architectural scale, materiality and character, as well as public domain treatment, the design responds to the fine grain, robust and eclectic character of Botany Road and the open, consistent and evolving character of Cope Street. In addition, the scale and materiality of the corner treatments relates to Waterloo's distinctive heritage items and local context, including the Abbotts Hotel, Cauliflower Hotel and CBC Bank building. The design responds to the Waterloo Congregational Church through podium heights and building setbacks. This building

setback has allowed for the creation of a spill-out space that will be activated by the makerspace community facility.

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 design solution will create a vibrant, accessible, diverse, inclusive, and connected, mixed-use local centre to serve as the gateway to the wider Waterloo precinct and cater to the needs of the Waterloo Metro Quarter, Waterloo Estate and all users of the area. The proposed built form and public domain distinctively reflect the local character, respond to place and context, and deliver high quality architecture and an enduring contribution to community life in the local area. The integrated design of the station with the over station development opens up and configures the new public plaza, Waterloo Place, to mirror the planned future park across Cope Street. The design has been developed to set up the future precinct and the Waterloo Estate for success.

Potential health services, a community makerspace, childcare and convenience retail will facilitate the future community to 'live, work and play' in one extended precinct. The design thinking aligns with the NSW Government's seven objectives for the Waterloo Metro Quarter: local, inclusive, integrated, connected, diverse, liveable and cultural, which are outlined in the Waterloo Metro Quarter Design Quality Guidelines. At the same time the design maintains substantial compliance with the architecture, urban design, landscape architecture, public art, WMQ and retail requirements outlined in the station project requirements.

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

All the public transport infrastructure is public space, so the station's internal and external spaces 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 maximise the amenity of public spaces and permeability around station entrances:

- 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.
- Public spaces should be created which allow for spontaneous uses and activities by their occupants. The design should consider opportunities for temporary events, pop ups, retail spaces and the night-time economy.

- 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 the customer experience and provide 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 the public realm. Their design is to be an integral part of the urban design of the station areas and corridor sites to minimise excessively long unarticulated lengths and inactive, bland and unappealing frontages.
- 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, high quality and appealing urban realm identity for Sydney Metro stations and structures.
- 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 for Waterloo Station:

- **Places, amenities and program** – The ground plane, including building locations and setbacks, has been designed across the site to prioritise clear routes for movement, resulting in a permeable and intuitive precinct that connects seamlessly into the surrounding blocks. Two generous east-west links (Grit Lane and Church Square) are complemented by a north-south lane (Raglan Walk) to facilitate movement in all directions through the site, in addition to the streetscapes wrapping the perimeter. These connecting spaces lead to the main open space on the site, Waterloo Place, which has been expanded in size to better serve the needs of the evolving community.
- **Ground space design and activation** – Building uses, entrances and loading facilities have been carefully considered at ground level to achieve an activated public domain. Community and retail activities have been located on key corners and adjacent to the public spaces to ensure the public realm is activated by these uses throughout the day and night.

  The ground plane across the site has been designed to create useable and attractive public places, while protecting the buildings from flooding. This results in a ground plane that is terraced and ramped up to a higher level on which most of the buildings are located. Terraced edges create opportunities for incorporating seating and planting across the site, maximising the useability of these edges. The ground surface materials are intended to vary in response to the type of place, with opportunities to include artwork and other site-specific design features.

- **Waterloo Place** – The main open space on the site to create a neighbourhood plaza, which will be an open, inclusive and flexible space where the Waterloo Metro Quarter meets the wider community. Waterloo Place has been designed to create both ease of access to the south-facing metro station entrance, with pathways of adequate width to accommodate future high pedestrian numbers and enable the place to be a welcoming public plaza. With the likely construction of a large community facility and park on the eastern side of Cope Street in the future, this plaza is designed to complement the range of park-based activities that will occur across the street.

  The public plaza will enable many different modes of use and has been designed to enable community events to be held alongside the daily use of commuters and residents. The plaza will provide a flexible, paved area surrounded by activated terraced edges. The selection of plants will create visual appeal, seasonal change and protection from microclimate. Waterloo Place will become the town centre for the wider Waterloo precinct and an inviting place to dwell, eat or enjoy community activities.

- **Grit Lane** – Grit Lane has been conceived as both an important connector between Botany Road and the metro station and a place for food and beverage tenancies. It will be characterised by an eclectic mix of small shopfronts animated by serving counters, built-in seating and loose furniture. The six-metre wide laneway will have an intimate quality and be a safe link between bus stops and the metro station due to the food and beverage trading hours. Unique lighting and paving will add to the character of the lane, making it a known destination in the neighbourhood.

- **Church Square** – As an important east-west connector for pedestrians and vehicles accessing the underground basement carpark, the space has been designed to enable safe and convenient access across the site. The vehicular accessway will be a shared space through which vehicles pass slowly. With the church on the south side and the contemporary community building to the north, the square will have a unique character. The Waterloo Place frontage will provide a generous undercover area below the podium level and enable weather protected access. Retail tenancies located adjacent to the community hub will create a safe and welcoming place.

- **Raglan Walk** – An important north-south connector between Raglan Street and Waterloo Place, Raglan Walk will be activated by small format retail tenancies, the adjacent commercial building lobby, end-of-trip facilities, co-working spaces and a significant artwork opportunity along the metro station façade. The laneway will have a generous height ceiling with a central portion open to the sky.

- **Church Yard** – This sheltered space on the southern side of the church, created by a six-metre wide building separation, will be a verdant urban space. The yard will be an ideal place for adjunct community or retail functions to spill out into the garden. The adjacent metro station wall is a potential location for a significant artwork, which would further add to the character of the place. Planting design within Church Yard will include a mix of native and exotic species, chosen to create an eclectic mix reflective of the multicultural Waterloo community.

- **Connectivity** – Ease of movement across the site has driven the design thinking, incorporating a new laneway from Raglan Street to the plaza, in addition to the east-west connections between Cope Street and Botany Road. These connections enable the site to be an accessible and inviting hub of activity, acting as a town centre for the broader Waterloo area. Central to the design process has been ensuring a diversity of places and experiences are provided throughout the precinct to respond to the changing needs of the community.

The Waterloo Metro Quarter will be a successful precinct through the combination of:

- thoughtfully designed places and buildings
- building ground floor uses that attract people and create reasons to dwell in the precinct
- an attractive public domain
- a program of community activities that occur in the public spaces
- partnerships with local community organisations that will link the WMQ with surrounding precincts and amenities.

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.

The following design principles and guidelines were identified in the Chatswood to Sydenham Design Guidelines to ensure 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.
- Consideration should be given to integrating heritage interpretation with public art.
- Sydney Metro is to be fully integrated within, and sensitive to, its heritage context.
- Awnings 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 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, a place or by the quality of the existing urban context.

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

- **Landscape and streetscape** – The planting strategy for the site has been developed to create a clear identity for the precinct, with a strong focus on edible native plant species. The planting palettes are appropriate for the many microclimate conditions across the site and aim to increase biodiversity through both plant selection and fauna that are attracted to these plants.

  The intent to ensure there is deep soil around the site perimeter influenced the carpark design and will provide opportunities for deep soil planting along Raglan Street and Botany Road. In addition to Apartment Design Guide (ADG) compliant deep soil, plantings have been included within the plaza and on several roof gardens that meet the CoS's required depths. The combination of deep soil at ground level and roof

gardens with adequate soil depth will enable both permeability for run off and inclusion of long-living vegetation. Furthermore, the precinct design achieves the council's tree canopy coverage targets/requirements.

- **Roof gardens and green façades** – Biophilia is an important consideration when designing urban precincts and the desire to provide connections to nature has been incorporated into each building design. Key to the design is incorporating planting on the façade of the community building, to ensure greenery is visible to users in the centre of the site. Similarly, roof gardens and planter boxes have been included to provide access or views to plantings in all parts of the precinct. Species selection has considered microclimate, maintenance and biodiversity.
- **Waterloo Congregational Church** – The heritage building Waterloo Congregational Church on Botany Road is bounded on three sides by the integrated station development. The design delivers additional public domain at the rear (east) of the church by setting back the station services building. This provides an attractive pedestrianised public space around the church, connecting Waterloo Place with the new Church Yard to the south, to improve pedestrian safety, passive surveillance and increase pedestrian circulation around the church.

  The additional eastern setback also provides a visual connection to public open space and the church. This connection will enable the public to visually connect with and interpret the history of the site, beyond those people using the proposed laneway.

  North of the church, the central building has been set back 14 metres at ground level to create Church Square. A pedestrian ramp, shared way, new plantings and seating are positioned to the immediate north of the church, allowing for increased pedestrian circulation and access from Botany Road into Waterloo Place and the metro station. The central building includes a three-storey podium form that responds to the key architectural features and scale of the church.

  The built form to the south of the church has been set back eight metres to create Church Yard; a cool landscaped area activated by a ground-floor community makerspace. The podium of the southern building includes a two-storey form, which relates to the scale of both the church and the locally significant Cauliflower Hotel.

  Decreasing the residential market housing in the diversified development mix has reduced the excavation requirements for parking, including no basement on the southern side of the church. As a result, the basement levels are located a safe distance from the Waterloo Congregational Church, mitigating the risk of structural impacts to the heritage building.

  The solution gives the church its own space and respect, while providing an opportunity to integrate the church as a respected anchor connecting the past to the present.

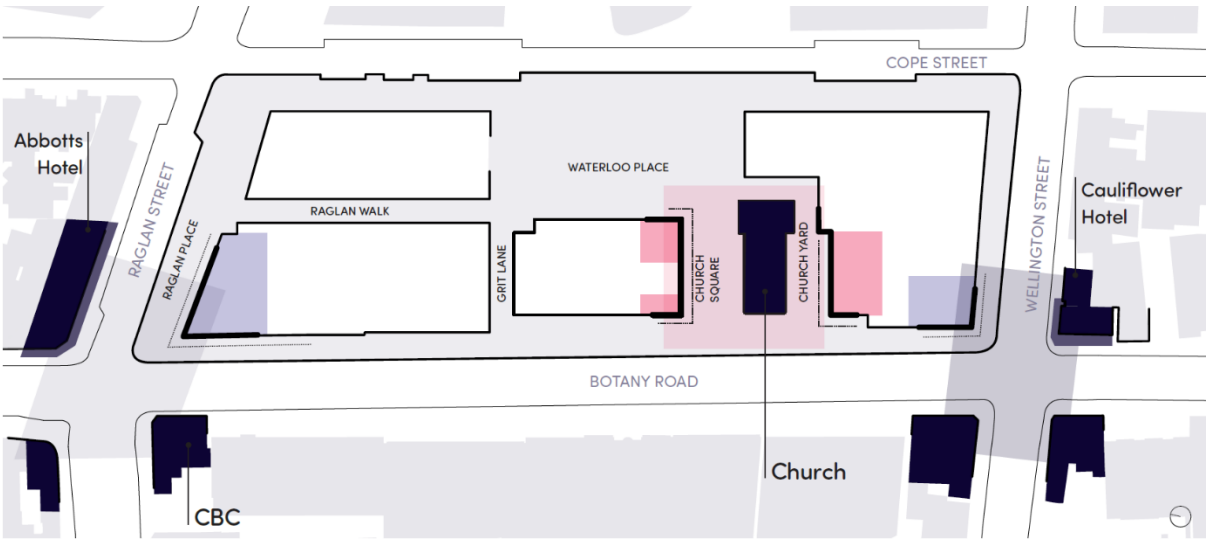


Figure 4.3.1: The heritage Waterloo Congregational Church has been integrated into the development.

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.

The inner-city suburb of Waterloo is very much a local centre, split between residential neighbourhoods east of Botany Road, and a commercial and employment area to the west.

The area around the station benefits from animated street frontages, with local retail, food and beverage, and amenities, lining the tree-planted Botany Road. Capitalising on its heritage and warehouses, it is also the scene of an evolving creative district.

Waterloo is an evolving destination in Sydney, with major new developments planned on either side of the precinct. The new transport hub will serve as a catalyst to trigger a new phase of urban renewal, including affordable housing. Waterloo Station has a variety of concept strategies that have been developed in association with stakeholders, including City of Sydney, Urban Growth NSW and the wider network.

The following design principles were identified in the Chatswood to Sydenham Design Guidelines to ensure 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.
- The design of station buildings, service facilities and public domain elements must respond to 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 Waterloo Station:

- **Cope Street** – Considerable effort has been made to create an appealing and comfortable environment on Cope Street, while ensuring a clear identity for the metro station entrance. The metro building mass to the north and south have been vertically articulated into smaller masses and further broken up by the inclusion of awnings to shelter pedestrians. These design moves in the architecture are complemented by

generous provision of understory planting, street trees and wide footpaths. Seating and bike racks have been incorporated in useful locations along the street to provide places to dwell.

- **Botany Road** – The design intent to relate the base of buildings along Botany Road to the scale of existing buildings on adjacent blocks has led to a diverse building expression along the length of the block. To retain the existing heritage value, generous setbacks from the church and to the southern portion of the site has allowed the creation of a clear footpath along Botany Road. Terraced garden beds are used to mediate the level changes between buildings and the footpath. Places to wait for the bus have been incorporated into the streetscape design, with convenience retail uses proposed to maintain activation of the street into the evening. The design retains existing trees as much as possible on Botany Road and replaces those that need to be removed to facilitate construction. In addition to the deep soil planting areas within the site boundary, the design includes verge planting along the Botany Road kerb to provide separation from the busy road environment.
- **Raglan Street** – Forming a significant address to the broader Waterloo Precinct, Raglan Street is a key connector beyond the site as well as the front door to the new metro station. The architectural design responds to the significance of the address, while creating a diversity of uses on the street through the location of retail and the commercial lobby, in addition to the station entrance. The generous streetscape width, in combination with a reduced basement size, creates opportunities for large areas of deep soil planting to be provided on Raglan Street. These planting beds will provide welcoming places to meet and dwell and make a significant contribution to the quality of the streetscape. Within the planting beds, security devices can be seamlessly integrated. Raglan Street footpaths will be shaded and generous, allowing for comfortable journeys to encourage high pedestrian use.
- **Wellington Street** – Wellington Street is another key east-west street that links Waterloo to Alexandria Park. The design solution seeks to draw on the character of the surrounding area to improve the streetscape at the intersection of Botany Road and Wellington Street. Large areas of understory planting, in addition to new street trees, will create an inviting streetscape and pedestrian-scaled spaces. Retail tenancies with unique architectural expression hold each corner of the street and add to the street activation created by the residential lobby.

4.5. Community safety, amenity and privacy

Safety has been considered at all stages of project design, with the commitment to safety outlined in Section 1.6 of the Chatswood to Sydenham Design Guidelines.

The following design principles were identified in the guidelines to ensure 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 many aspects of physical design, including 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 microclimate effects, including wind tunnel impacts. The urban heat island effects should be minimised through light coloured finishes, roofs and pavements, green walls and roofs, plantings and shade trees.
- Customer weather protection outside Sydney Metro stations is to be provided to ensure good levels of comfort are maintained with 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 Waterloo Station:

- **Safety and comfort** – Safety and comfort for all users has driven public domain design to create a precinct that is attractive and welcoming to use both day and night. Key safety considerations include:
    - provision of clear sight lines
    - building uses that provide passive surveillance and activation throughout the day and night
    - lighting levels that support safety and amenity
    - consideration of building lobby locations
    - minimised conflict between pedestrians, cyclists and vehicles.

  Comfort in all seasons has been considered and reflected in the choice of paving materials, tree species, furniture types, awning dimensions and building massing. The project has been designed to enable the free flow of pedestrians in and out of the metro station. Hostile vehicle security requirements have been incorporated into the public domain, as a combination of concrete walls under seats and bollards, to provide security measures without compromising on amenity.
- **Wind** – Awnings provide weather protection and wind protection across the site, as well as creating a level of consistency for various uses. For example, the metro station's angled façade folds out to become a metal entry awning for the station entry and provides weather protection for the southern metro retail spaces.
- **Natural surveillance** – The station entries are designed so they are visible from both Raglan and Cope streets. The station is designed to be bright and open, avoiding blind corners and spaces that are out of public view to maximise visual lines within the station. Glass partitions and lifts are used to provide clear sight lines within and outside the station. A skylight is provided to maximise natural lighting on the station concourse level. The station and the public domain will be well lit and illuminated at night to support safety. There will also be CCTV coverage across the station and station precinct.

- **Natural access control** – Sufficient exits is provided to accommodate the pedestrian flow for commuter safety. Furniture such as benches are carefully chosen to discourage vagrants. Public and non-public spaces are clearly identified with wayfinding signage and non-public rooms are secured.
- **Natural territorial reinforcement** – Clear wayfinding signage will provide orientation and comfort for commuters to navigate within the station. Restricted areas have secured access control and clear signage.
- **Maintenance** – The station finishes are resistant to graffiti and the station furniture is durable and low maintenance.

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 will achieve new benchmarks in sustainable 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 are designed to achieve five-star design review and as-built ratings using the Green Building Council of Australia (GBCA) Green Star Sydney Metro rating tool v1.1.

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

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

- design for durability, low maintenance and replacement
- active transport facilities, including external bike rails and internal bike store
- community engagement through building information displays and public art
- waste storage and sorting facilities
- maximised occupant comfort and improved indoor environmental quality, through daylight penetration, appropriate acoustic treatment, optimised ventilation and indoor air quality
- sustainable products and low volatile organic compound (VOC) materials to be used where possible
- low embodied impact and high recycled content materials
- water efficient fixtures, fittings and building services
- energy efficient lighting and building services
- water sensitive urban design (WSUD) initiatives.

4.7. Minimising the project footprint

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

- ensure that earthworks and engineered structures such as noise walls, retaining walls and portals are visually integrated into their urban or landscape setting, as much as possible, keeping engineered structures to a minimum

- provide integrated public art, lighting, signage and heritage interpretation to minimise the footprint.

Site-specific design principles and guidelines have also been identified to inform the development of the detailed design for Waterloo Station:

- As a cut-and-cover station development, the infrastructure for the metro station itself is substantially below ground. Above ground the station buildings and precinct development has a building footprint that is substantially smaller than the built form before demolition, with increased setbacks particularly at Raglan Street and around the church. The proposed new laneways and public plaza proposed have increased permeability across the site and facilitate access to the metro station and connectivity to the surrounding context.
- The station boxes are integrated into the surrounding context to create a human-scaled environment. The façade material and language reflect the local industrial architecture to minimise its visual footprint.
- Public art will contribute to the culture and design of the Waterloo metro station. Wall spaces in the busy public areas identified in Section 5.2 of this report will be artwork canvases to respond to the space and enhance the local amenity.
- The circulation systems within the station and station precinct are easy and efficient to navigate with the open space layout and effective signage. Station entries are easily identified and accessed from the station precinct to support customer interchange and convenience and shorten walking distances. There are also clear visual lines to the station escalators, retail businesses, bike hub access and lifts, while the spaces are all well connected for intuitive wayfinding.
- Glazed exterior on the station at street level increases visual connection between the outside and inside of the building while activating the perimeter frontages.
- Provisions are made for public art and heritage interpretation via interpretive walls, signage, wayfinding and material finishes.

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
- Australian Disability Discrimination Act 1992
- Disability Standards for Accessible Public Transport 2002
- Building Code of Australia
- NSW Environmental Planning and Assessment Act 1979
- NSW Health and Safety Act 2011
- NSW Rail Safety (Adoption of National Law) Act 2012
- Australian Standards
- Station Design Standard Requirements

- TfNSW Disability Action Plan 2012–2017
- A Plan for Growing Sydney (NSW Government, December 2014)
- NSW Long Term Transport Master Plan (NSW Government, December 2012)
- TfNSW City & Southwest Final Business Case (October 2016)
- Sydney City Centre Access Strategy (NSW Government, December 2013)
- Sydney's Rail Future (NSW Government, June 2012)
- Sydney Public Spaces Public Life (Gehl Architects, 2007)
- Sydney Metro City & Southwest Waterloo Integrated Station Development Scope of Works and Technical Criteria
- North Sydney Development Control Plan 2013
- Sydney Local Environmental Plan 2012 (NSW Government)
- Sydney Streets Design Code (City of Sydney Council, 2013)
- Sydney Metro City & Southwest Submissions and Preferred Infrastructure Report – Design Guidelines 2016
- City of Sydney Development Control Plan 2012.

5. Design opportunities

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

5.1.1. Building design

The visual impact of the project has been mitigated by implementing the following building design initiatives:

- The façade treatment of the two station boxes (north and south) helps to differentiate the architectural expression from the OSD design. It creates a strong horizontal form to articulate the station separately from the OSD and helps mitigate the perceived density of the cluster of taller buildings.
- The station boxes further mediate the visual impact through a subtly articulated composition relating to the scale and materiality of the surrounding area's varied industrial and residential context. This is comprised of a range of vertical and horizontal elements, metal, perforated and textured concrete and masonry elements that treat the north and south head boxes independently. These elements are of a scale and modulation intended to mediate between the integrated development above the station head boxes, as well as both the existing and proposed neighbourhood. This will bring a human scale to the streetscape while recognising the scale of the proposed metro infrastructure.
- The continuous awnings around the station boxes also emphasise the horizontal form to further mediate and bring scale to the built form and its appearance. These are of metal fabrication, a refined version of the shop awnings to be found throughout the neighbourhood.
- The parapet façade height is of a considered scale and relates in height to parapet and cornice lines to be found nearby in the neighbourhood.
- The southern station box is set back with its height and façade articulated in response to the character and scale of the Waterloo Congregational Church.
- The external glazing is detailed to enable a high degree of visual transparency throughout the street level of the station area. Glazing used for the retail and food outlets also aids activation of the streets.
- The visual impact of the northern station building is substantially reduced with its entry well set back from Raglan Street. This provides a larger public space, clearly articulates the station entry from the adjacent development, and further breaks down the bulk and scale of this building element.

5.1.2. Landscape design

The visual impact of the project has been mitigated by implementing the following landscape initiatives:

- The station buildings and primary and secondary plazas form the public domain for half of the new city block being created in Waterloo. The OSD will provide the western side of the block and the public plaza that fronts onto and connects the station to Cope Street and the rest of the development via a series of laneways and public spaces. Therefore, the opportunities for landscape to mitigate the visual impact is limited to the

widened footpaths and street edges created along Raglan, Cope and Wellington streets.

- The existing character of Cope Street with its mature street trees will be replicated on the station side and build upon the mitigation and visual benefits that the existing trees already provide. Street trees are proposed along the widened footpath for the whole length of Cope Street and will provide the main mitigation to the visual impact over the medium to long term.

  The proposed new street tree planting will mainly be *Corymbia eximia* along Cope Street, a medium-sized evergreen tree (up to 10–15 metres high); *Waterhousia floribunda* on Wellington Street, a medium-sized evergreen tree (up to 10 metres high); with *Lophostemon confertus, a* medium-sized evergreen tree (up to 15 metres high), proposed along Raglan Street. All trees will be located outside the perimeter of the station building and maintained by the City of Sydney.

- The proposed 40 kilometre an hour street design of Cope Street also provides some visual mitigation with the narrow traffic lanes and widened footpaths allowing for generous planting areas. These will be filled with native grasses and ground covers along the full length of streets around the station. The design does not preclude implementation of a lower speed in the future, at the discretion of the asset owner CoS. Water sensitive urban design features, such as rain gardens and slotted kerbs, will provide stormwater runoff to these garden areas to help ensure these plants thrive in the future.

- Street furniture and raised planters along the building frontage also help to mitigate the visual impacts of the buildings at the ground level.

- Street tree planting in the OSD area and the design of the public plaza can also help to mitigate the visual impact of the station buildings. Raised planters and feature trees in the plaza create an attractive public space which will be a drawcard for station customers and residents in and around the development. For more detail about the tree planting design for the precinct see Section 6.2.3.

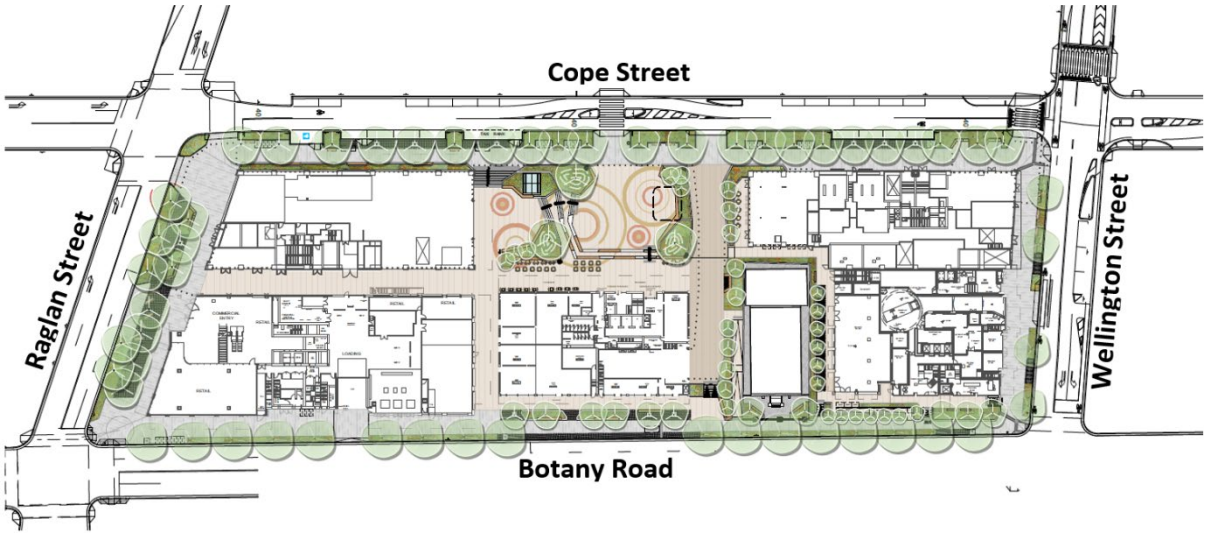


Figure 5.1.2.1: Landscaping across the Waterloo ISD precinct

5.2. Opportunities for public art

A key design principle for the project is to ensure public art is integrated within the design of stations and other corridor structures to aid place-making, enhance local amenity and celebrate local character.

The Sydney Metro City & Southwest Public Art Master Plan identifies the need for a distinctive, readily communicable and memorable identity public art program, through the creation of the cohesive program brand 'MetroCulture'.

The program provides six categories of art, including 2D, suspended, sculptural, lighting installations, functional and digital artworks. These will:

- respond to themes
- respond to place
- use form, material and colour effectively
- provide an uplifting experience for the customer
- develop the storylines theme
- consider day and night-time activation.

The Interpretation Strategy for the precinct outlines a proposal for public artworks that interprets and represents the values of the local Aboriginal community. The themes and narratives recommended for interpretation within the site focus on the Aboriginal history, light industrial character and general history of the area. These themes and narratives will be further investigated during detailed design to inform content of the interpretation media. The interpretation themes and narratives that have been developed to date by Aileen Sage Architects are outlined below. Agreement to the manifestation of these themes will be achieved through community input and involvement.

5.2.1. Theme 1 – Country

The work will acknowledge and celebrate the essential nature of the land that Waterloo sits on, above and within Aboriginal land. Land that has provided stories, skills, designs and cultural practices. Weaving patterns (from woven bags, baskets, and mats) will be developed by the artist, as well as interpretations of kinship stories or systems as patterns and designs.

5.2.2. Theme 2 – Community and language

It will acknowledge the history of Aboriginal activism in the Waterloo, Redfern and Eveleigh area; the birthplace of Australia's civil rights movement and its continuing significance for the Aboriginal community. It will also recognise emerging communities with each new wave of migration and the stories of food production, industry, craftspeople and makers that at various times have contributed to the character of this area.

5.2.3. Theme 3 – Innovation and knowledge

The work to be commissioned will celebrate the area's Aboriginal history and future with a focus on innovation. It will incorporate ideas and practices celebrating Indigenous knowledge of the skies and recognise a deep understanding of the interconnection between the planet and the broader universe. Honouring the sky above us that unites us under the same blanket of stars.

The work will celebrate the (sometimes difficult) journeys migrants took from the northern to the southern hemisphere and the unifying use of stars as a way of finding place. Honouring the stories of the southern constellations and the ongoing research and innovations that continue to build on this ancient knowledge.

5.2.4. Theme 4 – Development of the urban landscape

The overall development of the site from its original state as wetlands, Aboriginal occupation, early land grants, mills and market gardens, through to early residential subdivisions, light industrial and commercial uses before modern development.

5.2.5. Future themes, narratives and research

Additional themes and resources could be considered and used to inform detailed design of interpretation elements proposed for future development across the site. These include:

- Experiences of migrant workers – An oral history project could be explored to record the local communities' memories of the area. Interviews with past employees on the block could provide personal narratives to inform additional heritage interpretation or the media proposed as part of the Public Art Strategy, while also complementing the themes and narratives highlighted in this report. If undertaken, the oral history should be carried out in consultation with CoS and be a collaborative and co-owned resource. The history content could then be incorporated into future signage located across the site or online content. The full content should be made publicly accessible through a repository or centre such as the CoS archives.
- Evidence of Aboriginal or Early European occupation – Archaeological test excavations undertaken during the station box excavation work identified a small number of Aboriginal stone tools at the site. Post-excavation analysis and reporting has not yet been completed, but preliminary assessment suggests the rest of the precinct may also retain a background scatter of artefacts in a highly disturbed context. These are likely to be of low archaeological significance. Many of the artefacts recovered during the archaeological investigations would enhance the site interpretation to provide an insight into the lives of the local community that would otherwise not be realised.

5.2.6. Public art provisions

Four opportunities for public art are identified for further investigation and resolution at this stage. A preliminary diagram showing the possible artwork locations is included on the following page.

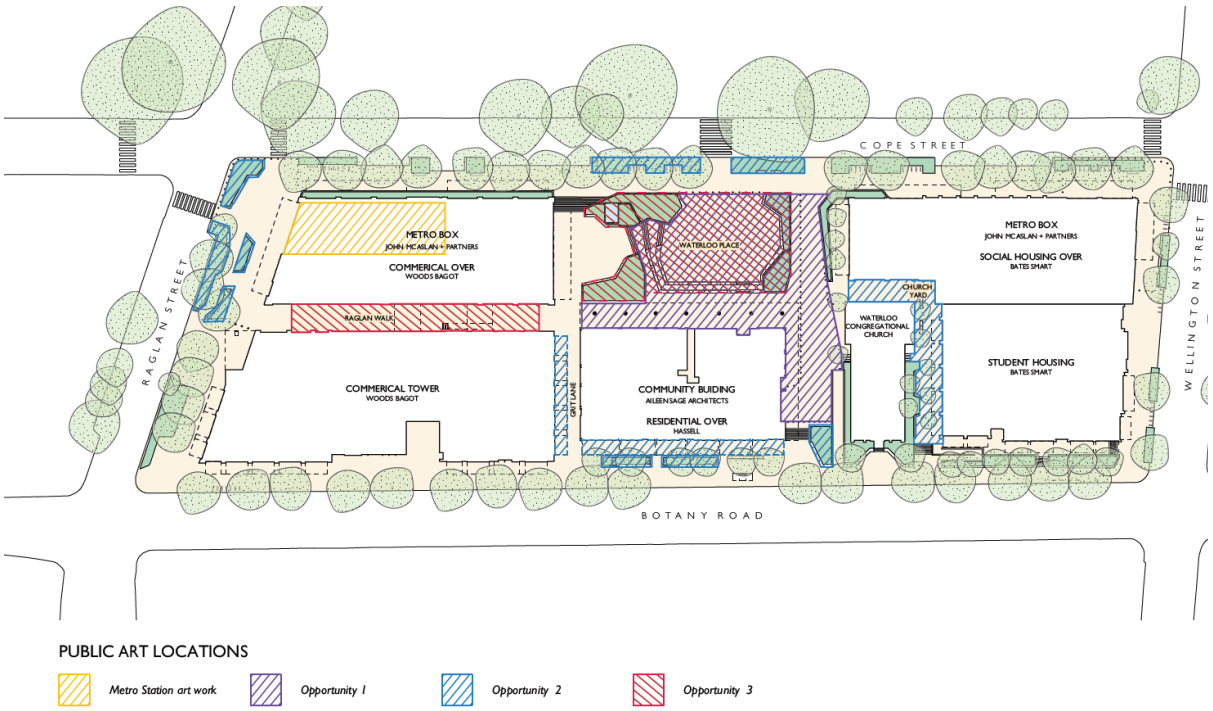


Figure 5.2.6.1: Potential public art locations

The following outlines each opportunity and identifies possible media and the values that each will communicate. This content has been quoted directly from Aileen Sage Architects and is indicative and subject to detailed design development, and more importantly, collaboration with the community.

Opportunity 1 – Celebrating Country

This artwork will be a two-dimensional design or pattern that will be translated into the brick or concrete unit paving of Waterloo Place and the share way between the residential building and the Waterloo Congregational Church. The work will be highly graphic and abstract, clearly demarcating these important civic zones. It will create a strong visual character and marker of these public domain areas when viewed from a distance, directly above or looking down from the residential, community and commercial buildings of the precinct and surrounds.

Opportunity 2 – Celebrating community and language

This commission will be in the local Sydney language as well as selected migrant languages. These include English, Mandarin, Arabic, and possibly some European languages, such as Italian, Greek, French and Russian. It will also consider other key languages that are important to respond to immigrant groups with strong historical and contemporary relationships with the area. It will work with poetry and storytelling to embed text within the site as illuminated, etched or integrated elements in key strategic places, speaking to identity, culture and community.

Naming places after local Indigenous community leaders and heroes could be incorporated, as well as celebrating historical knowledge and stories that honour the site's position as a place of social progression from significant moments in history. The achievements of local people in a diverse range of fields will be recognised and celebrated, paying tribute to important initiatives that began in this area such as the Aboriginal Legal Service, Aboriginal Medical Service, Aboriginal Children's Service and the National Black Theatre House. Acknowledgments of Country would also be included at key entry points to the precinct.

The locations of the work will be carefully considered and judiciously placed. The exact locations will be determined in collaboration with the curators and the precinct design team during the detailed design stage. These may include:

- integration within glass building awnings
- illuminated text around or upon strategic walls or vertical surfaces in the precinct – in locations where safety and security will benefit from considered lighting and activation – such as Church Yard, Church Lane and the tall vertical service core wall of Building 1, which addresses Botany Road. These could recognise local heroes and innovators or significant historical places, industrial heritage or events relevant to the site and community
- integrated text (engraved, etched or inlaid into materials) within specific functional design elements within the public domain such as public seating areas, the skylight, the public domain lighting strategy and hostile vehicle mitigation structures. These could be interesting quotes or extracts from stories about the original environmental qualities and geology of the site – once a freshwater wetland, sand dunes and a place abundant in food - providing talking points at places of rest or reflection.

Opportunity 3 – Celebrating innovation and knowledge

An opportunity is proposed for a series of sculptural elements either integrated with the landscape or suspended above Raglan Walk and extending through to Waterloo Place.

A collaborative multidisciplinary team would be commissioned, including artists working alongside an astronomer and tech innovation specialists. They would create an innovative and dynamic work which may include elements of digital programming and/or illuminated elements. These could be programmed to respond to specific activities or astrological, seasonal, environmental or site conditions.

Opportunity 4 – Public artwork within Waterloo Station

Public artwork is proposed to be included within Waterloo Station at the following locations:

- wall space at primary station entry at Raglan Street (Location A)
- wall space on side of escalators to underground metro concourse (Location B)
- wall space at concourse (Location C).

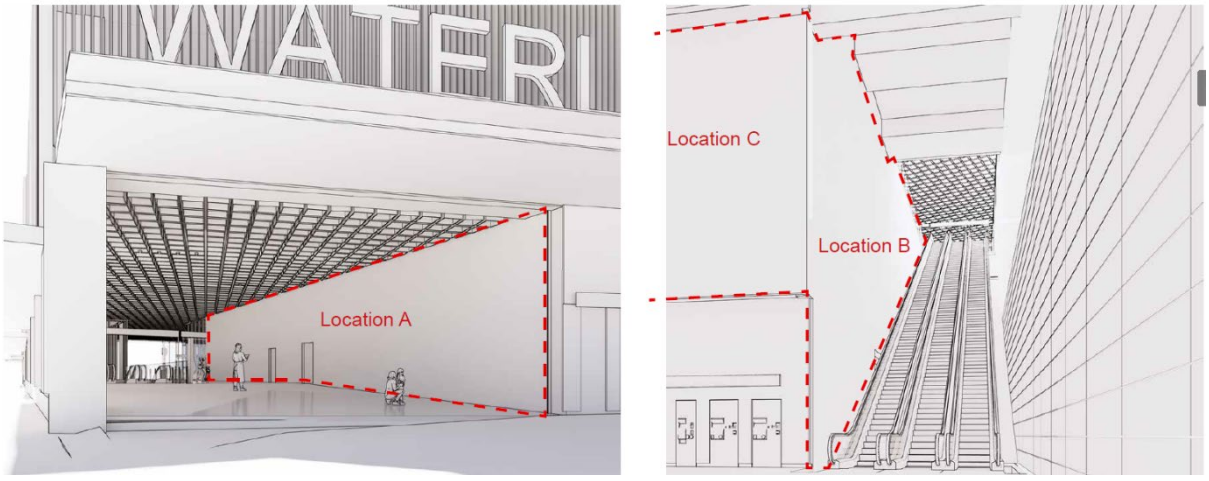


Figure 5.2.6.2: Provision for public art within the station

5.2.7. Sydney Metro public art commissioning and realisation

The Sydney Metro City & Southwest Public Art Master Plan (master plan) was prepared to ensure high quality, integrated and robust art for the 18 stations along the metro line. The program is guided by a curatorial theme 'Storylines'. The master plan sets out the program's vision, objectives, principles and the process for selection and realisation of the artworks.

Sydney Metro has an internal Public Art Working Group (PAWG), which includes membership from Create NSW, that oversees 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 the station's programs and functional requirements.

A two-step process was developed for artwork selection. Step 1 was a public expression of interest open to Australian artists and run in collaboration with Create NSW. A panel of art experts listed the best 21 artists; three artists for each of the seven stations.

Sydney Metro prepares a station-specific brief with input from the station architects. The three shortlisted artists were invited to a site visit and asked to prepare a concept artwork for the station artwork competition. A second panel, comprising art and design experts from Sydney Metro, the station delivery team, plus stakeholders from CoS, selected the best of the three artworks.

Nicole Monks was selected for Waterloo Station for her sensitive and contextual artwork Footprints on Gadigal Land. The artwork has a bespoke expression at the metro entrance, main escalators and concourse. The artwork selection will be presented to the PAWG for endorsement and to the DRP during its subsequent development.

The artwork references the importance of the site along a key Aboriginal walking route and is highly integrated with the station architecture. It comprises a lenticular artwork at the main metro station level, a three-dimensional wall installation on the escalator route to the concourse and a large scale commissioned photograph at concourse level. Daily commuters will become viewers and participants in a contemporary public artwork and unfolding experience as they move through the metro station entrances.

The selected concept artwork will be further developed in collaboration with the architectural and construction teams via regular meetings. These will be used to confirm concept feasibility, refine and develop the initial concept, and commence investigations into material selections and preliminary details. The meetings will ensure successful integration of the artwork into the architectural design and coordination with wayfinding, access and interpretation. Collaboration activities have included:

- modelling of the public art concept within the architectural models for space-proofing
- coordination with structural and building services design
- consideration of operations, maintenance and blast requirements when finalising materials and fixings.

The art has been coordinated with other publicly accessible, front-of-house areas of the station. When the public art development has been accepted, the artist and technical team will complete the construction documents for the artwork components and fabrication.

5.3. Opportunities identified in the Heritage Interpretation Plan

A Heritage Interpretation Plan has been prepared for Waterloo Station This plan identifies the following opportunities for heritage interpretation:

- incorporating local Aboriginal heritage themes into the flora and fauna or wetlands themes together with themes that address the more recent or modern Aboriginal community and experience, due to the complex and significant Aboriginal history of the local areal
- engaging local Aboriginal artists in the development and creation of an indigenous heritage interpretation
- integrating the identity of the dams, the location of the Waterloo site and Hinchcliffe's Woolwash by including the 1893 Sydney Water plan DS927
- using inverted bottles in architectural elements such as pavements, garden edging and foundations
- exposing the natural sand dune, with evidence of early occupation and activities by Europeans, which overlay Wianamatta clay.

5.3.1. Station and over station development interpretation

A development narrative addressing the area's geology, hydrology, and flora and fauna is proposed to be integrated within the station design. The themes will progress from the station platforms and concourse area, and into a public art space which would interface with the wider Waterloo precinct.

Design themes within the platform and lower concourse spaces would address the area's geology, while the upper concourse would focus on the pre-development wetlands. At ground level, a public art space will provide an opportunity to present artwork, with a theme agreed through community consultation and engagement, that captures the area's Aboriginal and historic heritage.

Opportunities for heritage interpretations are being explored across the built features shown in the diagram below.

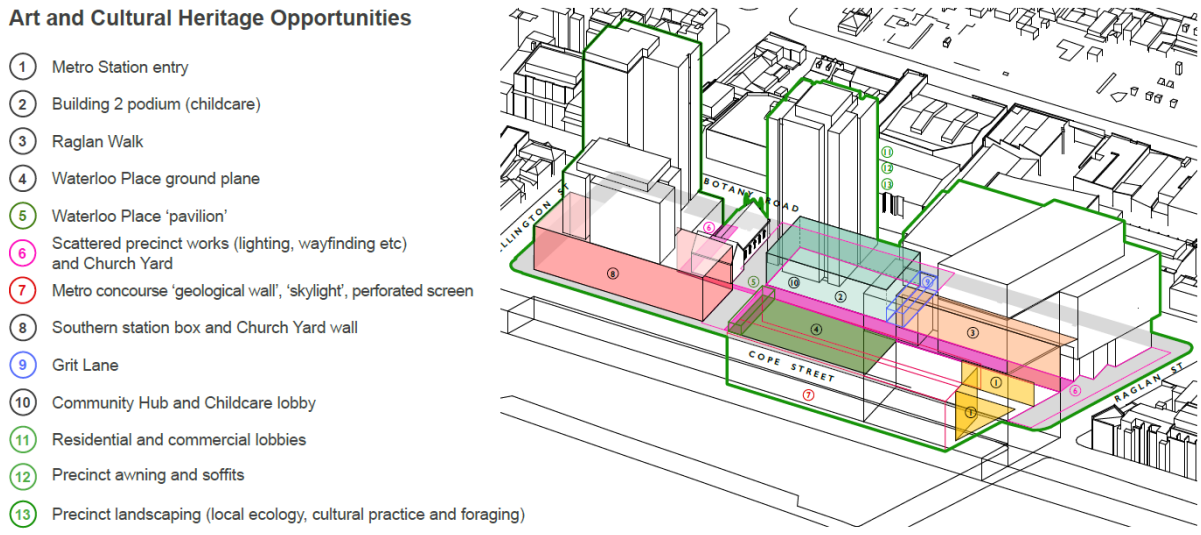


Figure 5.3.1.1: Potential locations for heritage interpretation across the Waterloo precinct

Waterloo Station

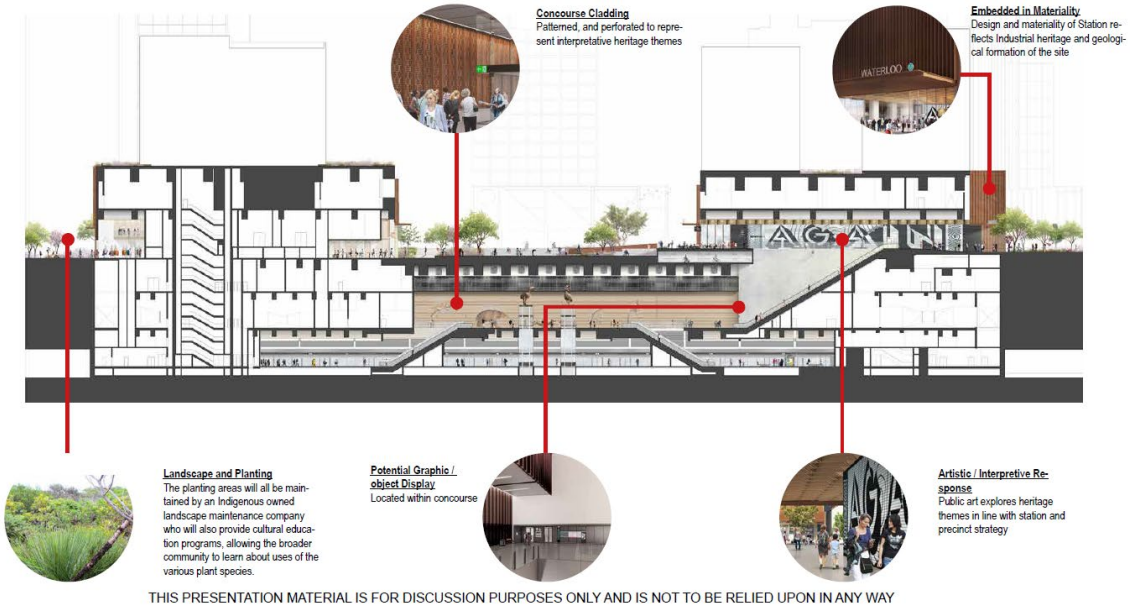


Figure 5.3.1.2: Heritage interpretation and artwork opportunities identified across Waterloo Station

Concourse Interpretive Wall

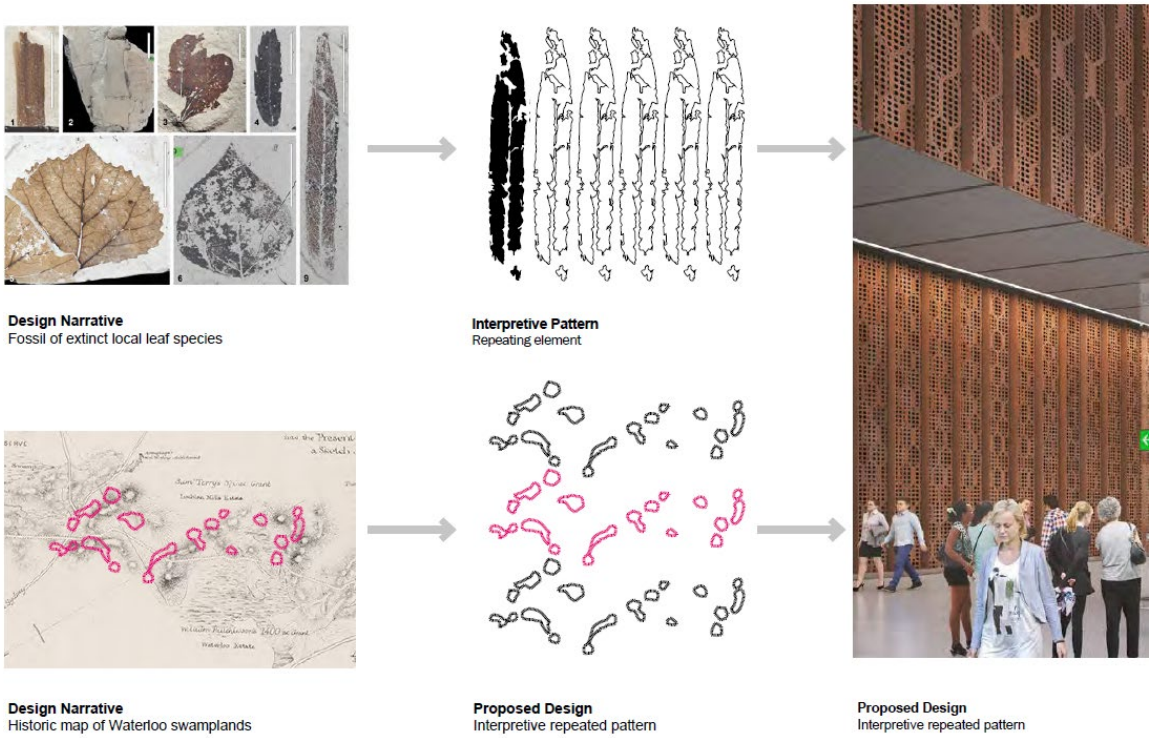


Figure 5.3.1.3: Heritage interpretation opportunities identified for station concourse wall and bulkhead

5.3.2. Landscape interpretation

Aspect Studios has been engaged to prepare the landscape design for the public domain. The landscape design incorporates plantings which represent the early site conditions or local native plants more generally to communicate natural or Indigenous values.

Landscape interpretation can include devices such as:

- planting strategies which aim to strengthen the Indigenous vegetation of the local area to create an urban bushland character
- native species, traditional Indigenous bush tucker and medicinal plants integrated in pockets throughout the site
- identification of zones within Waterloo Place and other areas for Indigenous artworks in the ground plane
- historic markers
- reuse of salvaged materials.

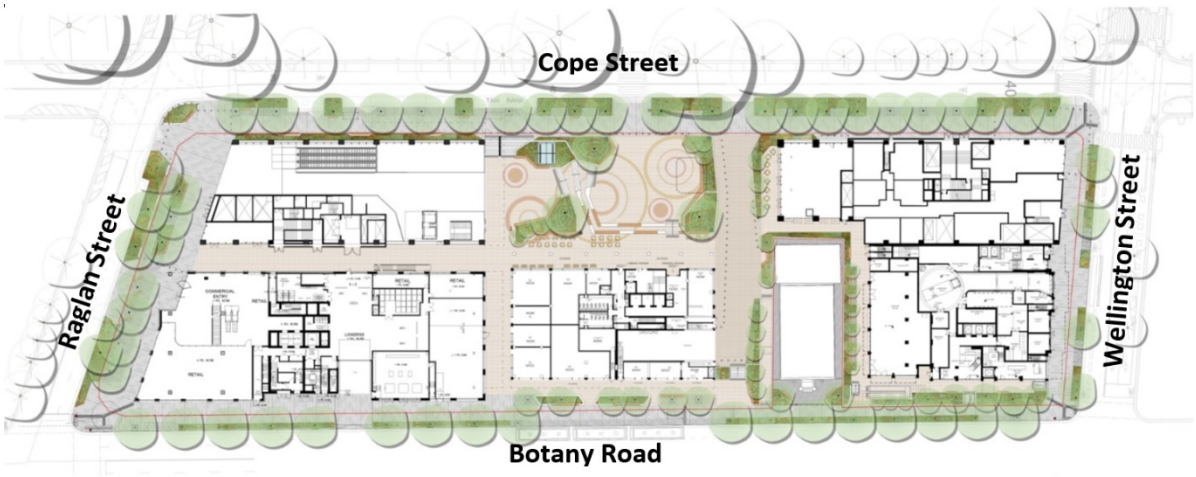


Figure 5.3.2.1: Landscape design master plan concept

5.4. Opportunities for incorporating salvaged historic and artistic elements

A recently completed archaeological program for the eastern half of the WMQ site has provided a comprehensive schedule of artefacts and information. The artefacts and salvaged building materials were retained as part of the archaeological works.

The archaeological excavation was carried out in line with the Sydney Metro City & Southwest Archaeological Method Statement (AMS) for Waterloo Station. AMBS Ecology and Heritage consultant prepared the AMS which addressed both the eastern (metro station side) and the future western excavations within the WMQ site.

AMBS has provided Sydney Metro with a summary report on the historical archaeological investigations, dated July 2018. It is understood that AMBS is yet to complete and release a final excavation report for the eastern half of the WMQ site. The 2018 interim summary report noted that there is recognised potential for further artefacts to be identified on the site as part of the ongoing archaeological program. Opportunities are to be sought and findings reviewed

with the Sydney Metro and Waterloo Station project team to determine how the archaeology can be incorporated across the entire WMQ.

In terms of the Waterloo station design, given the context and scope of the station works package, there are no specific salvaged materials to be re-used within the new construction. However, the Aboriginal and Historic Heritage Interpretation Plan has identified artefacts recovered during excavation of the station box together with other heritage themes, which are appropriate for interpretation within the station and precinct curtilage.

The station designers propose to include elements of interpretation within the station or precinct that relate to some of these artefacts. These may take the form of signage, graphics or displays.

The incorporation of salvaged historic and artistic elements from other locations along the project alignment have not been considered relevant for use at Waterloo Station, including 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.

6. Details of the Station Design and Precinct Plan

6.1. Waterloo Station design features

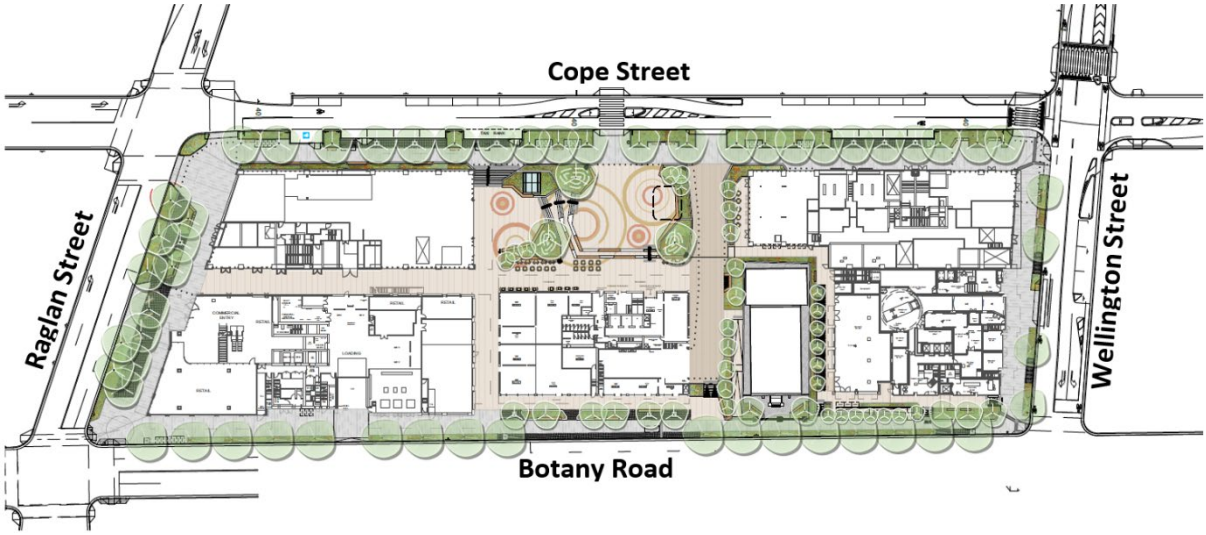


Figure 6.1.1: Waterloo ISD precinct

Waterloo ISD is designed to deliver a high quality metro customer experience by providing a safe and seamless interchange, and a range of retail services. The ISD is intended as a catalyst for significant urban renewal within the suburb of Waterloo. The station's distinctive design aims to create a place that integrates with its local context in terms of architecture, materiality, scale, connectivity, function and amenity.

An indicative diagrammatic longitudinal east section of the Waterloo ISD through the station is shown in the figure below.

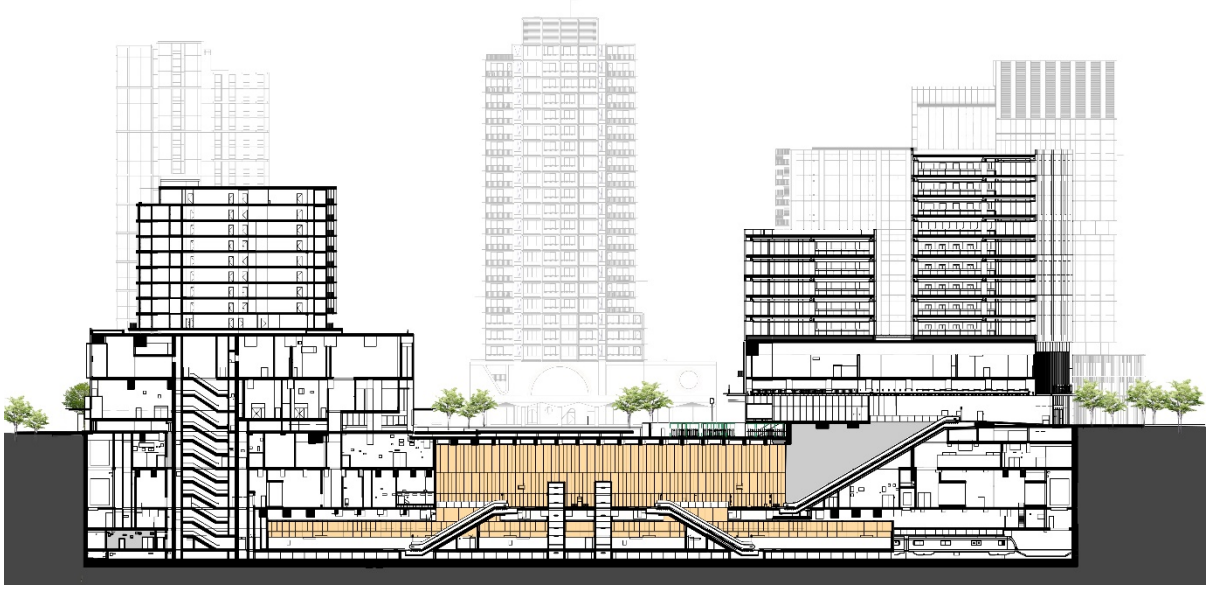


Figure 6.1.2: Indicative diagrammatic longitudinal east section of Waterloo Station

As a cut-and-cover construction, Waterloo Station is comprised of a suite of components and systems that form part of the system-wide approach to design, as well as site-specific responses to the precinct.

The station is located between Raglan Street to the north, Cope Street to the east, Wellington Street to the south and Botany Road to the west. The station buildings at both ends of Cope Street will have retail space and there will be a drop-off zone adjacent to the station entrance.

The station and plant needed to run the metro are mainly located underground. The platform is located about 24 metres below street level and oriented roughly along the north-south axis, parallel to Cope Street. Part of the services are located at platform level. The gate lines are located on the concourse level.

Above ground there are two station boxes. The north station box is where the station entrances and secure bike parking are located. The south station box primarily contains the bulk infeed of electricity which serves line-wide service systems. Ventilation plant rooms are on the higher level and there is interface with the OSD on the roof level.

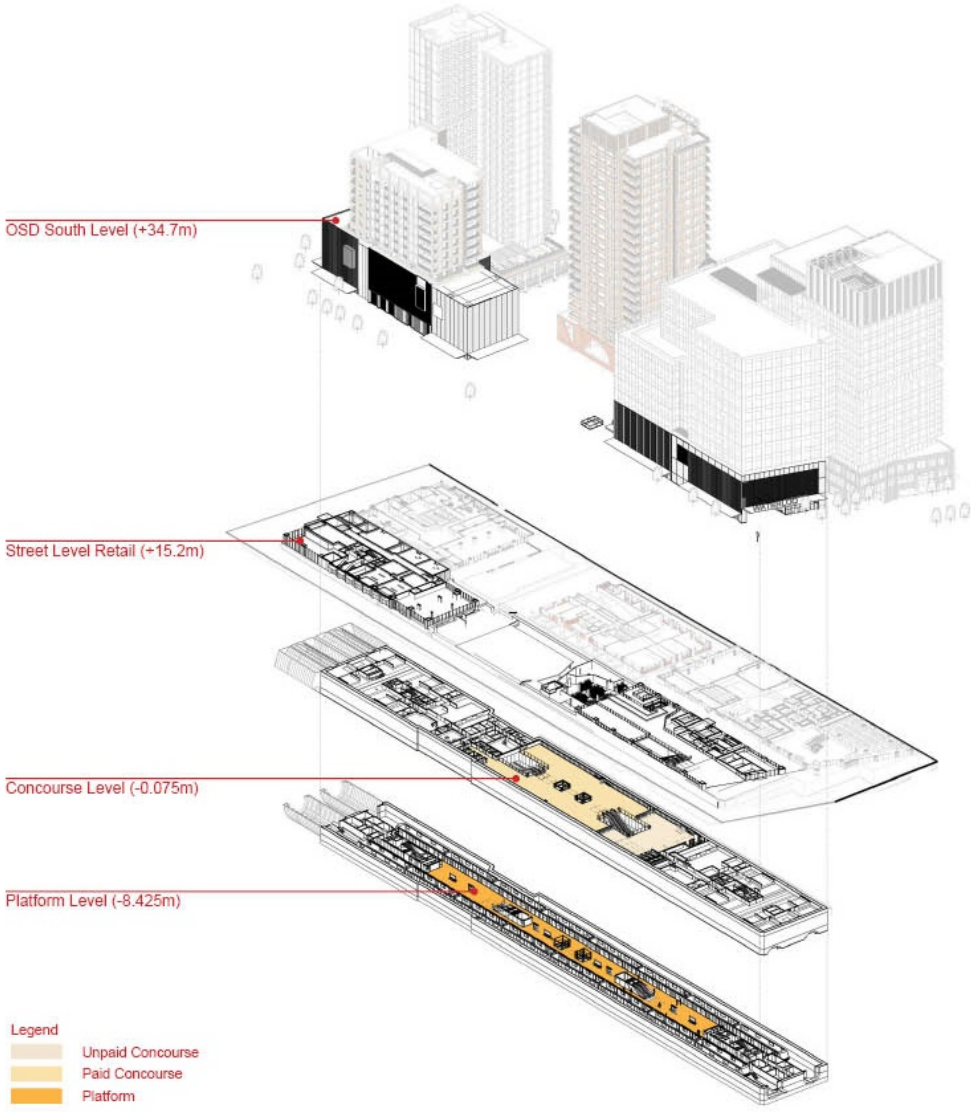


Figure 6.1.3: Indicative exploded axonometric view of Waterloo metro station

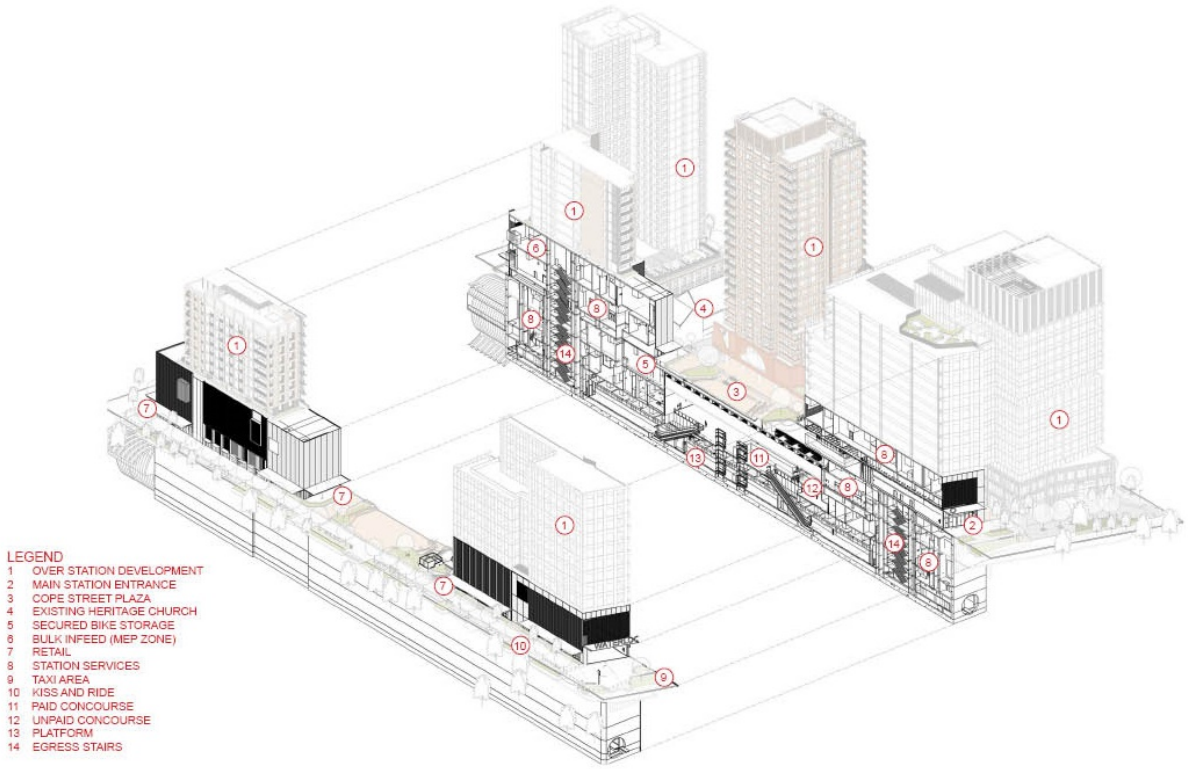


Figure 6.1.4: Indicative exploded axonometric view of Waterloo metro station and the OSD

Figure 6.1.5: An artist's impression of the north station box view from Cope Street and the station's southern entrance

6.1.1. Built form and scale

The proposed subdivision for the station within the WMQ has been simplified to a limited number of horizontal stratums. This has been achieved to both support and simplify arrangements and ensure the station and over station development are not a burden on each other.

The design connects residents, visitors and customers with clear lines of sight which are proposed to be kept during construction and maintenance of the over station and surrounding development.

The figures below show massing break down, connection to buildings above and grounding of OSD elements.

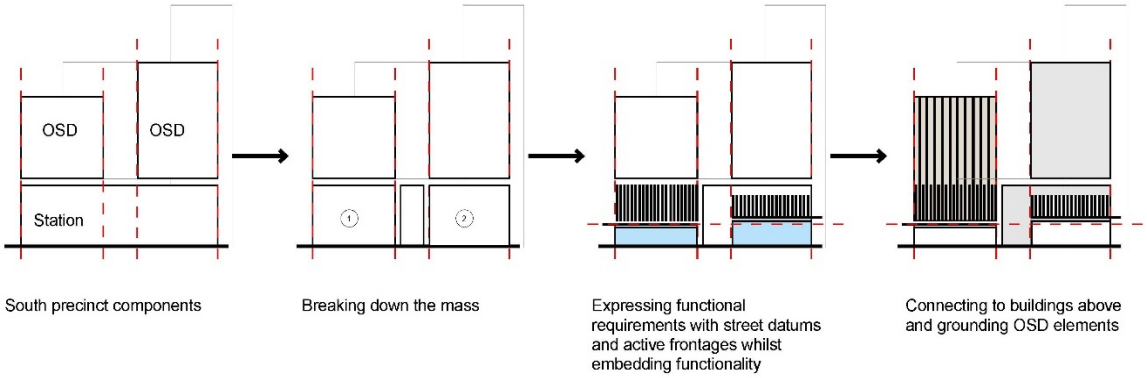


Figure 6.1.1.1: Interpreting fine grained urban context – north building

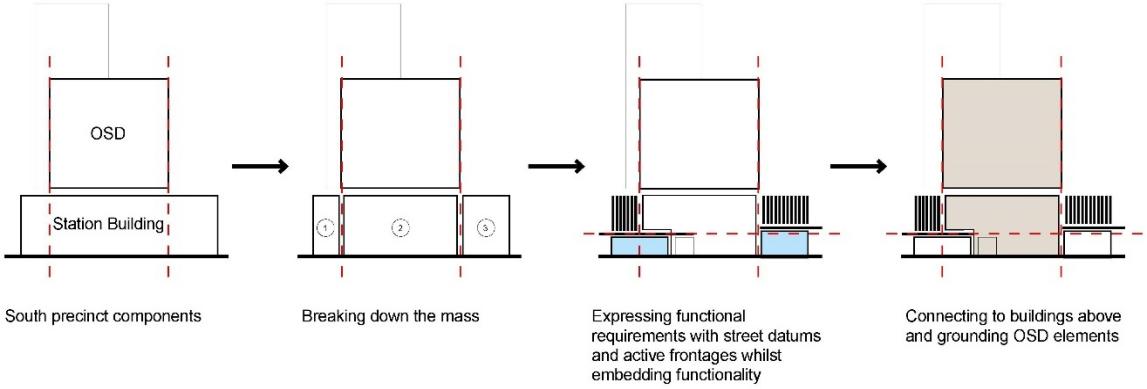


Figure 6.1.1.2: Interpreting fine grained urban context – south building

6.1.2. Façades

The approach to the façade has been addressed separately for the northern and southern head boxes to respond to their different uses and contexts.

The northern head box responds to the metro station entry and the relationship to the commercial development above. It is characterised by vertical finned panels, framed and broken down by concrete. This approach reflects on the scale and industrial nature of some of the nearby railway buildings and allows the ventilation required for the station's function. The ground level of the building is largely glazed, and covered and protected by awnings,

clearly announcing the station entry, and responding to the streetscape with soft landscape planters.

The southern head box responds to the more broken-down scale of smaller industrial units and buildings of a more residential scale to the south. It is characterised by similar vertical panels of a finer, smaller scale and framed and interspersed with concrete and brick panels reflecting the materiality and scale of neighbouring buildings.

The continuous awnings around the station boxes are of metal, signifying a refined version of the shop awnings to be found throughout the neighbourhood. In this way, the design approach expresses the Waterloo context and experience through its architecture, scale and material, as shown in the figure below.

Figure 6.1.2.1: Cope Street elevation and referenced materials from the local context

Northern station box

The corner façade for the station's northern entrance facing Raglan and Cope streets will be comprised of precast concrete framing the aluminium metal fin external cladding system.

At the southern entrance off Cope Street, the façade will be made from an aluminium metal fin external cladding system. It will align with the OSD building above and help define the station entry below, along with the adjacent bike store entry and retail.

The awnings at the entrances are set at a higher level to clearly signify the station entries.

The station box along Cope Street is glazed at street level to maximise visual connection to and from the public domain.

The western façade on Raglan Lane is comprised of a metal fin external cladding system with removeable vertical aluminium louvres in framed 'windows' to allow for delivery route access and services ventilation.

Figure 6.1.2.2: An artist's impression of Waterloo Station's northern entrance façade finishes

Figure 6.1.2.3: An artist's impression of Waterloo Station's southern entrance façade finishes

Southern station box

The southern station box serves as a key service building and is designed to present a different design language to the northern station entrance building. This will both mitigate confused wayfinding and provide greater variation and character reflecting the neighbouring streetscape.

The Cope Street frontage is largely activated by a glazed retail façade providing transparency and depth for visual connection through and to the public domain. The façade above street level serves a range of station ventilation requirements and is comprised of aluminium fin external cladding system. A brick façade with open sections will provide the required ventilation on Wellington and Cope streets respectively.

Awnings are aligned with those on the adjacent OSD providing an active yet shaded and protected environment for residents, workers and visitors alike.

Figure 6.1.2.4: An artist's impression of the Wellington Street southern station building façade finishes

Figure 6.1.2.5: An artist's impression of the southern station building façade finishes from Cope Street plaza

6.1.3. Station entries

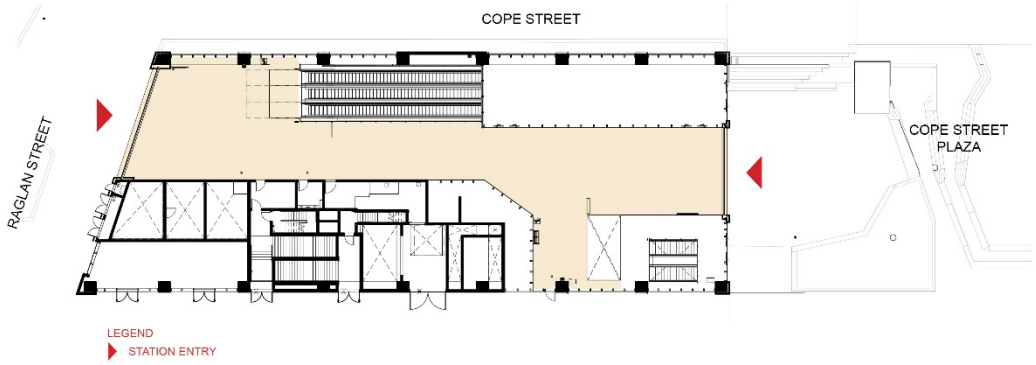


Figure 6.1.3.1: Street level plan identifying station entrances

Northern metro entrance – Raglan Street entrance (main entry)

The metro station's main entry is located off the corner of Raglan and Cope streets and elevated slightly to ensure the entry is above the projected probable maximum flood level. The position of the entrance allows an easy interchange between the metro, bus services and kiss-and-ride bay. The station has been designed to be step free and wheelchair accessible. The entrance is located to serve both pedestrian, drop-off and cyclist movement routes as a priority, contributing to broader active transport options. Access is also provided for emergency and required vehicles with loading and unloading via Raglan Lane.

As the customers set foot on the sunny, north-facing street with wide pedestrian footpath lined with substantial tree plantings, they are greeted with a vibrant and inviting public realm. The station entrance features the continuous awnings and the industrial architecture façade that complement the character of the precinct.

West of the station entrance a glass-fronted tenancy unit features along the public facing frontages on the corner of Raglan Street and Botany Road. The retail premises will activate the entrance area by offering quick daily convenience needs for customers before they embark on their journeys in the metro station. The station's continuous awning extends outwards to provide weather protection for the outdoor seating of the tenancy unit.

At the station entrance, the customers are welcomed by the sight of the integrated public artwork Footsteps on Gadigal Land developed by artist Nicole Monks. The escalators are strategically positioned to establish a direct sightline from Raglan Street and clear visibility from Cope Street, as intuitive wayfinding to the metro concourse. The space is open, bright and calm to provide an intuitive and simple journey experience where the customer knows where to go at every moment, minimising the need for signage and auxiliary elements.

The customers have a choice to either go down the escalators to the metro concourse or straight through the art hall to the southern entrance to access the lifts, the secured bicycle parking or out to the Cope Street plaza.

Figure 6.1.3.2: An artist's impression of the northern station entrance

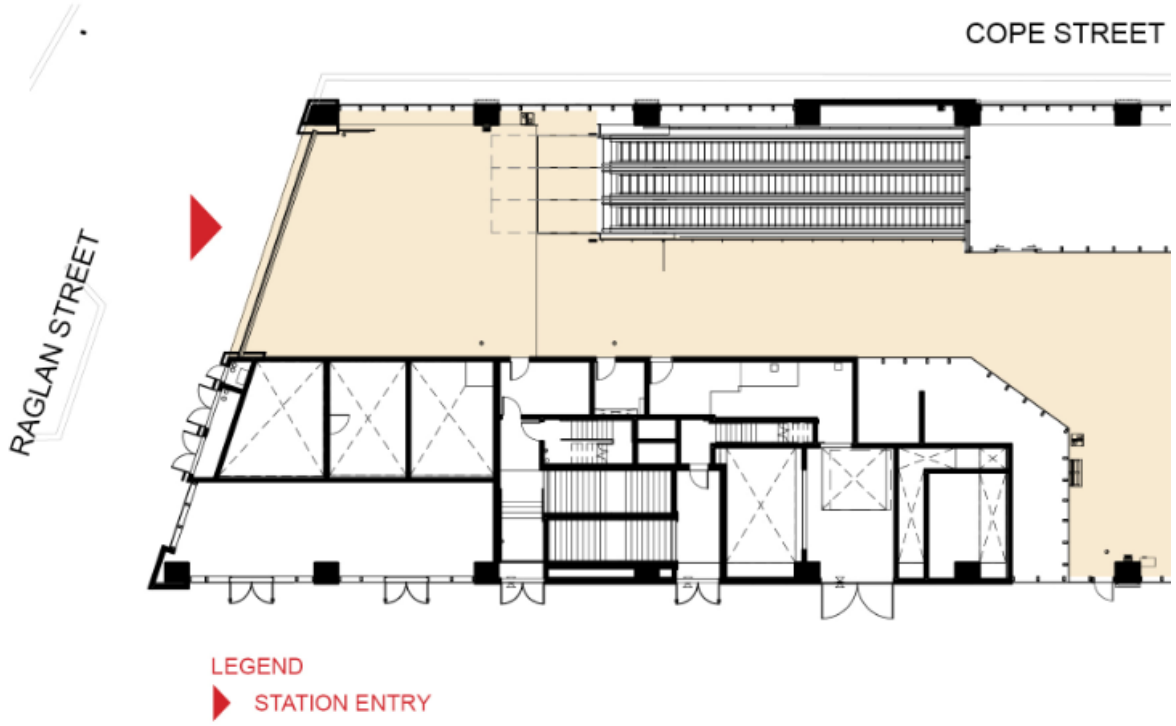


Figure 6.1.3.3: Northern metro station entrance plan

Southern metro entrance

A second entry is provided to the south of the station which connects with the Cope Street plaza. The plaza can be accessed from Cope Street and has a direct pedestrian link through to Botany Road and its bus interchange. This plaza provides a connection into a distinct and vibrant retail and social hub. The open space embraces the local community and residential areas along with the existing Waterloo Congregational Church, which is integrated into the overall Waterloo precinct master plan.

The planning design is consistent with the northern entrance. As customers approach the grand stairs from Cope Street, they are greeted with the view of the art hall while identifying the wayfinding to the underground metro. With its continuous extended awning for weather protection and high ceiling, it provides an open and inviting atmosphere to customers.

The southern entrance features a glass-fronted tenancy unit, a secured bicycle storage facility and super-graphics signage to clearly identify the main entry from across the Cope Street plaza. A lift to the underground metro is located behind the bicycle storage facility.

Figure 6.1.3.4: An artist's impression of the southern station entrance

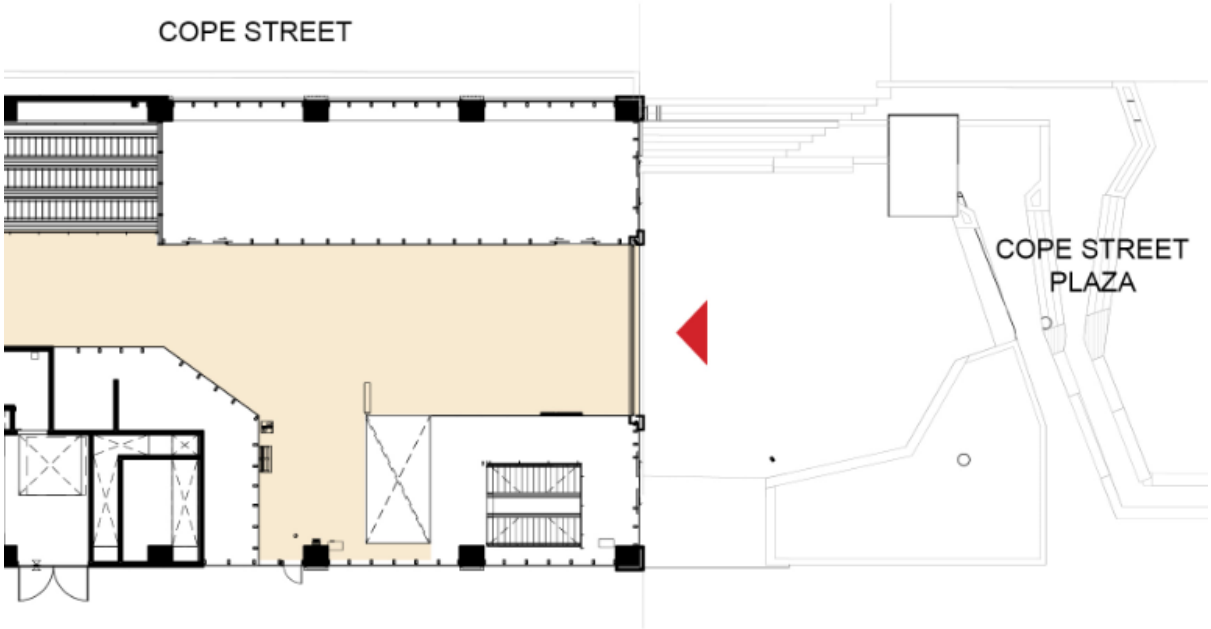


Figure 6.1.3.5: Southern metro station entrance plan

6.1.4. Concourses and platforms

Concourses

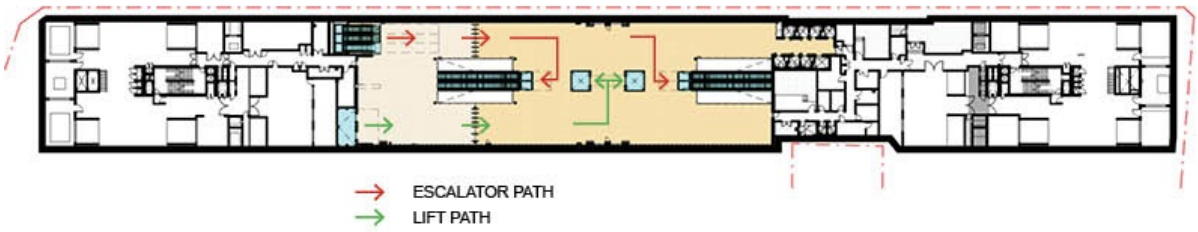


Figure 6.1.4.1: Concourse plan

Customers who arrive at street level are guided by wayfinding signage to descend into the open high-ceilinged concourse from the set of three escalators or the two lifts near the southern metro entrance. The location of the escalators and lifts are strategically planned for customers to intuitively navigate their way into the station.

In the unpaid concourse area, the customers can find ticket vending machines, the information point for the gateline and toilets. The direction to the station platform is easily identifiable to maximise the best customer experience. Immediately after, there is the gateline with a six metre free area on each side dedicated to the queue space required. The paid concourse area has two twin escalators and two lifts to connect the concourse to the platform on the level below. The simple layout helps to reduce the amount of 'decision-making' points, which end up in larger areas for circulation and less cross flows between the different customers.

Figure 6.1.4.2: An artist's impression of the station concourse looking south

Figure 6.1.4.3: An artist's impression of the station concourse looking north

Platforms

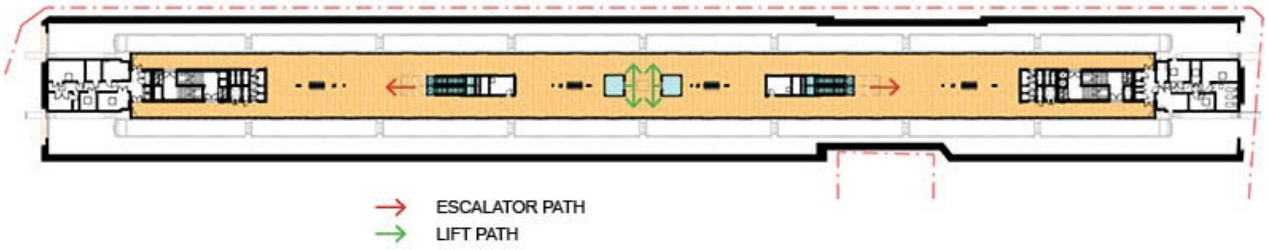


Figure 6.1.4.4: Station platform plan

The platforms are combined into a long platform which allows easier pedestrian flow and passive surveillance of the station. The platform is laid out linearly enhancing the movement of people along the station. The platform doors integrate signage, closed circuit television (CCTV) monitoring, public address (PA) system, acoustic panels, ventilation and smoke extraction louvres into an integrated cladding unit.

Figure 6.1.4.5: An artist's impression of the station platforms

6.1.5. Station services buildings

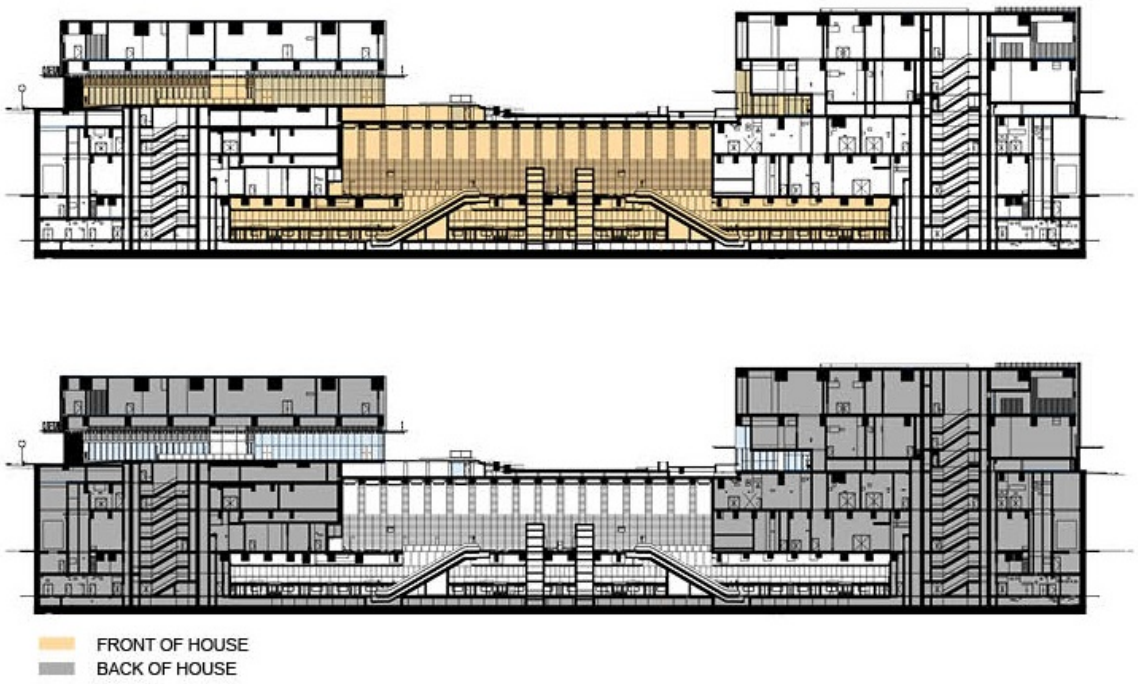


Figure 6.1.5.1: Diagram identifying building services zones

The services design is an integrated mechanical, electrical and plumbing solution incorporating interfaces identified between the metro station and proposed OSD. Given the delineation preferences and services segregation requirements between the two scopes of work, most station plant will be below ground. The plant and equipment has been located to simplify congestion on interconnecting services reticulation between key areas:

- close to platform level for train services plant and closer to street level for incoming utility connections
- horizontal services routing will be a combination of high level and under platform/subfloor reticulation dependent on the area. Typically, within back of house areas, services reticulations are fixed at a high level. Within the front of house areas, services are reticulated within suspended ceilings and cladding, allowing electrical services to remain concealed
- vertical reticulation is achieved through services risers and shafts.

6.1.6. Skylight

The skylight is integrated into the planted seated terrace on Cope Street plaza to provide natural lighting and visual connectivity to the underground bike storage and platform level. This allows the public near the skylight to see the activities happening in the bike storage area and on the platform. The walkable glass enclosure is secured to avoid forced entry.

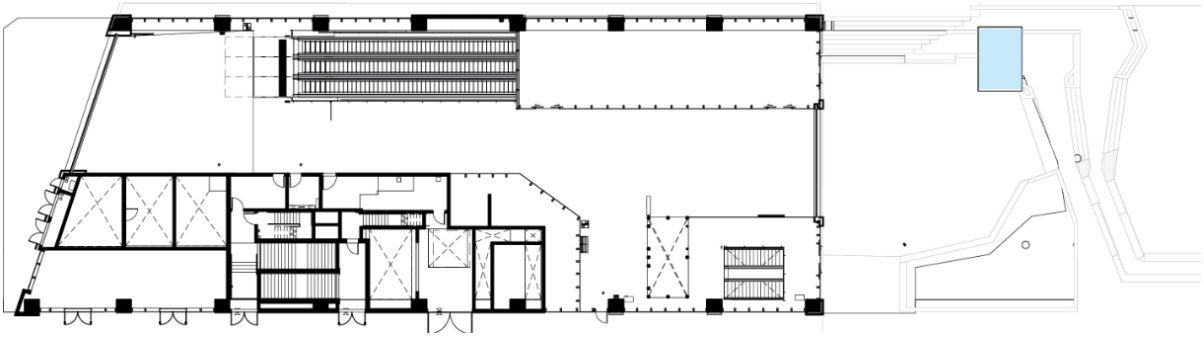


Figure 6.1.6.1: Ground level plan with skylight location (in sky blue)

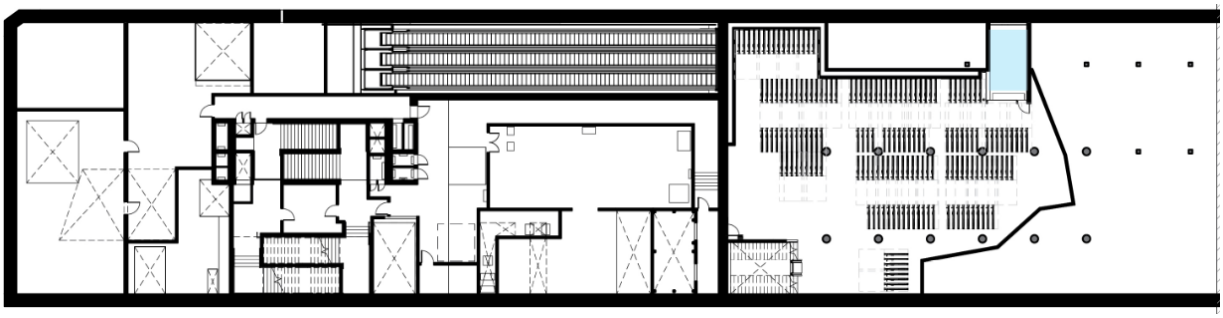


Figure 6.1.6.2: Bike store level plan with skylight location (in sky blue)

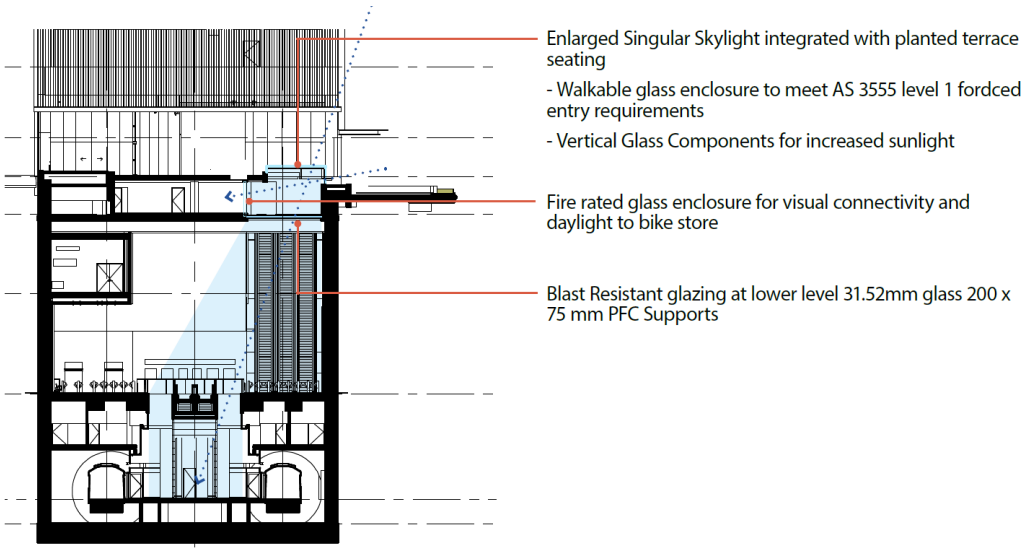


Figure 6.1.6.3: Skylight diagram (in sky blue)

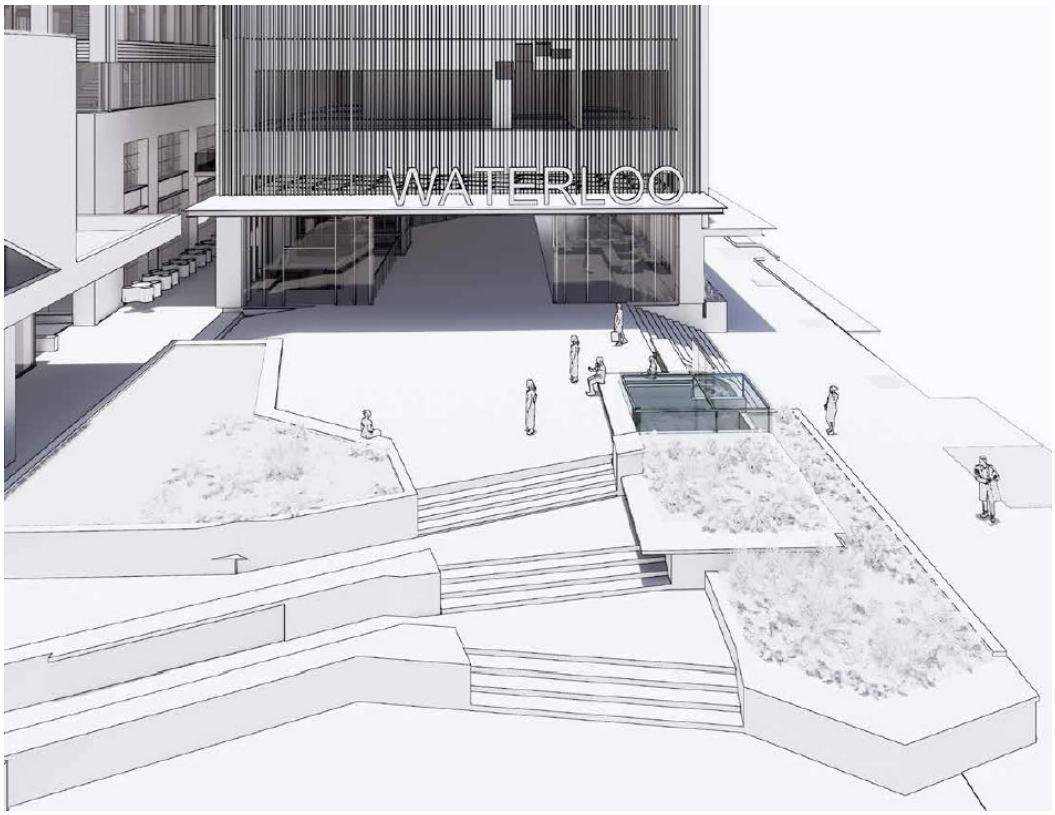


Figure 6.1.6.4: An artist's impression of the skylight on Cope Street plaza

6.1.7. Integrated bike hub

The bike hub is accessed from the public plaza at the southwest corner of the metro station entry via a staircase and bike slider. It can also be reached via the lifts, including mobility impaired access, out of hours and independently of the station, if necessary.

From day one operations, the facility has a capacity for 320 bikes with 80 bike parking spots located at ground level. This meets future-proofing requirements and avoids extension or repurposing of other spaces in the future.

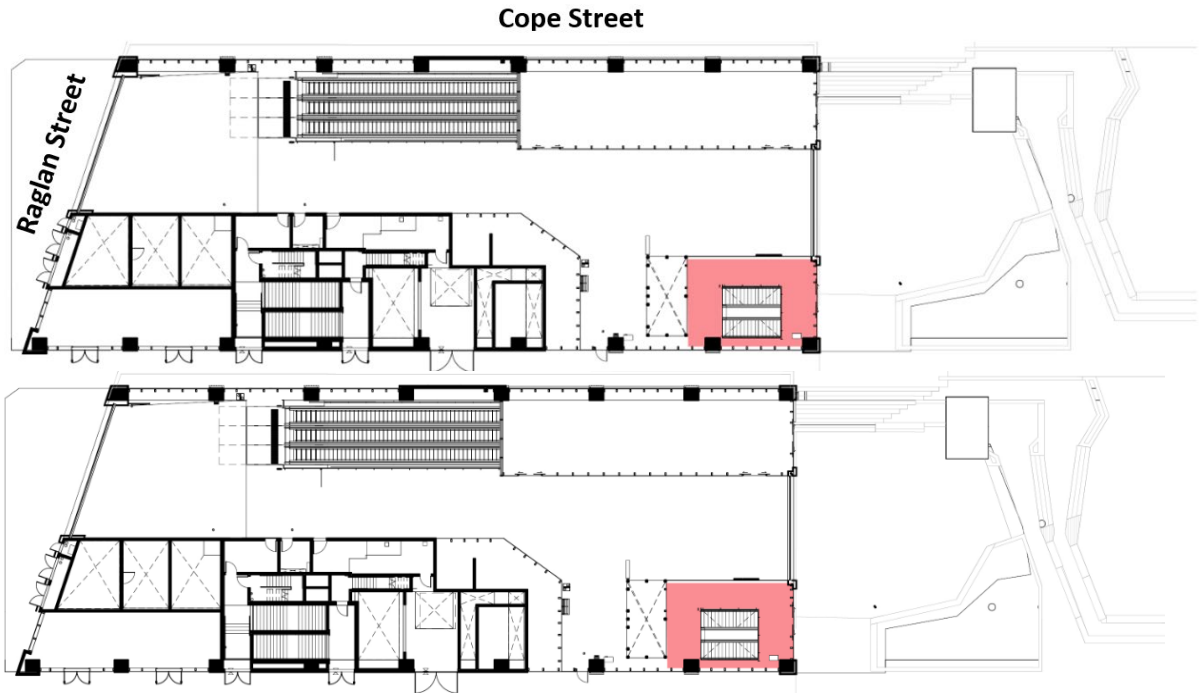


Figure 6.1.7.1: Street level access to the bike hub (entrance shown in pink in bottom right corner)

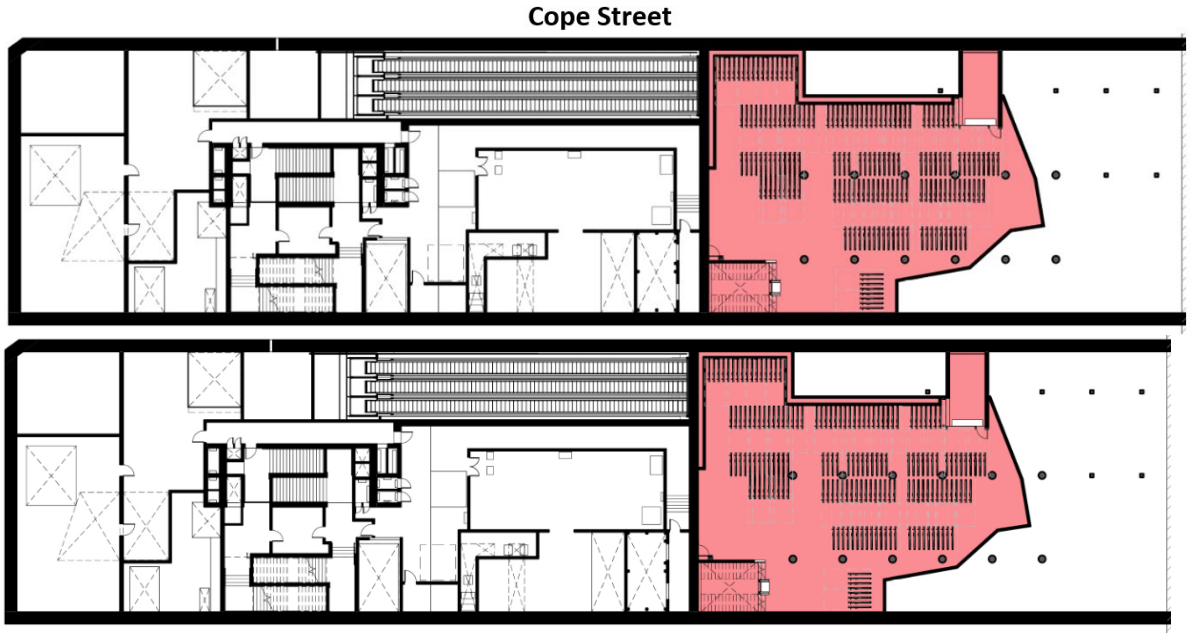


Figure 6.1.7.2: Bike hub on B1 level (below ground portion shown in pink)

6.1.8. Lighting

Station precinct and entrance

The station precinct lighting is designed to create a welcoming, safe and activated place at night. Feature lights within the plantings and integrated into the seating furniture will reinforce the identity and sense of arrival at the station. A characteristic awning wraps around the station with recessed downlights illuminating the planters below and defining the building perimeter.

At the main station entries, the lighting design defines the architectural form via discrete up-lights to the façade, enhancing the building's identity and sense of arrival at night. Concealed above the entry awnings, the façade lighting grazes the feature vertical elements above and frames views of the station entry. At the ground plane, awning recessed down-lights highlight the threshold of primary routes with 50 per cent higher illumination levels to help with wayfinding.

The station entrance ceiling features vertical aluminium baffles in a symmetrical pattern. The lighting in this area is fully integrated within individual ceiling boxes to provide highlights throughout the space and direct downlighting for functional and ambient illumination. Full height glazing means daylight/skylight effects will vary with the time of day, weather and seasons. Intelligent lighting controls allow for flexible modulation of light levels to suit the ambience required from dusk to dawn and throughout the day while maximising sustainability goals.

Station concourse

The concourse lighting is designed to enhance the transition between overground and underground spaces. The interplay of daylight, shadow and artificial light is pivotal to the design of this space. As such, a central roof light is located above the ticket gates allowing natural daylight to stream into the space providing a connection with the outside world. The skylight will be illuminated to create a night-time feature both above ground in the plaza and at the concourse level below. A signature array of coffer lights aligns with this roof light and guides customers through the concourse supporting intuitive wayfinding through this transition space.

The general ambient lighting is designed to complement and enhance the architecture with linear lighting to highlight the texture of the perforated metal fins and key accents at the gate-line, escalator and lift thresholds. The lighting controls are fully automated to respond to changes with the time of day and this layered light approach supports a balanced light effect.

Customers move to and from the concourse via escalators and lifts which are complete with integrated tread and hand-rail level lighting and recessed downlights to facilitate safe movement. Portals are located at key decision points with direct downlighting to ensure higher light levels than the surrounding areas for wayfinding.

Station platform

The station platform lighting includes direct linear downlighting running along both sides of the platform. This defines the platform edge and provides uniform and functional lighting across the space. This is combined with a subtle wash of uplighting to the ceiling to lift the space and promote a positive customer experience. The linear uplighting is concealed within the architecture and includes accessories to minimise glare and direct views of the light source.

6.1.9. Signage and wayfinding

Signage and wayfinding has been designed to meet the following key principles:

- clear and intuitive – the right information at the right time
- integrated – signage is treated as a core element of the architectural design
- responsive – anticipate customer needs and provide suitable information
- adaptive – signage has been future-proofed by ensuring key locations can accommodate new technologies as they become available.

These principles are aligned with TfNSW wayfinding planning principles and Sydney Metro's customer-centred design ethos.

Customer journey

The bus services on Botany Road are the key public transport modal transfer for Waterloo Station. Taxi and kiss-and-ride zones, accessible car spaces and bicycle parking are co-located near the station entries on Cope Street (see figure on next page). Directional and identification signage and information poster cases will be provided to meet the Wayfinding Planning Guide requirements to assist customers to connect to other transport modes.

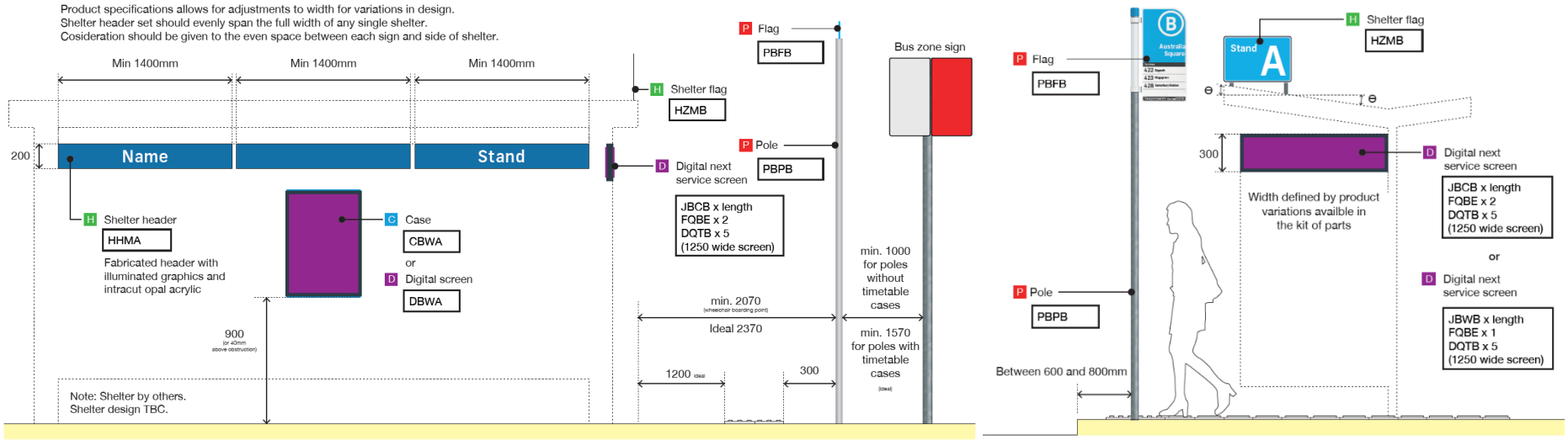


Figure 6.1.9.1: Shelter headers, poster cases and stand flag

Connecting modes

- Walk
- Cycle
- Taxi
- Kiss and ride
- Parking

Site Location Boundary and Bus stop information is based on Waterloo Works Authorisation Deed.

KEY

- Metro Station Entry
- Existing Bus Stop (OSD)
- Removal of Existing Bus Stop (OSD)
- New Bus stop
- Property Boundary
- Site Location Boundary

Figure 6.1.9.2: Site boundary and connections

Station entrances

The font Aktiv Grotesk has been nominated for the architectural lettering on the station entrance sign. This typeface takes an authoritative but neutral position, while conveying its message clearly and simply. The angled shearing on the rounded characters create a contemporary feel, while allowing for personality and expression. The type reflects the industrial characteristics of the Waterloo precinct through its heavy 1950's grotesque influence. This can create a sense of place and invoke history while reflecting the changing lifestyles and modern trends that are developing within the area.

Freestanding mode ID signs have been designated near the entrances and orientated to maximise visibility on pedestrian approach. In addition, a teal station name sign has been located near the station entrances along with poster cases that provide precinct and connecting mode information.

The signage includes directional information towards the lifts within clear sightlines of the primary decision point at the top of the escalators. This will ensure customers can easily locate the lifts, especially when entering from Raglan Street.

Concourse and platform

Signage has been mounted at a consistent datum throughout the station concourse to ensure information is clearly ordered and easily identifiable by customers.

Poster cases, ticket vending machines and concourse information displays (CIDs) have been located on the northern wall near the lifts, along with Sydney Metro help points. This creates a central location for supplementary information and facilities for customer assistance.

6.1.10. Integration with the over station development

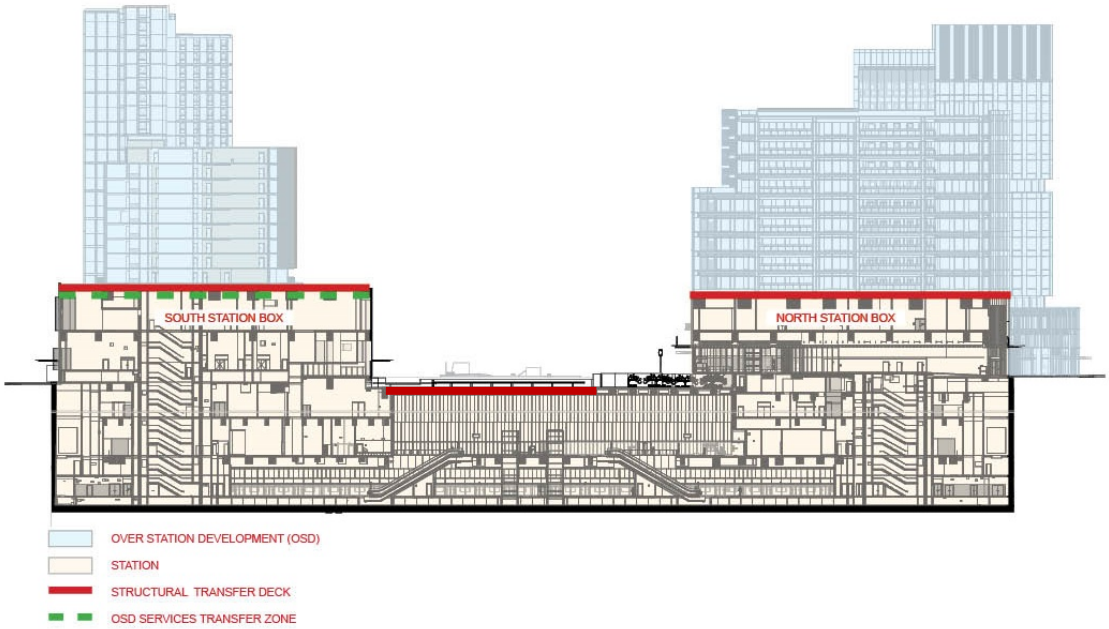


Figure 6.1.10.1: Sectional diagram indicates the station and OSD above

Design of the station considers the future OSD which is planned to be built so that it does not interfere with station operations above ground and the metro network below ground. The design proposes a structural transfer deck separating the north and south head houses from

any development above. No additional structure or services will rely on the station development itself ensuring the metro station, OSD and surrounding development remain independent. This provides for separate means of emergency access and egress, and independent access for maintenance for the station, retail premises and OSD.

The station and its retail premises will also be independent from the OSD. If the need arises, the station can be secured from the surrounding development providing effective management and control of emergency situations. This independence ensures that shared spaces have been eliminated, however the OSD does share a loading dock with the station.

6.2. Precinct (public realm) plan

6.2.1. Landscape design

The metro station and OSD will establish a new public realm for the entire city block in Waterloo. The precinct provides a focus and early contribution to the revitalisation of Waterloo and a catalyst for significant upgrades and activation to the existing and new areas of public domain.

The station works and OSD provide improved pedestrian amenity and access to public transport across the precinct. The proximity to the new metro station and people-centred place making will create a desirable place to live, work and visit. The generous footpaths, new plaza, laneways, street trees and planting will ensure the precinct fits into and enhances the surrounding area.

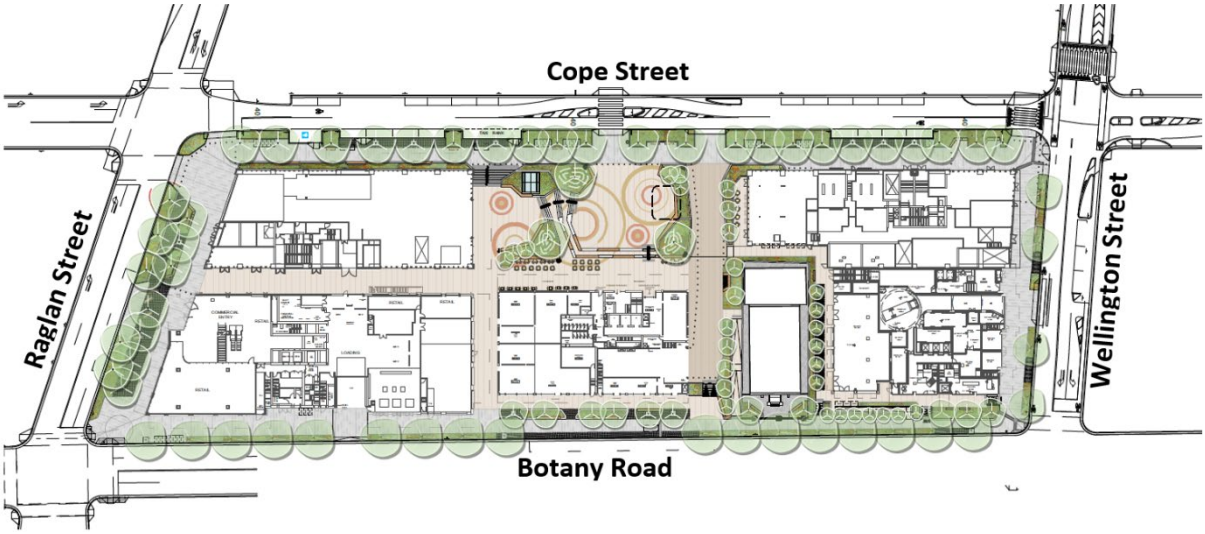


Figure 6.2.1.1: Public domain plan

The station development provides approximately 50 per cent of the public domain street frontage on the eastern side of the site. The OSD will provide the remainder of the public domain, which includes the public plaza between the two station buildings.

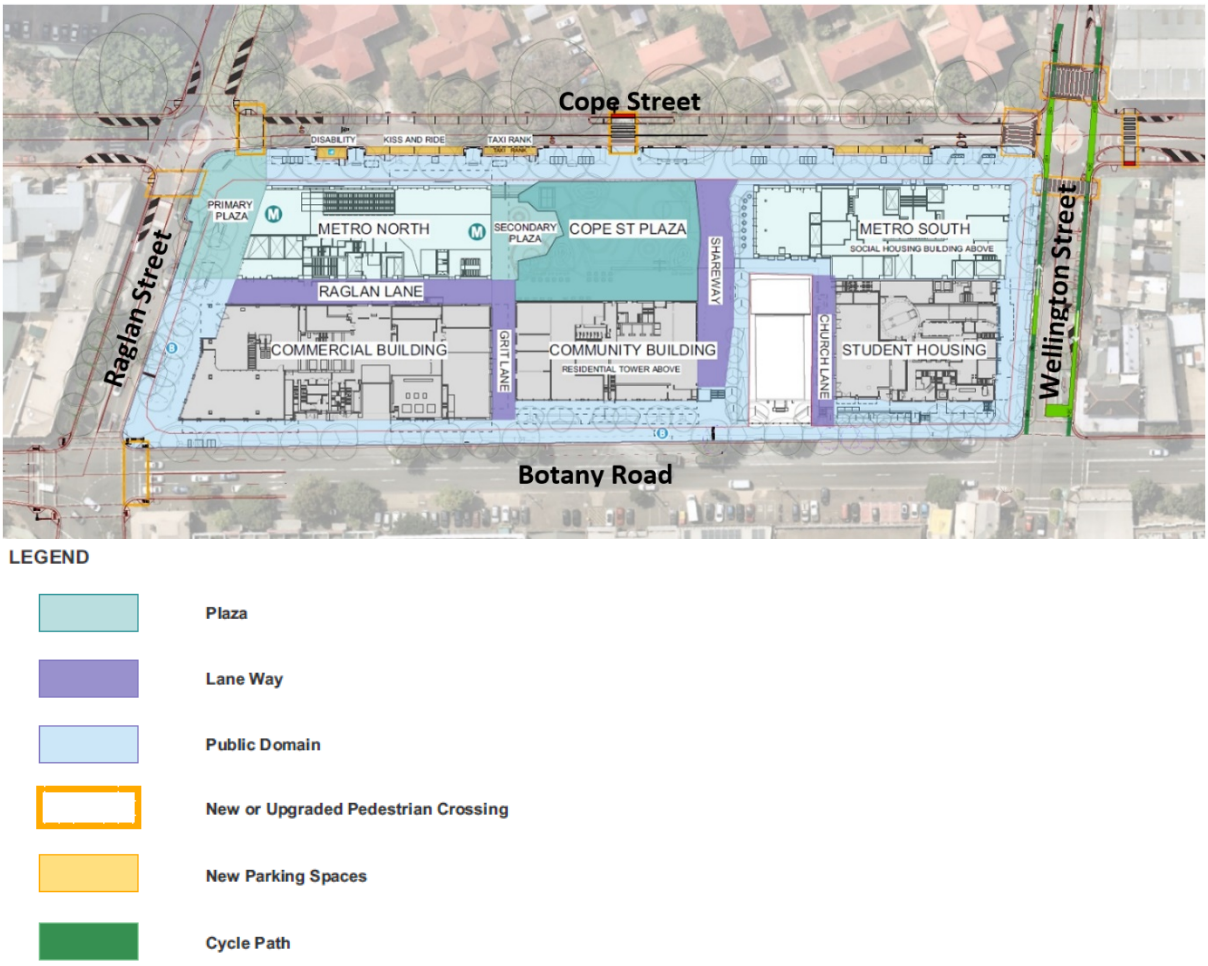


Figure 6.2.1.2: Precinct plan

The primary plaza, next to the main station entrance from the northern building, is where customers emerge onto Raglan Street. This is a broad east-west street with generous public realm, activated by ground floor retail uses and a commercial lobby. The wide pedestrian footpath accommodates the anticipated flows of customers and future pedestrian volumes in line with planned population growth.

Significant public realm upgrades are proposed including continuous awnings, new street furniture and station amenities. There will be substantial tree plantings to provide shade to the seating area at the station entrance and along the north facing street.

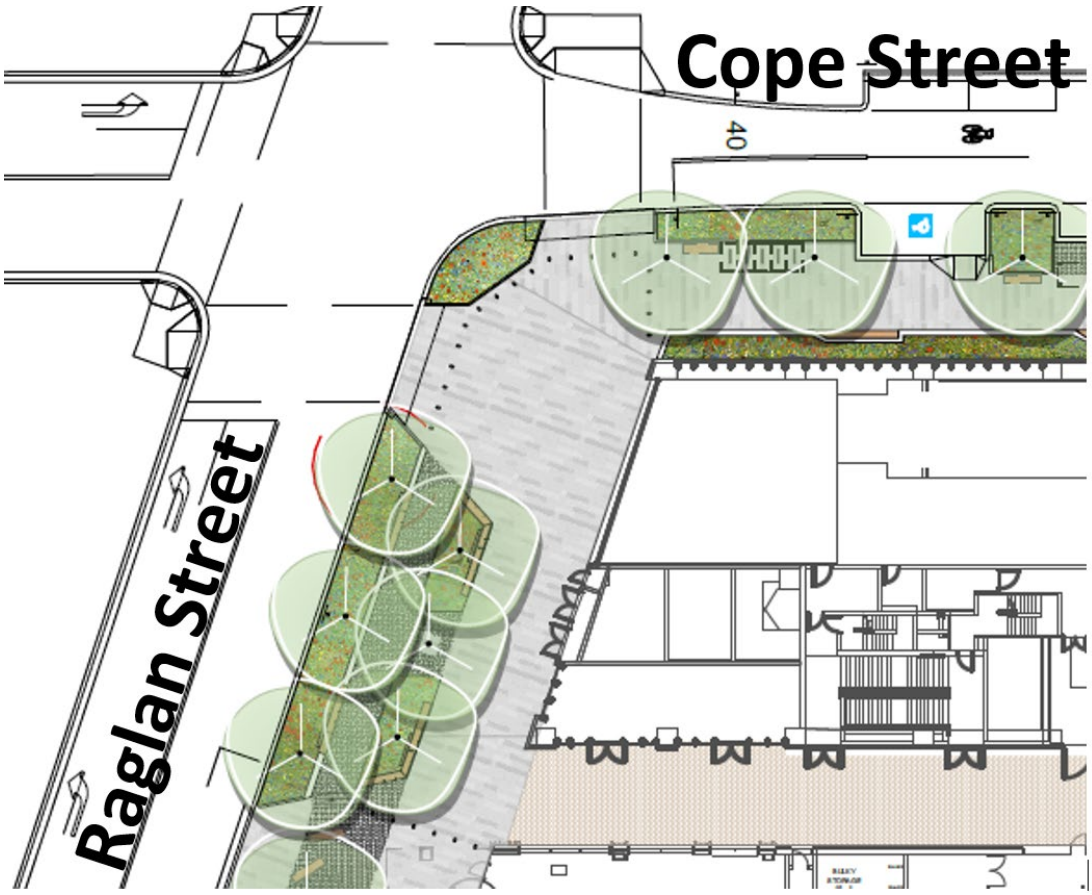


Figure 6.2.1.3: Primary plaza

The southern station entrance opens out onto the main public plaza through the terracing, raised planters and steps forming the ‘community door’ between the station entrance and Waterloo Place.

The detailed design of the plaza will continue to develop in concert with the Waterloo Estate master planning and include community uses associated with the station amenities and activated ground floor retail uses. The square is intended to complement the public open space network that will be designed and delivered with the Waterloo Estate renewal to the east.

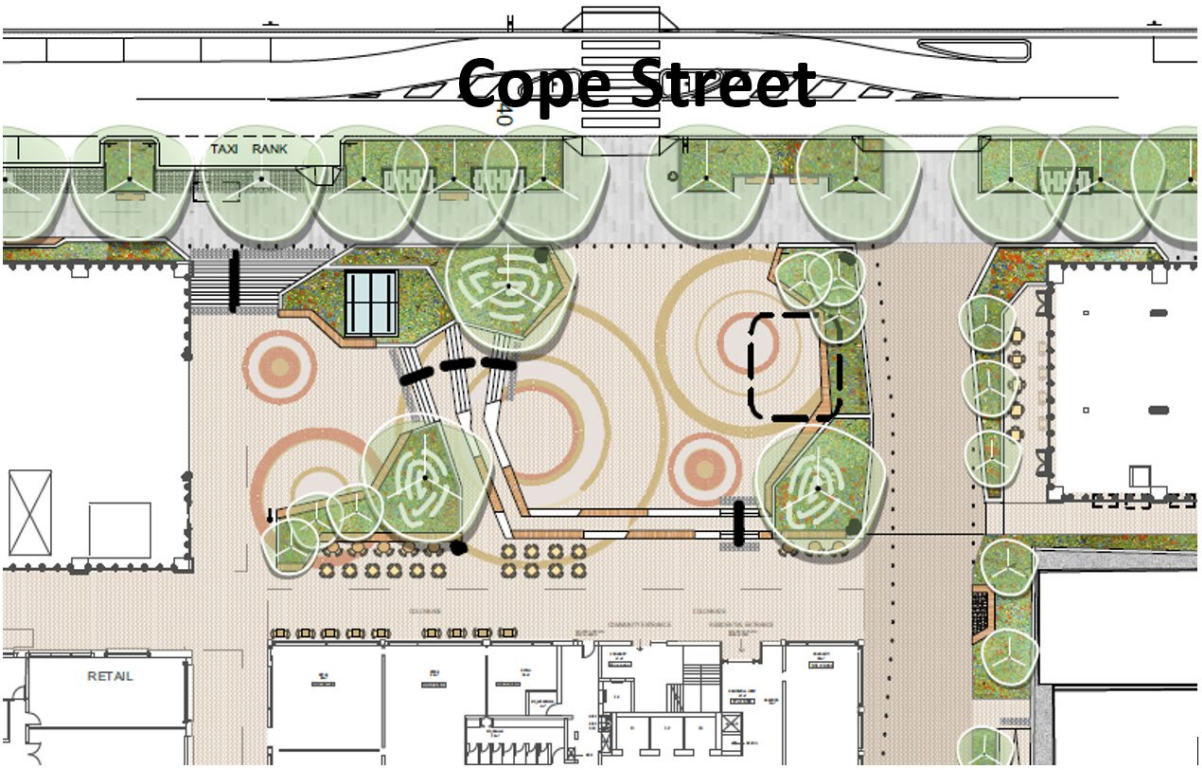


Figure 6.2.1.4: Public plaza – Waterloo Place

Cope Street is conceived as a 40 kilometre an hour street, with generous pedestrian footpaths and deliberately tightened carriageway intended to slow vehicular traffic. Cycle lanes are designed to share the vehicle carriageway and contribute to the slower design speed. The public realm is intended to emphasise pedestrian priority at the heart of the urban renewal precinct.

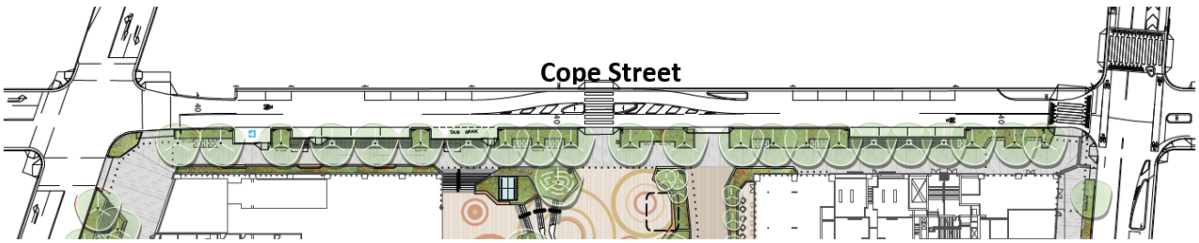


Figure 6.2.1.5: Cope Street

Wellington Street will extend important cycling and pedestrian infrastructure, connecting to the CoS's cycle lanes and serving the Alexandria Park Community School. The objective is to facilitate safe pedestrian movement and cycling connections between the new metro station and nearby school campuses.

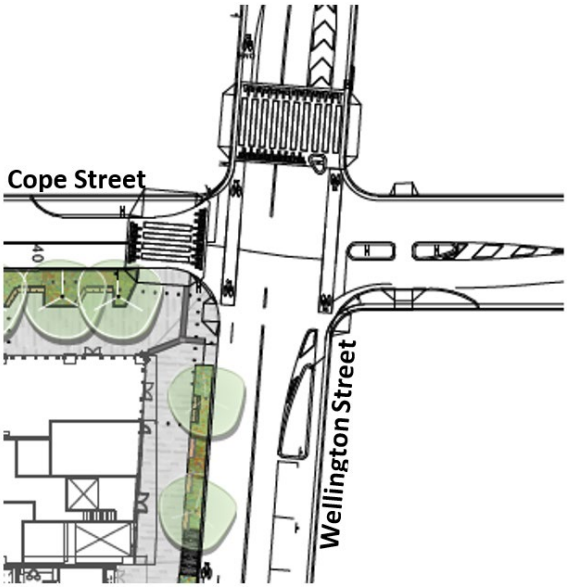


Figure 6.2.1.6: Wellington Street

The station and precinct will establish two new east-west pedestrian links from the bus stops on Botany Road to the station entry. Additional public realm improvements along Botany Road include new tree planting, street furniture, increased building setback and awnings to provide weather protection.

6.2.2. Landscape strategy and planting

The landscape strategy defines the form and function of the landscaped areas including the street trees, water sensitive urban design and feature planting. Feature trees and plantings in the plaza will be seen from Cope Street drawing people and activity into the space. Over time the trees will provide shade to the seating areas around the plaza.

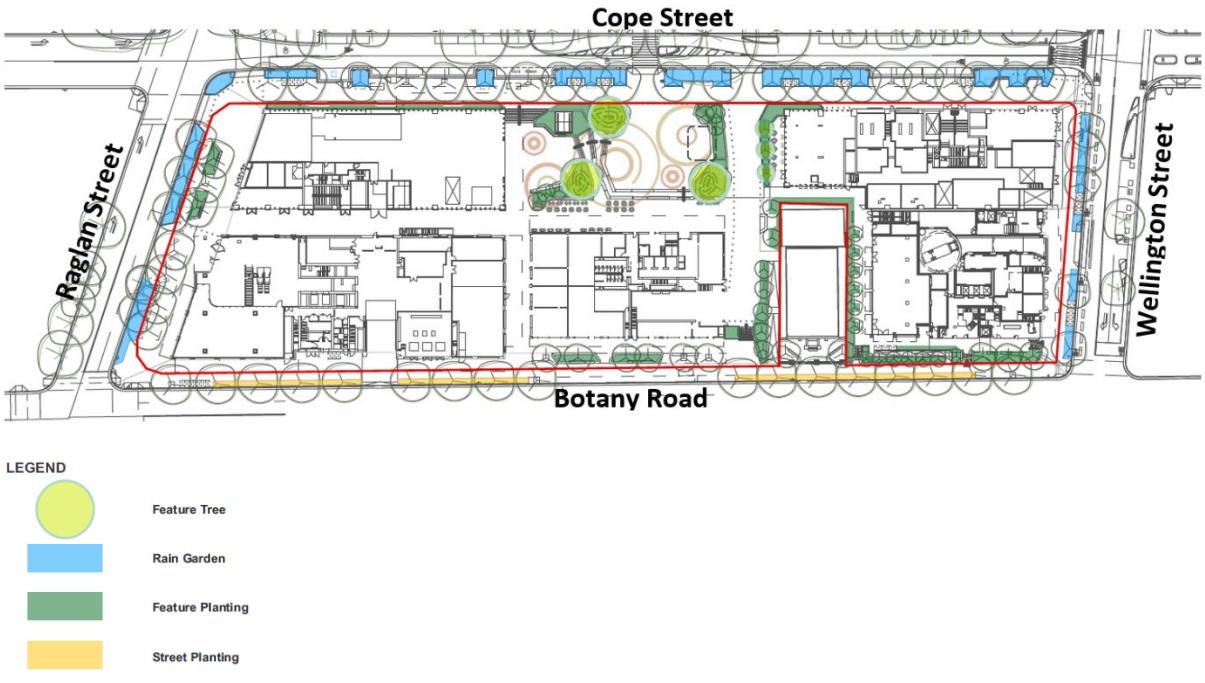


Figure 6.2.2.1: Landscape strategy plan

6.2.3. Street tree planting

A mix of deciduous and evergreen native trees are proposed to be used and have been selected in accordance with the City of Sydney Street Tree Master Plan. The project arborist has assessed the existing street trees in line with the requirements of the CoA E6. As many trees as possible will be retained within the CSSI design, however, where tree removal is required, new trees will be planted in accordance with the Street Tree Plan provided in Figure 6.2.3.1.

The selected street tree species for the station precinct are shown on the following pages.

The WMQ has an extensive planting strategy targeting 55 per cent canopy coverage across the entire precinct consisting of more than 50 new trees.

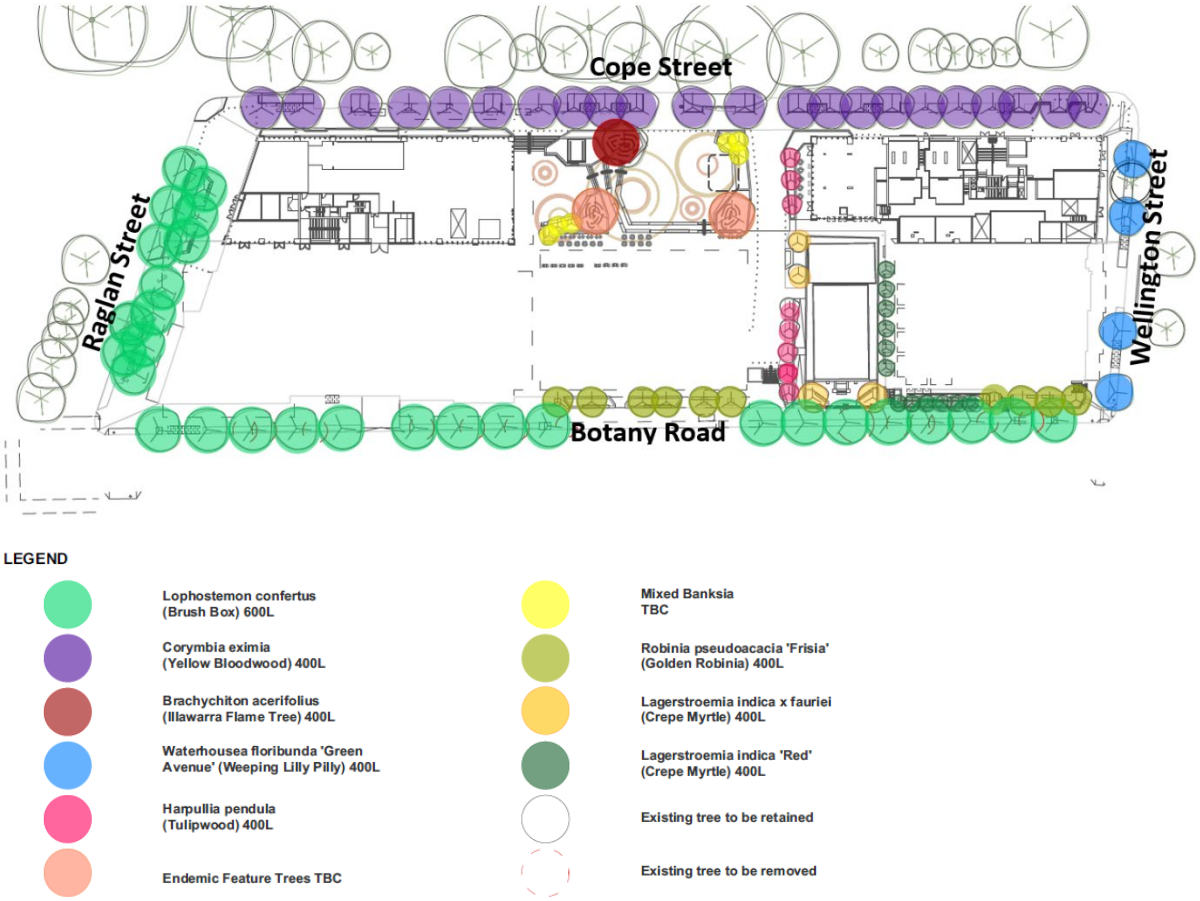


Figure 6.2.3.1: Street tree plan

Lophostemon confertus




Corymbia eximia



Figure 6.2.3.2: Street tree species

6.2.4. Water sensitive urban design

Water sensitive urban design (WSUD) has formed a fundamental part of the design for the station's public domain.

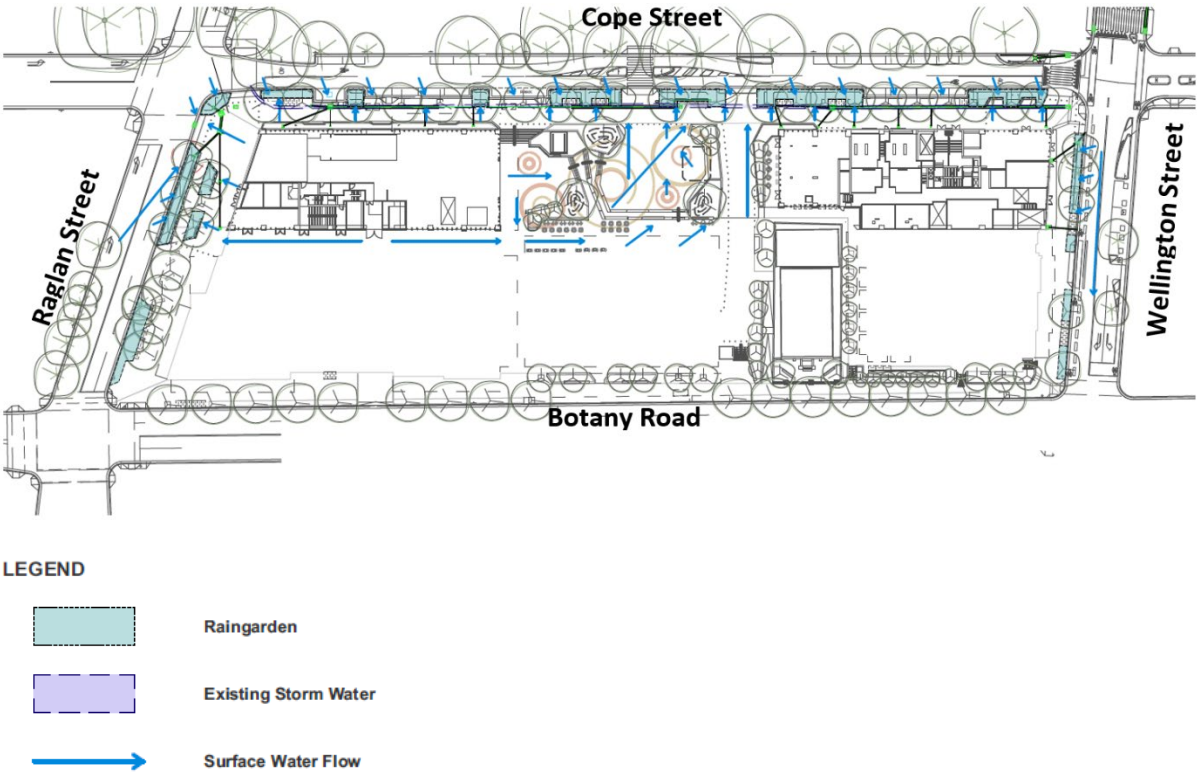


Figure 6.2.4.1: WSUD strategy plan

WSUD features have been integrated with the streetscape and hostile vehicle management (HVM) requirements along each street and particularly Cope Street, where the planting beds are a key component of the 40 kilometre an hour street design. The following WSUD features are planned for the precinct:

- Pavement cross falls are designed to provide passive irrigation to the adjacent planting beds and street trees along the edges of the footpaths and plaza areas.
- Street cross falls are designed to provide passive irrigation to the adjacent planting beds and street trees via slotted kerbs. Drainage flows during low intensity rainfall events from the parking areas along Cope Street are also designed to provide passive irrigation. A 100 millimetre freeboard is provided to a stormwater drainage pit to cater for larger rain events. The rain gardens are connected along Cope Street allowing flow between the planting beds.
- Permeable paving is provided within the parking areas and below the street furniture zone and passive areas of the Raglan Street plaza. This will enable drainage through to the sandy sub soil and provides the opportunity for improved growing conditions for the proposed street trees.

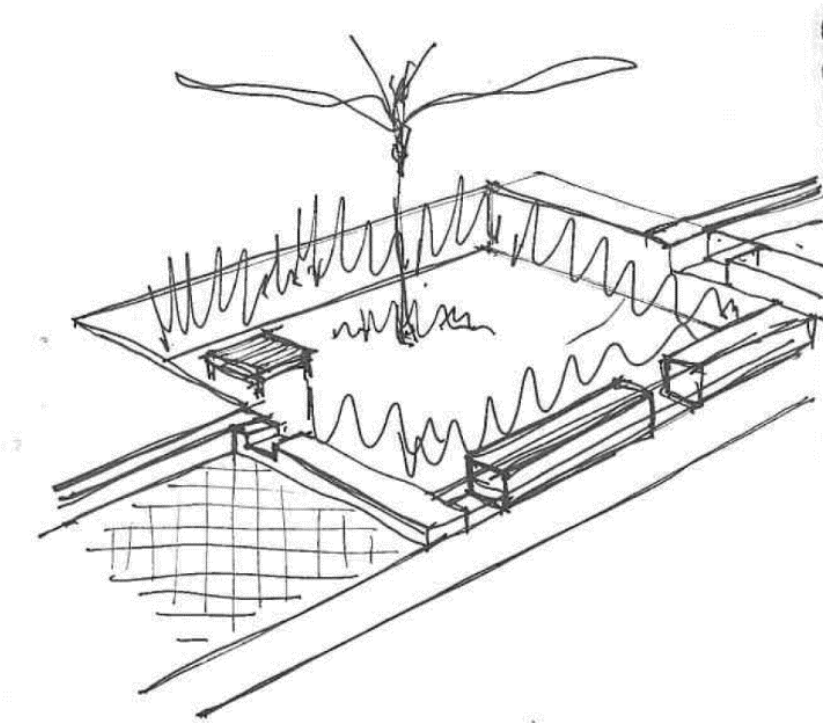


Figure 6.2.4.2: Cope Street rain garden sketch

Native grasses and ground covers used within the rain gardens are endemic, drought tolerant and selected for their ability to withstand inundation from flooding.

Native Mix

Banksia petiolaris

Banksia spinulosa

Chrysocephalum apiculatum

Dianella revoluta

Grevillea flexuosa

Lepidosperma squamatum

Leptospermum flavescens

Rhagodia spinescens

Raingarden Mix


Dioscorea transversa


Imperata cylindrica


Juncus usitatus


Lomandra multiflora


Persicaria decipiens


Schoenus melonstachys


Themeda australis

Figure 6.2.4.3: Native grasses and ground cover species

6.2.5. Deep soil

Provision of deep soil across the landscape and public domain was prioritised within the design. Constraints of the metro box, building footprints and basement requirements were counterbalanced by a significant expansion of planting and permeable paving within the public domain. These elements were coordinated with the water sensitive urban design strategy, continuous tree pit trenching to avoid utilities conflict and the hostile vehicle mitigation required.

On the podium over the station box, deep constructed soil was retained as much as possible and integrated with the security elements. This will provide sufficient soil depth to accommodate trees and mass planting while performing as effective security barriers with the terraced retaining walls.

Figure 6.2.5.1: Deep soil plan

6.3. Statement of integrated urban design and place making outcome

The station is designed to integrate with the Waterloo context, to become a place which local people will use and where events happen. The architecture expresses the materials and the façade language of the local industrial buildings to bring a sense of familiarity to the station precinct. The entrances have generous footpaths with shaded trees next to them creating a positive station identity.

The services and facilities also enhance the station identity within the local context. The retail premises strategically located on both ends of the station boxes activate the precinct and street frontages by offering quick convenience for the customers going to and from the station. The bike storage hub within the station building allows customers to store their bicycles before embarking on their journey to the underground metro.

Visual connectivity through the glazed exterior on street level is maximised to facilitate a sense of safe place. It brings natural light into the station and the outside space into the inside space of the station and retail areas. The skylight integrated within the terrace seating in the plaza off Cope Street maximises natural light into the bike hub and the platform. It also links the above ground space to the underground space through visual connectivity.

The station also respects the heritage value of the adjacent Waterloo Congregational Church by setback with its height and façade articulated in response to the character and scale of the church.

In the evening, the ambience in the station precinct will be improved through a coordinated lighting approach in the surrounding area. This will provide a sense of safety and security to create an inviting vibrant place for the public to enjoy in the evening. The station is integrated into the public domain with its consistent lighting strategy on both building facades. Concealed luminaires are integrated into the awnings to light up the facades on both station boxes to further improve illumination around the station precinct.

Figure 6.3.1: An artist's impression of the southern station box from Cope Street plaza

The station development and OSD are reforming the city block with built frontage to the back of the Cope Street footpath re-creating the pre-existing conditions of the site. The proposed built form is an improvement on the pre-existing conditions by permeating the block with breaks between the buildings that allow for new connections to be made across the site. The public plaza and laneway network will create new east/west connections across the block, a new civic space and improve accessibility for pedestrians.

Place making

Place making initiatives that have been included in the public domain design include the following:

Local Village Character

- Consistent street furniture
- Clear physical and visual connection to Redfern Village Centre

Sydney Slow Street

- Reduced carriageways
- Universal Access
- Increased verges + footpaths

Urban Streets

- Incorporated greening
- Encourage human interaction
- Vibrant Streetscapes

Activation

- Retail F+B destinations
- Over site development - Community and Residential

Pedestrian Priority

- Signalised intersections
- Footpath widening
- Pavement Treatments
- Continuous Awnings
- Improved pedestrian crossings

Strengthening Community

- Embracing existing community infrastructure
- Community Plaza

Urban Greening

- Cope and Wellington Street native tree planting to create a tree line boulevard
- Deciduous trees to Raglan Street Primary Station and retail entries

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.*

The Waterloo Station project's landscape and public realm works are divided into several parts and subject to varying milestone completion dates. These works include the primary and secondary plazas around the station entrance. The diagram below shows the primary plaza marked in blue and secondary plaza in green.

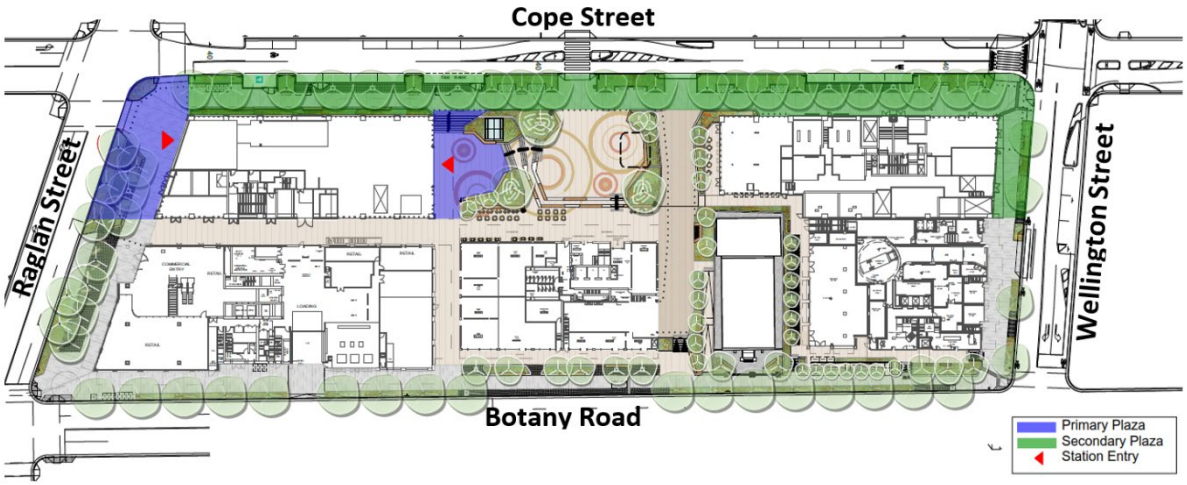


Figure 7.1.1: Primary and secondary plazas

The two plazas have been programmed to be completed before metro services start in 2024. The primary plaza is the immediate area around the station entrance. The balance of the landscape, public realm works and ground plane activation are tied together with the milestone dates of the OSD in 2024.

For the station component of landscape works, the baseline program has the station design phase finishing in the first half of 2021 and construction between October 2020 through to August 2023. Within the construction period, the timing for the start and completion of permanent above ground works is programmed between November 2022 through to March 2023. This information is summarised in the table below.

Table 7.1: Station and precinct program

Delivery stage	Indicative dates
Design stage	Late 2019 to mid-2021
Station construction (early works to handover)	Late 2020 to third quarter of 2023
Landscape works (permanent above ground works)	Late 2022 to first quarter of 2023
Testing and commissioning works	Mid-2021 to third quarter of 2023
Target commencement of metro operations and paid services	2024

7.2. Monitoring and maintenance of landscaping

The landscaping has been designed to minimise long-term maintenance through the selection of low maintenance, drought tolerant native species appropriate for each planting location. Irrigation will be provided on an ongoing basis for planters not being passively irrigated as part of the WSUD strategy.

Landscape maintenance will be continuous throughout operation of the metro. The operator will be responsible for keeping the landscaping in their licenced maintenance area to a high standard of health and appearance.

The following horticultural practices will be carried out to ensure plants are maintained in a vigorous condition:

- watering to ensure all plantings are receiving sufficient water for vigorous growth and to maintain a healthy condition
- weeding and pest control to eradicate all grass, weeds and pests from within planted areas manually or with approved herbicides and insecticides, removing waste from site and using measures to prevent reinfestation
- monitoring all plants and trees for pest and disease monthly
- fertilising as appropriate to the species
- replacing or treating damaged plants and replacing unhealthy or stolen plants to ensure minimum planting densities are maintained
- remulching as necessary to maintain mulched areas to the specified depths
- removing litter and debris to ensure the site is always kept clean
- pruning vegetation for safety of the public domain and CPTED surveillance.

Maintenance period

Sydney Metro is required to maintain new trees within the station precinct for a period of 24 months after handover of the ISD. The CoS will then resume responsibility for plantings and street trees on council land, such as along footpaths.

8. Visual impact assessment

8.1. Introduction

John Holland, ASPECT Studios and John McAslan + Partners undertook a visual impact assessment of the Waterloo Station design, as part of the draft Waterloo Station Design and Precinct Plan (SDPP) in July 2020. This assessment was based on the concept design for the project.

The assessment responds to the Sydney Metro project approval condition E102 referring to the requirement for a visual assessment in accordance with the methodology outlined within the Sydney Metro Chatswood to Sydenham, City & Southwest Environmental Impact Statement (EIS).

8.1.1. Condition of Approval E102

The Condition of Approval E102 states:

> *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 EIS/modification reports identified a minimum visual impact rating of ‘minor benefit’ from all viewpoints for the scope elements of the design considered in this SDPP.

A further visual impact assessment of the design has been undertaken using the same EIS methodology. This assessment concludes that the SDPP achieves a minimum visual impact rating of minor beneficial or negligible for the Waterloo metro station from all viewpoints.

The following assessment considers the views identified in the EIS for the northern station building and additional views selected to demonstrate and assess the visual impact of the southern station building.

This assessment considers the visual impact of the station buildings only and excludes the over station development which is subject to a separate approvals process.

The EIS identified five viewpoints and established a visual impact rating for each view, during both construction and operation. A further four viewpoints have been selected to provide a range of views for both the northern and southern station buildings.

8.1.2. Method

The visual assessment of viewpoints uses the methodology outlined in the EIS which includes the following steps:

- identify the visual sensitivity of the view (refer to Table 8.1)
- identify the level of modification expected in the view (refer to Table 8.2)
- assign an impact level (refer to Table 8.3).

Table 8.1: Visual sensitivity levels

Visual sensitivity	Description
National	Heavily experienced view to a national icon, e.g. 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, e.g. 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, e.g. views to Central Station from Belmore Park, a Sydney CBD skyline view from Prince Alfred Park.
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 e.g. view from Miller Street.
Neighbour- hood	Views where visual amenity is not particularly valued by the wider community.

Table 8.2: Visual modification levels

Visual sensitivity	Description
Considerable reduction or improvement	Substantial part of the view is altered. The project contrasts substantially with the surrounding landscape.
Noticeable reduction or improvement	Alteration to the view is clearly visible. The project contrasts with the 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 8.3: Day time visual impact levels

		Visual sensitivity				
Visual Modification		National	State	Regional	Local	Neighbourhood
	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

8.1.3. Limitations and assumptions

This assessment was carried out as a desktop study. The images used were taken from the EIS Visual Impact Assessment Report to show the before locations and existing built form, therefore the focal lengths are not known and have not been survey verified.

8.2. Project scope

The new metro station sits beneath a public plaza at the centre of the Waterloo community. The station will consist of eight levels with three to be publicly accessible at the street, concourse and platform levels. The remaining floors consist largely of technical and plant spaces.

The journey for passengers starts at street level through one of the station entrances located at the corner of Raglan and Cope streets or off the Cope Street plaza. Passengers will be intuitively directed down the light-filled escalators to the concourse level, an orienting space, before taking the escalators or lift down to the platform level to catch the metro trains. A longitudinal cross-section of the new metro station is shown in the following image.

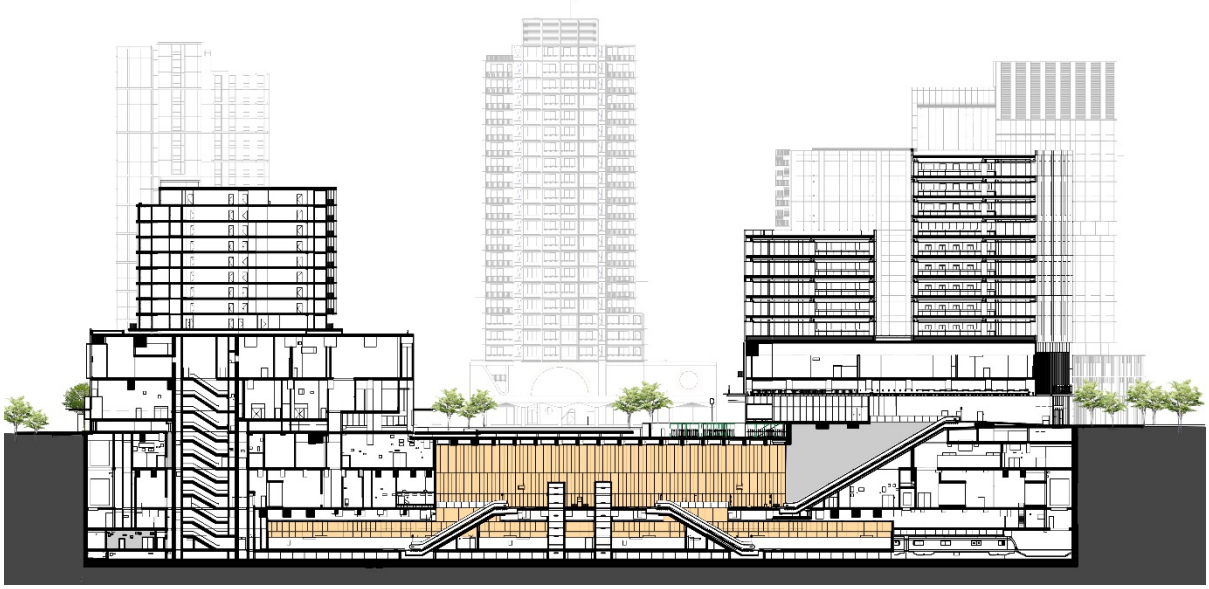


Figure 8.2.1: Longitudinal cross-section of the Waterloo metro station

The Waterloo metro station provides further capacity to develop and expand the global economic corridor between the Sydney CBD, Green Square and Sydney Airport. The station supports the continued renewal of the Waterloo, Redfern and Alexandria areas providing key connections to the Australian Technology Park and Redfern Station. Additionally, the metro station will be a major contributor to evolving plans to renew the Waterloo Estate.

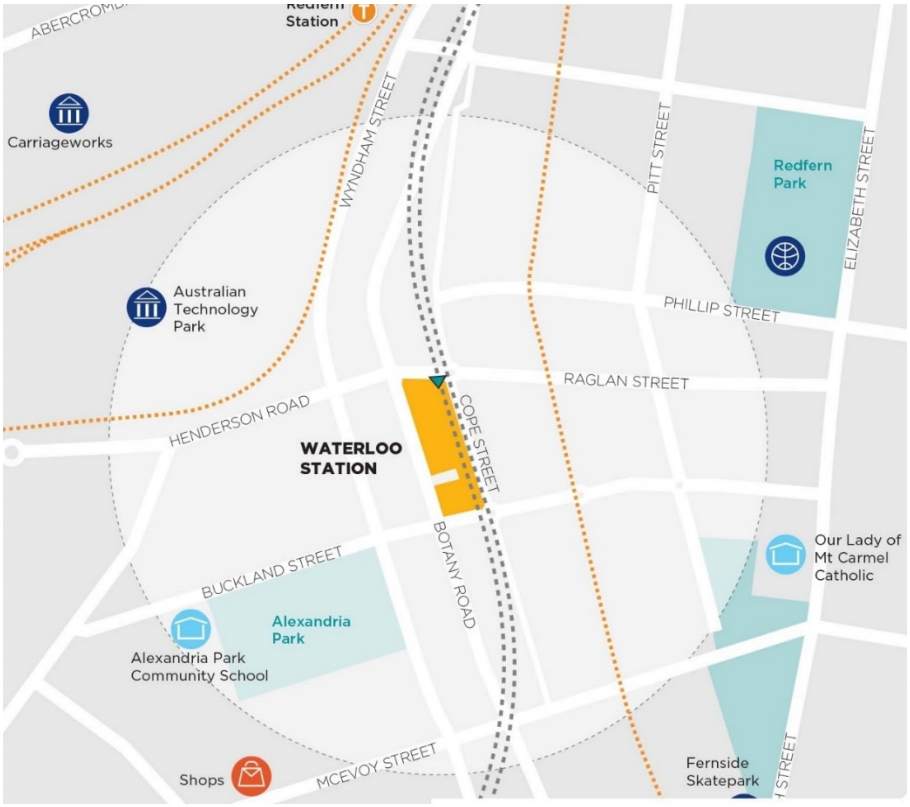


Figure 8.2.2: The Waterloo metro station will support urban renewal and provide key connections to other areas

The station is located along Cope Street in the block bounded by Raglan and Wellington streets and Botany Road. As part of the Waterloo urban renewal precinct, the metro station will enhance accessibility to businesses and residential communities while the related over station development will provide new workplaces, homes, retail and community facilities.

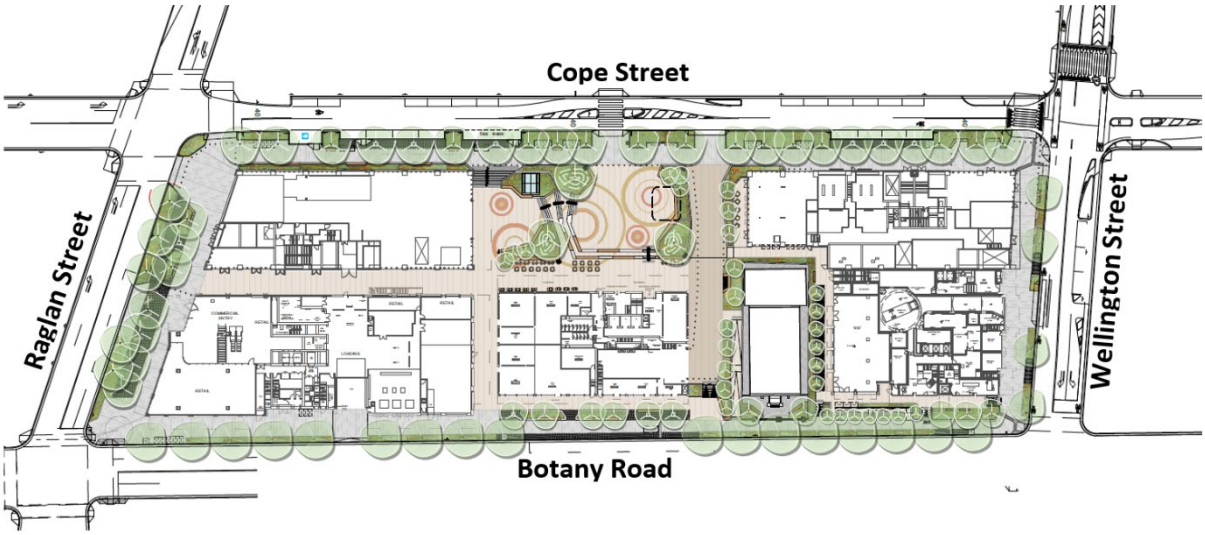


Figure 8.2.3: Site location plan

8.2.1. Waterloo Station building

Character and components of the project

The station is comprised of two station boxes. The north station box will have entrances on the building's northern and southern sides, secured bicycle storage and a plant room on the top level. The northern building will have the following features:

- distinctive station entrances with high level awnings and visually prominent identifications
- northern main entry set back from Raglan Street to provide a larger public space with urban furnishing and clear articulation of the entry to set it apart from the adjacent OSD
- retail and food outlets located next to each of the station entries to activate the streets
- architectural expression of the façade treatment is different to the OSD design above to create a strong horizontal form to articulate the station separately from the OSD. This helps mitigate the perceived density of the cluster of taller buildings
- continuous metal fabricated awning for weather protection emphasises the horizontal form to further mediate and bring scale to the built form and its appearance. It is a refined version of the shop awnings found throughout the neighbourhood
- station façade is comprised of a range of vertical and horizontal elements, metal, perforated and textured concrete and masonry elements relating to the scale and materiality of the surrounding area's varied industrial and residential context
- use of external glazing panels to enable a high degree of visual transparency throughout the street level of the station and enhance passive surveillance.

Figure 8.2.1.1: An artist's impression of the north station box and northern station entry on the corner of Cope and Raglan streets

Figure 8.2.1.2: An artist's impression of the north station box and the southern station entry from Cope Street plaza

The south station box consists of retail and food outlets on the street level and building services on the top level. The southern building will have the following features:

- set back from Wellington Street to provide a larger public space, furnished with urban furniture and soft landscaping elements
- continuous awning of metal fabrication which is a refined version of the shop awnings found throughout the neighbourhood
- station box set back with its height and façade articulated to respond to the character and scale of the Waterloo Congregational Church
- façade on Cope and Wellington street comprised of a range of vertical and horizontal elements, metal, perforated and textured concrete and masonry elements relating to the scale and materiality of the surrounding area's varied industrial and residential context
- perforated metal sheeting façade on Cope Street plaza
- external glazing panels to maximise transparency at street level and enhance security.

Figure 8.2.1.3: An artist's impression of the south station box at the corner of Cope and Wellington streets

Figure 8.2.1.4: An artist's impression of the south station box from Cope Street plaza

8.3. Visual impact assessment viewpoints

Assessment of daytime visual impact

The viewpoints one to five were selected in the EIS as representative of the range of views towards the site and the proposed development. A further four viewpoints numbered six to nine have been added to this visual impact assessment to represent the range of views towards the southern station building from the south and west of the site.

Viewpoints from EIS:

Viewpoint 1: View east from Wellington Street

Viewpoint 2: View northeast from Botany Road

Viewpoint 3: View southeast from the intersection of Botany Road and Raglan Street

Viewpoint 4: View southwest from the corner of Cope and Raglan streets

Viewpoint 5: View south from Cope Street.

Additional viewpoints:

Viewpoint 6: View north from Cope Street

Viewpoint 7: View west from Wellington Street

Viewpoint 8: View north from Cope Street south of Wellington Street

Viewpoint 9: View east from Wellington Street.

The following sections summarise the daytime visual impact identified in the representative viewpoint assessment and site visit observations.

Figure 8.3.1: Viewpoints location plan

8.3.1. Viewpoint 1

Figure 8.3.1.1: Viewpoint 1 – View east from Wellington Street (from EIS before demolition)

Figure 8.3.1.2: Viewpoint 1 – Current view east from Wellington Street

Figure 8.3.1.3: Viewpoint 1 – Proposed view east from Wellington Street

Visual impact identified in the EIS

The visual impact identified in the EIS for the operation of the site assumes that the OSD development would:

- reinstate the prominence of the street corner
- be visually compatible with the surrounding urban setting
- be absorbed visually into the surrounding urban landscape
- not create a perceived change in the amenity of the view.

The EIS identified the view as being of **local sensitivity** and would result in a **negligible visual impact** during operation.

Visual impact of the SDPP design

The visual impact of the SDPP design of the southern station building is largely mitigated by the OSD development and presents a limited visual impact in this view. The existing and proposed street trees along Wellington Street provide a filtering effect which allows the new building to be absorbed into this view.

With the reinstatement of the street edge and the station building being absorbed into the larger OSD development, this view would result in no change from the EIS assessment and a **negligible visual impact**.

8.3.2. Viewpoint 2

Figure 8.3.2.1: Viewpoint 2 – View northeast from Botany Road (from EIS before demolition)

Figure 8.3.2.2: Viewpoint 2 – Current view northeast from Botany Road

Figure 8.3.2.3: Viewpoint 2 – Proposed view northeast from Botany Road

Visual impact identified in the EIS

The visual impact identified in the EIS for the operation of the site from this viewpoint assumes that the OSD development would:

- transform the future station's built form as part of the state-led urban renewal (OSD development is subject to a separate design and development approval process)
- result in the station not being visible due to the location of the future development
- not create a perceived change in the amenity of the view, despite the loss of the pre-existing warehouse character.

The EIS identified the view as being of **local sensitivity** and would result in a **negligible visual impact** during operation.

Visual impact of the SDPP design

As identified in the EIS visual impact assessment, it is expected that the OSD development would screen the station development. The proposed street improvements, including tree planting along Botany Road, would result in no change to the EIS assessment of a **negligible visual impact**.

8.3.3. Viewpoint 3

Figure 8.3.3.1: Viewpoint 3 – View southeast from Botany Road and Raglan Street intersection (from EIS before demolition)

Figure 8.3.3.2: Viewpoint 3 – Current view southeast from Botany Road and Raglan Street intersection

Figure 8.3.3.3: Viewpoint 3 – Proposed view southeast from Botany Road and Raglan Street intersection

Visual impact identified in the EIS

The visual impact identified in the EIS for the operation of the site from this viewpoint assumes that the station development would:

- be visually prominent at street level in the middle ground of the view from the corner of Raglan and Cope streets to about the mid-block position
- reinstate and improve the footpaths and street trees
- transform the future built form as part of the state-led urban renewal (OSD development is subject to a separate design and development approval process).

The EIS identified the view as being of **local sensitivity** and would result in a **negligible visual impact** during operation.

Visual impact of the SDPP design

The SDPP design will have the following visual impacts:

- The new station entry and primary plaza in front of the station would be seen at street level along Raglan Street but in the middle to background in this view.
- Views to the western side of the northern station building would be hidden by the OSD development building.
- It is assumed that the integrated development and the new building will reinstate the corner of the built form at Raglan Street and Botany Road.
- The filtering effect of new and existing street trees and planted areas would help to blend the built form into the character of the existing area.

Overall, it is expected that the development design and public domain improvements would enhance the amenity of this view, which is of local visual sensitivity, and provide **a minor beneficial visual impact.**

8.3.4. Viewpoint 4

Figure 8.3.4.1: Viewpoint 4 – View southwest from corner of Cope and Raglan streets (from EIS before demolition)

Figure 8.3.4.2: Viewpoint 4 – Current view southwest from corner of Cope and Raglan streets

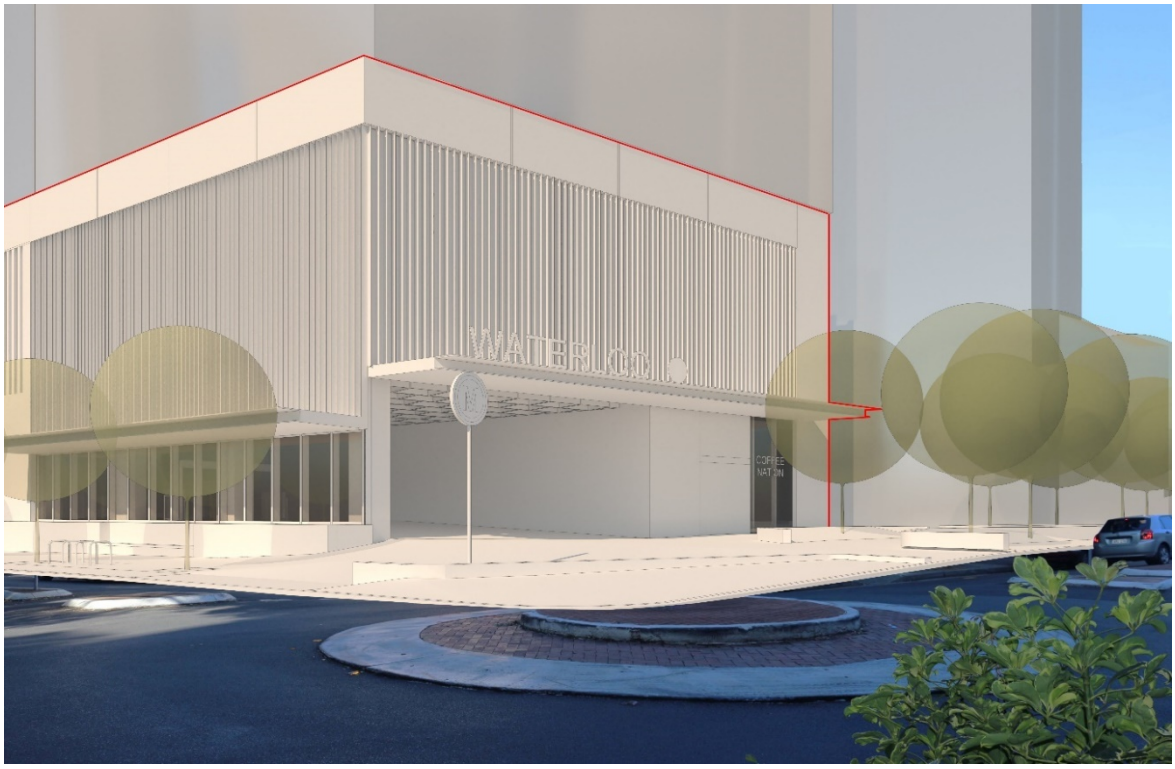


Figure 8.3.4.3: Viewpoint 4 – Proposed view southwest from corner of Cope and Raglan streets

Visual impact identified in the EIS

The visual impact identified in the EIS for the operation of the site from this viewpoint assumes that the station development would:

- see the station entry visible in the centre of this view on the corner of Raglan and Cope streets
- set the station entry within a refreshed public domain
- see the station building form part of a new commercial centre along Raglan Street, as part of the urban renewal of this precinct (formed by the OSD and subject to a separate development process)
- reinforce the commercial centre as the focal point of this view, despite the loss of the existing built form which had a level of cohesion
- form a local visual landmark at street view.

The EIS established that the development would not create a perceived change in the amenity of the view, which is of neighbourhood visual sensitivity, and will result in a **negligible visual impact** during operation.

Visual impact of the SDPP design

The SDPP design will have the following visual impacts:

- A generous landscaped plaza will be seen in the middle ground of the view and extend west along Raglan Street, including planted rain gardens and street trees.
- New street trees will be provided along Raglan and Cope streets forming an avenue of trees along the built frontage.
- The wide entry is defined by the glazed façade to Cope Street.
- A high-level awning and distinctive cladding to the double-storey Raglan Street frontage will visually define the station from the adjacent streetscape.
- The differentiation between the northern station box and the OSD mitigates the scale of the building.
- The setback from the street corner behind the landscaped plaza will soften the view at street level.

Overall, this will result in a noticeable improvement in the amenity of this view, which is of neighbourhood visual sensitivity, and a **minor beneficial visual impact.** This is due to the:

- improved quality of the architecture and the public domain
- filtering effect the street trees, plantings and raingardens will have from the ground plain and street view
- architectural articulation to the façade of the station building, which reduces the scale and emphasises the station entrance
- improved active frontage provided to the street edge
- removal of the low voltage overhead power lines seen in the view.

8.3.5. Viewpoint 5

Figure 8.3.5.1: Viewpoint 5 – View south from Cope Street (from EIS before demolition)

Figure 8.3.5.2: Viewpoint 5 – Current view south from Cope Street

Figure 8.3.5.3: Viewpoint 5 – Proposed view south from Cope Street

Visual impact identified in the EIS

The visual impact identified in the EIS for the operation of the site from this viewpoint assumes that the development will have a new station building prominent in the foreground of this view.

Beyond the station, it was expected that the project would not be visible due to the future built form as part of the state-led urban renewal of the precinct (OSD is subject to a separate design and development approval process).

The EIS established that despite the loss of warehouse character the development would not create a perceived change in the amenity of the view, which is of neighbourhood visual sensitivity, and result in a **negligible visual impact** during operation.

Visual impact of the SDPP design

The SDPP design will have the following visual impacts:

- A widened footpath with new street tree plantings and rain gardens with native grasses and ground covers will be visible in the middle ground of this view, extending south along Cope Street.
- An accessible parking space, kiss-and-ride and taxi parking areas will be provided along the Cope Street frontage close to the station entrance.
- Further south in the background of this view, the public plaza provides a break in the built form. It extends south to the southern station building and will incorporate raised planters, terracing and feature trees.
- The edges of the plaza will be activated with retail and food and beverage uses with outdoor dining spilling out into the public domain creating a vibrancy and visual interest.

- The mid-block crossing and the east to west connections created across the precinct will add to the activity and use of the plaza.

Overall, this will result in a noticeable improvement in the amenity of this view, which is of neighbourhood visual sensitivity, and a **minor beneficial visual impact.**

This improvement from the visual impact identified in the EIS is due to the following:

- improved quality of the architecture and the public domain
- filtering effect the street trees, plantings and raingardens will have from the ground plain and street view
- architectural articulation to the façade of the station building reduces the scale and massing of the building
- public plaza with tree planting drawing people and activities into the space
- improved active frontage provided to the street edge
- removal of the low voltage overhead power lines seen in the view.

8.3.6. Viewpoint 6

Figure 8.3.6.1: Viewpoint 6 – Existing view north from Cope Street

Figure 8.3.6.2: Viewpoint 6 – Proposed view north from Cope Street

Visual impact identified in the EIS

This is a new view, in addition to those identified in the EIS, to cover the south-eastern corner of the site. The EIS Visual Impact Assessment identifies Cope Street as providing access to medium density residential areas and used mainly by residents and workers in the precinct.

The existing development creates a disjointed and constrained public realm. Views are of mixed quality with municipal service buildings and residential properties set back from the street. This creates a fragmented streetscape character if somewhat improved by the remaining street trees on the eastern side of the street. The landscape and views of Cope Street are therefore considered to be of **neighbourhood sensitivity**.

Visual impact of the SDPP design

The SDPP design will have the following visual impacts:

- A widened footpath with new street trees and rain gardens planted with native grasses and ground covers will be visible in the middle ground of this view, extending north along Cope Street.
- The public plaza opens out from the street edge in this view and extends north to the northern station building and southern entrance to the station; incorporating raised planters, terracing and feature trees.

- The plaza edges will be activated with retail and food and beverage uses with outdoor dining spilling out into the public domain creating a vibrancy and visual interest.
- The mid-block crossing and east to west connections created across the precinct will add to the activity and use of the plaza.
- A kiss-and-ride parking area will be located on the left-hand side of this view.

Overall, this would result in a noticeable improvement in the amenity of this view, which is of neighbourhood visual sensitivity and a **minor beneficial visual impact.**

8.3.7. Viewpoint 7

Figure 8.3.7.1: Viewpoint 7 – Existing view west from Wellington Street

Figure 8.3.7.2: Viewpoint 7 – Proposed view west from Wellington Street

Visual impact identified in the EIS

This is a new view, in addition to those identified in the EIS, to cover the south-eastern corner of the site. Wellington Street is described in the EIS Visual Impact Assessment as providing access to medium density residential areas and used mainly by residents and workers in the precinct.

The existing development creates a disjointed and constrained public realm. Views are of mixed quality with traditional terraced housing and warehousing to the south and medium density residential properties set back from the street to the north. This creates a fragmented streetscape character if somewhat improved by the placement of existing street trees. The landscape and views of Wellington Street are considered to be of **neighbourhood sensitivity**.

Visual impact of the SDPP design

The SDPP design will have the following visual impacts:

- The southern station building will be seen in the middle ground of this view and set back further than the original building line to provide a wider footpath.
- The building reinstates the corner of the street with a continuous awning and glass façade at the ground floor retail, which provides both visual transparency and an active street frontage.

- Above this the façades on Cope and Wellington streets are comprised of a range of vertical and horizontal elements, metal, perforated and textured concrete and masonry elements relating to the scale and materiality of the surrounding area's varied industrial and residential context.
- The footpath extends along the Wellington Street frontage and includes planted rain gardens, street trees and bicycle parking.
- The roundabout is proposed to be removed and replaced with a priority intersection with a raised crossing at Cope Street on the northern side of the intersection.
- New street trees will be provided along Wellington and Cope streets forming an avenue with the existing trees along the built frontage.
- Uni-directional protected bicycle lanes are provided on Wellington Street adding to the protection of the footpath and increasing street activity.

Overall, this will result in a noticeable improvement in the amenity of this view, which is of neighbourhood visual sensitivity and a **minor beneficial visual impact.**

8.3.8. Viewpoint 8

Figure 8.3.8.1: Viewpoint 8 – Existing view north from Cope Street south of Wellington Street

Figure 8.3.8.2: Viewpoint 8 – Proposed view north from Cope Street south of Wellington Street

Visual impact identified in the EIS

This is a new view, in addition to those identified in the EIS, to cover the south-eastern corner of the site. The view is from the same area as viewpoint 7 and looking north along Cope Street. The landscape and views of Cope and Wellington streets are considered to be of **neighbourhood sensitivity**.

Visual impact of the SDPP design

The SDPP design will have the following visual impacts:

- The southern station building will be seen in the middle ground of this view and set back further than the original building line to provide a wider footpath.
- The building reinstates the corner of the street with a continuous awning and glass façade at the ground floor retail, which provides visual transparency and an active street frontage.
- Above this the façades on Cope and Wellington streets are comprised of a range of vertical and horizontal elements, metal, perforated and textured concrete and masonry elements relating to the scale and materiality of the surrounding area's varied industrial and residential context.
- The footpath extends along the Wellington and Cope street frontages and includes planted rain gardens, street trees and bicycle parking.

- The roundabout is proposed to be removed and replaced with a priority intersection with a raised crossing at Cope Street on the northern side of the intersection.
- New street trees will be provided along Wellington and Cope streets forming an avenue with the existing trees along the built frontage.
- Uni-directional protected bicycle lanes are provided on Wellington Street adding to the protection of the footpath and increasing street activity.

Overall, this will result in a noticeable improvement in the amenity of this view, which is of neighbourhood visual sensitivity and a **minor beneficial visual impact.**

8.3.9. Viewpoint 9

Figure 8.3.9.1: Viewpoint 9 – Existing view east from Wellington Street

Figure 8.3.9.2: Viewpoint 9 – proposed view east from Wellington Street

Visual impact identified in the EIS

This is a new view, in addition to those identified in the EIS, to cover the south-eastern corner of the site. Situated further west along Wellington Street from viewpoint 7, the landscape and views are considered to be of **neighbourhood sensitivity**.

Visual impact of the SDPP design

The SDPP design will have the following visual impacts:

- The southern station building will be seen in the middle ground of this view and set back further than the original building line to provide a wider footpath.
- The building reinstates the corner of the street with a continuous awning and glass façade at the ground floor retail, which provides visual transparency and an active street frontage.
- Above this the façade on Wellington Street is comprised of a range of vertical and horizontal elements, metal, perforated and textured concrete and masonry elements relating to the scale and materiality of the surrounding area's varied industrial and residential context.
- The footpath extends along the Wellington Street frontage and includes planted rain gardens, street trees and bicycle parking.
- New street trees would be provided along Wellington Street forming an avenue with the existing trees along the built frontage.

- Uni-directional protected bicycle lanes are to be provided on Wellington Street adding to the protection of the footpath and increasing street activity.

Overall, this will result in a noticeable improvement in the amenity of this view, which is of neighbourhood visual sensitivity and a **minor beneficial visual impact.**

Assessment of night-time visual impact

As identified in the EIS:

> *The setting of the Waterloo Station site is considered to be an area of **E3: Medium district brightness**. This is due to its brightly lit urban city location with a mix of commercial and residential uses. Some areas would experience 24-hour activity and there would be lighting from buildings and streets creating both direct light sources and a general skyglow around the project site. This lighting would be more dispersed within the adjacent residential areas.*

Operation: The station entry on the corner of Raglan and Cope streets will be brightly lit 24 hours a day to accommodate station activities and for security after hours. The lighting will be consistent with the surrounding medium district brightness environment. The site is expected to become more brightly lit with the redevelopment, which is part of the proposed state-led urban renewal project (not within the scope of this assessment).

Overall, it is expected that lighting during operation will create no perceived change in the amenity of this area, resulting in a **negligible visual impact** during evening hours.

Night-time visual impact of the SDPP design

The night-time visual impact of the SDPP design is not expected to create any perceived change from that identified in the EIS, therefore it will remain as a **negligible visual impact**.

8.4. Summary

8.4.1. Visual impact summary tables

Table 8.4: Daytime visual impact

			Operation – EIS		Operation – SDPP design	
No.	**Location**	**Sensitivity**	**Modification**	**Impact**	**Modification**	**Impact**
Viewpoints from the EIS						
1	**View east from Wellington Street**	Local	No perceived change	Negligible	No perceived change	Negligible
2	**View northeast from Botany Road**	Local	No perceived change	Negligible	No perceived change	Negligible
3	**View southeast from the intersection of Botany Road and Raglan Street**	Local	No perceived change	Negligible	Noticeable improvement	Minor beneficial
4	**View southwest from the corner of**	Neighbourhood	No perceived change	Negligible	Noticeable improvement	Minor beneficial

			Operation – EIS		Operation – SDPP design	
	Cope and Raglan streets					
5	**View south from Cope Street**	Neighbourhood	No perceived change	Negligible	Noticeable improvement	Minor beneficial
Additional viewpoints for the southern station building						
6	**View north from Cope Street**	Neighbourhood	N/A	N/A	Noticeable improvement	Minor beneficial
7	**View west from Wellington Street**	Neighbourhood	N/A	N/A	Noticeable improvement	Minor beneficial
8	**View north from Cope Street south of Wellington Street**	Neighbourhood	N/A	N/A	Noticeable improvement	Minor beneficial
9	**View east from Wellington Street**	Neighbourhood	N/A	N/A	Noticeable improvement	Minor beneficial

Table 8.5: Night-time visual impact

			Operation – EIS		Operation – SDPP design	
No.	**Location**	**Sensitivity**	**Modification**	**Impact**	**Modification**	**Impact**
1	**Project site**	E3: Medium district brightness	No perceived change	Negligible	No perceived change	Negligible

8.4.2. Summary of impact statement

As identified in the EIS, there will be negligible visual impact to the precinct due to its ability to readily absorb the visual change due to the existing eclectic mix of character and the proposed future urban renewal.

Most of the views (three to nine) in the SDPP design have achieved a minor beneficial impact. This is due to the:

- increased understanding of the architectural design and its façade finishes
- landscape design improving the public domain and streetscapes with upgraded paving, street furniture and street tree planting.

Views one and two have a negligible impact due to the station building being for the most part hidden by the larger OSD development (subject to a separate assessment process).

Appendix A Evidence of collaboration and consultation

Date	Consultation activity
02 May	**Invitation to attend an online Indigenous Yarning Circle convened by Murawin**
8 May	**Introduction eNews to Waterloo Station email subscribers** Email to over 1100 registered subscribers asking them to contact the Community and Stakeholder Manager if they had any questions about the Waterloo integrated station development.
12 May	**Invitation to briefings for local community, recreational and residents' organisations including:** • Waterloo Redevelopment Group • WARLOC • Alexandria Park Public School • REDWatch • Connect Redfern • South Sydney Business Chamber • Dunbar Rovers • Gymbaroo Redfern • South Sydney Police Youth Club • City Community Tennis • Alexandria Residents Action Group • Green Square School • Waterloo/Redfern local residents • Scouts NSW • Assistance Dogs Australia • Inner Sydney Voice • The Soccer Club • City of Sydney Basketball Association • Bike Sydney • South Sydney District Football Association
29 May	**Phone call invitation to South Eveleigh to comment**
12 June	**Waterloo integrated station development update eNews** Invitation to over 1100 registered email subscribers to comment during the Waterloo Station design development.
12 June	**A5 flyer invitation to comment – Waterloo integrated station development** Flyer distributed to over 5000 properties within a 500-metre radius of the Waterloo Station site.
16 June	**eNews invitation to online presentation** Invitation to participate in online forums and comment during the Waterloo Station design development.
29 June	**Have Your Say eNews** Invitation to participate in additional webinar sessions.
2 July	**A4 flyer** Invitation distributed to over 5000 properties within a 500-metre radius of the Waterloo Station site to participate in webinar sessions.

Date	Consultation activity
2 July	Invitation to Traditional Owners and Aboriginal stakeholder briefings including: • Department of Aboriginal Affairs • Aboriginal Employment Strategy AES Babana Men's Group • Aboriginal Legal Service • Alexandria Park Community School • Cootamundra Girls Home Cooperation • Department of Education • Elders and Wyanga • Jarjums • Mirvac and John Holland Group Aboriginal Participation in Employment Coordinator • National Aboriginal Sporting Chance Academy (NASCA) • Wunanbiri Preschool • Our Lady of Mt Carmel Catholic School • Redfern Aboriginal Medical Service • Redfern All Blacks • Redfern Community Centre • Souths Cares • TAFE Eora College • Tranby Aboriginal College • Tribal Warrior • UTS • National Centre of Indigenous Excellence • IndiGrow • Metropolitan Local Aboriginal Land Council • Weave • Jiwah • Wirringa Baiya Aboriginal Women's Legal Centre • Dreamtime Southern X • Gamarada • Gawura • Kinchela Boys Home Aboriginal Corporation • ID. Know Yourself • Australian Indigenous Mentoring Experience (AIME) • Yerrabingin • NSW Indigenous Chamber of Commerce • Inner City AECG • Community Aunty • City of Sydney Council • Redfern Police • Empowered Communities • Moogahlin Performing Arts • Mudgin-Gal • Aboriginal Housing Corporation • Barnardos
June – August	**Invitations to:** • Ethnic Communities Council • South Sydney Business Chamber • Department of Communities and Justice • Land and Housing Corporation • Sydney Trains • City of Sydney – Community Infrastructure Team
June – August	**Follow-up calls and emails from Community and Stakeholder Manager** Encouraging people to participate in sessions or provide feedback.

'Have your say' flyers

NSW GOVERNMENT | sydney METRO

City & Southwest

Waterloo integrated station development
June 2020

HAVE YOUR SAY

Artist's impression of station entrance

In 2024, Sydney will have 31 metro railway stations and a 66 kilometre standalone metro railway system, including a new metro station at Waterloo.

John Holland will deliver the metro station along with a joint venture between John Holland and Mirvac to deliver the Waterloo integrated station development, including the buildings above and next to the station.

The team is currently preparing designs for the buildings and public space in the Waterloo Metro Quarter and would like to hear your comments.

Let us know your comments on topics such as:

- Building designs
- Public art and landscape
- Facilities or services
- Construction impacts
- Public domain
- Car parking
- Retail spaces

Artist's impression of Waterloo integrated station development

If you have any questions about the Waterloo integrated station development, please contact Faye Rescigno on **1800 171 386** (24-hour community information line) or email WaterlooMetro@transport.nsw.gov.au

Contact us

1800 171 386 Community information line open 24 hours
WaterlooMetro@transport.nsw.au
Sydney Metro City & Southwest, PO Box K659, Haymarket NSW 1240
If you need an interpreter, contact TIS National on **131 450** and ask them to call **1800 171 386**

sydneymetro.info

SMCSWSWL-JHG-SWL-CL-NOT-000001

Figure 1: A5 flyer distributed on 2 June 2020

City & Southwest

Invitation to comment on the Waterloo integrated station development

John Holland will build the Waterloo metro station while a joint venture between John Holland and Mirvac will deliver the Waterloo Metro Quarter, including five buildings above and next to the station. The team is currently preparing designs for the buildings and public space in the Waterloo Metro Quarter and would like to hear your comments about changes to the approved concept design.

Wellington Street

Raglan Street

Architectural render of the view of the Waterloo integrated station development from Cope Street (subject to planning approval)

Contact us to join an online community information session and find out more information about:

- Waterloo Station precinct plan, including the Waterloo station architecture, design and street landscaping
- Waterloo Metro Quarter, including public spaces, community facilities, and building designs for commercial, residential, social, affordable and student housing.

Artist's impression of the Cope Street plaza

Artist's impression of the residential and affordable housing from Cope Street plaza

Artist's impression of the commerical building from the corner of Raglan and Cope streets

Artist's impression of the student and social housing at the corner of Cope and Wellington streets

Let us know your comments about:

- building designs
- public art
- landscaping
- facilities or services
- construction impacts
- public domain
- car parking
- retail spaces.

Cope Street public domain

Example of streetscape and landscape design

Cope Street aspect looking towards Wellington Street

Have your say:
If you would like join us at the Waterloo integrated station development webinar session to learn more about the station and overstation development, please contact Faye Rescigno on 1800 171 386 (24-hour community information line) or email WaterlooMetro@transport.nsw.gov.au.

sydneymetro.info

Contact us

1800 171 386 Community information line open 24 hours

WaterlooMetro@transport.nsw.au

Sydney Metro City & Southwest, PO Box K659, Haymarket NSW 1240

If you need an interpreter, contact TIS National on **131 450** and ask them to call **1800 171 386**

Figure 2: A4 flyer distributed on 29 June 2020

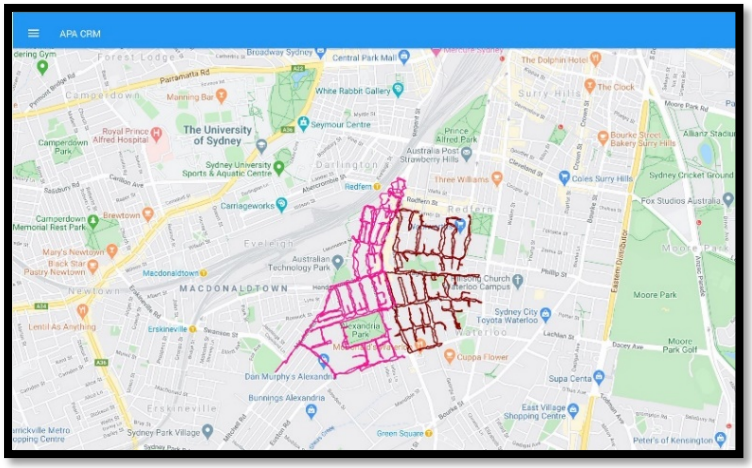


Figure 3: A4 flyer 500-metre distribution zone

Webinars

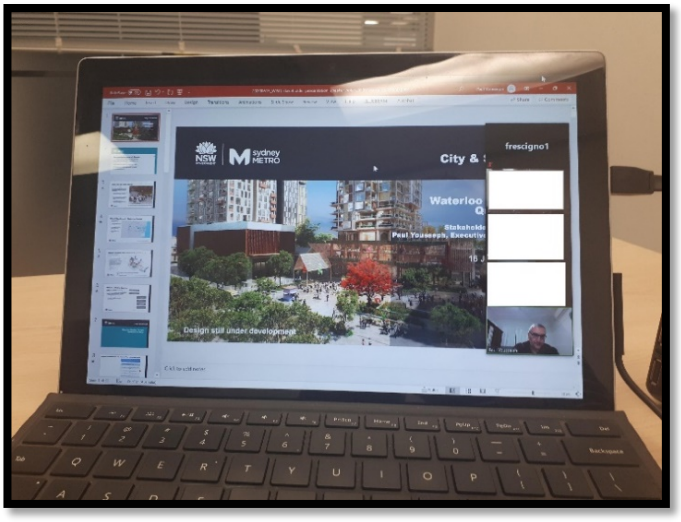


Figure 4: Webinar session on 18 June 2020

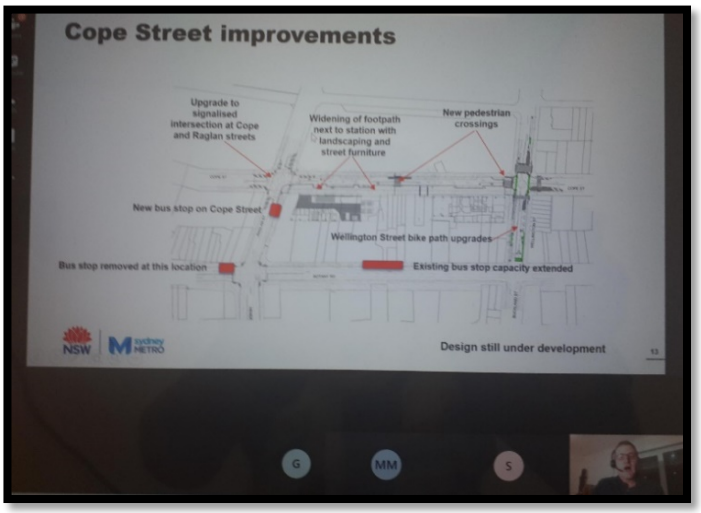


Figure 5: Webinar session on 24 June 2020

eNews

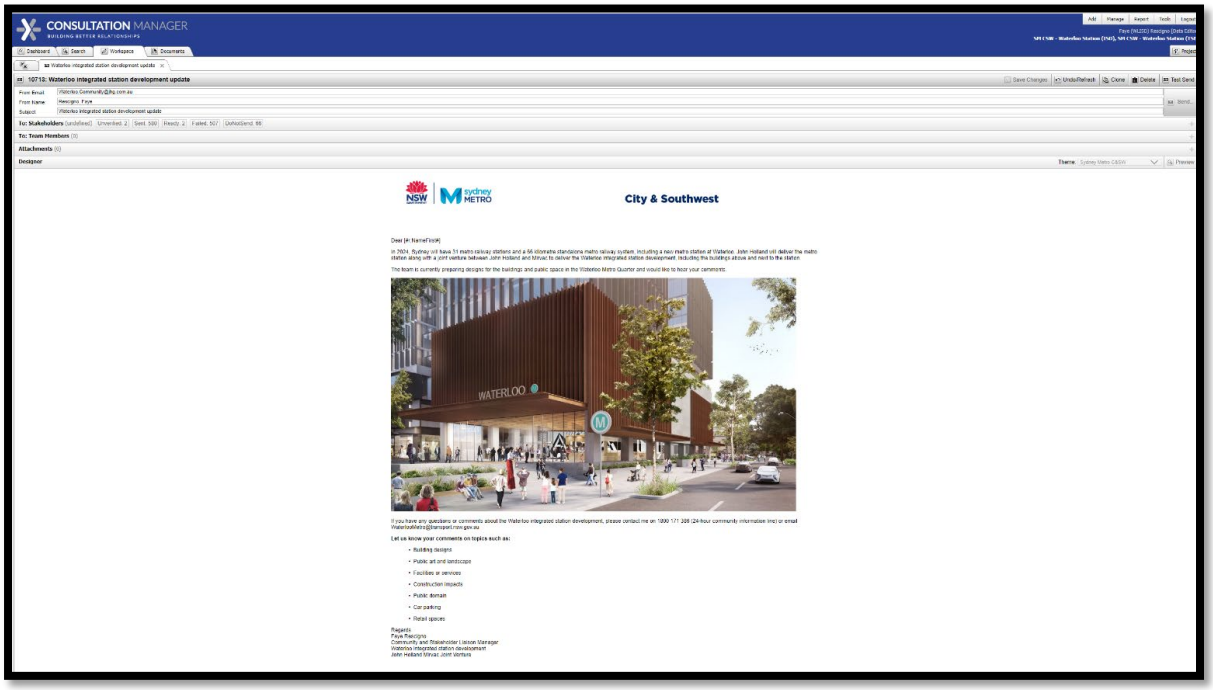


Figure 6: eNews on 12 June 2020

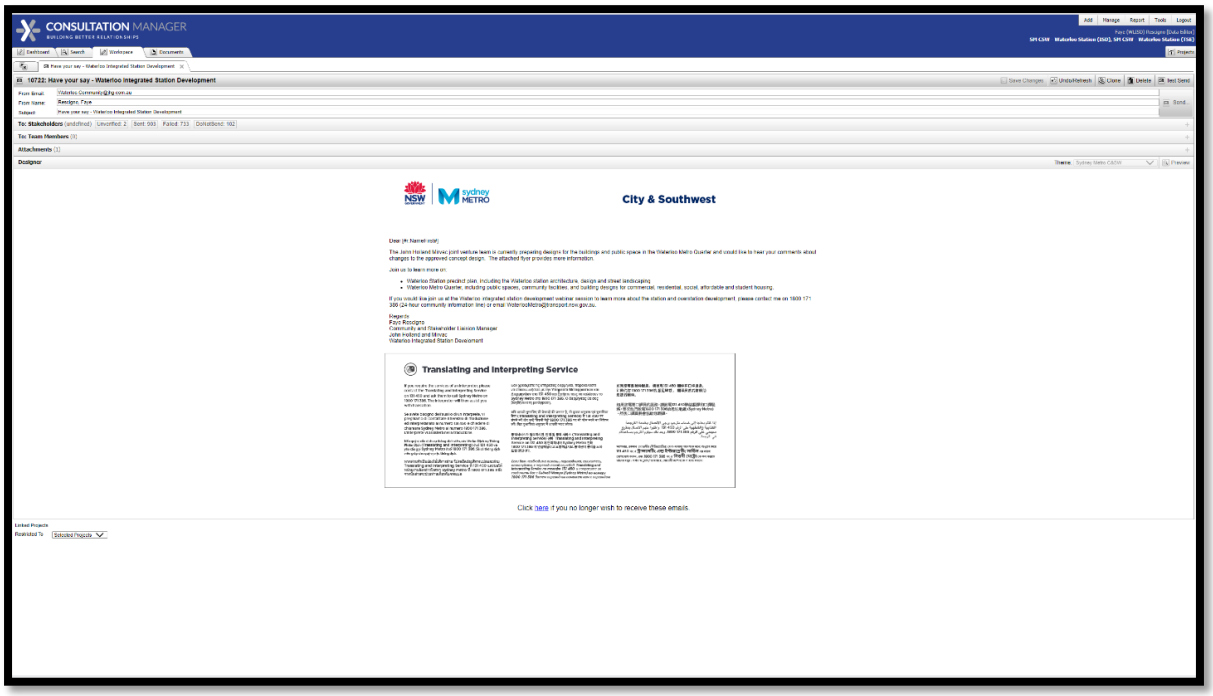


Figure 7: eNews on 29 June 2020 with A4 flyer

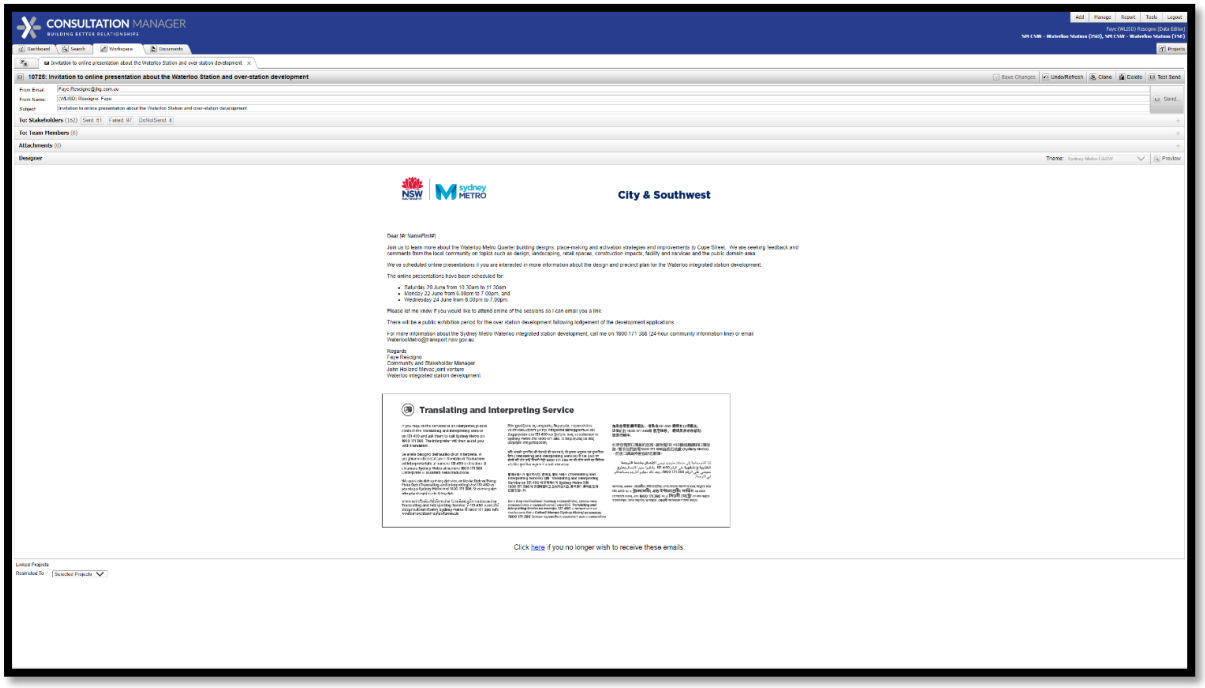


Figure 8: Targetted eNews on 16 June 2020

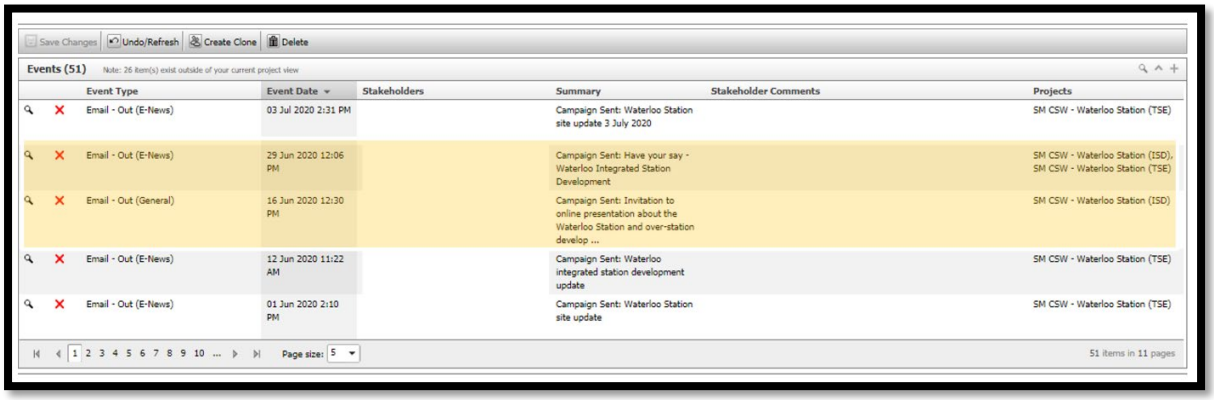
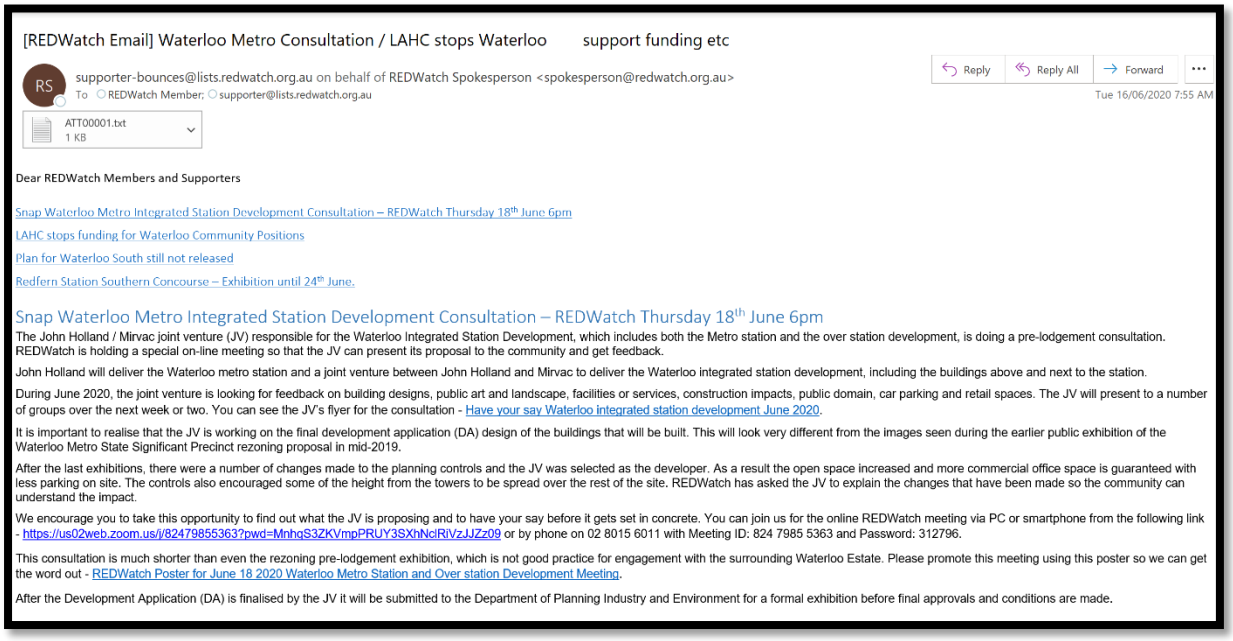


Figure 9: eNews on 16 and 29 June 2020

Community organisation's confirmation emails



[REDWatch Email] Waterloo Metro Consultation / LAHC stops Waterloo support funding etc

RS supporter-bounces@lists.redwatch.org.au on behalf of REDWatch Spokesperson <spokesperson@redwatch.org.au>
To REDWatch Member; supporter@lists.redwatch.org.au

Reply Reply All Forward
Tue 16/06/2020 7:55 AM

ATT00001.txt
1 KB

Dear REDWatch Members and Supporters

Snap Waterloo Metro Integrated Station Development Consultation – REDWatch Thursday 18th June 6pm

LAHC stops funding for Waterloo Community Positions

Plan for Waterloo South still not released

Redfern Station Southern Concourse – Exhibition until 24th June.

Snap Waterloo Metro Integrated Station Development Consultation – REDWatch Thursday 18th June 6pm

The John Holland / Mirvac joint venture (JV) responsible for the Waterloo Integrated Station Development, which includes both the Metro station and the over station development, is doing a pre-lodgement consultation. REDWatch is holding a special on-line meeting so that the JV can present its proposal to the community and get feedback.

John Holland will deliver the Waterloo metro station and a joint venture between John Holland and Mirvac to deliver the Waterloo integrated station development, including the buildings above and next to the station.

During June 2020, the joint venture is looking for feedback on building designs, public art and landscape, facilities or services, construction impacts, public domain, car parking and retail spaces. The JV will present to a number of groups over the next week or two. You can see the JV's flyer for the consultation - Have your say Waterloo integrated station development June 2020.

It is important to realise that the JV is working on the final development application (DA) design of the buildings that will be built. This will look very different from the images seen during the earlier public exhibition of the Waterloo Metro State Significant Precinct rezoning proposal in mid-2019.

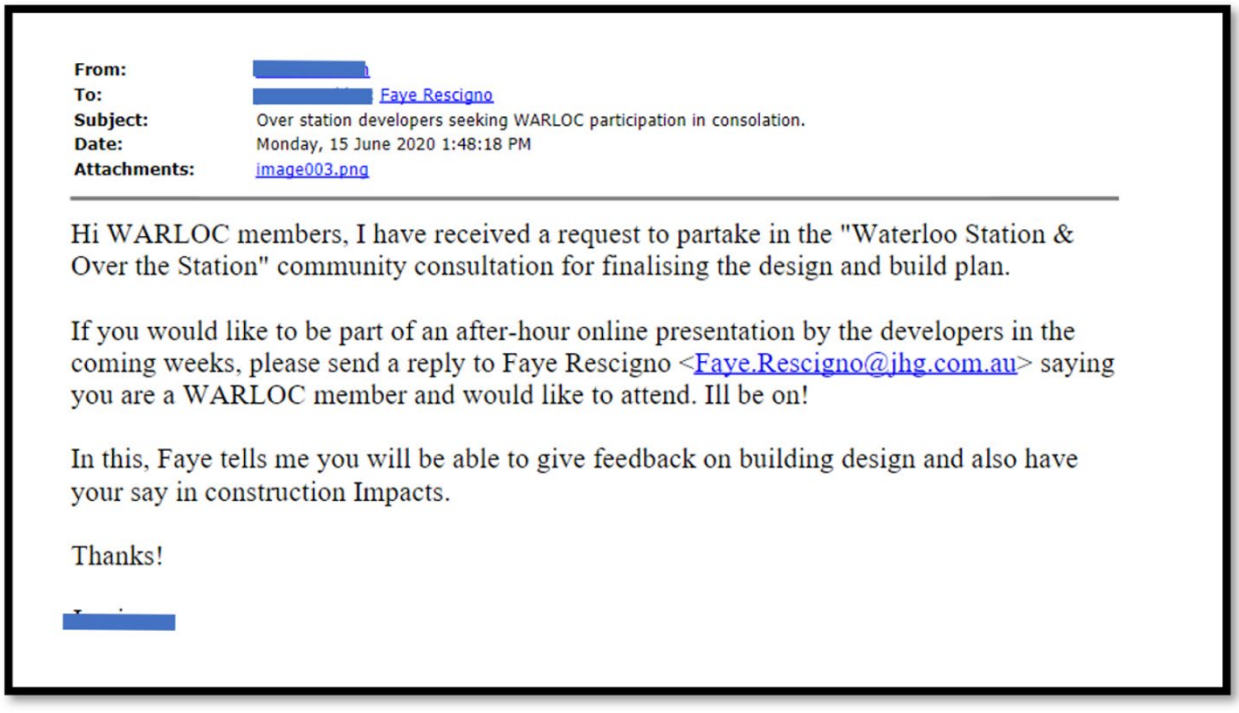
After the last exhibitions, there were a number of changes made to the planning controls and the JV was selected as the developer. As a result the open space increased and more commercial office space is guaranteed with less parking on site. The controls also encouraged some of the height from the towers to be spread over the rest of the site. REDWatch has asked the JV to explain the changes that have been made so the community can understand the impact.

We encourage you to take this opportunity to find out what the JV is proposing and to have your say before it gets set in concrete. You can join us for the online REDWatch meeting via PC or smartphone from the following link - https://us02web.zoom.us/j/82479855363?pwd=MnhqS3ZKVmpPRUY3SXhNclRiVzJJZz09 or by phone on 02 8015 6011 with Meeting ID: 824 7985 5363 and Password: 312796.

This consultation is much shorter than even the rezoning pre-lodgement exhibition, which is not good practice for engagement with the surrounding Waterloo Estate. Please promote this meeting using this poster so we can get the word out - REDWatch Poster for June 18 2020 Waterloo Metro Station and Over station Development Meeting.

After the Development Application (DA) is finalised by the JV it will be submitted to the Department of Planning Industry and Environment for a formal exhibition before final approvals and conditions are made.

Figure 10: REDWatch email to members



From: [redacted]
To: [redacted] Faye Rescigno
Subject: Over station developers seeking WARLOC participation in consolation.
Date: Monday, 15 June 2020 1:48:18 PM
Attachments: image003.png

Hi WARLOC members, I have received a request to partake in the "Waterloo Station & Over the Station" community consultation for finalising the design and build plan.

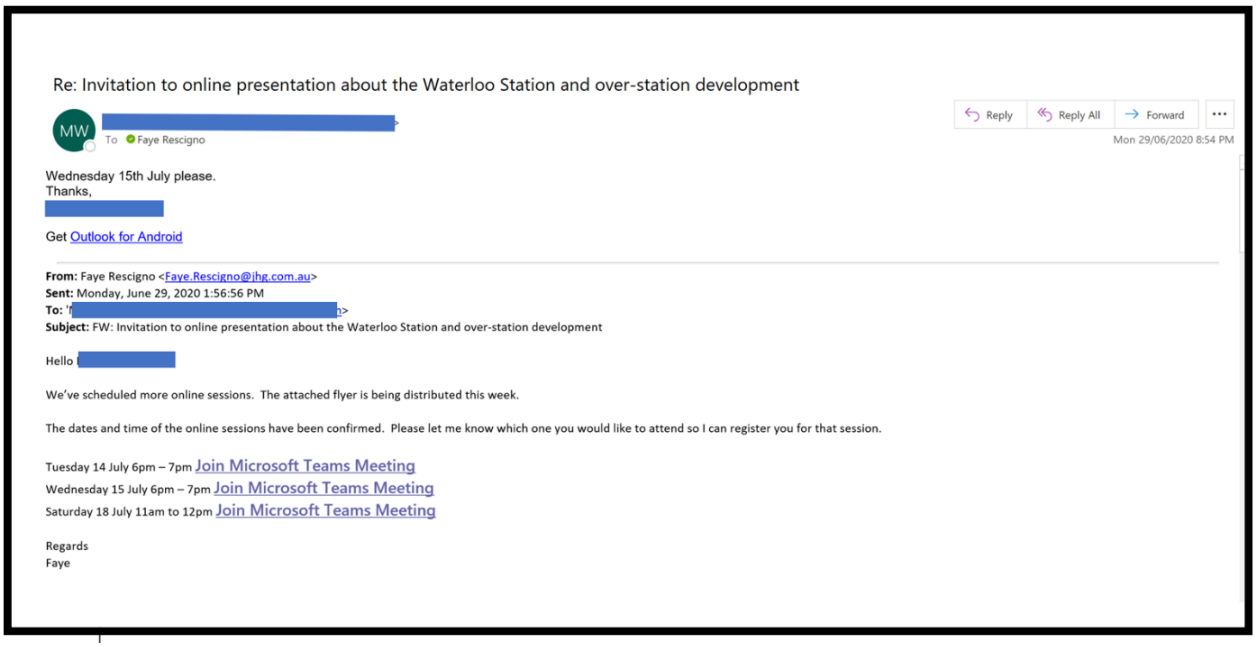
If you would like to be part of an after-hour online presentation by the developers in the coming weeks, please send a reply to Faye Rescigno <Faye.Rescigno@jhg.com.au> saying you are a WARLOC member and would like to attend. Ill be on!

In this, Faye tells me you will be able to give feedback on building design and also have your say in construction Impacts.

Thanks!

[redacted]

Figure 11: WARLOC email to members



Re: Invitation to online presentation about the Waterloo Station and over-station development

MW [redacted] To Faye Rescigno

Reply Reply All Forward

Mon 29/06/2020 8:54 PM

Wednesday 15th July please.
Thanks,
[redacted]

Get Outlook for Android

From: Faye Rescigno <Faye.Rescigno@jhg.com.au>
Sent: Monday, June 29, 2020 1:56:56 PM
To: '[redacted]'
Subject: FW: Invitation to online presentation about the Waterloo Station and over-station development

Hello [redacted]

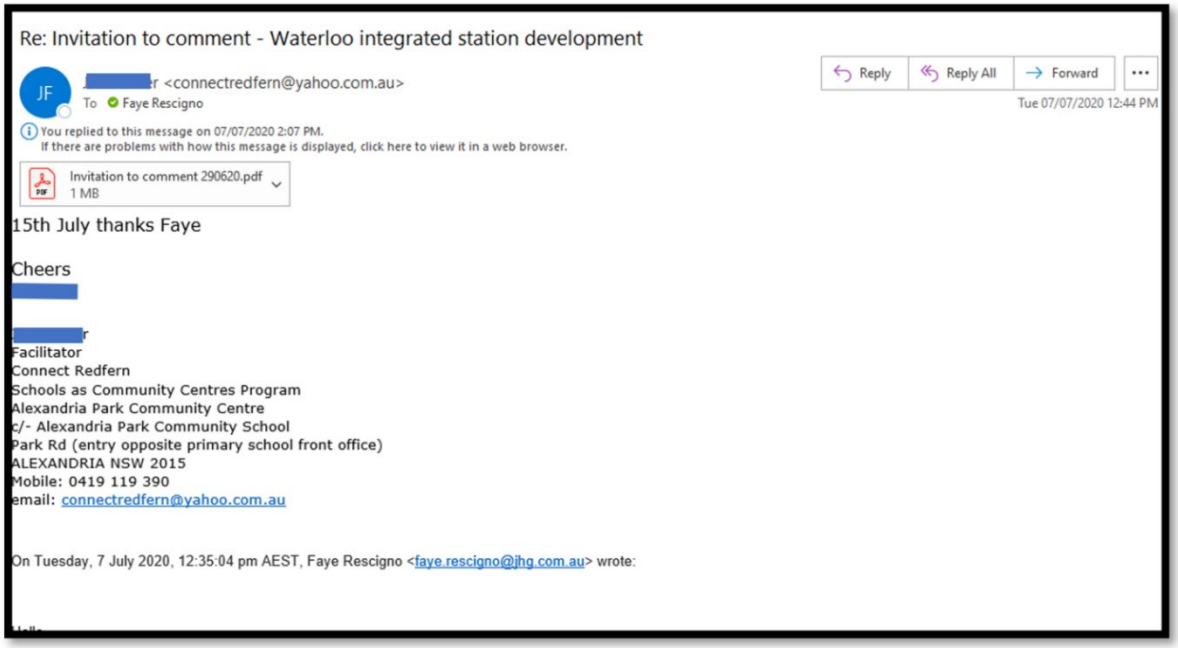
We've scheduled more online sessions. The attached flyer is being distributed this week.

The dates and time of the online sessions have been confirmed. Please let me know which one you would like to attend so I can register you for that session.

Tuesday 14 July 6pm – 7pm Join Microsoft Teams Meeting
Wednesday 15 July 6pm – 7pm Join Microsoft Teams Meeting
Saturday 18 July 11am to 12pm Join Microsoft Teams Meeting

Regards
Faye

Figure 12: Community member email registering for webinar



Re: Invitation to comment - Waterloo integrated station development

JF [redacted] <connectredfern@yahoo.com.au> To Faye Rescigno

Reply Reply All Forward

Tue 07/07/2020 12:44 PM

You replied to this message on 07/07/2020 2:07 PM.
If there are problems with how this message is displayed, click here to view it in a web browser.

Invitation to comment 290620.pdf
1 MB

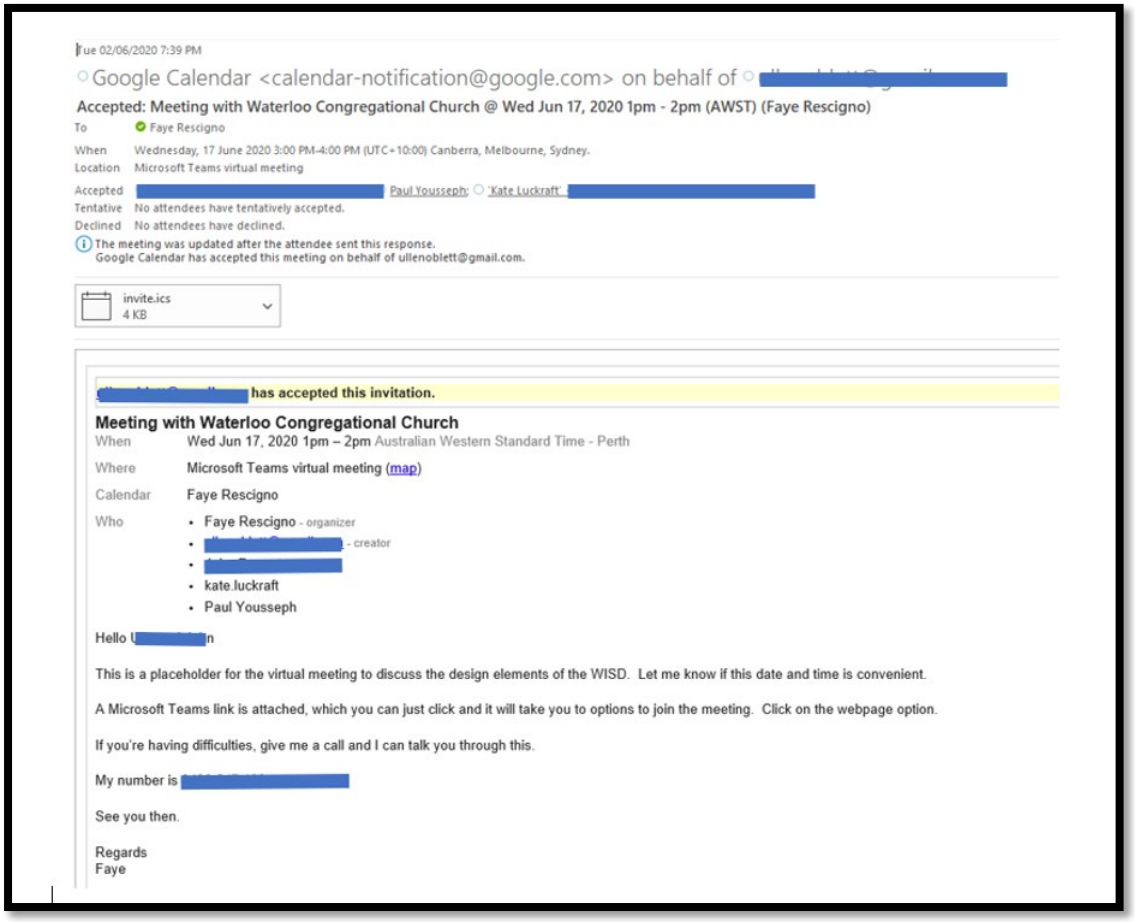
15th July thanks Faye

Cheers
[redacted]

[redacted]
Facilitator
Connect Redfern
Schools as Community Centres Program
Alexandria Park Community Centre
c/- Alexandria Park Community School
Park Rd (entry opposite primary school front office)
ALEXANDRIA NSW 2015
Mobile: 0419 119 390
email: connectredfern@yahoo.com.au

On Tuesday, 7 July 2020, 12:35:04 pm AEST, Faye Rescigno <faye.rescigno@jhg.com.au> wrote:

Figure 13: Connect Redfern email to participate in webinar



Tue 02/06/2020 7:39 PM

Google Calendar <calendar-notification@google.com> on behalf of [redacted]

Accepted: Meeting with Waterloo Congregational Church @ Wed Jun 17, 2020 1pm - 2pm (AWST) (Faye Rescigno)

To Faye Rescigno

When Wednesday, 17 June 2020 3:00 PM-4:00 PM (UTC+10:00) Canberra, Melbourne, Sydney.

Location Microsoft Teams virtual meeting

Accepted [redacted] Paul Yousseph; 'Kate Luckraft' [redacted]

Tentative No attendees have tentatively accepted.

Declined No attendees have declined.

The meeting was updated after the attendee sent this response.
Google Calendar has accepted this meeting on behalf of ullenoblett@gmail.com.

invite.ics
4 KB

[redacted] has accepted this invitation.

Meeting with Waterloo Congregational Church

When Wed Jun 17, 2020 1pm – 2pm Australian Western Standard Time - Perth

Where Microsoft Teams virtual meeting (map)

Calendar Faye Rescigno

Who
- Faye Rescigno - organizer
- [redacted] - creator
- [redacted]
- kate.luckraft
- Paul Yousseph

Hello [redacted]

This is a placeholder for the virtual meeting to discuss the design elements of the WISD. Let me know if this date and time is convenient.

A Microsoft Teams link is attached, which you can just click and it will take you to options to join the meeting. Click on the webpage option.

If you're having difficulties, give me a call and I can talk you through this.

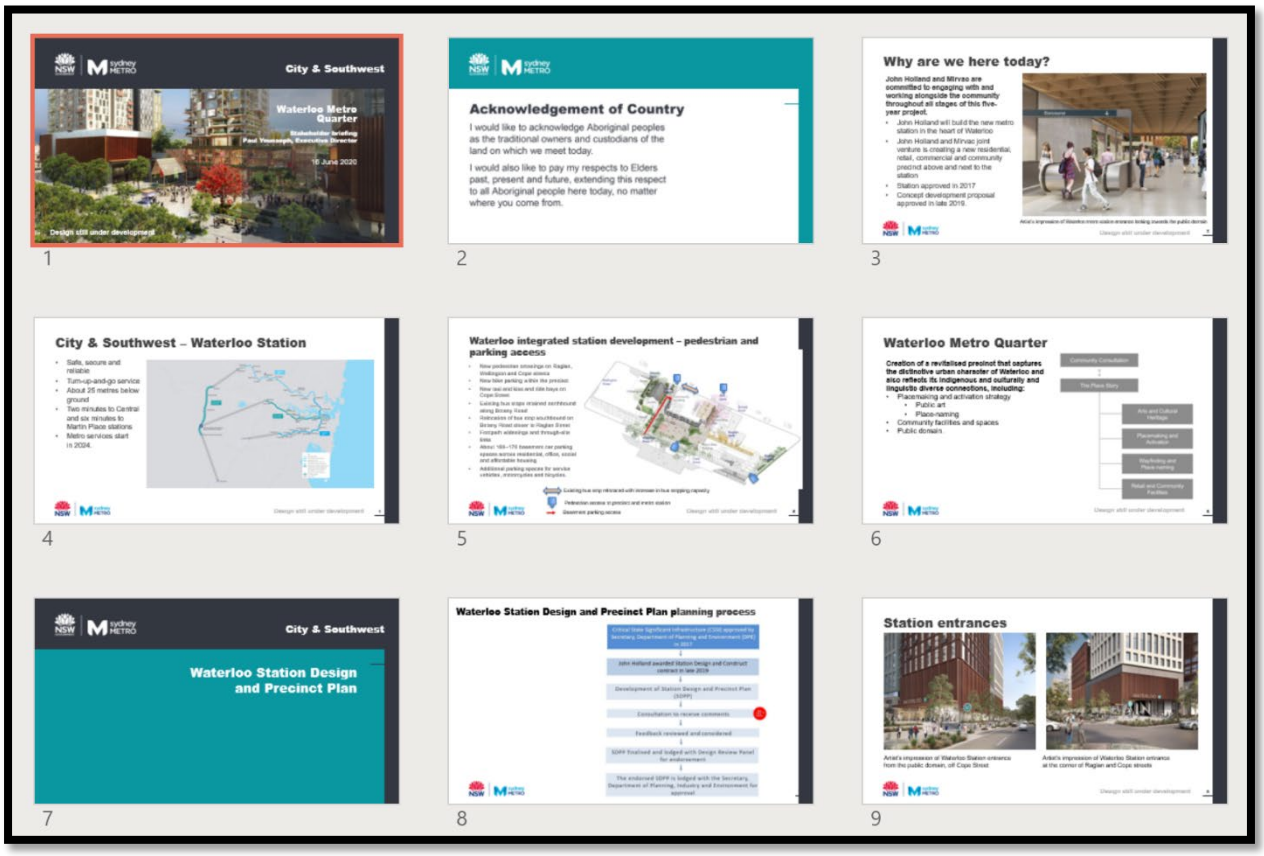
My number is [redacted]

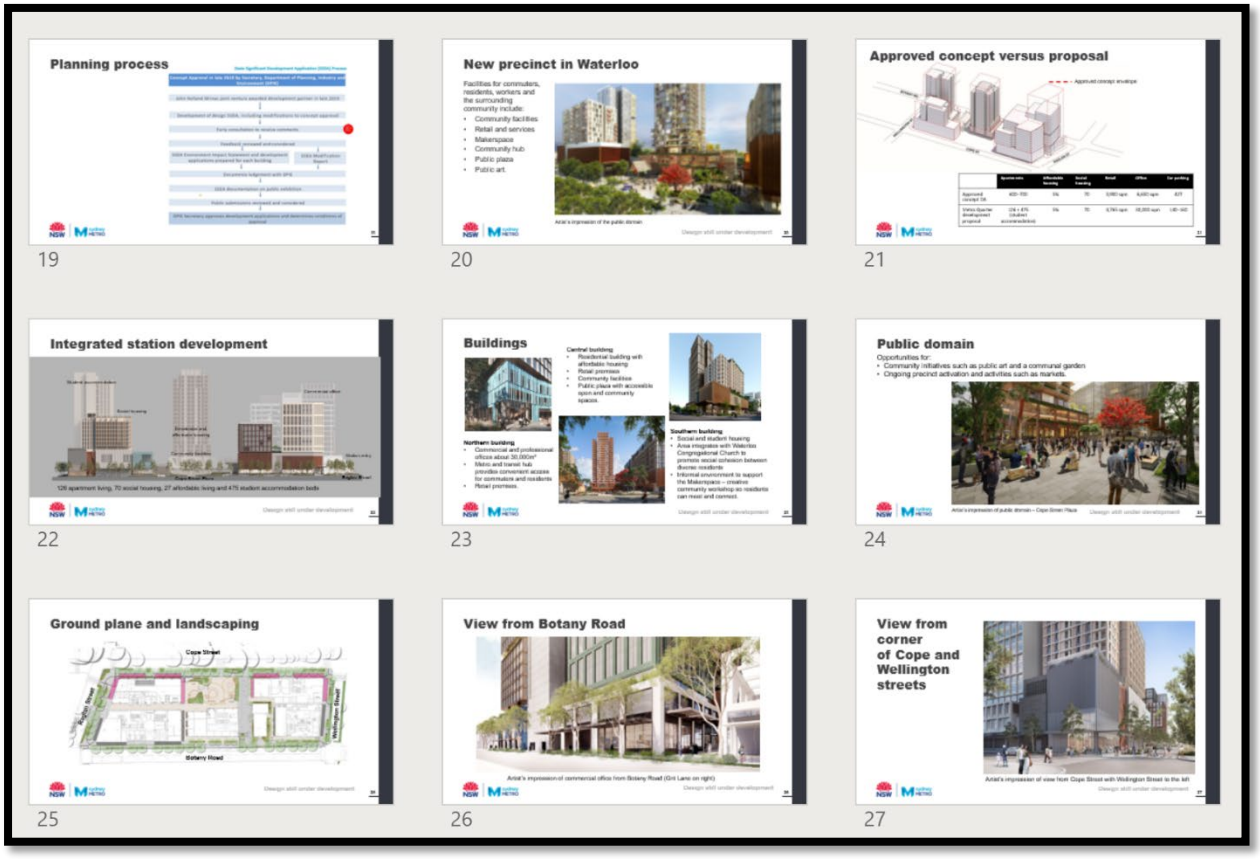
See you then.

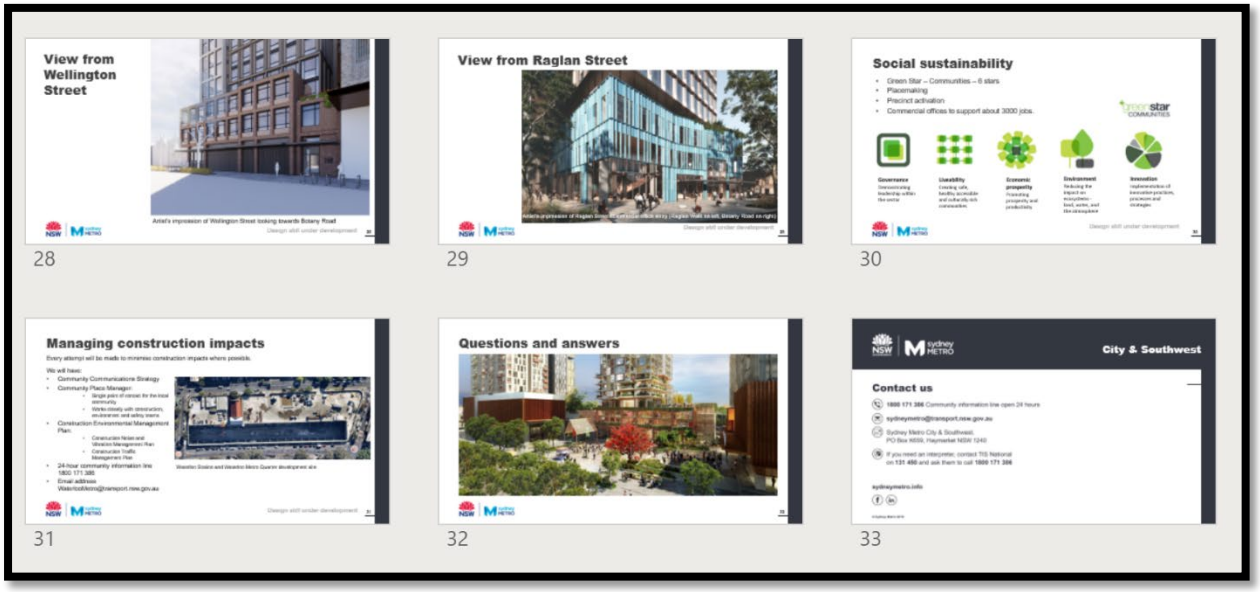
Regards
Faye

Figure 14: Confirmation of meeting with Waterloo Congregational Church

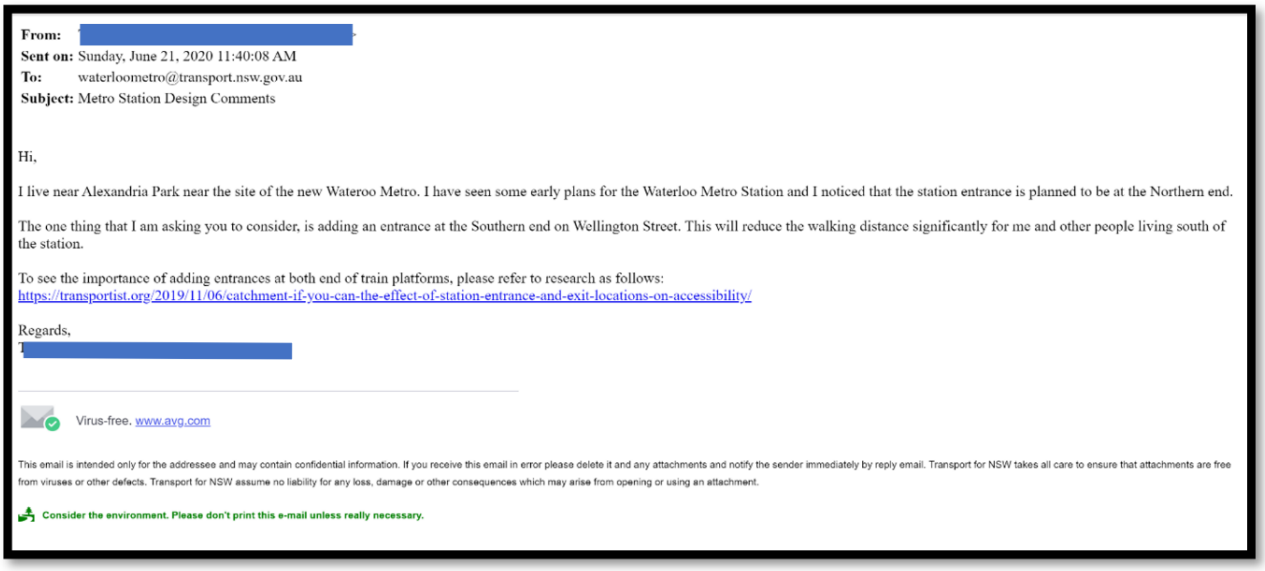
Waterloo integrated station development presentation




Planning process
19
New precinct in Waterloo
20
Approved concept versus proposal
21
Integrated station development
22
Buildings
23
Public domain
24
Ground plane and landscaping
25
View from Botany Road
26
View from corner of Cope and Wellington streets
27


View from Wellington Street
28
View from Raglan Street
29
Social sustainability
30
Managing construction impacts
31
Questions and answers
32
City & Southwest
Contact us
33

Email feedback



From: [redacted]
Sent on: Sunday, June 21, 2020 11:40:08 AM
To: waterloometro@transport.nsw.gov.au
Subject: Metro Station Design Comments

Hi,

I live near Alexandria Park near the site of the new Wateroo Metro. I have seen some early plans for the Waterloo Metro Station and I noticed that the station entrance is planned to be at the Northern end.

The one thing that I am asking you to consider, is adding an entrance at the Southern end on Wellington Street. This will reduce the walking distance significantly for me and other people living south of the station.

To see the importance of adding entrances at both end of train platforms, please refer to research as follows:
https://transportist.org/2019/11/06/catchment-if-you-can-the-effect-of-station-entrance-and-exit-locations-on-accessibility/

Regards,
[redacted]

Virus-free. www.avg.com

Figure 15: Email feedback from resident

Appendix B How feedback from consultation has been addressed

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

Stakeholder feedback

Feedback received	How addressed in the plan
Sydney Coordination Office (SCO is part of TfNSW))	
Feedback received and captured in Waterloo Contractor's Construction Traffic Management Plan. Comments closed with updated CTMP documentation.	• Design items raised with SCO related to the Waterloo Contractor's Construction Traffic Management Plan • Discussed relocation of bus stops during constriction and final design arrangement • Waterloo Station precinct road design requirements • Traffic control plans for Waterloo Station construction activities • Road Occupancy Licence for Waterloo Station construction activities
City of Sydney (CoS)	
Feedback received from the review of WL Contractor's stage submissions to CoS and captured in Waterloo Contractor's design packages. Feedback received from CoS Traffic Committee and comments captured in Waterloo Contractor's design packages. Comments closed with updated design documentation.	• Precinct design including road and street calming measure design • Flood modelling design and report • Rain garden design • Paving design • Easement requirements • Plant species selection • Bike rack, bin and shelter locations
AusGrid	
Feedback received from the review of WL Contractor's stage submissions to AusGrid and captured in Waterloo Contractor's design packages. Comments closed with updated design documentation.	• Design items raised with AusGrid related to relocation of utilities such as HV and LV along Cope Street • Discussed relocation of services during construction activities and final location of utilities
Sydney Water	
Feedback received from the review of WL Contractor's stage submissions to Sydney Water and captured in Waterloo contractor's design packages. Comments closed with updated design documentation.	• Coordination of water and sewerage design with Sydney Water being undertaken by WSP Water Services Coordinator
Jemena	
Feedback received from the review of WL Contractor's stage submissions to Jemena and captured in Waterloo Contractor's design packages. Comments closed with updated design documentation.	• Discussed relocation of gas services on Cope Street • Coordination of final gas service location

TfNSW (Bus Authority)	
Feedback received from the review of WL contractor's stage submissions to Sydney Buses and captured in Waterloo contractor's design packages. Comments closed with updated design documentation.	• Relocation of bus stops temporary and final arrangements • Coordination of final road widths around precinct roads • Coordination of turning circle requirements around precinct roads
NSW Fire, Police and Ambulance	
Feedback received from the review of WL contractor's FLS report and design drawings and captured in Waterloo contractor's design packages. Comments closed with updated design documentation.	• Review Fire Engineering Brief • Review and approve Fire, Life and Safety strategy for the project
Roads and Maritime Services (RMS is now part of Transport for NSW)	
Feedback received from the review of WL contractor's stage submissions to RMS and captured in Waterloo contractor's design packages. Comments closed with updated design documentation.	• Finalise traffic signal design for Raglan and Cope streets • Approval of Construction Traffic Management Plan • Review and approval of Waterloo Station precinct road design
Waterloo Congregational Church	
Given their proximity to the site, the church custodian is a key stakeholder. Discussions with the church focused upon: • ensuring access for vehicles for weddings and funerals • enabling continued operations throughout construction • security given no fences are proposed • managing changes in levels around the church.	• Discussions with the church are ongoing. The precinct plan allows vehicle access for church purposes via Church Square. • Planter boxes will be used to negotiate changing levels and provide curtilage around the church building. • In line with the new precinct design, of additional open laneways around the church, the removal of the boundary fence makes it safer by opening up the space, improving sight lines and prevents entrapment. • Security in the form of improved passive surveillance via the high-rise apartments, retail to the east and plaza, improved lighting in the laneways and the fact that a larger population will be living in the precinct, resulting in greater numbers travelling through the space to access the station, will all help address security concerns. • John Holland will continue to liaise with the church throughout the station construction to enable any ongoing church issues to be understood and addressed.
Land and Housing Corporation (LAHC)	
The joint venture has had regular discussions with the Waterloo housing estate development managers and other LAHC staff and these will continue in relation to both the station and over-station developments. During consultation the following was noted: • Significant reduction in basement carparking • Sought clarification of height of the commercial towers	• Basement parking, building heights, Cope Street plaza and social housing will be addressed in the over-station development applications. • DA consultation later this year will enable LAHC to provide further feedback on the detailed designs for the over-station development and wider precinct.

• Purpose of the pre-DA consultation and what would it achieve • Interest in the plaza facing the housing estate • Delivery date of the social housing.	
Department of Communities and Justice	
The joint venture has had regular discussions with department staff about the Waterloo housing estate residents and these will continue in relation to both the station and over-station developments. During consultation the following was noted: • Disability access to the station • Interest in social housing finishes and the external elements • Concerns about the impact to McEvoy Street and surrounding areas from the development of the site • Noted interest in over-station building design and future community facilities.	• Design of the station public areas complies with all requirements for disability access. • As an integrated station development, public transport will be the dominant and preferred mode of travel to/from the station precinct. • Ample bike parking facilities will also help to encourage cycling as a mode of travel to the station precinct. This will help reduce vehicular traffic on local roads, including McEvoy Street. • Social housing finishes and external elements, over-station building design and future community facilities will be addressed by the over-station development applications.
Ethnic Communities Council	
The Ethnic Communities Council (ECC) building in Cope Street is important to Australia's history, as the council played a key role in the birth of multiculturalism, as a tenet of civic life within Australia, and SBS. This contribution to multiculturalism should be reflected and celebrated within the precinct. **Station precinct:** • Does on-street parking on Cope Street south of Wellington Street change? The ECC has functions and workshops which can attract up to 60 people. If parking is removed this will create an issue for the organisation. • Provide enough bike parking and cycleway as on-street parking is limited? • Include CCTV within the public domain and along surrounding streets? • Will there be good air quality in the underground station? • Ensure the southern end of the site will be as activated as the northern end. • What noise can we expect at the southern end of the site from station plant equipment? • What happens to the roundabout at the intersection of Cope and Wellington streets, as it's a tight turn for buses and larger vehicles?	• As an integrated station development, public transport is the dominant and preferred modes to service the station precinct and local area. • On-street parking regulation and enforcement is the responsibility of the City of Sydney. • Bike parking is provided throughout the precinct with 80 bike parking spaces on surrounding footpaths and 320 undercover and secure bike spaces within the station. • CCTV will be installed within the station and public areas across the precinct. • The station will have compliant levels of ventilation to ensure customer comfort and safety. CFD modelling has been undertaken to model airflow throughout the station in multiple scenarios to ensure there will be sufficient airflow and velocities. • Station plant and equipment located within the station building at the southern end of the site will operate within environmental limits for noise and vibration. Station building at the southern end of the site incorporates retail spaces with residential properties near and above the station building to activate this area. • The roundabout at the intersection of Cope and Wellington streets will be removed to incorporate new cycleway and traffic calming devices.

Waterloo Metro Quarter: • Can you include office space within the station building at the southern end of the site? • Is there allocation to public housing? • Public domain is good. There are currently limited areas to relax. • There is limited retail opportunity along Regent Street due to the lack of people spending money during the day. Commercial offices at the Metro Quarter will generate trade. • The commercial offices will attract visitors or customers. • Lack of onsite parking will detract the elderly and people with disabilities, as there is limited on-street parking.	• The Precinct Public Art Strategy provides for a series of significant works to be commissioned throughout the precinct. The strategy will respond to the links First Nations' people have and continue to have with the Waterloo area, while also exploring the diversity of people who have come to Waterloo from other countries and the area's multicultural history. • The station building at the southern end of the site will be dedicated to housing plant and services needed to operate the metro station. • The over-station development application will cover the allocation of office space and social housing in the new buildings. • Noted comments about activation due to retail and commercial uses planned for the precinct. • The metro station will have lifts and a ramp from Cope Street plaza to ensure the station is accessible to older people and people with disabilities. • On-street parking is the responsibility of the City of Sydney Council. • Disability parking will only be provided on site for residents in the new residential units. This will be covered in the over-station development application.
South Sydney Business Chamber	
• Strength and uniqueness of the local community and that from a building and activation perspective it required a unique and local response. • Liked the diversity of architecture across the station precinct and over-station development. • Believes Metro service will be a benefit to the area. • Important for incoming businesses to link in with local organisations to help them provide mentoring, training and job opportunities for local people. • Supported the change to expand commercial uses within the precinct to activate the place during the day and provide local jobs. • Appreciated Mirvac's approach at Eveleigh where they had formed strong links with the local community. Suggested that once planning is completed, a joint Eveleigh Metro Quarter engagement program could reduce duplication and over consultation for the local community. • Supported minimising car parking.	Noted.
Customer Experience Sydney Metro	
Consultation about customer centric design undertaken during the design stage included: • 15 customer testing sessions held between 15 July and 22 July • three participants with reduced mobility • two participants with culturally and linguistically diverse background	Outcomes and recommendations include: • provide suspended station identification signage in the Cope Street entrance • use the rear of the sign to provide onward journey/exiting information for customers • provide greater colour contrast on the toilet supergraphics/end wall to help customers find the toilets

• eight local participants who currently live in Waterloo, Redfern, Surry Hills or Alexandria • both remote testing sessions and in-person testing sessions. The sessions were facilitated by Maynard and observed by members of the architectural design team, as well as representatives from Sydney Metro and TfNSW. Recruitment of all participants was undertaken by Farron Research Testing of the four key themes included: • accessibility • essential information • safety and security • comfort.	• relocate toilet directional signage to case mounted, mid-concourse location • relocate unpaid Help Point at balustrade to avoid customer confusion with the ticket machine • provide art, environmental graphics, patterns and/or lighting on the escalator to break up the journey • relocate passenger information displays (PIDs) closer to the lift to help people identify the correct platform and destination information.

Community feedback

Feedback received	How addressed in the plan
Access to station precinct	
There were markedly differing views on the distribution of access points to the station. Some feedback noted there needs to be an access point to the station at the Wellington Street end of the site to support fair and equal distribution of pedestrian access for residents who live south or west of the station.	• Access to the station concourse was outlined within the CSSI approval. • A second access from Wellington Street cannot be provided as plant and services need to be located at this end of the station. • Direct access to the station is only about 70 metres from Wellington Street, via an entrance on the northern side of the plaza.
Participants noted the station precinct could not be considered in isolation and encouraged a strategic approach to planning for pedestrian movement throughout the area around the station, including the need to: • see detailed modelling for both vehicular and pedestrian traffic • look at cumulative impacts of the development upon pedestrian and vehicular traffic flows.	• Cumulative impacts for the station precinct were assessed in the CSSI and Concept Plan stage. Initial pedestrian modelling shows widened footpaths and improved pedestrian crossings to accommodate the increase in pedestrian flows. • Additional traffic and pedestrian modelling will be prepared for the Waterloo Metro Quarter. This will be available as part of the development application public exhibition. • John Holland is working with Transport for NSW and the City of Sydney on traffic and pedestrian infrastructure improvements and operational designs to support the station precinct and surrounding area.
Need good lighting for walkways and along Cope Street. Introduce lighting that won't pollute the sky at night.	• A lighting expert has developed a lighting strategy to ensure compliant levels and types of lights are provided throughout the precinct to minimise light pollution and ensure adequate brightness and coverage.

Feedback received	How addressed in the plan
Facilitate pedestrian flows across Botany Road for commuters travelling to and from South Eveleigh. Look at opportunities to facilitate connections to the light rail network.	• John Holland is working with Transport for NSW and the City of Sydney on traffic and pedestrian infrastructure improvements • A two-minute direct trip on the metro network from Waterloo to Central will enable passengers to access the light rail to destinations such as Moore Park, the Randwick Health Precinct and the University of NSW.
Access to the station concourse	
Participants noted the importance of ensuring suitable access to the station including: • for people with a disability • adequate lifting to cope with peak demand • route to the platform is direct and as easy as possible • emergency access is fully addressed.	• The station and surrounding precinct are Disability Discrimination Act (DDA) compliant. • The station precinct will have wayfinding and signage, including hearing induction loops, to assist people with a disability to access the station area. A ramp within the Cope Street plaza will provide access to the station from the southern entrance for mobility impaired pedestrians. • Two stages of escalators and lifting provides access to the station concourse, and then to the platform area. Direct access from the public area to the platform is not possible due to security and ticketing requirements. • Customer and community safety are of the highest priority. Sydney Metro's infrastructure and operational requirements for safety and security, including emergency evacuation, have been incorporated within the design.
Station precinct design and operation	
Community priorities for the station precinct design included: • bringing natural light into the station • incorporating lessons learned from the COVID-19 pandemic into the station design and operations, to allow for social distancing and maintaining a healthy public environment • bringing greenery and nature into the station area through vertical gardens and landscaping • having CCTV within the station and throughout the precinct • having security and place management that is present and effective, but not too intrusive.	• Additional natural light has been achieved by increasing the void above the escalators. The introduction of skylights within the plaza will bring additional light into the underground areas of the station. • The station precinct and concourse have been designed to incorporate space. The station concourse design includes a high ceiling and natural lighting, with widened footpaths to facilitate pedestrian traffic. • There will be extensive landscaping across the precinct. Advanced trees will be planted to enhance the appearance of the precinct and provide shade. The planting scheme will feature endemic plants. • Vertical green walls will not be included due to issues related to building maintenance, plant upkeep and vermin management. • CCTV will be installed within the station and public areas across the precinct. • The precinct will be managed via the building strata management, rather than a centre or place management.

Feedback received	How addressed in the plan
Generally, the precinct was well received with comments encouraging: • use of natural materials and colour and the need to avoid a stark industrial feel • use similar colour scheme as used on Sydney Metro North West where each station can be identified by colour • public art to tell the stories of place • creating visual interest – with encouragement to be as bold as Madrid airport • develop a unique design for Waterloo • use of low maintenance and resilient materials.	• Overall building finishes will include natural materials that are resilient, durable and suitable for public infrastructure and high pedestrian traffic. • The public art strategy for the station is based on a cultural landscapes approach that recognises First Peoples first. It will then build layers of meaning that reflect the varied stories of communities and people that have made Waterloo their home. Refer to Section 5.2 for more detail. • Final material and finishes are still under review. Community preferences for natural materials and colour have been noted.
More information was sought about emergency management by a few participants who expressed concerns that the 'crowded nature' of the site and surrounding streets could make it difficult for services to access the station.	• No kerbside parking, only kiss-and-ride and bus zones, therefore access for emergency services not impeded.
Precinct transport, traffic and pedestrian movement	
Congestion of surrounding streets, particularly Botany Road, was raised as a key issue to be addressed. Suggestions for further resolution included: • positioning the northbound bus stop and layby on Botany Road to accommodate the increased number of buses queuing along Botany Road between Raglan and Wellington streets • placing alternate crossings mid-block or at Wellington Street to reduce the number of pedestrians using the Raglan Street crossing • footpath improvements on the western side of Botany Road to accommodate more pedestrian traffic • footpaths wide enough to accommodate pedestrians and queuing bus passengers.	• New bus stops on Raglan Street and Botany Road are being considered by Transport for NSW to support the precinct. Northbound bus stops on Botany Road are outside the station precinct area. • No mid-block crossings on Botany Road or Wellington Street are being considered as part of this precinct plan. • Enhanced pedestrian crossings are being created at the intersections of Cope and Wellington streets and Cope and Raglan streets as part of the precinct plan. A mid-block crossing is provided on Cope Street to access the plaza. • There may also be consideration for a future mid-block crossing on Botany Road in the over-station development application. • Widened footpaths around the perimeter of the precinct will enable waiting bus passengers to safely queue while also allowing pedestrians to pass.
Provision of infrastructure to support cycling, such as on-street bike racks and the bike station, was encouraged.	• Bike parking is provided throughout the precinct. There will be 80 bike parking spaces on surrounding footpaths and 320 undercover and secure bike spaces within the station.

Feedback received	How addressed in the plan
Some reservations were expressed about the bike path on Wellington Street if it would result in the loss of on-street parking and potentially impact deliveries to Wellington Street businesses.	• The precinct links directly into the cycle network via the bike path on Wellington Street. • The enhanced bike path on Wellington Street is a City of Sydney/TfNSW requirement. Some loss of on-street parking is expected as part of the enhanced bike path.
More consideration should be given to protection and shelter for bus patrons.	• The precinct plan includes a shelter at the new bus stop. • The station design includes awnings along Wellington, Cope and Raglan streets to provide protection from the weather.
Car parking	
Some people commented that more parking should be provided within the precinct given the existing pressures on parking in surrounding streets, while others felt that with the improvements to public transport, parking within the new development should be limited.	• Public transport will be the dominant and preferred mode of travel to/from the station precinct. • The Cope Street kiss-and-ride area is an essential part of enabling access to the station and included in the CSSI application.
Concerns were expressed about the loss of car parking along Cope and Wellington streets to facilitate changes such as kiss-and-ride and bus stops. When the precinct is operational, measures will need to be implemented and enforced to ensure no commuter, worker and resident parking in surrounding streets.	• A kiss-and-ride and bus stop will be provided in Cope Street to encourage people to use public transport to access the metro station while discouraging use of private vehicles and parking in nearby streets. • The station will not have onsite parking. The over-station development application will address parking for residents and commercial tenants. • On-street parking regulation and enforcement is the responsibility of the City of Sydney.
Precinct and public domain	
Provision of open space was generally well received, although there were some concerns about the overall adequacy of the amount of open space in the public plaza.	• Provision of open space was addressed in the CSSI and Concept Plan approvals. • The plaza is consistent with the CSSI and Concept Plan approval.
Consider station roof tops and podium areas be landscaped to extend the amount of planting and available open space across the precinct. Consider green walls on buildings to provide room for nature and soften the look and feel of the precinct.	• There will be extensive landscaping across the precinct. Advanced trees will be planted to enhance the appearance of the precinct and provide shade. The planting scheme will feature endemic plants. • Vertical green walls or rooftop landscaping will not be included within the station precinct due to issues related to building maintenance, plant upkeep and vermin management.
Keen to see more detail on the extent of sunlight to the plaza at different times of the year due to any changes to the over-station development.	• Comment noted. This will be addressed in the over-station development application.

Feedback received	How addressed in the plan
Preferences were expressed around: • amount of hard surfaces • making public spaces safe, welcoming and inclusive • providing plenty of areas to sit, particularly closer to the station • sensitive design and operational measures to manage anti-social behaviour • infrastructure to support events and activation of the plaza	• Durable hard surfaces are required to withstand the significant foot traffic and use the plaza will receive. Visual interest will be provided by an inground artwork that will extend throughout the plaza area. • Additional seating has been incorporated into planter boxes around the entrances to the station and within the plaza. • The public domain design is based on Crime Prevention Through Environmental Design principles. • Positioning of retail, building entrances and balconies will provide passive surveillance of the public domain leading into the station, to supplement use of CCTV. • Solar access to plaza area is further detailed in the over station development application.

• Landscaping and planting:
  ○ planting advanced trees for 'instant' shade and greenery
  ○ not using deciduous trees
  ○ supplementing shade trees with awnings and shade structures
  ○ considering the final plaza design in the context of the park across the road as envisaged in the Waterloo Housing Estate master plan
  ○ using endemic trees and plants as part of the Indigenous story of the area.
	• There will be extensive landscaping across the precinct. Advanced trees will be planted to enhance the appearance of the precinct and provide shade.
	• Consideration will be given to not having deciduous trees when deciding which species to plant near the station.
	• The station design includes awnings along Wellington, Cope and Raglan streets to provide shade.
	• The plaza and the park planned for across the road will complement each other and provide open space for the community to enjoy.
	• The planting scheme will feature endemic plants.

• Street furniture and amenity:
  ○ Provide garbage bins within the precinct and surrounding streets to prevent littering.
  ○ Provide awnings around the perimeter of the precinct and particularly near the bus stop on Botany Road.
  ○ Misted cooling in the walk space between the buildings for 40-degree days (like in Saudi Arabia, where they jet a fine mist to drop ambient temperature).
  ○ Remove seating on the Wellington Street frontage as it is a small street, will be in shade for a large part of the day, and has a noise impact due to the interface with existing residential dwellings.
  ○ Cope Street and the plaza are better locations for seating and people to congregate as they are away from established residential areas.
	• Rubbish bins will be provided within the station concourse area. The City of Sydney manages rubbish bins on surrounding streets.
	• The bus stop on Botany Road will be considered in the over station development application.
	• The station will be air conditioned for the comfort of commuters. Misted cooling is not used outside any other metro station and is unlikely due to the relatively low number of days over 40 degrees in Sydney.
	• Seating on Wellington Street near Cope Street has two purposes. It provides amenity to the precinct and is also a security measure to manage hostile vehicles.
	• Noted.

Station precinct operation and governance	
It was noted that the public areas of the site including the open space and footpaths need to be designed and operated to ensure safety and amenity for all. This was particularly important for areas that interface with existing residential dwellings.	• The station public areas have been designed as both a gathering place and an access way to the station. Design of the station public areas is compliant with all requirements for disability access.

Ensure a welcoming and safe environment where drinking of alcohol (outside of licensed areas) is prohibited across the precinct.	• The plaza area is publicly accessible private open space and will be managed by Mirvac. This will be covered in the over-station development application.
	• Mirvac's intention is to designate the plaza itself an alcohol-free area with exemptions for:
	  ○ licensed restaurants and small bars surrounding the plaza
	  ○ events such as food festivals, etc.
	• Ongoing events at the precinct will be coordinated through the Mirvac strata management.

What measures have been incorporated to attenuate noise from servicing and plant for the station to maintain the amenity of the surrounding area?	• Station plant and equipment at the southern end of the site will operate within environmental limits for noise and vibration. • Station design has considered retail space and residential properties near and above the station plant building.
Station precinct operations, management and security personnel will need training to deal with challenging behaviour, in a sensitive and responsive way. Security and station managers will also have to build relationships with local health and community services providers to assist in difficult situations.	• Security within the station and at the entrances will be the responsibility of Sydney Metro. • CCTV throughout the precinct and unobtrusive on-site security will operate throughout the over station precinct.

Clear precinct governance about who is responsible for maintaining the public domain and plaza area will be needed, as there will be multiple owners and different parts of the precinct will fall under the responsibility of Sydney Metro, Mirvac, City of Sydney, LAHC and a community housing provider.	• Responsibility for managing areas within and around the station precinct includes:
	  ○ Station area – Sydney Metro
	  ○ Footpaths and local streets – City of Sydney
	• Mirvac will be responsible for managing the wider precinct, including the plaza, laneways and interfaces with buildings. This will be covered in the over-station development application.
	• Retail uses around the edges of the plaza and at key points along street frontages will provide passive surveillance of the station precinct across a large part of the day.

Precinct redevelopment should also secure economic opportunities for Aboriginal people and social housing residents who live in the Waterloo area. This should not just cover participation in construction but extend to working with employers locating to the precinct.	• The increase in retail and commercial jobs within the precinct will provide more opportunities for Aboriginal people and social housing residents to find work close to where they live.

Public art	
The commitment to public art was seen as adding a distinctive dimension to the precinct. Suggestions included: • a sculpture that acknowledges First Nations' peoples' links to the land • works that speak to the contemporary Aboriginal culture of the area • street art in laneways • bold large-scale works like in Madrid Airport • bringing colour into the area, particularly the station • works that reference the rich and diverse multicultural nature of the area • Acknowledging Aboriginal owners of the land with art, such as through the creation story in the stone walkway (would need to consult with Traditional Owners).	• The Precinct Public Art Strategy provides for a series of significant works to be commissioned throughout the precinct. These works will be in a range of media and at various scales. The strategy has been developed by Indigenous curator Tess Allas and Sebastian Goldspink and informed by the work of specialist placemaking consultancy Murawin. • A key focus of the strategy is responding to the links First Nations' people have and continue to have with Country, as well as the contemporary stories of Waterloo. • One theme that will be explored will be the diversity of people who have come to Waterloo from other countries and the area's multicultural history. • One of the selection criteria for public artists involves their capacity and willingness to engage with the community in developing their works. This will create further connections between the community and the precinct and also ensure the work reflects the character and stories of this very diverse community. • More information on public art can be found in Section 5.2 of the SDPP. • Sydney Metro is also commissioning a large-scale public artwork to be located within the station.
Station precinct activation	
Support for reducing residential and creating more commercial space to make the place busy during the day and increase use of nearby streets.	• Noted. This will be considered in the over-station development application.

• Programming and events in the public domain precinct, seen as key to activating the precinct.
• Suggestions included:
  ○ farmers markets
  ○ local artisan markets
  ○ workshops to make and repair things
  ○ ongoing arts events and productions, not just large fixed public art works.
• Consider small cinema complex or rooftop open-air cinema for summer.
• Public games e.g. chess, chequers or ping pong tables to bring residents living in the precinct into the common area at night.
	• Mirvac will maintain and operate the public domain. Activation of the wider precinct will be considered in the over-station development application.
	• The station precinct has been designed as a welcoming and inclusive space with convenient access to and from the metro station.
	• There is no plan to incorporate events or entertainment within the station precinct area. These may be considered in the over-station development application.
	• A small cinema complex or rooftop open-air cinema may be considered in the over-station development application.
	• Public games may be considered in the over-station development application. The station environment is not suitable for public games, due to the throughflow of pedestrians.

Include public charging points and WIFI for phones in common seating areas.	• Phone charging points and WIFI for phones in the station precinct or concourse area will not be considered due to cybersecurity concerns. • Mirvac precinct management may consider these amenities in the community facilities such as the Maker Space, as part of the over-station development application.
Aboriginal culture	
As Waterloo will have the only metro station surrounded by a large Aboriginal community, it should be distinctive and highlight the contemporary Aboriginal culture of Redfern and Waterloo. Importance of telling local stories, truth telling, healing stories, and being true to the local spirit of the place. The Gadigal language and local heroes of the Indigenous community should be celebrated throughout the precinct. There was support for Murawin's cultural landscapes approach of telling the First People's stories first and using this foundation to then tell the stories of colonial and multicultural immigration to the area. People asked what opportunities there were to engage Aboriginal architects and designers. General comment was that future projects should engage the Aboriginal community earlier.	• Feedback from Aboriginal stakeholders has been very instructive for the placemaking, public art and design teams. It has strongly informed the Place Story document, which recognises and celebrates Aboriginal connections to Waterloo and underpins the public art strategy. • The Precinct Public Art Strategy provides for a series of significant works to be commissioned throughout the precinct. These works will be in a range of media and at various scales. The strategy has been developed by Indigenous curator Tess Allas and Sebastian Goldspink and informed by the work of specialist placemaking consultancy Murawin. • Noted. Aboriginal consultants have been engaged to get input from the Aboriginal community and stakeholders on art and curation which reflects the First Nations' peoples. • Noted that early involvement of the Aboriginal community is seen as fundamental to the development.
Feedback from the Aboriginal community was more focused on community outcomes rather than the buildings. Opportunities for Aboriginal participation should not just be limited to public art but include Aboriginal enterprises, procurement and employment. Important that a proportion of social and affordable housing is targeted to Aboriginal people who are being forced out of the area by rising rents. Happy that plaza and surrounding areas are intended to be welcoming to Aboriginal people. Plenty of seating should be provided in and around the station and plaza for people to sit and gather. Asked what would be done to work with police so that when people gather they won't be targeted by police?	• John Holland will look at opportunities to support Aboriginal employment and enterprises during construction of the station and the precinct. • Noted. Social and affordable housing is covered under the over-station development application. These housing options will be managed by community and government agencies. • Noted. Placemaking in the plaza and surrounding areas will be considered under the over-station development application. Aboriginal consultancy Murawin will convey feedback to the developer about seating and concerns about policing. • The area on Raglan Street and the northern section of Cope Street now include additional seating to provide a comfortable environment for small casual gatherings of people.

Asked if there would be room in the development for a place where Elders can meet. Sydney Metro needs to: • run programs to recruit, train and employ Aboriginal staff • require consultant teams working for them to provide employment for Aboriginal professionals • consult Aboriginal people in the early stages of the project rather than when designs are fully developed. Asked if an Indigenous representative is on the Design Review Panel? Elders asked why developer representatives were not at the consultation. People asked if there would be affordable shops in the precinct?	• Noted. This will be considered in the over-station development applications. • Feedback about Indigenous consultation and employment passed onto Sydney Metro. • Noted. • Noted. • Noted. • Aboriginal consultancy Murawin has been engaged to carry out consultation with the Aboriginal community to provide feedback on the station design and precinct plan. • Developer representatives will be available for consultation with the Aboriginal community during the exhibition period for the over-station development. • The retail mix will be addressed in the over-station development applications, and consideration will be given to affordable retail options.
Cultural heritage	
Community stakeholders noted the significance of Redfern and Waterloo to many new Australians who settled in the area. Some people noted Waterloo's strong sense of community was born out of adversity and a commitment to social justice and inclusion, as evidenced by its proud working class and social housing history. Asked if heritage surveys had been done on the Waterloo site.	• This information has been passed onto the public art and design teams and is reflected as one of the key themes within the public art strategy. • Noted. • Heritage investigations were undertaken at the Waterloo site before excavation of the station started. Artefacts uncovered at the site showed evidence of early European occupation of the area. Sydney Metro had also worked with the Local Aboriginal Land Council.
Amenity	

Concerns about amenity impacts arising from the station development included:
• shade measures to reduce the heat island effect
• measures to attenuate noise from station plant and servicing to maintain amenity of the surrounding area
• loss of sunlight to Wellington Street and the Alexandria heritage area.
	• Extensive planting throughout the precinct will provide canopy cover to shade the area and help lessen the heat load on ground surfaces.
	• Plant and equipment within the southern station building will comply with all relevant noise management requirements.
	• Noise is reduced through:
	  ○ choosing plant that has high environmental performance specifications
	  ○ building design and material choices for the shell enclosing the plant areas.
	• The station buildings are low rise so they will cast only minimal shadowing. The impact of other buildings in the Waterloo Metro Quarter will be considered within the over-station development application.

Construction management	
A number of issues that emerged from community members near the site were: • while there have been amenity impacts from works to date these have generally been well managed and complaints have been addressed • contractor will need to continue to work with the community and keep them informed • construction vehicles will cause congestion and amenity impacts in surrounding streets • noise and dust will need to be managed • night works should be minimised and not go beyond 11.00pm.	• A series of management plans will be prepared for the Waterloo Station precinct work. The Construction Environmental Management Plan outlines the strategy to minimise construction impacts on the local community. The community communications plan outlines the strategy to provide information and updates to the community, and the processes for managing enquiries and complaints. • Community notifications and newsletters about upcoming activities will be distributed to the local community to inform them of the type of work, hours of activities and likely impacts. Printed material will promote the project's contact details, including the 24/7 enquiry and complaints line. • The project site induction will encourage workers to use public transport during construction to minimise parking in the local area.

Appendix C Evidence of review and endorsement by the Design Review Panel

The following document is evidence of the Sydney Metro Design Review Panel's review of the SDPP. It outlines the DRP's recommendations and where and how they have been considered in the SDPP. The advice and actions records demonstrate the endorsement by DRP as required by Project Planning Condition E101 (k).

Waterloo Integrated Station Development
DRP Actions and Advice

ITEM #	GEOGRAPHIC LOCATION	THEME	RAISED ON	DOCUMENT REVIEWED	ACTION / ADVICE	TEAM TO RESPOND	DATE OF RESPONSE	RESPONSE	STATUS
12.07	OSD - North	Materials & finishes	18/02/2021	DRP Presentation 13	[redacted]				Closed
12.08	OSD - Central	Built form	18/02/2021	DRP Presentation 13	[redacted]				Closed
12.09	OSD - Central	Built form	18/02/2021	DRP Presentation 13	[redacted]				Closed
12.10	OSD - Central	Built form	18/02/2021	DRP Presentation 13	[redacted]				Closed
12.11	OSD - Central	Built form	18/02/2021	DRP Presentation 13	[redacted]				Closed
12.12	OSD - South	Built form	18/02/2021	DRP Presentation 13	[redacted]	Design team			Open
13.01	Station	SDPP	24/03/2021	SDPP	**Urban Design Context** The Panel note the OSD components that are considered under separate conditions of approval and not subject of the SDPP review under the CSSI. However, OSD design has been extensively discussed at the DRP sessions and integration with the station design and public domain should be considered. As well as previous advice provided by the Panel, the below items 13.02 to 13.08 have been provided to ensure these items are considered closely in ongoing design and delivery of the precinct.	Design team			Closed
13.02	Station	SDPP	24/03/2021	SDPP	**Urban Design Context** The ground plane detailed design is to ensure the seamless transition of ground plane with retail and building entries.	Design team			Closed
13.03	Station	SDPP	24/03/2021	SDPP	**Sustainable Design and Maintenance** The achievement of sustainability targets requires ongoing monitoring.	Design team			Closed
13.04	Station	SDPP	24/03/2021	SDPP	**Community safety, amenity and privacy, including 'safer by design' principles** The achievement of best practice accessibility through development of cohesive shoreline strategy across the Precinct to ensure maximising of inclusion for the vision imparted.	Design team			Closed
13.05	Station	SDPP	24/03/2021	SDPP	**Community safety, amenity and privacy, including 'safer by design' principles** The impact of overshadowing and wind on the precinct will need ongoing monitoring.	Design team			Closed
13.06	Station	SDPP	24/03/2021	SDPP	**Opportunities for Public Art** Ongoing focus and development of the integration of an artwork strategy with public domain and building materiality.	Design team			Closed
13.07	Station	SDPP	24/03/2021	SDPP	**Proposed landscaping** Project team is to monitor the percentage of Urban Tree canopy both on private and public lands.The Panel recommends that a more telling indicator of heat island mitigation for these integrated developments, would be the preparation of a report which details the total green roof & tree canopy as a proportion of the private development, with a monitoring target.	Design team			Closed
13.08	Station	SDPP	24/03/2021	SDPP	**Visual Impact Assessment** The Panel recommends that a discussion occur with DPIE regarding the Visual Impact Assessments as a requirement of the SDPP submission process. Due to their nature as a qualitative assessment made by the project team, the DRP question their relevance to the assessment of design excellence.	Sydney Metro			Closed
13.09	Station	SDPP	24/03/2021	SDPP	With the above items noted for future development, the Panel endorses the Station Design and Precinct Plan for Waterloo, in accordance with Condition of Approval E101(k) of Planning Approval SSI 7400.	Sydney Metro			Closed

Table C-1: Summary of actions from DRP review of the SDPP and how these have been addressed.

DRP summary of actions from SDPP review				
Item	**Date**	**Action/Advice**	**Response/Reference**	**Status**
13.01	24/03/2021	**Urban Design Context** The Panel note the OSD components that are considered under separate conditions of approval and not subject of the SDPP review under the CSSI. However, OSD design has been extensively discussed at the DRP sessions and integration with the station design and public domain should be considered. As well as previous advice provided by the Panel, the below items 13.02 to 13.08 have been provided to ensure these items are considered closely in ongoing design and delivery of the precinct.	Noted	Closed
13.02	24/03/2021	**Urban Design Context** The ground plane detailed design is to ensure the seamless transition of ground plane with retail and building entries.	Addressed in Section 1.3, Section 4.2 and Section 7.1	Closed
13.03	24/03/2021	**Sustainable Design and Maintenance** The achievement of sustainability targets requires ongoing monitoring.	Noted, refer Section 4.6. The Waterloo ISD Sustainability Management Plan outlines monitoring requirements to achieve CoA E71	Closed
13.04	24/03/2021	**Community safety, amenity and privacy, including 'safer by design' principles** The achievement of best practice accessibility through development of cohesive shoreline strategy across the Precinct to ensure maximising of inclusion for the vision imparted.	Refer Section 4.1 and Section 4.2	Closed
13.05	24/03/2021	**Community safety, amenity and privacy, including 'safer by design' principles** The impact of overshadowing and wind on the precinct will need ongoing monitoring.	Refer Section 4.5	Closed
13.06	24/03/2021	**Opportunity for Public Art** Ongoing focus and development of the integration of an artwork strategy with public domain and building materiality.	Refer Section 5.2	Closed
13.07	24/03/2021	**Proposed landscaping** Project team is to monitor the percentage of Urban Tree canopy both on private and public lands. The Panel recommends that a more telling indicator of heat island mitigation for these integrated developments, would be the	Section 6.2.3 describes the proposed landscaping, however, the preparation of a report detailing the green roof and tree canopy as a proportion of the private development is outside the scope of the	Closed

DRP summary of actions from SDPP review				
Item	**Date**	**Action/Advice**	**Response/Reference**	**Status**
		preparation of a report which details the total green roof & tree canopy as a proportion of the private development, with a monitoring target.	CSSI and should be considered separately.	
13.08	24/03/2021	**Visual Impact Assessment** The Panel recommends that a discussion occur with DPIE regarding the Visual Impact Assessments as a requirement of the SDPP submission process. Due to their nature as a qualitative assessment made by the project team, the DRP question their relevance to the assessment of design excellence.	Noted.	Closed

Appendix D CVs of qualified personnel involved in developing this SDPP

This section contains curriculum vitaes (CVs) for the following people, who were involved in the development of this SDPP.

- Fanos Panayides – Director, John McAslan + Partners Architects
- Kate Luckcraft – Studio Director, Aspect Studios
- Jamie Kemp – Senior Associate, Aspect Studios

Fanos Panayides Director of Major Projects

John McAslan + Partners
2003 – onwards

Nationality
British

Qualifications
Part III, University of Westminster, 2005
BArch, Welsh School of Architecture, 2001 – 2003
BSc (Hons), Welsh School of Architecture 1998 – 2001

Professional Associations
RIBA, ARB

Biography

Fanos Panayides joined JMP in 2003 and has played a leading role in a diverse range of work in the transportation, urban infrastructure, commercial, mixed-use, residential and cultural sectors.

Fanos has extensive experience in the design and delivery of complex masterplan and infrastructure projects at every scale. Of particular significance are the completion of £500m King's Cross Station, which involved the complete refurbishment and extension of the Grade 1 heritage listed station to accommodate new platforms, a new 7,500sqm concourse, with significant new retail offer which remains Network Rail's most successful retail operation across the network. The complex project was delivered through multiple packages and ensured complete operational continuity. In addition the project included significant new public realm works and surrounding developments which has transformed this area of central London.

The new £200m Bond Street Station located in a central London conservation area, also poses similar challenges in terms of a dense city centre location and the associated constraints. Connecting to an existing underground station whilst maintaining operational continuity and the connections from the new station in to the fabric of the city centre through new landscaping and public realm.

Prior to this, Fanos led the practice's work on the $5bn Msheireb urban regeneration scheme in Doha, involving a 35ha masterplan and 16 new commercial, mixed-use, residential and cultural buildings, together with significant public realm works as well as 6 stations for the new Doha Metro Green Line Project.

These projects involved complex multi-stakeholder clients multiple phases, contractors, and multi-disciplinary design teams located across the globe, which needed to be managed, led and coordinated, to a very challenging programme.

Selected Projects

Sydney's Central Station, Australia (2018-onwards)
John McAslan + Partners and Wood Bagot are delivering the Sydney Metro upgrade to Central Station, the renewal of Australia's biggest railway station. The $955 million project will transform Sydney, delivering more trains and faster services for customers across the network. A new stand-alone railway network, Sydney Metro is the solution to clearing the city's public transport bottlenecks and wil deliver a quality of rail service never before seen in Australia.
Role: Project Director

Varanasi Junction, India (2017 – onwards)
John McAslan + Partners and Mott MacDonald are providing concept design for station renewal and to showcase smart, integrated urban development at a high value, commercially viable site in India. A pilot between the Indian Ministry of Urban Development and the Ministry of Railways for station modernisation to 21st Century standards, the surrounding development is intended to unlock the value of former rail land to assist the realisation of much needed improvements to infrastructure.
Role: Project Director

Chicago Union Station, USA (2017 – onwards)
John McAslan + Partners are providing technical support for the initial phase of work which places emphasis on expanding capacity and renovations to this architecturally and historically significant transportation terminal and also acting in a Challenge Team capacity to test the design and find best practice solutions for station improvement, restoration of existing fabric and integration of modern facilities within a heritage structure in the most efficient, safe and comfortable manner possible.
Role: Project Director

Doha Metro Green Line, Doha, Qatar (2014 – onwards)
This project involves the development of 6 New stations constituting the first phase of the east-west Green line, connecting the Msheireb development and Education City. Fanos has been leading the team since the commencement of the project in 2014, the 6 stations are currently on site and due for completion in 2019.
Role: Project Director

Belfast Transport Hub, Belfast, Northern Ireland (2014 – onwards)
John McAslan + Partners, together with ARUP, is developing design proposals for this £150 million integrated bus and rail transport interchange for Belfast which will benefit communities across Ireland. The project doubles the capacity of the existing GVS station which it will replace and offers significant regeneration opportunities for the city delivering a dynamic and

imaginative mixed-use scheme with the development of the 8-acre brownfield site.
Role: Project Director

Crossrail Bond Street, London, UK (2014-onward)
New build station in the heart of London's West End and one of the most famous retail centres in the world. Fanos has overseen the design and development of one of the flagship stations on the Crossrail line. The works invovled design of wider public realm area around new station, including reconfiguration of Hanover Square and Davies Street. The project involved working alongside Grosvenor and Great Portland Estates.
Role: Project Director

Anand Vihar Transport Hub, New Delhi, India (2014 – 2017)
The 53ha Anand Vihar Transport Hub will be a major new multi-modal interchange hub for New Delhi, one of a number of passenger terminals targeted for redevelopment. Key to the approach is the aspiration to deliver high quality urban infrastructure and an architecturally distinctive gateway to the city. Fanos is leading the development of a scheme which proposes the creation of a layered interchange building which will be oversailed by a large, architecturally dramatic long span roof.
Role: Project Director / Chief Architect

Dhaka Metro Line 6, Bangladesh (2013 – onwards)
This is Dhaka's inaugural US$3billion metro project along a 20km north-south route comprising 16 stations to be delivered in 3 phases. Fanos and his team are supporting an international consortium led by Nikei Koei of Japan and Mott MacDonald (India). Current work phases include Basic Design, Tender Design and Detailed Design
Role: Project Director

LUL Future Stations Programme, London, UK (2012 – 2015)
Fanos led the feasibility studies of priority station sites for TfL and LUL including Brent Cross and South Kensington. The focus has been capacity enhancement, access improvement and optimisation of developmental opportunities.
Role: Project Director

Northern Line Extensions, London, UK (2012 – 2015)
At the heart of the £1billion infrastructure investment project to regenerate Nine Elms on the South Bank, creating 25,000 jobs and 16,000 new homes. Developing the above-ground elements of two new stations and their urban context, Fanos led the project development up to submission of planning in summer 2015.
Role: Project Director

Chhatrapati Shivaji Terminus, Mumbai, India (2012 - onwards)
The Chhatrapati Shivaji Terminus is a UNESCO World Heritage site. Formerly the Victoria Terminus, this grand Victorian station dating from 1887 is a mixture of the Indian Mughal and Victorian Italianate Gothic. The station is also the busiest railway terminus in India, handling some 650,000 passengers daily. Fanos supported the completion of a masterplan study focusing on potential development proposals adjoining the station, proceeds from which will be used to fund the necessary upgrade works to the station.
Role: Project Director

Masterplan, Msheireb Downtown Doha (2009 – onwards)
Fanos has led JMP's work on the Msheireb: Downtown Doha project, which is a $5bn major urban regeneration project in Doha, Qatar. This involved masterplanning a 35Ha site in the centre of Doha's old town, totalling over 100 buildings of diverse uses, significant pubic realm, and integration with new transportation hubs for the new Metro and surface tram networks. The practice is also responsible for the design of 15 projects within the development including mixed-use, commercial, hotel, retail, education and cultural projects which Fanos has lead.
Role: Project Director

King's Cross Station Redevelopment (2006 – 2009)
The £500m King's Cross Station, which involved the complete refurbishment and extension of the Grade 1 heritage listed station to accommodate new platforms, a new 7,500sqm concourse, with significant new retail offer which remains Network Rail's most successful retail operation across the network. The complex project was delivered through multiple packages

Kate Luckraft

Studio Director, Sydney

Registered Landscape Architect, AILA

Bachelor of Landscape Architecture (Hons), RMIT

NSW State Design Review Panel Member 2019

As Studio Director, Kate has been involved in many of the Sydney Studios key transport infrastructure projects - providing expertise in strategic design, design development with particular expertise in both resolving and communicating complex issuesp

Over the last six years Kate has led teams working on significant urban renewal and infrastructure projects including the Inner West Light Rail Preliminary Concept Report; Wynyard Walk; North West Rail Link; Sydney CBD and South East Light Rail and Sydney Metro USDT station precincts. Through these projects, Kate has developed expertise in designing public domains integrated with public transport infrastructure.

Kate is currently leading ASPECT's Sydney CBD and South East Light Rail Team, involved in negotiations with stakeholders to achieve a seamless integration of Light Rail Infrastructure within high quality public domain. This role involves coordinating with all consultants to prepare integrated design options for presentation to key stakeholders, design reference groups and TfNSW.

With 20 years experience as a Landscape Architect, Kate has delivered numerous high quality public domain projects across Sydney and brings extensive experience in design, communication and delivery of complex projects.

Experience

INFRASTRUCTURE

Parramatta Light Rail Stage 2 Definition Design, 2019 - ongoing

Parramatta Light Rail Stage 2 Scoping Design, 2018

Sydney CBD and South East Light Rail, 2014 - ongoing

Newcastle Light Rail Public Domain Options Study, 2014

North West Rail Link Bid, 2013

Wynyard Walk, 2012 - 2017

Inner West Light Rail, Preliminary Concept Report, 2011

Parramatta Rail Link surface works and urban design guidelines, 2002

PUBLIC DOMAIN

Quay Quarter Precinct, Sydney CBD, 2011 - Ongoing

Newcastle City Centre (GPT sites), 2013 - 2015

Platypus Urban Park, 2012 - 2014

Bell's Foreshore Balmain, 2010 - 2013

Darling Quarter, 2006 - 2011

Sydney Streets Design Code, 2009 - 2010

Foley Park, Glebe, 2006 - 2009

Eventful Path installation, Sydney Olympic Park, 2004

INSTITUTIONAL

Arthur Phillip High School and Parramatta Primary School, 2015 - ongoing

Australian National University - Kambri, 2016 - 2019

UNSW Roundhouse and SEB Public Domain, 2016 - Ongoing

UTS Alumni Green , 2012 - 2015

UNSW Kensington Colleges, 2010 - 2014

Campbelltown Hospital, 2011

Cranbrook Junior School, 2007 - 2012

NSW Police Headquarters, 2001 - 2003

RESIDENTIAL / COMMERCIAL

Quay Quarter, 2015 - ongoing

Newcastle City Centre Commercial Sites, 2013 - 2014

MLC Centre, 2013 - 2015

Harold Park, 2011 - 2015

Biarritz Apartments, 62 Wunulla Road, Point Piper, 2008 - 2010

Springfield Avenue, Potts Point, 2004 - 2010

Daisho Park Hyatt, 2009

Kiama House, 2006

PLAY SPACES

Cook and Phillip Park - 2018 - ongoing

Glebe Park Nature Play, Canberra, 2018 - 2019

The Ian Potter Children's WILD PLAY Garden, 2014 - 2017

St James Park, Glebe, 2012 - 2015

Roseville Rotary Playground, 2014

Yarrabillba Playground, 2011 - 2014

Parramatta Foreshore Playground, 2011 - 2013

Darling Quarter, 2006 – 2011

Foley Park, Glebe, 2006 - 2009

ASPECT Studios

Jamie Kemp

Senior Associate, Sydney

Registered Landscape Architect, AILA

Master of Arts in Urban Design with Merit, University of Westminster, London

Bachelor of Landscape Architecture, Manchester Metropolitan University

Bachelor of Arts in Landscape Design (Hons), Manchester Metropolitan University

Since joining ASPECT Studios in January 2015 he has been a key member of the design team for delivering Sydney CBD and South East Light Rail. Providing project management, urban and landscape design, coordination with the engineering team and an overall design review role.

Jamie has over 20 years experience in designing and project managing urban design, master planning, infrastructure and landscape architectural projects in Australia, UK, Middle East, China and Pacific region. These include award winning transport infrastructure, town centre regeneration projects, urban expansions, design guidelines and public open space improvements.

Jamie's design experience includes, concept urban design studies and reports, visual assessments, master planning transit orientated developments and town centre regeneration projects focussed on transport interchanges. He has also worked on urban design guidelines and detailed design and construction documentation of major transport infrastructure projects including light rail stops and interchanges, bridges, noise walls, retaining walls and public domain improvements. He has proven management and leadership skills managing the urban landscape team; for business development, tender production and quality control for urban landscape, infrastructure design and master planning projects.

Experience

INFRASTRUCTURE DESIGN

Parramatta Light Rail Stage 2 - scoping design and definition design, 2018

Sydney CBD and South East Light Rail - detailed design, documentation, construction, 2014 - ongoing

Sydney Light Rail Inner West Extension- tender to completion

Hunter Expressway: F3 to Banxton Design Alliance D&C - detailed design to completion

Great Western Highway Upgrade: Bullaburra East - Design Alliance - detailed design and tender documentation

Great Western Highway Upgrade: Lawson 1A - design alliance for detailed design and tender documentation

Pacific Highway: Sapphire to Woolgoolga Upgrade - design, construct and maintain tender

Bringelly Road Concept Urban Design Study. Project manager and urban designer for the concept urban design development and visual assessment of the upgrade of Bringelly Road for the RTA.

Cowpasture Road Design Alliance. Project manager for the urban design responsible for design development and construction documentation including noise walls and bridge design for the RTA and URS

URBAN DESIGN AND MASTER PLANNING

UNSW Science and Engineering Building Public Domain

St. Columba's Master Plan, Springwood for Diocese of Parramatta.

Maya Island, Abu Dhabi for Capital Investment - Concept Master Plan

Paita Sports & Recreation Master Plan, New Caledonia

Glendale & Cardiff Town Centres for Lake Macquarie City Council - Urban Design Guidelines

Munibung Hill / Pasminco Site Land Use Strategy for Lake Macquarie City Council.

South Deebing Creek Master Plan, Ripley Valley, Qld - Development Application

Ripley Valley Sites, Qld for the Rawlings Group - Concept Master Plan

Kennedy's Road, Kilcoy - Masterplanning and Concept Subdivision Design

Wolong Lake, Nanjing, China. Lead urban designer for the master planning of a 380ha lake front residential development site

Huntley Coal Mine, Wollongong. Urban designer for a golf resort and residential development

Breakfast Point DCP for Canada Bay Council. Urban design and landscape input

Janell Crescent, Carlingford -1.2ha multi unit residential development - Master Plan

Morriset Town Centre for Lake Macquarie City Council - Urban design strategy and master plan

URBAN LANDSCAPE

Blacktown Village Green Design Development

Randwick Urban Elements Design Guide

Orange CBD Street Upgrades - Urban designer for street upgrades

Plaza West Development, Parramatta. - proposed public plaza within a mixed use city centre development

ASPECT Studios