STATION DESIGN AND PRECINCT PLAN
PITT STREET METRO STATION

PITT STREET STATION

Station Design and Precinct Plan

Project:	Pitt Street metro - Station Design and Precinct Plan	**Date:**	September 2021
Author:	Forster + Partners Urbis	**Status:**	Final


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Table of Contents


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TO
PEDESTRIANS

EXECUTIVE SUMMARY

This Station Design and Precinct Plan (SDPP) has been prepared to fulfil condition E101 of the Chatswood to Sydenham project approval SSI 15_7400 for the Pitt Street metro station.

Condition E101 requires that:

> *Before commencement of permanent built surface works and/or landscaping, the Proponent must prepare Station Design and Precinct Plans (SDPP) for each station. The SDPP must be prepared by*
>
> *a suitably qualified and experienced person(s), in collaboration and consultation with relevant stakeholders including but not limited to relevant council(s), Urban Growth 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 Pitt Street metro station and associated public domain and is submitted in a single stage for that metro station. This SDPP has been prepared by CPB Contractors.

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.

Figure 1 – Artist's impression of north station entrance and OSD tower

The design team has studied Sydney Metro's strategic goals of capacity, connectivity and quality of life, whilst meeting the key Sydney Metro objectives defined for the Stage 1 design.

The Stage 2 detailed design for the SDPP addresses the key overarching objectives set out by Sydney Metro as follows:

1. Ensure an easy customer experience

- By being customer focused and providing an intuitive transfer to street level, the vision is to design the stations so that the customer can intuitively move through the station with the minimum need for signage.
- By utilising Customer Centric Design testing and including the customer in the design process, we have been able to harness this feedback to inform the design decisions in collaboration with Transport for NSW and Sydney Metro City & Southwest.

2. Being part of a fully integrated system

- The station needs to be part of a system but address the individual needs of each site. The vision is to create one all-encompassing strategy that links the above ground and the below ground portion of the station together.
- The consistent material palette throughout the Pitt Street entrances, adits and platforms help to tie the different spaces together, allowing them to work in unison to create a fully integrated system.

3. Being a catalyst for positive change

- The station should be a landmark to reinvigorate the city. The vision is to create a station that will instantly create a sense of place around it which will be enhanced as the city grows around the public transport system.
- The continuous canopy wraps around the buildings, sheltering the public and leading them to the double height station entrances. These grand volumes, combined with their refined yet robust materials, instantly create a recognisable, landmark destination.

4. Being responsive to distinct contexts and communities

- Create an iconic design that sits comfortably in its context. The vision is to create a unique emblem that will make the station an instantly recognisable part of the city.
- The responsive design of both the station and the Over Station Development (OSD) incorporate a sensitive material palette, as well as historical datum lines from the surrounding context, to allow the developments to blend harmoniously into their surroundings, whilst remaining iconic and unique.

5. Delivering an enduring and sustainable legacy for Sydney

- To provide a positive legacy for future generations. The vision is to create a timeless identity that will meet its functional requirements on the opening day but can facilitate the future growth for generations to come.
- By incorporating the latest design and construction techniques, as well as state of the art equipment and materials, the development will remain modern and adaptable, capable of facilitating future growth and coping with any increased demand.

This SDPP presents an integrated urban and place making outcome for the Pitt Street metro station and associated public domain and landscape areas in accordance with the conditions of the Chatswood to Sydenham project approval SSI 15_7400, particularly condition E101.

Figure 2 – Artist's impression of south station entrance and OSD tower

1. INTRODUCTION

1.1. PURPOSE OF THE STATION DESIGN AND PRECINCT PLAN

This SDPP 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 Pitt Street metro project.

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

The preparation of the SDPP is a requirement of condition E101 of the Chatswood to Sydenham project approval SSI 15_7400. Condition E101 allows the SDPP to be submitted in stages and, as identified in the Staging Report, staging of the project is represented on a precinct basis. This SDPP covers the Pitt Street metro station north and south entrances and surrounding public domain. Consistent with the requirements of condition E101, this SDPP for Pitt Street metro station:

- 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, and
- Provides evidence of consultation.

In accordance with condition E101, this SDPP has been prepared by suitably qualified and experienced person(s), including the following key contributors:

- Ross Palmer – Principal Architect at Foster + Partners
- Mathieu Le Sueur – Principal Architect at Bates Smart
- David Whitworth – Landscape Architect at Sue Barnsely Design
- Jacqueline Parker – Urbis
- Ashleigh Ryan – Urbis

Sydney Metro is Australia's biggest public transport program. A new standalone railway, this 21st century network will deliver 31 metro stations and 66 kilometres of new metro rail for Australia's biggest city, revolutionising the way Sydney travels.

Sydney Metro has four core components:

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

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

Sydney Metro City & Southwest

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

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

From a planning approvals perspective, Sydney Metro City & Southwest has been split into two components – Chatswood to Sydenham and Sydenham to Bankstown. The Chatswood to Sydenham component of Sydney Metro City & Southwest involves the delivery of approximately 16.5 kilometres of metro rail line between Chatswood and Sydenham

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.

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

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

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. The Australian and NSW governments are equal partners in the delivery of this new railway.

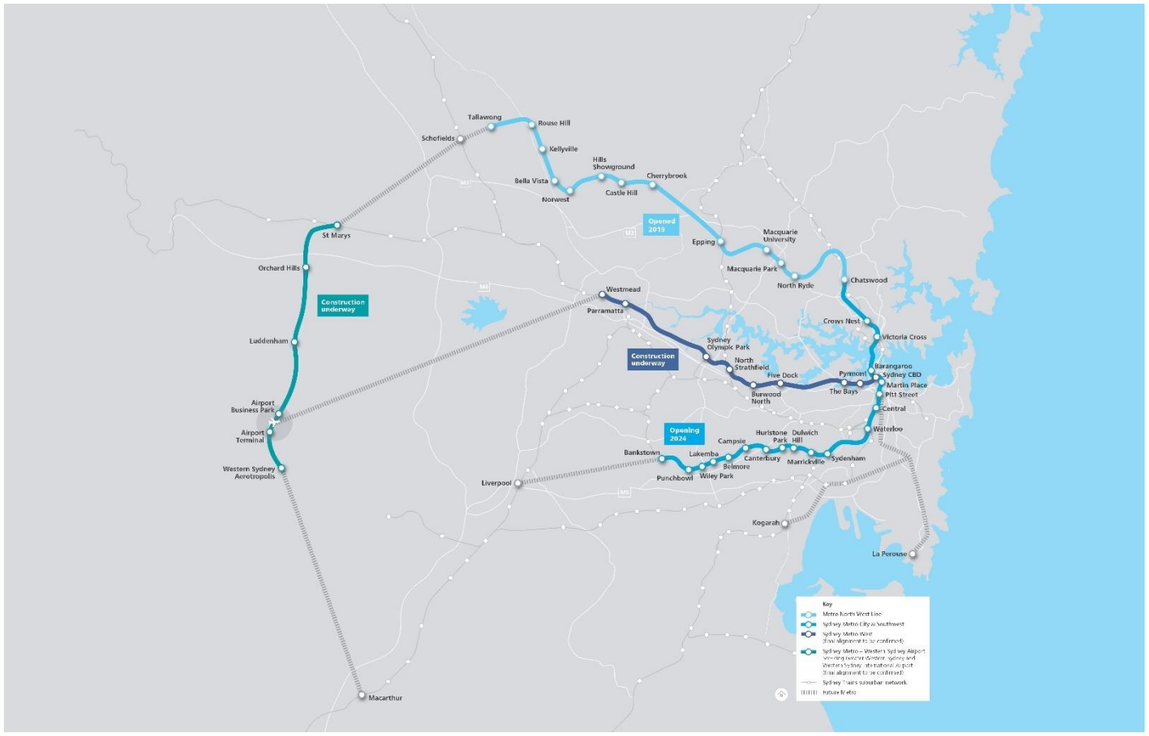


Figure 3 – Sydney metro alignment map

Source: Sydney Metro

1.2. PROJECT OVERVIEW

In 2024, customers will benefit from a new fully air-conditioned Sydney Metro train every four minutes in the peak in each direction with lifts, level platforms and platform screen doors for safety, accessibility and increased security.

On 9 January 2017, the Minister for Planning approved the Sydney Metro City & Southwest - Chatswood to Sydenham project as a Critical State Significant Infrastructure project (reference SSI 15_7400) (CSSI approval). The terms of the CSSI approval include all works required to construct the Sydney Metro Pitt Street Station, including the demolition of existing buildings and structures on both the north and south station entrance sites. The CSSI approval also includes the construction of below and above ground improvements with the metro station structure for appropriate integration with the OSD.

Figure 4 – Sydney Metro

Figure 5 – Artist’s impression of station north entrance looking west

1.3. PITT STREET STATION PRECINCT – EXTENT

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

- Pitt Street metro station, inclusive of station cavern, north and south access adits,
- North station entrance, station box, concourse and ticketing facilities and
- South station entrance, station box, concourse and ticketing facilities.

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, including the following areas:

- The public domain areas including pathways, road reserve and landscaping along the street frontages of Park, Pitt and Castlereagh streets of the Pitt Street north station;
- The public domain areas including pathways, road reserve and landscaping along the street frontages of Bathurst and Pitt Streets of the Pitt Street south station;
- The north and south station entrances, caverns and concourses; and
- Lobby spaces and base building works for the over station development (OSD) and retail spaces within the two station box envelopes.

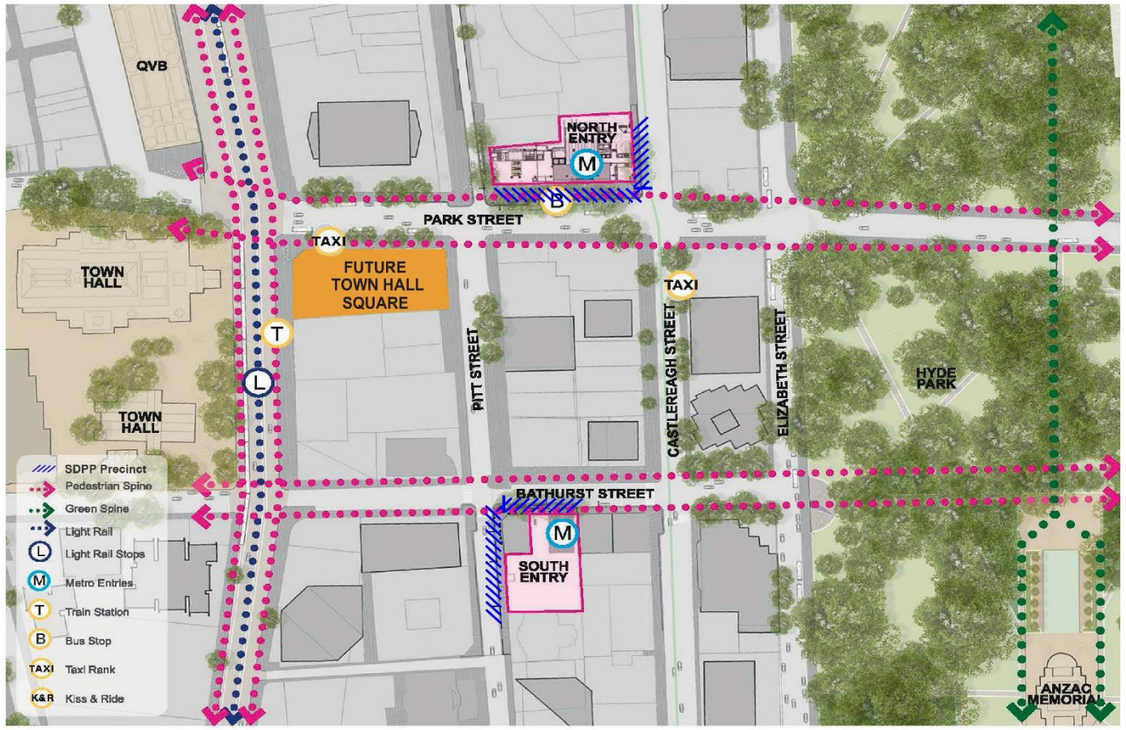


Figure 6 – Pitt Street midtown precinct plan

1.4. PITT STREET STATION PRECINCT – URBAN CONTEXT

The following imagery provides civic context from the surrounding areas of the Sydney CBD which have aided in informing the detailed design of both the north and south metro station entrances, podiums and public domain areas. Specifically, the built form and materiality (sandstone) of surrounding civic buildings shown in Figures 7 - 12 have been referenced in the design of both station entrances and the respective building podium façades. Similarly, Figures 10 and 11 have inspired the overall design intent of the public domain areas surrounding the podium and station entrances.

Figure 7 – Town Hall

Figure 8 – Queen Victoria Building

Figure 9 – General Post Office

Figure 10 – St Mary's Cathedral

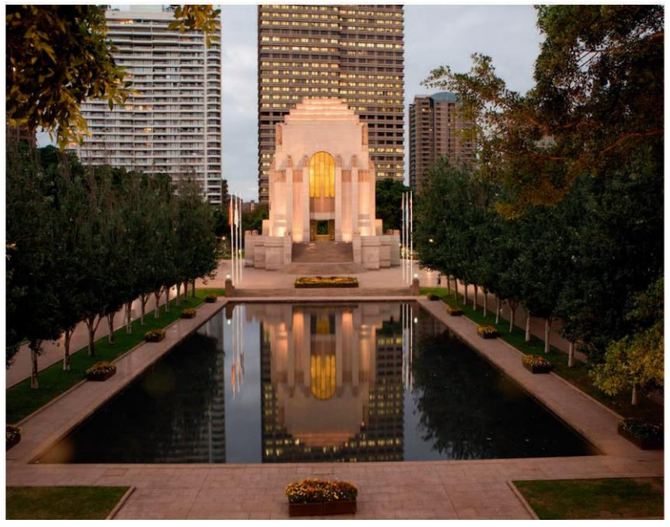


Figure 11 – Anzac Memorial

Figure 12 – Hyde Park Fountain

1.5. STATUS OF THIS STATION DESIGN AND PRECINCT PLAN

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

Structure of this Station Design and Precinct Plan

The SDPP has been structured as follows:

- **Section 2**: provides an overview of the design development process that has occurred for the project to date.
- **Section 3**: outlines the consultation that has been undertaken during the preparation and review of this plan and how the feedback received has been addressed.
- **Section 4**: identifies the design objectives, principles and standards specific to the relevant scope element of the plan.
- **Section 5**: identifies design opportunities, including with respect to public art, heritage interpretation and use of salvaged elements.
- **Section 6**: details the key features of the station/element design and the precinct/public realm plan.
- **Section 7**: outlines the implementation phase including timing for delivery.
- **Appendix A:** Provides a comprehensive review of stakeholder consultation
- **Appendix B**: 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, as required by Condition E102 of the CSSI Approval.

Figure 13 – Artist's impression of Pitt Street north station

Figure 14 – Artist's impression of Pitt Street south station

1.6. COMPLIANCE WITH THE CONDITIONS OF APPROVAL

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

Requirement of the conditions of approval	Where addressed in the plan
Condition E93:	
In developing the Interchange Access Plan(s), the Proponent must consider: a) traffic and accessibility requirements; and b) the Station Design and Precinct Plan(s) required by Condition E101	Section 4 identifies design objectives, principles and standards. Where these objectives principles and standards are relevant to the Interchange Access Plan(s), they would be considered in these plans. In addition, the Interchange Access Plan(s) described in Section 3.3 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.
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	Document authors are noted in Section 1.1. Consultation is outlined in Section 3.1.
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.
The SDPP(s) must be approved by the Secretary following review by the Design Review Panel (DRP) and before commencement of permanent aboveground work.	The plan will be submitted to the Secretary for approval. Section 3 details the review undertaken by the DRP.

Requirement of the conditions of approval	Where addressed in the plan
Condition E101:	
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 to salvaged elements and opportunities to mitigate visual impacts.
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 plan. This includes the station / element design including key design features, and station operational lighting. The precinct plan details the location of existing and proposed landscaping within the precinct/public realm plans and operational lighting within the precinct.
h) The details of where and how recommendations from the DRP have been considered in the plan	Section 3.2 details the DRP meeting contents and tabulates how the design has incorporated the DRP feedback. Essentially, the proposed design follows the station design approved through the CSSI consent for Pitt Street Station. As this was the case, no specific comments relating to the SDPP have been received by the DRP.

Requirement of the conditions of approval	Where addressed in the plan
i) the timing for implementation of access, landscaping and publicrealm 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; and	Section 6.7 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 on 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. All landscape and built elements are addressed in this singular SDPP. It is not intended to submit the Pitt Street SDPP in stages.
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 5.3 details the visual impact of the proposed works. Appendix B of this SDPP provides the visual impact assessment and identifies the visual impact ratings achieved for the detailed design.

Figure 15 – CSSI conditions of approval table

DESIGN DEVELOPMENT PROCESS 2

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. At each stage a range of consultation and stakeholder engagement activities have occurred. This has also been supported by the development of design objectives, incorporation of the Chatswood to Sydenham Design Guidelines and now this SDPP, all of which have been refined in consultation with the Sydney Metro Design Review Panel.

2.1. STATION AND OVER STATION DEVELOPMENT INTEGRATION

This SDPP draws upon the design work that occurred for the station 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 Pitt Street station design and surrounding precinct subject to the SSI project approval SSI 15_7400. The approval and design of the two over station developments is subject to a separate planning approval and associated design process.

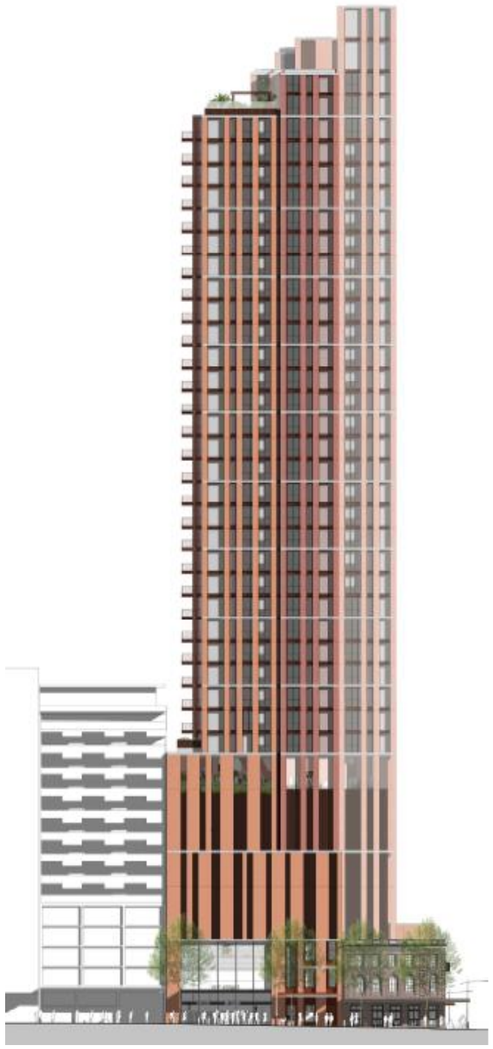


Figure 16 – Aesthetic integration of Pitt Street south station and OSD

The Pitt Street metro station will offer two station entries – one on Park Street, providing access north into the CBD's primary retail and commercial zone, the other on Bathurst Street, providing access south into a core CBD residential, hotel, and entertainment zone.

The OSD buildings above both the north and south metro station entry portals have been designed to be integrated, both in structure and appearance, with the station infrastructure below. The intent has been to visually integrate the station with the OSD. For Pitt Street north station and OSD, an aesthetic concept was developed where the centre line of the station entrance is used to articulate the tower above. For Pitt Street south station and OSD, the building form drew inspiration from the nearby heritage buildings and a focus on verticality. Although designed as one, the station structure can operate without the OSD above being complete.

The massing and articulation of the tower and podium facades for both the north and south sites are designed to integrate with the surrounding urban context of midtown Sydney. The design approach for both station and OSD designs creates podiums which respond directly to the street context and the heritage buildings surrounding each respective site. The external building appearance for both the podium and tower forms are taken from the scale and materiality of surrounding characteristic buildings, which have informed both the north and south station and OSD design schemes.

Figure 17 – Aesthetic integration of Pitt Street north station and OSD

2.2. DESIGN PROCESS

The Neighbourhood

Located in the very centre of the CBD, Pitt Street is surrounded by tall office buildings, that hit the ground with retail, food and beverage and cultural activities. The area is both a highly connected and accessible part of the city, in close proximity to St James, Museum and Town Hall railway stations. The new metro station will reinforce Pitt Street as a key hub in the heart of the city. Within this buoyant neighbourhood, Hyde Park and the Anzac Memorial provide a welcome respite with ample useable green spaces. Building on its high density and good public transport accessibility, the area is undergoing major change and initiatives like the pedestrianisation of George Street further contributes to improvements in the public realm and creation of a world class business district.

Pitt Street Station will connect customers using Sydney's retail core and the expanding commercial and mixed use areas of the southern CBD. The metro station completes a multi-modal transport choice in this walkable precinct. It also provides a new marker on an important east-west movement corridor through the CBD between inner western and eastern suburbs.

The north over station development offers prosperous additions to the city skyline comprising of new retail and premium commercial spaces for businesses. The south over station development offers residential build-to-rent accommodation.

Station Entrances

In accordance with the Request for Tender (RFT) Design and the Stage 2 Design, the entrances on Park Street (north) and Bathurst Street (south) are both easily identifiable.

The entrances slope gradually to provide flood protection to the station with the minimum possible slope.

The Pitt Street south and north entrances incorporate the same design elements to give a consistent identity and familiarity when navigating within the station.

External canopies at the street frontages are incorporated to identify the stations and provide shelter for passengers.

From the entrance to the platform the route is clear and easily followed. The consistent use of a carefully chosen range of high-quality materials creates a calm environment.

The north and south entrances have been designed to maintain a consistent material palette, so the white, back-painted glass cladding panels continue from the entrances at street level into the escalator voids.

Below ground level the cladding changes from back-painted glass to sandstone, to subtly differentiate between above and below ground level. The white back-painted glass reflects natural and supplementary lighting down into the escalator voids. Sydney Metro's artworks will sit on the back walls of the escalator voids.

The ceilings above the escalators are made of bronze coloured aluminium ceiling battens, which are backed with acoustic insulation. Down lighting is located between the ceiling slats.

Figure 18 – Artist's impression Pitt Street south station entrance

Figure 19 – Artist's impression Pitt Street north station entrance

3. COLLABORATION AND CONSULTATION

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

3.1. AGENCY AND COMMUNITY CONSULTATION

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.

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

- City of Sydney Council
- Department of Planning, Industry and Environment
- Government Architect NSW
- Former Office of Environment and Heritage
- Transport for NSW (former officers from Roads and Maritime Services)
- Sydney Metro
- Sydney Trains
- Sydney Coordination Office within Transport for NSW
- Sydney Airport Corporation Limited and the Civil Aviation Safety Authority
- Small Business Commissioner
- Heritage NSW, Community Engagement Group, Department of Premier and Cabinet
- NSW Police
- Fire and Rescue NSW
- Committee for Sydney
- Surrounding residents, businesses and local community groups
- Heritage council

Collaboration and consultation activities undertaken during development of the detailed design and preparation of this SDPP are detailed in Figure 20.

The following organisations will be approached for one-on-one stakeholder briefings following DPIE Secretary sign off of the SDPP but prior to SDPP finalisation:

- Sydney Airport Corporation Limited
- The Civil Aviation Safety Authority
- NSW Police
- Heritage NSW
- Community Engagement, Department of Premier and Cabinet.

Stakeholder engagement was also carried out during the development of the concept SSD DA for the OSD. Sydney Metro undertook consultation with local residents, businesses, various government bodies and other stakeholders in accordance with the Secretary's Environmental Assessment Requirements. Feedback received during consultation activities was considered during the preparation of the concept SSDA.

Activity	Content	Date
Email to stakeholders	Offered briefing with project team to discuss integrated station development project update as well as including proposed modifications to the concept SSD Approval as well as the detailed design of the Pitt Street north and south integrated station developments.	January 2020
One-on-one stakeholder briefings undertaken with: • City of Sydney • Sydney Metro • Transport for NSW • Sydney Trains • Sydney Coordination Office within Transport for NSW • Office of the Small Business Commissioner • Committee for Sydney	Carried out stakeholder briefings to present a project overview including proposed modifications to the concept SSD Approval as well as the detailed design of the Pitt Street north and south integrated station developments, to discuss project status and relevant items coordination as well as to receive feedback on the integrated station development.	October 2019 – July 2020
Integrated station development planning overview and Information booklet	The Pitt Street north and south integrated station development planning overview and information booklet provided information about the integrated station development detailed design, planning approvals pathways, planning timelines and project phases and how to provide feedback.	Post-lodgement

Figure 20 – Collaboration and consultation activity table

3.2. REVIEW BY THE DESIGN REVIEW PANEL

The Design Team has presented to the Sydney Metro Design Review Panel (DRP) regarding the station design on thirteen (13) occasions, regarding the following issues:

- **DRP #1. 15 October 2019**

  RFT design station, OSD North and South

  Station typology

  Key design influence

  Public Domain

  Passenger Journey

- **DRP #2. 19 November 2019**

  Bus shelter

  Materiality

  Bollards

  Pedestrian modelling

  Customer touch points relocation

  Landscape

- **DRP #3. 17 December 2019**

  Vertical Transportation

  Fire control room

  BCA

  Circulation

  Lighting

- **DRP #4. 21 January 2020**

  Façade materiality

  Solar analysis and thermal comfort

  Envelope compliance

  Set backs to Masonic building and Ashington Place

  Crowd studies

- **DRP #5. 18 February 2020**

  Materiality OSD South

- **DRP #6. 17 March 2020**

  Materiality OSD South – bounding wall to Edinburgh Castle Hotel

  Station façade pre-cast

  Station concourse geometry and interface

- **DRP #7. 31 March 2020**

  Building envelope

  Public art & heritage interpretation

  Station buildform

- **DRP #8. 21 April 2020**

  Bus shelter

  Gate-line

  Station materiality

  Station and OSD North façade

- **DRP #9. 4 May 2020**

  Gate-line

  Station materiality

  Station and OSD North façade

  Public art

  DRP

- **DRP #10. 19 May 2020**

  Lighting

- **DRP #15. 28 January 2021**

  Stakeholder consultation

Each session resulted in the issue of Advice and Action Records. A summary of each item raised and the responses provided is contained in the following table.

DRP endorsement for the SDPP will be sought upon final consultation with relevant stakeholders, the Department of Planning, Industry & Environment, and the local community prior to Secretary approval and before commencement of permanent above ground work.

ITEM #	GEOGRAPHIC LOCATION	THEME	RAISED ON	DOCUMENT REVIEWED	ACTION / ADVICE	TEAM TO RESPOND	DATE OF RESPONSE	RESPONSE	STATUS
1.00	ISD	General	15/10/2019	DRP 1 Presentation	The Panel supports the overall scheme as presented with recommendations: Items 1.01 to 1.03	Project Team	19/11/2019	The Panel notes and supports the general approach to landscape design as presented in DRP 2 Presentation, noting that it is in its early stages.	Closed
1.01	ISD	Materials and finishes	15/10/2019	DRP 1 Presentation	The Panel requests that the landscape designer present at a future meeting.	Project team	19/11/2019	The Panel notes and supports the landscape design at its current stage as presented in DRP 2 Presentation	Closed
1.02	OSD South	Planning and Passenger Movement	15/10/2019	DRP 1 Presentation	The Panel requests that the following be presented at the next meeting: - Demonstration that the proposed lifts will provide an appropriate level of service to service 227 apartments and other uses.	Project team	19/11/2019	The Panel supports the proposed lift numbers on the basis of the analysis presented – being 3 passenger and 1 service lift for 227 apartments.	Closed
1.03	OSD South	Access and maintenance	15/10/2019	DRP 1 Presentation	The Panel requests that the following be presented at the next meeting: Demonstration that the loading dock and service lifts will provide a sufficient level of service.	Project team	19/11/2019 17/12/2019	The Panel raised concerns about the level of service provided by the current arrangement of loading dock and service lift (that requires changing lift at the lobby level). The Panel requested to see alternative configurations bringing the residential service lift closer to the goods lift, or ideally a model that does not require lift change from loading to apartment floors, whilst noting that the client is confident that this model is workable. The Panel accepts the design change presented for loading and vertical transport which achieves direct access from the loading dock into a larger residential service lift at the entry level, avoiding the need to transfer between lifts at the upper level.	Closed
2.01	OSD North	Materials and finishes	19/11/2019	DRP 2 Presentation	The Panel recommends a wind study be undertaken to ascertain impact on trees located on Pitt St North Podium.	Project team	31/03/2020 21/04/2020 05/05/2020	Refer Item 7.06 for further actions. The Panel acknowledge that a wind study was presented on 31 March 2020 however the intention of this action item was to ascertain the impact the wind, and proposed mitigation measures, will have on trees on the podium and street, and their ability to grow. This item remains open until this has been addressed. The Panel support the presented tree species and locations proposed for the street and podium planting, and accept the information presented that they will grow in the anticipated wind conditions.	Closed
2.02	Precinct/ Public Domain North	Planning and Passenger Movement	19/11/2019	DRP 2 Presentation	The Panel notes that the suitability of the bus shelter design and location is yet to be confirmed with City of Sydney.	Project Team	21/04/2020 05/05/2020	The Panel supports in principle the approach to remove the standard City bus shelter and rely on the building awnings for shelter, however the Panel requests a plan showing seating locations in relation to the awning to understand the available amenity. The Panel also recommends coordination with TfNSW. The Panel support the return of the bus shelter.	Closed
2.03	Precinct/ Public Domain North	Planning and Passenger Movement	19/11/2019	DRP 2 Presentation	The Panel does not support the location of the bollards perpendicular to the station entry and recommends an alternate solution be sought with City of Sydney.	Sydney Metro	15/06/2020	The Panel has ongoing significant concern with the placement of bollards across the path of pedestrian movement on the footpath, and recommends consultation be undertaken with the City of Sydney to co-ordinate with their city wide HVM placement strategy.	Closed
2.04	Precinct/ Public Domain North	Planning and Passenger Movement	19/11/2019	DRP 2 Presentation	The Panel requests further information regarding crowd studies and movement corridors at Pitt St North in order to establish the functionality of proposed seating and other elements along the footpath.	Project team	21/01/2020 21/04/2020	The Panel notes that the project team will review the proposed locations of street furniture and bus shelter to optimise pedestrian flows and movements based on the crowd studies presented. The Panel confirm this item can be closed out following the project team's presentation on 31 March 2020.	Closed
2.05	Station	Materials and finishes	19/11/2019	DRP 2 Presentation	The Panel recommends samples and final finishes of material selection be presented along with evidence of sign off by Sydney Metro on sealing and maintenance regimes.	Project team	31/03/2020	The Panel accepts the current finishes proposed but notes that physical samples could not be reviewed due to the current Covid 19 isolation requirements.	Closed
2.06	Station Entry North	Built Form	19/11/2019	DRP 2 Presentation	Retail Unit 3 Facade The panel seeks a review of Retail Unit 3 façade composition and recommends glazing be subservient to the strong wrapping of the sandstone wall into the entry, to maintain continuity of design with the original proposition.	Project team	17-Dec-19	The Panel accepts the updated design which minimises glazing to maintain the integrity of the curved form of the retail area adjoining Ashington Place.	Closed
2.07	OSD North	Materials and finishes	19/11/2019	DRP 2 Presentation	The Panel supports in principle the current material selection and recommends the future presentation of this selection also include direct reference to the SSD OSD-North Part A Design Parameters to enable support of these conditions. The Panel also recommends that samples and final finishes be presented along with evidence of sign off by Sydney Metro on sealing and maintenance regimes.	Project team	21/04/2020 05/05/2020	The Panel supports the approach to the development of an appropriate bronze finish to aluminium and requests that samples of the proposed finish on the variant façade forms, be available to view on site during the construction delivery phase. The Panel request further information about the durability and maintenance of the proposed bronze finish to aluminium where this finish is present at ground level. The Panel support the product warranty evidence to demonstrate durability and look forward to seeing samples of the proposed finish in all variant façade forms when available on site.	Closed
2.08	Station Entry North	Planning and Passenger Movement	19/11/2019	DRP 2 Presentation	Pitt St Egress The Panel recommends the review of the narrowing egress corridor & stairwell as may conflict with legislative requirements.	Project team	17-Dec-19	The Panel accepts that the project fire engineer and BCA consultant have confirmed that the pinch point in the egress corridor does not present an unacceptable obstruction to people movement.	Closed

ITEM #	GEOGRAPHIC LOCATION	THEME	RAISED ON	DOCUMENT REVIEWED	ACTION / ADVICE	TEAM TO RESPOND	DATE OF RESPONSE	RESPONSE	STATUS
2.09	Station Entry North	Planning and Passenger Movement	19/11/2019	DRP 2 Presentation	Fire control room The Panel notes the relocation of the fire control room is yet to be confirmed with the fire brigade and therefore requires further development.	Project team	17-Dec-19	The Panel accepts the updated design to consolidate the fire control rooms on Park Street.	Closed
2.10	Station Entry North	Planning and Passenger Movement	19/11/2019	DRP 2 Presentation	Schedule C4 - North entry toilet & lift configuration	Project team	19/11/2019 17/12/2019	The Panel supports the new configuration of toilet and lift access with the 2m setback of the toilet entry doors behind a privacy screen. The Panel accepts the proposed screen to the amenities to support separation of circulation between lift and amenities.	Closed
2.11	Station Entry North	Planning and Passenger Movement	19/11/2019	DRP 2 Presentation	Schedule C4 - North entry metro touch point locations The Panel notes and supports the relocation of the metro touch points to inside of curtilage however requests the further development of the entry hall to ensure it remains a unified public room as presented in the original proposition, through consolidation of floor treatments, levels and balustrade lines.	Project team	17/12/2019	The Panel accepts that the proposed use of wall, floor and ceiling materials and finishes internally and externally as presented greatly improves the sense of a unified public room at the Park Street Metro entrance. The Panel accepts the proposed glazed screens separating the paid area behind the gate line from the footpath on Park Street.	Closed
2.12	Station Entry North	Built Form	19/11/2019	DRP 2 Presentation	Schedule C4 - North entry natural light access The Panel requests this item be addressed at the next scheduled meeting in order to close it out.	Project team	17/12/2019	The Panel accepts that the reduced concourse will let more lighting into the escalator switch back and void.	Closed
2.13	OSD South	Built Form	19/11/2019	DRP 2 Presentation	Princeton Apartment Interface – Ventilation design The Panel note that this proposal appears to meet the minimum requirements of the relevant contract design parameters however, the panel raised the following concerns with the presented solution: -Conflict between safety and cleaning -Conflict between access to ventilation and acoustic separation The Panel was advised that this solution has been presented to the City of Sydney (CoS), but no feedback from the CoS was provided. In addition to demonstration that the scheme addresses the above concerns, the Panel recommends that CoS support for this approach is secured.	Project Team	21/01/2020 18/02/2020 21/04/2020 19/05/2020	The Panel accepts removal of the vertical blade to the ventilation slot on the south façade (Princeton Apartment interface) noting further development of horizontal ledges to be provided. The Panel accept the articulation of horizontal ledges to the ventilation panel slots along the Princeton Apartment Interface. The Panel accept that investigation is underway regarding nesting prevention and recommend the project team liaise with Sydney Metro regarding their current solution testing. The Panel note the previous request to confirm there are no high-volume wind whistling issues arising from the bedroom ventilation panels located in the recessed slots with no horizontal ledges. The Panel confirm this item remains open due to concern raised over the potential for high-volume wind whistling issues arising from the recessed slots with no horizontal ledges. The Panel seeks confidence from the Pitt Street team that this issue won't arise. The Panel supports the presented material relating to the mitigation of high-volume wind whistling.	Closed
2.14	OSD South	Built Form	19/11/2019	DRP 2 Presentation	Princeton Apartment Interface – Visual privacy	Project Team	19/11/2019	The Panel supports that visual privacy is achieved through the noted vertical louvres to the apartment windows facing the Princeton Apartments.	Closed
2.15	OSD South	Materials and finishes	19/11/2019	DRP 2 Presentation	The Panel supports the material selection in principle, and recommends all materials are presented again with samples and final finishes, including evidence of sign off by Sydney Metro on sealing and maintenance regimes.	Project team	21/01/2020 18/02/2020	The Panel reiterates the need for material samples and prototypes prior to providing support. The Panel accept the samples provided in principle however recommend the production of multiple full-scale prototypes with a variety of options upon the engagement of the precast contractor to test the level of subtlety between colour and finishes from varying distances and light conditions, and to explore a greater level of texture to improve contrast in colour. It is recommended the Panel be invited to view these prototypes to ensure design excellence is carried through to project delivery and that enough time be allowed to test developed options for the prototypes if required.	Closed
2.16	Station Entry South	Planning and Passenger Movement	19/11/2019	DRP 2 Presentation	Schedule C4 - South entry sightline to lift waiting area	Project Team	19/11/2019	The Panel supports the improved sight lines to the lift waiting area through the increase in width from 2.5m to 3m.	Closed
2.17	Precinct/ Public Domain North	Planning and Passenger Movement	19/11/2019	DRP 2 Presentation	The Panel is concerned that the use of bollards as the only approach to managing security issues is leading to suboptimal public domain outcomes that will negatively impact on the urban design quality and useability of the Metro entry areas. Transport to provide a presentation on alternative approaches to security.	Transport for NSW / Project team	3/12/2019 15/06/2020	A presentation has been made regarding HVM devises, a strategy has not yet been proposed. The Panel accepts the proposed strategy for HVM device placement however further to Tracker Item 2.03, does not support the placement of bollards perpendicular to the path of travel.	Closed
2.15	General	General	19/11/2019	DRP 2 Presentation	The Panel noted that the CoS representative required as a member on this Panel has not yet been appointed.	Transport for NSW	18/02/2020	Graham Juan has been appointed as DRP Panel member for the City of Sydney.	Closed
3.01	OSD North	Integrated Art and Heritage Interpretation	17/11/2019	DRP 3 Presentation	The Panel accepts the modifications to the facades on Pitt and Castlereagh Streets to improve design relationships with adjoining heritage items and looks forward to the developed design of heritage interpretation panels.	Project Team	21/04/2020	The Panel note the importance of the integration of pre-colonial history into the heritage interpretation strategy (refer item 7.02) and understand this is forthcoming, therefore accept this item has been met and can be closed following the Pitt Street 31 March presentation.	Closed

ITEM #	GEOGRAPHIC LOCATION	THEME	RAISED ON	DOCUMENT REVIEWED	ACTION / ADVICE	TEAM TO RESPOND	DATE OF RESPONSE	RESPONSE	STATUS
4.01	OSD South	Materials and finishes	21/01/2020	DRP 4 Presentation	**Façade design** The Panel recommends considering a different treatment to the precast façade panels at street level in order to provide a richer sense of detail.	Project Team	18/02/2020 17/03/2020	The Panel note that limited options were developed by the design team to introduce detail into the street level precast panels. The Panel acknowledge that mimicking the brick striations/banding is not a suitable response and recommend further investigation be undertaken to test texture and applied finishes to resolve a finer level of design detail, and that additional larger scale samples are developed and request the DRP are invited to review further proposals. The Panel accept the honed precast finish to the street level walls, with a higher visibility of aggregate then sample shown and promote further consideration be given to the skirting and corner details to ensure longevity of initial appearance.	Closed
4.02	OSD South	Materials and finishes	21/01/2020	DRP 4 Presentation	**Façade design** The Panel requests a plan diagram/s that establish the locations of colour changes, and confirmation that this is consistent with the agreed concept of the tower being a composition of four articulated slender forms.	Project Team	18/02/2020	The Panel accept the presented diagrams and 3D imagery explaining the locations of colour changes and evolution of design.	Closed
4.03	OSD South	Built Form	21/01/2020	DRP 4 Presentation	**Façade design** The Panel accepts the proposed rationale for façade openings between concrete panels applicable to the various internal room uses.	Noted			Closed
4.04	OSD South	Heritage Interpretation	21/01/2020	DRP 4 Presentation	**Edinburgh Castle Hotel** The Panel requests a detailed resolution of the return wall to the Edinburgh Castle Hotel.	Project Team	18/02/2020 17/03/2020	Concern was raised over the use of brick in the boundary wall to the Edinburgh Hotel. The Panel recommends that this wall be read as part of the new development whilst remaining sympathetic to the Hotel. The Panel promotes the use of materials already within the OSD building palette and recommends explorations into the use of painted steel. The Panel accepts the proposal for the bounding wall to the Edinburgh Hotel to be composed of recycled bricks with tone and texture similar to the bricks used in the Hotel.	Closed
4.05	OSD South	Built Form	21/01/2020	DRP 4 Presentation	**Solar Analysis and Thermal Comfort** The Panel notes there has been a reduction in solar access on June 21st due to the New Castle Residences development, which has recently commenced on site. The Panel notes the design teams advice that appropriate solar analysis testing to minimise this impact has been undertaken, which demonstrates that the current façade design remains as an appropriate solution along with relocation of upper level 3-bedroom apartments to the lower levels.	Noted			Closed
4.06	OSD South	Built Form	21/01/2020	DRP 4 Presentation	**Envelope compliance** The Panel accepts the presented envelope non-compliances as having very minor impacts and therefore reasonable.	Noted			Closed
4.07	General	General	21/01/2020	DRP 4 Presentation	**Design Excellence** The Panel requests that future presentations include commentary on compliance with design excellence strategies including design guidelines.	Project Team	18/02/2020	The Panel note that the project team are currently in conversation with DPIE	Closed
4.08	OSD North	Built Form	21/01/2020	DRP 4 Presentation	**Setbacks to lightwells** The Panel accepts and supports updates to the presented lightwell setbacks to the existing NSW Masonic Club and Ashington Place developments, following the survey study undertaken of these buildings.	Noted			Closed
4.09	OSD North	Materials and finishes	21/01/2020	DRP 4 Presentation	**Ashington Place lightwells** The Panel suggests looking at opportunities for improving outlook from the Ashington Place development across the lightwell to the proposed solid boundary wall.	Project Team	17/03/2020	The Panel supports the materials to the Ashington Place lightwells and looks forward to viewing samples when available.	Closed
4.10	OSD North	Built Form	21/01/2020	DRP 4 Presentation	**Ashington Place lightwells** The Panel suggests consideration of introducing natural light from the Ashington Place lightwell to benefit the commercial spaces within.	Project Team	17/03/2020	The Panel supports the materials to the Ashington Place lightwells and looks forward to viewing samples when available.	Closed
6.01	OSD South	Materials and finishes	17/03/2020	DRP 6 Presentation	**Ground floor windows** The Panel request further information provided regarding bird roosting mitigation measures at horizontal window heads that sit below the awning.	Project Team	19/05/2020	The Panel supports the detailed coordination of the various joints and look forward to a presentation of the proposed design.	Closed
6.02	OSD South	General	17/03/2020	DRP 6 Presentation	**Design Excellence** The Panel accepts that Pitt Street South OSD meets design excellence parameters and is ready for submission to DPIE.	Noted			Closed

ITEM #	GEOGRAPHIC LOCATION	THEME	RAISED ON	DOCUMENT REVIEWED	ACTION / ADVICE	TEAM TO RESPOND	DATE OF RESPONSE	RESPONSE	STATUS
6.03	Station Entry North	Planning and Passenger Movement	17/03/2020	DRP 6 Presentation	**Ticketing & information re-entrant areas** The Panel continues to be concerned regarding the quality of public domain provided by re-entrant ticketing and information spaces on either side of the station entry gates, and request Sydney Metro and the design team investigate this area further.	Project Team & Sydney Metro	21/04/2020 19/05/2020	The Panel support the presented design amendments but encourage further reducing the re-entrant depth further by setting the station gates & signage portal back whilst still proud of the column, understanding this will require access dispensation for escalator run-off The Panel accepts the station gate line cannot move closer to the escalator.	Closed
6.04	Station Entry North	Materials and finishes	17/03/2020	DRP 6 Presentation	**Escalator landing materiality** The Panel looks forward to the presentation of the artwork on the escalator landing and suggests reconsideration of the use of two materials on east and west flanking walls.	Project Team	21/04/2020 05/05/2020 19/05/2020 23/06/2020	The Panel remain concerned about the potential clinical outcome of the white flanking walls to this station entry, and encourage the project team to review their finish in context of the integrated public artwork. The Panel supports the use of sandstone from the escalator switch back landing to the foundation datum, and seek further information on how the door located at this landing will be integrated into this finish. The Panel apologises for the lack of clarity in the advice given following the previous presentation and would like to clarify that in the context of the integrated artwork, a unified finish on walls perpendicular to the artworks is encouraged to enable the artwork to read as strongly as possible. The Panel supports the use of white textured colour back glass in lieu of sandstone at the base of the wall and request the project team review the details at the service datum line to investigate whether a continuous material is possible. The Panel supports the use of sandstone on the basis of the out of session material provided on 15 June 2020. The Panel notes that concealing appearance of the service door into the wall through material use, careful detailing and minimising door hardware is critical to the effective reading of the artwork and the surrounding wall as a simple plane.	Closed
6.05	Station Entry North	Materials and finishes	17/03/2020	DRP 6 Presentation	**Colour back glass** The Panel suggests considering a slight texture be provided on the low-iron colour-back glass to minimise visibility of smears and fingerprints (such as the glass used by Foster & Partners in the Deutsche Bank Place lift cars).	Project Team	31/03/2020	The Panel supports the inclusion of a textured finish to the white colour-back glass	Closed
6.06	Station	Built Form	17/03/2020	DRP 6 Presentation	The Panel recommends review of the discordant interface between the two geometries at the station concourse south escalator exit.	Project Team	31/03/2020	The Panel accepts the revised design at the interface of the 2 geometries which proposes 400mm depth of wall below the services plenum.	Closed
7.01	General	Integrated Art and Heritage Interpretation	31/03/2020	DRP 7 Presentation	**Post Colonial Heritage** The Panel commended the depth and rigour of the historical research (post-colonisation) and its opportunity for heritage interpretation and display.	Noted	N/A	N/A	Closed
7.02	General	Integrated Art and Heritage Interpretation	31/03/2020	DRP 7 Presentation	**Indigenous Heritage** The Panel was disappointed by the lack of engagement with indigenous heritage and recommend further engagement be undertaken. The Panel notes that George and Pitt Streets in particular, follow indigenous tracks and routes, as well as the Tank Stream.	Project Team	5/05/2020 15/06/2020	The Panel supports the indigenous narrative presented and the importance of its representation. The Panel understands the intended presentation is via displays boxes, however encourages alternative approaches to ensure the work communicates a sense of permanence and respect. The Panel look forward to future presentations on the project teams' approach to integration. The Panel supports the integration of site-related interpretive elements for this site.	Closed
7.03	Precinct/ Public Domain North	Planning and Passenger Movement	31/03/2020	DRP 7 Presentation	**Traffic Signals** The Panel notes that adjustment of traffic signals to preference pedestrian priority at the intersection would be the desired outcome and support this occurring. The Panel acknowledge there is planned to be a whole of city review in the upcoming years of timing of signalisation and pedestrian flows.	Noted	N/A	N/A	Closed
7.04	Station Entry North	Integrated Art and Heritage Interpretation	31/03/2020	DRP 7 Presentation	**Foundation course** The Panel is concerned that the re-used foundation course of the wall as a datum at the station entry seems tokenistic and lacks co-ordination with the larger adjacent artwork and seeks clarity regarding the interaction of these two elements.	Project Team	19/05/2020	The Panel supports the removal of the re-used foundation course as the datum along the flanking walls, as noted in item 6.04, this will detract from the artwork.	Closed
7.05	OSD North	Built Form	31/03/2020	DRP 7 Presentation	**Building Envelope** The Panel accepts the building envelope as presented with the exception of the 1.8m high balustrades on the top of the podium.	Project Team	21/04/2020 05/05/2020	This item seeks review of the proposed 1.8m glass balustrade solution The Panel supports the glass balustrade and efforts made to reduce its perceived height internally and externally.	Closed
7.06	OSD North	Built Form	31/03/2020	DRP 7 Presentation	**Further Wind Study** The Panel is concerned that screening the podium setback on the corner with 1.8m glass balustrade in order to moderate the impact of wind for podium users, will in turn negatively impact the wind conditions on the street that the setback has been designed to mitigate. The panel recommends further wind studies be undertaken to assess this. Refer Item 2.01 for further action.	Project Team	21/04/2020 05/05/2020	This item seeks further wind studies to understand the impacts the increased balustrade height will have on the broader development (i.e.: the podium setback is created to mitigate wind impacts on the public domain through the mitigation of downdraft, yet the high balustrade seeks to provide amenity on the podium roof during windy conditions – what impact will the provision of this balustrade have, if any on the wind at street level?) The Panel accept the wind consultant's opinion that the balustrade will not impact street wind conditions.	Closed

ITEM #	GEOGRAPHIC LOCATION	THEME	RAISED ON	DOCUMENT REVIEWED	ACTION / ADVICE	TEAM TO RESPOND	DATE OF RESPONSE	RESPONSE	STATUS
7.07	OSD North	Built Form	31/03/2020	DRP 7 Presentation	**Planter Balustrade** The Panel notes that a code compliant balustrade would be required on the outside edge of any planter to prevent falls, and seeks regarding the interface of the landscape and the balustrade edge.	Project Team	5/05/2020	The Panel supports the presented solutions for balustrades to the outside edges of planters.	Closed
7.08	General	General	31/03/2020	DRP 7 Presentation	**OSD Design Parameters** The Panel noted the status update provided on the OSD design parameters and that ongoing discussions are occurring between the Sydney Metro and the Pitt St Project Team to close these out progressively. The Panel accepts this has been achieved and will close this item in the design integrity tracker.	Noted	N/A	N/A	Closed
7.09	General	General	31/03/2020	DRP 7 Presentation	**Design Excellence Guidelines** The Panel noted the suggested process to be followed to close out and satisfy compliance with the design excellence guidelines and notes the detail on this process is to be agreed with DPIE, Sydney Metro and the developer.	Noted	N/A	N/A	Closed
8.01	OSD North	Planning and Passenger Movement	21/04/2020	DRP 8 Presentation	**OSD Use & Retail offering** The Panel accept that the planning requirements have been met relating to the proposed extent of commercial and retail use.	N/A	N/A	N/A	Closed
9.01	OSD North	General	5/05/2020	DRP 9 Presentation	**Design Excellence** The Panel endorses that design excellence has been achieved on OSD North, and the design is ready for submission to DPIE.	N/A	N/A	N/A	Closed
9.02	General	Integrated Art and Heritage Interpretation	5/05/2020	DRP 9 Presentation	**Integrated Art** The Panel strongly support the presented integrated art and commend the team on a bold and exciting approach. The Panel raise concern over the visible impact of expressed joints arising from the proposed installation of pre-finished panels. The Panel recommend the type and location of joints, along with production of a full scale prototype be carefully developed in conjunction with the artist, and suggest further investigation of an in-situ installation.	Project Team	19/05/2020 03/08/2020	The Panel supports the detailed coordination of the various joints and look forward to a presentation of the proposed design. The Panel strongly recommends that the artist and architect are involved in the development and approval of the final joint set out. The Panel requests that a prototype be developed prior to site works for inspection and approval by the architect and artist, and review by the Panel.	Closed
10.01	General	Integrated Art and Heritage Interpretation	19/05/2020	DRP 10 Presentation	**Lighting Specialist** The Panel encourages the project team to consult a lighting specialist in conjunction with the artist, to undertake a lighting study to ensure the ambient light is both sufficient and will not cause undue light scalloping on the wall.	Project Team	23/06/2020	The Panel accept the reply provided by the Contractor, that consultation will occur between their lighting specialist and the artist to provide appropriate light levels and type.	Closed
10.02	OSD South	Built Form	19/05/2020	DRP 10 Presentation	**South Façade Window Cleaning** The Panel seeks clarification from the design team on how the windows behind the fixed louvres on the south façade are to be cleaned.	Project Team	18/08/2020	The Panel accepts the maintenance strategy presented for the South Façade.	Closed
11.01	OSD South	Built Form	18/08/2020	DRP 12 Presentation	**Varied setback from Pitt Street boundary** The Panel notes the project team did not address the impact of the proposed varied setback on solar access to the Princeton Apartments which DPIE had noted was the intention of this condition.	Project Team	15/09/2020	The Panel defers to DPIE for compliance decisions relating to overshadowing of Princeton apartments.	Closed
11.02	OSD South	Built Form	18/08/2020	DRP 12 Presentation	**View retention from Century Tower** The Panel accepts that a reasonable attempt has been made to increase the number of Century Tower apartments retaining views of St Mary's cathedral through articulation of the roof form within the approved planning envelope	N/A			Closed

ITEM #	GEOGRAPHIC LOCATION	THEME	RAISED ON	DOCUMENT REVIEWED	ACTION / ADVICE	TEAM TO RESPOND	DATE OF RESPONSE	RESPONSE	STATUS
11.03	OSD South	Built Form	18/08/2020	DRP 12 Presentation	**Projections beyond building envelope** The Panel reasserts its earlier assessment that the minor encroachments outside the building envelope create no adverse impacts on privacy and solar access. Whilst the Panel applauds the project teams' efforts to reduce these encroachments, the Panel believes the reduced depth to the GRC façade elements diminishes the architectural quality of the facade, and should be calibrated to the building orientation (E.G.: maintaining the deeper panels on east/west).	Project Team	15/09/2020 23/09/2020 20/10/2020	The Panel does not currently support the reduction in façade depth to the west, east and northern façade panels however does support the updated consistency of width. The Panel acknowledges that the design team are confident of the decision to reduce the depth to 325mm from the original depth of 450mm and will review the full-scale details of the proposed façade depth to further their understanding of this decision. Following the review of the 1:1 printed detail of the GRC façade elements, the Panel does not support the reduction in depth of the GRC unit. The Panel believes the flattening of these elements changes the architectural expression of depth and relief in the façade that the initial design proposed, and recommends the original depth of 450mm to the glass line be maintained. The Panel supports the change in width of the GRC units to 900mm. The Panel notes that there has been a significant reduction in the quantity of GRC units in the façade from the initial Stage 2 DA to that which is currently proposed as part of the Response to Submissions. This reduction appears to have increased beyond that which was presented to the DRP on the 18th August. The reduction of quantity of solid elements on the façade is impacting design excellence – ie the overall appearance and integrity of the design, in addition to a potential increase in solar load on the building. The Panel requests an urgent comparative analysis (of % of solid vs glazing) is provided of the Stage 2 DA façade vs the current proposed façade, prior to resubmission – in order to ascertain the overall impact. The comparative analysis should consist of elevations, plans and 3d views. The Panel accept the increased depth to the GRC units inline with the original proposal and provides further commentry regarding number of units in Item 13.01	Closed
11.04	OSD South	Built Form	18/08/2020	DRP 12 Presentation	**SE Coner Apartment Design** The Panel does not support the reduction in area to the SE corner apartments, and suggests the removal of the second bathroom to align the area with the Apartment Design Guidelines. However, the Panel supports the reduction in balcony area to improve privacy	Project Team	15/09/2020	The Panel supports the improved amenity afforded to the SE corner apartments due to indenting the balcony, and the resultant reduction of balcony size.	Closed
11.05	OSD South	Planning and Passenger Movement	18/08/2020	DRP 12 Presentation	**Privacy and amenity to Princeton Apartments** The Panel supports the Level 6 terrace use as landscape only, and encourages the maximisation of soft landscaping through reducing extent of proposed paved area. The Panel does not support the inclusion of internal communal space, including the pool area, within the total communal open space calculation.	Project Team	15/09/2020	The Panel supports the updated landscape design however defers to DPIE on compliance decisions relating to the calculation of communal open space.	Closed
11.06	OSD South	Built Form	18/08/2020	DRP 12 Presentation	**Maximising solar access** The Panel notes that in selecting a residential use for the site solar access amenity was known to be limited. The Panel accepts that the project team have maximised solar access and amenity to apartments in the context of the challenges presented by this particular site.	N/A			Closed
12.01	OSD North	Built Form	15/09/2020	DRP 13 Presenation	**Hyde Park solar access** The Panel notes the shadows cast over Hyde park by the Pitt Street development remain within the footprint of shadow already cast by existing development at 201 Elizabeth street and an alternative and smaller built form envelope proposed for 201 Elizabeth St (which is currently not intended to proceed).	N/A			Closed
12.02	OSD North	Built Form	15/09/2020	DRP 13 Presenation	**Neighbouring apartment solar access** The Panel defers to DPIE for compliance decisions relating to overshadowing of surrounding residences.	N/A			Closed
12.03	OSD North	Design Guidelines	15/09/2020	DRP 13 Presenation	**Design Guidelines** The Panel does not support updating the Design Guidelines to reflect changes made during design development, however recommends the design team provide a statement responding to these guidelines for review and endorsement by the Panel.	Project Team	15/10/2020	Response to design guidelines provided by project team.	Closed
12.04	OSD North	Materials and finishes	15/09/2020	DRP 13 Presenation	**Bird protection** The Panel supports the measures taken to minimise reflectivity to protect Powerful Owls and other birds from flying into the building facade glazing and balustrades.	N/A			Closed

ITEM #	GEOGRAPHIC LOCATION	THEME	RAISED ON	DOCUMENT REVIEWED	ACTION / ADVICE	TEAM TO RESPOND	DATE OF RESPONSE	RESPONSE	STATUS
13.01	OSD South	Built Form	20/10/2020	DRP 14 Presentation	**GRC façade unit quantity** The reduction in columns made to the OSD South façade, presented in DRP 12 and 13, has a significant impact on the overall appearance and visual quality of the building and is not supported by the Panel. Whilst the Panel supports the greater level of consideration that has been given to the rationalisation of window/solid to internal planning, it recommends reviewing the original density and syncopated rhythm of the SSDA proposal, to recapture this design quality.	Project Team	30/10/2020 04/11/2020	The Panel supports the proposed number of GRC units presented, as a reduction in 7 from the SSDA submission. The Panel recommends reviewing the placement of the columns along the western face of the north-western corner, and the eastern face of the north-eastern corner, to achieve a slightly more varied and less regular spacing which is more consistent with the SSDA design. The Panel supports the presented design changes to GRC unit positions along the western face of the north-western corner, and the eastern face of the north-eastern corner.	Closed
14.01	Station	SDPP	28/01/2020	DRP 15 Presenation	**Consultation** The Panel accepts the proposed consultation strategy, and acknowledges that the design team are yet to provide responses to the submissions made by stakeholders and the public.	N/A			Closed

3.3. INTERCHANGE ACCESS PLAN

The Interchange Access Plan (IAP) is a key component which contributes to realising this vision for the Pitt Street metro project. The IAP involves a series of public domain works which are to be completed as part of the overall Pitt Street project. These works will occur in the surrounding public domain around the physical metro station location to ensure improved pedestrian and cyclist amenity and safety, access and transport interchange. The specific elements to be delivered as part of the IAP are as follows:

- Provision of separated cycleway along the western side of Castlereagh Street – by City of Sydney.
- Addition of a red turn arrow signal at intersection of Park and Castlereagh streets, Bathurst and Castlereagh streets and Bathurst and Pitt streets – by Transport for NSW.
- Footpath widening along southern side of Bathurst Street, west of Pitt Street – by Greenland Group.
- Widening of pedestrian crossings and ramps at Pitt Street north of Park Street, and south of Bathurst Street – by Sydney Metro.

The items noted for delivery by Sydney Metro have been coordinated with the SDPP and will be provided as part of this suite of works.

Sydney Metro and CPB Contractors will continually work with Transport for NSW, City of Sydney Council and other stakeholders in a collaborative manner to ensure an integrated transport outcome for the Pitt Street station and Sydney CBD.

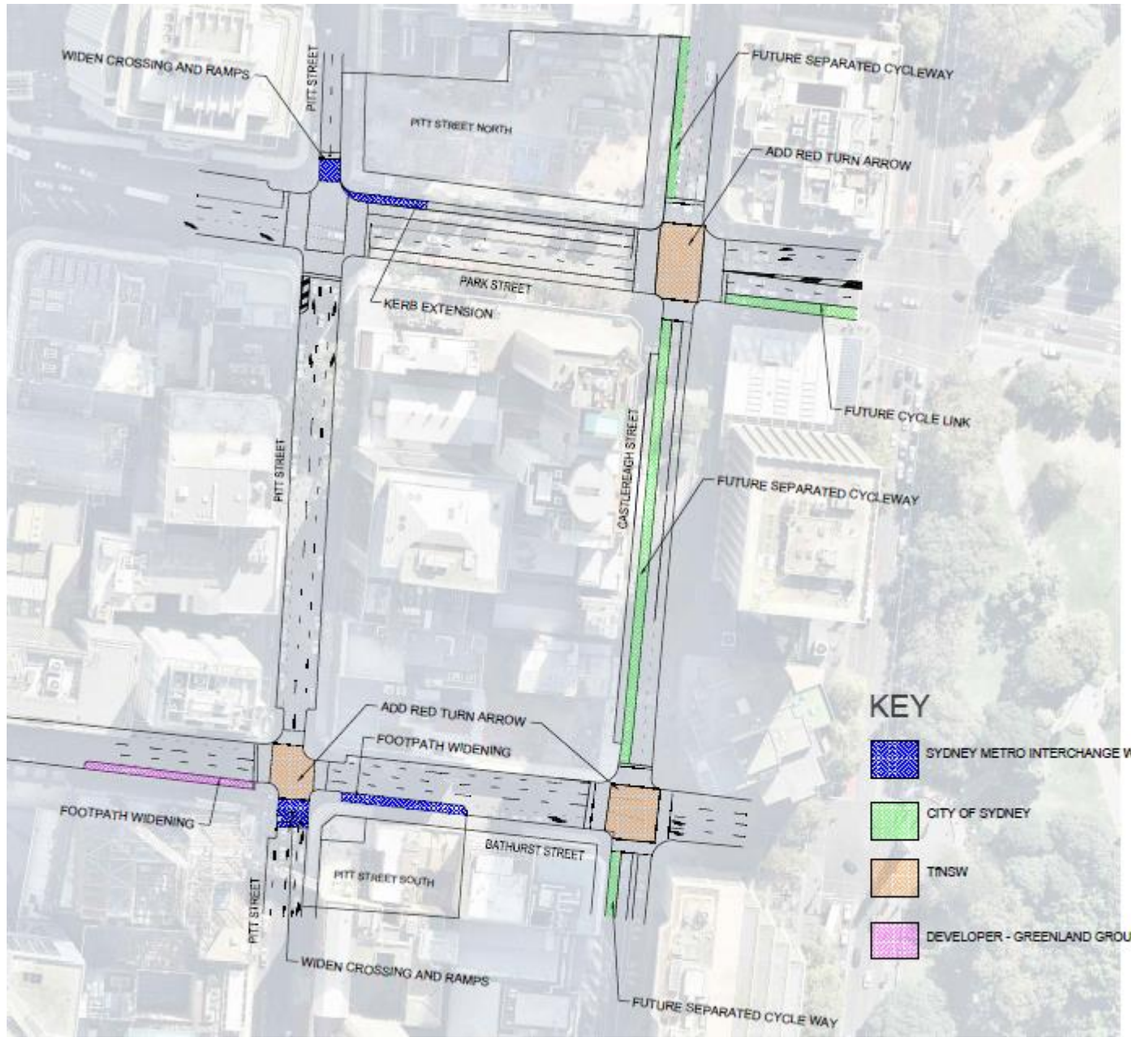


Figure 21 – Interchange Access Plan Works Drawing

DESIGN OBJECTIVES, PRINCIPLES AND STANDARDS 4

4. DESIGN OBJECTIVES, PRINCPLES AND STANDARDS

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

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

The Design Guidelines identify 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 this section.

Sections 4.2 to 4.9 details the design principles relevant to the aspects identified in condition E101(a) and scope of this SDPP. These have been captured from the Sydney Metro City & Southwest Chatswood to Sydenham 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

The following objectives have informed the design of the SDPP.

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.

Achieved by utilising CCD testing (Customer Centric Design) and including the customer in the design process, customer feedback has informed the design development.

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.

Achieved by the consistent material palette throughout the Pitt Street entrances, adits and platforms which helps to tie the different spaces together, allowing them to work in unison to create a fully integrated system.

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.

Achieved by a provision of a continuous canopy that wraps around the buildings, sheltering the public and leading them to the double height station entrances. These grand volumes, combined with their refined yet robust materials, instantly create a recognisable, landmark destination.

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.

Achieved by the responsive design of both the station and the OSD incorporate a sensitive material palette, as well as historical datum lines from the surrounding context, to allow the developments to blend harmoniously into their surroundings whilst remaining iconic and unique.

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.

Achieved by incorporating the latest design and construction techniques, as well as state of the art equipment and materials, the development will remain modern and adaptable, capable of facilitating future growth and coping with any increased demand.

Figure 22 – Artist's impression of Station north entrance looking west along Park Street

4.2. MAXIMISING AMENITY OF PUBLC SPACES AND PERMEABILITY AROUND STATION ENTRANCES

All of the public transport infrastructure is public space, so internal and external spaces of the station are public realm. Having a consistent theme binds the internal and external areas and helps the station to integrate within its local context. The station entrances engage with their local context to create welcoming landmarks in the urban environment. The following design principles provided by Sydney Metro have informed the design of the station works. The design response to each principle is provided in the table below.

DESIGN PRINCIPLES	SDPP DESIGN RESPONSE
The design creates welcoming, secure and well maintained public domain spaces and station buildings with an attractive ‘sense of place’	The design of Pitt Street Station and north and south towers is focused around the integration of metro, residential, retail, public art and heritage at the base of the building as an holistic shared place. Park and Bathurst streets are activated with the metro and retail entries whilst Pitt and Castlereagh streets are articulated with the tower entrances. A legible and rational public domain ensures passive surveillance which provides a secure and welcoming space. Robust materials in line with City of Sydney guidelines ensure public domain spaces will remain well maintained and attractive.
The stations are to be integrated with the urban design of the adjoining precinct to provide direct and safe accessibility to the station entry	The new north and south Pitt Street Station entrances will connect Sydney's midtown precinct in the creation of a 'new heart', seamlessly integrated with the surrounding urban context. Station entrances and associated public domain upgrades are comprised of items selected from the City of Sydney furniture suite to integrate with the adjoining precinct.
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	The new north and south Pitt Street station entrances will create improved pedestrian movements through the midtown precinct and enhance connectivity to existing public transport nodes at Town Hall including light and heavy rail stations. Achieving flood mitigation whilst optimising grades between the station entries and public domain provides an accessible and integrated connection between station precincts and the surrounding urban structure. New canopies that wrap around the station entrances and tower footprints will allow pedestrians to move comfortably around the north and south sites and be protected from the heat and rain.
Entry spaces are to be well lit, bright and welcoming to enhance customer experience providing a safe, open environment that has good permeability and clear sight lines from inside and outside the station	The north and south entrances will use a combination of large glazed facades and skylights to ensure that natural daylight is maximised in the public spaces. Reflective, white coloured glazed wall panelling will assist with transferring light down to the subterranean zones of the station. The use of natural daylight will be supported by an elegant lighting design to ensure that the station is always light, bright and safe.
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	Pedestrian pavements have been expanded in the public domain where possible to provide clear and legible spaces adjacent to station entries. Station entries are kept clear of clutter and paved in Australian granite in line with City of Sydney and Sydney Metro guidelines, extending the public domain into station entries.
The design must provide legible, intuitive spaces to enhance customer journeys through efficient navigation and interchange	At both sites, expanded pavements and increased circulation and waiting areas make the public domain legible and wayfinding intuitive.
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	The public domain is paved with Australian granite as a primary plaza finish, in line with City of Sydney and Sydney Metro guidelines.
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, inactive, bland and unappealing frontages	Pitt Street Station responds to the unique context of the midtown precinct by creating careful alignments with the adjacent buildings and selecting materials that are responsive and sympathetic to the surrounding neighbourhood.
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	Station public spaces are paved with Australian granite pavements in line with City of Sydney guidelines, integrating these spaces with the public domain through seamless materiality.
The landscape design is an important component of a positive, high quality and appealing urban realm identity for Sydney metro stations and structures.	A commitment to continuous street tree plantings on both Park and Bathurst streets strengthens the landscape character and urban canopy of these key streets. Street furniture to City of Sydney guidelines enhances the public domain as a place for people.
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. Provide space for customers in a busy pedestrian environment by extending the public domain into the station entries.	Public art will be installed at both the north and south station entrances. The public art installations are envisioned as dynamic and colourful elements that will be highly prominent both inside the stations and in the surrounding public realm. The open, bright and transparent character of the north and south entries will enable the artworks to be easily visible from the adjacent pavements and roads.

Figure 23 – Design principle and response table

Maximising Amenity of Public Spaces and Permeability Around Station Entrances

The following site-specific design principles and guidelines taken from the Sydney Metro & Southwest Chatswood to Sydenham Design Guidelines inform the detailed design for Pitt Street Station.

Pitt Street Station Design Principles	SDPP Design Response
Provide space for customers in a busy pedestrian environment by extending the public domain into the station entries.	Station entries are kept clear of clutter and paved with primary plaza finishes in line with City of Sydney guidelines, reading as an extension of the public domain.
Integrate with the Sydney City Centre Access Strategy and other CBD planning guidelines.	The SDPP Integrates with the Sydney City Access Strategy and other CBD Planning guidelines. Co-locating an improved bus shelter and the provision of cycle parking makes mode shift easier. A decluttered and expanded public domain reduces conflict between modes and balances the demand for street space in favour of commuters. The widening of pedestrian crossings reduces conflict at intersections and pinch points.
Anticipate connections to a future Town Hall Square and other nearby developments.	Widened crossings and expanded pedestrian pavements anticipate a future Town Hall Square and increasing pedestrianisation in the midtown precinct.
Extend the transport focus along Park Street, near Pitt Street.	The transport focus is supported along Park Street near Pitt Street via an extension of the pedestrian pavement, widening street crossing and the provision of cycle parking.

Figure 24 – Design principles and response table

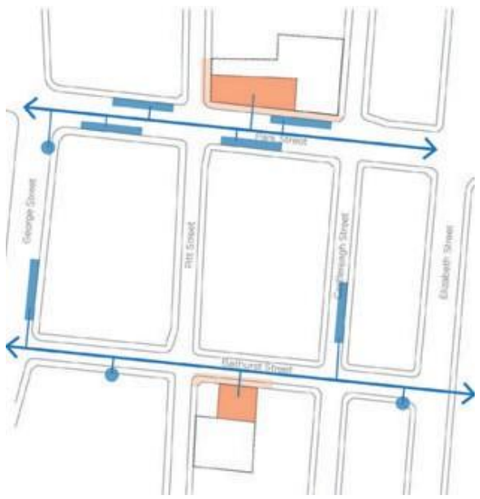
Figure 25 –Pitt street station – public realm interface

Maximising Amenity of Public Spaces and Permeability Around Stations Entrances

The Sydney Metro & Southwest Chatswood to Sydenham Design Guidelines also contain the following key principles for Pitt Street Station, which are achieved by this SDPP as detailed below.

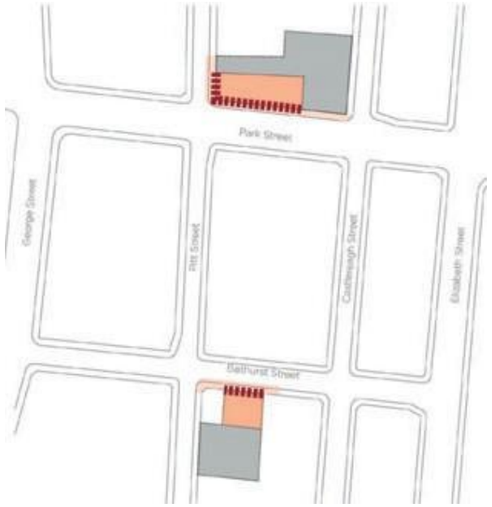
Linking Hyde Park to the Civic Precinct

Park and Bathurst Streets are key east-west connectors in the Sydney city centre, linking the harbour (at Darling Harbour) and green space (Hyde Park) on the edges of the city. These streets run through the heart of the city's civic precinct, which contains Sydney Town Hall, St Andrews Cathedral and the Queen Victoria Building (as well as the planned Town Hall Square). As increasingly important pedestrian streets, Park Street and Bathurst Street will require public domain improvements.



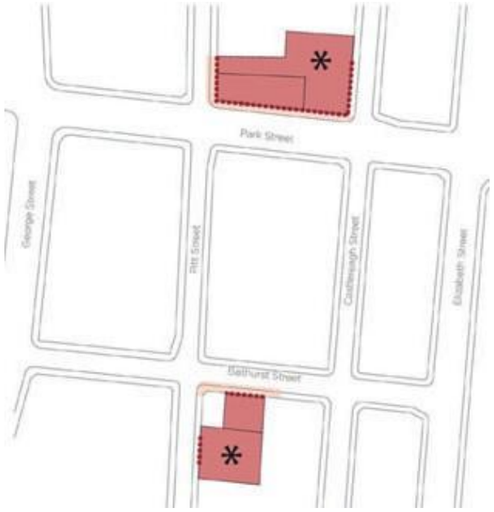
A Street-grid of Interchange

The new Sydney Metro station will be located within a network of public transport services spread over several street blocks. These services include rail (Town Hall and Museum stations), bus (primarily along Park, Castlereagh and Elizabeth Streets) and future light rail along George Street. The entrances to the new Metro station address Park and Bathurst Streets. These two streets will be key to interchange movements, especially to the bus and light rail services that run along the north-south streets of the city.



Frontages to east-west streets

The primary address of both Metro entries will be to the east-west connectors, reinforcing the importance of these streets and facilitating interchange between transport modes. Extending the materiality and character of the surrounding public domain into the station entries creates the opportunity for a seamless experience. An expansion of the public domain at the corner of Pitt and Park Streets and at Bathurst Street strengthens these frontages.



Optimising development over stations

The entrances to the station provide an opportunity to facilitate renewal. Future development above these spaces should reflect the context of the locality and positively contribute to the built form and character of the area.

Figure 26 – Key Principles for Pitt Street Station per Sydney Metro & Southwest Chatswood to Sydenham Design Guidelines

These guidelines will be achieved at Pitt Street station as follows.

The footpaths will be upgraded in accordance with the Sydney City Access Guidelines, will include new paving, street furniture and landscape planting to provide cohesion in appearance and functionality with the remainder of the nearby CBD precinct. Footpaths will be widened at the intersection of Park Street and Pitt Street, and along the southern side of Bathurst Street adjacent the south station entrance, to accommodate the expected pedestrian movements generated by the new metro station. Pedestrian crossings to Pitt Street will also be widened south of Bathurst Street and north of Park Street to accommodate increase pedestrian crossing numbers.

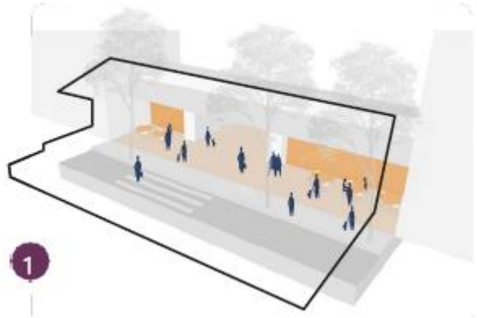
Provision is made in the SDPP for the bus interchange at the Park Street frontage of the north station entrance.

The public domain materiality will align with the City of Sydney material palette and will continue into the entrance plaza of the stations.

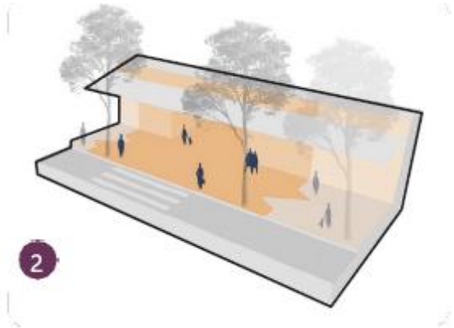
Improvements to the public domain around both station entrances will emphasise the primacy of the east-west streets (Park Street and Bathurst Street) and will cater for the expected pedestrian movements. The public domain footpath at the intersection at Park and Pitt Streets will be widened to accommodate pedestrian movements in a safe manner.

Provision is made in the building design for integration with the OSD above each of the station portals. Entrances to the OSD buildings are separated from the metro entrances, primarily fronting Pitt Street for both OSD towers. This provides clear primacy to the station entrances on Park Street and Bathurst Street.

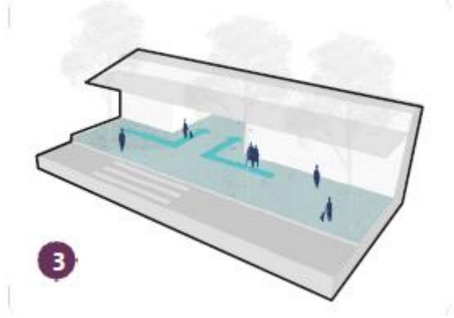
The following design moves have been taken at the Pitt Street station entrances to maximise the public domain amenity around the site



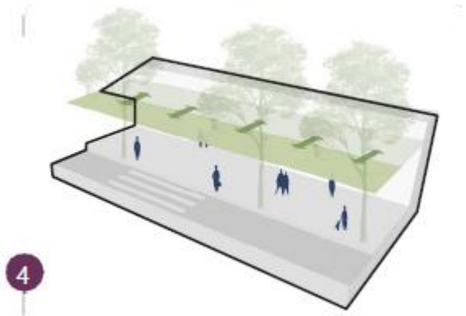
A Stage for Public Life: Station and OSD thresholds are designed as part of an active and accessible public domain.



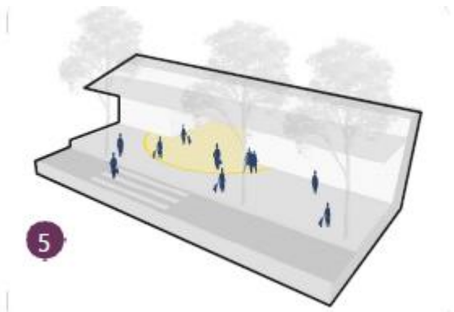
Respect the Street: The designs respond to the established rhythm and character of the streetscape.



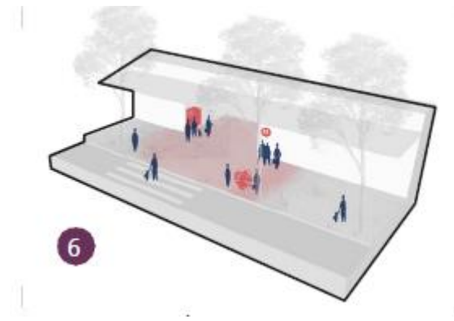
City in the Station: The ground plane from the public domain is continuous, both visually and materially, into the station foyer.



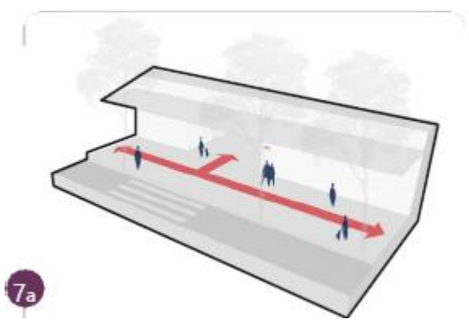
A Civic Ceiling: Extending the station ‘ceiling’ from the awning to the tree canopy.



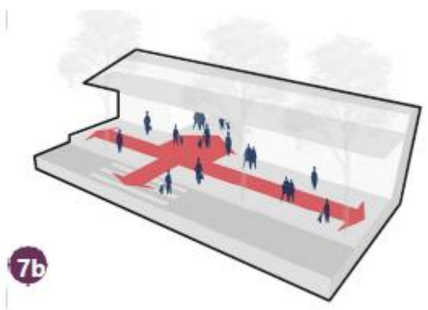
Clean and Clutter Free: Uncluttered doorways and façade lines offer open welcoming and barrier-free customer arrival and dispersal.

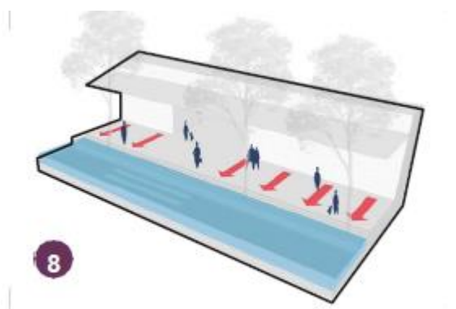


Integrate to Navigate: Provide integrated public art, lighting, signage and heritage interpretation to minimise the footprint and reinforce intuitive wayfinding.



Expand and Contract: Streetscapes and urban plazas allow flexibility to expand and contract, accommodating both peak commuter flows and general everyday use.





Consolidated Changes: Level changes are drawn away from the building line into a consolidated footprint, simplifying and clarifying differences in height to be addressed.

Figure 27 – Maximising amenity of public spaces and permeability around station entrance

4.3. LOCAL ENVIRONMENT, 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.

There are several listed items of both local and State heritage significance in the surrounding area of Pitt Street metro precinct. The date range for these buildings is between 1840s and 1930s. Heritage interpretation is being compiled to reflect extant buildings along with earlier stories of the place. Earlier developments on this block and potential archaeological finds, if surviving, relate to mid to late 19th century residences, shops and small-scale industrial workshops.

The following design principles and guidelines were identified in the Chatswood to Sydenham Design Guidelines to ensure that the design responds to the local environmental, heritage and place making values:

- The design and location of public artworks is to be reflective of the distinctive character of each place.
- 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.
- Canopies and entrances are to respond to the built form and character of the surrounding context in terms of scale, setbacks and characters, as well as heritage context where relevant.
- Where appropriate, the design of the rail corridor and station precincts are to integrate and conserve existing heritage items and mitigate any negative impacts.
- Where Sydney Metro intervenes in or interfaces with heritage places, design excellence is to be sought to support inventive, interpretive and contemporary responses to heritage values of that place. The design should take into consideration the siting, scale, form, materials and colour and details of the heritage items and places.
- The design should identify opportunities for heritage conservation to contribute to the celebration of local identity in station design.
- A positive precinct image is to be developed around the particular heritage values or a place or by the quality of the existing urban context.
- Future over station developments should reflect the context of the locality and positively contribute to the built form and character of the area.
- Extending the materiality and character of the surrounding public domain into the station entries creates the opportunity for a seamless experience.

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

- Environmental values - consolidate the urban canopy and strengthen key green links.
- Place making values.
- Heritage values. The new station and over station developments have been designed in response to the adjacent heritage buildings.

Figure 28 – Precinct heritage plan

4.4. LOCAL ENVIRONMENT, HERITAGE AND PLACE MAKING VALUES

While neither the northern or southern site is listed as an item of heritage significance, there are several heritage items in their vicinity. The above heritage principles and guidelines have been implemented in the detailed design for Pitt Street metro station as follows:

- The architects for both sites have worked closely with a highly experienced local Heritage Consultant to ensure that the proposed buildings respond to the character of heritage items in their vicinity.
- The significant characteristics of such items, including their height, scale, massing, horizontal subdivision, solid to void ratio, materiality and colours, were surveyed and are referenced in the proposed designs.
- The proposed buildings employ the podium and tower method for mitigating the impact of high-rise buildings in low-scale heritage settings, with their podia acknowledging the heights of heritage elements and the towers set back from the podia.
- The impact of the proposed buildings' scale and massing is mitigated by their division, visually, into several less massive, more vertically oriented sub-masses, and by the articulation of their facades into elements reflecting the scale of the heritage context.
- The heights and widths of heritage items are similarly referenced in the articulation of the proposed building facades, reflecting the urban scale and pattern of the earlier era.
- Surveys were undertaken of the materiality and colour of such heritage buildings, and similar and/or sympathetic materials and colours are employed in the proposed designs.
- Significant views to and from all heritage items are maintained.
- The eclectic historical character of the vicinity is maintained.
- Interpretation Plans have been prepared for each site, employing a variety of strategies ranging from text and photographs to artworks, designed to reflect and interpret the distinct history and character of each location in a visually pleasing, imaginative manner

Figure 29 – South podium massing relationship to adjacent heritage (Pitt Street elevation)

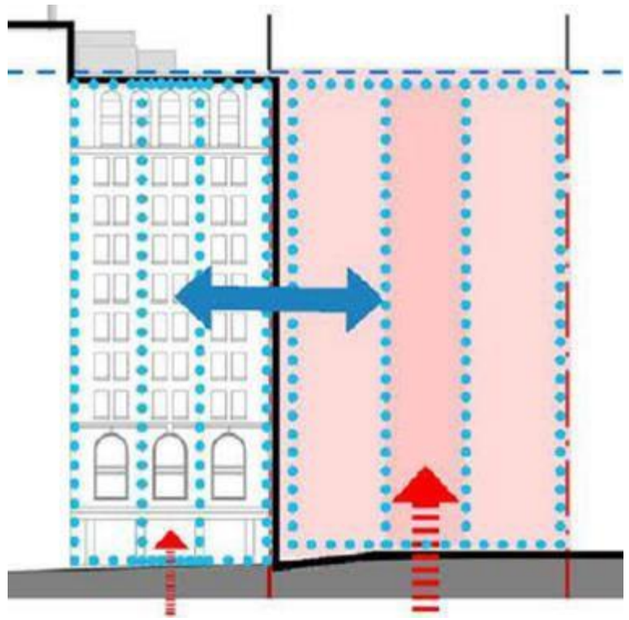


Figure 30 – North podium massing relationship to adjacent heritage (Pitt Street elevation)

4.5. URBAN DESIGN CONTEXT

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

Pitt Street metro station connects customers using Sydney's retail core and the expanding commercial and mixed use areas of the southern CBD. The metro station completes a multi-modal transport choice in this walkable precinct. It also provides a new marker on an important east-west movement corridor through the CBD between inner western and eastern suburbs.

The following design principles were identified in the Chatswood to Sydenham Design Guidelines to ensure that the Pitt Street station and associated public domain design responds to the surrounding urban design context:

- A positive precinct image has been 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 be the local context and environment.
- Link Hyde Park to the Civic Precinct.
- A Street-grid of Interchange.
- Frontages to east-west streets.
- Optimising development over stations.

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

- Upgrades to adjacent bus stop interchange on Park Street outside the northern entry.
- Class 3 cycle racks located at both entries on Bathurst Street and Park Street.
- Refurbishment of street furniture.
- Extension of footpath on Bathurst Street in front of the station entry to increase pedestrian capacity at the southern entry.
- Building colonnades and awnings to provide weather protection around station entries.

Specifically, the Pitt Street station proposal seeks to implement the following design elements to benefit the surrounding context in reference to the site-specific design principles and guidelines:

- Supporting an activated pedestrian oriented environment through the expansion of the public domain and footpath on Bathurst Street in front of the southern entry to increase pedestrian capacity and circulation spaces.
- Enhancing the overall transport experience for customers and site users by delivering integrated transport connections through upgrades to the adjacent bus stop interchange located on Park Street outside the northern station entry.
- Improving the public domain areas adjacent the respective station entries through refurbishments to street furniture and other informal seating areas, new kerbside street tree planting, intuitive lighting and the provision of bicycle racks on both Bathurst Street and Park Street.
- Connecting the wider community by providing landmark station entries which feature awnings to provide weather protection for pedestrians.

Figure 31 – City character

Figure 32 – Clear zoning

Figure 33 – Pedestrian priorities and canopies

Figure 34 – Street trees

4.6. COMMUNITY SAFETY, AMENITY AND PRIVACY

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

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

- Sydney Metro must provide safe interfaces between stations and the existing urban environment.
- The safe movement of customers, staff and contractors through the station areas needs to be facilitated through 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 micro climate effects, including wind tunnel impacts. The urban heat island effects should be minimised through light coloured finishes, roofs and pavements, green walls, roofs, plantings and shade trees.
- Customer weather protection outside Sydney Metro stations is to be provided to ensure good levels of comfort are maintained and to provide useable spaces at ground level.
- A high level of amenity and security in waiting areas is to be provided.

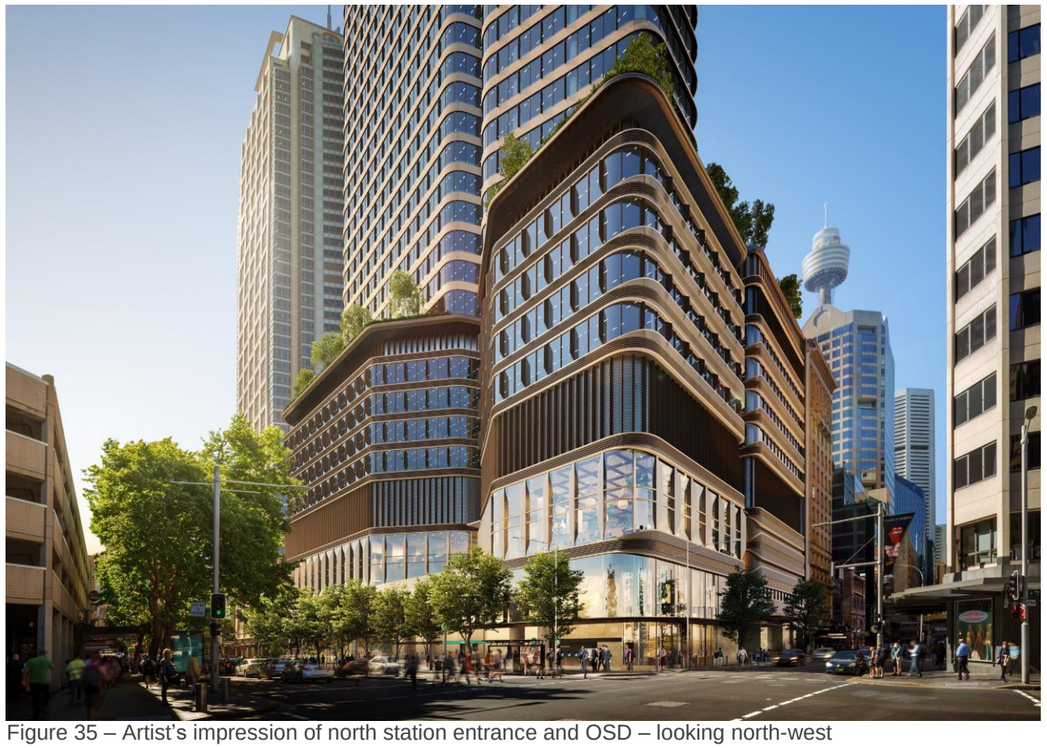


Figure 35 – Artist's impression of north station entrance and OSD – looking north-west

The Pitt Street SDPP responds to these guidelines in the following way:

- The station pedestrian entrances are provided in prominent positions which provide clear sight lines to the public domain areas, adjoining street network and surrounding buildings.
- The public station entries are clearly separated from the OSD building entries to enable intuitive wayfinding and delineation of access through territorial reinforcement.
- Paving and footpaths in the public domain have been expanded, where required, to enable increased pedestrian capacity and improve circulation spaces, reducing queuing, cramming and potential pedestrian conflict collisions with minimal obstructions.
- Visually impaired customers have been considered in the development of the Station Design and Precinct Plan.
- Overall, the design adopts Hostile Vehicle Mitigation (HVM) measures to ensure the safe operation and function of the station and public realm. Hostile mitigation is required with the footpath along the Station Site boundary and mitigates risk associated with terrorism.
- Bollards along the Station Site boundary are used to prevent vehicle encroachment into the station plaza.
- Maximum effective standoff distances have been achieved for the various assets to protect the station perimeter and OSD. As such, the design ensures the safety and security for all users, whilst minimising obstructions in the public domain which would otherwise disturb the urban fabric.
- The public domain and landscape works including street tree planting, furniture and informal seating areas, lighting, bollards and paving create a welcoming public domain and encourage people to use the space. This contributes to improved amenity for patrons and broader ground-level activation of the precinct, providing additional opportunities for natural surveillance near station entries and the surrounding built form.
- The raised height of the station entrances and use of glazing allows for clear sightlines for paths of travel and ample natural light penetration to enhance safety and visual connectivity.
- The ground level and associated public domain areas have been designed with consideration of the climate in terms of wind and rain protection for passengers and site users.
- The station entries are specifically designed to be clearly visible from the respective street frontages. The interior materiality and finishes are prominent through the façades to create a landmark sense of place.
- Both the north and south site entrances incorporate fixed awnings above public domain spaces which provide weather protection for pedestrians coming to and from the station, whilst also establishing intuitive wayfinding for pedestrians throughout the precinct.

4.7. SUSTAINABLE DESIGN AND MAINTENANCE

Section 1.7 of the Chatswood to Sydenham Design Guidelines outlines the commitment to sustainability and acknowledges that Sydney Metro would achieve new benchmarks in sustainability infrastructure delivery. The design must ensure best practice sustainable design solutions are adopted for the public domain, stations and buildings to minimise environmental impacts and benefit customers and local communities.

All station design elements have been designed to achieve a 5-star rating using the Green Building Council of Australia (GBCA) Green Star Sydney Metro rating tool by addressing the following:

- Practices and processes that enable and support best practice sustainability outcomes throughout the different phases of a project's design, construction and its ongoing operation.
- Initiatives that enhance the comfort and well-being of occupants.
- Design solutions that reduce the overall operational energy consumption below that of a comparable standard-practice building.
- Initiatives that reduce the consumption of potable water through measures such as the incorporation of water efficient fixtures and building systems and water re-use.
- Selection of lower-impact materials.

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

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

- Adopt energy efficient and low carbon design solutions.
- Incorporate passive design solutions to optimise solar access, introduce daylight and maximise natural ventilation.
- Develop a low maintenance design.
- Ensure resilience to climate change.
- Include integration of renewable energy sources at stations and in the public domain where feasible.
- Provide water and energy efficient services.

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 Principles.
- Building Code of Australia (BCA).
- Disability Discrimination Act (DDA).
- Australia's Strategy for Protecting Crowded Places from Terrorism 2017.

DESIGN OPPORTUNITIES 5

5. DESIGN OPPORTUNITIES

5.1. PUBLIC ART PROPOSAL

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 and to 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 ‘Metro Culture’.

The program would provide six categories of art, including 2D works, suspended works, sculptural works, lighting installations, functional artworks and digital works, which will:

- Respond to themes,
- Respond to place,
- Use form, material and colour effectively,
- Provide an uplifting experience for the customer,
- Develop the Storylines theme, and
- Consider day and night time activation.

Opportunities for public art at Pitt Street metro station include:

- on the walls surrounding the north entrance escalator switchbacks,
- on the walls surrounding the south entrance escalator switchbacks.

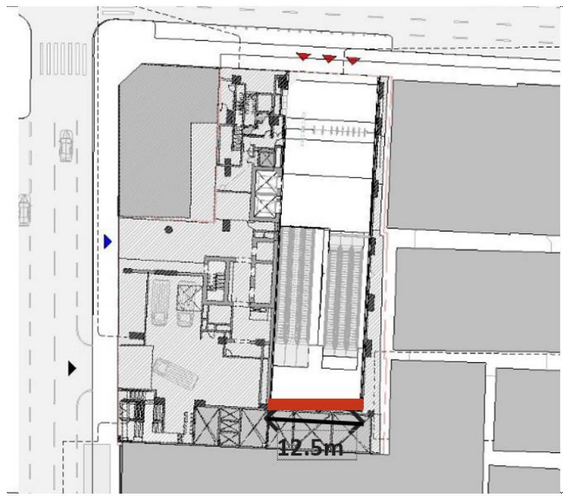
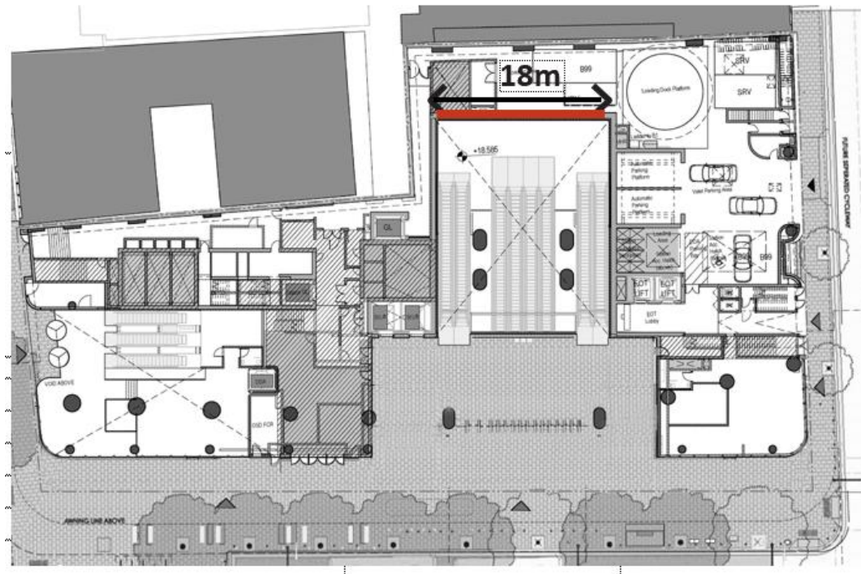


Figure 36 – South entrance art location



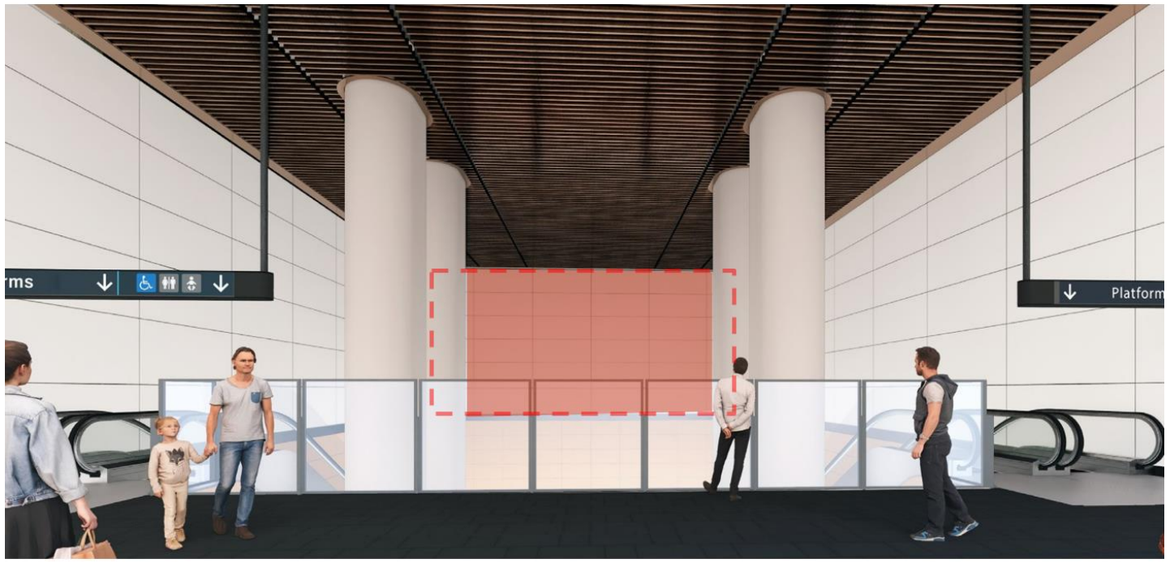


Figure 37 – North entrance art location

5.2. PUBLIC ART PROPOSAL

'Our vision is to elevate the customer's journey with art and engagement.' - Sydney Metro

Around the world, art has re-imagined and transformed public transport hubs to create imaginative and inspiring spaces for the community to enjoy. These international examples prove art's capacity to elevate the experience of the customers' journey, contribute to place identity and activation, and deliver a cultural legacy to enrich the life of the host city. Public art is proposed by Sydney Metro along the Northwest, City & Southwest lines.

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

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

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

Once selected, the artwork will be further developed in collaboration with the architectural and construction teams via regular meetings to confirm concept feasibility, refine and develop the initial concept and commence investigations in material selections and preliminary details to ensure the successful integration of the art into the architectural design and to ensure the artwork is coordinated with Wayfinding, Access and Interpretation.

A brief has been developed for an invited competition to receive proposals of an artwork integrated into the architectural design of the Sydney Metro for Pitt Street Station.

The principles informing the selection of the artwork are to ensure that it:

- Delivers a publicly appropriate, accessible and engaging artwork,
- Is located with a strong visual presence,
- Is an original creation, specific to the site,
- Integrates into the architectural design, and
- Incorporates the principles of sustainable design.

At the time of preparing this SDPP the short list of artists has not been announced.

5.3. VISUAL IMPACT

A Visual Assessment of the SDPP works (including the station above ground / podium works) has been undertaken by Urbis as a requirement of Condition E102 of the CSSI Approval.

Condition E012 of CSSI Approval requires that:

The SDPP must achieve a minimum visual impact rating of at least 'Minor Benefit' as defined in the EIS for all design elements of the project, where feasible and reasonable. Where it can be demonstrated, to the DRP's satisfaction, that a 'Minor Benefit' is not achievable, then a 'Negligible' visual impact rating must be achieved as a minimum.

This Visual Assessment was undertaken to ensure that the building podium designs generate a satisfactory and acceptable vie impact within the CBD context of their locations. This detailed analysis is provided in full at Appendix B.

The nine viewpoints used for the visual impact assessment as part of the CSSI approval were reproduced for the SDPP assessment, with CGIs of the podium form placed into the current images. Three examples of these GGIs are reproduced below.

Figure 38 – Artist's impression of north station podium viewed from south west (source: Arterra Interactive)

Figure 39 – Artist's impression of south station podium viewed from east along Bathurst Street (source: Unsigned Studio)

Figure 40 – Artist's impression of south station podium viewed from north west at Pitt Street / Bathurst Street intersection (source: Arterra Interactive)

Design elements used to mitigate the visual intrusiveness of the north and south station entrance podiums include

- Use of materiality and colour tones which are complementary to the materiality and character of surrounding building
- Emphasising the station entry portals whilst designing the other façade elements as more visually recessive
- Limiting signage to that which is unobtrusive and coordinated with the deign intent of the building
- Using public domain materials and street furniture which is consistent with the City of Sydney street furniture and materiality used in the surrounding locality.

The visual assessment identified that all viewpoints towards both the north and south station locations were of a 'local' or 'regional' sensitivity and found that the Precinct and podium designs resulted in either a 'minor benefit' or 'negligible' impact on the streetscape and urban context. The below table at Figure 41 shows the assessment comparison from the CSSI VIA undertaken by Iris Visual Planning and Design (Operation – SSI 15_7400 VIA) with the SDPP VIA undertaken by Urbis (Operation – SDPP design). This shows that the assessed visual impact of the building design is comparable with what was expected at the CSSI assessment stage, and that the building appearance results in an improvement from the impact rating of 'negligible' to 'minor benefit' for viewpoints 1, 3, 4, 5 and 6 for both Pitt Street north and south.

This assessment finds that the view impacts are consistent with the requirement of Condition E102 of the CSSI Approval, with the view impact rating achieving at least a minor benefit, or negligible.

The DRP has reviewed the design and visual impact assessment outcomes and is satisfied with the low level of visual impact achieved by the north and south station podium forms, thereby satisfying Condition E102.

Figure 41 – Visual Impact Assessment – Rating Table

			Operation – SSI 15_7400 VIA		**Operation – SDPP design**	
No.	Location	Sensitivity	Modification	Impact	Modification	Impact
Pitt Street Station north site – Viewpoints from approved assessment						
1	View southeast along Pitt Street	Local	No perceived change	Negligible	No perceived change	Minor Benefit
2	View south along Castlereagh Street	Local	No perceived change	Negligible	No perceived change	Negligible
3	View northwest from Hyde Park at the corner of Park and Elizabeth Streets	Regional	No perceived change	Negligible	No perceived change	Minor Benefit
4	View northwest at the corner of Castlereagh and Park Streets	Local	No perceived change	Negligible	No perceived change	Minor Benefit
5	View northeast at the corner of Park and Pitt Streets	Local	No perceived change	Negligible	No perceived change	Minor Benefit
Pitt Street Station south site – Viewpoints from approved assessment						
6	View south along Pitt Street	Local	No perceived change	Negligible	No perceived change	Minor Benefit
7	View west along Bathurst Street	Local	No perceived change	Negligible	No perceived change	Negligible
8	View west along Bathurst Street from Hyde Park	State	No perceived change	Negligible	No perceived change	Negligible
9	View north along Pitt Street	Local	No perceived change	Negligible	No perceived change	Negligible
					No perceived change	

Source: Urbis

5.4. LANDSCAPE OPPORTUNITIES

The landscape opportunities build on those outlined in the CSSI and the objectives outlined in section 4 - Design objectives, principles and standards. Specific opportunities and outcomes expressed in the current design include:

- Extension of footpath at Park Street and Pitt Street intersection and at Bathurst Street in front of the station entrance to increase pedestrian capacity at key these sites,
- Widening of signalised crossings at Pitt Street and Park Street intersection, and Pitt Street at Bathurst Street, minimising congestion and enhancing the customer experience,
- Extension of primary plaza finishes into the station entries, creating an integrated high quality public domain with strong connections to the site's surroundings,
- Consolidation of urban canopy cover, strengthening the role Park and Bathurst streets play as green links between Hyde Park and Darling Harbour, and
- Consolidation and upgrade of street furniture.

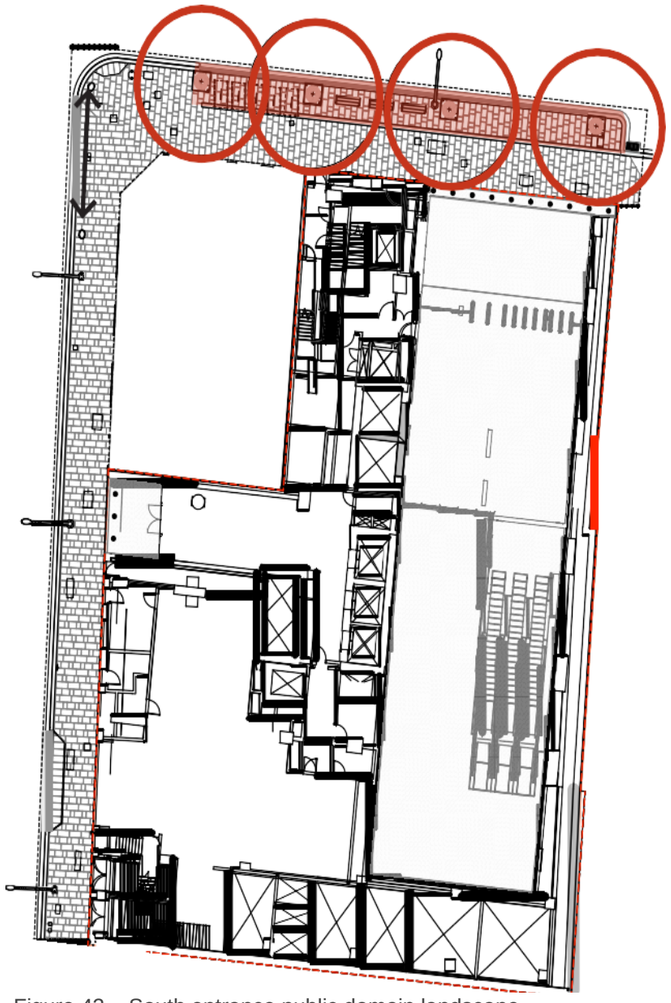


Figure 42 – South entrance public domain landscape

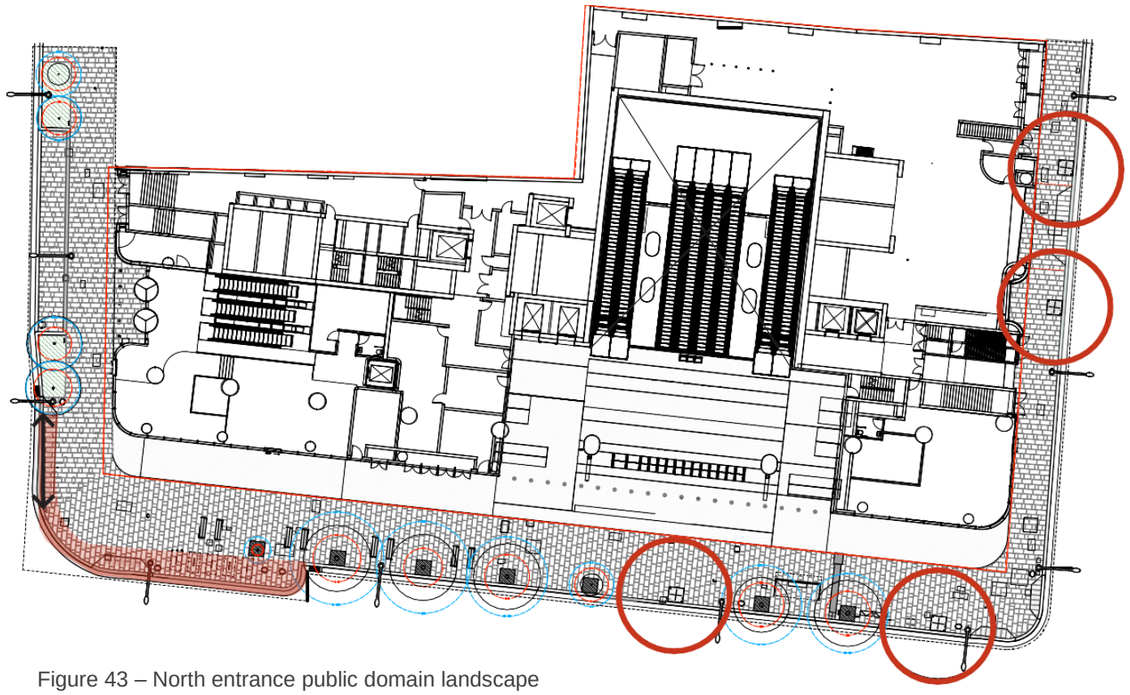


Figure 43 – North entrance public domain landscape

5.5. OPPORTUNITIES IN THE HERITAGE INTERPRETATION

The aim of heritage interpretation is to communicate the significance of a heritage item, through the identification of key themes and storylines that will convey a meaningful understanding of Aboriginal and Non-Aboriginal heritage values. Separate Heritage Interpretation Plans have been prepared for the North & South OSDs, and the Station itself. The following common historical themes have been identified,

- The historical role of Pitt Street in Sydney's transportation system, from horse-drawn transport, to horse and carriage transport, to Sydney's first and second tram networks, and finally the metro.
- The historical social character of the neighbourhood, and its consequent urban grain and built environment reflecting the local mixture of trades, small businesses and housing.
- Historical archaeology.

Non-Aboriginal Interpretation

Opportunities to tell stories reflecting these themes for Non-Aboriginal Heritage have been identified as follows:

Story	Location		Method
Historical Archaeology	Station		Incorporate discovered sandstone as course in sandstone walls
		Lower concourse, north	Display archaeological artefacts in wall- mounted cabinet
		Paving along Park and Pitt streets – north station and OSD	Indicate former layout of erstwhile commercial businesses in pavement
From Horses to Metro		Platform level (B4) - south	Install linear graphic on wall of 1860s Pitt Street and the first tram line
		Platform level (B4) - north	Image mounted on wall showing where you could go on a Pitt Street tram
	OSD North	Castlereagh Street external wall	Artistic horse and carriage scene
Sam Hood, photographer – a business on the site		Level 2 or 3 lobbies	Presentation of photographic images by Sam Hood
The Barley Mow Hotel – an hotel on the site [optional for tenant]		Inside tenancy, cnr Park and Castlereagh Streets	Imagery and song lyrics associated with the former hotel
'The Worker' newspaper – a business on the site	OSD South	Level 2, 'work from home lounge'	Display of newspaper front pages and the cover of Mary Gilmore's cookbook
Trades on the site, including stonemason, cedar supplier, baker etc..		Pitt Street residential lobby (ground floor)	Artistic representation of the former small trades character of this location

Figure 44 – A buggy manufacturer on the OSD north site


Figure 45 – Excerpt from 1877 photograph of the OSD north site

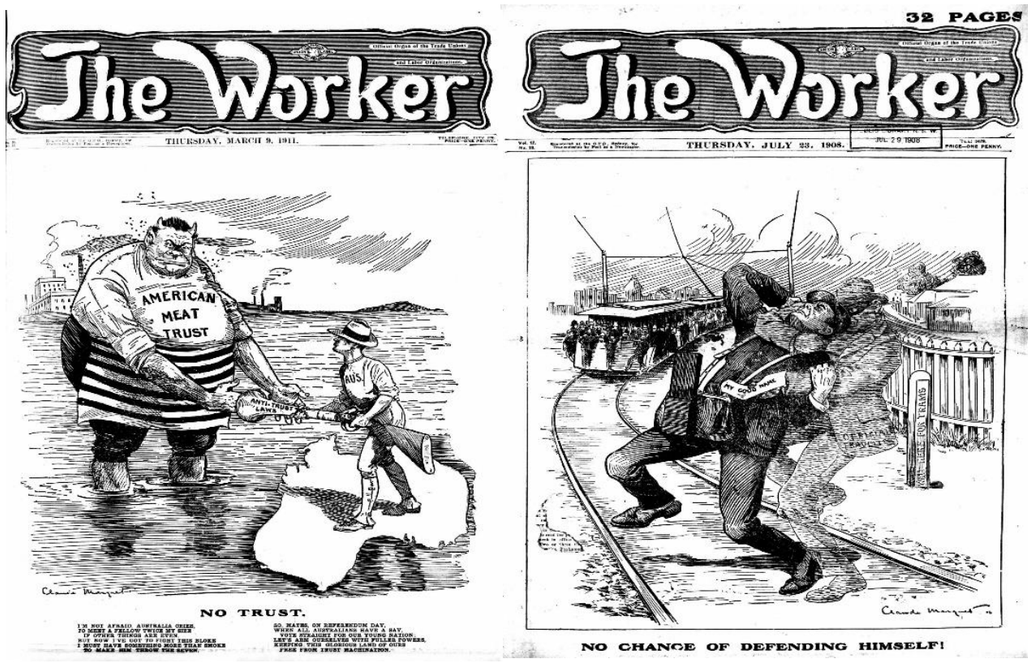


Figure 46 – Covers of the worker, produced on the OSD south site

The Heritage Interpretation Plan for each station site will address any salvaged items from the site, that are of any major significance. The Plan will identify the requirements and design opportunities for those items to be integrated into the design of the station entrance.

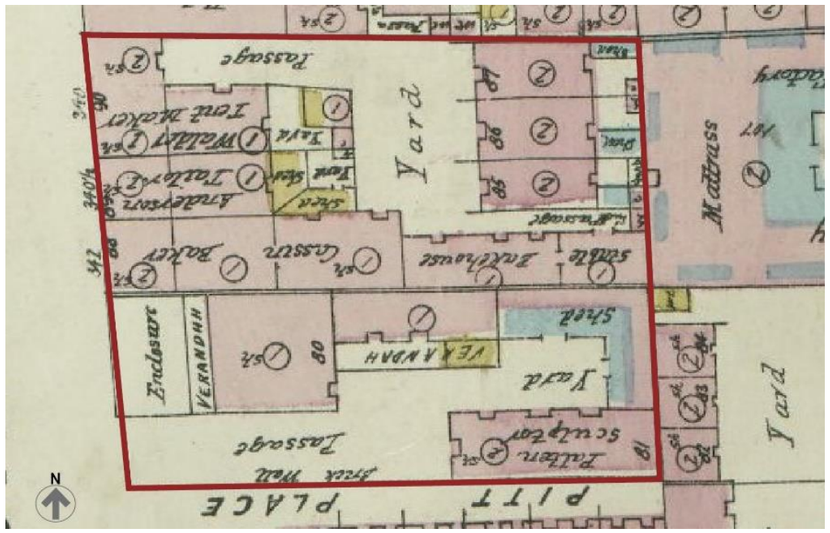


Figure 47 – Use of part of the OSD south site, 1880

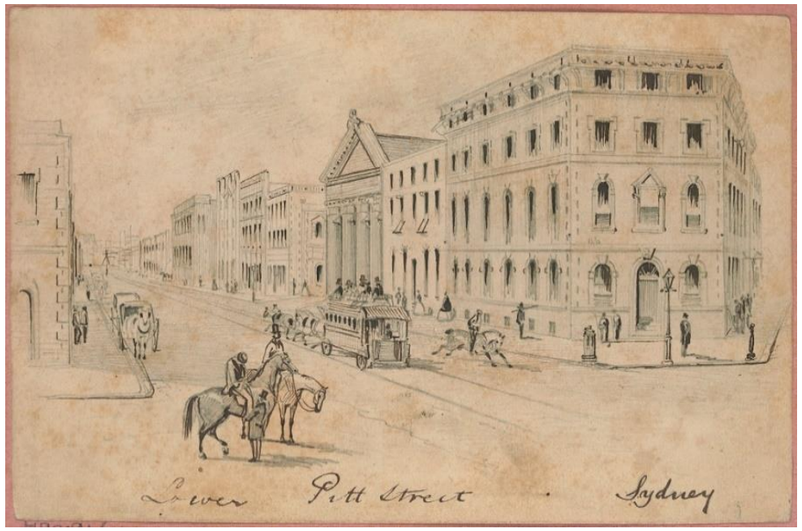


Figure 48 - Horse-drawn tram in Pitt street, 1860

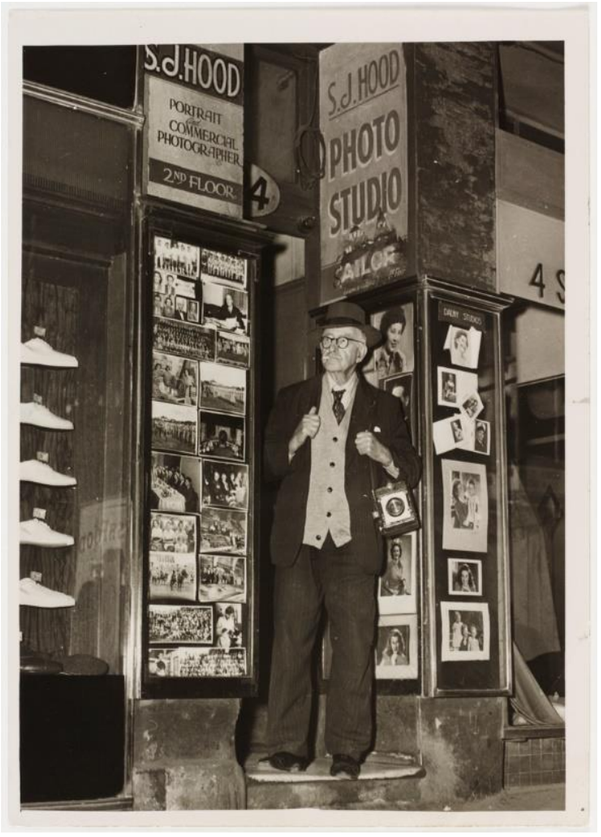


Figure 49 - Sam Hood, photographer, outside his park street studio on the OSD north site

Aboriginal Interpretation

The history and culture of local Aboriginal people, as first owners of the land, should be acknowledged and explored at the station site.

Opportunities to tell stories reflecting the key stories and themes of Aboriginal Heritage at Pitt Street that have been identified as follows:

- Aboriginal life on Gadigal Land
- Aboriginal Lift on Gadigal land following European Settlement
- Colbee, a Gadigal Man
- What did Gadigal land look like
- The Gadigal diet.

These stories and themes are proposed to be represented through Interpretive Signage & Artwork. However, the design and approach to the interpretation will consider feedback received from the ongoing Aboriginal community consultation and Land Council.

Figure 50 – “View in Port Jackson” by Richard Cleveley 1789 (source: Dixson Library, State Library of New South Wales [a7225030 / DL PXX 84, 30]).

Figure 51 – “A View in Port Jackson, New South Wales” by T Webley (engraver) in 1793, showing Aboriginal people fishing from the rocks with spears, and in canoes, with fire. (Source: Dixson Library, State Library of New South Wales [a7225031 / DL PXX 84, 31]).

Figure 52 – “First interview with the Native Women at Port Jackson New South Wales” by William Bradley (source: Mitchell Library, State Library of New South Wales [a3461017h / ML Safe 1/14 opp. p. 70]).

Figure 53 – Hand-coloured engraving from 1793, published by Alex. Hogg, showing “Captains Hunter, Collins & Johnston, with Governor Phillip, Surgeon White, &c Visiting a Distressed Female Native of New South Wales, at a Hut near Port Jackson” (source: Dixson Library, State Library of New South Wales [a7225029 / DL PXX 84, 29])

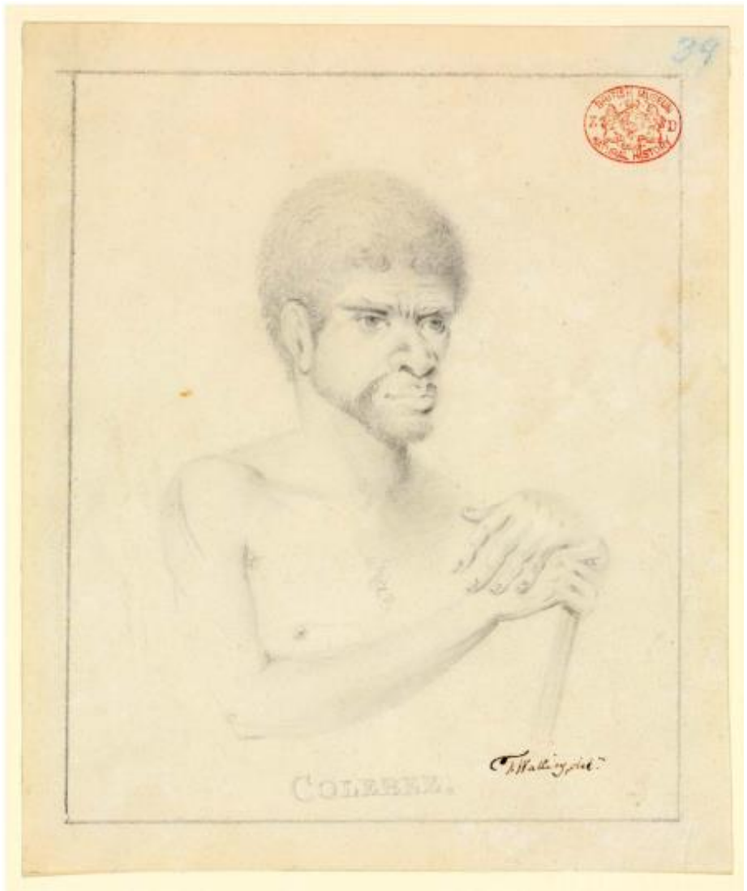


Figure 54 – Portrait of Colebee, sketched by Thomas Watling between 1792 and 1797 (source: Natural History Museum of London – 022030.)

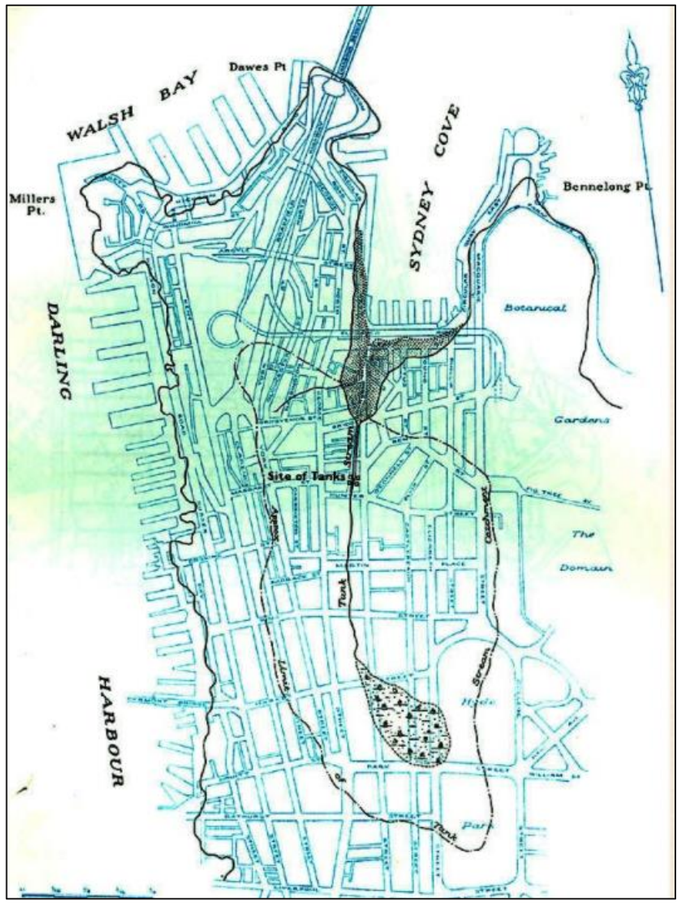


Figure 55 – Map depicting the alignment of the Tank Stream, which provided the colony's first and main source of drinking water (source: Aird 1961).

Figure 56 – View in Port Jackson from the South Head leading up to Sydney; Supply sailing in" by William Bradley, showing the forested landscape. Source: Mitchell Library, State Library of New South Wales [a3461017h / ML Safe 1/14 opp. p. 123].

Figure 57 – Example photograph of a midden site. Source: Dictionary of Sydney https://dictionaryofsydney.org/entry/archaeological_evidence_of_aboriginal_life_in_sydney).

6. DETAILS OF THE STATION DESIGN AND PRECINCT PLAN

6.1. PITT STREET INTEGRATED STATION DEVELOPMENT

Beyond spatial, structural and services integration, our proposal seeks to extend the concept of an integrated transport development.

By carefully integrating the development with the surrounding built, cultural, social, and heritage context, we will create a truly world-class station and surrounding precinct that is not just in keeping with the spirit of the location but helps define it.

Future customers will easily navigate their way in and around both of the Pitt Street station entrance sites with an intuitive and integrated design which delivers a high degree of connectivity, flowing from the station to the public domain and surrounding local context. The station seamlessly integrates with the public domain areas and surrounding neighbourhood with generous circulation spaces, offering street tree planting, lighting and informal seating / gathering areas to provide respite and guide customers on their journey.

The northern site features a primary metro entrance on Park Street. The commercial tower above has its main entrance on Pitt Street and a secondary entrance on Castlereagh Street which reference the scale and materiality of the surrounds to sit harmoniously in the local context. The public domain and metro entrance express openness through kerb extensions on Park Street which define the bus stop waiting areas and increase circulation spaces. This is complimented with street tree planting, lighting and other informal seating areas throughout the public domain to benefit the local community and site users.

The southern site, with the metro entrance located at Bathurst Street, proposes to expand the public domain by extending the kerb to increase pavement and circulation spaces near the station and Edinburgh Castle Hotel. The public domain upgrade works to Pitt and Bathurst Streets consist of new kerbside street tree planting, bollards, lighting, street furniture, bench seats and bike racks to encourage sustainable travel.

Figure 58 – North entrance ground plane

Pitt Street Integrated Station Development

The outcomes from an integrated development are considered under the following headings:

1. Structure

Refinements to building structure have resulted in the removal of OSD columns in both the north and south metro entrances.

2. Services

Refinements to station services have permitted the creation of a new retail space on Bathurst Street as well as a more compact podium on the south site with improved louvre locations.

3. Built Form

Refinements to the Stage 1 massing achieve a built form that is sensitive to the surrounding context. On Pitt Street north, tower and podium massing are cleverly articulated to enhance legibility of the metro entry and integrate with the scale of adjacent developments. On Pitt Street south, a stepped street frontage to Bathurst Street mediates between the scale of Euro Towers and the heritage listed Edinburgh Castle Hotel to achieve a highly integrated streetscape.

4. Station Entrances

The South station entrance has been increased in height by one storey, while the north station entrance now incorporates a skylight above the centralised gateline. Both entrance designs enhance daylight penetration into the station and provide an integrated design outcome between sites.

5. Uses

Proposed OSD uses have been selected to integrate with existing uses in the precinct and have been designed to integrate with the design of the station entrances.

On the North site, premium grade commercial office will knit into the adjacent, predominantly commercial, office context. On the South site, Australia's first Build to Rent residential development will enhance, enliven and integrate with the existing luxury residential and entertainment precinct south of Bathurst Street.

6. Social & Cultural

Both North and South sites contain shared areas above the ground floor which foster a rich social overlay between varying user groups.

On the North site, the commercial office tower is accessed through food and beverage retail areas shared by metro customers, local residents and office workers. This will create an integrated lively social heart within the development, expressed with new activation on the Park Street facade.

On the South site, above ground car parking has been eliminated and replaced with active bar, restaurant and wellness facilities shared by Build to Rent residents, Metro customers and general public. The vision enhances social overlap between the various user groups and integrates the development into the adjacent entertainment precinct.

7. Materials

Materials and finishes within the station have been integrated into the facades of both OSDs to create a continuity of theme and aesthetic, enhancing the clarity and identity of the combined development.

8. Heritage & Built Context

Both podium and tower facades have been further integrated into their respective contexts through comprehensive material selections. These are based on rigorous analysis of adjacent context and heritage.

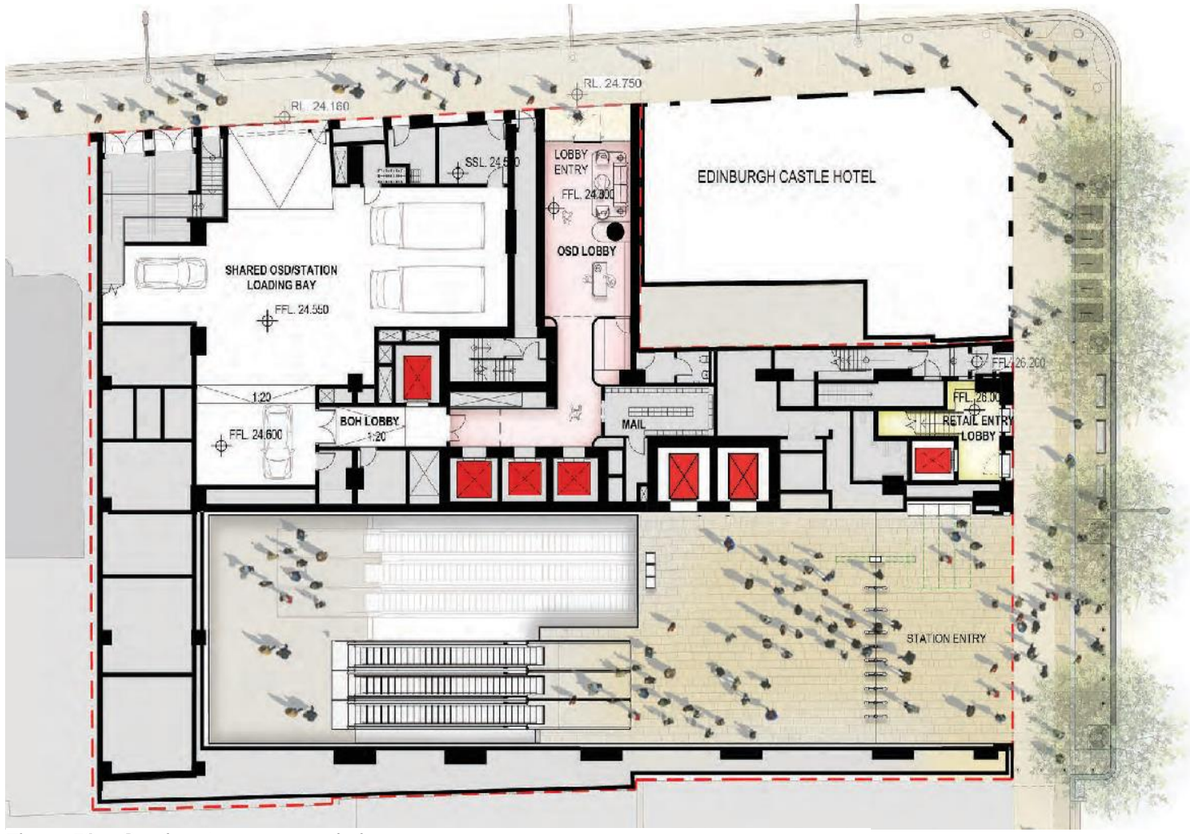


Figure 59 – South entrance ground plane

Pitt Street Integrated Station Development

The below image demonstrates how the south and north station entrances are linked through the underground metro station and adits, as well as their relationship with the over station buildings, above.

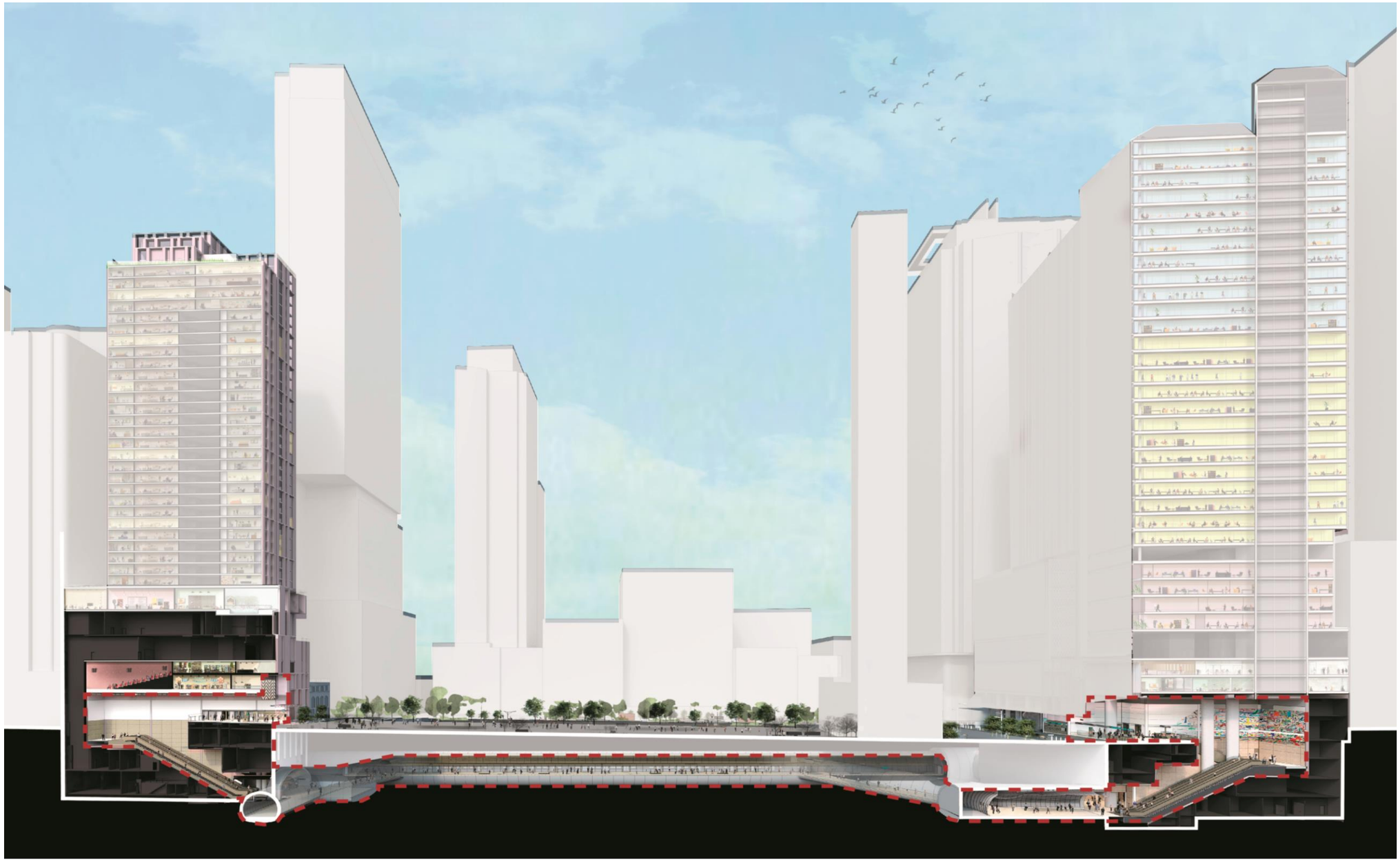


Figure 60 - Pitt Street integrated station development

6.2. PRECINCT PUBLIC DOMAIN OBJECTIVES & PRINCIPLES

The midtown precinct occupies a nexus of political, physical and cultural significance. It straddles the buried history of an indigenous track, formalized over centuries as George Street. This acts as a potent ceremonial site coincident with the seat of Local Government.

Regeneration of this precinct is already under way with the construction of the light rail linking Circular Quay to Central Station on George Street. The future upgrade of Sydney Square and the addition of a new public square on the corner of Park and George Streets, will recast the centre of Sydney as a vital, collective space for all. The long term vision for Park and Bathurst streets is to make enduring pedestrian and green connections across the city.

This transformation will be a series of bold urban renewal projects. Interventions that speculate the future closure of Park Street to traffic altogether, as part of the second life of the Cross City Tunnel; Re-imagining the Australian Museum on the threshold of Cook and Phillip Park, with Hyde Park unified; Town Hall connected directly with The Queen Victoria Building and linked to Darling Harbour.

A commitment to continuous street tree plantings on both Park and Bathurst streets is the first part of this regeneration, as roadways evolve to tree lined city boulevards - streets for people.

The public domain objectives for the station sites correspond to those of the midtown precinct, supporting the NSW Government's planning strategies and objectives, including the Greater Sydney Region Plan (2018) and the Eastern City District Plan (2018).

The Pitt Street Integrated Station Development (ISD) provides an opportunity to realise precinct wide ambitions at a site scale. Upgrading the public domain in the precinct will enable intuitive pedestrian wayfinding, commuter connectivity and improved public amenity.

The Pitt Street ISD comprises two sites in the Sydney CBD, including the north entrance located on the northern side of Park Street between Castlereagh and Pitt streets and the southern entrance located on the southern side of Bathurst Street adjacent to Pitt Street.

At both sites expanded pavements and increased circulation and waiting areas make places for people over traffic, while reducing street crossing distances. New lights and bollards improve security, bench seats allowing street life. New kerbside street tree planting transforms streets, strengthening green links and connections.

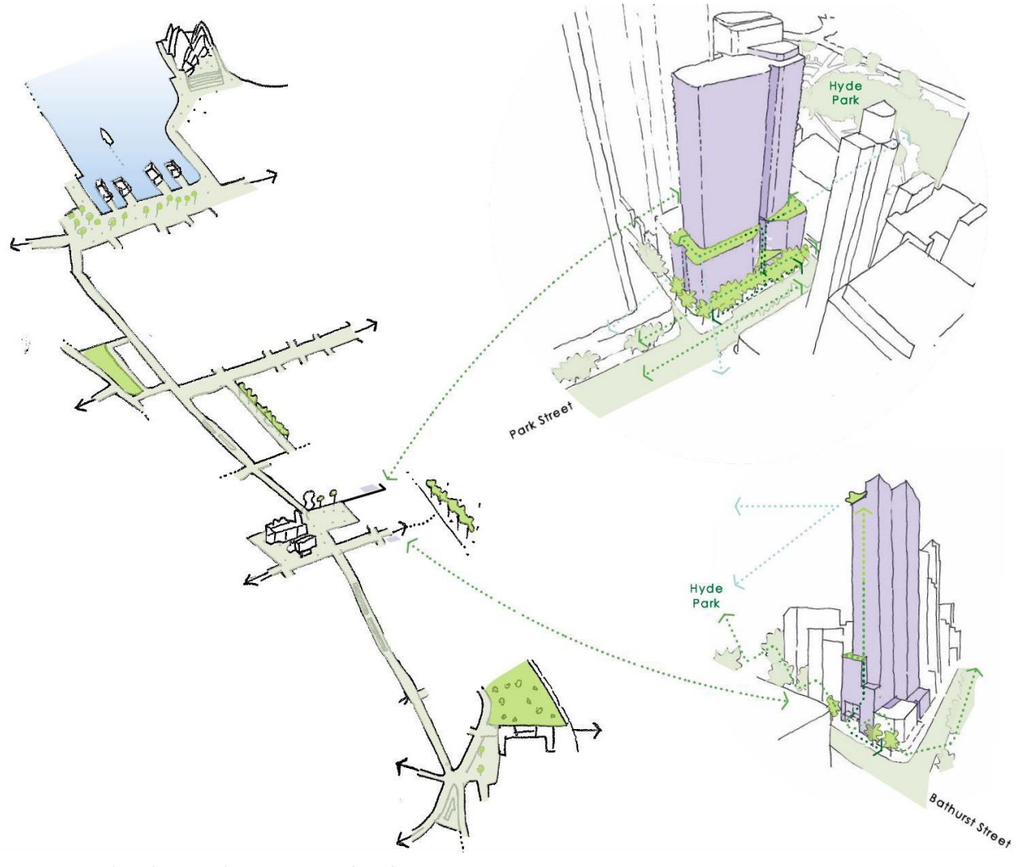


Figure 61 – Precinct integration concept sketch

6.3. LANDSCAPE CONNECTIONS

The siting of the metro and station plazas on Park and Bathurst streets signals the pre-eminence of these cross city connections and the potential of these streets as future city boulevards. The immediate connection to the City's public spaces, its plazas, parklands and cultural institutions, gives both sites deeper resonance and landscape significance.

The landscape opportunities build on those outlined in the CSSI and the objectives outlined in Section 4 - Design objectives, principles and standards.

The first order issue is to ensure the public domain is clear, legible, safe and comfortable for all, establishing a continuous canopy of street trees that visually and ecological link each site to Hyde Park and Darling Harbour. This gives these cross streets a clear identity that helps anchor and situate both locals and visitors at the midpoint in the City.

Forming safe but open and uncluttered footpaths scaled for pedestrian movement is of equal importance, with places to pause and queue for connecting transport services - buses, taxis, light rail and cycle paths. Widening of signalised crossings at Pitt Street and Park Street intersection, and Pitt Street at Bathurst Street, and the extension of the footpath at Park Street and Pitt Street intersection and at Bathurst Street will help realise this ambition.

The continuation of high quality primary plaza finishes into the station entrances connects these spaces to the broader public domain.

Figure 62 – Proposed species

6.4. PUBLIC DOMAIN AND LANDSCAPE INTERFACE –

Northern Entrance

Public Domain

The public domain is where everything in the project comes together – the horizontal and vertical ‘cross roads’. The podium massing has been carefully crafted to accentuate and improve the pedestrian flow around the building and into the station.

A sense of openness and calm infuses Pitt Street north in the public domain and metro entry, with the station plaza and two kerb extensions on Park Street. The expanded pavements and bus shelter define the bus stops for east-bound buses, and increase circulation and waiting areas, while reducing street crossing distances. New lights and bollards improve security, making this feel like a place for people, over traffic.

In order to further enhance the pedestrian experience, the colonnade on the Park Street facade has been omitted, with the continuous canopy now supported from the building above. This effectively clears the public domain of all vertical obstructions, providing clarity on the ground plane and station entry configuration. The ceiling treatment of the station, which is brought into this residual space, acts as an additional wayfinding element along Park Street.

Landscaping Overview

Greenery is amplified with infill street trees along Park Street and new kerbside street trees on Castlereagh Street leading up to a street canopy. Bench seats invite waiting and resting to the west of the station plaza, while bike racks located to the east offer users of the future Castlereagh Street cycle path a quick getaway.

Underplanting of existing street trees on Pitt Street, and the provision of new planter beds on Park Street, lend the tower a green entry, separating seating from the kerb and bus stop to enhance the quality of waiting spaces. The approach to planting and greening of entrances creates a feeling of harmony with nearby parkland.

Figure 63 – Landscape section – station north

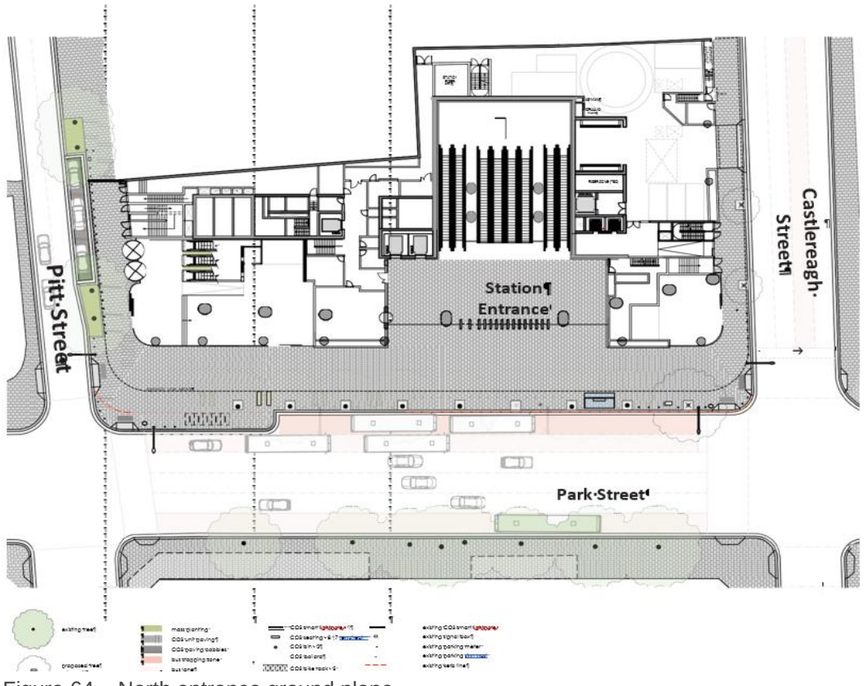


Figure 64 – North entrance ground plane

6.5. NEW STREET TREE & UNDERSTOREY PLANTING – NORTH

Park Street is the city's key east-west cross street. Connecting the public domain of Darling Harbour and Hyde Park with destinations beyond the city.

New street trees will add to existing plantings of evergreen Brushbox in Park Street, forming a unifying base to the new Over Station Development Building and a green entry to Pitt Street Station North.

The evergreen Green Avenue Weeping Lilly Pilly is the street tree for Castlereagh Street which bounds the eastern edge of the site, reinforcing recent plantings to the north. The complexity of underground services along this footpath allowing for the installation of only two trees on this frontage.

In all cases new trees are spaced to provide clear corners and sightlines at the intersection of Park Street with formative pruning enabling clear pedestrian movement beside the trees and away from building awnings above. Both species are consistent with the City of Sydney Street Tree Masterplan and the Urban Interface Agreement.

On Pitt Street which bounds the western edge of the site, four existing Chinese Elm trees frame a short stay parking bay at the entry to the Over Station Development Building. Replacement of paving below these paired trees with a groundcover of scented Star Jasmine will improve growing conditions for the trees while adding landscape to the building entrance. The mass planting providing year round foliage below the semi-deciduous elms.

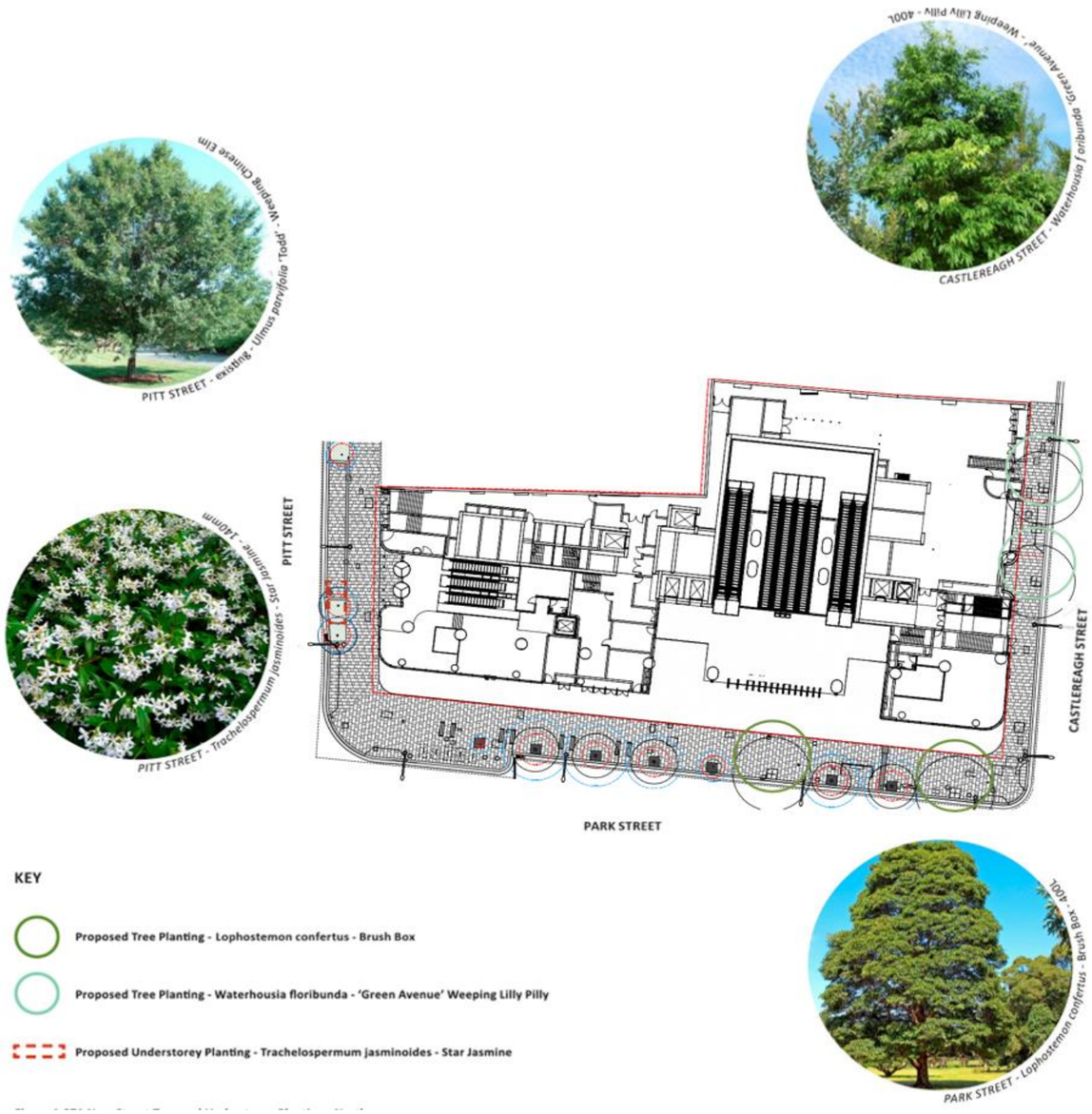


Figure 65 – New street tree and understorey planting - north

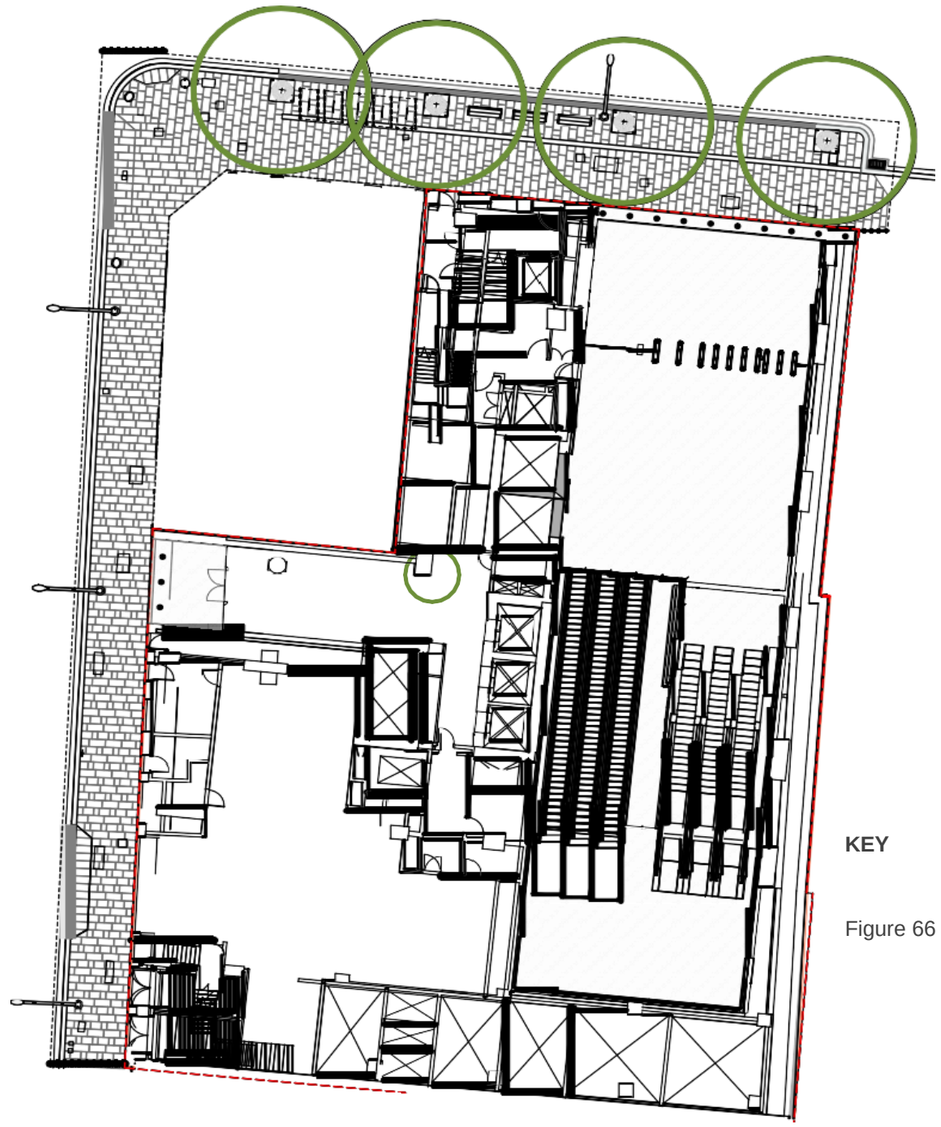
6.6. NEW STREET TREE PLANTING – SOUTH

Bathurst Street is one of the city's key east-west cross streets. Here new street trees will add to the avenue plantings of Brushbox consistent with the City of Sydney Street Tree Masterplan and the Urban Interface Agreement.

Bathurst Street will connect the public domain of Darling Harbour and Hyde Park with an evergreen canopy, while forming a unifying base to the new Over Station Development Building and the corner pub and hotel, The Edinburgh Castle Hotel.

Trees are spaced around existing services to form a continuous canopy and provide a green entry to Pitt Street Station south, with clear sightlines at the intersection of Bathurst and Pitt streets. Formative pruning will enable clear pedestrian movement beside the trees and away from building awnings above.

No street trees are proposed along the footpath on Pitt Street due to the continuous awnings at this frontage



KEY Proposed tree planting - Lophostemon confertus - Brush Box

Figure 66 – New street tree and understorey planting - south

6.7. MONITORING & MAINTENANCE OF LANDSCAPING

Planting within the city footpaths and public domain are in three typologies:

- existing trees with terrabond surrounds
- existing trees in planter beds with underplanting
- new street trees set within grates and bounded by protective tree guards

No areas will have automatic irrigation.

A synopsis of the basic horticultural practices required to maintain these plantings in optimum condition is identified below. These procedures will need to be adjusted to respond to seasonally adverse weather conditions and unanticipated events.

This schedule will be expanded on as part of the preparation of the project documentation package.

health monitoring & litter removal	**monthly** inspect planting areas to assess site conditions, plant health and vigour remove litter from tree grates and planter beds
watering	**weekly until occupation certificate** deep water trees and planting beds by hand without wetting adjacent pavements **monthly after occupation certificate** deep water trees and planting beds by hand as conditions require to ensure plants are vigorous and healthy
fertilising	**quarterly** apply seasol® to manufacturer's recommendations **annually** apply 50 grams of a slow release fertiliser 18:3:10 NPK ratio to manufacturer's recommendations apply powerfeed® to manufacturer's recommendations
weeding	**monthly** remove all weeds by hand and dispose off site
pest & disease control	**monthly** inspect plants for pests and diseases take corrective action using integrated pest management procedures appropriate for a public space
pruning	**monthly** prune minor limb damage to AS 4373- 2007 **quarterly** prune star jasmine to remove vines from tree trunks and contain planting within the planter bed prune to remove deadwood annually prune street trees to AS 4373- 2007 for Crown Maintenance
mulching	**annually** top up mulch to 75mm depth with composted organic matter as originally installed
replacement planting	**monthly** replace plants that have died or failed to thrive, have been damaged, vandalised or stolen, with plants of the original container size and species

6.8. STREET FURNITURE

The metro station entries are integrated within the City of Sydney's public domain ensuring a unified setting that is recognisably public, safe and welcoming. The station will increase the numbers of pedestrians within the public domain and on city footpaths, so pavements and station forecourts will be kept open and uncluttered to facilitate movement.

Granite pavements will form a simple, unified and recognised ground plane across all city streets, creating a high-quality pedestrian environment with materials that are robust, durable and easy to maintain. Australian granite is a sustainable local product with low embedded energy.

Consistency with the City of Sydney, City Centre Furniture Suite will enhance the legibility of the public domain for both customers and the public. Street furniture will improve amenity and safety with smart poles for lighting, seats for resting and waiting, bike racks for active multi-modal travel and bins for civic cleanliness. New street trees will be distinguished with tree grates and protective guards.

These furniture elements will be located beside the kerb and beyond the main path of travel. Litter bins are the exception and are co-located with pedestrian crossings for increased usage.

All public domain elements are consistent with the Sydney Streets Code and the requirements of the Urban Interface Agreement.

Clarification from the City of Sydney will resolve minor site inconsistencies with the code such as the use of granite unit pavers in parking bays, insitu retention of trachyte kerbs at kerb extensions, pram ramp widths and the extent of tactile indicators. The provision of a bus shelter at Pitt Street North is a further item for resolution during Stage 3 design.

The figure below shows the street furniture typologies to be used within the public domain surrounding both the north and south station entries.

Figure 67 – City of Sydney public domain furniture and city paving

6.9. FRONT OF HOUSE MATERIALITY – STATION IDENTITY

The identity of this Sydney Metro station reflects the geological rock formation that it sits within.

For the station interior walls, local Sydney sandstone has been selected. The sandstone was selected in consultation with local quarries, to assess availability and stone qualities. Cutting techniques, available stone sizes and quantities were assessed and this informed the selection. The locally sourced sandstone reinforces the station's sense of place.

Sandstone panels will be applied with grouted, sealed joints of a colour to match the stone panels. Refer to specifications and detailed drawings for further details.

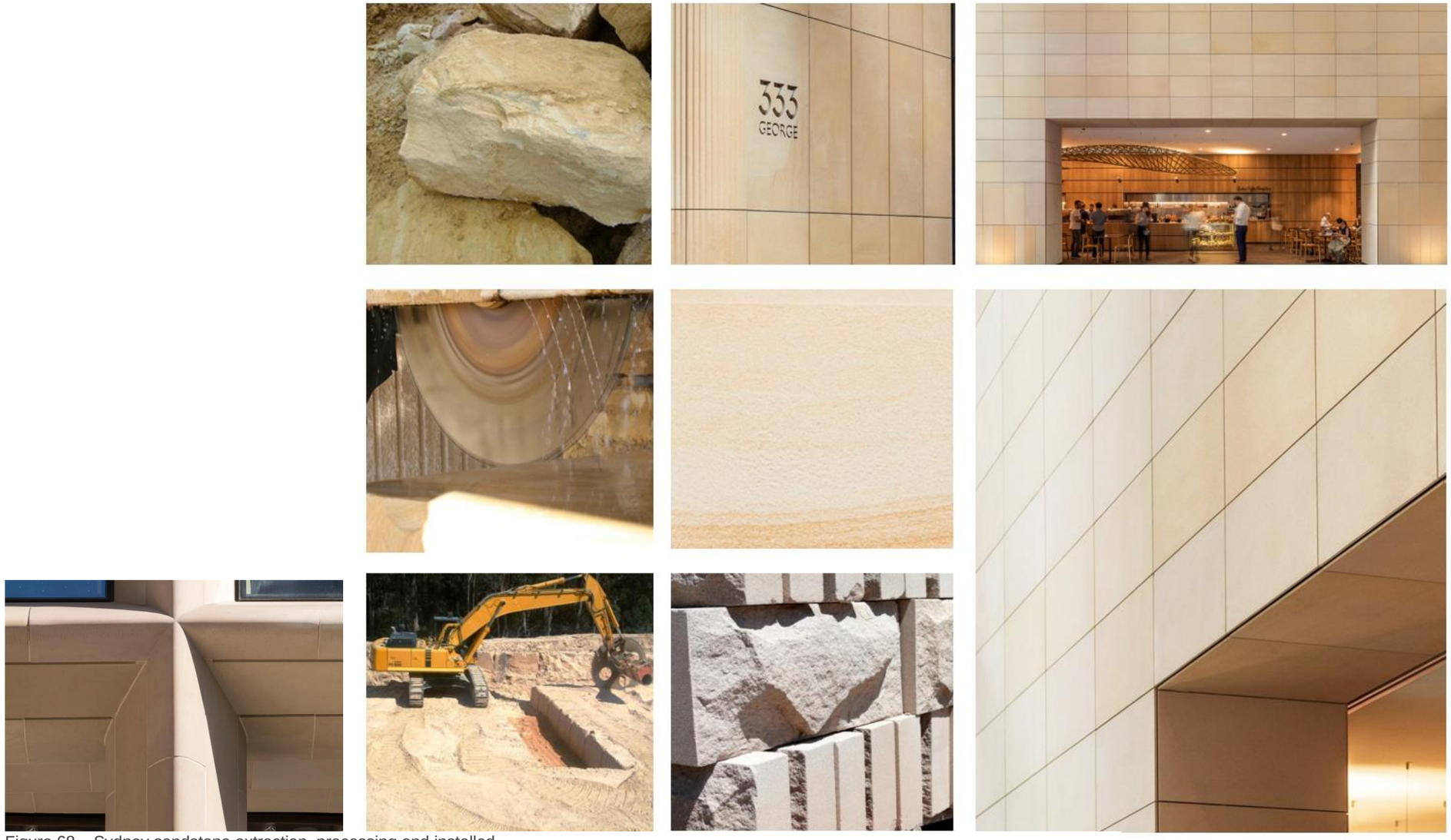


Figure 68 – Sydney sandstone extraction, processing and installed

6.10. FRONT OF HOUSE MATERIALITY – STATION ENTRANCE EXTERNAL MATERIAL PALETTE

The following material palette will be used for the external façade components of the station entrances.

Material Palette

1. Low-iron back painted glass
2. Stainless steel service band
3. Austral black granite paving
4. Bronze colour aluminium slatted ceiling
5. Piles Creek cream sandstone
6. White terrazzo tiled flooring
7. RAL 7024 aluminium platform screen doors
8. Bronze coloured metal finish
9. Bronze coloured PVD coated stainless steel
10. Brushed finished stainless steel
11. Ribbed white GRC cladding

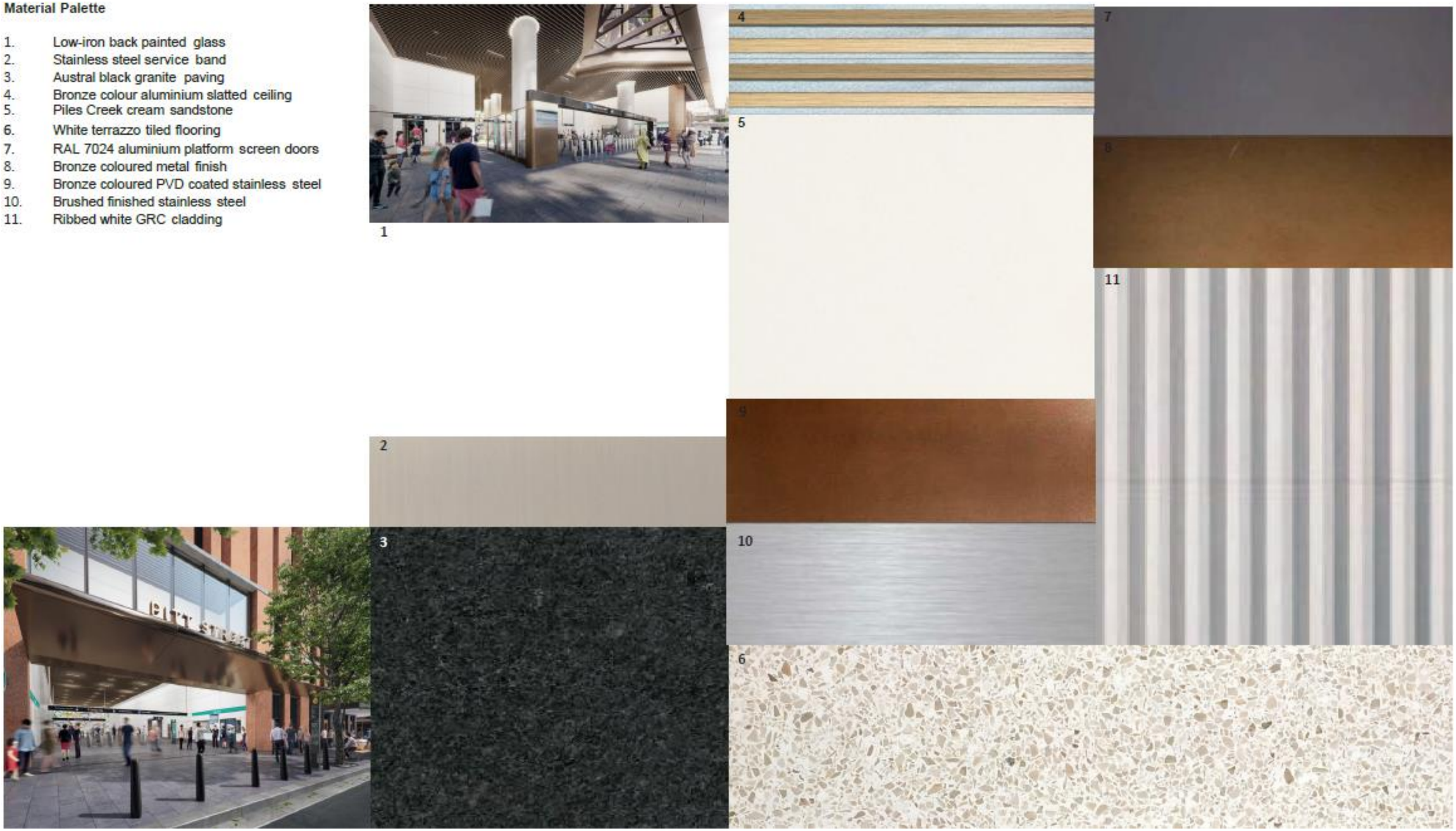


Figure 69 – Station entrance material palette

6.11. NORTH STATION ENTRANCE – PODIUM DESIGN

Figure 70 – Artist's impression of north station entrance and OSD tower

6.12. NORTH STATION ENTRANCE – FAÇADE DESIGN

The expression of the facades with different integrated shades directly responds to the specific shape and orientation of the floor plate and the detailed design of each is developed to respond to its location and orientation.

The massing has been carefully crafted to accentuate the building's functions. The station entrance is celebrated by a large glass veil that lets daylight flood the station plaza concourse. In addition, the centre line of the station entrance is used to articulate the tower above.

The following details reflect the facade typologies around the Street elevations up to the Station plantroom on Level 04.

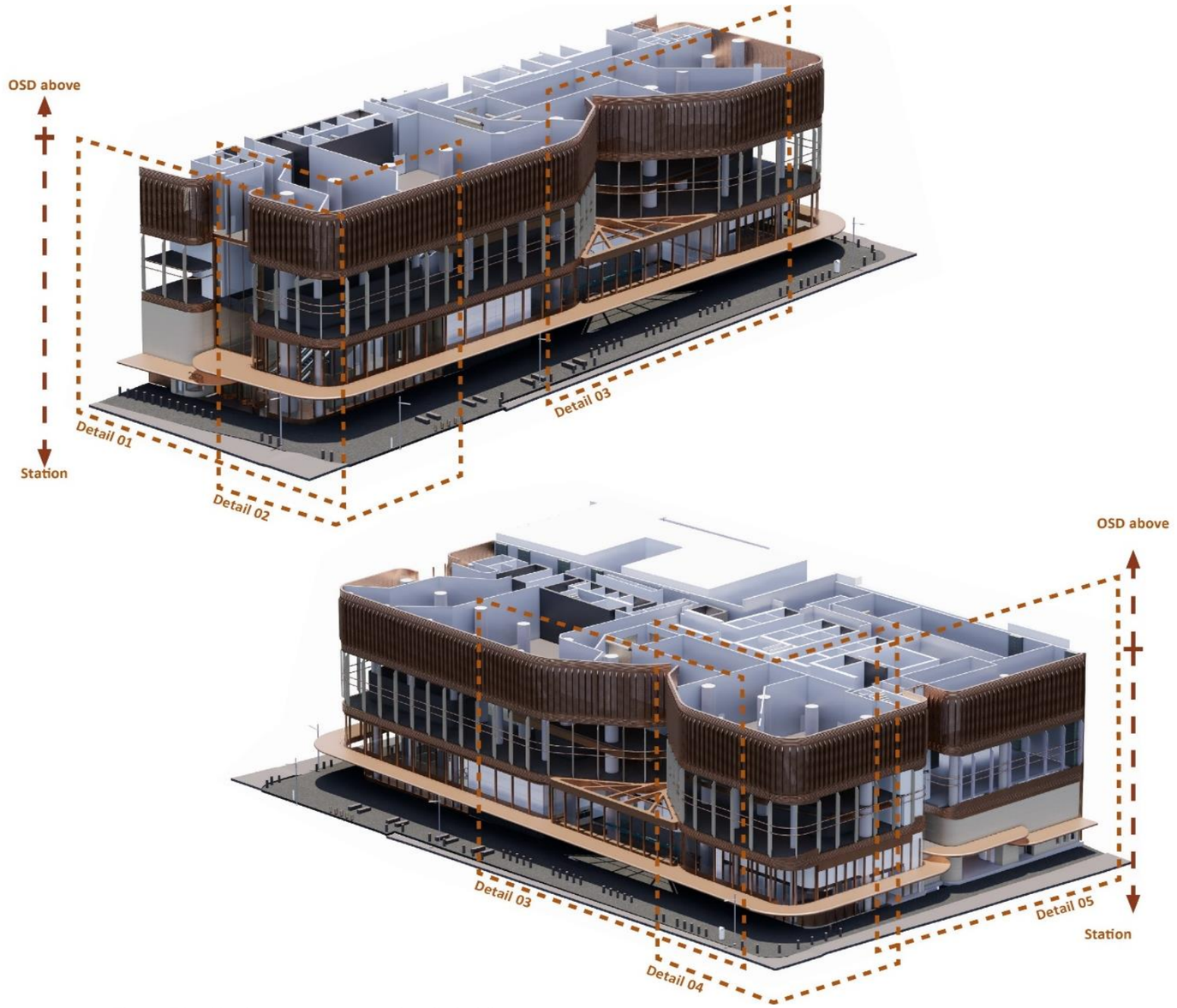


Figure 71 – North entrance external wall cladding

6.13. NORTH STATION ENTRANCE – FACADE DETAILS

Park Street Station Entrance - Detail 3

The glass veil on Park Street frames the station concourse creating a gateway into the Pitt Street Metro Station.

The corner of Park Street and Castlereagh Street wraps around the bronze coloured awning to unify the podium in one continuous canopy level.

Additional retail areas further activate the facade and celebrates the corner from Hyde Park towards the Metro station entrance.

In addition, the glass top increases the natural daylight within the station and down the escalator area to improve ambient light quality.

The gate line to the station is framed by the tower columns above and centrally located which reinforces the glass veil symmetry and architectural presence.

Both glass veil and vertical slot to the tower are in perfect alignment strengthening the station entrance location in relation to the tower above.

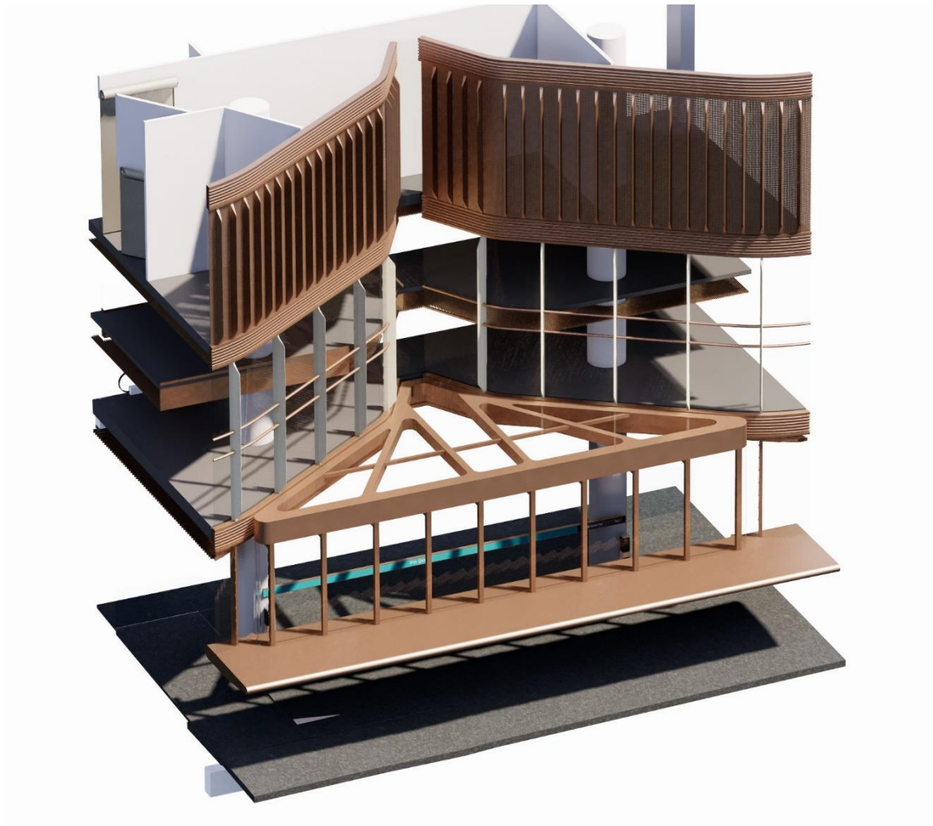


Figure 72 – North entrance external wall cladding - detail 3

Park Street and Castlereagh Street - Detail 4

The corner of Park Street and Castlereagh Street wraps around the bronze coloured awning to unify the podium in one continuous canopy level.

Additional retail areas further activate the facade and celebrates the corner from Hyde Park towards the Metro station entrance.

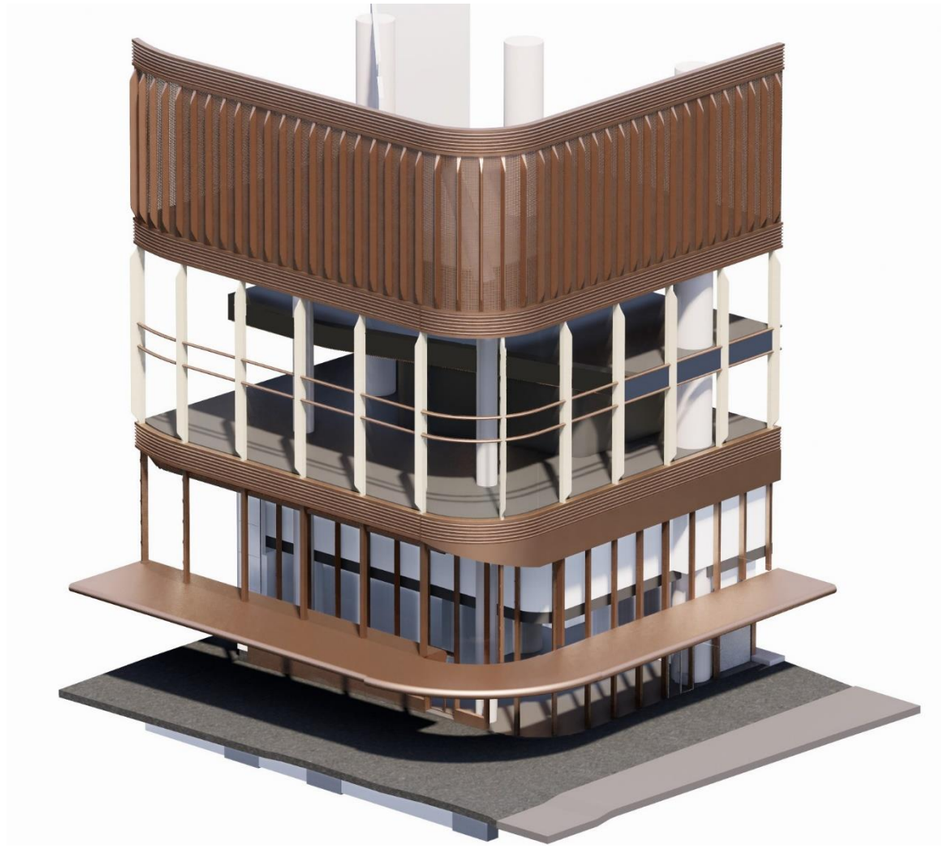


Figure 73 – Park Street and Castlereagh Street external wall cladding - detail 4

6.14. SOUTH STATION ENTRANCE - PODIUM DESIGN

Figure 74 – Artist's impression of south station entrance

6.15. SOUTH STATION ENTRACNCE – FAÇADE DESIGN

The car parking podium uses approved under the CSSI approval have been replaced with active uses to increase amenity and sense of place, whilst encouraging active transit methods and high public transport patronage by users and occupants of the Pitt Street south OSD.

The station entrance and ancillary uses occupy the ground level adjacent Bathurst Street, along with the OSD residential lobby entrance and loading services on Pitt Street.

Retail uses in the form of a food and drink premises (restaurant) occupies the Level 2 space looking out over the main metro entrance oriented towards Bathurst Street. This is coupled with residential amenities, including lounges, informal working-from-home spaces and a terrace, oriented towards Pitt Street.

This is intended to activate Level 2 of the podium in conjunction with the ground floor station entrance and ancillary uses, whilst referencing the horizontal and vertical datums of the OSD above and surrounding built form. These uses have, in part, guided the design of the respective external façade typologies in these locations.

The proposal seeks to create a sensitive scale relationship to both Euro Towers to the east and the Edinburgh Castle Hotel by articulating the podium massing to create a stepped height transition between each.

The following details reflect the facade typologies around the street elevations up to the station plant room on Level 04.

Figure 75 – Pitt Street Station south entrance

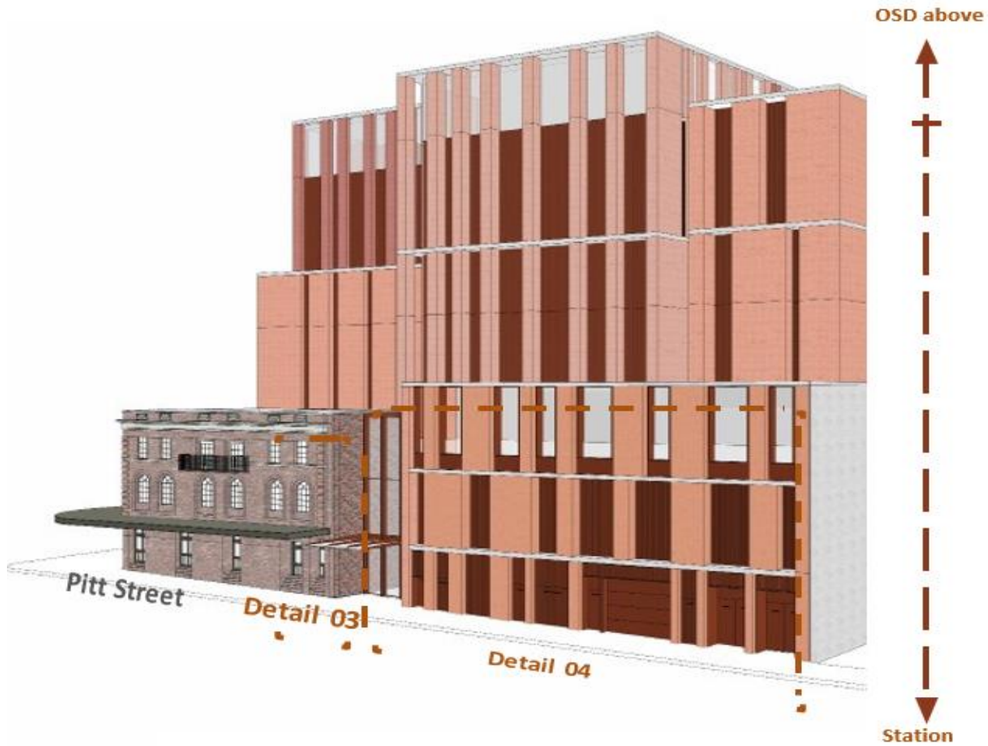


Figure 76 – Pitt Street south OSD tower entrance

6.16. SOUTH STATION ENTRANCE – FAÇADE DETAILS

Bathurst Street Station Entrance - Detail 1

The three storey station entrance on Bathurst Street forms the gateway into the Metro Station. The entrance is glazed above the awning to allow light to penetrate deep into the station concourse creating an ambient arrival experience.

Figure 77 – Pitt Street Station south entrance detail – Pitt Street back-of-house facade

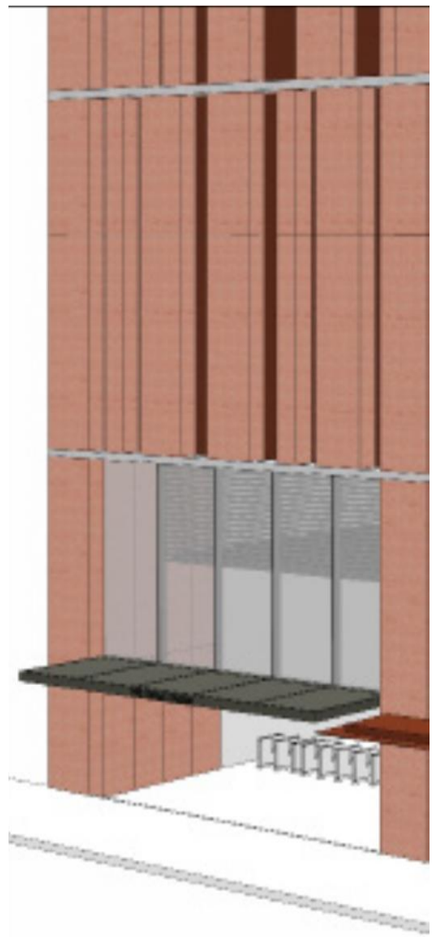


Figure 78 – Pitt Street Station south entrance detail – Bathurst Street facade

6.17. STATION ENTRANCES - INTERNAL MATERIAL PALETTE

The Pitt Street south and north station entrances incorporate the same design elements to give a consistent identity and familiarity of navigation in station.

External canopies are incorporated to identify the respective station entrances and provide shelter for the passengers.

Figure 79 – Artist’s impression of Station north entrance looking west along Park Street, and station south entrance looking from Bathurst Street

6.18. STATION ENTRANCES – INTERNAL MATERIAL PALETTE

The north and south station entrances have been designed to maintain a consistent material palette, and so the white, back-painted glass cladding panels continue from the entrances at street level into the escalator voids.

The ceilings above the escalators are made of bronze coloured aluminium ceiling battens, which are backed with acoustic insulation. Down lighting is located between the ceiling slats.

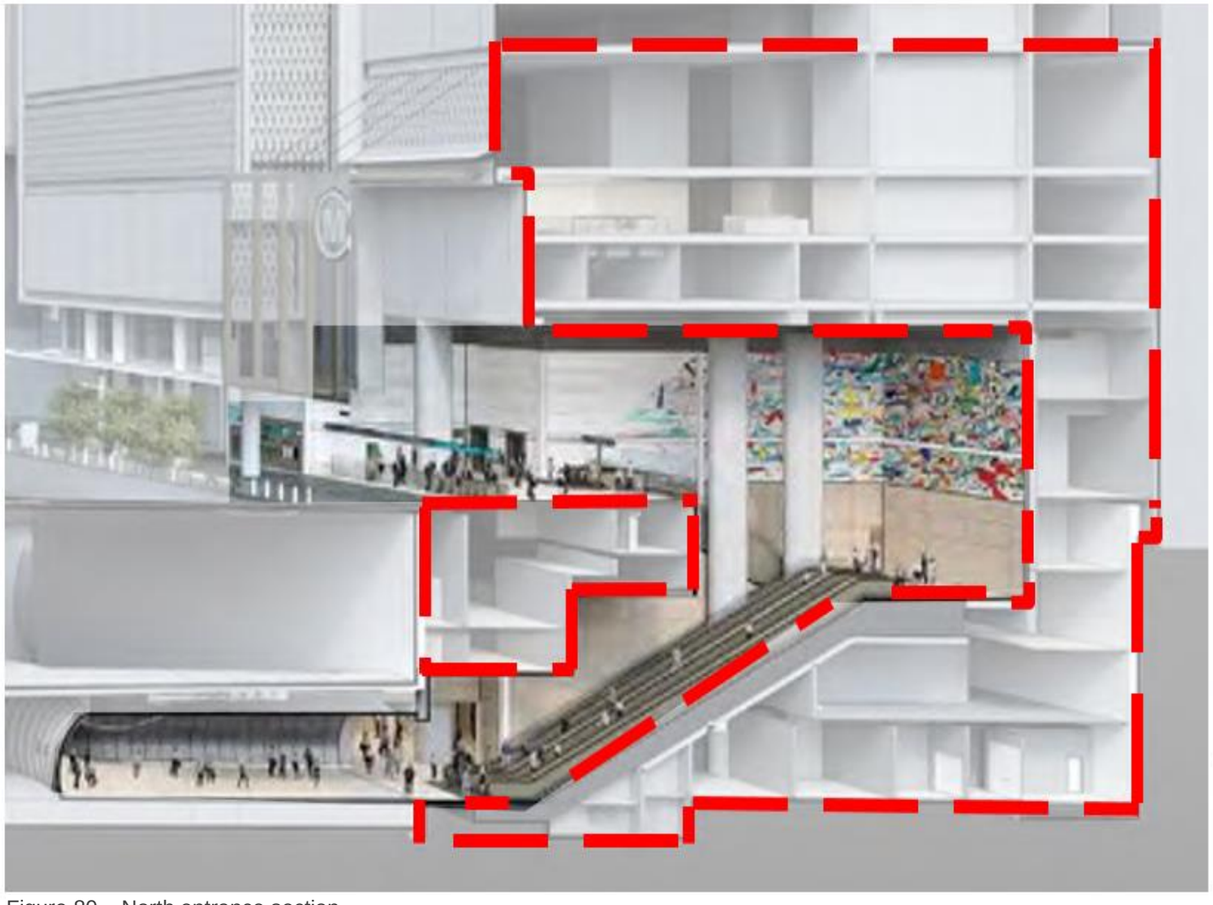


Figure 80 – North entrance section

Figure 81 – South entrance section

6.19. STATION ENTRANCE INTERNAL MATERIALITY – NORTH

Material Palette

The materials have been carefully chosen to ensure a consistent aesthetic through the project and the city of Sydney.

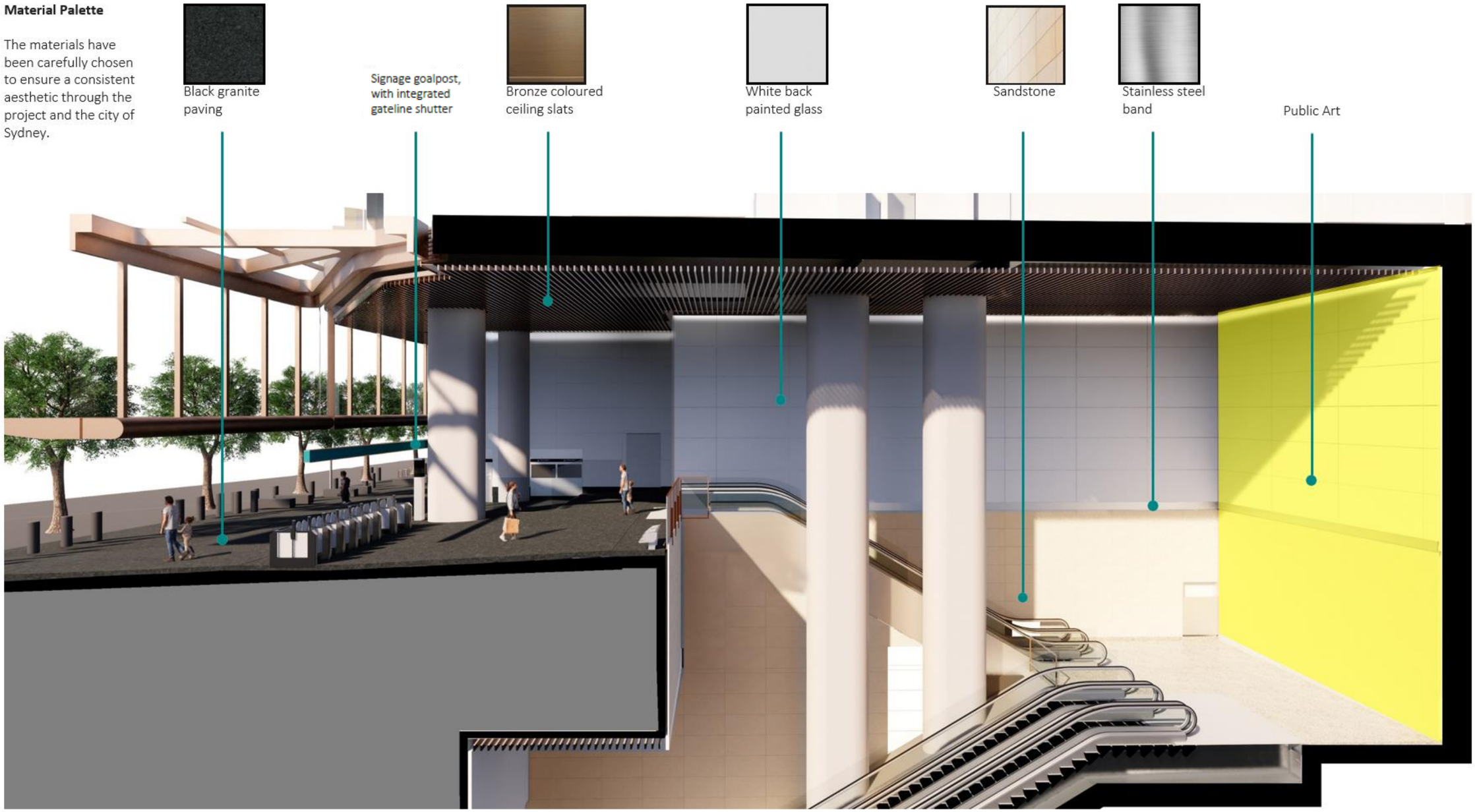


Figure 82 – North entrance materiality

6.20. STATION ENTRANCE INTERTNAL MATERIALITY – SOUTH

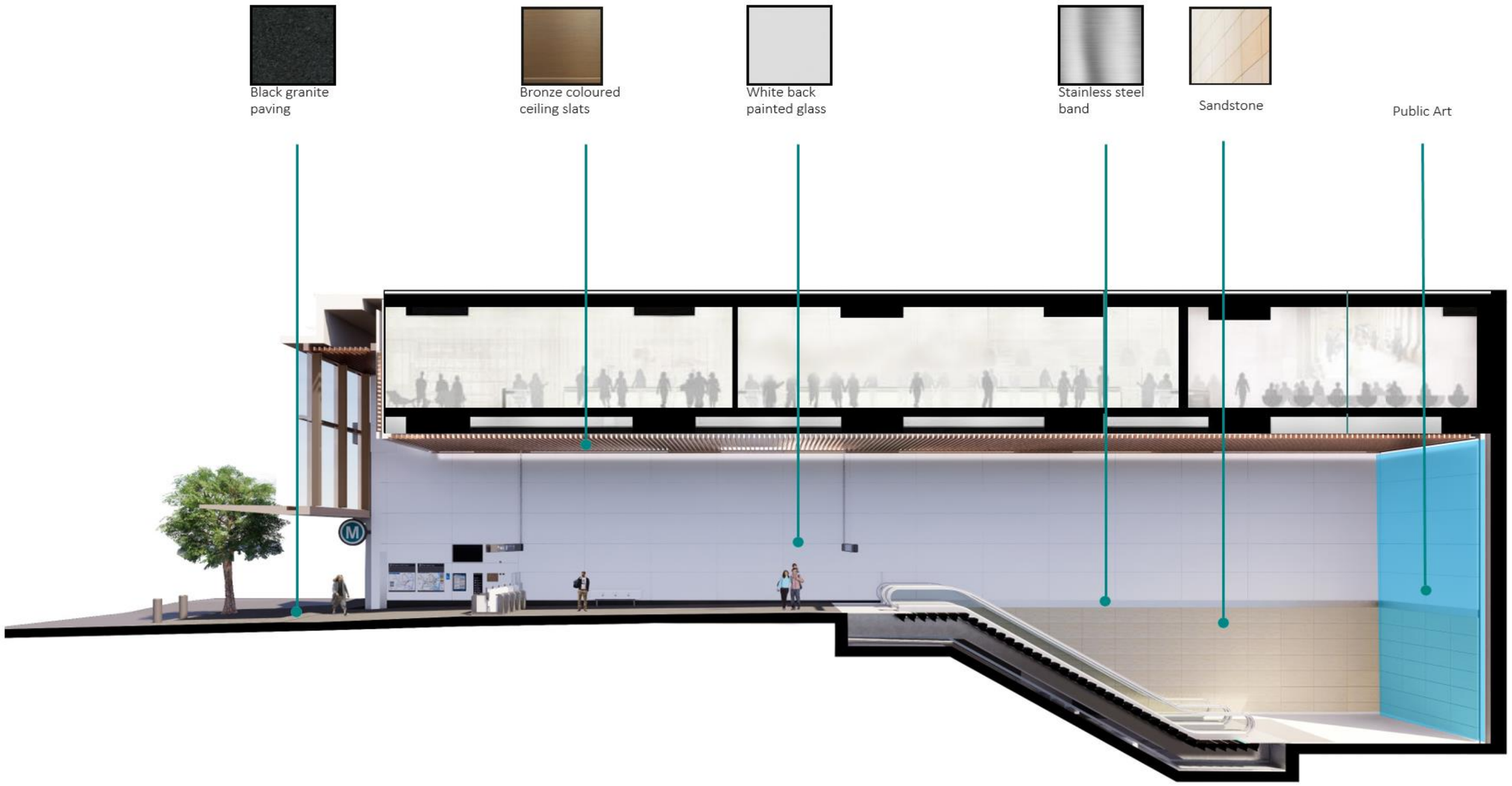


Figure 83 – South entrance materiality

6.21. STATION ENTRANCE – INTERNAL MATERIALITY NORTH AND SOUTH

The materials have been carefully chosen to ensure a consistent aesthetic throughout the project.

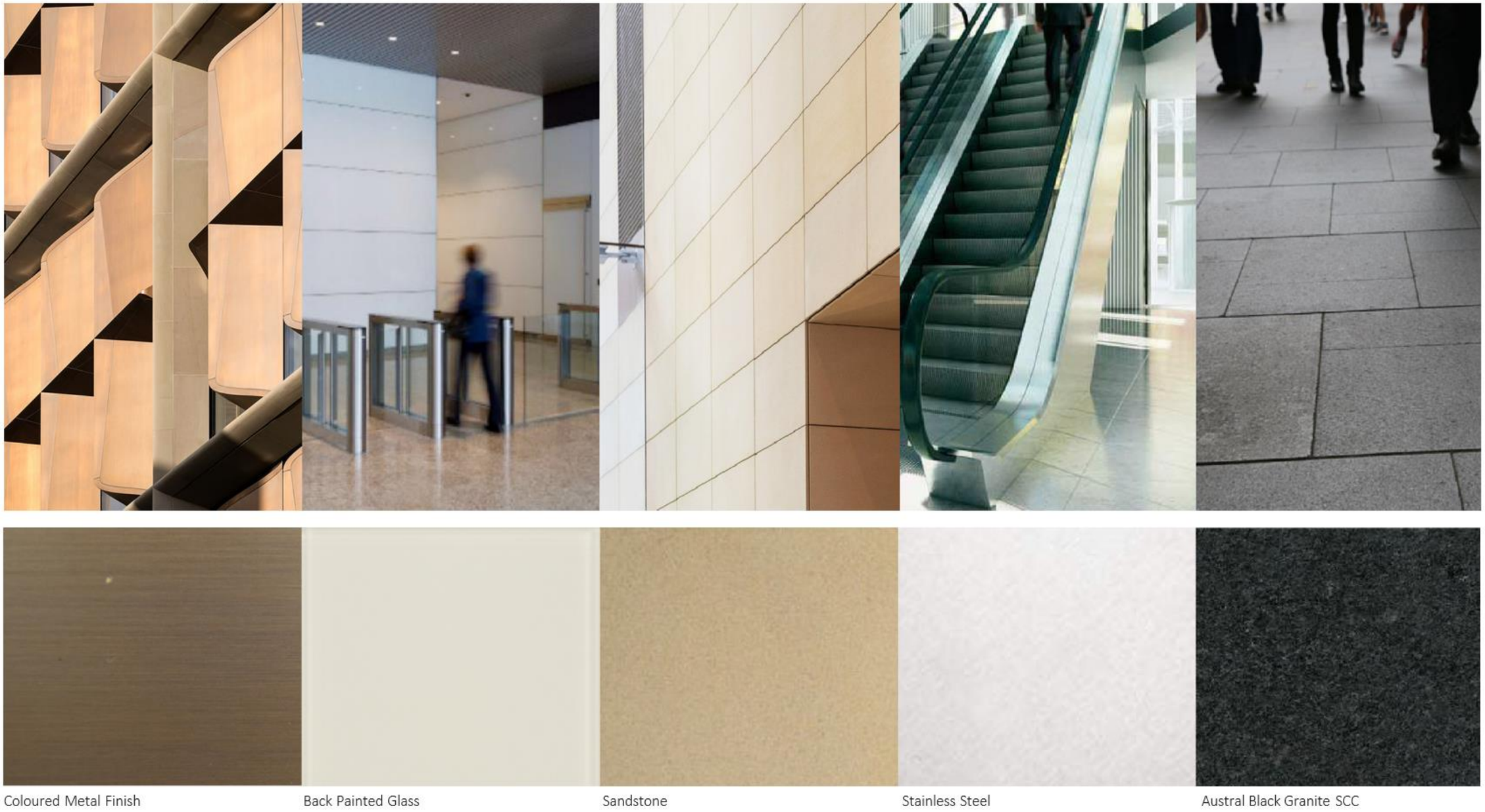


Figure 84 – Station material palette

6.22. FLOODING AND STORMWATER

The threshold level of all entrances, ventilation openings, tunnel portals and other openings into underground railway infrastructure have been set or above the higher of the Probable Maximum Flood (PMF) or, where flooding does not occur, 300mm above surrounding ground level. At station entrances this requirement has been met by sloping the surface away from the threshold rather than by steps.

The Pitt Street south and north entrances incorporate the same design elements to give a consistent identity and familiarity of navigation in station.

External canopies are incorporated to identify the respective station entries and provide shelter for the passengers.

Figure 85 – Artist’s impression of Station north entrance looking west along Park Street

6.23. PEDESTRIAN MOVEMENT AND PERMEABILITY

The Pitt Street metro station precinct includes the platform, vertical transport nodes and concourses, both the north and south OSD and the wider precinct covering Pitt Street, Park Street, Castlereagh Street and Bathurst Street. The layout includes widening of the Pitt Street / Park Street signalised intersection (northern pedestrian crossing) to 10.0m, and the Bathurst Street / Pitt Street signalised intersection (southern pedestrian crossing) to 7.0m.

To enable Sydney Metro to open in 2024, pedestrian modelling and analysis has been undertaken for the AM and PM peak hour future years including 2026, 2036 and 2056:

- The 2026 pedestrian demands represents the Sydney Metro opening year operations,
- The 2036 pedestrian demands have been used to assess the station precinct and public domain environment, and
- The 2056 represents the Sydney Metro ultimate year operations.

The model layout includes widening of the Pitt Street / Park Street signalised intersection (northern pedestrian crossing) to 10.0m, and the Bathurst Street / Pitt Street signalised intersection (southern pedestrian crossing) to 7.0m.

The typical 2026 AM peak hour pedestrian volume for Pitt Street Metro is approximately 8,100 customers (of which approximately 6,700 are alighting customers and 1,400 are boarding customers). Similarly, the typical 2056 future year AM peak hour pedestrian volume for Pitt Street Metro is approximately 9,400 customers (of which 7,900 are alighting customers and 1,500 are boarding customers). The 2056 future year represents the highest volume of customers and is the scenario with the maximum overall pedestrian volumes.

The Fruin Level of Service criteria is an industry wide criteria used to understand the overall pedestrian experience. The criteria is based on the number of people over an area and ranges for a Level of Service rating ‘A’ to a Level of Service rating ‘F’. A description of these is provided in Figure 86.

Dynamic pedestrian modelling has been undertaken for various Sydney Metro operations including AM and PM peak hour normal operations alongside degraded scenarios, for example a train breakdown, ensuring sufficient space has been accommodated for pedestrian volumes to meet a maximum Fruin Level of Service rating ‘D’ within the design and precinct infrastructure.

From the results, the footpaths throughout the overall precinct are estimated to perform to a Level of Service rating ‘A’ (being the best) to Level of Service rating ‘D’ under the Fruin walkways criteria. At signalised intersections the pedestrian experience is estimated to perform to a Level of Service rating ‘D’, however this is estimated to last for short periods only. Overall the anticipated pedestrian performance within the precinct is considered satisfactory. Similarly, the internal station is estimated to perform to a satisfactory level of service providing adequate space and facilities for customer movement based on the estimated pedestrian demand, even throughout the varied customer volumes due to the arrival and departure of a metro. Overall the pedestrian performance within the station is also considered to perform to a satisfactory level of service.

Diagrams on the following pages show the Fruin Level of Service (queuing criteria) for the 2036 AM peak and 2036 PM peak for the following four intersections:

- Pitt Street / Bathurst Street intersection (Pitt Street south station).
- Pitt Street / Park Street (Pitt Street north station).
- Castlereagh Street / Bathurst Street (Pitt Street south station).
- Castlereagh Street / Park Street (Pitt Street north station).

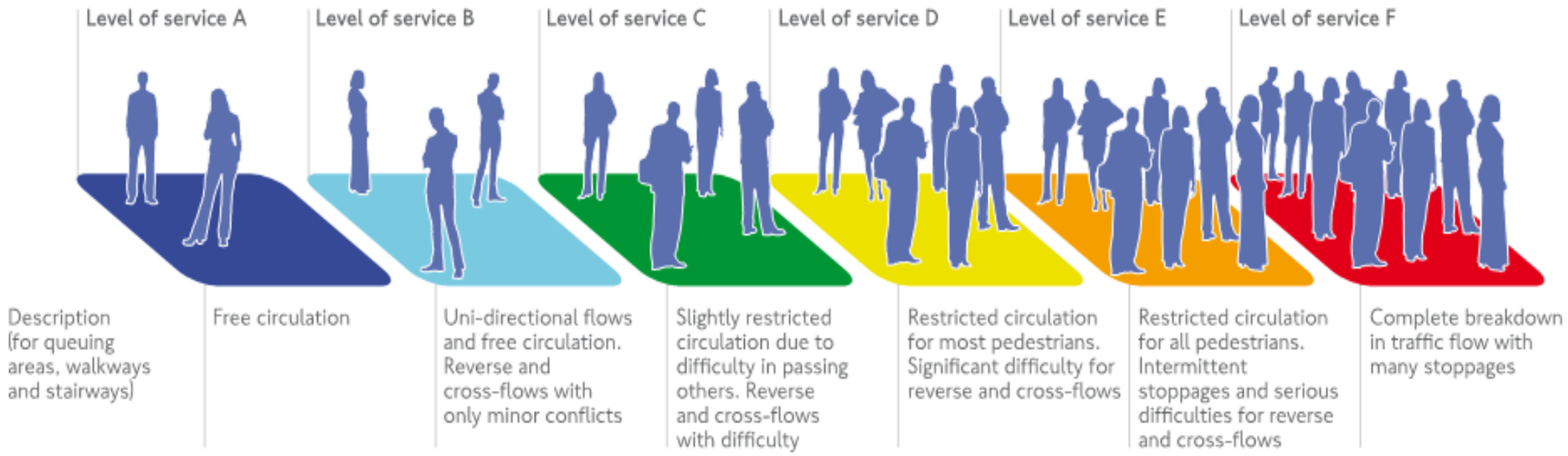
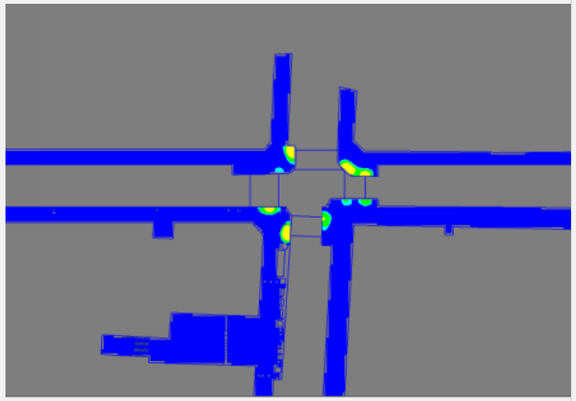
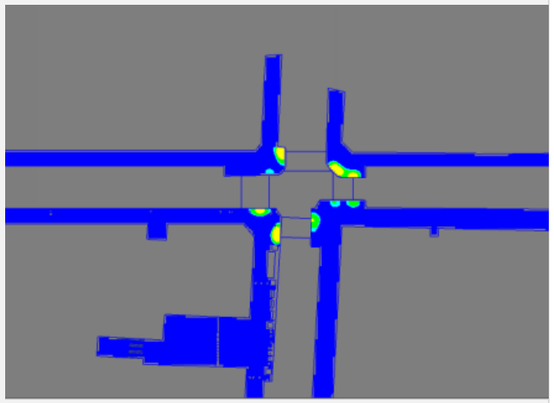


Figure 86 – Fruin level of service criteria description (ref: Transport for London station planning guideline)

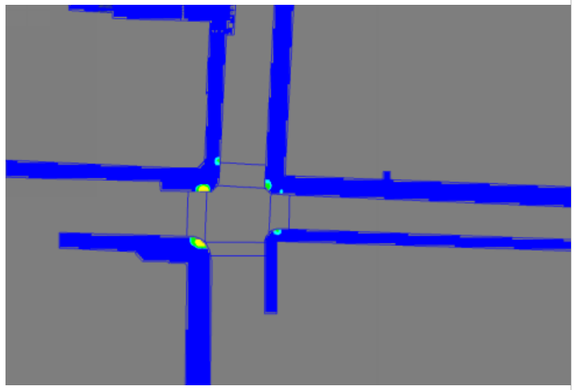
Pitt Street / Bathurst Street Intersection



Pitt Street / Park Street Intersection



Castlereagh Street / Bathurst Street Intersection



Castlereagh Street / Park Street Intersection

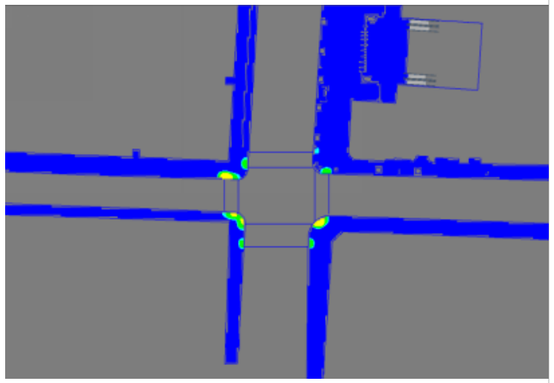
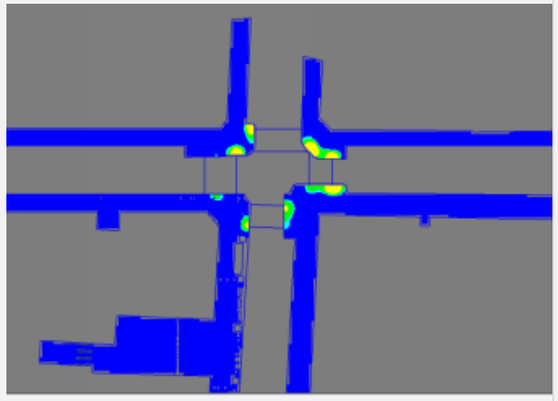


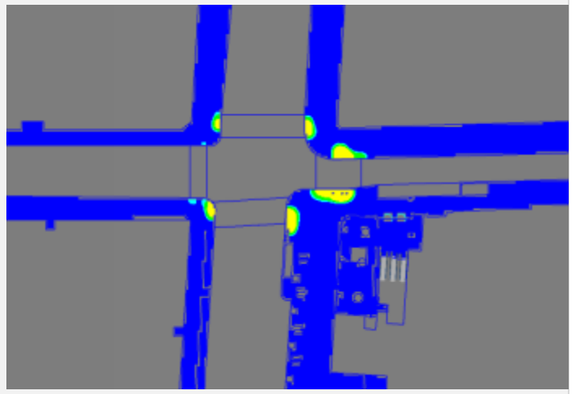
Figure 87 – Fruin level of service (queuing criteria) 2036 AM peak

Source: Aurecon

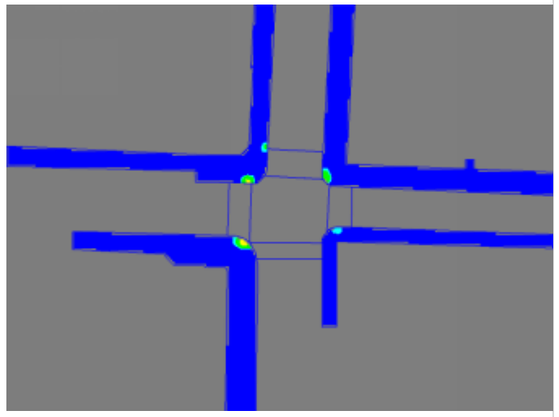
Pitt Street / Bathurst Street Intersection



Pitt Street / Park Street Intersection



Castlereagh Street / Bathurst Street Intersection



Castlereagh Street / Park Street Intersection

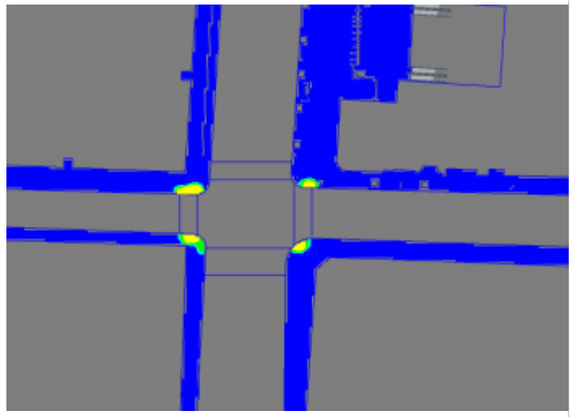


Figure 88 – Fruin level of service (queuing criteria) 2036 PM peak

Source: Aurecon

6.24. TRAFFIC MANAGEMENT

Consultation with Traffic and Transport Liaison Group took place during stage 2 and stage 3 of the station design works in October 2019 and April 2020. Informed by this consultation, traffic and pedestrian management for the construction and operation of the Pitt Street north and south metro stations has been detailed in the Pitt Street Station Sydney Metro, Station Delivery Deed – Construction Traffic Management Plan (Appendix C). Associated operational traffic management is detailed in the Transport and Accessibility Impact Assessment prepared in support of the State Significant Development Application (SSD DA) for Pitt Street North Over Station Development (Appendix D) as that application includes construction and operation of the loading dock and one parking space associated with the metro station operation.

This section summarises the traffic and pedestrian management measures to minimise disruption to

- traffic network operations,
- the public, including changes to and the management of pedestrian, bicycle and public transport networks
- transport services, pedestrian and cyclist movements.

Traffic Management

Truck movements to and from the subject construction sites would be scheduled to minimise traffic disruption on the surrounding road network. This would comprise the following measures:

- Heavy vehicles equipped with systems to improve vehicle safety, visibility and the detection of vulnerable road users.
- Oversized and/or over-mass vehicles would be transported to/from the site in strict accordance with Roads and Maritime guidelines and City of Sydney requirements, subject to one-off approval, to minimise traffic disruption during normal business hours. Articulated vehicles (including semi trailers) are not permitted in the CBD unless accepted under a separate approval sought by an Oversize & Over Mass Vehicle Permit Application. This Application would be submitted via the National Heavy Vehicle Regulator (NHVR) Portal < https://www.nhvr.gov.au/about-us/nhvr-portal > prior to the proposed start date of works.
- Haulage routes would be designated and communicated to all truck drivers to ensure truck movements to/from the site are as efficient as possible.
- The loading and unloading of trucks would be planned to ensure each individual truck haulage capacity is fully utilised reducing the number of truck movements.
- Where possible, reduce trucking during AM and PM network peak periods.
- CPB Contractors would implement a Logistics Management System, such as Voyage Control or similar, to manage work zones, and crane and hoist coordination via a booking system. The System provides real-time visibility of vehicle locations when travelling to site and away from site, allows directions to be provided to drivers by the contractor, and permits tracking of vehicle arrival and departure times. This way, CPB is able to manage construction vehicles and activities, and avoid causing negative impacts to the surrounding road network.

On Site Parking

Vehicles associated with the subject construction sites must not park in any on-street parking spaces. On-site parking would not be made available for employees working on the project. Staff would be encouraged to use public transport when travelling to/from the site, hence minimising traffic impacts on the surrounding road network.

All vehicles associated with the site would be parked wholly within the site in designated off-street parking areas.

Pedestrian and Cyclist Management

B-class hoarding will be erected over the footpath on Pitt Street, Park Street, Castlereagh Street and Bathurst Street to provide overhead protection to pedestrians and maintain pedestrian thoroughfare during the construction period.

Pedestrian access will be maintained along all footpaths surrounding the subject sites. Qualified traffic controllers with approved clothing will be in place to manage and control pedestrian movements. Concertina gates will be used to manage pedestrian movements at the vehicular crossing.

Traffic controllers will not stop pedestrians in anticipation. Pedestrians will have the right-of-way at all times. Pedestrians may be held only for short periods by the pedestrian concertina gate to ensure safety when trucks are entering and leaving the site. Cyclists travelling on surrounding streets would not be affected by the construction works. Cyclists would be required to follow the traffic controller's directions as are other road users.

For the Pitt Street north project, as the cyclist access is located close to the vehicle access off Castlereagh Street, the users are exposed to some safety risks, particularly the on-street cyclists who will travel in a southbound direction and therefore ride across the vehicle access crossover from Castlereagh Street to access the loading dock. Awareness improvements are to be implemented in the area to reduce the risk, such as a warning system and convex mirror mounted onto street poles.

Protection of Bus Zones and Services

A work zone is proposed on the north side of Park Street, east of the existing Bus Zone. The work zone will cause no impact to the existing bus stop as the full length of the bus zone would be retained. Trucks will enter the work zone immediately, and not be permitted to idle in the adjacent Bus Lane. This will be managed by a dedicated traffic controller and monitored by CPB and associated stakeholders throughout the project to ensure no impact on the bus operation.

Works Zones and access to On Street Parking and Loading Zones

- The work zone proposed on Pitt Street (north of Park Street) will replace an existing No Stopping space, and therefore, will not result in any impact to on-street parking or loading zones.
- A work zone is proposed on the north side of Park Street which will replace the existing Loading Zone which currently operates between 6am-6pm. As surveys demonstrated that this loading zone is lawfully used very infrequently, use of nearby loading zones for these infrequent delivery vehicles would not be expected to cause any noticeable impacts to the capacity of nearby loading zones.
- The work zone proposed on Bathurst Street will be located within an existing No Stopping space.
- CPB Contractors intends to extend the work zone on Castlereagh Street to the north past the Castlereagh Boutique Hotel frontage. CPB Contractors has considered the needs of the Hotel operation and use of this kerbside space for hotel guest set down and pick up, hotel deliveries and emergency vehicle access. Therefore, CPB intends to liaise with City of Sydney to remove one paid on-street loading/ parking space to create a new hotel set down/ pick-up area to the north of the work zone.
- The work zone proposed on Pitt Street South will be located within an existing No Stopping space, and therefore, would not result in any impact to on-street parking or loading zones.
- The Bathurst Street work zone is proposed in place of an existing loading zone and 4P on-street parking which can accommodate 4-5 cars/ small vans. Given that there are several nearby loading zones in the vicinity, the removal of the Bathurst Street loading zone will not impact delivery and service vehicles in the vicinity. It is noted that CPB Contractors will work with The Edinburgh Castle Hotel on the corner of Pitt Street and Bathurst Street to ensure its delivery and service needs are met.

Contingency Plans

The Project Team will develop contingency plans for all traffic control operations. Incidents may include late finishing road work, equipment breakdowns, poor weather conditions, and unplanned incidents. Appendix C sets out various actions, in respect to traffic management, which would be applied for these types of incidents.

In the case that the construction works result in worsening of the traffic conditions, the Project Team shall review the measures identified in the CTMP in consultation with the TTLG. Any changes to the CTMP shall be submitted to Roads and Maritime for approval following Sydney Coordination Office endorsement.

6.25. SAFETY AND SECURITY

The delivery of an integrated security design has been informed by a security risk assessment to ensure the implementation of consistent and proportionate security measures achieve a strategic security intent.

Provision of a systematic approach to the early detection of security vulnerabilities and their prevention, elimination, or control is necessary in order to deliver a performance security design where vulnerabilities are designed-out and security measures are designed-in, whilst minimising intrusive security and the impact on non-security design functions for public space.

This includes identifying critical assets and infrastructure and building in resilience to prevent unacceptable disruption of station operations.

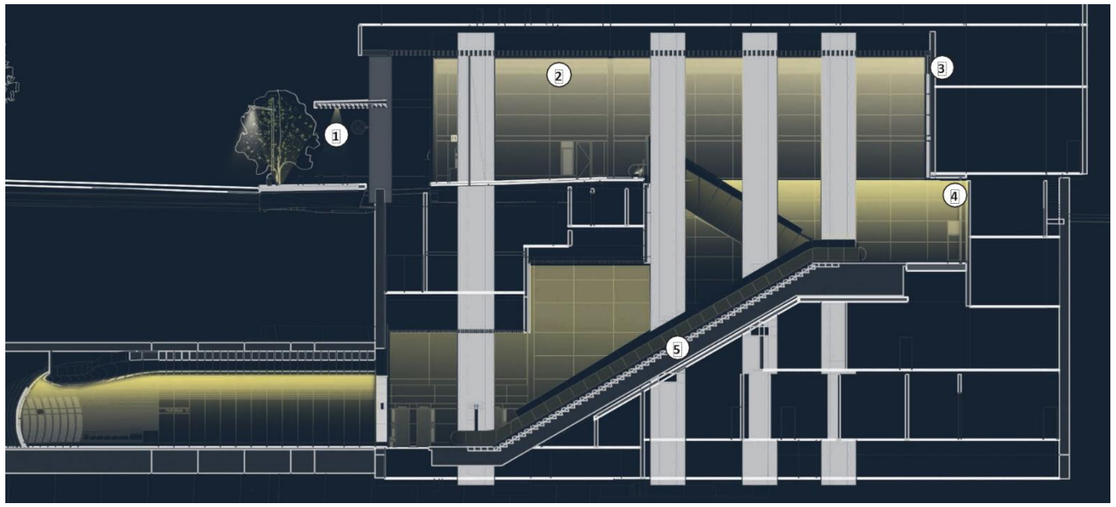
Hostile vehicle mitigation has been incorporated into the design of the station and SDPP. These have been developed to ensure that the operation and function of the station and public realm is a primary consideration when designing-in the mitigation measures to counter the risks posed to the station, its users and staff by hostile vehicles.

6.26. STATION LIGHTING

The Metro entrances lighting is composed of multiple layers of lighting effects that come together to form an holistic approach in line with the integrated architectural lighting strategy.

The surrounding walls and the columns are grazed with close offset grazing linear downlights to bring out the texture while providing a strong peripheral brightness. This aids to accent architectural elements while increasing the overall perceived light levels.

Similarly, each lighting layer serves a purpose either to accent a specific architectural element, to mark a decision making point, to provide safety or to balance the overall light levels within the station. These layers are annotated in the schematic visual with their purpose.



1. Downlight integrate into station entrance and signage
2. Discreet, recessed, anti-glare downlights within ceiling battens to provide general horizontal illuminance to the ground plane
3. Vertical illumination strategy to primary vertical box surfaces. Wall washing for uniform vertical illuminance to artwork.
4. Concealed lighting grazing the sandstone finish and intermediate concourse level and ground concourse levels
5. Integrated lighting to escalator to be coordinated with escalator manufacturer

Figure 89 – Station lighting schematic

Technical Parameters

Station Entries

- Daylight influence to be supplemented with strong vertical illuminance to assist in transition to lower interior light levels.
- Ensure a bright and inviting space
- Security – higher verticals for facial recognition
- Lit appropriately for the surrounding environment wayfinding.
- Emphasis on accent lighting of architectural material finishes.

Mounting and arrangement

- Luminaires to be concealed and discreetly integrated into architecture as much as possible.
- Indirect lighting - wall and ceilings
- Ensure accessibility of luminaires for maintenance

Colour temperature/ RGB Light

- Suit external environment
- Colour temperature 3000K / Tunable White

7. IMPLEMENTATION

The targeted dates for the delivery of the following Project Milestones elements, as described in this SDPP are as follows.

Station Construction

- Structure north – 1st Quarter 2021 - 2nd Quarter 2022
- Structure south – 1st Quarter 2021 - 4th Quarter 2021
- Station practical completion – 3rd Quarter 2023

Over Station Development

- Commencement of construction for OSD north – 3rd Quarter 2021
- Practical completion for OSD north – 3rd Quarter 2023
- Commencement of construction for OSD south – 3rd Quarter 2021
- Practical completion of OSD south – 3rd Quarter 2023

As outlined through the SDPP the project works are focussed on achieving an integrated delivery of the overall program. All works relating to access, landscaping and the public domain will be completed in conjunction with the proposed Station and Over station works. The public domain works will be finalised with completion of the station, including both north and south station entries and all podium levels up the “Transfer Level”.

APPENDIX A CONSULTATION SUMMARY REPORT

APPENDIX A

CONSULTATION SUMMARY REPORT

EVIDENCE OF COLLABORATION AND CONSULTATION

Please find evidence of collaboration and consultation on the following page.

Table 1 – Evidence of collaboration and consultation

Stakeholder	CPB	Sydney Metro	Date	Consultation	Stakeholder attendees	Subject / Purpose
Planning and Environment						
Department of Planning, Industry and Environment (DPIE)	✓	✓	Oct 2019 – Feb 2021	Design Review Panel (DRP)	Infrastructure Management Team	SDPP consultation
City of Sydney Council	✓	✓	Oct 2019 - Feb 2021	Design Review Panel (DRP)	Manager Transport Major Projects	SDPP consultation
NSW Government Architect and her office	✓	✓	Oct 2019 - Feb 2021	Design Review Panel (DRP)	NSW Government Architect Deputy NSW Government Architect	SDPP consultation
Neighbouring Businesses						
Castlereagh Boutique Hotel/ NSW Masonic Club	✓	✓	15/10/20	Face to face briefing held	General Manager NSW Masonic Club Board Director NSW Masonic Club member	SDPP consultation
The Edinburgh Castle Hotel (Solotel Group)			08/10/20	Proposed meeting - declined. Stakeholder reviewed draft SDPP document, no issues raised.	General Manger	SDPP consultation
Fire and Rescue NSW	✓	✓	21/10/20	Online briefing held	Senior Project Manager Real Estate Manager Zone Commander	SDPP consultation
Citigroup Building (2 Park Street)			06/10/20 28/10/20	Proposed meeting. No response	General Manager, Citigroup Centre	SDPP consultation
The National Building (250 Pitt Street)			08/10/20 14/10/20	Proposed meeting. Declined	Strata Manager	SDPP consultation
The Great Synagogue			06/10/20 28/10/20	Proposed meeting. No response	General Manager	SDPP consultation
Neighbouring Residents						
Princeton Apartments			08/10/20 14/10/20	Email - proposed meeting. No response	Strata Manager of the Owners Corporation	SDPP consultation
EuroTower			08/10/20 14/10/20	Email - proposed meeting. Declined	Managing Director, Rosen & Co	SDPP consultation
Park Regis - City Centre			06/10/20 28/10/20	Email. No response	Area Manager NSW, Park Regis	SDPP consultation

HOW FEEDBACK FROM CONSULTATION HAS BEEN ADDRESSED

PITT STREET INTEGRATED STATION DEVELOPMENT (PSISD)

COMMUNITY AND STAKEHOLDER CONSULTATION SUMMARY REPORT

STATION DESIGN AND PRECINT PLAN (SDPP)

JANUARY 2021

TABLE OF CONTENTS

BACKGROUND

1.1 Introduction

This report has been prepared to accompany a Station Design and Precent Plan (SDPP) for Pitt Street integrated station development (ISD) and the associated public domain works component of the Sydney Metro City & Southwest Project. The SDPP has been prepared to present an integrated urban and placemaking outcome to guide the design of the permanent built surface works and landscaping associated with the project.

The plan is consistent with the Chatswood to Sydenham State Significant Infrastructure approval (SSI 15_7400) granted for the integrated development on site. The preparation of the SDPP Community and Stakeholder Consultation Summary Report seeks to satisfy requirements of Condition E101 of the SSI 15_7400 approval to provide evidence of consultation.

1.2 The site

Pitt Street Station is situated within the CBD, largely surrounded by high-rise commercial and residential buildings. The station is a binocular cavern station with north and south bound platform caverns running beneath Pitt and Castlereagh streets respectively. The station will have two entrance shafts from the surface at Pitt Street North and Pitt Street South connected to the platform caverns via adit tunnels.

Pitt Street North is located on Park Street between Pitt and Castlereagh streets, with the station entrance facing onto Park Street. Pitt Street South is located on the corner of Pitt and Bathurst streets. It is configured in an 'L' shape which wraps around the Edinburgh Castle Hotel with the station entrance opening onto Bathurst Street.

Key features:

- two station entrances
- a build to rent building above the south entrance
- a commercial building above the north entrance
- enhancement of pedestrian infrastructure
- improvements to the public domain.

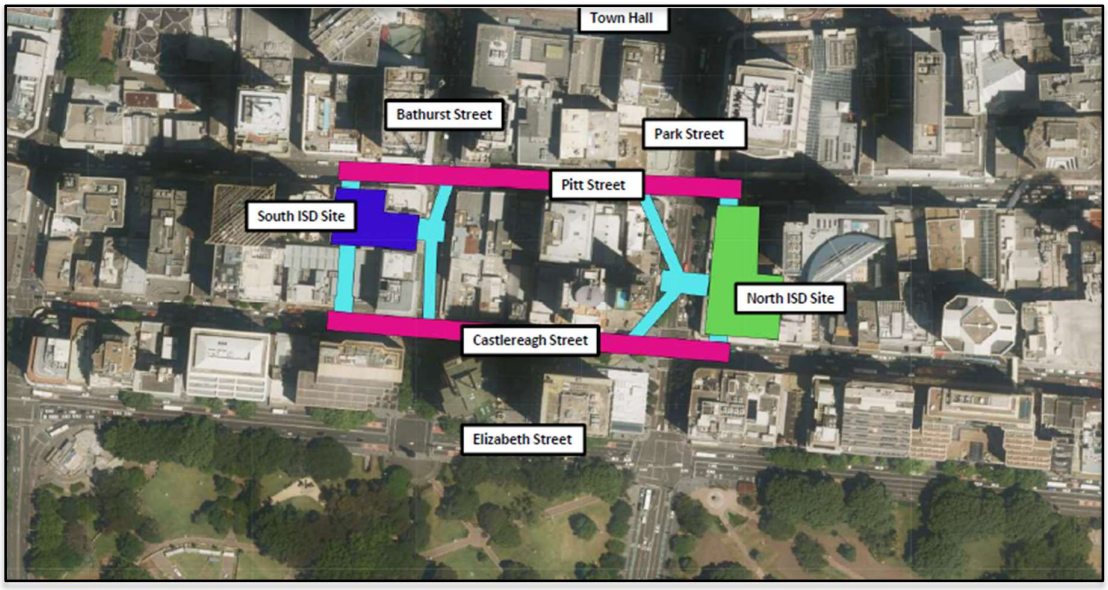


Figure 1: Pitt Street integrated station development site overview

1.3 Sydney Metro City & Southwest

Sydney Metro City & Southwest will extend Sydney Metro North West to the CBD and beyond to Bankstown. The project is being delivered through a suite of contracts for the tunnels, stations, line-wide infrastructure and systems.

On 9 January 2017, the Minister for Planning and Public Spaces approved the Sydney Metro City & Southwest Chatswood to Sydenham project as a Critical State Significant Infrastructure (CSSI) project (reference SSI 15_7400) (CSSI Approval). The terms of the CSSI Approval includes all works required to construct the Sydney Metro Pitt Street Station. The CSSI Approval also includes construction of below and above ground works within the metro station structure for appropriate integration with the over station development (OSD). Any component of the detailed design that is contained within the "metro box" and public domain will be pursued in satisfaction of the CSSI conditions of approval.

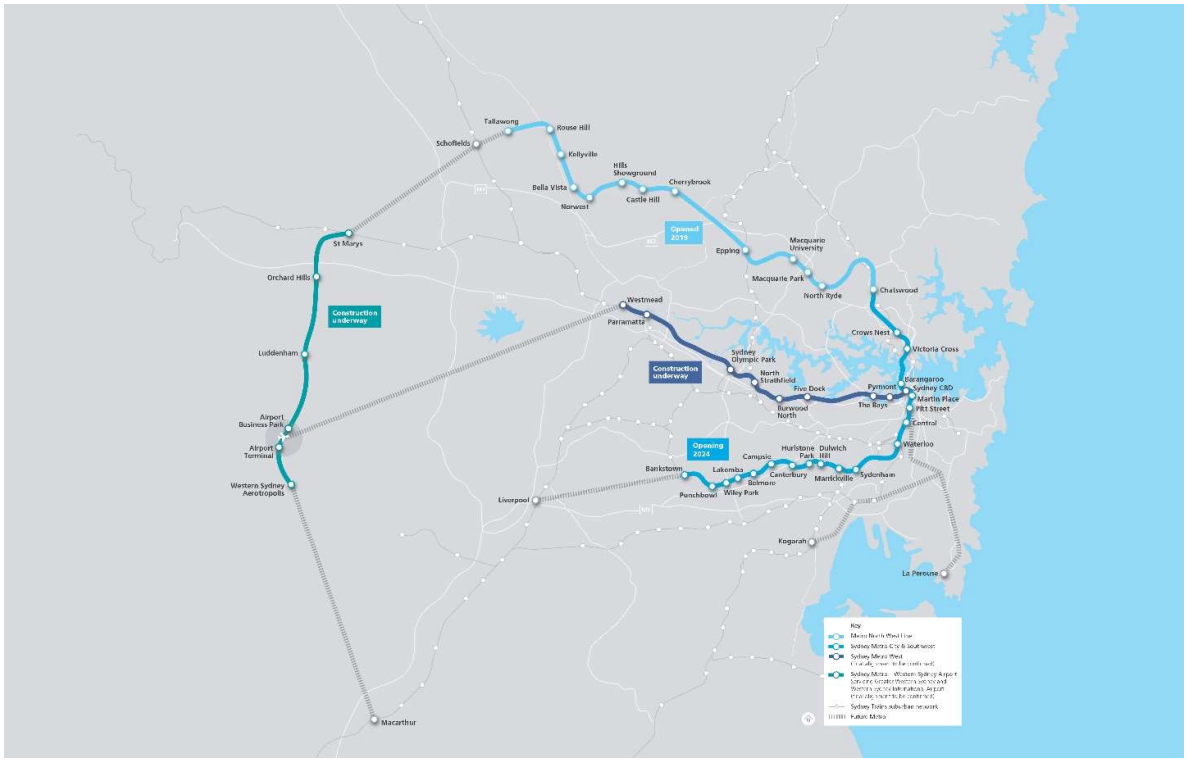


Figure 2: Sydney Metro alignment map

2 CONSULTATION SUMMARY

Consultation for the Pitt Street ISD, being delivered by CPB, was carried out by Sydney Metro with key stakeholders and local community in late 2020. Consultation activities and public communication materials have continued and included the following:

- one on one stakeholder meetings and presentations
- community information newsletter distributed to all properties within 200m radius of the Pitt Street ISD site
- e-newsletter to the Sydney Metro Pitt Street distribution list
- advertising in two local newspapers (Sydney Morning Herald and Chinese Daily)
- Sydney Metro Pitt Street project website and CPB dedicated project website
- the consultation provided information about the development at Pitt Street to stakeholders and community regarding:
  - integrated station development project progress
  - an overview of the planning approvals pathways
  - proposed design of the OSD
  - proposed design of the CSSI
  - how to get in touch with the project team and provide feedback on the project.

CPB is continuing the Pitt Street ISD consultation process to meet and discuss the project with different stakeholder groups which included government agencies, local businesses, residents and community members. Feedback from these consultation activities in addition to feedback received from earlier consultation conducted by Sydney Metro in late 2017 has been considered in the development's design response.

3 CONSULTATION AND ENGAGEMENT APPROACH

This report outlines the consultation and engagement specific to Pitt Street ISD by CPB and Sydney Metro. It summarises activities carried out during the consultation period, such as stakeholder meetings, emails and phone calls and, where relevant, outcomes from this consultation.

3.1 Objectives

CPB's specific objectives underpinning this consultation program were to:

- begin open, transparent and two-way communication with stakeholders and the community
- proactively continue to build stakeholder and community awareness of, and capacity to participate in, the planning application's pre-lodgement formal consultation process
- enable stakeholders and community members to learn about the integrated station development by providing them with accurate and quality information, including information about the planning processes
- enable stakeholders and community members to contribute in a meaningful way by providing structured and informal opportunities to ask questions and provide feedback to the project team, so that it could understand their issues, drivers and aspirations.

3.2 Stakeholder consultation

Sydney Metro have proactively engaged with all stakeholders since project inception, CPB will continue this proactive consultation to ensure that stakeholders are kept informed about the project. Opportunities for briefings via meetings, presentations, phone calls and email were provided to key stakeholders and the community informed to ensure any suggestions or issues raised could be considered by the project.
Table 1 below outlines stakeholder organisations who received emails as part of the project update distribution list. This list contained 1432 email addresses, with advice on how to learn more about the Pitt Street ISD and how to have their say.

Table 1 - Stakeholder organisations email distribution list

Stakeholder		
Local Government		
City of Sydney Council		
Community and Interest Groups		
Pitt Street Uniting Church	Church of Scientology	
Neighbouring properties - North site		
Castlereagh Boutique Hotel/ NSW Masonic Club	Park Regis Hotel and Apartments	The Great Synagogue
Citigroup Building - 2 Park Street	The Galeries	The National Building - 250 Pitt Street
Neighbouring properties – South site		
Edinburgh Castle Hotel	Fire and Rescue NSW	Primus Hotel
EuroTower Apartments	Meriton Pitt Street	Princeton Apartments

3.3 Consultation methodology

CPB is committed to an inclusive, transparent and proactive community engagement process, working with all stakeholders to enable their long-term involvement and participation. Planning application pre-lodgement consultation is regarded as a core component of this approach.

The pre-lodgement consultation for the SDPP supports Transport for NSW's Communication objectives and respects the requirements for consultation as defined by the NSW Department of Planning and Infrastructure's Guidelines for Major Project Community Consultation (January 2019).

A range of engagement activities were undertaken prior to preparation of the SDPP in order to engage with stakeholders, the local community and directly impacted groups about the development including the detailed design planned for the wider Pitt Street ISD. Specific engagement activities for the Pitt Street Station project are outlined in the following Table 2.

Provided in the attachments section at the end of this report are examples of the project communications collateral developed and issued to community members and stakeholders regarding the consultation completed on Tuesday 17 November.

Table 2 - Community consultation activities

Activity	Content	Date
Email to subscribers on project email distribution list	See evidence A	6 October 2020 and 28 October 2020
Community information newsletter (issued to residents and businesses within 200m radius of the site)	See evidence B	6 October 2020
Newspaper advertisements	See evidence C	10 October 2020
One on one stakeholder briefings: Castlereagh Boutique Hotel/NSW Masonic Club and Fire & Rescue NSW	See evidence D	15 October 2020 21 October 2020
CPB website information published Sydney Metro website information published	See evidence E	6 October 2020

4 SUMMARY OF FEEDBACK RECEIVED

4.1 Stakeholder feedback

CPB received feedback on the SDPP consultation through:

1. email response submissions to email sent via the subscribed project distribution list
2. email response submissions to individual tailored stakeholder emails
3. feedback received from scheduled stakeholder briefings.

This feedback has been considered to inform the design development of the station. Where relevant, key stakeholders will continue to be engaged by the project team throughout the development.

Table 3 provides a summary of feedback received via email and one on one stakeholder meetings. The detail provided in this summary also includes information not relevant to the SDPP as it summarises the overall nature of the meeting.

Table 3 - One on one stakeholder briefings

Stakeholder	Briefing Summary	Date
Department of Planning, Industry and Environment (DPIE)	Design Review Panel (DRP)	Oct 2019 – Jan 2021
City of Sydney Council	Design Review Panel (DRP)	Oct 2019 – Jan 2021
NSW Government Architect	Design Review Panel (DRP)	Oct 2019 – Jan 2021
City of Sydney Council	Design Review Panel (DRP)	Oct 2019 – Jan 2021
Castlereagh Boutique Hotel/NSW Masonic Club	Evidence D – Excerpt from stakeholder meeting minutes	15 Oct 2020
NSW Fire & Rescue	Evidence D – Excerpt from stakeholder meeting minutes	21 Oct 2020

4.2 Community feedback

Due to Covid-19 restrictions on large group gatherings, traditional community information sessions were not arranged during the SDPP consultation phase. CPB carried out online SDPP consultation and individual face-to-face meetings where possible.

Online feedback received from stakeholders was collated for consideration and review by CPB.

- Date of consultation period: Tuesday 6 October - 5pm Tuesday 17 November 2020.
- Number of online community feedback responses received: 9 responses received via email (Stakeholders A-I shown in table 4)

The following table provides a detailed analysis of community consultation feedback received. It also outlines the extent to which matters raised during the consultation have informed the design development.

Table 4 - Summary of community consultation feedback received and considered by project team

Stakeholder	Sub-issue category	Issue or suggestion raised	CPB response	Applicable to this Application
Stakeholder A	Link to Town Hall Station	Suggested underground link to Town Hall Station	No underground link proposed. Information provided	Yes
Stakeholder B	Location of amenities	Location of lifts, stairs, tactile strips	Location of amenities provided	Yes
	Station connections	Access to Town Hall Station	No underground link proposed. Link to nearby stations via street access information provided	Yes

Stakeholder	Sub-issue category	Issue or suggestion raised	CPB response	Applicable to this Application
Stakeholder C	Link to Town Hall Station	Suggested underground link to Town Hall station	No underground link proposed. Link to nearby stations via street access information provided	Yes
Stakeholder D	Station connections	Pedestrian movements between stations	No underground link proposed. Link to nearby stations via street access only, information provided.	Yes
	Station naming	Suggested alternate names for station	Information provided on station naming process	Yes
Stakeholder E	Link to Town Hall Station	Suggested underground link to Town Hall Station	No underground link proposed. No underground link proposed. Link to nearby stations via street access, information provided.	Yes
Stakeholder F	Design	Number of levels in station	Details provided	Yes
	Over station development	Function of over station development, whether residential or commercial	Details provided	Yes
Stakeholder G	Amenities	User experience, bathroom and amenities	Details provided	Yes
Stakeholder H	Station naming	Suggested alternate names for station	Information provided on station naming process	Yes
Stakeholder I	Accessibility	Accessibility for visually impaired customers	Draft SDPP to be updated to provide additional details	Yes

- **Evidence A – emails sent to project subscribed email distribution list to invite community feedback on the SDPP.**

06/10/20 - 1432 email recipients

NSW GOVERNMENT | sydney METRO

City & Southwest

6 October 2020

Dear[#r:NameFirst#]

Station Design and Precinct Plan

A draft Station Design and Precinct Plan (SDPP) has been prepared for Pitt Street Station that shows how the new station design has developed and how it will integrate with the surrounding precinct.

You are encouraged to provide feedback on the Pitt Street Station draft SDPP between **Tuesday 6 October and Tuesday 3 November 2020.** Once the exhibition period is complete, all feedback received will be considered and addressed in the final Pitt Street Station SDPP.

To view a copy of the draft SDPP and for more information, please click here https://pittstreetsydneymetroisd.com.au/sdpp/

The key improvements are summarised in the attached newsletter.

Please submit your feedback via email to pittstreetmetro@transport.nsw.gov.au by **5pm Tuesday 3 November 2020.**

Your feedback will be considered and addressed in the final Pitt Street Station SDPP, which will be available on the Sydney Metro website.

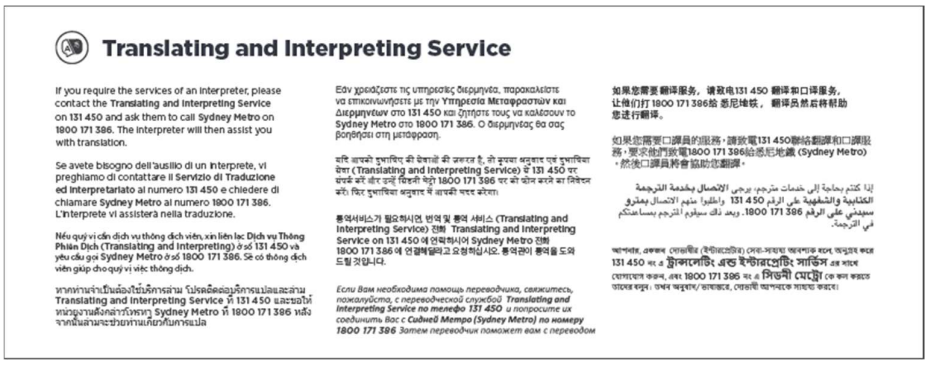
Further information and community enquiries on future work at Pitt Street Station

The Sydney Metro website has further information about the project. For further information on the draft SDPP community consultation process, you can contact Sarah from CPB Contractors (CPB) via the community phone number on **1800 171 386** or email pittstreetmetro@transport.nsw.gov.au

Kind regards,

Sarah Power

CPB Contractors Pitt Street integrated station development
Community Relations Team



Translating and Interpreting Service

If you require the services of an interpreter, please contact the Translating and Interpreting Service on 131 450 and ask them to call Sydney Metro on 1800 171 386. The interpreter will then assist you with translation.

Se avete bisogno dell'ausilio di un interprete, vi preghiamo di contattare il Servizio di Traduzione ed Interpretariato al numero 131 450 e chiedere di chiamare Sydney Metro al numero 1800 171 386. L'interprete vi assisterà nella traduzione.

Nếu quý vị cần dịch vụ thông dịch viên, xin liên lạc Dịch vụ Thông Phiên Dịch (Translating and Interpreting) ở số 131 450 và yêu cầu gọi Sydney Metro ở số 1800 171 386. Sẽ có thông dịch viên giúp cho quý vị việc thông dịch.

หากท่านจำเป็นต้องใช้บริการล่าม โปรดติดต่อบริการแปลและล่าม Translating and Interpreting Service ที่ 131 450 และขอให้หน่วยงานดังกล่าวโทรหา Sydney Metro ที่ 1800 171 386 หลังจากนั้นล่ามจะช่วยท่านเกี่ยวกับการแปล

Εάν χρειάζεστε τις υπηρεσίες διερμηνέα, παρακαλείστε να επικοινωνήσετε με την Υπηρεσία Μεταφραστών και Διερμηνέων στο 131 450 και ζητήστε τους να καλέσουν το Sydney Metro στο 1800 171 386. Ο διερμηνέας θα σας βοηθήσει στη μετάφραση.

यदि आपको दुभाषिए की सेवाओं की जरूरत है, तो कृपया अनुवाद एवं दुभाषिया सेवा (Translating and Interpreting Service) से 131 450 पर संपर्क करें और उन्हें सिडनी मेट्रो 1800 171 386 पर की कॉल करने का निवेदन करें। फिर दुभाषिया अनुवाद में आपकी मदद करेगा।

통역서비스가 필요하시면 번역 및 통역 서비스 (Translating and Interpreting Service) 전화 Translating and Interpreting Service on 131 450 에 연락하시어 Sydney Metro 전화 1800 171 386 에 연결해달라고 요청하십시오. 통역관이 통역을 도와 드릴 것입니다.

Если Вам необходима помощь переводчика, свяжитесь, пожалуйста, с переводческой службой Translating and Interpreting Service по номеру 131 450 и попросите их соединить Вас с Сидней Метро (Sydney Metro) по номеру 1800 171 386. Затем переводчик поможет вам с переводом

如果您需要翻译服务，请致电131 450 翻译和口译服务，让他们打 1800 171 386给 悉尼地铁， 翻译员然后将帮助您进行翻译。

如果您需要口譯員的服務，請致電131 450聯絡翻譯和口譯服務，要求他們致電1800 171 386給悉尼地鐵 (Sydney Metro)，然後口譯員將會協助您翻譯。

إذا كنتم بحاجة إلى خدمات مترجم، يرجى الاتصال بخدمة الترجمة الكتابية والشفهية على الرقم 131 450 واطلبوا منهم الاتصال بمترو سيدني على الرقم 1800 171 386. وبعد ذلك سيقوم المترجم بمساعدتكم في الترجمة.

আপনার একজন দোভাষীর (ইন্টারপ্রেটার) দোভাষায় অনুবাদক এবং অনুবাদ করে 131 450 নং এ ট্রান্সলেটিং এন্ড ইন্টারপ্রেটিং সার্ভিস এর সাথে যোগাযোগ করুন, এবং 1800 171 386 নং এ সিডনী মেট্রো কে কল করতে তাদের বলুন। তখন অনুবাদ/ভাষান্তরে, দোভাষী আপনাকে সাহায্য করবে।

28 October 2020

Dear[#r:NameFirst#]

Station Design and Precinct Plan

A draft Station Design and Precinct Plan (SDPP) has been prepared for Pitt Street Station that shows how the new station design has been developed and how it will integrate with the surrounding precinct.

Community consultation for the SDPP began on **Tuesday 6 October and will be open until 5pm Tuesday 3 November 2020.** Once the exhibition period is complete, all feedback received will be considered and addressed in the final Pitt Street Station SDPP.

You are encouraged to provide feedback on the Pitt Street Station draft SDPP. To view a copy of the draft SDPP and for more information, please click here https://pittstreetsydneymetroisd.com.au/sdpp/

The key improvements are summarised in the attached newsletter.

Please submit your feedback via email to pittstreetmetro@transport.nsw.gov.au by **5pm Tuesday 3 November 2020.**

Your feedback will be considered and addressed in the final Pitt Street Station SDPP.

Further information and community enquiries on future work at Pitt Street Station

The Sydney Metro website has further information about the project. For further information on the draft SDPP community consultation process, you can contact Sarah from CPB Contractors (CPB) via the community phone number on **1800 171 386** or email pittstreetmetro@transport.nsw.gov.au

Kind regards,

Sarah Power

CPB Contractors Pitt Street integrated station development
Community Relations Team

Translating and Interpreting Service

If you require the services of an interpreter, please contact the **Translating and Interpreting Service** on 131 450 and ask them to call **Sydney Metro** on 1800 171 386. The interpreter will then assist you with translation.

Se avete bisogno dell'ausilio di un interprete, vi preghiamo di contattare il **Servizio di Traduzione ed Interpretariato** al numero 131 450 e chiedere di chiamare **Sydney Metro** al numero 1800 171 386. L'interprete vi assisterà nella traduzione.

Nếu quý vị cần dịch vụ thông dịch viên, xin liên lạc **Dịch vụ Thông Phiên Dịch (Translating and Interpreting)** ở số 131 450 và yêu cầu gọi **Sydney Metro** ở số 1800 171 386. Sẽ có thông dịch viên giúp cho quý vị việc thông dịch.

หากท่านจำเป็นต้องใช้บริการล่าม โปรดติดต่อบริการแปลและล่าม **Translating and Interpreting Service** ที่ 131 450 และขอให้หน่วยงานดังกล่าวโทรหา **Sydney Metro** ที่ 1800 171 386 หลังจากนั้นล่ามจะช่วยท่านเกี่ยวกับการแปล

Εάν χρειάζεστε τις υπηρεσίες διερμηνέα, παρακαλείστε να επικοινωνήσετε με την **Υπηρεσία Μεταφραστών και Διερμηνέων** στο 131 450 και ζητήστε τους να καλέσουν το **Sydney Metro** στο 1800 171 386. Ο διερμηνέας θα σας βοηθήσει στη μετάφραση.

यदि आपको दुभाषिए की सेवाओं की जरूरत है, तो कृपया अनुवाद एवं दुभाषिया सेवा (**Translating and Interpreting Service**) पर 131 450 पर संपर्क करें और उन्हें फ़ोन पर 1800 171 386 पर की कॉल करने का निवेदन करें. फिर दुभाषिया अनुवाद में आपकी मदद करेगा।

통역서비스가 필요하시면 번역 및 통역 서비스 (Translating and Interpreting Service) 전화 **Translating and Interpreting Service** on 131 450 에 연락하시어 **Sydney Metro** 전화 1800 171 386 에 연결해달라고 요청하십시오. 통역관이 통역을 도와드릴 것입니다.

*Если Вам необходима помощь переводчика, свяжитесь, пожалуйста, с переводческой службой **Translating and Interpreting Service по телефо 131 450** и попросите их соединить Вас с **Cudneй Mempo (Sydney Metro) по номеру 1800 171 386** Затем переводчик поможет вам с переводом*

如果您需要翻译服务，请致电131 450 翻译和口译服务，让他们打 1800 171 386给 悉尼地铁， 翻译员然后将帮助您进行翻译。

如果您需要口譯員的服務，請致電131 450聯絡翻譯和口譯服務，要求他們致電1800 171 386給悉尼地鐵 (Sydney Metro)，然後口譯員將會協助您翻譯。

إذا كنتم بحاجة إلى خدمات مترجم، يرجى الاتصال بخدمة الترجمة الكتابية والشفهية على الرقم 131 450 واطلبوا منهم الاتصال بمترو سيدني على الرقم 1800 171 386. وبعد ذلك سيقوم المترجم بمساعدتكم في الترجمة.

আপনার একজন দোভাষীর (ইন্টারপ্রেটার) সেবা-সহায়তা আবশ্যক হলে, অনুগ্রহ করে 131 450 নং এ ট্রান্সলেটিং এন্ড ইন্টারপ্রেটিং সার্ভিস এর সাথে যোগাযোগ করুন, এবং 1800 171 386 নং এ সিডনী মেট্রো কে কল করতে তাদের বলুন। তখন অনুবাদ/ভাষান্তরে, দোভাষী আপনাকে সাহায্য করবে।

- **Evidence B – community newsletter and distribution map, Tuesday 6 October 2020**

Front page:

NSW GOVERNMENT | sydney METRO

City & Southwest

Station Design and Precinct Plan - Pitt Street Station

October 2020

Sydney Metro is Australia's biggest public transport program.

Services started in May 2019 in the city's North West with a train every four minutes in the peak. Metro rail will be extended into the CBD and beyond to Bankstown in 2024. There will be new CBD metro railway stations at Martin Place, Pitt Street and Barangaroo and new metro platforms at Central.

In 2024, Sydney will have 31 metro railway stations and a 66 kilometre standalone metro railway system. There will be ultimate capacity for a metro train every two minutes in each direction under the Sydney city centre.

Pitt Street Station is situated within the CBD, largely surrounded by high-rise commercial and residential buildings. The station will run beneath Pitt and Castlereagh streets, and will have two entrances that connect to the platforms via pedestrian tunnels.

What is the Station Design and Precinct Plan (SDPP)?

The draft SDPP outlines the urban, landscaping and architectural design for Pitt Street Station and shows how it will integrate with the surrounding precinct. It identifies the design objectives and principles, and discusses opportunities to improve public spaces, connectivity, transport and access.

The draft SDPP is being publicly exhibited as part of Pitt Street Station community consultation. CPB Contractors has been awarded the contract to deliver the station component of the Pitt Street integrated station development, including improvements to the public domain. Sydney Metro and CPB Contractors are inviting members of the community to provide their feedback to inform the final SDPP.

Back page:

Design objectives

- Ensuring an easy customer experience
- Being part of a fully integrated transport system
- Being a catalyst for positive change
- Being responsive to distinct contexts and communities
- Delivering an enduring and sustainable legacy for Sydney

Key design features

- Improved pedestrian pathways
- Enhanced station entries including weather protection
- Upgrades to the adjacent bus stop on Park Street
- Cycle racks to be installed at both entries on Park and Bathurst streets
- Refurbishment of street furniture
- Landscaping

Have your say

You are encouraged to provide feedback on the Pitt Street Station draft SDPP between **Tuesday 6 October 2020 and Tuesday 3 November 2020.** Once the exhibition period is complete, all feedback received will be considered and addressed in the final Pitt Street Station SDPP.

To view a copy of the draft SDPP please visit sydneymetro.info/station/pitt-street-station.

Please submit your feedback online at pittstreetmetro@transport.nsw.gov.au by **5pm Tuesday 3 November 2020**.

Next steps

Your feedback will be considered and addressed in the final Pitt Street Station SDPP, which will be available on the Sydney Metro website.

Properties close to the Pitt Street Station construction sites will receive notifications when work is scheduled to occur and we will continue to keep the general community updated through our website, social media channels and email updates.

1800 171 386 Community information line open 24 hours

pittstreetmetro@transport.nsw.gov.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

Newsletter distribution map, 3500 properties, Tuesday 6 October 2020

- **Evidence C – newspaper advertisements**

1. Sydney Morning Herald, 10-11 October 2020

Pitt Street Station

Station entry on Bathurst Street (indicative image only)

Pitt Street Station is situated within the CBD, largely surrounded by high-rise commercial and residential buildings. The station will run beneath Pitt and Castlereagh streets, and will have two entrances that connect to the platforms via pedestrian tunnels.

STATION DESIGN AND PRECINCT PLAN

The draft Pitt Street Station Design and Precinct Plan (SDPP) outlines the urban, landscaping and architectural design for Pitt Street Station and shows how it will integrate with the surrounding precinct. It identifies the design objectives and principles, and discusses opportunities to improve public spaces, connectivity, transport and access.

The draft SDPP is being publicly exhibited as part of Pitt Street Station community consultation. We are inviting members of the community to provide their feedback to inform the final SDPP. Key design features of the SDPP include:

- Improved pedestrian pathways
- Enhanced station entries including weather protection
- Upgrades to the adjacent bus stop on Park Street
- Cycle racks to be installed at both entries on Park and Bathurst streets
- Refurbishment of street furniture
- Landscaping

HAVE YOUR SAY

You are encouraged to provide feedback on the Pitt Street Station draft SDPP between **Tuesday 6 October and Tuesday 3 November 2020.** To view a copy of the draft SDPP please visit sydneymetro.info/station/pitt-street-station. Please submit your feedback online at pittstreetmetro@transport.nsw.gov.au by **5pm Tuesday 3 November 2020.**

For more information about Pitt Street Station please contact the community information line on 1800 171 386 or email pittstreetmetro@transport.nsw.gov.au.

2. Chinese Daily, Saturday 10 October 2020

Pitt Street 火車站

Bathurst Street的車站入口(圖片僅供參考)

Pitt Street火車站位於CBD內，周圍主要是高層商業和住宅建築。本車站位於在Pitt Street和Castlereagh Street地下，將設兩個出入口，通過行人隧道與月台相連。

車站設計和區域規劃

Pitt Street車站設計和區域規劃草案(SDPP)概述了Pitt Street火車站的城市、景觀和建築設計，並展示了它將如何與周圍區域融為一體。該草案確定了設計目標和原則，並探討了如何抓住機遇，改善公共空間、連接性、交通和通道。

作為Pitt Street火車站社區咨詢的一部分，SDPP草案正在公示中。我們誠邀社區民眾發表意見，為最終的SDP提供參考。SDPP的主要設計特點包括：

- 改善行人道
- 改善車站入口，包括增設可以遮風擋雨的設施
- 改善毗鄰的Park Street巴士站
- 在Park Street和Bathurst Street的兩個出入口安裝自行車停放處
- 翻新街道設施
- 美化環境

請提出您的反饋意見

我們誠邀您在10月6日(星期二)至2020年11月3日(星期二)期間對Pitt Street火車站的SDPP草案提出反饋意見。如欲查看SDPP草案，請訪問 sydneymetro.info/station/pitt-street-station。請在2020年11月3日星期二下午5點之前，通過 pittstreetmetro@transport.nsw.gov.au 在線提交您的反饋意見。

如欲了解關於Pitt Street火車站的更多信息，請撥打社區咨詢熱線 **1800 171 386** 或發送電子郵件至：pittstreetmetro@transport.nsw.gov.au。

- **Evidence D – Excerpt from stakeholder meeting minutes**

1. Castlereagh Boutique Hotel/NSW Masonic Club meeting Thursday 15 October

Table taken from meeting minutes:

Document	Section	Topic	Page no.	Stakeholder comments
SDPP	1.3 & 1.4	Extent and urban context	12 & 13	Noted – no comments
SDPP	2.2	Design process	19	Noted – no comments
SDPP	3.3	Interchange access plan	26	RE and PB noted their objection to CoS cycleway
SDPP	4.4 Figure 30	Local heritage and place making values	34	Noted – no comments
SDPP	4.6	Community safety, amenity and privacy	36	Noted – no comments
SDPP	5.1	Public art proposal	40	Noted – no comments
SDPP	6.1	Integrated station development	51	Request for information on contents of station building levels adjacent to Masonic property to determine expected noise impacts. Specifically, plant room level 4. Noted pedestrian safety concerns around loading bay access on Castlereagh St. RE noted CoS cycleway is not shown in figure 28, SP stated that this could be updated once a timeline for the installation of the CoS cycleway is known. 'Proposed cycleway' note could be added to the image.
SDPP	6.4 & 6.5	Public domain and landscape interface and planting - north	56 & 57	Noted – no issue
SDPP	6.9	Front of house materiality - station identity	61	Noted – no issue
SDPP	6.12 & 6.13	North station entry – façade design and details	64 & 65	Noted – appreciate that consideration has been taken for surrounding buildings in station building design. Requesting OSD Heritage information on Castlereagh St side of station building when available (street level)
SDPP	6.19	Station entrance internal materiality - north	71	Noted – no issue
Visual Assessment	3.1 Figure 1	Pitt Street north station	10	Noted – no issue
Visual Assessment	4.1.2 4.1.4	Viewpoint 2 - view south along Castlereagh Street Viewpoint 4 - view northwest at the corner of Castlereagh and Park streets	15 & 17	Noted – no issue
N/A		Other business SP noted main site access during construction will be from Castlereagh St.		PB was positive about Castlereagh St site access as it will bring project workers/customers to the CBH café on ground floor

2. Fire and Rescue NSW (211-217 Castlereagh Street) meeting Wednesday 21 October

Table taken from meeting minutes:

Item 2 – Station Design and Precinct Plan (SDPP) community consultation

Document	Section	Topic	Page no.	Stakeholder comments
SDPP	1.3 & 1.4	Extent and urban context	12 & 13	No comments
SDPP	2.2	Design process	19	No comments
SDPP	3.3	Interchange access plan	26	No comments
SDPP	4.4 Figure 30	Local heritage and place making values	34	No comments
SDPP	5.1	Public art proposal	40	No comments
SDPP	6.1	Integrated station development	52	PS opposes CoS cycleway on Castlereagh St – refer to CoS. CPB not installing cycleway
SDPP	6.6	New street planting - south	58	No comments. MM noted bollards will be in place on the footpath at the boundary of the station footpath and shared driveway. These bollards will not impact access to the shared driveway
SDPP	6.10	Front of house materiality - station entrance external material palette	62	No comments
SDPP	6.15 & 6.16	South station entry – façade design and details	67 & 68	No comments
SDPP	6.20	Station entrance internal materiality - south	72	No comments
Visual Assessment	3.2 Figure 2	Pitt Street south station	11	No comments
Visual Assessment	4.2	Pitt Street south site - viewpoint 6, 7, 8, 9	20	No comments. SP noted OSD access from Pitt St only

- **Evidence E – website information – CPB Project website**

  SDPP content and feedback process images taken from CPB website:

  https://pittstreetsydneymetroisd.com.au/sdpp/

STATION DESIGN AND PRECINCT PLAN CONSULTATION

Aerial city view across Hyde Park (indicative image only)

What is the Station Design and Precinct Plan?

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Design objectives

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- Landscaping

Have your say

Thank you for your submissions. The exhibition period is now complete.

Download a copy of the draft SDPP

Station_Design_and_Precinct_Plan_For_Consultation_PittStreet_Accessible Download

Next steps

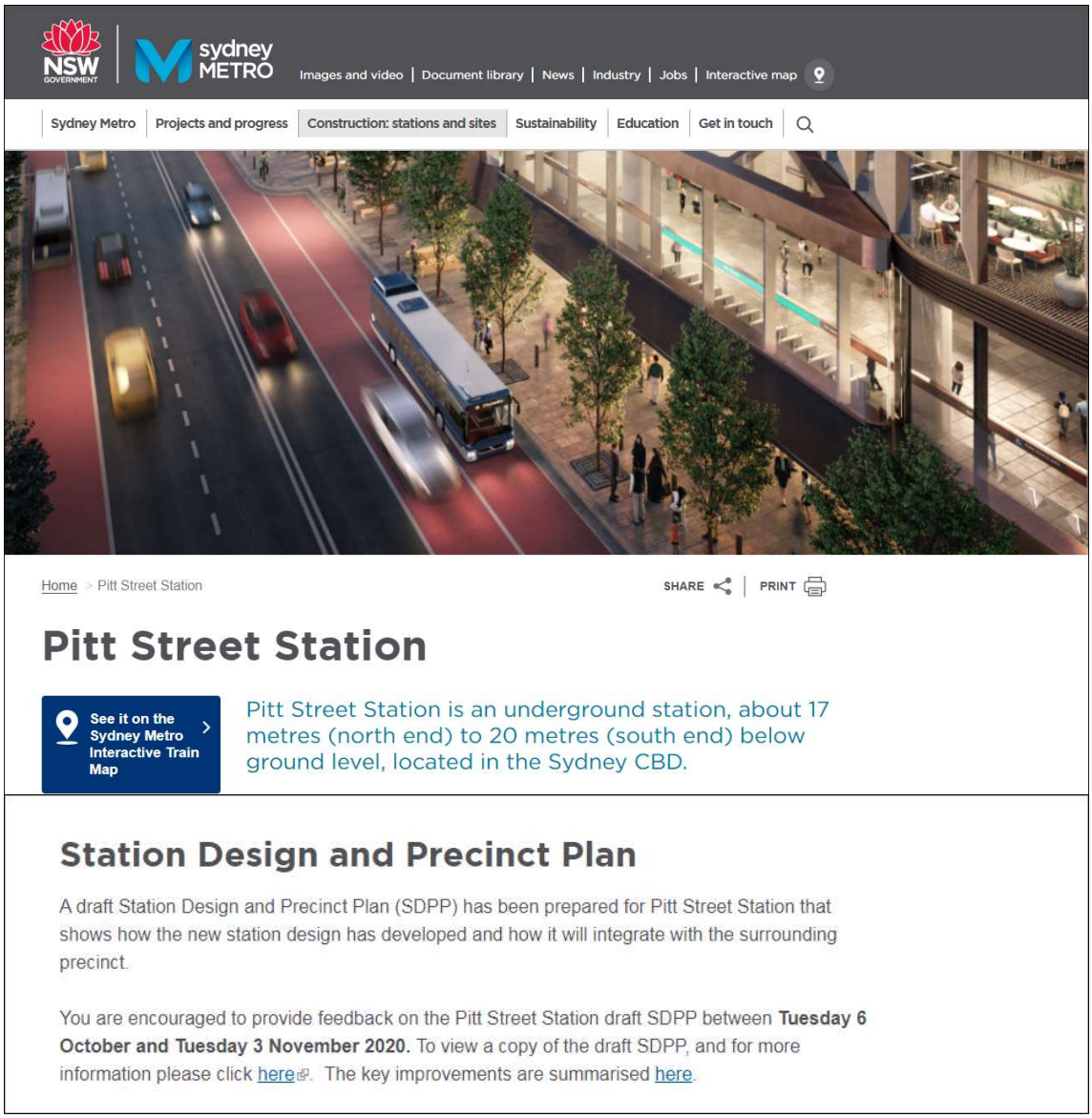
Your feedback will be considered and addressed in the final Pitt Street Station SDPP, which will be available on the Sydney Metro website.

Properties close to the Pitt Street Station construction sites will receive notifications when work is scheduled to occur and we will continue to keep the general community updated through the Sydney Metro website, social media channels and email updates.

For any questions please email pittstreetmetro@transport.nsw.gov.au.

SDPP content and feedback process images taken from Sydney Metro website:

https://www.sydneymetro.info/station/pitt-street-station



EVIDENCE OF REVIEW BY THE DESIGN REVIEW PANEL

Attachment A - Design Review Panel – Endorsement – 18 February 2021

Sydney Metro Design Review Panel

Pitt Street ISD

Advice and Actions Record – 18 February 2021

Date:	18 February 2021
Venue:	Microsoft Teams
Panel:	Abbie Galvin (Chair), Tony Caro, Peter Phillips, Yvonne von Hartel AM, Graham Jahn AM, Kim Crestani
Independent Secretariat:	Gabrielle Pelletier
Design Team Presenters:	
CPB Contractors	Michael Muller, Sarah Power
Sydney Metro	Mila Batureych
Sydney Metro	Jason Hammond, Alex Nicholson, Sumathi Navaratnam, Ash Jarvis
Observers:	
DPIE	Shelly Reed
Apologies:	Heritage Council, Bob Nation AM,

Project status: Date of last presentation: 28 January 2021

The Pitt Street ISD project team presented DRP presentation 15 on the SDPP consultation process.

Design Integrity Tracker:

Please refer to the DRP Pitt St Design Integrity Tracker for the status of all actions past and present. DRP actions and advice are sorted via their geographic location first, and then via their theme:

Advice is sorted first by their geographic location:

- ISD – General
- OSD North
- OSD South
- Precinct/ Public Domain North
- Precinct/ Public Domain South
- Station
- Station Entry North
- Station Entry South

Advice is then also sorted by its theme:

- Customer experience and wayfinding
- Sustainability
- Public art & heritage interpretation
- Station services
- Planning and passenger movement
- Access and Maintenance
- Built form
- Materials and finishes

DRP Advice:

SDPP

- The Panel accepts the responses provided by the project team to comments made by the stakeholders regarding the Pitt Street SDPP.

Pitt Street 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
1.00	ISD	General	15/10/2019	DRP 1 Presentation	The Panel supports the overall scheme as presented with recommendations: Items 1.01 to 1.03	Project Team	19/11/2019	The Panel notes and supports the general approach to landscape design as presented in DRP 2 Presentation, noting that it is in its early stages.	Closed
1.01	ISD	Materials and finishes	15/10/2019	DRP 1 Presentation	The Panel requests that the landscape designer present at a future meeting.	Project team	19/11/2019	The Panel notes and supports the landscape design at its current stage as presented in DRP 2 Presentation	Closed
1.02	OSD South	Planning and Passenger Movement	15/10/2019	DRP 1 Presentation	The Panel requests that the following be presented at the next meeting: - Demonstration that the proposed lifts will provide an appropriate level of service to service 227 apartments and other uses.	Project team	19/11/2019	The Panel supports the proposed lift numbers on the basis of the analysis presented – being 3 passenger and 1 service lift for 227 apartments.	Closed
1.03	OSD South	Access and maintenance	15/10/2019	DRP 1 Presentation	The Panel requests that the following be presented at the next meeting: Demonstration that the loading dock and service lifts will provide a sufficient level of service.	Project team	19/11/2019 17/12/2019	The Panel raised concerns about the level of service provided by the current arrangement of loading dock and service lift (that requires changing lift at the lobby level). The Panel requested to see alternative configurations bringing the residential service lift closer to the goods lift, or ideally a model that does not require lift change from loading to apartment floors, whilst noting that the client is confident that this model is workable. The Panel accepts the design change presented for loading and vertical transport which achieves direct access from the loading dock into a larger residential service lift at the entry level, avoiding the need to transfer between lifts at the upper level.	Closed
2.01	OSD North	Materials and finishes	19/11/2019	DRP 2 Presentation	The Panel recommends a wind study be undertaken to ascertain impact on trees located on Pitt St North Podium.	Project team	31/03/2020 21/04/2020 05/05/2020	Refer Item 7.06 for further actions. The Panel acknowledge that a wind study was presented on 31 March 2020 however the intention of this action item was to ascertain the impact the wind, and proposed mitigation measures, will have on trees on the podium and street, and their ability to grow. This item remains open until this has been addressed. The Panel support the presented tree species and locations proposed for the street and podium planting, and accept the information presented that they will grow in the anticipated wind conditions.	Closed
2.02	Precinct/ Public Domain North	Planning and Passenger Movement	19/11/2019	DRP 2 Presentation	The Panel notes that the suitability of the bus shelter design and location is yet to be confirmed with City of Sydney.	Project Team	21/04/2020 05/05/2020	The Panel supports in principle the approach to remove the standard City bus shelter and rely on the building awnings for shelter, however the Panel requests a plan showing seating locations in relation to the awning to understand the available amenity. The Panel also recommends coordination with TfNSW. The Panel support the return of the bus shelter.	Closed
2.03	Precinct/ Public Domain North	Planning and Passenger Movement	19/11/2019	DRP 2 Presentation	The Panel does not support the location of the bollards perpendicular to the station entry and recommends an alternate solution be sought with City of Sydney.	Sydney Metro	15/06/2020	The Panel has ongoing significant concern with the placement of bollards across the path of pedestrian movement on the footpath, and recommends consultation be undertaken with the City of Sydney to co-ordinate with their city wide HVM placement strategy.	Closed
2.04	Precinct/ Public Domain North	Planning and Passenger Movement	19/11/2019	DRP 2 Presentation	The Panel requests further information regarding crowd studies and movement corridors at Pitt St North in order to establish the functionality of proposed seating and other elements along the footpath.	Project team	21/01/2020 21/04/2020	The Panel notes that the project team will review the proposed locations of street furniture and bus shelter to optimise pedestrian flows and movements based on the crowd studies presented. The Panel confirm this item can be closed out following the project team's presentation on 31 March 2020.	Closed
2.05	Station	Materials and finishes	19/11/2019	DRP 2 Presentation	The Panel recommends samples and final finishes of material selection be presented along with evidence of sign off by Sydney Metro on sealing and maintenance regimes.	Project team	31/03/2020	The Panel accepts the current finishes proposed but notes that physical samples could not be reviewed due to the current Covid 19 isolation requirements.	Closed
2.06	Station Entry North	Built Form	19/11/2019	DRP 2 Presentation	Retail Unit 3 Facade The panel seeks a review of Retail Unit 3 façade composition and recommends glazing be subservient to the strong wrapping of the sandstone wall into the entry, to maintain continuity of design with the original proposition.	Project team	17-Dec-19	The Panel accepts the updated design which minimises glazing to maintain the integrity of the curved form of the retail area adjoining Ashington Place.	Closed
2.07	OSD North	Materials and finishes	19/11/2019	DRP 2 Presentation	The Panel supports in principle the current material selection and recommends the future presentation of this selection also include direct reference to the SSD OSD-North Part A Design Parameters to enable support of these conditions. The Panel also recommends that samples and final finishes be presented along with evidence of sign off by Sydney Metro on sealing and maintenance regimes.	Project team	21/04/2020 05/05/2020	The Panel supports the approach to the development of an appropriate bronze finish to aluminium and requests that samples of the proposed finish on the variant façade forms, be available to view on site during the construction delivery phase. The Panel request further information about the durability and maintenance of the proposed bronze finish to aluminium where this finish is present at ground level. The Panel support the product warranty evidence to demonstrate durability and look forward to seeing samples of the proposed finish in all variant façade forms when available on site.	Closed
2.08	Station Entry North	Planning and Passenger Movement	19/11/2019	DRP 2 Presentation	Pitt St Egress The Panel recommends the review of the narrowing egress corridor & stairwell as may conflict with legislative requirements.	Project team	17-Dec-19	The Panel accepts that the project fire engineer and BCA consultant have confirmed that the pinch point in the egress corridor does not present an unacceptable obstruction to people movement.	Closed
2.09	Station Entry North	Planning and Passenger Movement	19/11/2019	DRP 2 Presentation	Fire control room The Panel notes the relocation of the fire control room is yet to be confirmed with the fire brigade and therefore requires further development.	Project team	17-Dec-19	The Panel accepts the updated design to consolidate the fire control rooms on Park Street.	Closed

ITEM #	GEOGRAPHIC LOCATION	THEME	RAISED ON	DOCUMENT REVIEWED	ACTION / ADVICE	TEAM TO RESPOND	DATE OF RESPONSE	RESPONSE	STATUS
2.10	Station Entry North	Planning and Passenger Movement	19/11/2019	DRP 2 Presentation	Schedule C4 - North entry toilet & lift configuration	Project team	19/11/2019 17/12/2019	The Panel supports the new configuration of toilet and lift access with the 2m setback of the toilet entry doors behind a privacy screen. The Panel accepts the proposed screen to the amenities to support separation of circulation between lift and amenities.	Closed
2.11	Station Entry North	Planning and Passenger Movement	19/11/2019	DRP 2 Presentation	Schedule C4 - North entry metro touch point locations The Panel notes and supports the relocation of the metro touch points to inside of curtilage however requests the further development of the entry hall to ensure it remains a unified public room as presented in the original proposition, through consolidation of floor treatments, levels and balustrade lines.	Project team	17/12/2019	The Panel accepts that the proposed use of wall, floor and ceiling materials and finishes internally and externally as presented greatly improves the sense of a unified public room at the Park Street Metro entrance. The Panel accepts the proposed glazed screens separating the paid area behind the gate line from the footpath on Park Street.	Closed
2.12	Station Entry North	Built Form	19/11/2019	DRP 2 Presentation	Schedule C4 - North entry natural light access The Panel requests this item be addressed at the next scheduled meeting in order to close it out.	Project team	17/12/2019	The Panel accepts that the reduced concourse will let more lighting into the escalator switch back and void.	Closed
2.13	OSD South	Built Form	19/11/2019	DRP 2 Presentation	Princeton Apartment Interface – Ventilation design The Panel note that this proposal appears to meet the minimum requirements of the relevant contract design parameters however, the panel raised the following concerns with the presented solution: -Conflict between safety and cleaning -Conflict between access to ventilation and acoustic separation The Panel was advised that this solution has been presented to the City of Sydney (CoS), but no feedback from the CoS was provided. In addition to demonstration that the scheme addresses the above concerns, the Panel recommends that CoS support for this approach is secured.	Project Team	21/01/2020 18/02/2020 21/04/2020 19/05/2020	The Panel accepts removal of the vertical blade to the ventilation slot on the south façade (Princeton Apartment interface) noting further development of horizontal ledges to be provided. The Panel accept the articulation of horizontal ledges to the ventilation panel slots along the Princeton Apartment Interface. The Panel accept that investigation is underway regarding nesting prevention and recommend the project team liaise with Sydney Metro regarding their current solution testing. The Panel note the previous request to confirm there are no high-volume wind whistling issues arising from the bedroom ventilation panels located in the recessed slots with no horizontal ledges. The Panel confirm this item remains open due to concern raised over the potential for high-volume wind whistling issues arising from the recessed slots with no horizontal ledges. The Panel seeks confidence from the Pitt Street team that this issue won't arise. The Panel supports the presented material relating to the mitigation of high-volume wind whistling.	Closed
2.14	OSD South	Built Form	19/11/2019	DRP 2 Presentation	Princeton Apartment Interface – Visual privacy	Project Team	19/11/2019	The Panel supports that visual privacy is achieved through the noted vertical louvres to the apartment windows facing the Princeton Apartments.	Closed
2.15	OSD South	Materials and finishes	19/11/2019	DRP 2 Presentation	The Panel supports the material selection in principle, and recommends all materials are presented again with samples and final finishes, including evidence of sign off by Sydney Metro on sealing and maintenance regimes.	Project team	21/01/2020 18/02/2020	The Panel reiterates the need for material samples and prototypes prior to providing support. The Panel accept the samples provided in principle however recommend the production of multiple full-scale prototypes with a variety of options upon the engagement of the precast contractor to test the level of subtlety between colour and finishes from varying distances and light conditions, and to explore a greater level of texture to improve contrast in colour. It is recommended the Panel be invited to view these prototypes to ensure design excellence is carried through to project delivery and that enough time be allowed to test developed options for the prototypes if required.	Closed
2.16	Station Entry South	Planning and Passenger Movement	19/11/2019	DRP 2 Presentation	Schedule C4 - South entry sightline to lift waiting area	Project Team	19/11/2019	The Panel supports the improved sight lines to the lift waiting area through the increase in width from 2.5m to 3m.	Closed
2.17	Precinct/ Public Domain North	Planning and Passenger Movement	19/11/2019	DRP 2 Presentation	The Panel is concerned that the use of bollards as the only approach to managing security issues is leading to suboptimal public domain outcomes that will negatively impact on the urban design quality and useability of the Metro entry areas. Transport to provide a presentation on alternative approaches to security.	Transport for NSW / Project team	3/12/2019 15/06/2020	A presentation has been made regarding HVM devises, a strategy has not yet been proposed. The Panel accepts the proposed strategy for HVM device placement however further to Tracker Item 2.03, does not support the placement of bollards perpendicular to the path of travel.	Closed
2.15	General	General	19/11/2019	DRP 2 Presentation	The Panel noted that the CoS representative required as a member on this Panel has not yet been appointed.	Transport for NSW	18/02/2020	Graham Juan has been appointed as DRP Panel member for the City of Sydney.	Closed
3.01	OSD North	Integrated Art and Heritage Interpretation	17/11/2019	DRP 3 Presentation	The Panel accepts the modifications to the facades on Pitt and Castlereagh Streets to improve design relationships with adjoining heritage items and looks forward to the developed design of heritage interpretation panels.	Project Team	21/04/2020	The Panel note the importance of the integration of pre-colonial history into the heritage interpretation strategy (refer item 7.02) and understand this is forthcoming, therefore accept this item has been met and can be closed following the Pitt Street 31 March presentation.	Closed
4.01	OSD South	Materials and finishes	21/01/2020	DRP 4 Presentation	**Façade design** The Panel recommends considering a different treatment to the precast façade panels at street level in order to provide a richer sense of detail.	Project Team	18/02/2020 17/03/2020	The Panel note that limited options were developed by the design team to introduce detail into the street level precast panels. The Panel acknowledge that mimicking the brick striations/banding is not a suitable response and recommend further investigation be undertaken to test texture and applied finishes to resolve a finer level of design detail, and that additional larger scale samples are developed and request the DRP are invited to review further proposals. The Panel accept the honed precast finish to the street level walls, with a higher visibility of aggregate then sample shown and promote further consideration be given to the skirting and corner details to ensure longevity of initial appearance.	Closed

ITEM #	GEOGRAPHIC LOCATION	THEME	RAISED ON	DOCUMENT REVIEWED	ACTION / ADVICE	TEAM TO RESPOND	DATE OF RESPONSE	RESPONSE	STATUS
4.02	OSD South	Materials and finishes	21/01/2020	DRP 4 Presentation	**Façade design** The Panel requests a plan diagram/s that establish the locations of colour changes, and confirmation that this is consistent with the agreed concept of the tower being a composition of four articulated slender forms.	Project Team	18/02/2020	The Panel accept the presented diagrams and 3D imagery explaining the locations of colour changes and evolution of design.	Closed
4.03	OSD South	Built Form	21/01/2020	DRP 4 Presentation	**Façade design** The Panel accepts the proposed rationale for façade openings between concrete panels applicable to the various internal room uses.	Noted			Closed
4.04	OSD South	Heritage Interpretation	21/01/2020	DRP 4 Presentation	**Edinburgh Castle Hotel** The Panel requests a detailed resolution of the return wall to the Edinburgh Castle Hotel.	Project Team	18/02/2020 17/03/2020	Concern was raised over the use of brick in the boundary wall to the Edinburgh Hotel. The Panel recommends that this wall be read as part of the new development whilst remaining sympathetic to the Hotel. The Panel promotes the use of materials already within the OSD building palette and recommends explorations into the use of painted steel. The Panel accepts the proposal for the bounding wall to the Edinburgh Hotel to be composed of recycled bricks with tone and texture similar to the bricks used in the Hotel.	Closed
4.05	OSD South	Built Form	21/01/2020	DRP 4 Presentation	**Solar Analysis and Thermal Comfort** The Panel notes there has been a reduction in solar access on June 21st due to the New Castle Residences development, which has recently commenced on site. The Panel notes the design teams advice that appropriate solar analysis testing to minimise this impact has been undertaken, which demonstrates that the current façade design remains as an appropriate solution along with relocation of upper level 3-bedroom apartments to the lower levels.	Noted			Closed
4.06	OSD South	Built Form	21/01/2020	DRP 4 Presentation	**Envelope compliance** The Panel accepts the presented envelope non-compliances as having very minor impacts and therefore reasonable.	Noted			Closed
4.07	General	General	21/01/2020	DRP 4 Presentation	**Design Excellence** The Panel requests that future presentations include commentary on compliance with design excellence strategies including design guidelines.	Project Team	18/02/2020	The Panel note that the project team are currently in conversation with DPIE	Closed
4.08	OSD North	Built Form	21/01/2020	DRP 4 Presentation	**Setbacks to lightwells** The Panel accepts and supports updates to the presented lightwell setbacks to the existing NSW Masonic Club and Ashington Place developments, following the survey study undertaken of these buildings.	Noted			Closed
4.09	OSD North	Materials and finishes	21/01/2020	DRP 4 Presentation	**Ashington Place lightwells** The Panel suggests looking at opportunities for improving outlook from the Ashington Place development across the lightwell to the proposed solid boundary wall.	Project Team	17/03/2020	The Panel supports the materials to the Ashington Place lightwells and looks forward to viewing samples when available.	Closed
4.10	OSD North	Built Form	21/01/2020	DRP 4 Presentation	**Ashington Place lightwells** The Panel suggests consideration of introducing natural light from the Ashington Place lightwell to benefit the commercial spaces within.	Project Team	17/03/2020	The Panel supports the materials to the Ashington Place lightwells and looks forward to viewing samples when available.	Closed
6.01	OSD South	Materials and finishes	17/03/2020	DRP 6 Presentation	**Ground floor windows** The Panel request further information provided regarding bird roosting mitigation measures at horizontal window heads that sit below the awning.	Project Team	19/05/2020	The Panel supports the detailed coordination of the various joints and look forward to a presentation of the proposed design.	Closed
6.02	OSD South	General	17/03/2020	DRP 6 Presentation	**Design Excellence** The Panel accepts that Pitt Street South OSD meets design excellence parameters and is ready for submission to DPIE.	Noted			Closed
6.03	Station Entry North	Planning and Passenger Movement	17/03/2020	DRP 6 Presentation	**Ticketing & information re-entrant areas** The Panel continues to be concerned regarding the quality of public domain provided by re-entrant ticketing and information spaces on either side of the station entry gates, and request Sydney Metro and the design team investigate this area further.	Project Team & Sydney Metro	21/04/2020 19/05/2020	The Panel support the presented design amendments but encourage further reducing the re-entrant depth further by setting the station gates & signage portal back whilst still proud of the column, understanding this will require access dispensation for escalator run-off The Panel accepts the station gate line cannot move closer to the escalator.	Closed

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6.04	Station Entry North	Materials and finishes	17/03/2020	DRP 6 Presentation	**Escalator landing materiality** The Panel looks forward to the presentation of the artwork on the escalator landing and suggests reconsideration of the use of two materials on east and west flanking walls.	Project Team	21/04/2020 05/05/2020 19/05/2020 23/06/2020	The Panel remain concerned about the potential clinical outcome of the white flanking walls to this station entry, and encourage the project team to review their finish in context of the integrated public artwork. The Panel supports the use of sandstone from the escalator switch back landing to the foundation datum, and seek further information on how the door located at this landing will be integrated into this finish. The Panel apologises for the lack of clarity in the advice given following the previous presentation and would like to clarify that in the context of the integrated artwork, a unified finish on walls perpendicular to the artworks is encouraged to enable the artwork to read as strongly as possible. The Panel supports the use of white textured colour back glass in lieu of sandstone at the base of the wall and request the project team review the details at the service datum line to investigate whether a continuous material is possible. The Panel supports the use of sandstone on the basis of the out of session material provided on 15 June 2020. The Panel notes that concealing appearance of the service door into the wall through material use, careful detailing and minimising door hardware is critical to the effective reading of the artwork and the surrounding wall as a simple plane.	Closed
6.05	Station Entry North	Materials and finishes	17/03/2020	DRP 6 Presentation	**Colour back glass** The Panel suggests considering a slight texture be provided on the low-iron colour-back glass to minimise visibility of smears and fingerprints (such as the glass used by Foster & Partners in the Deutsche Bank Place lift cars).	Project Team	31/03/2020	The Panel supports the inclusion of a textured finish to the white colour-back glass	Closed
6.06	Station	Built Form	17/03/2020	DRP 6 Presentation	The Panel recommends review of the discordant interface between the two geometries at the station concourse south escalator exit.	Project Team	31/03/2020	The Panel accepts the revised design at the interface of the 2 geometries which proposes 400mm depth of wall below the services plenum.	Closed
7.01	General	Integrated Art and Heritage Interpretation	31/03/2020	DRP 7 Presentation	**Post Colonial Heritage** The Panel commended the depth and rigour of the historical research (post-colonisation) and its opportunity for heritage interpretation and display.	Noted	N/A	N/A	Closed
7.02	General	Integrated Art and Heritage Interpretation	31/03/2020	DRP 7 Presentation	**Indigenous Heritage** The Panel was disappointed by the lack of engagement with indigenous heritage and recommend further engagement be undertaken. The Panel notes that George and Pitt Streets in particular, follow indigenous tracks and routes, as well as the Tank Stream.	Project Team	5/05/2020 15/06/2020	The Panel supports the indigenous narrative presented and the importance of its representation. The Panel understands the intended presentation is via displays boxes, however encourages alternative approaches to ensure the work communicates a sense of permanence and respect. The Panel look forward to future presentations on the project teams' approach to integration. The Panel supports the integration of site-related interpretive elements for this site.	Closed
7.03	Precinct/ Public Domain North	Planning and Passenger Movement	31/03/2020	DRP 7 Presentation	**Traffic Signals** The Panel notes that adjustment of traffic signals to preference pedestrian priority at the intersection would be the desired outcome and support this occurring. The Panel acknowledge there is planned to be a whole of city review in the upcoming years of timing of signalisation and pedestrian flows.	Noted	N/A	N/A	Closed
7.04	Station Entry North	Integrated Art and Heritage Interpretation	31/03/2020	DRP 7 Presentation	**Foundation course** The Panel is concerned that the re-used foundation course of the wall as a datum at the station entry seems tokenistic and lacks co-ordination with the larger adjacent artwork and seeks clarity regarding the interaction of these two elements.	Project Team	19/05/2020	The Panel supports the removal of the re-used foundation course as the datum along the flanking walls, as noted in item 6.04, this will detract from the artwork.	Closed
7.05	OSD North	Built Form	31/03/2020	DRP 7 Presentation	**Building Envelope** The Panel accepts the building envelope as presented with the exception of the 1.8m high balustrades on the top of the podium.	Project Team	21/04/2020 05/05/2020	This item seeks review of the proposed 1.8m glass balustrade solution The Panel supports the glass balustrade and efforts made to reduce its perceived height internally and externally.	Closed
7.06	OSD North	Built Form	31/03/2020	DRP 7 Presentation	**Further Wind Study** The Panel is concerned that screening the podium setback on the corner with 1.8m glass balustrade in order to moderate the impact of wind for podium users, will in turn negatively impact the wind conditions on the street that the setback has been designed to mitigate. The panel recommends further wind studies be undertaken to assess this. Refer Item 2.01 for further action.	Project Team	21/04/2020 05/05/2020	This item seeks further wind studies to understand the impacts the increased balustrade height will have on the broader development (i.e.: the podium setback is created to mitigate wind impacts on the public domain through the mitigation of downdraft, yet the high balustrade seeks to provide amenity on the podium roof during windy conditions – what impact will the provision of this balustrade have, if any on the wind at street level?) The Panel accept the wind consultant's opinion that the balustrade will not impact street wind conditions.	Closed
7.07	OSD North	Built Form	31/03/2020	DRP 7 Presentation	**Planter Balustrade** The Panel notes that a code compliant balustrade would be required on the outside edge of any planter to prevent falls, and seeks regarding the interface of the landscape and the balustrade edge.	Project Team	5/05/2020	The Panel supports the presented solutions for balustrades to the outside edges of planters.	Closed

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7.08	General	General	31/03/2020	DRP 7 Presentation	**OSD Design Parameters** The Panel noted the status update provided on the OSD design parameters and that ongoing discussions are occurring between the Sydney Metro and the Pitt St Project Team to close these out progressively. The Panel accepts this has been achieved and will close this item in the design integrity tracker.	Noted	N/A	N/A	Closed
7.09	General	General	31/03/2020	DRP 7 Presentation	**Design Excellence Guidelines** The Panel noted the suggested process to be followed to close out and satisfy compliance with the design excellence guidelines and notes the detail on this process is to be agreed with DPIE, Sydney Metro and the developer.	Noted	N/A	N/A	Closed
8.01	OSD North	Planning and Passenger Movement	21/04/2020	DRP 8 Presentation	**OSD Use & Retail offering** The Panel accept that the planning requirements have been met relating to the proposed extent of commercial and retail use.	N/A	N/A	N/A	Closed
9.01	OSD North	General	5/05/2020	DRP 9 Presentation	**Design Excellence** The Panel endorses that design excellence has been achieved on OSD North, and the design is ready for submission to DPIE.	N/A	N/A	N/A	Closed
9.02	General	Integrated Art and Heritage Interpretation	5/05/2020	DRP 9 Presentation	**Integrated Art** The Panel strongly support the presented integrated art and commend the team on a bold and exciting approach. The Panel raise concern over the visible impact of expressed joints arising from the proposed installation of pre-finished panels. The Panel recommend the type and location of joints, along with production of a full scale prototype be carefully developed in conjunction with the artist, and suggest further investigation of an in-situ installation.	Project Team	19/05/2020 03/08/2020	The Panel supports the detailed coordination of the various joints and look forward to a presentation of the proposed design. The Panel strongly recommends that the artist and architect are involved in the development and approval of the final joint set out. The Panel requests that a prototype be developed prior to site works for inspection and approval by the architect and artist, and review by the Panel.	Closed
10.01	General	Integrated Art and Heritage Interpretation	19/05/2020	DRP 10 Presentation	**Lighting Specialist** The Panel encourages the project team to consult a lighting specialist in conjunction with the artist, to undertake a lighting study to ensure the ambient light is both sufficient and will not cause undue light scalloping on the wall.	Project Team	23/06/2020	The Panel accept the reply provided by the Contractor, that consultation will occur between their lighting specialist and the artist to provide appropriate light levels and type.	Closed
10.02	OSD South	Built Form	19/05/2020	DRP 10 Presentation	**South Façade Window Cleaning** The Panel seeks clarification from the design team on how the windows behind the fixed louvres on the south façade are to be cleaned.	Project Team	18/08/2020	The Panel accepts the maintenance strategy presented for the South Façade.	Closed
11.01	OSD South	Built Form	18/08/2020	DRP 12 Presentation	**Varied setback from Pitt Street boundary** The Panel notes the project team did not address the impact of the proposed varied setback on solar access to the Princeton Apartments which DPIE had noted was the intention of this condition.	Project Team	15/09/2020	The Panel defers to DPIE for compliance decisions relating to overshadowing of Princeton apartments.	Closed
11.02	OSD South	Built Form	18/08/2020	DRP 12 Presentation	**View retention from Century Tower** The Panel accepts that a reasonable attempt has been made to increase the number of Century Tower apartments retaining views of St Mary's cathedral through articulation of the roof form within the approved planning envelope	N/A			Closed

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11.03	OSD South	Built Form	18/08/2020	DRP 12 Presentation	**Projections beyond building envelope** The Panel reasserts its earlier assessment that the minor encroachments outside the building envelope create no adverse impacts on privacy and solar access. Whilst the Panel applauds the project teams' efforts to reduce these encroachments, the Panel believes the reduced depth to the GRC façade elements diminishes the architectural quality of the facade, and should be calibrated to the building orientation (E.G.: maintaining the deeper panels on east/west).	Project Team	15/09/2020 23/09/2020 20/10/2020	The Panel does not currently support the reduction in façade depth to the west, east and northern façade panels however does support the updated consistency of width. The Panel acknowledges that the design team are confident of the decision to reduce the depth to 325mm from the original depth of 450mm and will review the full-scale details of the proposed façade depth to further their understanding of this decision. Following the review of the 1:1 printed detail of the GRC façade elements, the Panel does not support the reduction in depth of the GRC unit. The Panel believes the flattening of these elements changes the architectural expression of depth and relief in the façade that the initial design proposed, and recommends the original depth of 450mm to the glass line be maintained. The Panel supports the change in width of the GRC units to 900mm. The Panel notes that there has been a significant reduction in the quantity of GRC units in the façade from the initial Stage 2 DA to that which is currently proposed as part of the Response to Submissions. This reduction appears to have increased beyond that which was presented to the DRP on the 18th August. The reduction of quantity of solid elements on the façade is impacting design excellence – ie the overall appearance and integrity of the design, in addition to a potential increase in solar load on the building. The Panel requests an urgent comparative analysis (of % of solid vs glazing) is provided of the Stage 2 DA façade vs the current proposed façade, prior to resubmission – in order to ascertain the overall impact. The comparative analysis should consist of elevations, plans and 3d views. The Panel accept the increased depth to the GRC units inline with the original proposal and provides further commentry regarding number of units in Item 13.01	Closed
11.04	OSD South	Built Form	18/08/2020	DRP 12 Presentation	**SE Coner Apartment Design** The Panel does not support the reduction in area to the SE corner apartments, and suggests the removal of the second bathroom to align the area with the Apartment Design Guidelines. However, the Panel supports the reduction in balcony area to improve privacy	Project Team	15/09/2020	The Panel supports the improved amenity afforded to the SE corner apartments due to indenting the balcony, and the resultant reduction of balcony size.	Closed
11.05	OSD South	Planning and Passenger Movement	18/08/2020	DRP 12 Presentation	**Privacy and amenity to Princeton Apartments** The Panel supports the Level 6 terrace use as landscape only, and encourages the maximisation of soft landscaping through reducing extent of proposed paved area. The Panel does not support the inclusion of internal communal space, including the pool area, within the total communal open space calculation.	Project Team	15/09/2020	The Panel supports the updated landscape design however defers to DPIE on compliance decisions relating to the calculation of communal open space.	Closed
11.06	OSD South	Built Form	18/08/2020	DRP 12 Presentation	**Maximising solar access** The Panel notes that in selecting a residential use for the site solar access amenity was known to be limited. The Panel accepts that the project team have maximised solar access and amenity to apartments in the context of the challenges presented by this particular site.	N/A			Closed
12.01	OSD North	Built Form	15/09/2020	DRP 13 Presenation	**Hyde Park solar access** The Panel notes the shadows cast over Hyde park by the Pitt Street development remain within the footprint of shadow already cast by existing development at 201 Elizabeth street and an alternative and smaller built form envelope proposed for 201 Elizabeth St (which is currently not intended to proceed).	N/A			Closed
12.02	OSD North	Built Form	15/09/2020	DRP 13 Presenation	**Neighbouring apartment solar access** The Panel defers to DPIE for compliance decisions relating to overshadowing of surrounding residences.	N/A			Closed
12.03	OSD North	Design Guidelines	15/09/2020	DRP 13 Presenation	**Design Guidelines** The Panel does not support updating the Design Guidelines to reflect changes made during design development, however recommends the design team provide a statement responding to these guidelines for review and endorsement by the Panel.	Project Team	15/10/2020	Response to design guidelines provided by project team.	Closed
12.04	OSD North	Materials and finishes	15/09/2020	DRP 13 Presenation	**Bird protection** The Panel supports the measures taken to minimise reflectivity to protect Powerful Owls and other birds from flying into the building facade glazing and balustrades.	N/A			Closed

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13.01	OSD South	Built Form	20/10/2020	DRP 14 Presentation	**GRC façade unit quantity** The reduction in columns made to the OSD South façade, presented in DRP 12 and 13, has a significant impact on the overall appearance and visual quality of the building and is not supported by the Panel. Whilst the Panel supports the greater level of consideration that has been given to the rationalisation of window/solid to internal planning, it recommends reviewing the original density and syncopated rhythm of the SSDA proposal, to recapture this design quality.	Project Team	30/10/2020 04/11/2020	The Panel supports the proposed number of GRC units presented, as a reduction in 7 from the SSDA submission. The Panel recommends reviewing the placement of the columns along the western face of the north-western corner, and the eastern face of the north-eastern corner, to achieve a slightly more varied and less regular spacing which is more consistent with the SSDA design. The Panel supports the presented design changes to GRC unit positions along the western face of the north-western corner, and the eastern face of the north-eastern corner.	Closed
14.01	Station	SDPP	28/01/2020	DRP 15 Presenation	**Consultation** The Panel accepts the proposed consultation strategy, and acknowledges that the design team are yet to provide responses to the submissions made by stakeholders and the public.	N/A	18/02/2021	The Panel accepts the responses provided by the project team to comments made by the stakeholders regarding the Pitt Street SDPP.	Closed

APPENDIX B VISUAL IMPACT ASSESSMENT

SYDNEY METRO PITT STREET STATION DESIGN AND PRECINCT PLAN - VISUAL ASSESSMENT

Prepared for
CPB
7 September 2020

URBIS

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

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Report Number	Final

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CONTENTS

FIGURES

TABLES

INTRODUCTION

Urbis has been engaged by CPB to prepare a visual assessment of the Sydney Metro Pitt Street Station – Station Design Precinct Plan. This visual assessment is required in order to fulfill condition E102 of the Critical State Significant Infrastructure (CSSI) Sydney Metro City & Southwest Chatswood to Sydenham approval SSI 15_7400 (the CSSI Approval) , as it relates to the Station Design Precinct Plan (SDPP) for Pitt Street Station.

It is noted that SSI 15_7400 pertains **only to the station entrances and 'station box' / podium structures of both Pitt Street north and Pitt Street south stations**, and does not extend to the over station development (tower) components above, which are subject to separate development application and assessment pathways. The visual assessment contained in this report and required by Condition E102 therefore does not address the visual impact of the over station development.

Condition E102 of SSI 15_7400 requires that

The SDPP must achieve a minimum visual impact rating of at least 'Minor Benefit' as defined in the EIS for all design elements of the project, where feasible and reasonable. Where it can be demonstrated, to the DRP's satisfaction, that a 'Minor Benefit' is not achievable, then a 'Negligible' visual impact rating must be achieved as a minimum.

This visual assessment therefore assesses the nine views identified in the CSSI EIS of the Pitt Street Station north and south entries. This assessment considers the visual impacts of the operational station design from these nine view points, but excludes assessment of the over station development components which are subject to a separate approval.

1. METHOD

Condition E102 of SSI 15_7400 requires that this visual assessment use the methodology contained within the Sydney Metro Chatswood to Sydenham, City and Southwest Environmental Impact Statement (EIS). The method to determine the level of visual impacts followed the following key steps;

- Identify the visual sensitivity (perception and significance) of the view (refer Table1).
- Identify the level of modification (visual effects) expected in the view (refer Table 2) regarding descriptions of visual effects).
- Assign an impact level (refer Table 3) or assess the level of effects in the context of important additional factors for example external visibility, visual absorption capacity and compatibility with the existing concept approval.

This visual assessment was undertaken broadly following the required method as follows;

- This assessment comprises a desktop assessment of the photomontages prepared by Arterra Interactive and Unsigned Studio in the context of fieldwork observations and documented views undertaken by Urbis Staff in February and March 2020 in relation to other development at each of the sites.
- The design detail referred to herein is based on the draft Pitt Street Station Design Precinct Plan (May 2020).
- Viewpoint photomontages were prepared to represent the character, form and scale of the station and public domain intended by the SDPP. For completeness the viewpoints used for analysis in this report are the same as those used in the CSSI Approval.
  - Viewpoint photomontages for viewpoints 1-6 and 8 were prepared by Arterra Interactive
  - Viewpoint photomontages for viewpoints 7 and 9 were prepared by Unsigned Studio.
- The original images have been taken with a range of focal lengths and have not been survey verified according to the requirements of the Land and Environment Court of New South Wales.

Urbis note that there is no definitive VIA methodology that is required to be formally adopted in relation to assessing the visual effects and impacts of built forms in an urban setting. In this regard we have followed the framework adopted by Iris for the CSSI VIA and have added explanation or a comparative assessment of the levels of effects and impacts that are used by Urbis.

Sensitivity

The table included below prepared by Iris Visual and Planning (Iris) for the CSSI Visual Impact Assessment has been used for the assessment of the visual effects of the proposed development on each view. It describes the level of sensitivity or significance based on the features of the composition in the view. We note that this includes some consideration of scenic quality and composition or particular features. Urbis provides comments below on additional factors which are not captured but which affect the sensitivity and significance of views.

Table 1 Visual Sensitivity Levels adopted in the CSSI Approval

Visual Sensitivity	Description
National	Heavily experienced view to a national icon, eg view to Sydney Opera House from Circular Quay or Mrs 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, eg view along main avenue in Hyde Park, or a view to Sydney Harbour from Observatory Hill.

Visual Sensitivity	Description
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 eg from Hyde Park or from the steps of Town Hall
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 eg close views from Castlereagh, Park Street, Druitt Street and Pitt Street etc
Neighbourhood	Views where visual amenity is not particularly valued by the wider community, medium- distant views (for example further than 500m from the site)

Source: IRIS and Urbis

Urbis Comment

Sensitivity relates to the likely level of public interest in a view of the proposed development. The level of sensitivity also includes consideration of the scenic quality and visual character of the view, view place sensitivity, view composition, relative viewing level, viewing period, viewing distance and view loss or blocking effects. The level of public interest includes assumptions made about its exposure in terms of distance and number of potential viewers. For example, close and middle-distance views from public places such as surrounding roads and intersections in the Sydney CBD are likely to be exposed to large numbers of viewers and therefore would be considered as being sensitive view places. An axial view from the central path in Hyde Park would be considered of higher sensitivity.

In our opinion, according to the descriptions included in Table 1 above, none of the views assessed in this report would be considered as being of National, State or Regional Sensitivity. As stated above the sensitivity of each view is influenced by many factors. Based on our fieldwork observations there is low external visibility of both podium envelopes from a limited number of close view places. In this regard the potential visual catchment is small and constrained to the immediately adjacent streetscapes by intervening built form and street wall height of buildings present in the streetscape. Therefore there are a limited number of close locations in Pitt Street, Castlereagh Street, Park Street and Druitt Street from which the visual effects of the built forms proposed would be visible. The views assessed are available from close viewing locations and were rated by Urbis as being of neighbourhood or local significance.

Visual Modification Levels

The Iris methodology describes the level of visual effects or change to be caused by a proposed development as shown below in Table 2 Visual Modification Levels.

Table 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.

Source: IRIS

Urbis Comment

The methodology adopted by Urbis includes a comprehensive assessment of the level of change or modification (visual effects) that will be created by a proposed development in a view. For completeness Urbis has equated visual sensitivity definitions from Table 2 with our own understanding of the level of visual effects, which is consolidated in Table 3 below.

Table 3 Urbis Visual Effects

Description of Visual Effects equivalent to Table 2 Visual Modification Levels			
Factors	**Low Effect** *No perceived reduction or improvement. There is no change or change is unlikely to be perceived (Iris)*	**Medium Effect** *Noticeable change-Alteration of the view is clearly visible. The project contrasts substantially with the surrounding landscape (Iris)*	**High Effect** *Considerable reduction or improvement (Iris)*
Scenic quality	The proposal does not have negative effects on features which are associated with high scenic quality, such as the quality of panoramic views, proportion of or dominance of structures, and the appearance of interfaces.	The proposal has the effect of reducing some or all of the extent of panoramic views, without significantly decreasing their presence in the view or the contribution that the combination of these features make to overall scenic quality.	The proposal significantly decreases or eliminates the perception of the integrity of any of panoramic views or important focal views. The result is a significant decrease in perception of the contribution that the combinations of these features make to scenic quality.
Visual character	The proposal does not decrease the presence of or conflict with the existing visual character elements such as the built form, building scale and urban fabric.	The proposal contrasts with or changes the relationship between existing visual character elements in some individual views by adding new or distinctive features but does not affect the overall visual character of the precinct's setting.	The proposal introduces new or contrasting features which conflict with, reduce or eliminate existing visual character features. The proposal causes a loss of or unacceptable change to the overall visual character of individual items or the locality.
View place sensitivity	Public domain viewing places providing distant views, and/or with small number of users for small periods of viewing time (Glimpses-as explained in viewing period).	Medium distance range views from roads and public domain areas with medium number of viewers for a medium time (a few minutes or up to half day-as explained in viewing period).	Close distance range views from nearby roads and public domain areas with medium to high numbers of users for most the day (as explained in viewing period).
Viewer sensitivity	Residences providing distant views (>1000m).	Residences located at medium range from site (100-1000m) with views of the development available from bedrooms and utility areas.	Residences located at close or middle distance (<100m as explained in viewing distance) with views of the development available from living spaces and private open spaces.
View composition	Panoramic views unaffected, overall view composition retained, or existing views restricted	Expansive or restricted views where the restrictions created by new work do not	Feature or focal views significantly and detrimentally changed.

	in visibility of the proposal by the screening or blocking effect of structures or buildings.	significantly reduce the visibility of the proposal or important features of the existing visual environment.	
Relative viewing level	Elevated position such as ridge top, building or structure with views over and beyond the site.	Slightly elevated with partial or extensive views over the site.	Adjoining development, public domain area or road with view blocked by proposal.
Viewing period	Glimpse (eg moving vehicles).	Few minutes to up to half day (eg walking along the road, recreation in adjoining open space).	Majority of the day (eg adjoining residence or workplace).
Viewing distance	Distant Views (>1000m).	Medium Range Views (100- 1000m).	Close Views (<100m).
View loss or blocking effect	No view loss or blocking.	Partial or marginal view loss compared to the expanse/extent of views retained. No loss of views of scenic icons.	Loss of majority of available views including loss of views of scenic icons.

The level must be based on an assessment of the existing visual context of the site which has been summarised below.

EXTERNAL VISIBILITY

Pitt Street North

Urbis conducted fieldwork in relation to Pitt Street South in February 2020 and in March 2020 in relation to Pitt Street North. This fieldwork allowed us to inspect the close potential visual catchment of the proposed podium envelopes for both locations.

In relation to the north site, the podium would be potentially visible. In this regard we found that direct views to the podium component was limited to close views from the immediate streets. The visual catchment is constrained by the street-grid arrangement, relatively uniform topography and the alignment of roads in relation to the subject site.

The visual catchment is therefore limited to a short section of Pitt and Castlereagh Streets to the north and south and to the west and east along Park Street. Fieldwork observations from public domain locations surrounding the site indicate that parts of the proposed development will be visible from the west along Park Street approximately to the intersection of Druitt Street after which Druitt Street curves to the north and south so that views along the road to the east are constrained by intervening built form.

The Proposed Development is visible from the front steps of Town Hall and from the intersection of Park and George Streets. There is limited visibility of the site and the Proposed Development from Park Street to the east beyond College Street. Views from the north side of Park Street in the vicinity of Hyde Park are further constrained by overhanging vegetation in the Park itself.

The visual catchment extends to the north along Pitt and Castlereagh Streets approximately to the intersection with Market Street. Views from the north along these roads are constrained to the road corridor by built form which is predominantly characterised by a zero setback at street level and some overhanging awnings. To the south along both streets the visual catchment extends approximately to Liverpool Street south of which views would be constrained to intermittent glimpses to the north depending on the location of intervening street trees and built form. In addition, the alignment of Pitt Street curves to south-west further reducing view access to the site.

Pitt Street South

Visual exposure of the proposed podium envelope is limited to the south, west and north. Exposure in these directions is constrained to close locations in Bathurst Street, Pitt Street and from the corner of Castlereagh Street. East of Castlereagh Street and adjacent to the intersection of Elizabeth Street and entrance to Hyde Park, visual access to the site is constrained by mature street tree vegetation and built forms typically have a zero setback to Bathurst Street. Visibility is limited from more distant locations by intervening development in each direction.

VISUAL CHARACTER

A description of visual character includes identifying features that are present on the subject site and immediately surrounding visual context. This includes the physical and built components including features such as topography, vegetation, land uses, settlement pattern, urban and built form etc.

Pitt Street North

The site's immediate visual context is characterised by densely spaced built form in a highly urbanised visual context that includes mixed-use, commercial and residential buildings predominantly tower forms. Street trees are located along Park Street to the east and Castlereagh Street to the north which contribute to the site's visual setting.

Neighbouring buildings to the north, east and south-east are commercial towers. A medium height mixed—use tower at 27 Park Street is located at the south of the site. This building appears to include commercial uses on lower floors with a residential tower above. The residential tower includes windows that are orientated to the north and corner balconies that are orientated to the north-east

Pitt Street South

Visual character in the vicinity of the site to the north, west and south includes a variety of types of development and built forms which vary in height, architectural age, style and detailing. The visual character of areas east of the subject includes a greater number of low to medium height buildings compared to the west of Pitt Street. Low height buildings characterised the west side of Elizabeth Street and between Elizabeth Street and Castlereagh Street south of Bathurst Street some which are circa early 20th Century for example Sydney Fire Station. Hyde Park which occupies two city blocks to the east and north-east of the subject site contributes a significant scenic visual resource to the local visual environment.

Assessment of Impacts

This report focusses on the comparative level of effects and impacts of the CSSI Approval and the built form proposed in the SDPP. Urbis has assumed that the level of effects that were contemplated in the CSSI Approval are acceptable provided they the end rating as conditioned is either considered as a ***'Minor Benefit'*** *or as a minimum will generate 'Negligible'* visual impacts. In this regard we have considered the rating system employed by Iris included below in Table 4 Day Time Visual Impacts Levels in the context of our own Urbis methodology as included below in Table 5. We have included in our opinion equivalent rating of impacts according to Iris (in italics).

Based on the scenic quality, visual character and significance or sensitivity of each view we have included only the most relevant impact ratings that relate to Regional, Local and Neighbourhood visual sensitivity.

Please refer to Appendix A for further description regarding baseline factors

Table 4 Daytime 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

Source: Iris

Table 5 Urbis levels of Visual Impacts including Iris Impact ratings

Factors	**Low Impact** *Minor adverse* *Minor benefit* *Negligible or no perceived change*	**Medium Impact** *Moderate Adverse* *Moderate Beneficial*	**High Impact** *High or very high adverse* *High or very high benefit*
Compatibility with urban context	High compatibility with the character, scale, form, colours, materials and spatial arrangement of the existing urban and natural features in the immediate context. Low contrast with existing elements of the built environment.	Moderate compatibility with the character, scale, form and spatial arrangement of the existing urban and natural features in the immediate context. The proposal introduces new urban features, but these features are compatible with the scenic character and qualities of facilities in similar settings.	The character, scale, form and spatial arrangement of the proposal has low compatibility (or high contrast) with the existing urban features in the immediate context which could reasonably be expected to be new additions to it when compared to other examples in similar settings.
Compatibility with the CSSI EIS	High compatibility with the form, height and scale of the approved envelope	Moderate compatibility with the form, height and scale of the approved envelope. Some parts of the proposed development may exceed the approved envelope mass	Low compatibility with the form, height and scale of approved envelope. A large proportion of the proposed development exceeds the approved envelope.

2. PROJECT SCOPE

The Pitt Street Station Design and Precinct Plan (SDPP) has been prepared to fulfill condition E101 of SSI 15_7400 for the Pitt Street metro station.

Condition E101 requires (in part) that

Before commencement of permanent building works and /or landscaping, the Proponent must prepare a Station Design and Precinct Plan (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), Urban Growth NSW, The Department, Chamber 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 above ground work.

The condition then goes on to list all the required inputs and issues to be addressed in the SDPP.

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

- Pitt Street metro station, inclusive of station cavern, north and south access entrance points,
- North station entrance, station box, concourse and ticketing facilities
- South station entrance, station box, concourse and ticketing facilities.

The SDPP boundary is the area within which works identified in the SDPP will be delivered as part of the project, including the following areas:

- The public domain areas including pathways, road reserve and landscaping along the street frontages of Park, Pitt and Castlereagh streets adjacent the Pitt Street north station;
- The public domain areas including pathways, road reserve and landscaping along the street frontages of Bathurst and Pitt Streets, adjacent the Pitt Street south station;
- The north and south station entrances, caverns and concourses; and
- Lobby spaces and base building works for the over station development (OSD) and retail spaces within the two station box envelopes.

Pitt Street north station is located at the corner of Pitt, Park and Castlereagh Streets Sydney. The SDPP extent surrounding this site includes

- Building materiality of the lower podium form (up to the Level 02 Transfer slab at RL 48).
- Public domain design and improvements from the site boundary to the alignment of Pitt Street, Park Street and Castlereagh Streets, immediately in front of the site.
- The design of the station entrance fronting Park Street and its interface with the public domain, including internal materiality and design.
- Integration with the OSD entrance location from Pitt Street and loading dock / car park entrance from Castlereagh Street.

Pitt Street south station is located at the corner of Bathurst and Pitt Streets, but excluding the site of the Edinburgh Castle Hotel. The SDPP extent surrounding this site includes

- Building materiality of the lower podium form (up to the OSD transfer slab at RL 58.75).
- Public domain design and improvements from the site boundary to the alignment of Pitt Street, Bathurst Street and Castlereagh Streets.
- The design of the station entrance fronting Bathurst Street and its interface with the public domain, including internal materiality and design.
- Integration with the OSD entrance location from Pitt Street, Level 02 restaurant entrance from Bathurst Street and loading dock from Pitt Street.

3. CHARACTER & COMPONENTS OF THE PROJECT

3.1. PITT STREET NORTH STATION

Figure 1 Pitt Street north station entrance fronting Park Street

Source: [Foster + Partners]

The Pitt Street north station precinct comprises the following design elements:

- Massing and articulation of the façade to integrate with the urban context of midtown Sydney. The design approach creates a podium that responds directly to the street context and heritage buildings to the north of the site, and to the location of the future Town Hall square to the west. The materiality responds to the sandstone character of historic buildings in the vicinity and seeks to complement these heritage elements rather than visually dominate them.
- An integrated transport connection will be provided through upgrades to the adjacent bus stop interchange at Park Street outside the Pitt Street north station entrance.
- Inclusion of Class 3 cycle racks at the station entry at Park Street.
- Improvement of the public domain areas adjacent the station entrance through refurbishments to street furniture and other informal seating areas, new kerbside tree planting, intuitive lighting and the provision of bike racks on Park Street.
- Granite pavements will form a simple, unified and recognised ground plane across all city streets.
- Provision of building colonnades and awnings to provide weather protection around the station entrance on Park Street.

- Provision of new infill street tree planting along Park Street and new kerbside street trees on Castlereagh Street. Underplanting will also be located below existing street trees along Pitt Street and new planter beds will be located on Park Street.

3.2. PITT STREET SOUTH STATION

Figure 2 Pitt Street south station entrance fronting Bathurst Street

Source: [Bates Smart]

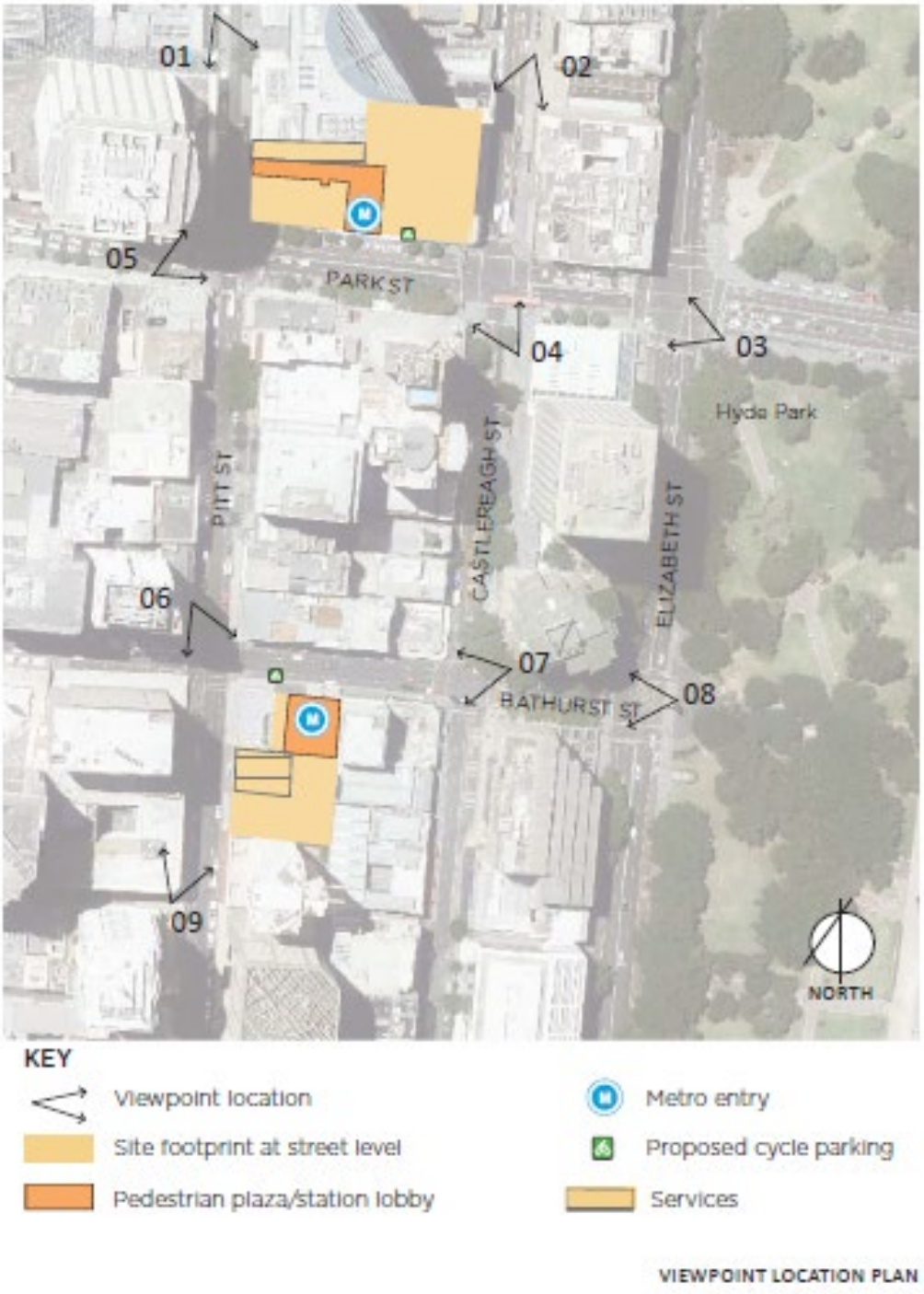
The Pitt Street south station precinct comprises the following design elements:

- A podium design that references the scale and face brick materiality of the Edinburgh Castle Hotel, and also transitions from that heritage scale through to the characteristically taller buildings surrounding the site, including Euro Tower to the east. The façade materiality references
- Improvement of the public domain areas adjacent the station entrance through refurbishments to street furniture and other informal seating areas, intuitive lighting and the provision of bike racks on Bathurst Street.
- Street furniture elements are located beside the kerb and beyond the main path of travel.
- Support for pedestrian oriented environment through the expansion of the public domain and footpath on Bathurst Street in front of the southern entrance to increase pedestrian capacity and circulation spaces.
- Granite pavements will form a simple, unified and recognised ground plane across all city streets.
- Location of tree planting along the street frontage towards the kerb line along Bathurst Street.

4. PITT STREET STATION VIEWPOINT ANALYSIS

Nine separate viewpoints have been assessed for the Pit Street Station sites – five for the north site and four for the south site. These are the same as those assessed for the SSI 15_7400 VIA, as shown on the extract from that VIA at Figure 3 below.

Figure 3 Pitt Street Station Viewpoints – CSSI EIS



Source: IRIS Visual Planning & Design, Technical Paper no. 6 Landscape and Visual Impact Assessment April 2016

Images and CGIs from Viewpoints 1-6 and 8 were prepared by Arterra Interactive, as shown on the map at Figure 4 below.

Images and CGIs from Viewpoints 7 and 9 were prepared by Unsigned Studio.

Figure 4 Pitt Street Station Viewpoints by Arterra Interactive – SDPP

Source: Arterra Interactive

In order to compare the potential visual effects and impacts with the imagery used in the CSSI assessment, the original images from each view point as selected and captured by IRIS Visual Assessment in the VIA report supporting the CSSI EIS, have been approximately replicated by Urbis. The Iris images are generally Picture 2 for each viewpoint, titled *'View prior to demolition (2016)'.*

The camera positions for the 'existing'/'proposed' images titled

- *Picture 1 'Current View (2020)', and*
- *Picture 3 'Proposed view with artist impression of project'*

have been matched as closely as possible to those included in the Iris report without the benefit of access to the original GPS coordinates or survey data in relation to each view location, confirmation of the focal lens length (FLL) and the type of camera used by Iris. In this regard there are minor differences in the composition of views captured and included in the Urbis VIA for example peripheral perspective distortion which may be a result of a differing FLL being used.

Despite these minor discrepancies, in our opinion the discrepancies do no significantly hinder our ability to analyse the extent of visual effects that are modelled in each view or the final ratings of the visual impacts on the urban streetscape, especially as the assessment primarily requires comparison between the current view and proposed view CGIs.

4.1. NORTHERN SITE

4.1.1. Viewpoint 1 – View southeast along Pitt Street

Figure 5 Viewpoint 1 southeast along Pitt Street

Picture 1 Current View (2020)

Source: Arterra Interactive

Picture 2 View prior to building demolition (2016)

Source: IRIS Visual Planning + Design

Picture 3 Proposed view with artist impression of project

Source: Arterra Interactive

The visual impact identified in the Pitt Street Station approval:

- *Service facilities and active frontages would be visible at street level, following the alignment of the existing facades.*
- *Street trees and footpaths would be reinstated and be visually consistent with the surrounding streetscape.*
- *The project would be visually absorbed into the surrounding urban landscape and there would be no perceived change in the amenity of this view, resulting in a* ***negligible visual impact*** *during operation.*

Visual impact of SDPP design:

- The project street frontage would be visible at street level and includes architectural detail and modulated elements that are aligned with the street frontage heights of neighbouring facades.
- The modulation of the project's façade and the reinstated street trees provide visual consistency along the streetscape and provide immediate screening and filtering effects to parts of the project. The project's streetscape presence, compatibility with the character, scale, form colours and materials provides a minor benefit to the immediate visual context and of the approved envelope.

- The overall visual impact is negligible given is high compatibility with the immediate context.

4.1.2. Viewpoint 2 – View south along Castlereagh Street

Figure 6 Viewpoint 2 south along Castlereagh Street

Picture 4 Current View (2020)

Source: Arterra Interactive

Picture 5 View prior to building demolition (2016)

Source: IRIS Visual Planning + Design

Picture 6 Proposed view with artist impression of project

Source: Arterra Interactive

The visual impact identified in the Pitt Street Station approval:

- *In this view active frontages would be seen at street level.*
- *The predominant alignment of the existing facades would be restored along Castlereagh Street and the active street frontage would be consistent in character with the surrounding streetscape.*
- *It is expected that the project would be absorbed into the highly urban context and there would be no perceived reduction in the visual amenity of this view, resulting in a* ***negligible visual impact*** *during operation.*

Visual impact of the SDPP design:

- The project street frontage would be visible at street level and follows the alignment and rhythm of adjacent facades.
- The project provides low contrast and high compatibility with the character, scale, form colours and materials palette of the existing urban features in the immediate context.

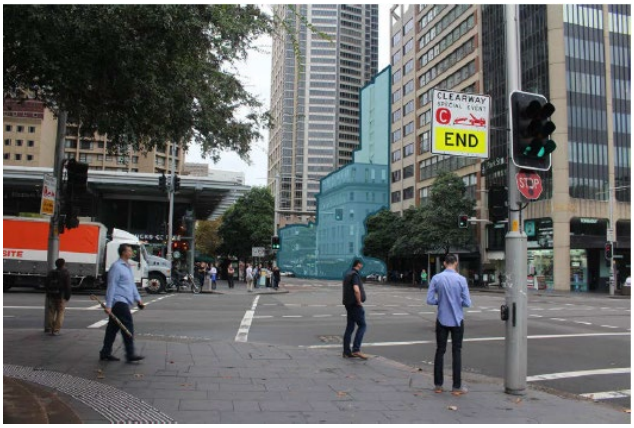
- The visual impact is negligible given its high compatibility with the immediate context and in this regard provides a minor benefit to the local streetscape.

4.1.3. Viewpoint 3 – View northwest from Hyde Park at the corner of Park and Elizabeth streets

Figure 7 Viewpoint 3 northwest from Hyde Park at the corner of Park and Elizabeth streets

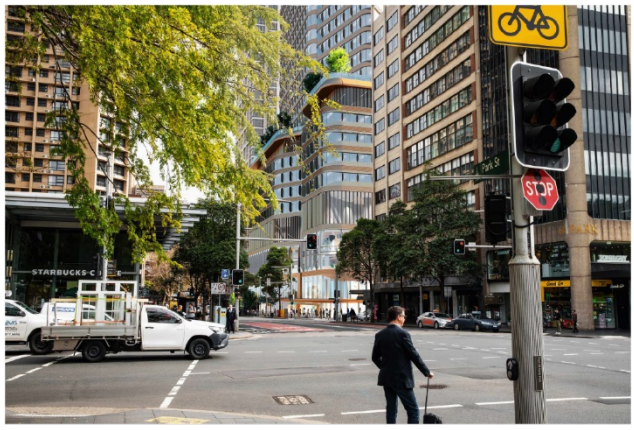
Picture 7 Current View (2020)

Source: Arterra Interactive



Picture 8 View prior to building demolition (2016)

Source: IRIS Visual Planning + Design



Picture 9 Proposed view with artist impression of project

Source: Arterra Interactive

The visual impact identified in the Pitt Street Station approval:

- *In this view the new station entry and active frontages would be located at street level creating visual interest and a consistency with the surrounding urban streetscape.*
- *The predominant alignment of the existing facades would be restored along Park Street and street trees reinstated. Despite the loss of heritage character it is expected that the project would not create a perceived change in the amenity of this view, resulting in a* ***negligible visual impact*** *during operation.*

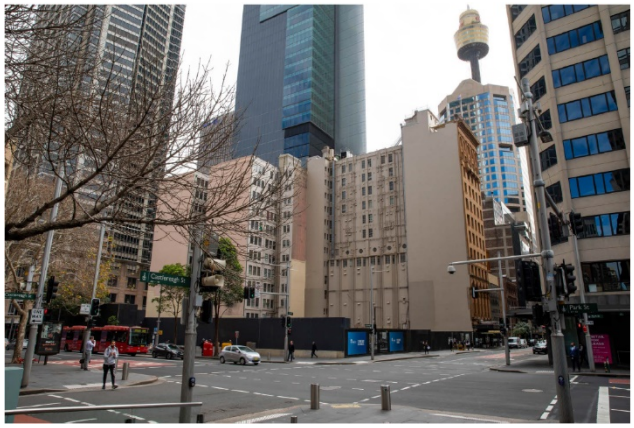
Visual impact of SDPP design:

- The project street frontage would be visible at street level and follows the alignment of neighbouring facades.
- Reinstated street trees provide visual consistency and screening at ground and upper levels.

- The project provides minor benefit by:
    - its compatibility with the character, scale, form colours and materials palette of the existing urban features in the immediate context.
    - providing visual interest in its scale, height and material treatment including planting on podium level.
- This results in a negligible visual impact given is high compatibility and low visual contrast with the immediate context. In our opinion the combined design features provide a minor benefit to the visual context and streetscape character.

4.1.4. Viewpoint 4 – View northwest at the corner of Castlereagh and Park streets

Figure 8 Viewpoint 4 northwest at the corner of Castlereagh and Park streets



Picture 10 Current View (2020)

Source: Arterra Interactive

Picture 11 View prior to building demolition (2016)

Source: IRIS Visual Planning + Design

Picture 12 Proposed view with artist impression of project

Source: Arterra Interactive

The visual impact identified in the Pitt Street Station approval:

- *The new station entry and active frontages would be seen at street level along Park and Castlereagh Streets.*
- *The predominant alignment of the existing facades would be restored, and street trees would filter the view.*

- *Despite the loss of heritage character, it is expected that the project would not create a perceived change in the amenity of this view, resulting in a **negligible visual impact** during operation.*

Visual impact of SDPP design:

- The new station entry and active frontages would be visible at street level along Park and Castlereagh Streets.
- Reinstated street trees provide view filtering at street level.
- The modulation and articulation of the project elevations provide some consistency with rhythm and alignment of adjacent façades on Castlereagh Street and provide a contemporary visual upgrade and minor benefit to the local visual context.
- The project results in a negligible visual impact given is high compatibility and low visual contrast with the immediate context.

4.1.5. Viewpoint 5 – View northeast at the corner of Park and Pitt streets

Figure 9 Viewpoint 5 northeast at the corner of Park and Pitt streets

Picture 13 Current View (2020)

Source: Arterra Interactive

Picture 14 View prior to building demolition (2016)

Source: IRIS Planning + Design

Picture 15 Proposed view with artist impression of project

Source: Arterra Interactive

The visual impact identified in the Pitt Street Station approval:

- *The station entry would be visible at street level along Park Street, with active frontages along Pitt Street.*

- *The predominant alignment of the existing facades would be restored along Pitt and Park Streets, and street trees would be reinstated.*
- *Despite the loss of heritage character it is expected that the project would not create a perceived change in the amenity of this view, resulting in a **negligible visual impact** during operation.*

Visual impact of SDPP design:

- The new station entry would be visible at street level along Park Street with and active frontages along Pitt Street.
- Reinstated street trees filter views to parts of the project from street level.
- The Project's architectural detailing is visually consistent with rhythm and alignment of neighbouring building facades. The contemporary built form proposed contributes a minor benefit to the existing visual context.
- The project results in a negligible visual impact given its high compatibility with urban features and low visual contrast with the immediate context.

4.2. PITT STREET SOUTH SITE

4.2.1. Viewpoint 6 – View south east along Pitt Street

Figure 10 Viewpoint 6 south east along Pitt Street

Picture 16 Current View (2020)

Source: Arterra Interactive

Picture 17 View prior to building demolition (2016)

Source: IRIS Planning + Design

Picture 18 Proposed view with artist impression of project

Source: Arterra Interactive

The visual impact identified in the Pitt Street Station approval:

- *A station entry would be visible at street level on Bathurst Street.*
- *The visual prominence of the Edinburgh Castle Hotel would be restored and the alignment of the station would restore the strong built edge, aligning with the Hotel.*
- *It is expected that the project would not have a perceived change in the amenity of this view, resulting in a **negligible visual impact** during operation.*

Visual impact of SDPP design:

- The new station entry would be highly visible form this view location.
- The Edinburgh Castle Hotel maintains its visual prominence and independence from the project due to its contrasting height, form and character.
- The project is visually consistent with the rhythm and alignment of the facades of taller built forms along the neighbouring streetscapes and is compatible with the character, scale, form colours and materials palette of such features within eth immediate and wider visual context.

- The project results in a minor benefit and overall negligible visual impact given is high compatibility with the surrounding urban context.

4.2.2. Viewpoint 7 – View west along Bathurst Street

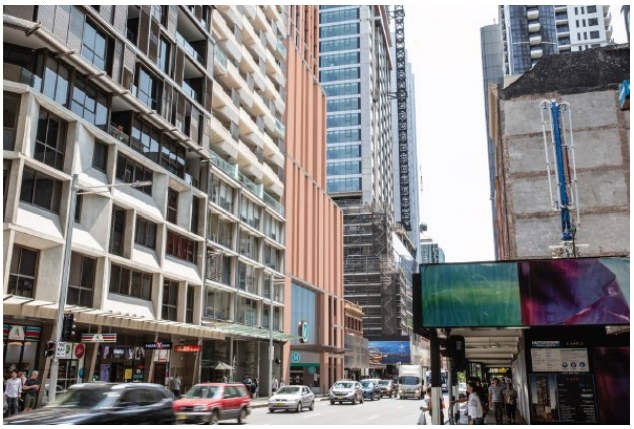
Figure 11 Viewpoint 7 west along Bathurst Street

Picture 19 Current View (2020)

Source: Unsigned Studio

Picture 20 View prior to building demolition (2016)

Source: IRIS Planning + Design



Picture 21 Proposed view with artist impression of project

Source: Unsigned Studio

The visual impact identified in the Pitt Street Station approval:

- *In this view, a station entry would be visible at street level along Bathurst Street.*
- *The former building line would be restored along Pitt and Bathurst Streets, aligning with the Edinburgh Castle Hotel.*
- *It is therefore expected that there would be no perceived change in the amenity of this view, resulting in a **negligible visual impact** during operation.*

Visual impact of SDPP design:

- The new station entry would be visible at street level along Bathurst Street.
- The building line of the project is consistent with the neighbouring streetscape. The architectural modulation of the Project's street frontage is similar to the Edinburgh Castle Hotel however the massing of its upper levels provide wide spatial setbacks from the heritage item. In this regard the Hotel maintains its visual prominence and distinction from the Project.

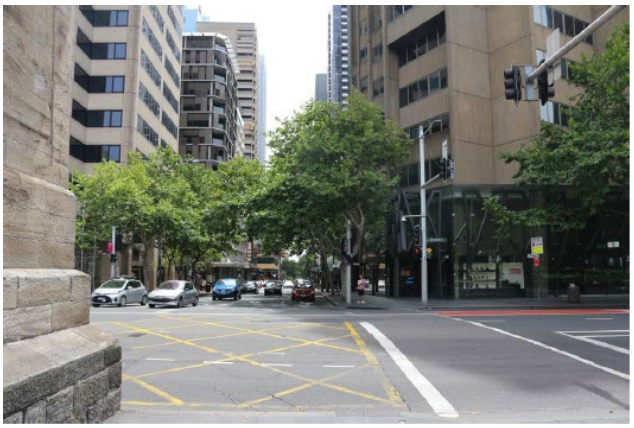
- There is no perceived change to the amenity of this view and results in a negligible visual impact given is high compatibility and low contrast with the immediate visual context.

4.2.3. Viewpoint 8 – View west along Bathurst Street from Hyde Park

Figure 12 Viewpoint 8 west along Bathurst Street from Hyde Park

Picture 22 Current View (2020)

Source: Arterra Interactive



Picture 23 View prior to building demolition (2016)

Source: IRIS Planning + Design

Picture 24 Proposed view with artist impression of project

Source: Arterra Interactive

The visual impact identified in the Pitt Street Station approval:

- *A station entry would be visible at street level on Bathurst Street, adjacent to the Edinburgh Castle Hotel.*
- *These elements would be seen in the background of this view and filtered through existing street trees.*
- *It is expected that the project would create a perceived change in the amenity of this view, resulting in a* ***negligible visual impact*** *during operation.*

Visual impact of SDPP design:

- A minor amount of the station entry is visible in this oblique view.
- The minor extent of the project that is visible from this viewpoint are filtered by existing and reinstated street trees.
- There is no perceived change to the amenity of this view and results in a negligible visual impact.

4.2.4. Viewpoint 9 – View north along Pitt Street

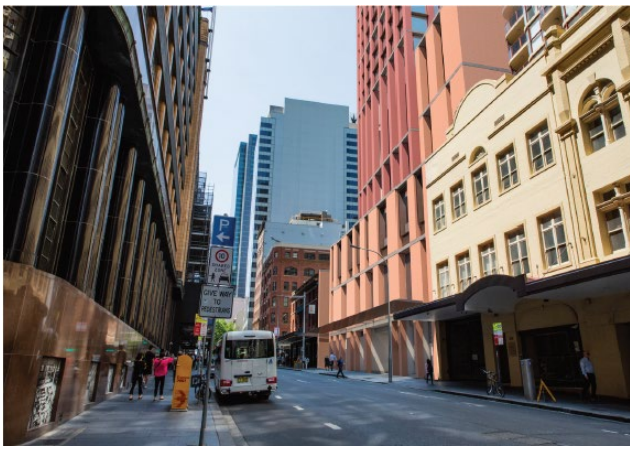
Figure 13 Viewpoint 9 north along Pitt Street

Picture 25 Current View (2020)

Source: Unsigned Studio

Picture 26 View prior to building demolition (2016)

Source: IRIS Planning + Design



Picture 27 Proposed view with artist impression of project

Source: Unsigned Studio

The visual impact identified in the Pitt Street Station approval:

- *Metro plant would be visible between the Edinburgh Castle Hotel and the Princeton Apartments.*
- *The existing building line would be reinstated along Pitt Street, matching in with the Edinburgh Castle Hotel.*
- *The built form edge would have a service character and not be recognised as part of the station and future works would potentially reinstate an active commercial entry at street level.*
- *It is expected that the project would not create a perceived change in the amenity of this view, resulting in a **negligible visual impact** during operation.*

Visual impact of SDPP design:

- The metro plant would be visible at street level along Pitt Street, however its proposed form, colours and materiality are compatible with the urban features present in the immediate visual context.
- Views to the Edinburgh Castle Hotel are not significantly affected by the project in this view, which will remain visually prominent in close views.

- There is no perceived change to the amenity of this view and results in a negligible visual impact.

5. SUMMARY OF IMPACT

The following table summarises the potential landscape and visual impacts of the project.

Table 6 Daytime Visual Impact

			Operation – SSI 15_7400 VIA		**Operation – SDPP design**	
No.	Location	Sensitivity	Modification	Impact	Modification	Impact
Pitt Street Station north site – Viewpoints from approved assessment						
1	View southeast along Pitt Street	Local	No perceived change	Negligible	No perceived change	Minor Benefit
2	View south along Castlereagh Street	Local	No perceived change	Negligible	No perceived change	Negligible
3	View northwest from Hyde Park at the corner of Park and Elizabeth Streets	Regional	No perceived change	Negligible	No perceived change	Minor Benefit
4	View northwest at the corner of Castlereagh and Park Streets	Local	No perceived change	Negligible	No perceived change	Minor Benefit
5	View northeast at the corner of Park and Pitt Streets	Local	No perceived change	Negligible	No perceived change	Minor Benefit
Pitt Street Station south site – Viewpoints from approved assessment						
6	View south along Pitt Street	Local	No perceived change	Negligible	No perceived change	Minor Benefit

			Operation – SSI 15_7400 VIA		Operation – SDPP design	
7	View west along Bathurst Street	Local	No perceived change	Negligible	No perceived change	Negligible
8	View west along Bathurst Street from Hyde Park	State	No perceived change	Negligible	No perceived change	Negligible
9	View north along Pitt Street	Local	No perceived change	Negligible	No perceived change	Negligible
					No perceived change	

Source: IRIS

DISCLAIMER

This report is dated 15 May 2020 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd **(Urbis)** opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of CPB **(Instructing Party)** for the purpose of Visual Assessment **(Purpose)** and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

In preparing this report, Urbis was required to make judgements which may be affected by unforeseen future events, the likelihood and effects of which are not capable of precise assessment.

All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

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This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

APPENDIX A

URBIS METHODOLOGY DEFINITIONS

Definition of View types

View composition type when considered in formal pictorial terms, refers to the placement or arrangement of visual elements in a view which in this case will include the proposed development in the composition of the view.

Considering a view in formal pictorial terms means that we consider various parts of the composition as if it were a painting where the composition can be divided broadly into the sections of foreground, mid-ground and background. *The following definitions have been developed by Richard Lamb and Associates (RLA) and adopted for use by Urbis.*

Description of typical view types:

- Expansive: unrestricted other than by features behind the viewer, such as a hillside, vegetation and buildings.
- Restricted: a view which is restricted at some distance by features between or to the sides of the viewer and the view for example by vegetation or built forms.
- Panoramic: a 360-degree angle of view unrestricted by any features close to the viewer.
- Focal: a view that is focused and directed toward the proposed development by features close to the viewer for example a view that is constrained to a road corridor by buildings etc
- Feature: a view where the proposed development is the main feature or element and dominates the view. A feature view would be a close-range view.

Other additional factors that influence the significance of visual effects include consideration of the viewing period, the distance of the view from the viewing location to the proposed development, the level of view loss or blocking effects and in some situations the viewing level alters the ability to perceive the level of visual effects.

Relative viewing level

Relative viewing level refers to the location of the viewer relative to the location of the proposal. The viewing angel towards the proposed development can affect perception of the visual effects. For example, the visual effects of a proposed development in downward views from elevated locations relative may decrease the level of visual effects. However the visual effects of the same development in a close view or from a similar level to the proposed development, may be more significant for example due to the effects of the trailing edge (the edge furthest from the viewer), particularly if built form intrudes into horizons

Viewing period

Viewing period in this assessment refers to the influence of time available to a viewer to experience the view to the site and the visual effects of the proposed development. Longer the viewing periods, experienced either

from fixed or moving viewing places such as dwellings, roads or the waterways, provide for greater potential for the viewer to perceive the visual effects.

Repeated viewing period events, for example views experienced from roads as a result of regular travelling, are considered to increase perception of the visual effects of the proposal.

Viewing distance

Viewing distance can influence on the perception of the visual effects of the proposal which is caused by the distance between the viewer and the development proposed. It is assumed that the viewing distance is inversely proportional to the perception of visual effects: the greater the potential viewing distance, experienced either from fixed or moving viewing places, the lower the potential for a viewer to perceive and respond to the visual effects of the proposal.

Scenic quality

Scenic quality relates to the likely expectations of viewers regarding scenic beauty, attractiveness or, preference of the visual setting of the subject site and is baseline factor against which to measure visual effects. Criteria and ratings for preferences of scenic quality and cultural values of aesthetic landscapes are based on empirical research undertaken in Australia by academics including Terrance Purcell, Richard Lamb, Colleen Morris and Gary Moore.

Moore (2006) summarises the theoretical and methodological constructs in the field of environment, behaviour and society (EBS) and discusses the largest body of research in this area prepared by Associate Professor Terry Purcell and Dr Richard Lamb. The research details results in relation to the experience, perception and aesthetics of natural and cultural landscapes, affective experience of the environment, and the perception of scenic quality.

Therefore, analysis of the existing scenic quality of a site or its visual context and understanding the likely expectations and perception of viewers is an important consideration when assessing visual effects and impacts. The sites would be considered in isolation and within their existing urban contexts as having moderate-low scenic quality given the urban setting and surrounding retail and commercial buildings notwithstanding the presence of heritage building facades in some views associated with the south podium.

URBIS

APPENDIX C

PITT STREET STATION SYDNEY METRO, STATION DELIVERY DEED – CONSTRUCTION TRAFFIC MANAGEMENT PLAN

Pitt Street Station Sydney Metro, Station Delivery Deed

Construction Traffic Management Plan

Prepared for:

CPB Contractors

14 January 2021

The Transport Planning Partnership

Pitt Street Station Sydney Metro, Station Delivery Deed

Construction Traffic Management Plan

Client: CPB Contractors

Version: 1 – For Construction

Aconex Doc. No: SMCSWSPS-ALL-TF-PLN-000001

Teambinder Doc. No: SMCSWSPU-CPB-SPS-TF-PLN-006626

Date: 14 January 2021

TTPP Reference: 18228

Quality Record

Version	Date	Prepared by	Reviewed by	Approved by	Signature
A	28/11/19	Santi Botross	Wayne Johnson	Wayne Johnson	
B	03/07/20	Santi Botross	Wayne Johnson	Wayne Johnson	
C	07/09/20	Santi Botross	Wayne Johnson	Wayne Johnson	
0 - For Construction	03/11/20	Santi Botross	Wayne Johnson	Wayne Johnson	
1 - For Construction	18/11/20	Santi Botross	Wayne Johnson	Wayne Johnson	
3 - For Construction	14/01/21	Santi Botross	Wayne Johnson	Wayne Johnson	

Table of Contents

Tables

Figures

APPENDICES

A. CITY OF SYDNEY CTMP STANDARD REQUIREMENTS

B. CONSULTATION AND CORRESPONDENCE

C. SWEPT PATH ANALYSIS

D. TRAFFIC CONTROL PLANS

E. ROAD SAFETY AUDIT

F. CONCEPT DRAWINGS FOR PITT STREET SOUTH AND BATHURST STREET LINE MARKING

1 Project Information

1.1 Introduction

The New South Wales (NSW) Government through Transport for NSW (TfNSW) is implementing *Sydney's Rail Future*, a plan to transform and modernise Sydney's rail network so that it can grow with the city's population and meet the needs of commuters in the future.

Sydney Metro is a new standalone rail network identified in *Sydney's Rail Future*. The Sydney Metro network consists of Sydney Metro Northwest (previously known as the North West Rail Link) and Sydney Metro City & Southwest.

The proposed Sydney Metro City & Southwest (SMC&SW) comprises two core components:

- The Chatswood to Sydenham project, which involves the construction and operation of an underground rail line approximately 15.5 kilometres long inclusive of new stations between Chatswood and Sydenham.
- Upgrades to the 13.5-kilometre rail line and existing stations from Sydenham to Bankstown.

The Sydney Metro works at Pitt Street is to be undertaken as part of the Critical State Significant Infrastructure (CSSI) project (reference SSI 15_7400) and will be completed over the following stages:

- Stage 1 - Structure
- Stage 2 - Fitout
- Stage 3 – Testing and Commissioning
- Stage 4 – Operational Readiness.

This Construction Traffic Management Plan (CTMP) has been developed to account for the station construction works across the North Site and South Site within the Pitt Street precinct.

CPB Contractors is referred in the CTMP as the Project Team.

1.2 Scope

The scope of works comprises construction of the Station Delivery Deed component of the Integrated Station Development at the Pitt Street precinct. The Pitt Street precinct consists of a North Site, South Site and Platforms and Adits.

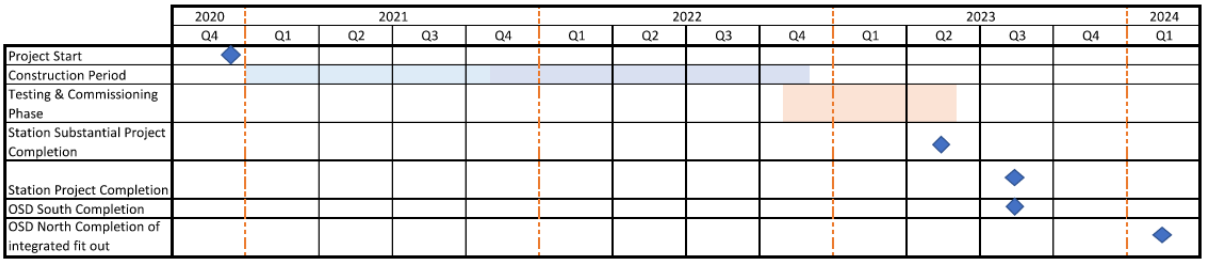
Key construction phases of the project would be carried out as described in the Construction and Site Management Plan prepared by CPB. Work would generally follow the sequence as indicated below.

- Detailed excavation or north site and south site.
- North and South station structure construction.
- Station Platform Structure and Trackway Component Construction.
- North, south and platform station Fitout.
- Interface Contractor Fitout.
- Testing and Commissioning.
- Handover.

1.3 Project Timeline Overview

An overview of the project timeline for the Integrated Station Development (B05 to L05) with the Over Station Development (32-storey commercial office tower) is as follows:

- Project Start/Site Possession Q4 2020.
- Testing & Commissioning Phase Commences Q4 2022.
- Station Substantial Project Completion Q2 2023.
- Station Project Completion Q3 2023.
- OSD South Completion Q3 2023
- OSD North Completion of integrated fit out Q1 2024.



2 Objectives

2.1 CTMP Objectives

This CTMP has been prepared in-line with the Sydney Metro City & Southwest Chatswood to Sydenham Conditions of Approval (CoA) E82 which requires that a CTMP is prepared for each construction site and submitted to Roads and Maritime Services (RMS) for approval following Sydney Coordination Office endorsement.

The objective of this CTMP is to detail the traffic management procedures to be implemented to ensure that the works required for the station construction works at the site would be undertaken safely, while minimising the impact of the works on pedestrians, cyclists, traffic and public transport in the vicinity of the site.

This CTMP and the associated traffic staging plan, traffic management plan, vehicle movement plan, and pedestrian movement plan comply with the Sydney Metro documents outlined in Section 4.

The proposed Works Zones will require a Works Zone Application and to City of Sydney. Works Zone Applications must be presented to the Local Pedestrian, Cycling and Traffic Calming Committee (LPCTCC) for approval.

The primary traffic and pedestrian management objectives and principles are to:

- provide an appropriate, convenient and safe environment for pedestrians.
- maintain existing levels of safe public transport access.
- retain, as far as possible, existing kerb space for parking, loading and buses.
- restrict heavy vehicle movements to designated routes to/ from the site.
- manage and control heavy vehicle activity in the vicinity of the site.
- minimise disruption to traffic operation, road users, pedestrians, cyclists and access to adjoining properties.
- maximise safety for workers by applying low exposure work methods, education and installing appropriate traffic controls.
- works to be carried out in accordance with approved hours of work.

2.2 Report Structure

This report has been structured as follows:

- Section 3 provides project details and contact persons.
- Section 4 confirms this CTMP has been prepared in accordance with the legislative requirements, guidelines and standards.
- Section 5 describes the existing transport context and concurrent construction works.
- Section 6 details the consultation process with the stakeholders and various agencies.
- Section 7 presents a risk assessment that focuses on the safety risk for employees working around live traffic
- Section 8 provides an overview of the proposed construction methodology.
- Section 9 assesses the impacts due to construction works.
- Section 10 recommends the mitigation measures.
- Section 11 details the incidents and complaints management.
- Section 12 states the employees' agreement to work to this CTMP in its entirety.

3 Project Details

3.1 Project Name and Address

Sydney Metro City & Southwest - Chatswood to Sydenham.

Pitt Street Metro Station Development Deed at North Site and South Site

3.2 Project Duration

Project Start Date: 18 December 2020 - 01 February 2021

Project Completion Date: 31 August 2023

3.3 Program Director

Name: Con Kerpiniotis

Phone: 0427 459 278

3.4 Site Supervisors

CPB Contractors nominates the following site supervisors who would be responsible for maintenance of traffic control devices during and outside normal working hours, and attendance at traffic incidents where required to do so by the Police and emergency services. These contact details would be provided to the Police.

Name: John Franklin (Site Manager North) Phone: 0411 779 503

Name: Roger Thompson (Site Manager South) Phone: 0408 232 523

3.5 Client Contact

Name: Emily Ball Phone: 0466 445 669

4 Legislative Requirements, Guidelines and Standards

This CTMP has been prepared in-line with the requirements as outlined in the documents listed in Table 4.1 which pertain to the preparation of a CTMP.

Table 4.1: Overview of the Legislative Requirements, Guidelines and Standards

Document/ Guide	Summary	Specific Requirements
Principal's General Specifications G10 - Traffic and Transport Management SM ES-ST-217, Sydney Metro Integrated Management System	It contains the traffic and transport management requirements that are to be met by the Contractor during the performance of the Contractor's Activities, including the management of the impacts of the Contractor's Activities.	The Construction Traffic Management Plan (CTMP) should include any traffic staging arrangements, and inclusion of traffic control plan, vehicle movement plans, pedestrian movement plans, and parking management plans. A road occupancy license to be obtained for occupancies that occur on-road.
Construction Traffic Management Framework – City & Southwest Chatswood to Sydenham Contracts, Version 2.5, 18 December 2018, Transport for NSW	It provides an outline of the traffic management requirements and processes required for the preparation of the CTMP in terms of contents, principles and objectives, contractual requirements, Revised Environmental Mitigation Measures (REMM) and other obligations of the SSI Planning Approval.	The site specific CTMP should include the proposed traffic and parking management measures which are developed in consultation with the Sydney Coordination Office, Roads and Maritime, Sydney Light Rail Team within TfNSW, and City of Sydney. It includes any relevant correspondence with stakeholders (e.g. bus operators) where applicable. It also includes the Traffic Control Plan (TCP) for the specific works and RMS and SCO imperatives outlined in Appendix C of the CTMF.
Critical State Significant Infrastructure, Sydney Metro City & Southwest Chatswood and Sydenham, Conditions of Approval, Modification 6 – February 2019	It lists administrative conditions for the critical state significant infrastructure including the establishment of Traffic and Transport Liaison Group (TTLG), traffic, transport and pedestrian access, and construction traffic and access.	Ongoing consultation with TTLG regarding the traffic and management measures during the development of the CTMP. The CTMP should include efficient and safety site access, erection and maintenance of hoarding, cumulative construction vehicle management, bus facilities, signage changes, parking management, heavy vehicle management, emergency and property access, user and passenger safety, incidence response, monitoring of transport and access impacts etc.
Sydney Metro Principal Contractor Health and Safety Standard – 29 May 2018	It sets out requirements for compliance with WHS and Rail Safety legislation as well as good management systems practice that collectively contribute to the delivery of the Sydney Metro program.	The CTMP should include a procedure for working on or near public roads, and manage risks associated with working in and around live traffic in accordance with legislation, RMS controls. Australian Standards and Sydney

Document/ Guide	Summary	Specific Requirements
		Metro Construction Traffic Management Framework.
Revised Mitigation Measures Allocation, Tunnel and Station Excavation, Revision 2.0.	It provides a list of specific mitigation measures in relation to construction traffic and transport.	The CTMP should include mitigation measures to manage construction traffic and transport impacts.
City of Sydney Standard Requirements for Construction Traffic Management Plans and Standard Requirements for Construction Traffic Management Plan Report	The document details specific requirements during the demolition, excavation and construction works to be undertaken within the City of Sydney area.	The CTMP should include, site access locations, truck movements, traffic control measures, road user priority and TCP etc.
Road and Maritime Services Guide to Traffic Control at Worksites Version 4, 2010.	This Guide must be used on all RMS road work sites, and is also encouraged to be used on non-RMS sites. Standard TCPs can be used at work sites for which the plan meets all requirements, where appropriate, the standard TCP could be modified with strict limits to suit site conditions.	The TCP should show signs and devices arranged to warn traffic and guide it around, or past a work site. It is to detail the location, spacing and sizes of all signs and devices, parking delineation, any containment or safety fencing and pedestrian routes etc.
Australian Standard AS1742.3-2002 – Manual of uniform traffic control devices, Part 3, traffic control devices for works on roads.	It provides a set of uniform practices for the signing and delineation of construction and maintenance works which will promote the safety of both workers and road users at the work site.	Any temporary traffic control devices must be installed in accordance with AS 1742.3:2009.

4.1 Approvals and Procedures

This CTMP is to be provided to the Sydney Coordination Office, Roads and Maritime/ Transport for NSW, Sydney Metro and City of Sydney for commentary. Feedback from the authorities has been incorporated into the latest revision of this CTMP.

4.2 CTMP Principles

This CTMP has been developed with the following principles in mind to ensure:

- the provision of a safe environment for road users and workers.
- the hierarchy of access given to the following order, with incidents & emergency services given top priority, followed by events (special and unplanned), pedestrians, bicycles and buses etc.
- the overall impact on road users is kept to a minimum.
- access is maintained for the local community, transport operators and commercial developments.
- road users and local communities are regularly informed in relation to changed traffic conditions.

4.3 Compliance to the Legislative Requirements, Guidelines and Standards

Compliance tables against the relevant requirements are shown in Table 4.2 through to Table 4.8 with a reference of where the information is provided in this CTMP.

Table 4.2: Compliance to Principal's General Specifications G10 - Traffic and Transport Management

Heading	Requirement	Reference in this TMP
2.1	(a) The Contractor must construct the Project Works and construct and remove the Temporary Works with the least possible obstruction to pedestrians, cyclists, public transport services and road traffic.	Section 8.4
	(b) The Contractor must undertake all work necessary to provide for the safe movement of pedestrians, cyclists, public transport services and road traffic and the protection of persons and property around the Construction Site and all other areas affected by the Project Works, the Temporary Works and the Contractor's Activities.	Sections 10.1 to 10.4
	(c) The Contractor must prepare and submit the Construction Traffic Management Plan and, where required, all Traffic Control Plans to the Principal's Representative and each relevant Authority and obtain all necessary Approvals from the relevant Authority for temporary pedestrian, cyclist, public transport service and road traffic arrangements, including the installation of and changes to any regulatory traffic control devices, road or thoroughfare.	Section 10.3
	(d) The Contractor must also obtain all necessary Approvals from each relevant Authority to enable it to direct traffic and to appoint Traffic Controllers to provide for the safe movement of pedestrians, cyclists, public transport services and road traffic and the protection of persons and property around the Construction Site.	Section 4.1
	(e) The Contractor must conform to the requirements of all relevant Authorities, the RMS Traffic Control at Worksites Manual, AS 1742.3 Manual of uniform traffic control devices Part 3: Traffic control devices for works on roads and this Principal's Specification G10, when planning and carrying out traffic and transport management.	Section 4 & throughout the CTMP
	(f) The Contractor must conform to applicable vulnerable road user initiatives required by the Principal and relevant Authority to enhance pedestrian, cyclist and motorist safety in the vicinity of construction sites. These may include measures such as deployment of speed awareness signs in conjunction with variable message signs, blind spot and other construction vehicle devices, Metro project specific heavy vehicle driver training and shared experience educational events.	Section 10.11
	(g) The Contractor must not reduce or adversely impact road network traffic capacity and traffic flow efficiency, except after hours, where approved.	Section 8.4
2.2	(a) Details of any traffic staging arrangements associated with each proposed construction stage, including Traffic Staging Plans, and the time periods during which each stage will be in operation	Section 8.2 & 8.5
	(b) Traffic Control Plans (TCP), including provision for cyclists, and any specific traffic control arrangements associated with the conditions of approval of the ROL. The TCP sets out the specific traffic and transport management arrangements to be implemented at specific locations during the construction of the Project Works and Temporary Works	Section 10.3
	(c) Vehicle Movement Plans (VMP) showing the preferred travel paths for vehicles to enter, leave or cross the through traffic stream. A VMP is a diagram showing the preferred travel paths for vehicles associated with a work site entering, leaving or crossing the through traffic stream. A VMP may be combined with or superimposed on a TCP.	Section 8.7, Appendix C & Appendix D

Heading	Requirement	Reference in this TMP
	(d) Pedestrian Movement Plans (PMP) showing the allocated travel paths for workers or pedestrians around or through the work site. A PMP may be combined with or superimposed on a TCP.	Section 8.5, 10.3, 10.4 & Appendix D
	(e) Parking Management Plans (PMP) that identify parking requirements and on and offsite parking arrangements and associated impacts; remote parking arrangements and associated access between sites and public transport nodes; alternate parking arrangements for displaced parking, and communication and parking management measures. For any proposed kerbside use impacts in the CBD a proposal for relocation of impacted users is required.	Section 10.2
	(f) Provision of access to adjoining properties and side roads affected by the construction.	Section 9.9
	(g) Copies of any ROL and approvals from other relevant authorities obtained.	N/A
	(h) Design drawings for any temporary roadways and detours, including alignment and surface levels, pavement widths, pavement cross-sections and drainage.	N/A
	(i) Names and contact details of nominated personnel responsible for attendance at traffic incidents where required to do so by the Police and emergency services, and for maintenance of traffic control devices and temporary roadways outside normal working hours. Provide confirmation that these details have been provided to the Police.	Section 3.1
2.3	The TCP must show, where applicable and appropriate, the following details: (a) Types and locations of permanent regulatory (R series) and warning (W series) signs. (b) Types and locations of temporary signs (T series) including advance warning signs and variable message signs (VMS). (c) Locations of permanent and temporary traffic signals. (d) Locations of any required Traffic Controllers. (e) Locations and lengths of taper and safety buffer areas. (f) Locations of safety barrier systems including end terminals. (g) Pedestrians and cyclists paths. (h) Locations of entry and exit gates to work areas, individually numbered and signposted. (i) Details of access to adjoining properties, car parking areas, and side roads. (j) Pavement marking details, including types of delineation required, turning arrows, stop/holding lines and other road markings, types and positions of raised pavement markers and other delineation devices. (k) Locations of temporary lighting.	Section 10.3 & Appendix D
2.4	The Traffic Staging Plans must show, where applicable and appropriate, the following details: (a) Lane configurations on existing and new (temporary and permanent) pavements, indicating any departures from existing traffic lanes. (b) Intersection layouts and temporary traffic signal arrangements. (c) Working areas and pedestrian and cyclist paths. (d) Access to residential properties, local businesses and community facilities. (e) Pavement markings. (f) Drainage system, both temporary and permanent, including any pollution control measures. (g) Utility services and their impact on the Project works, temporary works and Contactor's activities. (h) If removal of pavement markings is required, details of the proposed methods for removal, the estimated durations to carry out the removal, and if necessary, any proposed measures to restore the road surface.	Section 8.5

Heading	Requirement	Reference in this TMP
2.5	Road Occupancy Licenses	Separate application will be made by the contractor.
3.1	Traffic Control Devices The Contractor must supply and install the following, and remove them when the devices are no longer required: • regulatory traffic control devices • temporary speed zoning signs • portable and temporary fixed traffic signals • public transport service related portable and temporary fixed regulatory and advisory signage Public transport service portable and temporary fixed regulatory and advisory signage must be legible, of a high standard and similar to that used in permanent situations to the satisfaction of the Principal.	Section 10.3 & 10.5
3.2	Roads and Property Accesses – The Contractor must at all times provide safe and convenient passage for vehicles, pedestrians and cyclists along, to and from roads and property. Contractor's Activities that affect the use of areas around the Construction Site and existing accesses must not be undertaken without providing adequate alternative provisions, as required by all relevant Authorities and affected property owners, and to the prior satisfaction of the Principal's Representative.	Section 9.8
3.3	Traffic Controllers – The Contractor must advise the Principal's Representative of the names of proposed traffic controllers and their traffic controllers' certificate numbers and expiry dates.	Section10 .3
3.4	Opening Temporary Roadways and Detours to Traffic – All signposting, pavement marking, safety barriers and portable or temporary traffic signals must be completed before the opening of temporary roadways to traffic, pedestrian and cyclist route changes and public transport facility changes.	N/A
3.5	Maintenance – The Contractor is responsible for the maintenance of temporary pedestrian and cyclist thoroughfares and detours, temporary public transport facilities and temporary roadways and detours and must ensure the thoroughfares and road surfaces are kept safe for pedestrians, cyclists and traffic. Any potholes or other failures must be repaired without delay and within 2 days of the occurrence of the pothole or failure.	Section 10.1
3.6	Removal – Upon completion of the Project Works all temporary pedestrian and cyclist thoroughfares and detours, temporary public transport facilities and temporary roadways and detour arrangements must be removed, and the area restored to at least the state which existed prior to the commencement of the Contractor's Activities.	Table 10.1
4.1	The Contractor must make the following pedestrian traffic management measures: (i) Existing longitudinal pedestrian footpaths will be maintained either in their current form, or on an alternative adjacent alignment. Wherever possible works on footpaths (where required) will be scheduled to occur outside of peak pedestrian times.	Section 10.4
	(ii) Where construction works require full or partial occupation of the existing footpath, the Contractor must temporarily narrow footpaths around the worksite or to divert pedestrians to adjacent footpaths via safe crossing facilities with the appropriate barriers and signage. Any diversions may require pedestrian demand modelling and must be agreed with the relevant Authorities.	N/A
	(iii) Footpath widths are to allow two-way pedestrian traffic that meets the pedestrian demand and has sufficient space provided to accommodate prams, strollers and wheelchairs without requiring temporary widening from their existing	Section 9.4 & 10.4

Heading	Requirement	Reference in this TMP
	width prior to construction commencement. Narrowing of footpath width if required is to be approved by the relevant authorities.	
	(iv) Access to public transport facilities must be made available for customers at all times. Where excavation works and associated works limit accessibility to a facility, the Contractor must provide safe and secure temporary access incorporating handrails and other infrastructure where required. All temporary works must be in accordance with relevant standards.	N/A
	(v) Access to shops must be available for the public during business hours. Where excavation works limit accessibility to a shop during business hours, the Contractor must provide safe and secure temporary access incorporating handrails where required. All temporary works must be in accordance with relevant standards.	N/A
	(vi) Access to residences must be available at all times. Where excavation works limit accessibility to a residence, the Contractor must provide safe and secure temporary access incorporating handrails where required. All Temporary Works must be in accordance with relevant standards	N/A
	(vii) The Contractor must provide additional traffic control at locations where there is an interaction between pedestrians and construction vehicles.	Section 10.3 & 10.4
	(viii) Existing transverse pedestrian movements must be maintained at existing pedestrian crossing facilities using existing traffic control signals or controlled by traffic controllers, unless approved otherwise.	Section 10.4
	(ix) All mid-block transverse pedestrian crossings must be maintained by the Contractor during construction of the Works.	Section 10.4
4.2	Cycle Routes – Where the Sydney Metro Works will impact cycling routes, the Contractor must provide alternative cycle routes. The Contractor must consult with local bicycle user groups, local communities, and relevant authorities regarding any proposed alternative route. The Contractor must submit that proposal and summaries of that consultation for approval by TfNSW and RMS prior to implementation.	Cycle routes not affected by Pitt Street Project
5	Road Safety Audit – All Road Safety Audits will be undertaken in accordance with the RMS 'Guidelines for Road Safety Audit Practices (2011), with reference to current practices outlined in Austroads Guide to Road Safety Part 6 Road Safety Audit (2009) and the Sydney Metro Principal Contractor H&S Standard. Road safety audits shall be undertaken with due consideration to the high levels of pedestrian activity in the Sydney and North Sydney CBD environments.	Section 10.6 & Appendix E

Table 4.3: Compliance to Construction Traffic Management Plan Framework

Heading	Requirement	Reference in this TMP
2.1	General Traffic Management Approach Minimum disruption to pedestrians, cyclists and motorists.	Section 10.1 to 10.4
	Ensure Sydney Metro City & Southwest construction traffic accesses the arterial network as soon as practicable on route to and immediately after leaving the construction site.	Section 8.7
	Keeping Sydney moving	Throughout this CTMP
	Buses run on time with no disruption to routes and stops, where possible.	Section 10.2
	Minimise changes to traffic operation and kerbside access.	Section 10.2
	Maintain access for adjoining properties.	Section 9.8

Heading	Requirement	Reference in this TMP
	Minimise construction traffic generation during network peak periods.	Section 8.6
	Safe provision for vehicular and pedestrian traffic must be made at all work sites.	Section 10.1 to 10.4
	Delays to traffic in the immediate vicinity of work sites should be minimised as much as practicable.	Section 8.8
	Minimise construction traffic generation during network peak periods. It is an RMS operational imperative that the capacity and efficiency of the network is not reduced during peak periods.	Section 8.6
	Works should be coordinated so that road users do not encounter a series of delays in quick succession and such that the cumulative impact of multiple closures does not lead to unexpected congestion.	Noted.
	Implement appropriate operational and other measures to ensure the safety of vulnerable road users.	Section 10.3 to 10.5
	Access for residents and businesses is to be maintained.	Section 9.8
	Road users should be kept informed about: • The location of works. • Forecast travel delays they are likely to experience. • Suitable alternative routes, if available. • Timing of any works, including dates and times, to enable informed decisions by the road user regarding times and routes of travel.	Section 10.8
	The project should present a professional and helpful interface with road users during all parts of the construction process.	N/A
	Consideration of the above for road users should include potential impacts on pedestrians and cyclists.	Section 9.4 & 10.4
	Safe provision for cyclists must be made at all work sites.	Section 9.4
	Public transport users should also be kept informed of changes due to construction.	Section 10.8
2.2	Traffic Management Strategy a) The provision of directional signage and line marking to direct and guide drivers and pedestrians past work sites and to suitable alternative routes (if required) on the surrounding road network.	Traffic Control Plan in Appendix D
	b) Notification of proposed changes and duration using newspapers (local or majors), radio, project website, social media and direct community engagement (as required).	Section 10.8
	c) On-going or direct co-ordination with TMC and SCO, to mitigate congestion and provide rapid response should incidents or increased congestion occur as a direct result of the works.	Section 6
	d) Management and coordination of construction vehicle access to and from the work sites across pedestrian paths. The type of traffic management to be employed will be dependent on, and adjusted according to, the volume of pedestrians, passing traffic and the volume of construction vehicle activities for the site. The types of management could include manual supervision, physical barriers, temporary/portable traffic signals (where approved by RMS, BDA or council) or modification to existing traffic signals (where approved by RMS).	Section 10.1 to 10.5
	e) Ensuring that access to existing properties and businesses is maintained during the period of the works, or suitable alternative.	Section 9.8
	f) Retain existing on-street parking and restrictions, as far as is practicable.	Section 9.7

Heading	Requirement	Reference in this TMP
2.3	Hierarchy of Access The site specific CTMPs will be required to be developed on the basis of the following hierarchy of access: (1) Incidents & emergency services access, (2) Events (Special and unplanned), (3) Pedestrians, (4) Cycles, (5) Public transport – buses, (6) Service vehicles, (7) Coaches, (8) Taxis, (9) Kiss and Ride, and 10) Private cars (Shoppers/short stay, commuters).	Section 9
3.3.2	Construction Traffic Management Plan A contract-wide Construction Traffic Management Plan (CTMP) will be prepared by contractors, covering the full special extend of their works and multiple sites. The CTMP will comply with the Traffic Control at Worksites Manual (RMS), relevant Australian Standards, Principal's General Specifications G10 – Traffic and Transport Management and, where relevant, the RMS Work Authorisation Deed (WAD) documentation. This will allow fulfilment of the WAD requirement for a Traffic Management and Safety Plan (TMSP) subject to RMS review and approval. In addition, site specific CTMPs will be prepared and implemented having regard to the REMMs documented in Chapter 11 of the Chatswood to Sydenham Submissions and Preferred Infrastructure Report, October 2016. Construction traffic and transport REMMs are listed in Table 4.5.	Throughout this CTMP
3.3.3	Site-specific CTMP Contractors will also prepare more detailed site-specific CTMPs. These will be developed by the contractor for each work site and identify proposed heavy vehicle routes, traffic and parking management measures. These plans will be developed in consultation with the TTLG and TCG meetings.	This CTMP. Section 6.1, 8.7, 8.8
	Site specific CTMPs will details construction works sites, access points, relevant signage, parking changes (if required), bus stop relocations (if required), proposed heavy vehicle routes, traffic and parking management measures, relevant correspondence with stakeholders (e.g. bus operators, Australia Post, business owners) and all traffic management and mitigation measures required to impellent any proposed works.	Section 9
	It must also include Traffic Control Plans (TCP), Vehicle Movement Plans (VMP), Pedestrian Movement Plans (PMP), Parking Management Plans and Traffic Staging Plans for the specific works, unless otherwise agreed in writing with the Principal's Representative and relevant Authorities. The Parking Management Plan will also provide details regarding onsite and off-site staff parking arrangements, including any proposed busing to and from worksites. All TCPs prepared for construction activities will be developed in accordance with Australian Standard AS1742.3 and the RMS Traffic Control at Worksites Manual. TCPs must be prepared by a person who has completed and passed the Prepare a Work Zone Traffic Management Plan training course and has current certification to the required level. All work sites and related TCPs will be implemented in compliance with the ROL issued by the TMC for the approved times and appropriate standards. ***additional requirements	Section 10.3, Appendix C & Appendix D
4.1	Traffic and Transport Liaison Group TTLG includes representatives from Sydney Metro Delivery Office, Transport for NSW (including Centre for Road Safety; Sydney Light Rail; Metro Bus & Ferry Planning and Development; Freight Strategy & Planning), RMS, TMC, Sydney Coordination Office, Port Authority of NSW, Barangaroo Delivery Authority (BDA), Department of Planning and Environment, Sydney Motorway Corporation (WestConnex), NSW Police, NSW Fire & Rescue, NSW Ambulance Service, Local Council (depending on worksite locations), Lane Cove Council, Willoughby Council, North Sydney Council, City of Sydney Council, Inner West Council, State Transit Authority, Sydney Metro Contractor(s).	Section 6
4.11	Other Organisations Other organisations may be asked to attend the TTLG and/or receive relevant information depending on the matters under discussion or consideration.	Section 6

Heading	Requirement	Reference in this TMP
4.2	Traffic Control Group TCG includes representatives from Sydney Metro Contractor, Sydney Metro Delivery Office, Transport for NSW, RMS, TMC, Sydney Coordination Office and Local Councils.	Section 6
5.1	Communication with Existing Businesses and Residents Owners and operators of potentially affected properties and businesses will be consulted throughout the delivery of the Project and notified well in advance of any works that may potentially disrupt access to their property. Residents, property owners and businesses in the surrounding area will also be notified prior to the start of works. The proposed works and changes should also be advertised in the public notices section of newspapers (as required).	Section 10.8
5.2	Notification of Traffic Changes or Disruptive Works Activity specific communications strategies are required to be developed prior to any traffic event. These strategies should include details of the work, impacts and proposed mitigation measures. In addition to the strategy, activity-specific notifications will need to be developed and issued to directly impacted properties prior to works commencing. Notification of proposed changes should also be included on the Project website. Other communication methods that may be implemented could include, but are not limited to: • Doorknocks. • Letterbox drops. • Advertising (newspapers). • Social media updates. • Radio.	Section 10.8
5.3	Responsibilities The contractor's Stakeholder and Community Manager will be responsible for ensuring a system is in place to advise the Sydney Metro City & Southwest Project Communications Team, the TTLG and other key stakeholders each time proposed changes are to be made to traffic arrangements. Advice will include information about the changes to the traffic operation, anticipated delays to traffic, any changes to the times and duration of the work, and any other potential major disruptions.	Section 6
5.4	Roadside Messaging Appropriate signposting, whether static or Variable Message Signs (VMS), should be located and installed to provide for the easy and safe passage of vehicles, pedestrians and cyclists. This also includes public transport users accessing facilities such as bus stops. The installation of signs will be detailed within the relevant CTMP. Any signposting should be placed in accordance with relevant guidelines and standards. Messages should be clear and easily interpreted by drivers, pedestrians and cyclists, and should not create a safety hazard. The proposed location of any VMS would require the approval of the road authority.	Section 10.3 & Appendix D
6.2	Approvals	This CTMP will be sent to TMC for approval.
6.4	Road Occupancy License Process Whenever it is proposed to occupy or close a lane or road during the construction program for each of the sites, the closure will require the contractor to apply for a Road Occupancy Licence (ROL) from TMC and/or Council. ROLs are issued by the TMC for approved times, following endorsement by the SCO, for RMS State roads or locations on Regional or local roads within 100 metres of traffic signals. It should be noted that due to the critical nature of the potential traffic impacts for local roads within the Sydney and North Sydney CBDs that applications for ROLs on streets within these areas will be required to be submitted to TMC.	Separate application will be made by the contractor.

Heading	Requirement	Reference in this TMP
6.6	Special Event Coordination During the Project, special consideration and traffic planning will need to be undertaken for each of the sites to address the road user needs during programmed special events. It should also include the response to ad hoc events that may occur with minimal notice, including marches, protests and other public events. Sydney Metro City & Southwest contractors will be responsible for identifying special events that occur in the area of the work site, incorporating known special events into the construction program and detailing responses and contingencies in the CTMP for each site. This coordination will occur through the Sydney Coordination Office, approved event registers of councils, the TCG and the TTLG. During development of the site specific CTMPs the proposed traffic management measures must take account of major and regular events to ensure that proposals do not impede or impact on these events.	Section 9.2
6.7	Adjustments to Traffic Signals Any temporary or permanent works that impact on the operation of, or require the reconstruction or adjustments to, traffic signals require close consultation with RMS and approval of the traffic signal design plans, prior to the commencement of any work. This will require entering in to a Works Authorisation Deed (WAD) with RMS.	No Changes are proposed to traffic signals under this CTMP
6.8	Over-size or Over-mass Vehicle permits	Section 8.4
6.9	Adjustments to bus routes and stops – Any proposed adjustments or relocation of bus stops to facilitate construction works require the prior approval of TfNSW, CCO and affected bus operators in consultation with local councils prior to submitting an ROL application to TMC.	Section 9.5 & 10.2
6.10	Adjustments to Australia Post Boxes or Other Roadside Furniture	Section 9.8
6.11	Council Traffic Committees Where possible, the contractor should endeavour to secure all necessary Council approvals under delegation so as to avoid the need for approvals to be secured through the Local Traffic Committee and Council meetings. Matters that may need to be considered by the Local Traffic Committee include: • establishment of a kerbside 'Work Zone' on a local or regional road • CTMPs • other changes to parking restrictions • road closures.	Section 6
6.12.1	Dilapidation surveys	Section 8.11
7.1	Haulage Routes Details of any proposed routes for heavy vehicle access will be developed in consultation with the relevant state or local government authority and detailed in the appropriate section of the site-specific CTMP. Condition E88 then requires the CTMP to be approved by RMS following endorsement by SCO and the relevant roads authority. Where haulage routes differ from the primary and secondary routes shown in the EIS/Submissions Report/PIR, the contractor will undertake a review and where necessary document these in the contract wide and site-specific CTMPs and provide a justification for these changes in accordance with E88.	Section 8.8
7.2	Management of Heavy Vehicle Movements Vehicle and pedestrian access to each work site, including the locations of entries, exits, turning restrictions, slip lanes, traffic signals, signage and other site management requirements will be established in line with the requirements of the Project approvals and in consultation with RMS, SCO, BDA and councils.	Section 6, 10.1 to 10.5

Heading	Requirement	Reference in this TMP
7.3	Work Zones and Heavy Vehicle Marshalling Applications for a 'Works Zone' will be undertaken by the contractor to the relevant authority.	Section 2.1
7.4	Construction/Demolition Vehicle Types To minimise the number of heavy vehicle movements on the road network, the selection of vehicle size will consider the number of movements required, the impact of the quantity of vehicles on road and pedestrian movements, road geometry and safety.	Section 8.4
7.4.1	Worker Access and Parking The assumption for all site specific CTMPs is that there will be no provision, either on the road or within the work site, for worker parking. Workers should be encouraged to use public transport in travelling to and from the work sites.	Section 8.9
7.4.2	Construction Consolidation Centre/Depot To mitigate the potential impact of construction traffic the provision of a centralised Project centre should be considered. This centre could receive deliveries and arrange for combining of loads and materials for distribution to the various worksites. This may be incorporated into the truck marshalling and logistics facility and should address the intent of planning condition E89.	N/A
7.4.3	Driver training	Section 10.11
7.4.4	Chain of Responsibility and Heavy Vehicle National Law All necessary heavy vehicle approvals and permits (e.g. over-size, over-mass, etc.), must be obtained from the relevant road manager.	Section 8.8, Separate application will be made by the contractor.
8.1.1	Policy and Responsibilities When temporary or construction speed limits are required, the contractor will be required to make the necessary application to either RMS for classified roads or the local council for unclassified roads. This application will need to be submitted prior to the proposed implementation time to allow for processing and authorisation.	N/A
8.1.2	Traffic Control Techniques There are a number of traffic control methods that can be used at worksites that must be selected in accordance with the hierarchy of controls to ensure safety risks to workers (including traffic controllers) and the public are minimised So Far As Is Reasonably Practicable (SFAIRP). These include: • Temporary road deviations. • Linemarking with raised pavement markers to delineate proposed diversion. • Other traffic control devices as provided in the RMS' Traffic Control at Work Sites manual. • Portable traffic signals to control traffic flows if lane closures are required. • Directional and information signposting to direct or advise drivers. This can include Variable Message Signs (VMS), directional arrows or static signs. • The use of traffic cones, water filled barriers or other physical devices to delineate the required route. Refer also to the Sydney Metro Principal Contractor Health and Safety Standard. For longer term works, where traffic management devices are in place for an extended length of time, regular inspections are to be carried out by the Contractor's Construction Manager. This is to ensure that the controls in place continue to provide safe traffic management. All controls are to comply with the current RMS guidelines.	Section 10.3
8.1.3	Approved clothing for work personnel	Section 8.4, 8.10, 10.1

Heading	Requirement	Reference in this TMP
8.1.4	Plant and equipment Any plant used and working near traffic or pedestrians is to be suitably highlighted with physical protection and appropriate warning signs provided to ensure public safety.	Traffic Control Plans in Appendix D
8.2	Frequency of Inspections For long term (i.e. longer than one shift) traffic management road inspections will be carried out regularly to ensure the safe movement of traffic and the protection of persons and property through and/or around the work site.	Section 10.10 & 10.11
8.2.1	Inspections of roadwork traffic management schemes Three main types of inspections to be carried out: a) Pre-start and pre-close down inspections of short-term traffic control. b) Weekly inspections of long-term traffic control. c) Night inspections of long-term traffic control.	Section 10.10
8.3	Emergency Incident Planning An Incident Management Plan for on-road incidents, or incidents that impact on the public transport network should be submitted to the TMC Emergency Transport Operation section for review and comment.	Section 9.1, 9.3 & Incident Management Plan
8.3.1	Accidents/ Incidents and Complaints The contractor's ROL register will maintain records of traffic accidents and incidents reported at work sites. Any complaints received regarding traffic delays at work sites should be referred to the Principal. The contractor will be required to table the register, upon request, at TCG meetings.	Section 11
8.3.2	Chemical spills and leaks Sydney Metro City & Southwest staff and contractors are to be instructed not to approach flammable or hazardous substances until NSW Fire and Rescue have declared the site safe. In such cases the contractor will close the roadway at a safe distance until Fire and Rescue arrives and issues appropriate instructions.	Section 9.3
8.4	Traffic Controllers and Temporary Traffic Signals The use of traffic controllers and/or temporary traffic signals to control traffic at worksites is to be in accordance with the RMS' Traffic Control at Work Sites Manual and the Sydney Metro Principal Contractor Health and Safety Standard. VMS will be used in accordance with documented RMS procedures and guidance. The placement of temporary VMS is to consider pedestrian safety and disabled access needs when placed on footpaths. A ROL may be required when a portable VMS is proposed to be located in a parking or loading bay.	Section 10.3
9.1	Worksites (i) Details of the proposed erection and maintenance of hoardings, scaffolds and associated structures shall be documented in the CTMP.	Separate application will be made by the contractor.
	(ii) The CTMPs will identify the boundaries and detail the footpath and road controls, detail the movement of construction traffic in and out of the worksite. The site specific CTMPs will consider these interactions and the impacts of gantries, etc. on the road and footpaths.	Section 8.4 & 8.5
9.2	Hoardings Consideration will be given to ensuring sight lines for side roads, vehicle accesses, signposting, and traffic signals are maintained. The presentation of the hoarding, the branding and visual aspects of the hoarding are to be in line with City of Sydney policies, and TfNSW/Sydney Metro requirements.	Section 8.10
9.3	Site Security, Site Access and Signage The issues to be considered in determining the location of site accesses are: safety of travelling public, safety of construction workers and equipment, impact on local communities in terms of safety, noise and road damage, ease of access for emergency vehicles, and site security.	Section 8.4 & 10.1

Heading	Requirement	Reference in this TMP
	The worksites will have appropriate arrangements to discourage entry without approval and minimise vandalism. All access points to worksites will have lockable gates. Appropriate information signs will be provided at worksites to identify the Project and contact persons. Contractors will be required to develop and prepare Security Management Plans based on the site-specific security threats (hazards) identified. Requirements for Security Management Plans are outlined in Sydney Metro Principal Contractor Health and Safety Standard.	
9.4	Pedestrian Security/Safety/Lighting Any hoardings or other structures on the site boundaries will have lighting in accordance with current standards, particularly where existing street lighting is removed or obscured as a result of the site works. In those locations where this occurs, supplementary lighting is to be provided to meet the current standards. Discussions will be carried out with the relevant authority if the coverage or otherwise of CCTV cameras is impacted by the works.	Section 8.10
9.5	Management of risks to vulnerable road users – The Contractor is to adopt applicable vulnerable road user safety measures as per the SM PS-ST-221 Sydney Metro Principal Contractor Health and Safety Standard. Such measures include, but are not limited to: • The deployment of speed awareness signs in conjunction with variable message signs • Heavy vehicles equipped with systems to improve vehicle safety, visibility and the detection of vulnerable road users • Mandatory completion of Sydney Metro City & Southwest project specific Heavy Vehicle Driver Introduction Training • Contractor engagement in shared experience educational events. Where worksites have an impact on footpaths, consideration will be given to the requirements of all pedestrians and especially vulnerable road users (school children, elderly and mobility impaired). DDA requirements will be adopted with kerb ramps or other measures provided at road crossings. Footpath widths are required to allow for two-way pedestrian traffic allowing for prams/strollers and wheelchairs. Where high numbers of vulnerable road users are using a footpath, special provision and design consideration may be required to mitigate any impacts.	Section 9.4, 10.5 & 10.11
10.2.3	Road Safety Audits Sydney Metro City & Southwest and/or its contractors will undertake Road Safety Audits for CTMPs, to be submitted with the CTMP. Regular safety audits of work zones are also to be undertaken to ensure all worksite safety arrangements are in place. These audits will be additional to the daily inspections by the site staff. Particular attention will be given to WHS guidelines, work areas adjacent to the road, movement of construction traffic, vehicle speeds and all warning devices or systems	Section 10.6 & Appendix E

Table 4.4: Compliance to Critical State Significant Infrastructure Conditions of Approval

Heading	Requirement	Reference in this TMP
E75	The CSSI must be designed, constructed and operated with the objective of integrating with existing and proposed road and related transport networks and minimising adverse changes to the safety, efficiency and, accessibility of the networks, and facilitate an improved level of service in relation to permanent and operational changes. Detailed design and assessment of related traffic, parking, pedestrian and cycle accessibility impacts and changes shall be undertaken: (a) in consultation with, and to the reasonable requirements of the Traffic and Transport Liaison Group(s) established under Condition E77;	Section 6

Heading	Requirement	Reference in this TMP
	(b) in consideration of existing and future demand, connectivity (in relation to permanent changes), performance and safety requirements;	Chapter 5 and Chapter 9
	(c) to minimise and manage local area traffic impacts;	Section 10.1 to 10.5
	(d) to ensure access is maintained to property and infrastructure; and	Chapter 9
	(e) to meet relevant design, engineering and safety guidelines, including Austroads, Australian Standards, and RMS (RTA) requirements.	Section 4 & 10.3
	Copies of civil, structural and traffic signal design plans shall be submitted to the Relevant Road Authority for consultation before the commencement of the relevant works.	N/A
E76	Permanent road works, including vehicular access, signalised intersection works, and works relating to pedestrians, cyclists, and public transport users must be subject to safety audits demonstrating consistency with relevant design, engineering and safety standards and guidelines. Safety audits must be prepared in consultation with the Traffic and Transport Liaison Group before the completion and use of the subject infrastructure and must be made available to the Secretary upon request.	N/A
E77	The Proponent must establish a Traffic and Transport Liaison Group(s) (TTLGs) to inform traffic and transport management measures during construction and operation of the CSSI. Management measures must be coordinated with and approved by the RMS following endorsement by the Sydney Coordination Office and consultation with the Relevant Roads Authority. The TTLG must comprise representatives from the Relevant Road Authority(ies) (including the RMS, relevant Councils, and the Barangaroo Delivery Authority as appropriate), transport operators (including bus and taxi operators), emergency services and Port Authority of NSW as required. The TTLG must be consulted on to inform the preparation of the Construction Traffic Management Plan(s) and Interchange Access Plan(s).	Section 6
E78	The Proponent must undertake supplementary analysis and modelling as required by the TTLG to demonstrate that construction and operational traffic can be managed to minimise disruption to traffic network operations, public including changes to and the management of pedestrian, bicycle and public transport networks transport services, pedestrian and cyclist movements. Revised traffic management measures, must be incorporated into the Construction Traffic Management Plan(s), Interchange Access Plan(s) and Station Design and Precinct Plan(s).	Noted – to be advised by the TTLG
E79	The Proponent must consult with the Relevant Road Authority regarding the use of any weight restricted road by heavy vehicles.	Section 8.7
E80	The Proponent must minimise truck movements during peak periods within commercial centres. Peak periods are 7am to 10am and 4pm to 7pm Monday to Friday.	Section 8.6
E81	The Proponent must prepare and implement a Construction Traffic Management Framework (CTMF). The CTMF must be prepared in consultation with TTLG(s) and submitted to the Secretary for approval no later than one (1) month before the commencement of construction (or within any other timeframe agreed with the Secretary). The CTMF will set out the approach to managing issues across the CSSI and include but not be limited to:	This CTMP
	(a) Construction site access, including the efficient and safe egress and ingress of vehicles, consistent relevant Austroads, Australian Standards and RMS requirements;	Section 8.4
	(b) the erection and maintenance of hoardings, scaffolds and associated structures on roads;	Separate application will be made by the contractor.

Heading	Requirement	Reference in this TMP
	(c) short- and long-term lane and road closures including those associated with plant, crane and other operations between the road reservation and construction site;	Addressed in separate TMPs
	(d) cumulative construction vehicle management from surrounding developments;	Section 9.10
	(e) bus stop and associated facilities relocation and service rerouting;	Section 9.5
	(f) short and long term works zones on roads adjacent to the construction site;	Section 8.5
	(g) mail zone and associated facilities relocation;	Section 9.8
	(h) short and long term works within the road reservation;	N/A
	(i) regulatory, advisory and other signage changes and modifications;	Section 10.2 & 10.3
	(j) parking management, including on and off street and remote parking and access;	Section 10.2
	(k) heavy vehicle management, the restriction (unless otherwise approved) of heavy vehicles to certain routes and the minimisation of heavy vehicle traffic in peak traffic periods;	Section 8.6 & 8.7
	(l) special event management;	Section 9.2
	(m) the retention and reinstatement of emergency and property access;	Section 9.8
	(n) the retention of user and passenger safety, including pedestrians, cyclists, public transport users, including at stops and related facilities;	Section 9.4 & 9.5
	(o) incident response planning around construction worksites; and	Section 9.1
	(p) monitoring of transport and access related impacts attributable to the CSSI.	Section 10.11
E82	Construction Traffic Management Plans (CTMPs), consistent with the CTMF required in Condition E81, must be prepared for each construction site in consultation with the TTLG(s), and submitted to the RMS for approval following Sydney Coordination Office endorsement before construction commences at the relevant construction site.	Section 4.1 & 6
E83	Where construction results in a worsening of the matters identified in Condition E81(a)-(o), the Proponent must review the measures identified in the CTMPs in consultation with the TTLG(s), as relevant. Any changes to the CTMPs must be submitted to the RMS for approval following Sydney Coordination Office endorsement and implemented	Section 10.8
E84	Notwithstanding the above, the Proponent must investigate opportunities to maximise spoil removal by non-road methods and schedule final track laying as soon as practicable following completion of tunnelling with a view to transporting materials and equipment for station fit-out, systems and commissioning by rail to minimise truck movements in town centres and the Sydney CBD. The findings of the investigation must be reported to the Secretary before commencement and before completion of tunnel spoil generation as relevant. A decision to not adopt spoil haulage or materials delivery by non-road methods must be demonstrated to the satisfaction of the Secretary.	N/A
E85	Heavy vehicle haulage must not use local roads unless no feasible alternatives are available	Section 8.7
E86	During construction, measures must be implemented to maintain pedestrian and vehicular access to, and parking in the vicinity of, businesses and affected properties. Alternative pedestrian and vehicular	Chapter 6, and Section 8.4, Sections 9.4 to 9.9

Heading	Requirement	Reference in this TMP
	access, and parking arrangements must be developed in consultation with affected businesses. Such arrangements must be outlined in the Business Management Plan required in Condition E64 and implemented as required. Adequate signage and directions to businesses must be provided before, and for the duration of, any disruption.	
E86.1	Construction traffic is not to use Elliot Street, North Sydney except where required in an emergency to avoid injury or the loss of life, to avoid damage or loss of property or to prevent environmental harm.	N/A
E87	Permanent road works, including vehicular access, signalised intersection works, and works relating to pedestrians, cyclists and public transport users will be subject to safety audits demonstrating consistency with relevant design, engineering and safety standards and guidelines. Safety audits must be included within each relevant CTMP and carried out in consultation with the TTLG before the completion and use of the subject infrastructure and must be made available to the Secretary on request.	N/A
E88	Details of haulage routes and heavy vehicle sizes to transport material to and from any construction site must be specified in the Construction Traffic Management Plan(s) and be approved by the RMS following endorsement by Sydney Coordination Office and consultation with the TTLG(s).	Section 8.7
E89	The Proponent must implement traffic and transport management measures with the aid of a truck marshalling and logistics facility located within close proximity to the Sydney and North Sydney CBDs. The facility must be operational in advance of tunnel spoil generation. Details of the facility must be documented in the Ancillary Facilities Management Plan required by Condition A16.	Section 8.8
E89.1	Access to basement car parking to properties off Randle Lane must be maintained at all times except in consultation with affected occupiers and agreement with affected owners for alternative parking, storage or other forms of compensation.	N/A
E90	A Road Dilapidation Report must be prepared for local roads proposed to be used by heavy vehicles for the purposes of the CSSI before the commencement of use by such vehicles. Copies of the Road Dilapidation Report must be provided to the Relevant Council within three (3) weeks of completing the surveys and no later than one (1) month before the use of local roads by heavy vehicles.	Section 8.11
E91	If damage to roads occurs as a result of construction of CSSI, the Proponent must either (at the landowner's discretion): (a) compensate the landowner for the damage so caused. The amount of compensation may be agreed with the landowner; or	Section 8.11
	(b) rectify the damage so as to restore the road to at least the condition it was before construction commenced as identified in the Road Dilapidation Report(s).	Section 8.11

Table 4.5: Compliance to Revised Environmental Mitigation Measures

Heading	Requirement	Reference in this TMP
T1	Ongoing consultation would be carried out with (as relevant to the location) the Sydney Coordination Office, Roads and Maritime Services, Sydney Trains, NSW Trains, the Port Authority of NSW, Barangaroo Delivery Authority, local councils, emergency services and bus operators in order to minimise traffic and transport impacts during construction.	Section 6
T2	Road Safety Audits would be carried out at each construction site. Audits would address vehicular access and egress, and pedestrian, cyclist and public transport safety.	Section 10.6 & Appendix E

Heading	Requirement	Reference in this TMP
T3	Directional signage and line marking would be used to direct and guide drivers and pedestrians past construction sites and on the surrounding network. This would be supplemented by Variable Message Signs to advise drivers of potential delays, traffic diversions, speed restrictions, or alternate routes.	Shown on Traffic Control Plans in Appendix D. Separate TMPs have been prepared for road closures as part of crane works, which include VMS strategy.
T4	In the event of a traffic related incident, co-ordination would be carried out with the Sydney Coordination Office and / or the Transport Management Centre's Operations Manager.	Section 9.3
T5	The community would be notified in advance of proposed road and pedestrian network changes through media channels and other appropriate forms of community liaison.	Section 10.9
T6	Vehicle access to and from construction sites would be managed to ensure pedestrian, cyclist and motorist safety. Depending on the location, this may require manual supervision, physical barriers, temporary traffic signals and modifications to existing signals or, on occasions, police presence.	Section 10.1 to 10.5
T7	Additional enhancements for pedestrian, cyclist and motorist safety in the vicinity of the construction sites would be implemented during construction. This would include measures such as: • Use of speed awareness signs in conjunction with variable message signs near construction sites to provide alerts to drivers • Community educational events that allow pedestrians, cyclists or motorists to sit in trucks and understand the visibility restrictions of truck drivers, and for truck drivers to understand the visibility from a bicycle; and a campaign to engage with local schools to educate children about road safety and to encourage visual contact with drivers to ensure they are aware of the presence of children • Specific construction driver training to understand route constraints, expectations, safety issues, human error and its relationship with fitness for work and chain of responsibility duties, and to limit the use of compression braking • Use of In Vehicle Monitoring Systems (telematics) to monitor vehicle location and driver behavior • Safety devices on construction vehicles that warn drivers of the presence of a vulnerable road user located in the vehicles' blind spots and warn the vulnerable road user that a vehicle is about to turn.	Section 10.1 & 10.5
T8	Access to existing properties and buildings would be maintained in consultation with property owners.	Section 9.8
T9	All trucks would enter and exit construction sites in a forward gear, where feasible and reasonable.	Section 8.4 & Appendix C
T10	Any relocation of bus stops would be carried out by Transport for NSW in consultation with Roads and Maritime Services, the Sydney Coordination Office (for relevant locations), the relevant local council and bus operators. Wayfinding and customer information would be provided to notify customers of relocated bus stops.	N/A
T11	For special events that require specific traffic measures, those measures would be developed in consultation the Sydney Coordination Office (for relevant locations), Roads and Maritime Services, Barangaroo Delivery Authority (for relevant locations) and the organisers of the event.	Section 9.2
T12	Construction sites would be managed to minimise construction staff parking on surrounding streets. The following measures would be implemented:	Section 8.9

Heading	Requirement	Reference in this TMP
	• Encouraging staff to use public or active transport • Encouraging ride sharing • Provision of alternative parking locations and shuttle bus transfers where feasible and reasonable. Transport for NSW would work with local councils to minimise adverse impacts of construction on parking and other kerbside use in local streets, such as loading zones, bus zones, taxi zones and coach zones.	
T13	Construction site traffic would be managed to minimise movements in the AM and PM peak periods.	Section 8.6
T14	Construction site traffic immediately around construction sites would be managed to minimise movements through school zones during pick up and drop off times.	N/A
T19	Where existing parking is removed to facilitate construction activities, alternative parking facilities would be provided where feasible and reasonable.	Section 9.7 & 10.2
T20	Alternative pedestrian routes and property access would be provided where these are affected during the construction of the power supply routes.	N/A in this CTMP. Shall be applicable during footpath upgrades at final stage of construction works. At this point, works shall be completed via a ROL.
T21	The potential combined impact of trucks from multiple construction sites would be further considered during the development of Construction Traffic Management Plans.	Section 5.7
T22	Where existing footpath routes used by pedestrians and / or cyclists are affected by construction, a condition survey would be carried out to confirm they are suitable for use (e.g. suitably paved and lit), with any necessary modifications to be carried out in consultation with the relevant local council.	Section 9.4
T23	Specific station management measures would be implemented during pedestrian movement Phase 2. This would include strategies such as encouraging passengers to exit platforms at the closest stair case or escalator, signage and marshalling of passengers waiting to board to minimise those waiting adjacent to hoarding and to direct passengers so that that there is even distribution along the platform.	N/A
T27	Detailed construction planning would be coordinated with the Sydenham to Bankstown project and the Temporary Transport Strategy arrangements to minimise impacts on the traffic and transport network.	N/A

Table 4.6: Compliance to City of Sydney Standard Requirements for Construction Traffic Management Plan

Heading	Requirement	Reference in this TMP
1	Details of routes to and from site and entry and exit points from site – site specific	Section 8.4 & 8.7
2	Details of roads that may be excluded from use by construction traffic i.e. roads with load limits, quiet residential streets or access/turn restricted streets – site specific	Section 8.4 & 8.7
3	The approved truck route plan shall form part of the contract and must be distributed to all truck drivers.	Section 8.7 & 10.11

Heading	Requirement	Reference in this TMP
4	All vehicles must enter and exit the site in a forward direction (unless specific approval for a one-off occasion is obtained from the City's Construction Regulation Unit).	Section 8.4 & Appendix C
5	Trucks are not allowed to reverse into the site from the road (unless specific approval for a one-off occasion is obtained from the City's Construction Regulation Unit).	Section 8.4 & Appendix C
6	The Applicant must provide the City with details of the largest truck that will be used during the demolition, excavation and construction. NOTE: No dog trailers or articulated vehicles (AV) to be used (unless specific approval for a one-off occasion is obtained from the City's Construction Regulation Unit).	Section 8.4 & 8.6
7	Oversize and over-mass vehicles are not allowed to travel on Local Roads (unless approval for a one-off occasion is obtained from the City's Traffic Operations Unit). Requests to use these vehicles must be submitted to the City 28 days prior to the vehicle's scheduled travel date.	Section 8.8
8	No queuing or marshalling of trucks is permitted on any public road.	Section 8.8
9	Any temporary adjustment to Bus Stops or Traffic Signals will require the Applicant to obtain approval from the STA and RMS respectively prior to commencement of works.	Section 2.1
10	All vehicles associated with the development shall be parked wholly within the site. All site staff related with the works are to park in a designated off-street area or be encouraged to use public transport and not park on the public road.	Section 8.9
11	All loading and unloading must be within the development site or at an approved "Works Zone".	Section 8.4
12	The Applicant must apply to the City's Traffic Works Coordinator to organise appropriate approvals for Work Zones and road closures.	Separate application will be made by the contractor.
13	The Applicant must apply to the City's Construction Regulations Unit to organise appropriate approvals for partial road closures.	Separate application will be made by the contractor.
14	The Applicant must apply to the Transport for NSW's Transport Management Centre for approval of any road works on State Roads or within 100m of Traffic Signals and receive an approved Road Occupancy Licence (ROL). A copy of the ROL must be provided to the City.	Separate application will be made by the contractor.
15	The Applicant must apply to the City's Construction Regulation Unit to organise appropriate approvals for temporary driveways, cranes and barricades etc.	Separate application will be made by the contractor.
16	The Applicant must comply with development consent for hours of construction.	Section 8.3
17	All Traffic Control Plans associated with the CTMP must comply with the Australian Standards and Roads and Maritime Services (RMS) Traffic Control at Work Sites Guidelines.	Section 10.3
18	Traffic Controllers are NOT to stop traffic on the public street(s) to allow trucks to enter or leave the site. They MUST wait until a suitable gap in traffic allows them to assist trucks to enter or exit the site. The Roads Act does not give any special treatment to trucks leaving a construction site - the vehicles already on the road have right-of-way.	Section 10.3
19	Pedestrians may be held only for very short periods to ensure safety when trucks are leaving or entering BUT you must NOT stop pedestrians in anticipation i.e. at all times the pedestrians have right-of-way on the footpath not the trucks.	Section 10.3

Heading	Requirement	Reference in this TMP
20	Physical barriers to control pedestrian or traffic movements need to be determined by the City's Construction Regulations Unit prior to commencement of work.	N/A
21	The Applicant must obtain a permit from the City's Construction Regulation Unit regarding the placing of any plant/equipment on public ways.	Separate application will be made by the contractor.
22	The Applicant must apply to the City's Building Approvals Unit to organise appropriate approvals for hoarding prior to commencement of works.	Separate application to be made by the contractor
23	The CTMP is for the excavation, demolition and construction of building works, not for road works (if required) associated with the development. Any road works will require the Applicant or the contractor to separately seek approval from the City and/or RMS for consideration. Also, WorkCover requires that Traffic Control Plans must comply with Australian Standards 1742.3 and must be prepared by a Certified Traffic Controller (under RMS regulations).	Section 4
24	Please note that the provision of any information in this CTMP will not exempt the Applicant from correctly fulfilling all other conditions relevant to the development consent for the above site.	Section 4

Table 4.7: Compliance to Sydney Metro Principal Contractor Health and Safety Standard

Heading	Requirement	Reference in this TMP
11.19	a) Traffic Management Plans (TMPs) must be developed by a person that holds the RMS approved Prepare Work Zone Traffic Management Plan certificate of competence.	Appendix D
	b) Where there is a risk of workers from being struck by live traffic, temporary road closures and detours must be considered as the first option to eliminate the hazard of moving traffic.	Section 7
	c) Unless it can be reasonably justified through a risk assessment, temporary traffic signalling devices must be used to control traffic movements as per AS1742.3 and mitigate the risks to workers (including traffic controllers) of being struck by moving traffic.	Section 7
	d) Where the use of traffic controllers is deemed reasonably practicable, traffic controllers must hold an RMS approved Traffic Controller's license (formerly known as the Blue Card – Stop/Slow bat).	Section 7 & 8.4
	e) Unless approved in writing by the PC's Project Director, traffic controllers and workers on the road must be provided with physical protection from the risk of being struck by out-of-control vehicles using preferably road safety barriers compliant to AS3845 accepted by RMS for use on NSW Roads (and compliant with AS 3845), or engineer-certified crash attenuators (e.g. Truck and Trailer Mounted Attenuators) fitted to shadow vehicles.	Chapter 7
	f) Where crash attenuators are used they must be used in accordance with the National Guidelines for the use of Truck and Trailer Mounted Attenuators (TMAs).	N/A
	g) All signage must be installed in accordance with the relevant TCP/TCGS and must be inspected at the frequency specified in the CTMP.	Appendix D
	h) In addition to the minimum required PPE as specified in the section of this Standard, entitled Personal Protective Equipment (PPE), Traffic Controllers must wear high visibility clothing with trousers fitted with double-reflective stripes or reflective boot covers in accordance with Section 8 of AS 4602.	Section 8.4
	i) Sufficient traffic controller workers must be engaged so that the traffic controllers may rotate and have breaks.	Section 8.4 & Appendix D

Heading	Requirement	Reference in this TMP
	j) Traffic controllers working at night must carry illuminated wands to direct traffic.	Section 8.4

Table 4.8: Compliance to City of Sydney Standard Requirements for Preparing a CTMP Report

Heading	Requirement	Reference in this TMP
1	Details of the project including site location, scope of works, general breakdown of activities and hours of operation.	Section 5.1, 8.2 & 8.4
	Surrounding traffic environment showing State, Regional and Local Roads, road network configuration and use, public transport facilities and existing parking restrictions	Section 5.2, 5.4 to 5.6
2	Truck routes to and from the site utilising State and Regional Roads – map of the routes must be provided	Section 8.7
	The largest vehicle that will be used during construction in accordance with the City's CTMP Standard Requirements	Section 8.4
	Frequency of truck movements	Section 8.6
	Demonstrate using swept path diagrams how trucks enter, circulate and exit the site or Works Zone in a forward direction	Appendix C
	Works Zones will need to be considered if trucks cannot enter or exit the site in a forward direction at all times	N/A
	Demonstrate using swept path diagrams how trucks will navigate to and from the site along the nominated truck route	Section 8.7
	Provide a plan showing where vehicles stand to load and unload, where plant will stand, location of storage areas for equipment, materials and waste, location of Works Zones (if required) and location of cranes (if required)	Section 8.5
	The approvals of Works Zones and Road Closures (to install cranes) is a separate process that requires Traffic Committee endorsement	Separate application and TMP for crane works
3	Provide details of the impact of the works on residents, businesses, pedestrians, cyclists, local traffic and emergency services and management of staff parking.	Section 9.8, 9.4, 9.9, 9.1, 8.8
4	Include Swept Path drawings for vehicles entering, circulating and exiting the site and Works Zones in appendices.	Appendix C
-	Include Traffic Control Plans (done by RMS accredited traffic controller) for any diversions or Traffic Management relating to vehicles accessing the site in appendices.	Section 10.3 & Appendix D
-	Include the City's CTMP Standard Requirements. (There are some parts of the requirements that are in red and will need to be completed on a site-specific basis) in appendices.	Table 6 & Appendix A

5 Existing Transport Conditions

5.1 Site Location

The subject site consists of two sites, namely:

- North Site – DP 1255509 Lot 20, bound by Pitt Street, Park Street and Castlereagh Street.
- South Site – DP 1255507 Lot 10, at the corner of Bathurst Street and Pitt Street
- Adits and caverns – DP 1232510 Lot 153.

5.2 Surrounding Road Network

The road network surrounding the subject sites comprises local streets in the CBD road network having a 40 km/h speed zone. These streets are described herein while an aerial photo of the subject sites and the surrounding local road network is shown in Figure 5.1.

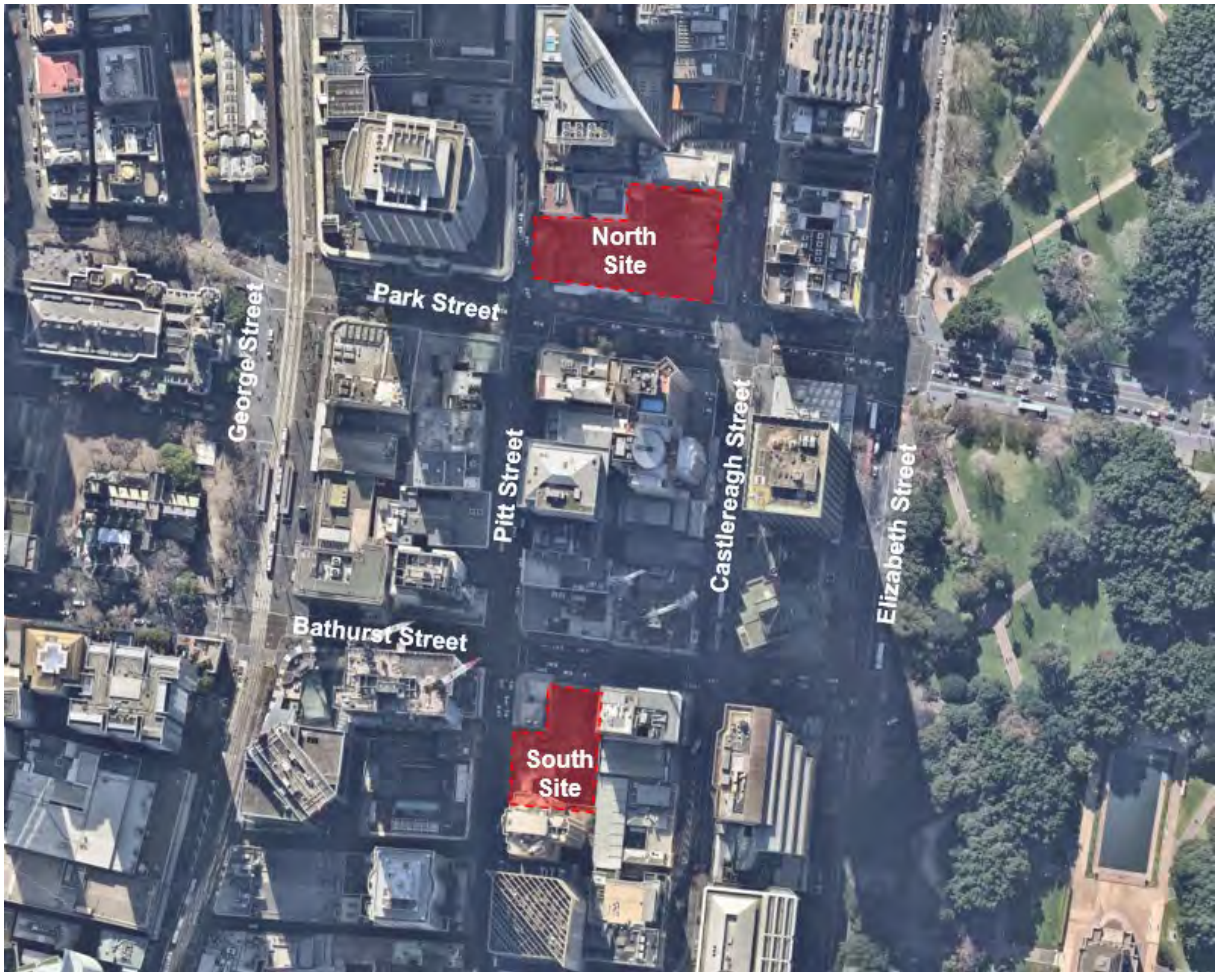
Pitt Street is configured as one-way street in the northbound direction. Near the North Site, Pitt Street has two traffic lanes with restricted off-street parking or loading zones on both sides of the street. Around the South Site, it has four traffic lanes with restricted parking and loading zones provided within kerbside lanes on both sides of the street. It runs in the north-south direction along the western boundary of the North Site and South Site. In the vicinity of the subject sites, marked pedestrian crossings are provided on all approaches at intersections with Pitt Street.

Castlereagh Street operates as a one-way street in the southbound direction. It has four trafficable lanes with two kerbside lanes used for parking and the two middle lanes used for through traffic movements. One of the middle lanes operates as a bus lane. Wide footpaths exist on both sides of the street and marked pedestrian crossings provided on all approaches at junctions near the subject sites. Castlereagh Street forms the eastern boundary to the North Site only.

Park Street is a two-way street with traffic flow in the east-west direction. Near the subject site, there are bus stops located on both sides of Park Street. The street is configured having two eastbound lanes (including a Bus Lane) and three westbound lanes (including two Bus Lanes). Wide footpaths are provided on both sides of the street and marked pedestrian crossings provided at all nearby signalised intersections.

Bathurst Street is a one-way street in the eastbound direction which forms the northern boundary of the South Site It has three traffic lanes and indented restricted parking or loading zones in kerbside lanes on both sides of the street. Wide footpaths are provided on both sides of the street and marked pedestrian crossings provided at all nearby signalised intersections.

Figure 5.1: Subject Site and Surrounding Road Network



Basemap source: Nearmap, viewed online on 03/09/2020

5.3 Traffic Volumes

A summary of the peak hourly traffic volumes on the surrounding road network as documented in the Sydney Metro EIS is provided in Table 5.1.

Table 5.1: Existing Traffic Volumes

Road	Direction	AM Peak Hour (Two-way movements)	PM Peak Hour (Two-way movements)
Castlereagh Street between Park Street and Bathurst Street	Southbound	300	490
Pitt Street between Bathurst Street and Park Street	Northbound	530	480
Park Street between Castlereagh Street and Pitt Street	Eastbound	170	270
	Westbound	610	530
Bathurst Street between Castlereagh Street and Pitt Street	Eastbound	1,110	1,120

Reference: Sydney Metro EIS

5.4 Kerbside Uses

A summary of kerbside uses surrounding the subject sites and time restrictions pertaining to parking and loading on these streets are shown in Figure 5.2.

Figure 5.2: Kerbside Uses

5.5 Pedestrian and Cyclist Facilities

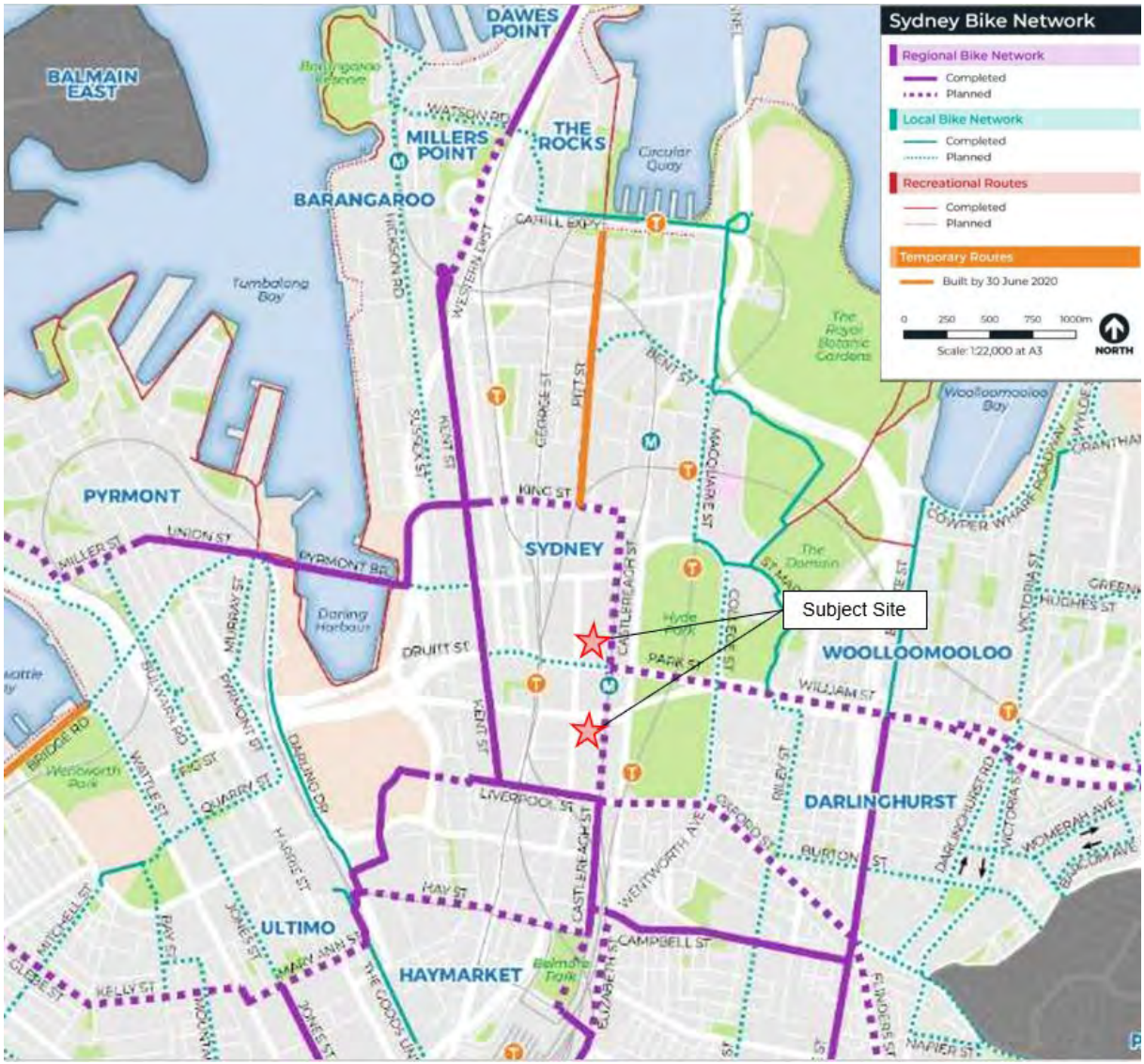
Well established pedestrian paths are provided on both sides of all roads in the vicinity of the subject site. The paths surrounding the subject site provide a good level of connectivity in the area and vary in width between 4m and 5.5m.

Signalised pedestrian crossing facilities are provided at the intersections immediately surrounding the subject sites, respectively, as follows:

- Park Street with Pitt Street
- Park Street with Castlereagh Street, and
- Bathurst Street with Pitt Street.

Surrounding the site, the nearest bicycle routes are located on Castlereagh Street as shown in Figure 5.3. It is noted that City of Sydney has installed six temporary cycleways to prioritise cycling as a transport mode in response to the recent COVID -19 pandemic. However, these routes which are highlighted in orange below, are located some distance away from the subject site (e.g. on Pitt Street, north of King Street).

Figure 5.3: Existing Bicycle Network



Basemap source: City of Sydney, viewed online 30/06/2020

5.6 Public Transport Services

Bus Services

The surrounding local road network is served by a number of bus routes operated by Sydney Buses, linking Sydney CBD with various suburbs across Sydney. Regular services are provided with a frequency of 10–20 minutes for each service during the AM and PM peak periods. Bus routes in the vicinity of the site are shown in Figure 5.3.

A bus lane is provided on Park Street and Castlereagh Street. These bus lanes operate in the southbound direction. The bus lane on Castlereagh Street operates between 6:00am-8:00pm Monday to Friday, and 10:00am-6:00pm on Saturday, Sunday and public holidays.

Train Services

The closest train station is Town Hall Station which has a station exits located on George Street near Park Street and Bathurst Street approximately 150m walking distance from the North Site and South Site. Town Hall Station is the second busiest station following Central Station. However, during the AM commuter peak period (6.00am-9.30am) it has the highest number of patrons exiting the station.

Light Rail

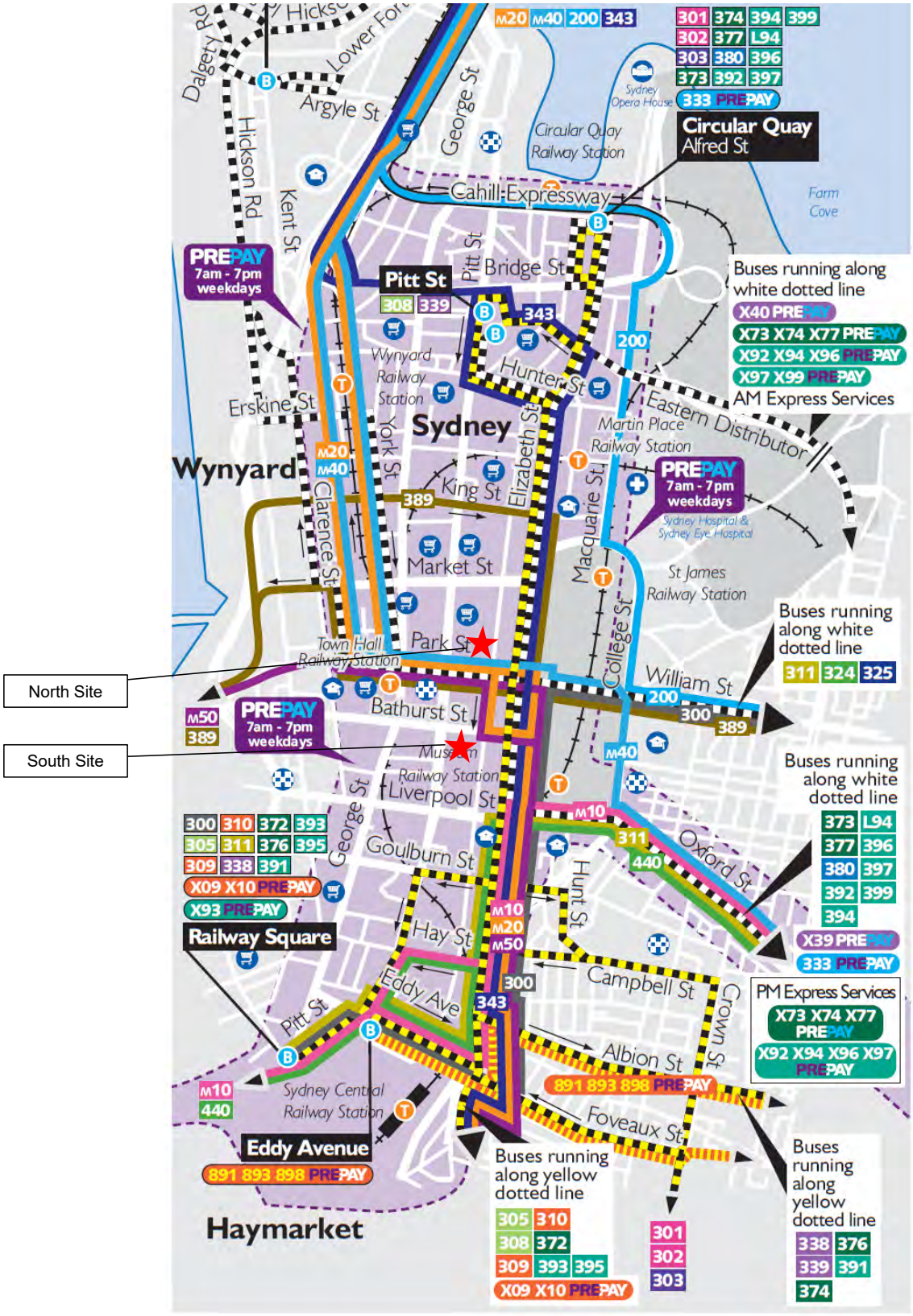
Town Hall (QVB) light rail stop is located on George street between 200-250m walking distance from the project site. this stop is served by the L2 Randwick to Circular Quay and L3 Kingsford lines. Services for each line are provided every 8 minutes in peak periods and 10-12 minutes in off-peak periods. The location of the light rail stop within context of the site is shown in Figure 5.5.

Taxi Services

According to City of Sydney's website, the nearest taxi rank and taxi stop are located on Pitt Street and Bathurst Street, near the South Site. The website states that the taxi rank and taxi stop are located on Pitt Street east side. However, a site inspection was carried out on 30 June 2020 which identified a Taxi Zone to be located on the west side of the street as indicated in Figure 5.6.

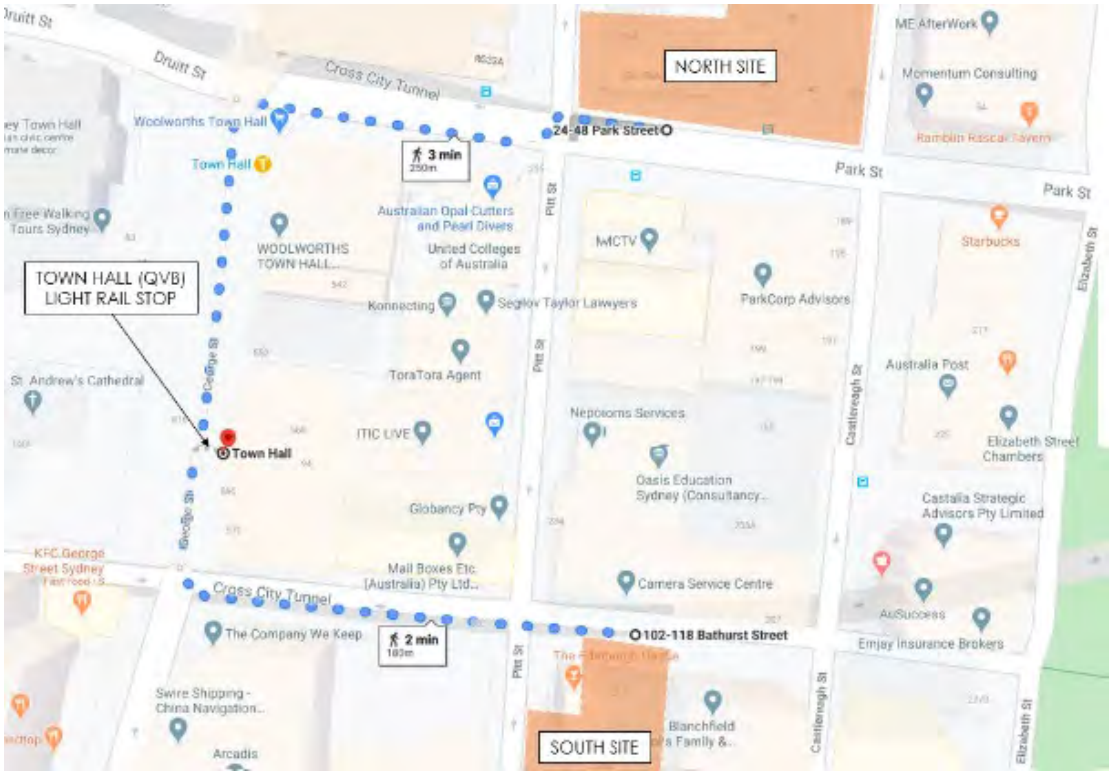
There was no taxi rank and taxi stop observed on the east side of Pitt Street.

Figure 5.4: Existing Bus Network



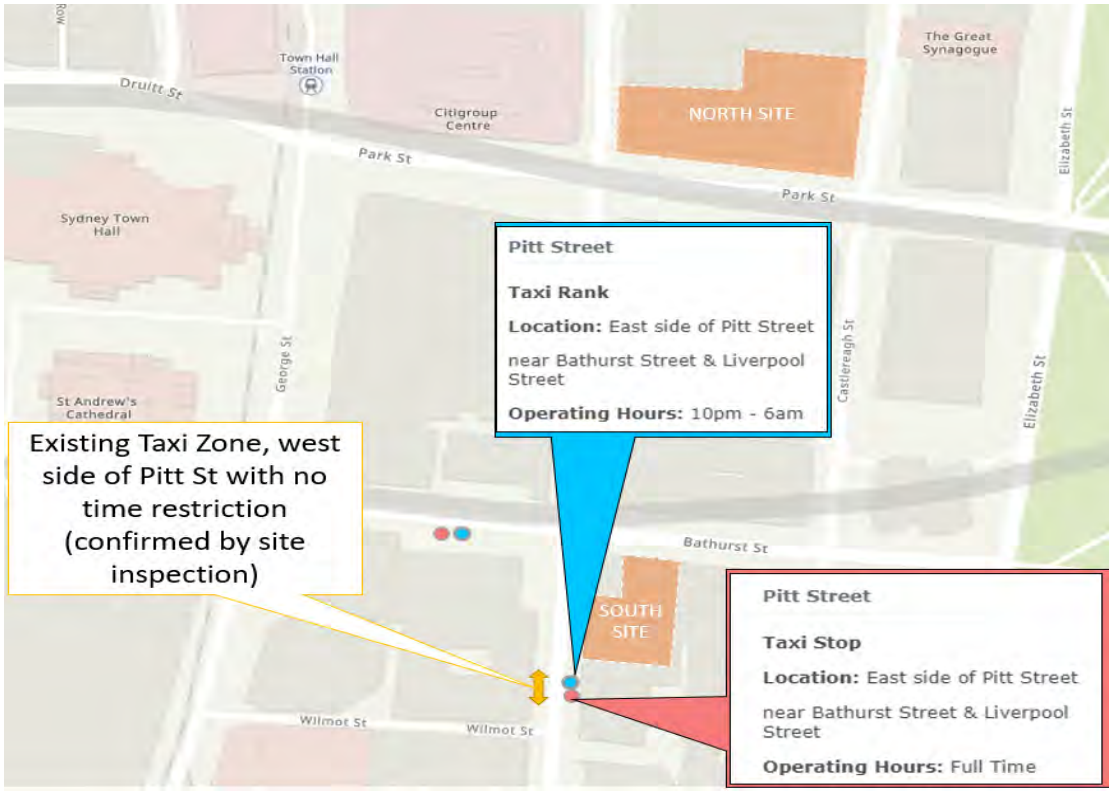
Source: Transport for NSW

Figure 5.5: Light Rail



Basemap Source: Google Maps, viewed online 20/06/2020

Figure 5.6: Existing Taxi Ranks



Source: City of Sydney, date viewed online 30/06/2020

5.7 Concurrent Construction Projects

Major projects under construction that are likely to overlap with the proposed construction works of the Pitt Street SDD project include the following:

- Martin Place Integrated Station Development (ISD) (2019 – December 2023)
- Central Station (2019 – August 2023)
- The Greenland Centre, 115 Bathurst Street (complete in December 2020)
- 116 Bathurst Street
- 201 Elizabeth Street
- 338 Pitt Street.

City of Sydney's online development tracker and NSW Department of Planning, Industry and Environment's Major Projects website have been reviewed for details on construction-related traffic volumes. Table 5.2 presents a summary of the construction traffic generation of the above projects. Construction information for some projects has not been made available online. As a result, construction traffic volumes for these sites have been assumed to be similar to the construction site at 338 Pitt Street on the basis that they are non Sydney Metro construction projects as contained in Table 5.2.

Table 5.2: Estimated Construction Traffic Generation of Concurrent Projects

Concurrent Project	Max. Daily Construction Traffic Estimate	Peak Hourly Construction Traffic Estimate
Martin Place Integrated Station Development	93 veh/day	15 veh/hr on average across construction project duration
Central Station Main Works	80 veh/day	24 veh/hr
The Greenland Centre, 115 Bathurst Street	68 veh/day	Not available. Assume 6 veh/hr based on 11-hr workday.
116 Bathurst Street	Not available. Assume 20 veh/day	Not available. Assume 2 veh/hr
201 Elizabeth Street	Not available. Assume 20 veh/day	Not available. Assume 2 veh/hr
338 Pitt Street	20 veh/day	2 veh/hr

6 Stakeholder Consultation

6.1 During Development of CTMP

Traffic Control Group (TCG) and Traffic and Transport Liaison Group (TTLG)

On 19 May 2020, the Project Team held a meeting with City of Sydney to discuss the proposed work zone arrangements surrounding the project site. City of Sydney advised that the work zone arrangement must avoid the removal of mature trees and, where possible, have minimal impact to other trees. Notably on Pitt Street and Park Street at the North Site, work zones have been modified such that tree removal would not be required; on Pitt Street the work zone has been reduced in length, and on Park Street the work zone has been relocated to the kerbside lane as opposed to with the wide footpath.

The Project Team attended TCG meetings held on 2 June and 16 June 2020 with Sydney Coordination Office (SCO), TfNSW, City of Sydney, Transport management Centre (TMC), Sydney Metro and CPB Contractors to present the proposed work zone and site access arrangements, and construction vehicle volumes.

SCO advised that the Park Street work zone must avoid impacting the existing bus zone located on the north side of Park Street. It is proposed to implement a work zone in place of the existing loading zone and mail zone immediately east of the bus zone.

Once the station structure at the North Site reaches street level, a vehicle crossing into the site will be proposed off Park Street. The driveway would be situated in the bus zone and work zone. To minimise impacts to bus operation, it is proposed to utilise this driveway outside of peak periods, and mainly at night time. This arrangement was discussed at the TCG meeting held on 16 June 2020.

During the TCG meeting on 2 June, the presentation covered the proposed layout of work zones on Castlereagh Street and Pitt Street with regard to the nearby traffic signals. The work zones are proposed to be setback from the intersection stop line to enable sufficient queueing distance at the traffic signals. SIDRA modelling analysis was undertaken to identify the average right-turn queue lengths at both locations which was used to define the commencement of the work zones. The proposed setback of work zones on Castlereagh Street and Pitt Street is discussed in detail in Section 8.4 while the TCG presentation slides have been included in Appendix B. No objections were raised by the TCG on the proposed arrangement.

Meeting minutes for TCG meetings are contained in Appendix B.

The Project Team also attended the TTLG which was held on 24 June 2020 to present the proposed work zone and site access arrangements, and construction vehicle volumes. Comments were received from the SCO, to include the construction information in the revised CTMP, and from Council to advise on impacts to pedestrians. CPB replied that there

would be no impacts to pedestrians, and interfaces between pedestrians and vehicles would be managed by traffic controllers.

Consultation with Australia Post

A work zone is proposed alongside the existing Park Street post boxes, and therefore, it is proposed to relocate the boxes in front of 150 Castlereagh Street. The kerbside space adjacent to the post boxes is currently signposted as *No Stopping Aust. Post Vehicles Excepted.*

A survey of this spaces was undertaken on Thursday 18 June between 6am-6pm to identify the frequency and duration of stay of Australia Post vehicles accessing this space. The results of the survey were provided to Australia Post by email. An analysis of the survey results is presented in Section 9.8 of this report.

Australia Post was consulted by email regarding the proposal to relocate the Pitt Street post boxes to Castlereagh Street. Australia Post has agreed to the proposal and has advised that once Mail Zone signage on Castlereagh Street has been installed Australia Post shall relocate the post boxes.

Email correspondence with Australia Post has been included at the end of Appendix B.

Consultation with Castlereagh Boutique Hotel and Edinburgh Castle Hotel (and any other adjoining properties)

CPB Contractors consulted with the Castlereagh Boutique Hotel and City of Sydney on 22 July 2020 regarding the intention to extend the work zone on Castlereagh Street to the north past the Hotel frontage. The Castlereagh Boutique Hotel and City of Sydney raised no objections to the proposal as per correspondence provided in Appendix B.

CPB Contractors has also considered the needs of the Hotel operation and use of this kerbside space for hotel guest set down and pick up, hotel deliveries and emergency vehicle access. CPB intends to liaise with City of Sydney to remove paid on-street loading/ parking spaces to create a new hotel set down/ pick-up area to the north of the work zone. The location of the work zone extension and removal of paid parking space are further described in Section 8.4.

Consultation with Edinburgh Castle Hotel has occurred regarding the accommodation of deliveries to the hotel. It is proposed to accommodate hotel deliveries within the front portion of the Pitt Street work zone as agreed in the correspondence provided in Appendix B. Such arrangement is discussed in Section 8.4.

CPB will utilise an online booking system for construction vehicle deliveries which will also be used to book in deliveries for the Edinburgh Castle Hotel as required. As agreed by Edinburgh Castle Hotel and CPB, both parties will communicate regularly to coordinate the respective deliveries.

Separately, it is noted that the CSSI Condition of Approval E75 is not triggered and not applicable to this project due to no permanent or operational changes to traffic, parking, pedestrian and cycle accessibility being undertaken as part of the Pitt Street Project and this CTMP.

6.2 Post CTMP Approval

Nil at this stage.

7 Risk Assessment

This section presents a risk assessment that focuses on the safety risk for workers, including site personnel and traffic controllers, working around live traffic. The risk ratings used in this analysis are based on the consequence and likelihood criteria presented in Table 7.1 and risk matrix provided in Table 7.2. These criteria and matrix have been adopted from the Sydney Metro Principal Contractor Health and Safety Standard Appendix C.

Table 7.1: Consequence & Likelihood Criteria

Consequence Table

Rating	C6	C5	C4	C3	C2	C1
Descriptor/Impact Area	Insignificant	Minor	Moderate	Major	Severe	Catastrophic
Health and Safety (Injury and Disease)	Illness, first aid or injury not requiring medical treatment.	Illness or minor injuries requiring medical treatment.	Single recoverable lost time injury or illness, alternate/restricted duties injury, or short-term occupational illness.	1-10 major injuries requiring hospitalisation and numerous days' lost, or medium-term occupational illness.	Single fatality and/or 10-20 major injuries/permanent disabilities/chronic diseases.	Multiple fatalities and/or >20 major injuries/permanent disabilities/chronic diseases.

Likelihood Table

Qualitative Expectation	Quantitative Frequency	SM Probability Analysis	LIKELIHOOD	
Expected to occur frequently during time or activity of project	10 times or more every year	>90%	Almost Certain	L1
Expect to occur occasionally during time or activity of project	1-10 times every year	75-90%	Likely	L2
More likely to occur than not during time of activity occur or project	Once each year	50-75%	Possible	L3
More likely not to occur than occur during time of activity of project	Once every 1 to 10 years	25-50%	Unlikely	L4
Not expected to occur during the time of activity or project	Once every 10 to 100 years	10-25%	Rare	L5
Not expected to ever occur during time of activity or project	Less than once every 100 years	<10%	Alost Unprecedented	L6

Source: SM PS-ST-221 Sydney Metro Principal Contractor Health and Safety Standard v2.0

Table 7.2: Risk Matrix

Risk Rating
A – Very High
B – High
C – Medium
D – Low

Likelihood		Consequence: Insignificant C6	Minor C5	Moderate C4	Major C3	Severe C2	Catastrophic C1
Almost certain	L1	C	B	B	A	A	A
Likely	L2	C	C	B	B	A	A
Possible	L3	C	C	B	B	A	A
Unlikely	L4	C	C	B	B	B	A
Rare	L5	D	C	C	B	B	A
Almost unprecedented	L6	D	D	C	C	B	B

Source: SM PS-ST-221 Sydney Metro Principal Contractor Health and Safety Standard v2.0

The combination of likelihood and severity generates a risk index between A (very high) to D (low). Risk evaluation must be concluded by identifying whether or not action is required based on the risk acceptability criteria presented in Table 7.3. Table 7.4 identifies the risks related to personnel working around live traffic on this project.

Table 7.3: Risk Acceptability Criteria

Class A – Very High	Risks that significantly exceed the risk acceptance threshold and need urgent and immediate attention.
Class B – High	Risks that exceed the risk acceptance threshold and require proactive management.
Class C – Medium	Risks that lie on the risk acceptance threshold and require active monitoring.
Class D – Low	Risks that are below the risk acceptance threshold and do not require active management.

Source: SM PS-ST-221 Sydney Metro Principal Contractor Health and Safety Standard v2.0

Table 7.4: Risk Assessment

Potential Hazards	Consequence	Likelihood	Risk Rating	Controls Implemented	Revised Risk Rating
Traffic on Surrounding Roads					
Traffic controller exposure to road rage/ aggression	Insignificant	Unlikely	C	Traffic controllers will not approach or halt drivers unexpectedly which could have caused drivers to react aggressively due to suddenness. Vehicles already on the road would have the right of way. As such every vehicle leaving the site must wait until a suitable gap in traffic allows them to exit under the direction of qualified traffic and pedestrian controllers.	D
Traffic controller being struck or injured by vehicle running off the road	Major	Rare	B	Surrounding streets are signposted and linemarked as 40km/h (due to the CBD-wide 40km/h speed limit). Site personnel/ traffic controllers will stand on the footpath, clear of roadways and driveways unless when required to manage traffic and pedestrians. Personnel will be instructed to be cautious of their surroundings and report any errant driver behaviour to Police that is observed on surrounding streets. Drivers travelling at speeds above the enforceable speed limit would be breaking the law, and is a matter to be dealt with by the local area command (police) that patrol surrounding streets.	C
Pedestrian being struck by vehicle at the marked crossing at Castlereagh Street – Park Street intersection west approach	Major	Rare	B	By law, pedestrians shall cross the road on a green pedestrian signal only which is when traffic is stopped. Notwithstanding this, to mitigate the risk of a collision between an oncoming vehicle and a pedestrian at the marked crossing, a dedicated traffic controller is proposed at the Park Street work zone to marshal incoming and outgoing heavy vehicles, and shall monitor the work zone with respect to the nearby crossing. In addition, the Park Street work zone is proposed to operate outside of commuter peak periods when the traffic volumes are reduced. The proposed hours of operation for the Park Street work zone are as follows:	C

Potential Hazards	Consequence	Likelihood	Risk Rating	Controls Implemented	Revised Risk Rating
				• 10am to 3pm – Monday to Friday, and 8pm to 5am for special deliveries. • 8am to 1pm – Saturday • No work zone operation on Sunday and public holidays.	
Fatigued Workers (Site Personnel/ Traffic Controllers)					
Occurrence of micro-sleeps therefore more likely for incidents to occur	Insignificant	Unlikely	C	At morning toolbox talks, the Site Supervisor will look out for unrested site personnel and refuse entry to site for employees who are not fit for work. Throughout work shifts, breaks and rest periods will be allocated to site personnel in-line with awards and enterprise agreements required by the Work Health and Safety Act 2011.	C
Less attentive/ reduced concentration therefore more likely to make mistakes	Insignificant	Unlikely	C	Breaks and rest periods will be allocated to site personnel in-line with awards and enterprise agreements required by the Work Health and Safety Act 2011.	C
Prolonged exposure to noise	Insignificant	Unlikely	C	Site personnel will be equipped with PPE, including ear protection (e.g. ear plugs). Also, breaks and rest periods will be allocated to site personnel in-line with awards and enterprise agreements required by the Work Health and Safety Act 2011.	C
Fatigued Drivers					
Less attentive/ reduced concentration therefore more likely to make mistakes	Insignificant	Unlikely	C	Site personnel/ traffic controllers will be equipped with PPE, including high visibility clothing and footwear which will enhance visibility to motorists. Traffic controllers will be equipped with reflective Stop/Slow bat and illuminated wand which would be visible in daytime and night time conditions. Site personnel/ traffic controllers will stand on the footpath, clear of roadways and driveways unless when required to manage traffic and pedestrians. Personnel will be instructed to be cautious of their surroundings and report any errant driver behaviour to Police that is observed on surrounding streets.	C
Occurrence of micro-sleeps therefore more likely for incidents to occur	Insignificant	Unlikely	C	Site personnel/ traffic controllers will stand on the footpath, clear of roadways and driveways unless when required to manage traffic and pedestrians. Personnel will be instructed to be cautious of their surroundings and report any errant driver behaviour to Police that is observed on surrounding streets. Driver fatigue is a matter to be dealt with by the local area command (police) that patrol surrounding streets.	C

Potential Hazards	Consequence	Likelihood	Risk Rating	Controls Implemented	Revised Risk Rating
Night works					
Drivers are slower to react to signage, site personnel/ traffic controllers, plant etc.	Minor	Rare	C	Site personnel/ traffic controllers will be equipped with PPE, including high visibility clothing and footwear which will enhance visibility to motorists. Traffic controllers will be equipped with reflective Stop/Slow bat and illuminated wand which would be visible in daytime and night time conditions. Work areas and site accesses will be well-lit by lighting installed on hoardings and portable light towers. Existing street lighting will be relied upon for lighting of adjacent roads. Surrounding streets are signposted and linemarked as 40km/h (due to the CBD-wide 40km/h speed limit).	D
Lower traffic volumes may lead to higher vehicle speeds on surrounding roads	Major	Rare	B	Surrounding streets are signposted and linemarked as 40km/h (due to the CBD-wide 40km/h speed limit). Site personnel/ traffic controllers will stand on the footpath, clear of roadways and driveways unless when required to manage traffic and pedestrians. Personnel will be instructed to be cautious of their surroundings and report any errant driver behaviour to Police that is observed on surrounding streets. Drivers travelling at speeds above the enforceable speed limit would be breaking the law, and is a matter to be dealt with by the local area command (police) that patrol surrounding streets.	C
Motorists' behaviour on surrounding roads may be impacted by drugs and alcohol	Major	Rare	B	Site personnel/ traffic controllers will stand on the footpath, clear of roadways and driveways unless when required to manage traffic and pedestrians. Personnel will be instructed to be cautious of their surroundings and report any errant driver behaviour to Police that is observed on surrounding streets. Drivers travelling under the influence of drugs and alcohol would be breaking the law, and is a matter to be dealt with by the local area command (police) that patrol surrounding streets.	C
Visibility is reduced for workers, increasing human reaction time if an incident occurs	Insignificant	Unlikely	C	Work areas and site accesses will be well-lit by lighting installed on hoardings and portable light towers. Existing street lighting will be relied upon for lighting of adjacent roads.	D

Potential Hazards	Consequence	Likelihood	Risk Rating	Controls Implemented	Revised Risk Rating
Environmental factors					
Vehicle stopping distance increased on wet roads, reducing recovery opportunity for the driver of an errant vehicle	Moderate	Unlikely	B	Surrounding streets are signposted and linemarked as 40km/h (due to the CBD-wide 40km/h speed limit). It is presumed that surrounding streets have been speed limited appropriately having consideration for various road conditions (dry, wet, day, night etc.). As a general road rule, drivers are also advised to slow down in wet weather conditions.	C
Poor lighting decreases visibility for drivers and workers which makes it harder to identify and react to hazards.	Minor	Rare	C	Site accesses and work areas will be well-lit by lighting installed on hoardings and portable light towers. Existing street lighting will be relied upon for lighting of adjacent roads.	D

In light of the above implemented controls, safety risks for site personnel and traffic controllers working around live traffic are significantly reduced. Without controls, risk rating range between B and C levels (i.e. high to medium). The introduction of controls would reduce risk ratings to between C and D levels (i.e. medium to low).

A shift in risk ratings are achievable due to the implementation of control measures as follows:

- Allocation of breaks and rest periods to site personnel in-line with in-line with awards and enterprise agreements required by the Work Health and Safety Act 2011.
- Provision of PPE, including high visibility clothing and footwear, reflective Slow/ Stop bats, illuminated wands for traffic control, and ear protection.
- Provision of lighting in work areas and at site accesses.
- Presence of Supervisorial oversight of workers who are fatigued and not fit for work.
- Site personnel/ traffic controllers will stand clear of trafficable areas unless when required to manage traffic and pedestrians momentarily.
- Personnel will move cautiously and diligently while working around live traffic, and be aware of atypical driver behaviour. Where errant driver behaviour is observed on surrounding streets, personnel will report to Police who would take action to mitigate errant behaviour.
- Use of stop/ slow to manage site personnel and traffic controller interaction with live traffic, where required.

In-line with Table 7.3, hazards with a D level risk rating are below the risk acceptance threshold and do not require active management while those with a C rating will be actively monitored by the Project Manager and Site Supervisor.

Safety risks for site personnel and traffic controllers working near live traffic would be either mitigated or managed using controls identified in Table 7.4. As addressed by this risk assessment, the use of traffic controllers is reasonably practicable, and thus, temporary traffic signalling devices would not be required.

Site personnel/ traffic controllers will stand on the footpath, clear of roadways and driveways unless when required to manage traffic and pedestrians momentarily. The implementation of controls as per in Table 7.4 would reduce the risk of a worker being struck by an errant vehicle from B to C. These controls would be actively monitored by the Project Manager and Site Supervisor to ensure that safety risks are maintained to a low level using controls required by CPB Safety Essentials.

8 Methodology

8.1 Description

The scope of works comprises construction of the Station Delivery Deed component of the Integrated Station Development at the Pitt Street precinct. The Pitt Street precinct consists of a North Site, South Site, and Adits and Caverns.

Key construction phases of the project would be carried out as described in the Construction and Site Management Plan prepared by CPB. Work would generally follow this sequence:

- Detailed excavation or north site and south site.
- North and South station structure construction.
- Station Platform Structure and Trackway Component Construction.
- North, south and platform station Fitout.
- Interface Contractor Fitout.
- Testing and Commissioning.
- Handover.

8.2 Duration and Staging of Works

Works are to be carried out over a duration of approximately 32 months with a planned start date in December 2020. The timeline for construction works is shown in Table 8.1.

Table 8.1: Staging and Duration

Stage	Description	Start Date	Finish Date	Duration
Stage 1N	North Station construction – B05 to Street Level	Dec 2020	August 2023	2 yr & 8 mo
Stage 1S	South Station construction – B05 to Street Level	Dec 2020	August 2023	2 yr & 8 mo

8.3 Hours of Operation

Activities during the normal works period shall be undertaken during the approved hours:

- 7.00am to 6.00pm – Monday to Friday.
- 8.00am to 1.00pm – Saturday.
- No works on Sunday and public holidays.

Where required, special approval for out of hours works would be sought through application of the relevant permits to allow work outside of the standard construction days and time.

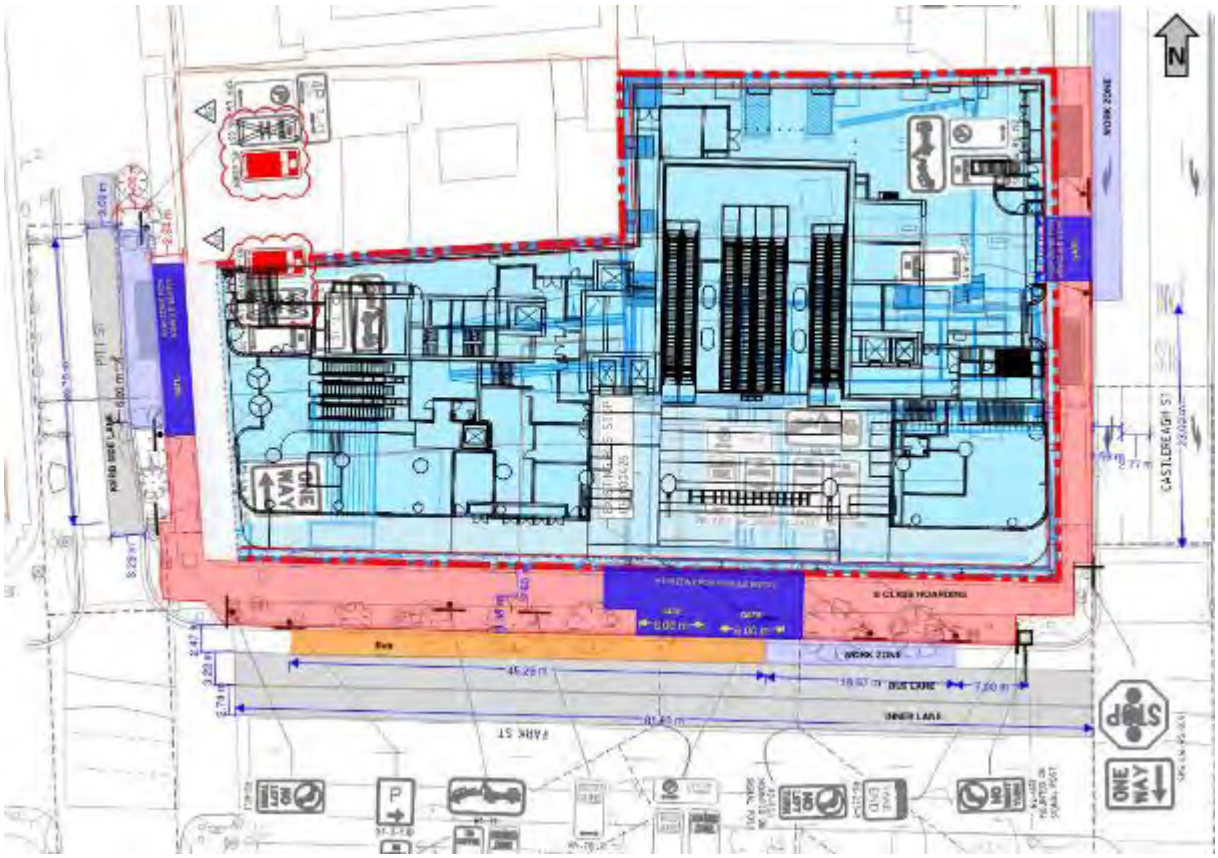
8.4 Work Zones and Site Access

North Site

Work zones are proposed on Pitt Street, Park Street and Castlereagh Street alongside the North Site frontage. A vehicle crossing is proposed off each of these streets into the site, however, driveways would not be in use until the station structure reaches ground level.

The general work zone and site access arrangement at the North Site is shown in Figure 8.1, and street-specific arrangements are explained thereafter.

Figure 8.1: North Site General Arrangement

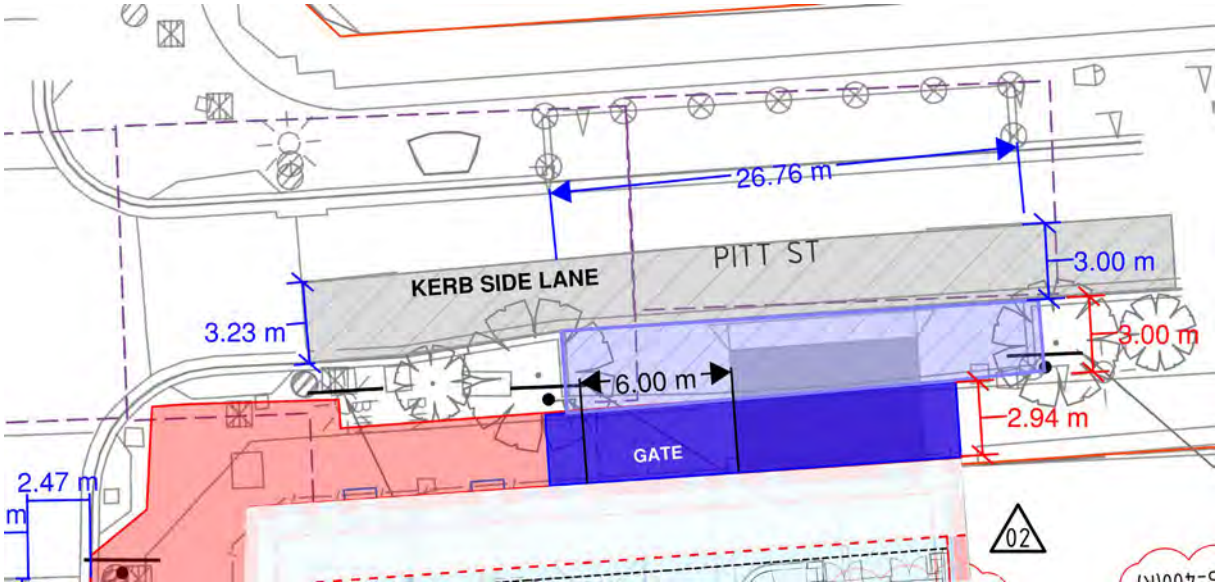


A work zone is proposed on Pitt Street east side, to the north of Park Street. It would be indented and provided off the roadway which would allow for two traffic lanes on Pitt Street to be maintained at all times. The work zone would be situated between the existing trees and would span for a length of 18.4m; tree removal would not be required.

Once the station structure reaches street level, a vehicle crossing would be proposed off Pitt Street into the site. In this later stage of the construction development, the driveway would have a width of 6m.

The proposed arrangement in Pitt Street is shown in Figure 8.2.

Figure 8.2: Pitt Street North

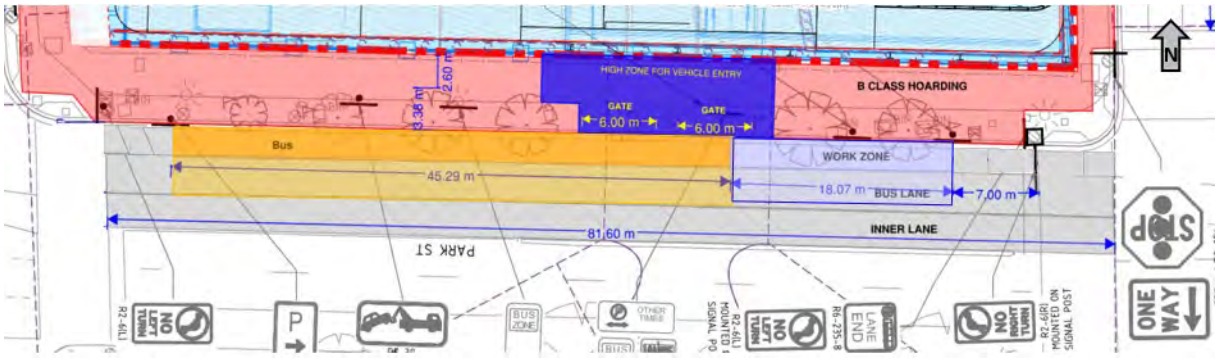


A work zone is proposed on Park Street north side, between Pitt Street and Castlereagh Street. The work zone would extend for a length of 18m in the kerbside lane. It would replace the existing *Loading Zone* and *No Stopping Aust. Post Vehicles Excepted* in the eastern portion of Park Street. The front of the work zone would be set-back 7m from the traffic signals (Park Street-Castlereagh Street).

A vehicle crossing is proposed off Park Street once the station structure reaches street level. The driveway crossing would be 6m wide in two locations on Park Street to enable trucks to enter and exit in a forward direction. Given the recent changes to lane configuration on Park Street, construction vehicles entering/exiting via the driveways would be required to cross one Bus Lane only which is low risk compared to the previous configuration which was two lanes. This arrangement has been discussed with SCO at the TCG meeting held on 16 June 2020 where there were no objections raised.

The proposed work zone and site access arrangement is shown in Figure 8.3.

Figure 8.3: Park Street



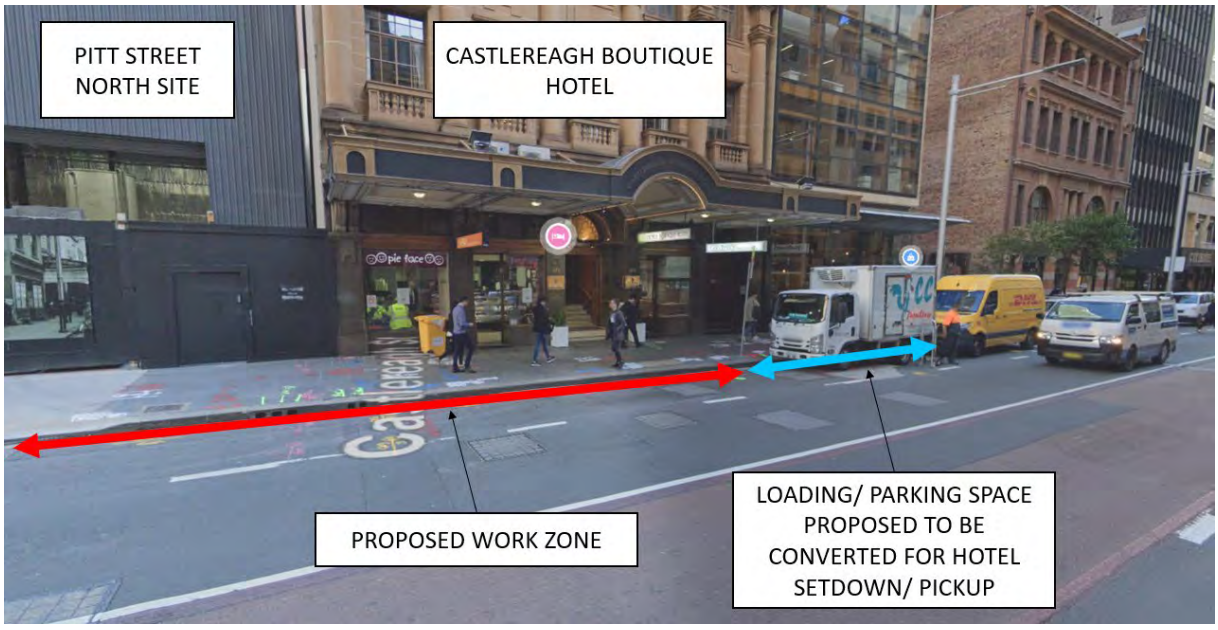
A work zone is proposed on Castlereagh Street west side, north of Park Street. It would be situated in the kerbside lane which is a dedicated right-turn lane onto Park Street. SIDRA intersection modelling of the traffic signals at Park Street with Castlereagh Street in existing conditions has been undertaken to identify an appropriate setback distance for the work zone from the signals. The setback would accommodate traffic queues associated with the right-turn movement. Based on the average traffic queue length in peak periods being 23m, the work zone would be set back from the traffic signals by this distance as a minimum. The length of the work zone would be 30m, of which the northern 10m would be located within the *No Parking* space in front of the Castlereagh Street Boutique Hotel.

The Castlereagh Boutique Hotel is being consulted regarding use of the existing *No Parking* space in front of the hotel site. CPB Contractors consulted with the Castlereagh Boutique Hotel and City of Sydney on 22 July 2020 regarding the intention to extend the work zone on Castlereagh Street to the north past the Hotel frontage. The Castlereagh Boutique Hotel and City of Sydney raised no objections to the proposal as per correspondence provided in Appendix B.

CPB Contractors has also considered the needs of the Hotel operation and use of this kerbside space for hotel guest set down and pick up, hotel deliveries and emergency vehicle access. CPB intends to liaise with City of Sydney to remove paid on-street loading/ parking spaces to create a new hotel set down/ pick-up area to the north of the work zone. As of 14 January 2021, CPB has not yet invoked the use of No parking space in front of the hotel, and will arrange with Council for the acquisition of paid parking spaces when required as agreed in the correspondence.

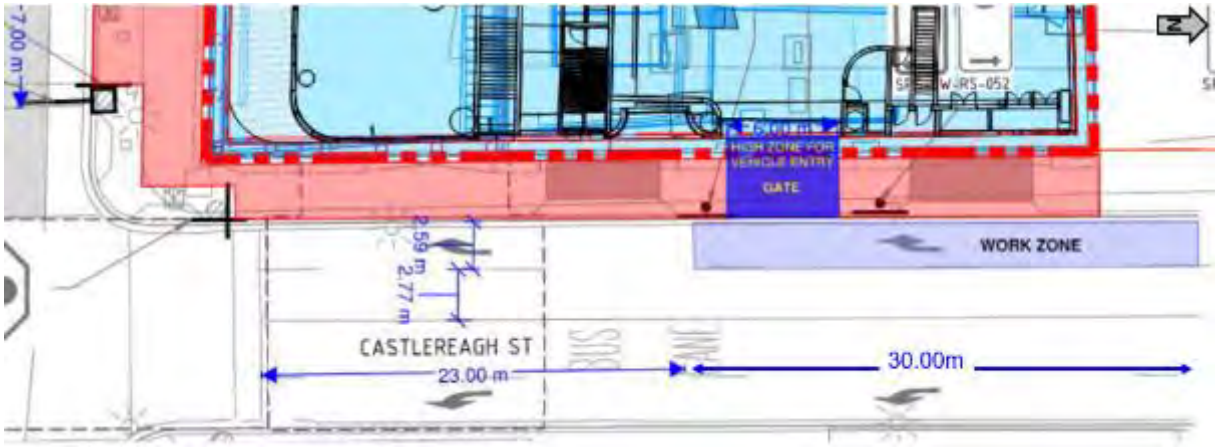
The location of the Castlereagh Boutique Hotel and the proposed kerbside conversions at the site frontage are shown in Figure 8.4

Figure 8.4: Castlereagh Boutique Hotel



Once the station structure reaches street level, a vehicle crossing would be proposed off Castlereagh Street into the site. In this later stage of the construction development, the driveway would have a width of 6m. The proposed arrangement on Castlereagh Street is shown in Figure 8.5.

Figure 8.5: Castlereagh Street

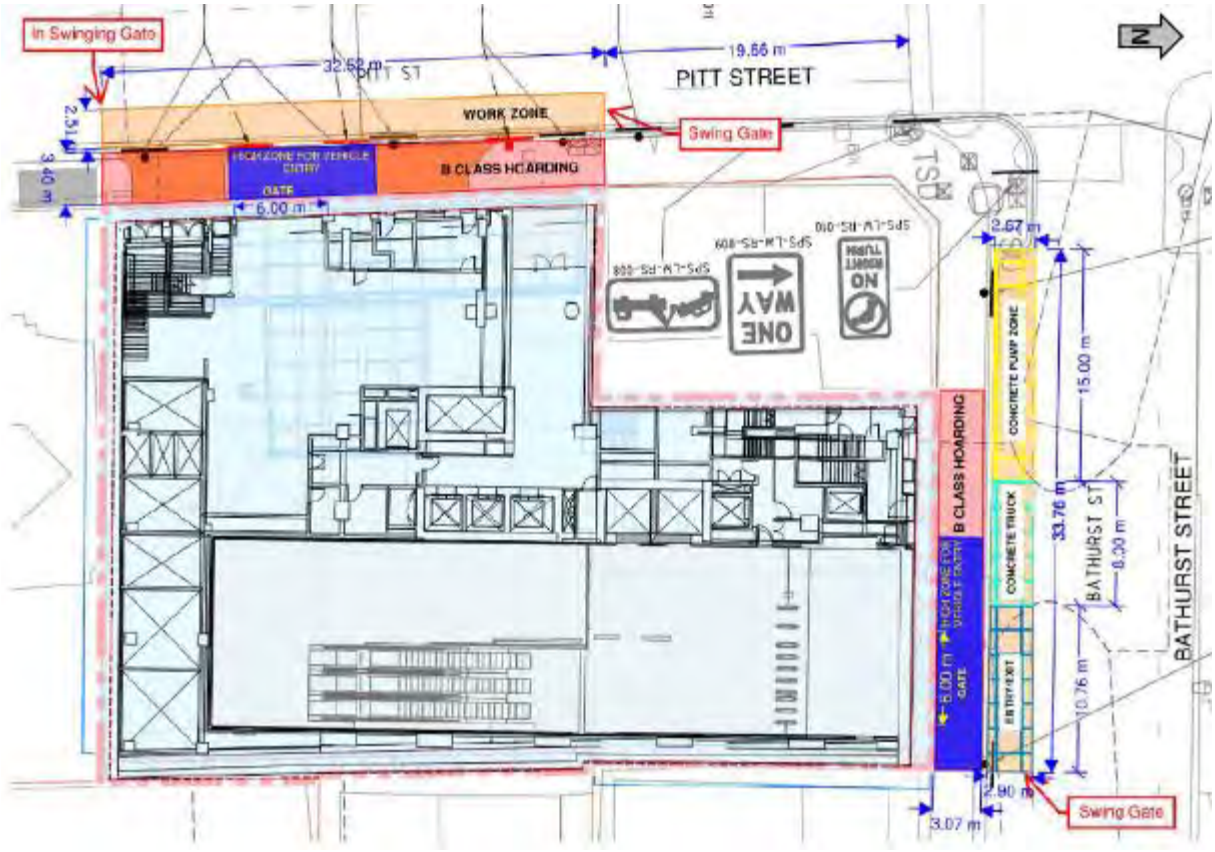


South Site

Work zones are proposed on Pitt Street and Bathurst Street alongside the South Site frontages. A vehicle crossing is proposed off Pitt Street into the site, however, the driveway would not be in use until the station structure reaches ground level. Once the station structure reaches street level, a vehicle crossing would be proposed off Bathurst Street into the site for large escalator deliveries at night, the vehicle crossing is not intended for other use.

The general work zone and site access arrangement at the South Site is shown in Figure 8.6.

Figure 8.6: South Site General Arrangement

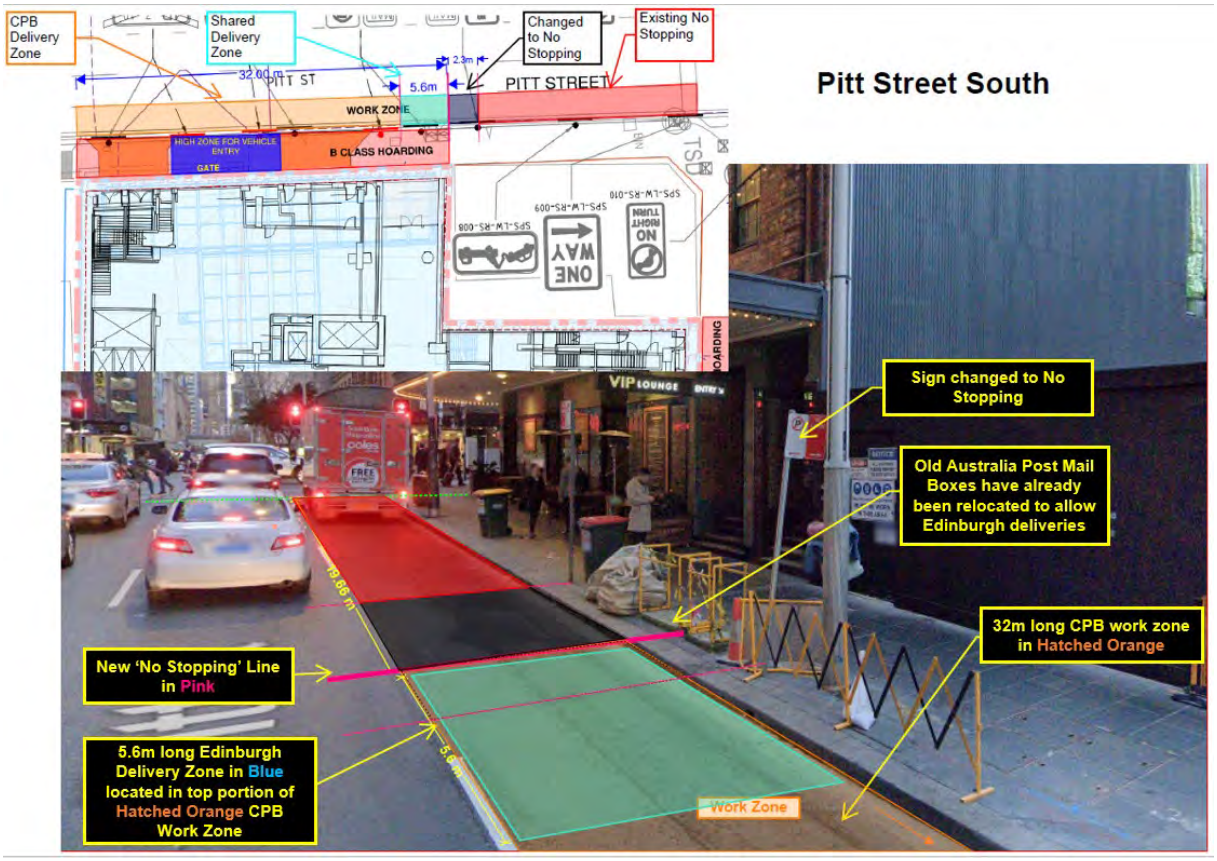


A work zone is proposed on Pitt Street east side, south of Bathurst Street. It would be situated in the kerbside lane which is a dedicated right-turn lane onto Bathurst Street. Like on Castlereagh Street, SIDRA intersection modelling of the traffic signals at Pitt Street with Bathurst Street in existing conditions has been undertaken to identify an appropriate setback distance for the work zone from the signals. Based on the average traffic queue length in peak periods being 18m, the work zone would be set back from the traffic signals by this distance as a minimum. The length of the work zone would be 32.5m.

Consultation with Edinburgh Castle Hotel has occurred regarding the accommodation of deliveries to the hotel. It is proposed to accommodate hotel deliveries within the front portion of the Pitt Street work zone as agreed in the correspondence provided in Appendix B. Such arrangement is illustrated in Figure 8.7.

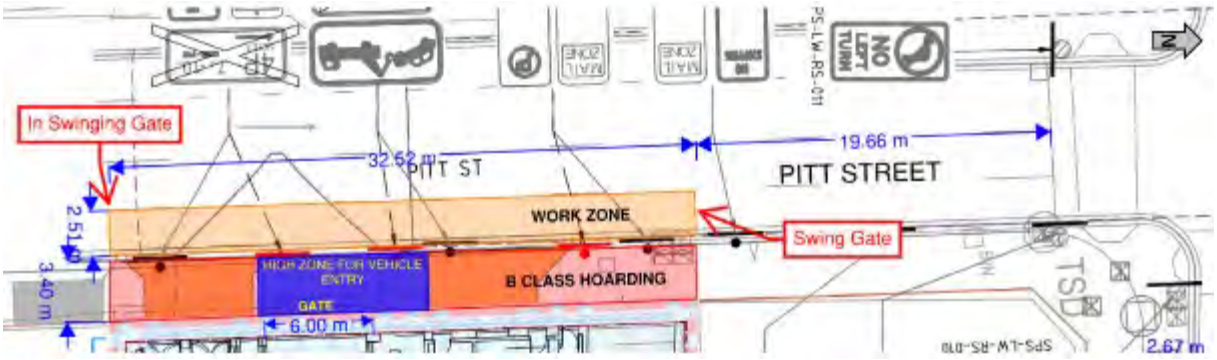
CPB will utilise an online booking system for construction vehicle deliveries which will also be used to book in deliveries for the Edinburgh Castle Hotel as required. As agreed by Edinburgh Castle Hotel and CPB, both parties will communicate regularly to coordinate the respective deliveries.

Figure 8.7: South Site General Arrangement



Once the station structure reaches street level, one vehicle crossing would be proposed off Pitt Street leading to the internal loading dock of the building. The proposed arrangement on Pitt Street south is shown in Figure 8.8.

Figure 8.8: Pitt Street South



To have safe working width for workers in the work zone, line marking of traffic lanes on Pitt Street south of Bathurst Street are proposed to be amended such that the eastern kerbside lane is widened from 2.45m to 2.9m (additional 450mm width) which will accommodate the work zone. All other through traffic lanes are proposed to be reduced in

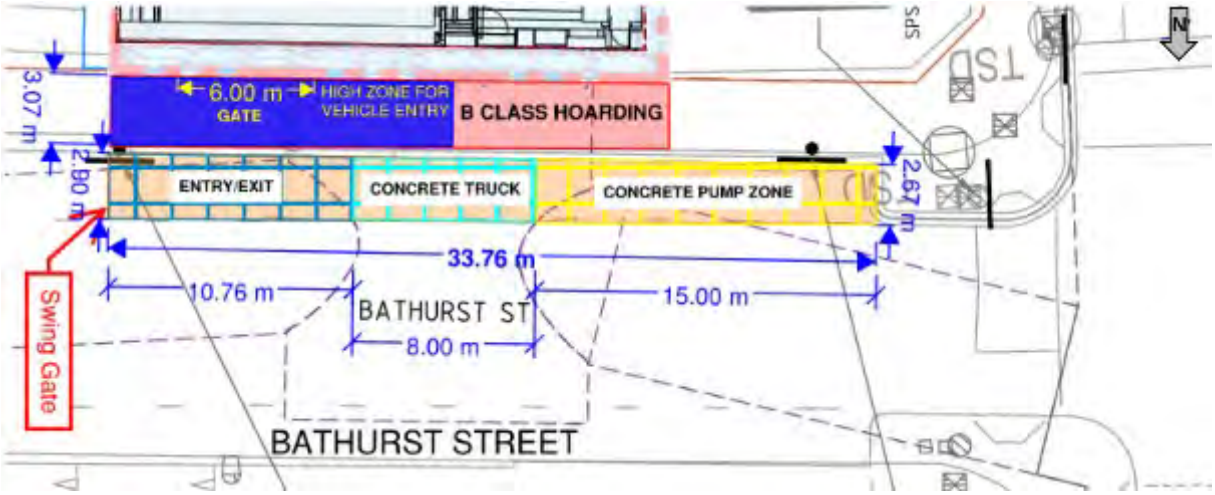
width from 3.2m to 2.7m to accommodate the kerbside lane widening. Conceptual drawings of the proposed changes on Pitt Street South are provided in Appendix F.

It is noted that changes to the line marking changes for Pitt St south are conceptual at this stage and will require further coordination between CPB Contractors and the relevant stakeholders when applying for work zone and hoarding permits.

A work zone is proposed on Bathurst Street south side, west of Pitt Street. The work zone would be located within the indented kerbside lane, and would have a length of 33.8m.

Once the station structure reaches street level, a vehicle crossing would be proposed off Bathurst Street into the site for large escalator deliveries at night time, the vehicle crossing is not intended for other use. The driveway would be 6m in width. The proposed arrangement on Bathurst Street is shown in Figure 8.9

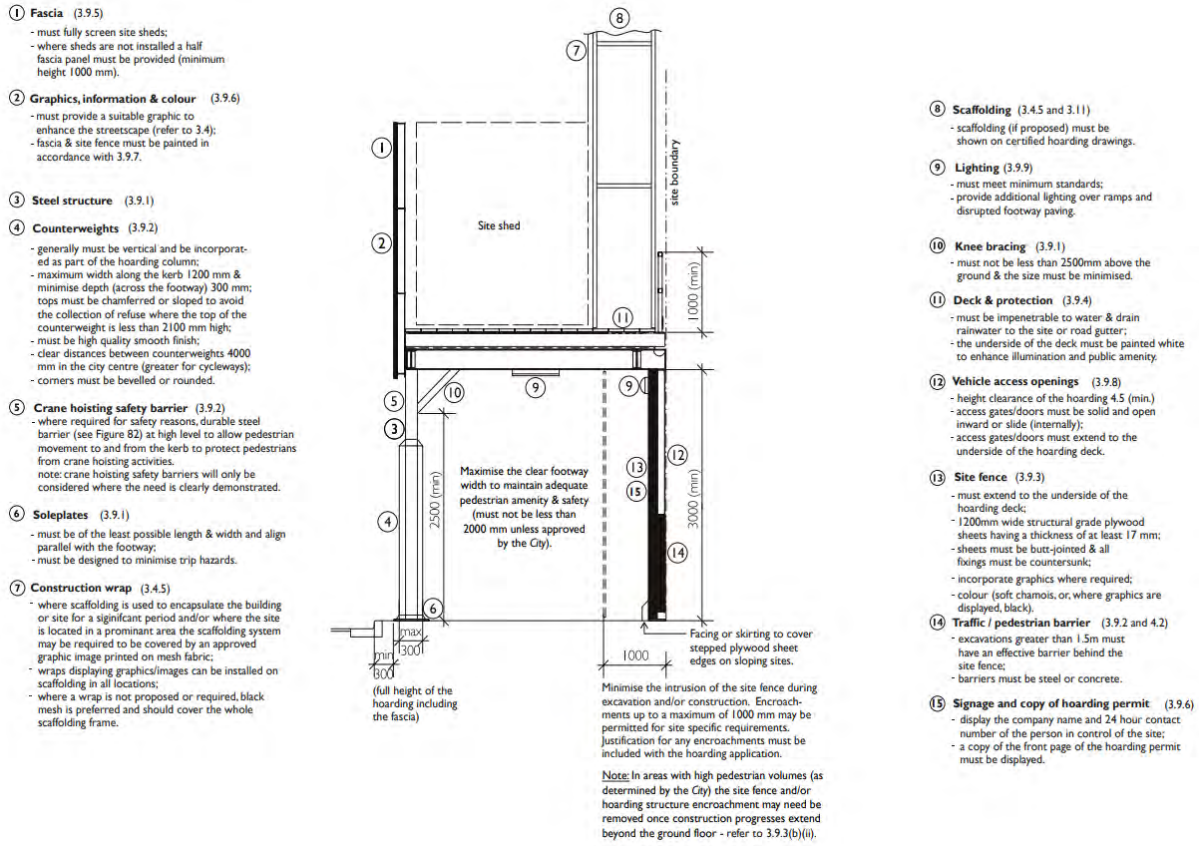
Figure 8.9: Bathurst Street



Similar to Pitt Street South, safe working width for workers in the work zone is required in the work zone on Bathurst Street which is currently 2.1m in width. It is proposed to implement a Class B hoarding configuration with a 2.0m internal clearance and no cantilever on the road. In this scenario, the footpath width would be reduced by approximately 800mm, which increases the width of the kerbside lane up to 2.9m. With this, the 2.0m pedestrian walkway clearance would remain compliant with City of Sydney's Guidelines for Hoardings & Scaffolding as per Figure 8.10. Conceptual drawings of the proposed changes to the footpath and kerbside lane on Bathurst Street are provided in Appendix F.

These plans are conceptual at this stage and will require further coordination between CPB Contractors and the relevant stakeholders when applying for work zone and hoarding permits.

Figure 8.10: Guidelines for B-Class Hoardings



Qualified traffic controllers would be located at each work zone and driveway to assist truck ingress movements while manoeuvring into the work zone (specifically, for shorter work zones such as Pitt Street North) and egress movements by finding suitable gaps in the traffic stream. The road network capacity would not be reduced as the proposed access points are provided close by to signals which would generate sufficient gaps in traffic to enable heavy vehicles to safely exit the work zones and sites.

Once site access driveways are to be in use, visibility towards pedestrians approaching from the both directions would exceed the 55m desirable sight distance requirement as per AS2890.1:2004. Under any circumstance, pedestrian movements on the footpath across the site access would be managed by traffic controllers and concertina gates (as detailed in Section 8.10). No permanent sight obstruction is located within this sight distance. Therefore, it is deemed as satisfactory.

The largest construction vehicle to typically enter the North Site and South Site would be a rigid heavy vehicle with an overall length up to 8.6m. The largest vehicles to access the on-street work zones on a daily basis would be a 12.5m heavy rigid vehicle. Over the duration of the project, the largest vehicle to travel to the sites would be a 19m semi-trailer and 150 to 350-tonne mobile crane. Articulated vehicles (including semi trailers) are not permitted in the CBD unless accepted under a separate approval sought by an Oversize & Over Mass Vehicle Permit Application.

Swept path plans showing these vehicles adequately accessing the sites and work zone are provided in Appendix C.

Work Zone Hours of Operation

As discussed in the TCG meeting, the operation hours of work zones are proposed as follows:

- 6.30am to 6.00pm – Monday to Friday.
- 7.30am to 1.00pm – Saturday.
- No work zone operation on Sunday and public holidays.

An exception to the above is the Park Street work zone which will operate outside of commuter peak periods to minimise impact to buses on Park Street. The proposed hours of operation of the Park Street work zone are as follows:

- 10.00am to 3.00pm – Monday to Friday, and 8.00pm to 5.00am for special deliveries.
- 8.00am to 1.00pm – Saturday.
- No work zone operation on Sunday and public holidays.

The Park Street work zone hours were discussed at the TCG meeting held on 16 June 2020.

8.5 Traffic Staging Plans

Traffic staging plans for the North Site and South Site are shown in Figure 8.11 and Figure 8.12.

Figure 8.11: Stage 1N Indicative Traffic Staging Plan

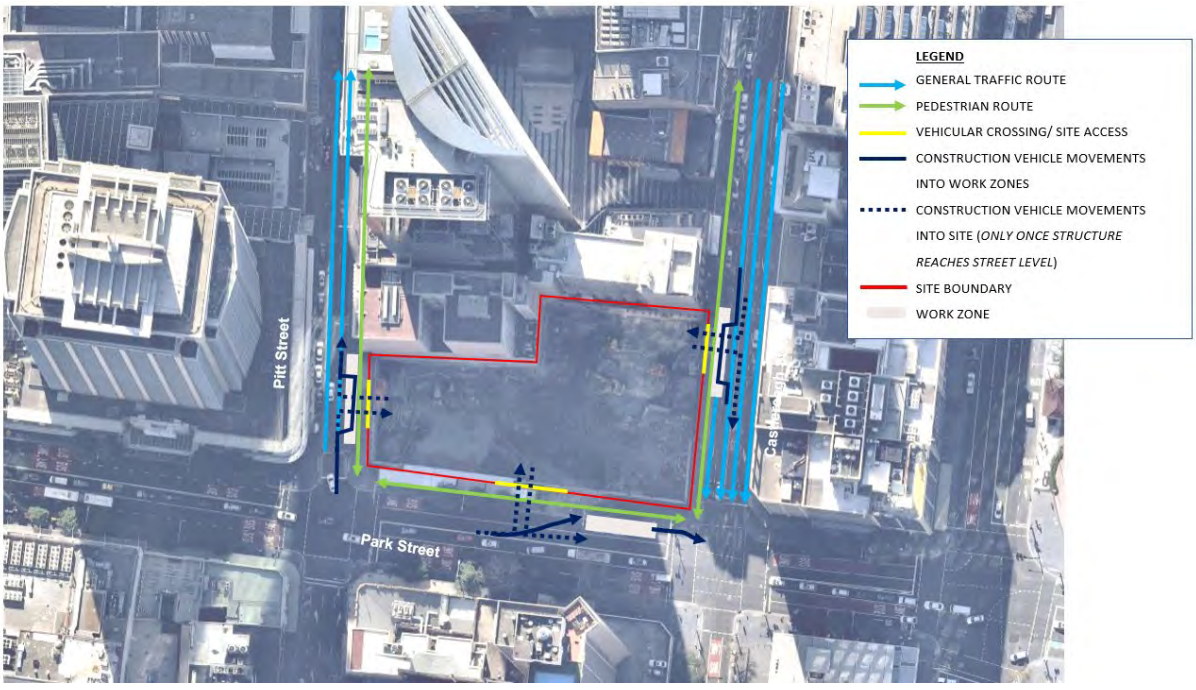
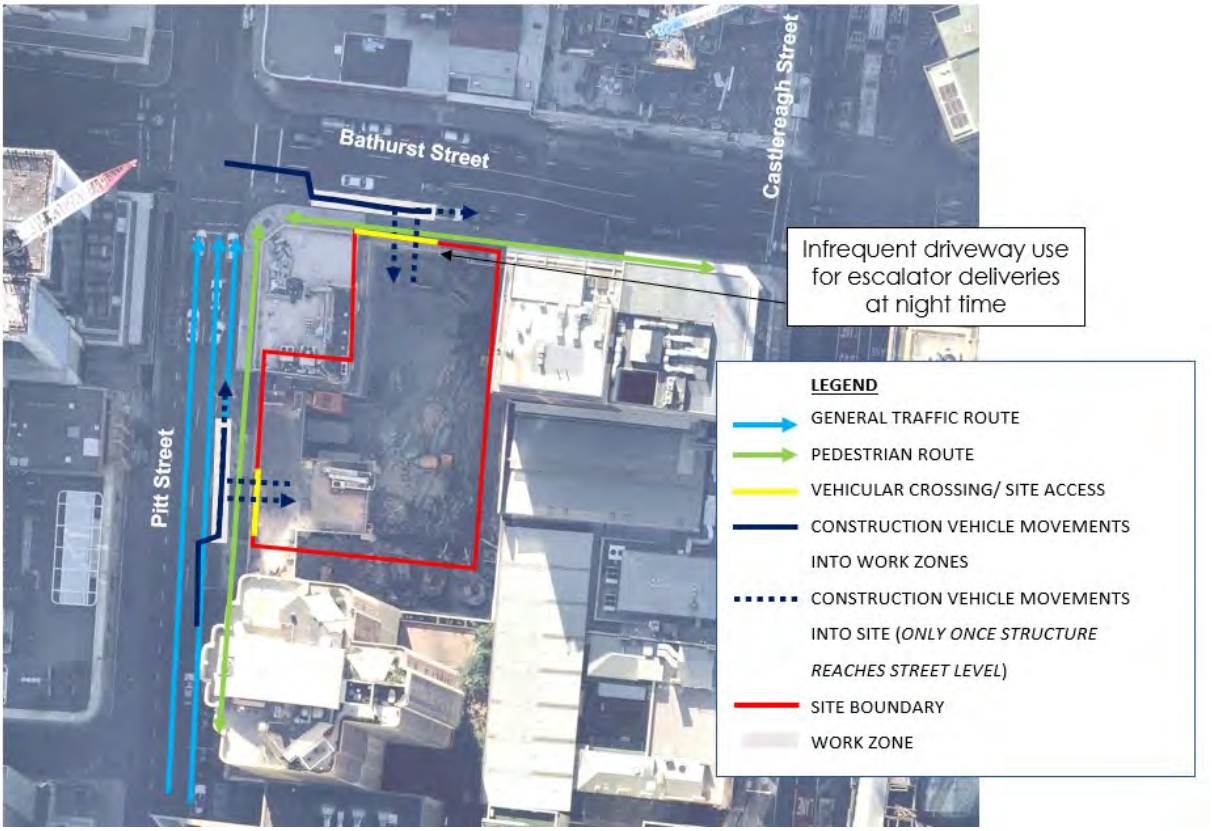


Figure 8.12: Stage 1S Indicative Traffic Staging Plan



8.6 Traffic Generation

Collectively, the North Site and South Site are expected to generate up to 28 heavy vehicles per hour (i.e. 56 heavy vehicle movements per hour). These vehicles will consist of deliveries for the station subcontractors, Interface Contractors and nominated subcontractors. Traffic generation associated with the project during all periods of the day would be distributed to the North Site and South Site as follows:

- North Site:
    - To Pitt Street North – 4 trucks per hour
    - To Castlereagh Street – 6 trucks per hour
    - To Park Street - 6 trucks per hour
- South Site:
    - To Pitt Street South – 8 trucks per hour
    - To Bathurst Street – 4 trucks per hour.

The abovementioned site-generated traffic volumes are based upon the use of all work zones at full capacity. For example, the Pitt Street North work zone can accommodate four

concrete trucks per hour on the basis that the work zone can physically store one truck at a time and each truck requires up to 15 minutes per delivery.

Each truck generates one inbound movement and one outbound movement in the same hour.

The existing operation of the intersections nearby the subject site have been assessed using SIDRA Network version 8.0, a computer-based modelling package which assesses intersection performance under prevailing traffic conditions. SIDRA calculates intersection performance as a level of service (LoS). SIDRA provides analysis of the operating conditions which can be compared to the performance criteria set out in Table 8.2.

Table 8.2: Level of Service Criteria for Intersection Operation

Level of Service	Average Delay (seconds per vehicle)	Traffic Signals, Roundabout	Give Way and Stop Signs
A	Less than 14	good operation	good operation
B	15 to 28	good with acceptable delays and spare capacity	acceptable delays and spare capacity
C	29 to 42	satisfactory	satisfactory, but accident study required
D	43 to 56	operating near capacity	near capacity and accident study required
E	57 to 70	at capacity, at signals, incidents will cause excessive delays, roundabouts require other control mode	at capacity, requires other control mode
F	Greater than 71	unsatisfactory with excessive queuing	unsatisfactory with excessive queuing; requires other control mode

Source: Roads and Maritime Guide to Traffic Generating Developments, 2002

SIDRA modelling for existing conditions and the construction period has been undertaken to assess the impact of additional vehicle trips on the surrounding road network. The key junctions which have been assessed include the signalised intersections of Park Street-Castlereagh Street (near the North Site) and Pitt Street-Bathurst Street (near the South Site).

In order to assess pre-COVID traffic conditions, SIDRA modelling has been based on a combination of the following data:

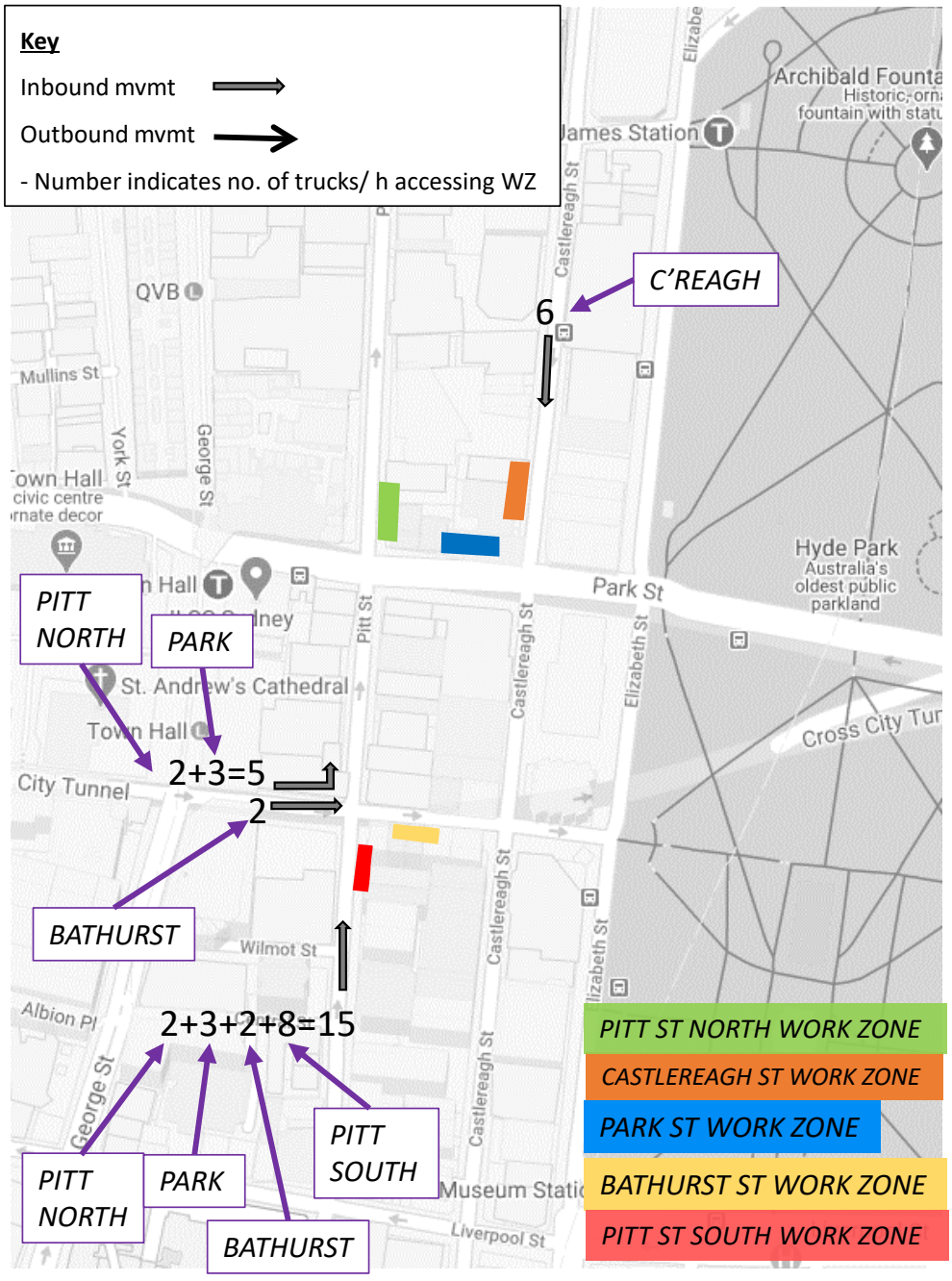
- 2020 SCATS traffic counts to obtain current traffic flows,
- Historic traffic turning movement counts for directional splits of traffic for shared movements obtained from 2018 (since SCATS data does not provide direction splits for shared through and turn lanes),
- Historic pedestrian counts (from 2018), and
- RMS SCATS signal phasing data from March 2020 (pre-COVID).

The weekday peak periods which have been modelled using SIDRA are as follows:

- Park Street-Castlereagh Street: 8:15am to 9:15am / 5pm to 6pm, and
- Pitt Street-Bathurst Street: 8am to 9am / 5pm to 6pm.

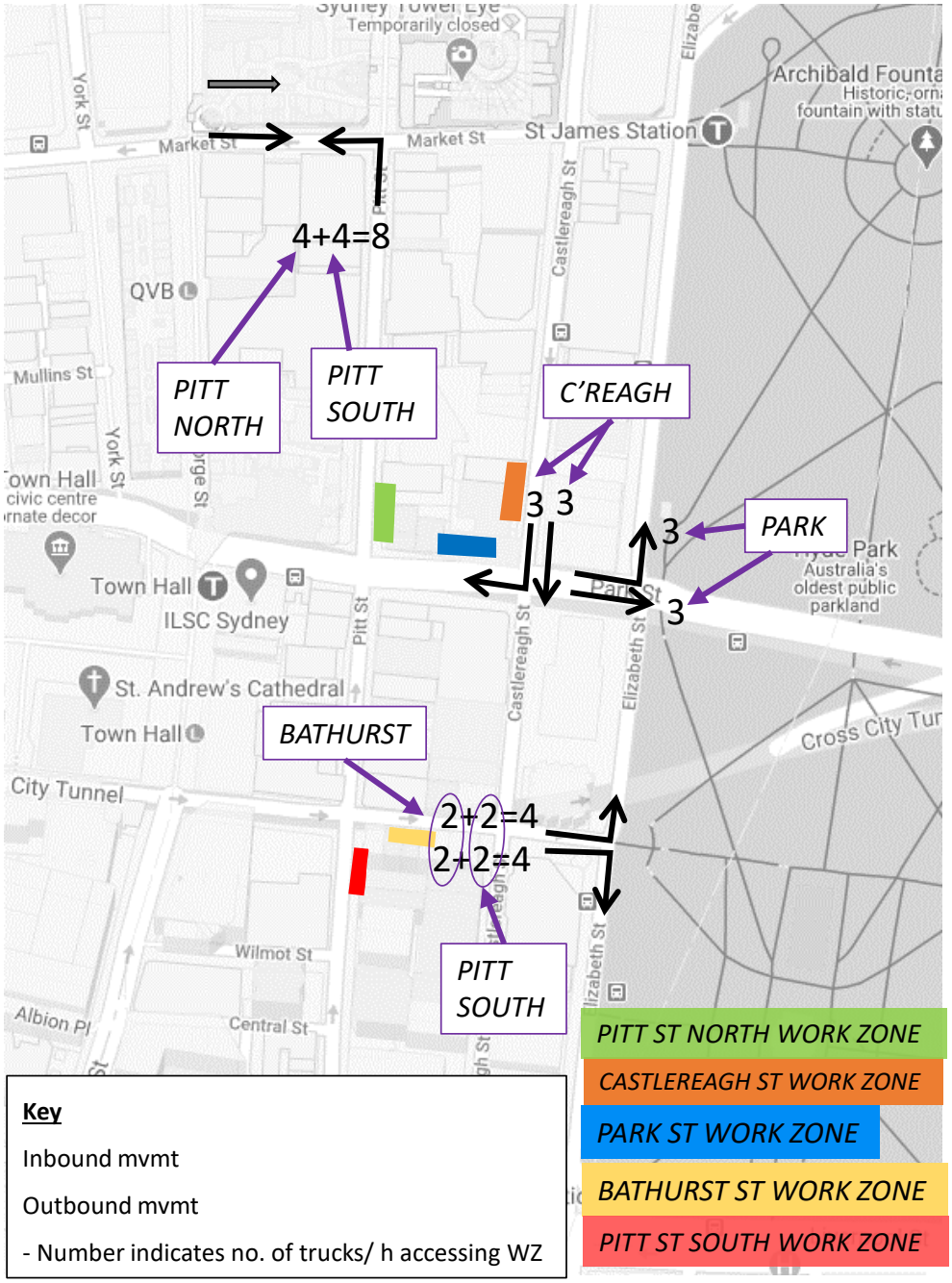
The directional split of construction vehicles travelling to/from each of work zone is illustrated in Figure 8.13 and Figure 8.14, while the SIDRA modelling results are provided in Table 8.3.

Figure 8.13: Inbound Construction Vehicle Movements



Total inbound movements = 28 vehicles per hour

Figure 8.14: Outbound Construction Vehicle Movements



Total outbound movements = 28 vehicles per hour

Table 8.3: SIDRA Modelling Results

Intersection	Existing (Base)				Future (With Construction)			
	Demand Flow	Average Delay (seconds per vehicle)	Level of Service	Degree of Saturation	Demand Flow	Average Delay (seconds per vehicle)	Level of Service	Degree of Saturation
Pitt – Bathurst (signalised)								
AM	1772	18	B	0.44	1794	19	B	0.45
PM	1808	18	B	0.68	1830	19	B	0.73
Park - Castlereagh (signalised)								
AM	1689	25	B	0.66	1700	25	B	0.69
PM	1417	28	B	0.78	1429	28	B	0.79

The key findings of the SIDRA intersection modelling of existing conditions and future conditions are as follows:

- Intersection levels of service would continue to operate at an acceptable level of service B,
- Average delay per vehicle would experience marginal change (+1 second at Pitt Street-Bathurst Street signals), and
- Degree of saturation is relatively similar, with any changes equivalent to or less than 5% (Pitt Street-Bathurst Street PM peak change from 0.68 to 0.73).

Overall, an additional 28 heavy vehicles (56 heavy vehicle movements) distributed throughout the road network would not have a negative impact at the modelled junctions.

To alleviate any other impacts due to construction vehicles in the CBD, CPB proposes to implement a Logistics Management System, such as Voyage Control or similar, to manage truck movements at work zones, and crane and hoist coordination via a booking system. The System provides real-time visibility of vehicle locations when travelling to site and away from site, allows directions to be provided to drivers by the contractor, and permits tracking of vehicle arrival and departure times. This way, CPB is able to manage construction vehicles and activities, and avoid causing negative impacts to the surrounding road network.

The above-mentioned construction traffic volumes would have a reduced long-term impact on the surrounding road network as it would enable the works to be completed in-line with the construction program. Notwithstanding this, the construction traffic volumes could be reduced at any time if required or for specific occasions. Consultation between CPB and key stakeholders, including SCO, TfNSW and Sydney Metro, would be carried out at such times.

8.7 Haulage Routes

Construction vehicle haul routes are provided in accordance with the location of the proposed work zones. Where the proposed haul routes deviate from the haul routes presented in the EIS, justification has been provided herein.

The proposed haul routes utilise the east-west haulage routes as presented in the Sydney Metro EIS. Furthermore, this CTMP includes haulage options to northern and southern areas of the Sydney Metropolitan as well as eastern and western areas, which is required for the supply of materials for the station construction and fit-out. As described herein and as shown in Figure 8.15 to Figure 8.17, the east-west routes would form the primary haul routes and north-south form the secondary haul routes.

Table 8.4: Haul Routes to/from Park Street

	Proposed Route Description	Corresponds with EIS
Arrivals		
Primary Routes	From East: from William Street continue onto Park Street, turn left onto Elizabeth Street, turn right onto Liverpool Street, turn right onto Pitt Street, turn right onto Park Street.	Yes.
	From West: from the Western Distributor, take Bathurst Street exit, head east on Bathurst Street, turn left onto Pitt Street, turn right onto Park Street.	Yes.
Secondary Routes	From North: from the Harbour Bridge continue onto the Western Distributor, take the Bathurst Street exit, turn left onto Bathurst Street, turn left onto Pitt Street, turn right onto Park Street.	Yes. Utilises route from the West, and other major aerial roads (Harbour Bridge and Western Distributor).
	From South: from the Eastern Distributor, exit onto William Street, continue onto Park Street, turn right onto Pitt Street.	Yes. Utilises route from the East, and other major aerial roads (Eastern Distributor and M5 Motorway).
Departures		
Primary Routes	To East and South: head east on Park Street towards William Street, and the Eastern Distributor and M5 Motorway.	Yes.
Secondary Routes	To North: head east on Park Street towards William Street, turn left onto Palmer Street, turn right onto Sir John Young Crescent and continue north onto M1 Motorway.	Partially. The EIS had not considered a work zone on Park Street adjacent to the North Site.
	To West: head east on Park Street, turn left onto Elizabeth Street, turn left onto Market Street and head west onto the Western Distributor.	No. The EIS had not considered a work zone on Park Street adjacent to the North Site.

Table 8.5: Haul Routes to/from Pitt Street North

	Proposed Route Description	Corresponds with EIS
Arrivals		
Primary Routes	From East: from William Street continue onto Park Street, turn right onto Pitt Street.	Partially. Amended from EIS to provide more direct route to Pitt Street work zone, instead of additional distance travelled via Elizabeth Street, Liverpool Street and Pitt Street south.
	From West: from the Western Distributor, take Bathurst Street exit, head east on Bathurst Street, turn left into Pitt Street, and head north on Pitt Street.	Yes.
Secondary Routes	From North: from the Harbour Bridge continue onto the Western Distributor, take the Bathurst Street exit, turn left onto Bathurst Street, turn left onto Pitt Street, and head north on Pitt Street.	Yes. Utilises route from the West, and other major aerial roads (Harbour Bridge and Western Distributor).
	From South: from the Eastern Distributor, exit onto William Street, continue onto Park Street, and turn right onto Pitt Street.	Yes. Utilises route from the East, and other major aerial roads (Eastern Distributor and M5 Motorway). The largest vehicle to enter the Pitt Street work zone would be a 12.5m HRV. A swept path analysis has been undertaken which shows that a HRV would be able to adequately undertake the right-turn movement from Park Street to Pitt Street (which is contained in Appendix C).
Departures		
Primary Routes	To West: head north on Pitt Street, turn left onto Market Street, and head west onto the Western Distributor.	No. The EIS had not considered a work zone on Pitt Street adjacent to the North Site. Since Pitt Street is one-way northbound, the haul route would utilise Market Street as part of the exit route.
Secondary Routes	To North: head north on Pitt Street, turn left onto Market Street, turn right onto Clarence Street, head north onto the Western Distributor and continue towards the Harbour Bridge.	No. The EIS had not considered a work zone on Pitt Street adjacent to the North Site.
	To East and South: head north on Pitt Street, turn left onto Market Street, turn left onto Sussex Street, turn left onto Bathurst Street, turn left onto Elizabeth Street and turn left onto Liverpool Street.	Partially. The EIS haulage routes had not considered a work zone on Pitt Street adjacent to the North Site. Since Pitt Street is one-way northbound, the haul route would utilise Market Street as part of the exit route. The remaining section of the exitr route utilises Bathurst Street, Elizabeth Street and Park Street which is in-line with the EIS.

Table 8.6: Haul Routes to/from Castlereagh Street

	Proposed Route Description	Corresponds with EIS
Arrivals		
Primary Routes	From East and South: from William Street continue onto Park Street, turn right onto College Street, continue onto St James Road, turn right onto Market Street, and turn left onto Castlereagh Street.	Yes.
Secondary Routes	From North: from the Harbour Bridge continue onto Cahill Expressway, turn left onto Macquarie Street, turn right at St James Road, turn left onto Market Street, turn left onto Castlereagh Street and turn right into the site.	Yes.
	From West: from the Western Distributor, take King Street exit, head east on King Street, turn right onto Castlereagh Street and turn right into the site.	No. The EIS had not considered a route from the western direction. Some heavy vehicle contractors will be based in Western Sydney and would travel to the site via the M4 Motorway and Western Distributor.
Departures		
Primary Routes	To West: turn right onto Park Street, head west on Druitt Street and continue west onto the Western Distributor.	Yes. Also, the exit route presented in the EIS indicates a right turn from Castlereagh Street to Park Street. The swept path analysis for this movement is contained in Appendix C.
Secondary Routes	To North: turn left onto Park Street/ William Street, turn left onto Palmer Street, turn right onto Sir John Young Crescent and continue north onto M1 Motorway.	Partially. Utilises Park Street/ William Street. However, the EIS had not considered a route to the northern direction. Some heavy vehicle contractors will be based in North-Western Sydney and would travel from the site via the M2 Motorway.
	To East and South: turn left onto Park Street towards William Street, and the Eastern Distributor and M5 Motorway.	Yes.

Table 8.7: Haul Routes to/from Pitt Street South

	Proposed Route Description	Corresponds with EIS
Arrivals		
Primary Routes	From East and South: from William Street, turn left at Elizabeth Street, turn right at Liverpool Street, and turn right onto Pitt Street.	Yes.
	From West: from the Western Distributor, take the Bathurst Street exit, continue east on Bathurst Street, turn right onto Elizabeth street turn right at Liverpool Street, and turn right onto Pitt Street.	No. The EIS had not considered a route from the western direction. Some heavy vehicle contractors will be based in Western Sydney and would travel to the site via the M4 Motorway and Western Distributor.
Secondary Routes	From North: from the Harbour Bridge continue onto Cahill Expressway, turn left onto Macquarie Street, turn right at St James Road, turn left onto Elizabeth Street, turn right onto Liverpool Street, and turn right onto Pitt Street.	Yes.
Departures		
Primary Routes	To East and South: turn right onto Bathurst Street, turn left onto Elizabeth Street, turn right onto William Street, and exit towards the Eastern Distributor and M5 Motorway.	Yes.
	To West: head north on Pitt Street, turn left onto Park Street/ Druitt Street and continue west onto the Western Distributor.	Yes.
Secondary Routes	To North: turn right onto Bathurst Street, turn left onto Elizabeth Street, turn right onto Park Street/ William Street, turn left onto Palmer Street, turn right onto Sir John Young Crescent and continue north onto M1 Motorway.	Partially. Utilises Park Street/ William Street. However, the EIS had not considered a route to the northern direction. Some heavy vehicle contractors will be based in North-Western Sydney and would travel from the site via the M2 Motorway.

Table 8.8: Haul Routes to/from Bathurst Street

	Proposed Route Description	Corresponds with EIS
Arrivals		
Primary Routes	From East and South: from William Street, turn left at Elizabeth Street, turn right at Liverpool Street, turn right onto Pitt Street, and turn right onto Bathurst Street.	Yes.
	From West: from the Western Distributor, take the Bathurst Street exit, and continue east on Bathurst Street.	Yes.
Secondary Routes	From North: from the Harbour Bridge continue onto Cahill Expressway, turn left onto Macquarie Street, turn right at St James Road, turn left onto Elizabeth Street, turn right onto Liverpool Street, turn right onto Pitt Street, and turn right onto Bathurst Street.	Yes.
Departures		
Primary Routes	To East and South: head east on Bathurst Street, turn left onto Elizabeth Street and turn right onto William Street, and exit towards the Eastern Distributor and M5 Motorway.	Yes.
	To West: head east on Bathurst Street, turn left onto Elizabeth Street, turn left onto Park Street/ Druitt Street and continue west onto the Western Distributor.	Yes.
Secondary Routes	To North: turn left onto Elizabeth Street, turn right onto Park Street/ William Street, turn left onto Palmer Street, turn right onto Sir John Young Crescent and continue north onto M1 Motorway.	Partially. Utilises Park Street/ William Street. However, the EIS had not considered a route to the northern direction. Some heavy vehicle contractors will be based in North-Western Sydney and would travel from the site via the M2 Motorway.

Figure 8.15: Haulage Route – Pitt Street North and Park Street

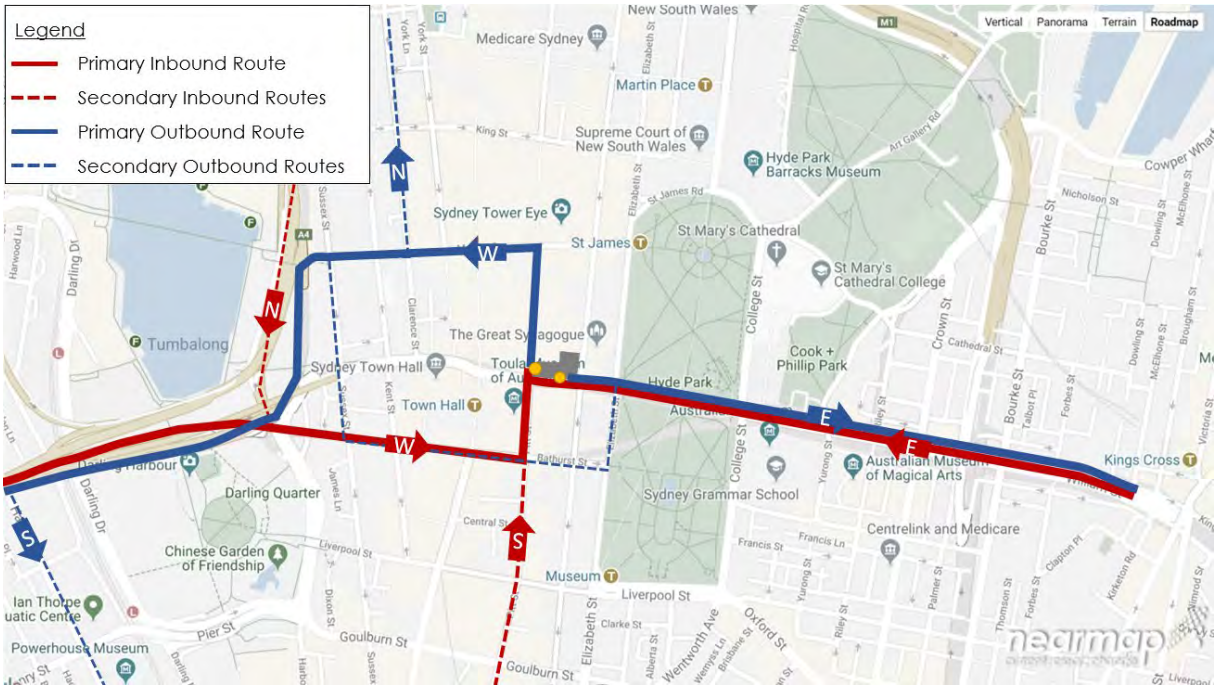


Figure 8.16: Haulage Route – Castlereagh Street

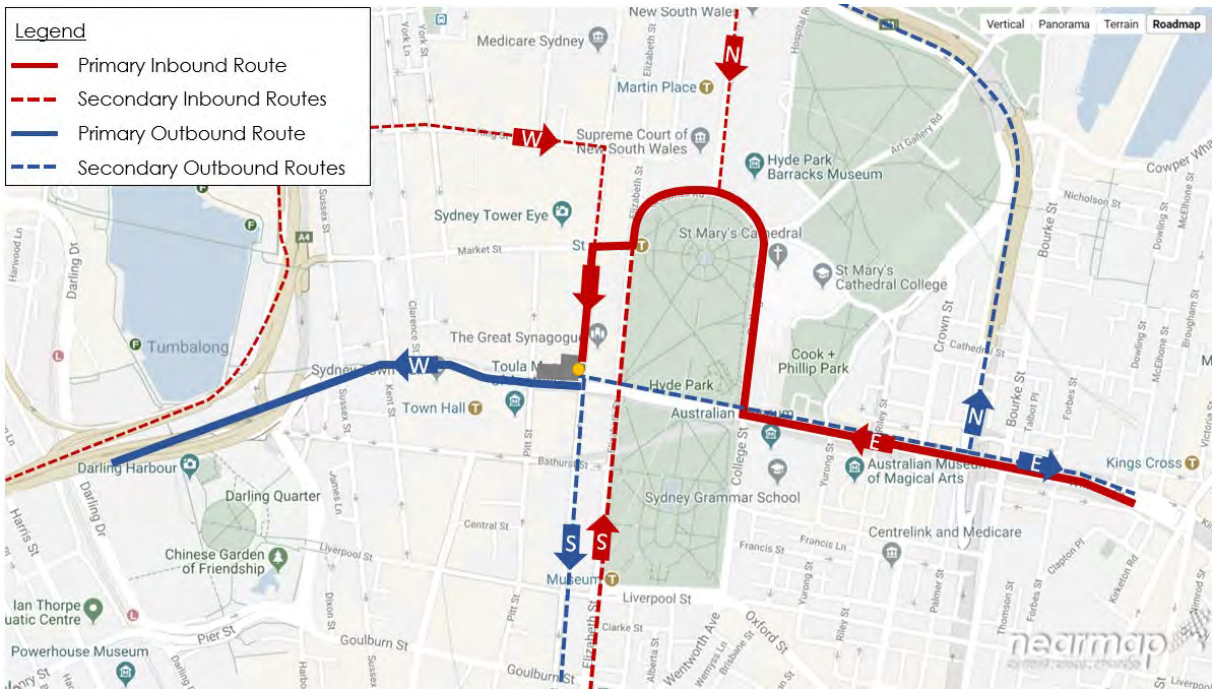
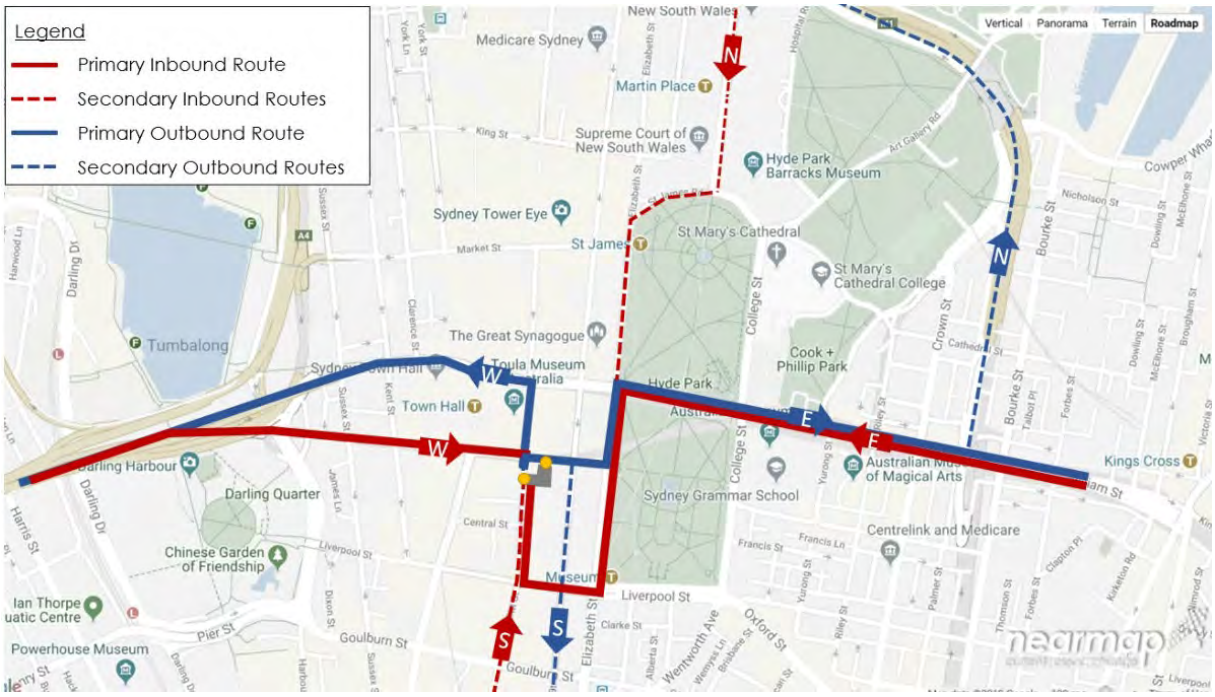


Figure 8.17: Haulage Route – Pitt Street and Bathurst Street



North Site and South Site

The impact caused by abovementioned haulage routes has been assessed quantitatively with SIDRA modelling and is deemed to be minor. Based on amended construction vehicles volumes (as discussed at the end of Section 8.6), the greatest number of heavy vehicles passing through any intersection along these haulage routes would be 20 vehicles which would occur at the intersection of Pitt Street-Bathurst Street. On average, this would equate to one vehicle movement every 3 minutes. As per the EIS, this intersection currently operates at a Level of Service B in the AM and PM peak periods, and an additional vehicle movement every 3 minutes would not impact the intersection level of service as shown by the SIDRA modelling results for the construction period (Table 8.3).

In the EIS, it is mentioned that due to the proximity of the site access to the traffic signals at Park Street the right turn movement from Castlereagh Street into Park Street would be unable to accommodate construction vehicles. Previously, the EIS had considered heavy vehicles exiting the site by turning right out of the site to Castlereagh Street. However, it is proposed that heavy vehicles are to use the work zone in the kerbside located at the site frontage on Castlereagh Street. A swept path analysis has been undertaken to assess this turning movement which illustrates that a 12.5m heavy rigid truck would be able to adequately undertake this turn. The swept path is shown in Figure 8.18 and Appendix C.

Figure 8.18: Castlereagh Street to Park Street Swept Path

It is noted that the roads travelled have no weight restrictions. CPB Contractors would consult with TfNSW and SCO regarding the use of any weight restricted road by heavy vehicles where required to be used.

8.8 Traffic Managements

Truck movements to and from the subject site would be scheduled to minimise traffic disruption on the surrounding road network. This would comprise the following measures:

- Heavy vehicles equipped with systems to improve vehicle safety, visibility and the detection of vulnerable road users.
- Oversized and/or over-mass vehicles would be transported to/from the site in strict accordance with Roads and Maritime guidelines and City of Sydney requirements, subject to one-off approval, to minimise traffic disruption during normal business hours. Articulated vehicles (including semi trailers) are not permitted in the CBD unless accepted under a separate approval sought by an Oversize & Over Mass Vehicle Permit Application. This Application would be submitted via the National Heavy Vehicle Regulator (NHVR) Portal < https://www.nhvr.gov.au/about-us/nhvr-portal > prior to the proposed start date of works.
- Haulage routes would be designated and communicated to all truck drivers to ensure truck movements to/from the site are as efficient as possible.
- The loading and unloading of trucks would be planned to ensure each individual truck haulage capacity is fully utilised reducing the number of truck movements.
- Where possible, reduce trucking during AM and PM network peak periods.
- CPB Contractors would implement a Logistics Management System, such as Voyage Control or similar, to manage work zones, and crane and hoist coordination via a booking system. The System provides real-time visibility of vehicle locations when travelling to site and away from site, allows directions to be provided to drivers by the contractor, and permits tracking of vehicle arrival and departure times. This way, CPB is able to manage construction vehicles and activities, and avoid causing negative impacts to the surrounding road network.

8.9 On-site Parking

Vehicles associated with the subject site must not park in any on-street parking spaces. On-site parking would not be made available for employees working on the project. Staff would be encouraged to use public transport when travelling to/from the site, hence minimising traffic impacts on the surrounding road network.

All vehicles associated with the site would be parked wholly within the site in designated off-street parking areas.

8.10 Pedestrian and Cyclist Management

B-class hoarding would be erected over the footpath on Pitt Street, Park Street, Castlereagh Street and Bathurst Street to provide overhead protection to pedestrians and maintain pedestrian thoroughfare during the construction period. Details relating to B-class hoarding installation would be provided in a separate application and CTMP by CPB. Relevant permits required for hoarding installation to be undertaken would be sought prior to any works taking place.

Pedestrian access would be maintained along all footpaths surrounding the subject sites. Qualified traffic controllers with approved clothing would be in place to manage and control pedestrian movements. Concertina gates would be used to manage pedestrian movements at the vehicular crossing.

Pedestrian concertina gates would extend across the footpath on both sides of the vehicular crossing to temporarily contain pedestrians when the vehicular access is in use. When the vehicular crossing is not in use the pedestrian concertina gates would be opened and pedestrian activity along the footpath would be available.

Traffic controllers would not stop pedestrians in anticipation. Pedestrians have the right-of-way at all times. Pedestrians may be held only for short periods by the pedestrian concertina gate to ensure safety when trucks are entering and leaving the site.

Cyclists travelling on surrounding streets would not be affected by the construction works. Cyclists would be required to follow the traffic controller's directions as are other road users.

8.11 Dilapidation Survey

A dilapidation survey of the surrounding infrastructure would be undertaken by the Project Team at the commencement and completion of each stage to distinguish a relevant baseline. Detailed photographic records of the following areas would be noted to identify existing defects prior to works to assist in identifying damage possibly related to the works:

- Footpaths along Pitt Street, Park Sstreet, Castlereagh Street and Bathurst Street surrounding the subject site where Class B hoardings are to be erected.
- Section of the roadway on Pitt Street and Castlereagh Street extending approximately 30m from either side of the nominated access points of both sites for heavy vehicles.

Copies of the Road Dilapidation Report would be provided to City of Sydney within three weeks of completing the surveys and no later than one month before the use of local roads by heavy vehicles.

If damage to roads occurs as a result of construction activities and haulage operations, the Project Team would either (at the landowner's discretion):

- compensate the landowner for the damage caused. The amount of compensation may be agreed with the landowner, or
- rectify the damage so as to restore the road to at least the condition it was before construction works commenced as identified in the Road Dilapidation Report.

Dilapidation reports have been completed and submitted to City of Sydney as per correspondence contained in Appendix B.

8.12 COVID-19

All site staff are practising social distancing. Workers are washing and sanitising hands regularly.

In-line with social distancing measures to minimise the spread of COVID-19, traffic controllers would monitor and advise pedestrians to social distance when being held for a short period of time, control measured will be monitored on a regular basis and adjusted in the event that government regulations change, the necessary changes will be made.

9 Assessment of Impacts

Impacts due to construction works have been assessed in the following hierarchy of access in-line with the CTMP Framework set out by Sydney Metro:

- Incidents & emergency services access
- Special events
- Unplanned events
- Pedestrians and cyclists
- Public transport – buses
- Service vehicles – loading zone
- Mail zones
- Coaches – N/A
- Taxis – N/A
- Kiss and Ride – N/A
- Private cars (Shoppers/short stay, commuters) – on-street parking.

9.1 Impacts to Incidents and Emergency Service Access

An Emergency Response Plan is being developed by CPB Contractors which would incorporate standard operating procedures for managing incidents and access for emergency services.

In the event of a traffic and transport related incident the primary point of contact for incident management is the Transport Management Centre. The Sydney Coordination Office would also be informed of the incident.

Access to the subject site and neighbouring sites by emergency vehicles would not be affected by the works as the road and footpath frontage would be unaffected. Emergency protocols on the site would include a requirement for suitably accredited site personnel to assist with emergency access from the street.

Consequently, any potential impacts on emergency access would be effectively managed throughout the works.

Liaison shall be maintained with the police and emergency services agencies throughout construction and a 24-hour contact would be made available for 'out of hours' emergencies and access.

CPB Contractors would assist with emergency access on surrounding streets as part of the emergency protocols on-site.

Thus, there would be no adverse impacts on the provision of existing emergency vehicle access to other neighbouring properties as a result of the proposed construction activities.

A fortnightly TCG meeting is held with SCO and Emergency Services personnel to discuss upcoming major construction work and traffic changes as part of the Sydney Metro project. CPB Contractors would liaise with SCO and other key stakeholders should any works involve lane/road closures and/or intersection changes.

9.2 Impacts to Special Events

Major special events that would be held in Sydney CBD in proximity to the construction works include, but are not limited, to those provided in Table 9.1. Most of the events in Table 9.1 occur annually, therefore, the dates and affected areas associated with each event are assumed to be similar in successive years (up to the completion of construction works in August 2023).

Table 9.1: Planned Special Events Surrounding the Subject Site

Month	Event	Affected Streets Surrounding the Subject Site
Thursday 25 April	Anzac Day Parade	Bent Street, Bligh Street, Castlereagh Street, Elizabeth Street, Hunter Street, King Street
Sunday in May	Mothers' Day Classic	Macquarie Street, College Street, Mrs Macquarie Road, The Royal Botanic Garden
May/June	Vivid Sydney	Sydney CBD, Circular Quay
July	Reserve Forces Day	Macquarie Street
Sunday in September	Sydney Running Festival	Bent Street, Hunter Street, Phillip Street, Macquarie Street
Sunday in October	Sydney Spring Cycle	Cahill Expressway
Sunday in November	Bloody Long Walk	Macquarie Street
December / January	Sydney New Years Eve	Sydney CBD
January	Australia Day	Circular Quay
February/ March	Chinese New Year Festival	Circular Quay, Haymarket

At the time of preparation of this CTMP, COVID-19 social distancing measures have been enforced by the NSW Government and are expected to remain in place for at least the next few months. As has been the case in 2020 thus far, community gatherings and special events have been cancelled. On this basis, it is expected that many, if not all, of the abovementioned special events during this period would be cancelled. Such measures may also impact forthcoming special events.

It is considered that some restrictions may be imposed on site access and work zone arrangements during future special events once restrictions are eased. This will be evaluated at the beginning of 2021 or once special events are permitted to recommence. CPB Contractors will work closely with SCO, TfNSW and City of Sydney to determine the necessary agreed plan during special events.

In the case that all events would go ahead as they did in 2019, the below analysis has been prepared.

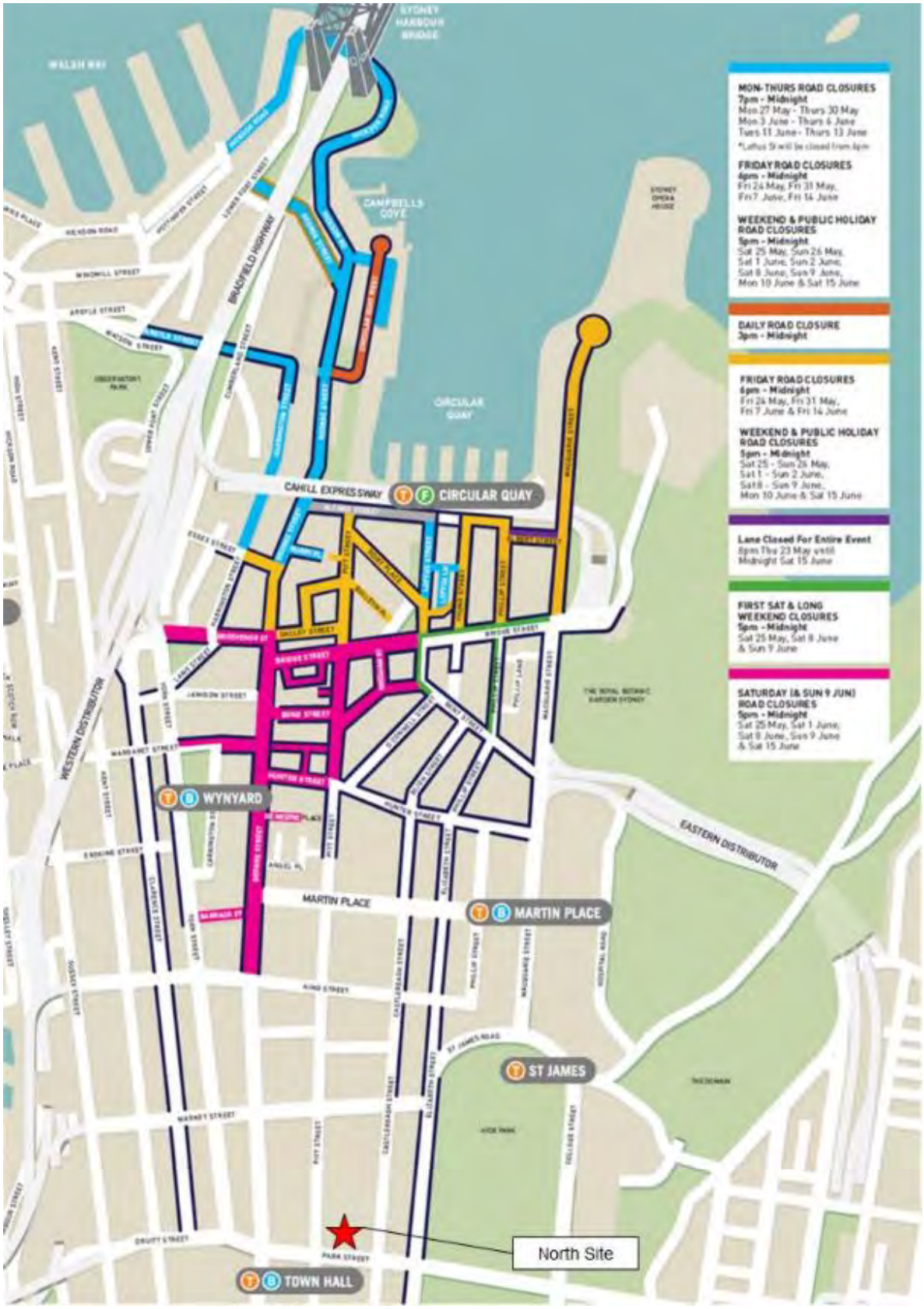
Roads and Maritime's Special Events Management guidelines identify the following classes of special events:

- Class 1: an event that impacts major traffic and transport systems and there is significant disruption to the non-event community.
- Class 2: is an event that impacts local traffic and transport systems and there is low scale disruption to the non-event community.
- Class 3: is an event with minimal impact on local roads and negligible impact on the non-event community.
- Class 4: is an event conducted entirely under Police control (but is not a protest or demonstration).

The above are Class 1 and 2 events which occur on Sundays and public holidays and do not coincide with construction works that are scheduled to occur Monday to Saturday (i.e. non-public holidays). Exceptions to this include Vivid Sydney and Chinese New Year events as they generally last for a few weeks with most major events taking place in the evening in the Sydney CBD, Circular Quay and Haymarket areas.

As per Vivid Sydney 2019, any road closures associated with the event in 2020 (and successive years) are expected to take place on weekends between 5.00pm-12.00am. Such road closures do not coincide with the proposed construction vehicle haulage routes and would not be expected to impact access to the subject site. Road closures associated with Vivid Sydney are shown in Figure 9.1.

Figure 9.1: Vivid 2019 Road Closures



Basemap Source: Vivid Sydney flyer 2019, viewed online on 19/11/2019

Roads and Maritime's traffic management measures proposed for Sydney New Years Eve 2019 will involve a staggered programme for closing all roads in the CBD. Streets surrounding the North Site will be closed from 7.00pm on 31 December while streets surrounding the South Site will be closed from 11.00pm. Therefore, the proposed haulage operation would not affect the event in any way as trucks would not operate after 6.00pm on weekdays and 1.00pm on Saturdays.

Figure 9.2: New Year's Eve 2019 Road Closures

Source: City of Sydney New Year's Eve website, viewed online 19/11/2019

A review of City of Sydney's registered events indicate no other events are anticipated to occur in the vicinity that would be impacted by the haulage operation nor site access.

City of Sydney has a policy of not permitting works that would cause disruption to the retail core of the city in the lead up to Christmas and post-Christmas period. Works that would have a significant impact on pedestrian paths and station accesses should be minimised during these periods and/or additional and increased interface supervision between the site and the adjoining pedestrian network. Given that the subject sites are not located within the retail core, it is anticipated the construction works and haulage operation would not impact on the pedestrian network in the retail core during this busy period. It is also acknowledged that retail trading hours are extended during this period, thus construction activities between mid-December and early January would be considered on a case-by-case basis.

It is acknowledged that ad hoc events may occur with minimal notice, including marches, protests and other public events. Impacts of special events in the CBD are not limited to the event area and immediate side streets. Many events involve relocating transport services such as buses and taxi zones temporarily. The Project Team would continue to identify special events that might be impacted by the proposed haulage activities during the course of the construction works, and subsequently incorporating the known special events into the

construction program and to detail responses and contingencies in the CTMP. This coordination would occur through the Sydney Coordination Office, approved event registers of Councils, the TCG and the TTLG.

Construction works at the subject site would be scheduled outside special event periods where possible, given the majority of the special events occur on Sundays and public holidays as listed in Table 9.1. Where unavoidable, liaison would occur with event organisers of Class 1 and 2 events, and the Sydney Coordination Office, Roads and Maritime and the organisers of the event to provide appropriate management of heavy vehicle movements to manage potential impacts to event goers, the general public and the construction works. This may involve measures such as temporary adjustment to haulage routes, working hours or potentially stopping works for the duration of the event.

9.3 Impacts to Unplanned Events

The Project Team would provide support to emergency service agencies and road authorities in the management of emergencies and unplanned incidents on roadways approaching and within the subject site area and would assist in the restoration of normal traffic conditions.

The types of emergencies or unplanned incidents that may occur include, but not limited to:

- Traffic crashes
- Hazardous material spillage
- Chemical spills and leak
- Power failure and bomb threats
- Terrorist attack
- Inclement weather conditions, including flooding and major storm events
- Fire
- Police operations
- Anti-social behaviour
- Structural damage to a rail line, building, road tunnel or bridge
- Construction type incidents involving closure of a lane, or footpaths.

The Safety Manager has an Emergency Response Plan which would incorporate standard operating procedures for managing emergencies and unplanned incidents.

In the event of a traffic and transport related incident the primary point of contact for incident management is the Transport Management Centre. The Sydney Coordination Office would also be informed of the incident.

In case of flammable or hazardous substances, site personnel would be instructed not to approach these substances until NSW Fire and Rescue have declared the site safe. CPB Contractors would close the roadway at a safe distance until Fire and Rescue arrives and issues appropriate instructions.

CPB Contractors shall also co-ordinate with TMC and Sydney Coordination Office should incidents occur.

9.4 Impacts to Pedestrians and Cyclists

During construction, pedestrian access adjacent to the sites along Pitt Street, Park Street, Castlereagh Street and Bathurst Street would be maintained and all footpaths would be kept clear and trafficable at all times.

Qualified traffic controllers would be located at proposed site access points to separate pedestrian and vehicle movements. No negative impacts are anticipated to be imposed on pedestrians. Pedestrians have the right-of-way at all times. Pedestrians may be held only for short periods (approximately 30 seconds) by the pedestrian concertina gate to ensure safety when trucks are entering and leaving the site.

Cycle access would be maintained in surrounding street during construction works. Haulage vehicles would not impose adverse impacts on cyclists travelling along these streets nor any other local streets.

Where existing pedestrian and cyclist routes used are affected by construction, a condition survey would be carried out to confirm they are suitable for use (e.g. suitably paved and lit), with any necessary modifications to be carried out in consultation with City of Sydney.

9.5 Impacts to Bus Zones and Services

A work zone is proposed on the north side of Park Street, east of the existing Bus Zone. The work zone would cause no impact to the existing bus stop as the full length of the bus zone would be retained. Trucks would enter the work zone immediately, and not be permitted to idle in the adjacent Bus Lane. This would be managed by a dedicated traffic controller, and monitored by CPB and associated stakeholders throughout the project to ensure no impact on the bus operation.

9.6 Impacts to Taxis

There is a Taxi Zone on Pitt Street west side opposite the South Site. Notwithstanding the proximity to the site, the proposed construction works would not cause any impact to taxi services.

It is noted that the space in front of the Castlereagh Boutique Hotel is signposted as No Parking, and may be used by taxis to pick-up/set-down passengers. The work zone on Castlereagh Street is proposed to utilise this space; CPB Contractor's Community and Stakeholder Manager is in the process of engaging the Hotel with Sydney Metro to discuss the project works and specifically the proposed work zone on Castlereagh Street.

9.7 Impacts to On-Street Parking and Loading Zones

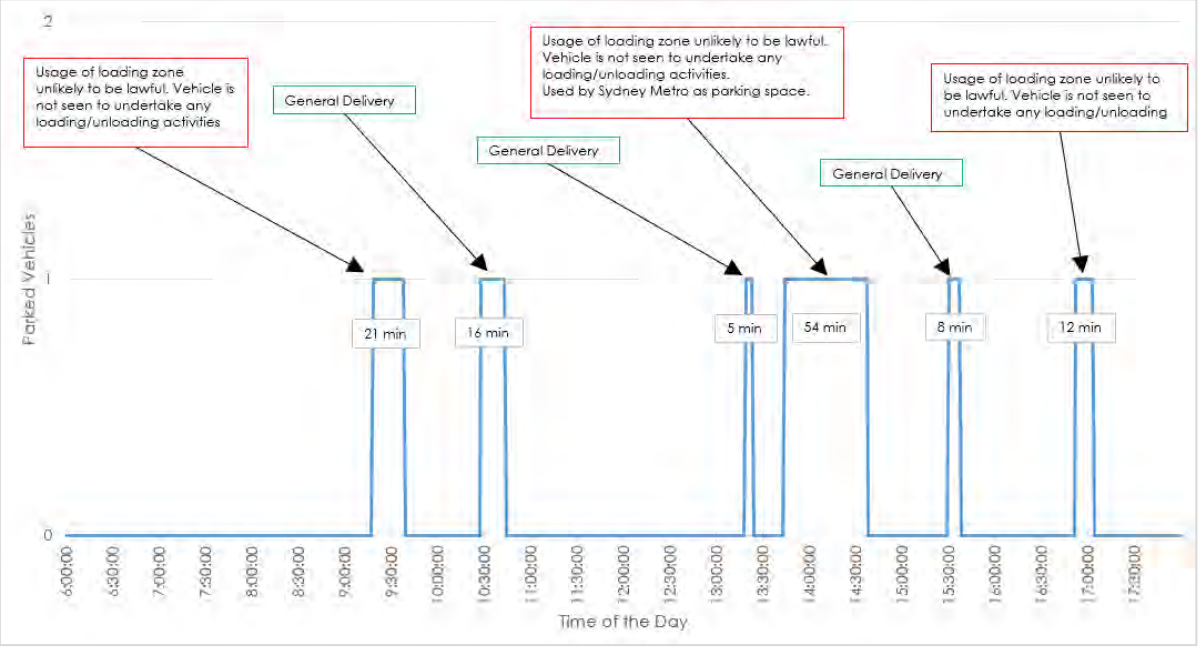
Pitt Street North

The work zone proposed on Pitt Street North would replace an existing No Stopping space, and therefore, would not result in any impact to on-street parking or loading zones.

Park Street

A work zone is proposed on the north side of Park Street which would replace the existing Loading Zone which currently operates between 6am-6pm. A survey of the loading zone was undertaken on Thursday 18 June between 6am-6pm to identify the frequency and duration of stay of vehicles. The results of the survey are shown in Figure 9.3.

Figure 9.3: Park Street Loading Zone Occupancy



The key findings of the survey are summarised as follows:

- 50% of vehicles using the loading zone are suspected to be doing so “unlawfully” . i.e. for activities not relating to loading/ unloading, and

- Having consideration for only those vehicles which used the loading zone "lawfully", the loading zone was accessed three times across the day and for a total duration of 29 minutes, which is considered to be a low occupancy rate across a 12 hour period.

According to City of Sydney's website for loading zones, there are multiple nearby loading zones which could be used instead of the Park Street loading zone. Nearby loading zones are shown in Figure 9.4. The loading zones nearest to the site operate 6am-6pm Monday to Friday and 6am-10am on Saturday which covers the same weekday period as the Park Street loading zone.

Since there is so few vehicles using the loading zone at present, the conversion of the Park Street loading zone to a work zone would not result in any negative impacts to delivery/ service vehicles in the vicinity. Furthermore, these deliveries/ service vehicles typically parked for a short period of time, namely, 5 minutes, 8 minutes, and 16 minutes. Therefore, the relocation of these delivery vehicles per day to surrounding loading zones would not be expected to cause any noticeable impacts to the capacity of nearby loading zones.

Figure 9.4: Nearby Loading Zones

Basemap Data Source: City of Sydney, accessed online on 19/06/2020

Castlereagh Street

The work zone proposed on Bathurst Street would be located within an existing No Stopping space. As mentioned previously, CPB Contractors intends to extend the work zone on Castlereagh Street to the north past the Castlereagh Boutique Hotel frontage. CPB Contractors has considered the needs of the Hotel operation and use of this kerbside space for hotel guest set down and pick up, hotel deliveries and emergency vehicle access. Therefore, CPB intends to liaise with City of Sydney to remove one paid on-street loading/ parking space to create a new hotel set down/ pick-up area to the north of the work zone.

Given that there are several existing on-street loading/ parking spaces located on Castlereagh Street, the conversion of one space for hotel guest set down and pick up would have minimal impact to loading and parking in the vicinity.

Pitt Street South

The work zone proposed on Pitt Street South would be located within an existing No Stopping space, and therefore, would not result in any impact to on-street parking or loading zones.

Bathurst Street

The Bathurst Street work zone is proposed in place of an existing loading zone and 4P on-street parking which can accommodate 4-5 cars/ small vans. Given that there are several nearby loading zones in the vicinity, the removal of the Bathurst Street loading zone would not impact delivery and service vehicles in the vicinity. It is noted that CPB Contractors will work with The Edinburgh Castle Hotel on the corner of Pitt Street and Bathurst Street to ensure its delivery and service needs are met.

There are two nearby car parks within short walking distance of Bathurst Street, namely, Wilson Car Park on Wilmot Street and Secure Parking at 255 Elizabeth Street. These car parks offer secure off-street car parking during weekdays and weekends (Secure Parking). On this basis, there would be close alternative parking options in place of Bathurst Street. Therefore, the removal of 5 car parking spaces would not have a negative impact on the surrounding businesses.

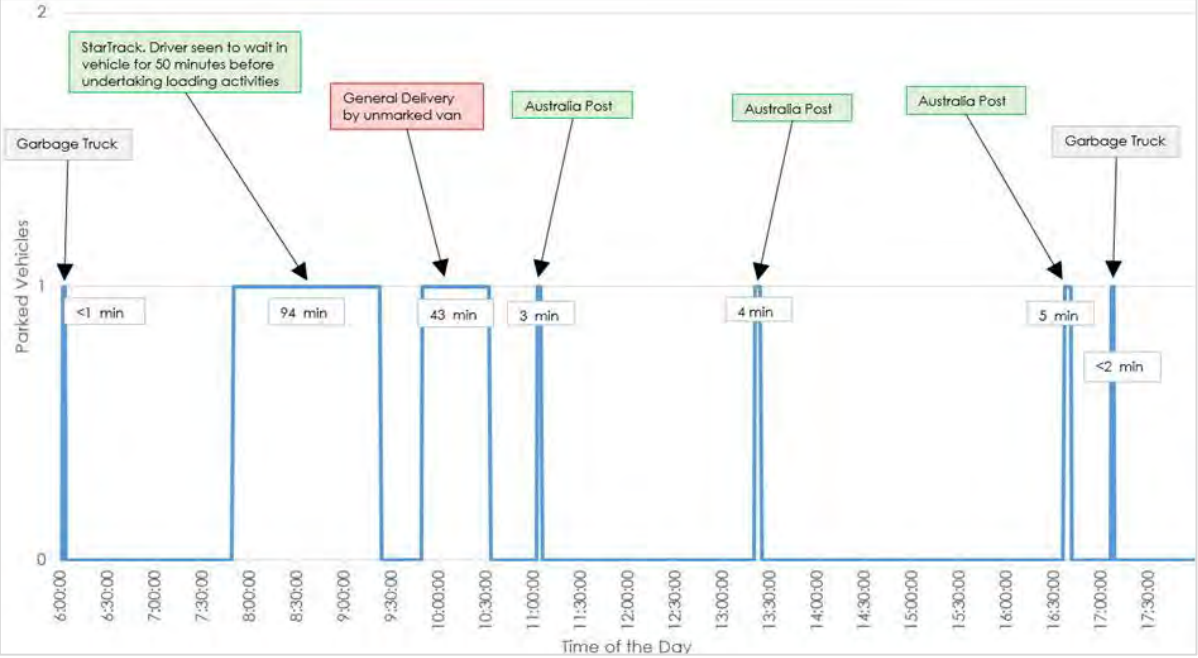
9.8 Impacts to Mail Zones

A work zone is proposed on the north side of Park Street within the exiting *No Stopping Aust. Post Vehicles Excepted.* This space is located directly east of the Park Street loading zone as described in Section 9.7. There are two Australia Post boxes (red and yellow boxes) located beside the *No Stopping Aust. Post Vehicles Excepted* section.

The work zone at this location would be required for the majority of the construction period (i.e. 32 months starting December 2020).

A survey of the *No Stopping* area was undertaken on Thursday 18 June between 6am-6pm to identify the frequency and duration of stay of Australia Post vehicles accessing this space. The survey results are presented in Figure 9.3.

Figure 9.5: Park Street Australia Post Box Access



The key findings of the survey include:

- For the majority of occurrences, Australia Post vehicles (which include Star Track) accessed this space.
- Notably, the Star Track vehicle was parked for 50 mins before delivering parcels, and all up, was there for 1.5 hours. The amount of time parked within the space seems peculiar, and is assumed to be a-typical.
- Having consideration for typical or average use of this space, the post boxes were emptied three times during the survey period by Australia Post vans for a short period each time (3-5 minutes).
- Waste collection of the council kerbside bin occurs twice during the day, for 1-2 minutes per collection. (The garbage bin would be removed as part of the work zone application).

It is appreciated that these post boxes could be key post boxes in the CBD. Therefore, CPB Contractors has consulted with Australia Post regarding the relocation of these post boxes to Castlereagh Street (as discussed in Chapter 6).

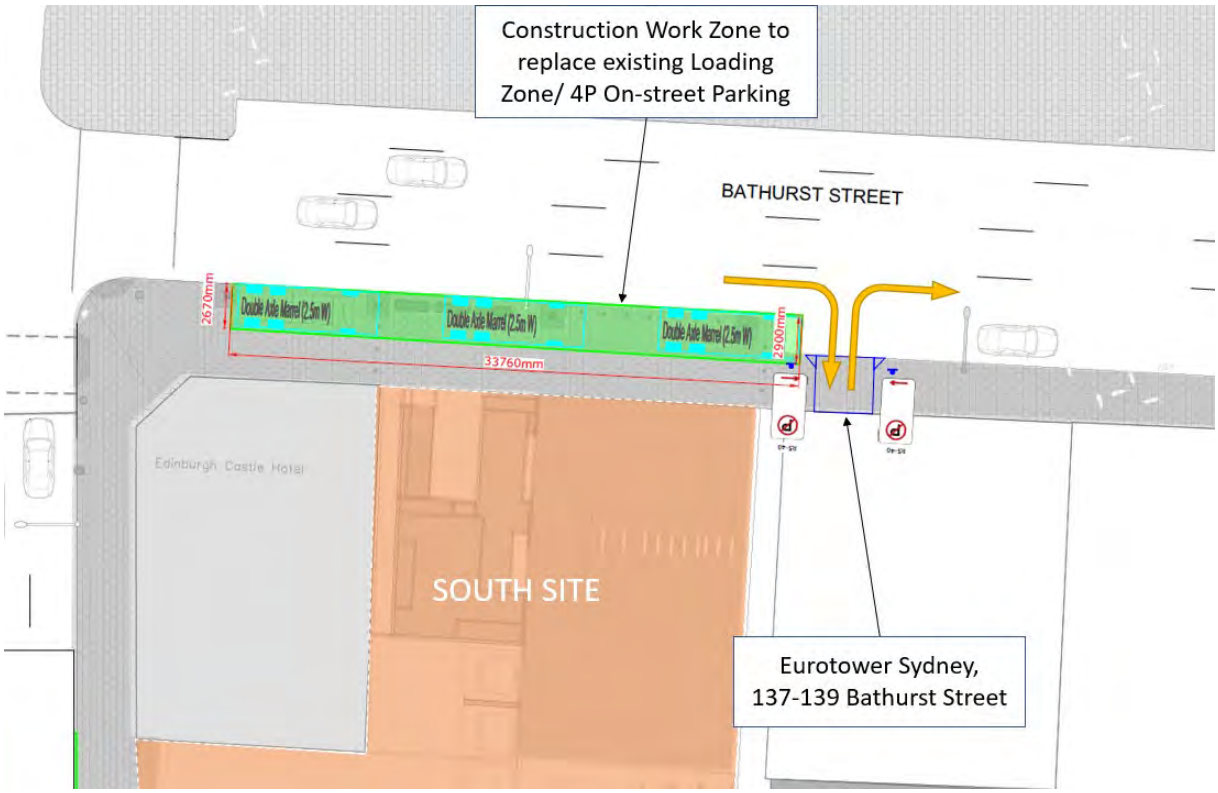
9.9 Impacts to Adjacent Properties

Access to adjacent properties would be maintained at all times for both pedestrians and vehicles as per existing conditions.

Surrounding the North Site, there are no property driveways located near the construction work zones/ site access driveways. Surrounding the South Site, EuroTower Sydney and Princeton Apartments have driveways located on Bathurst Street and Pitt Street, respectively, near the proposed on-street work zones. Notwithstanding this, driveways to these properties would be unaffected by the work zones and access to these properties will be maintained at all times.

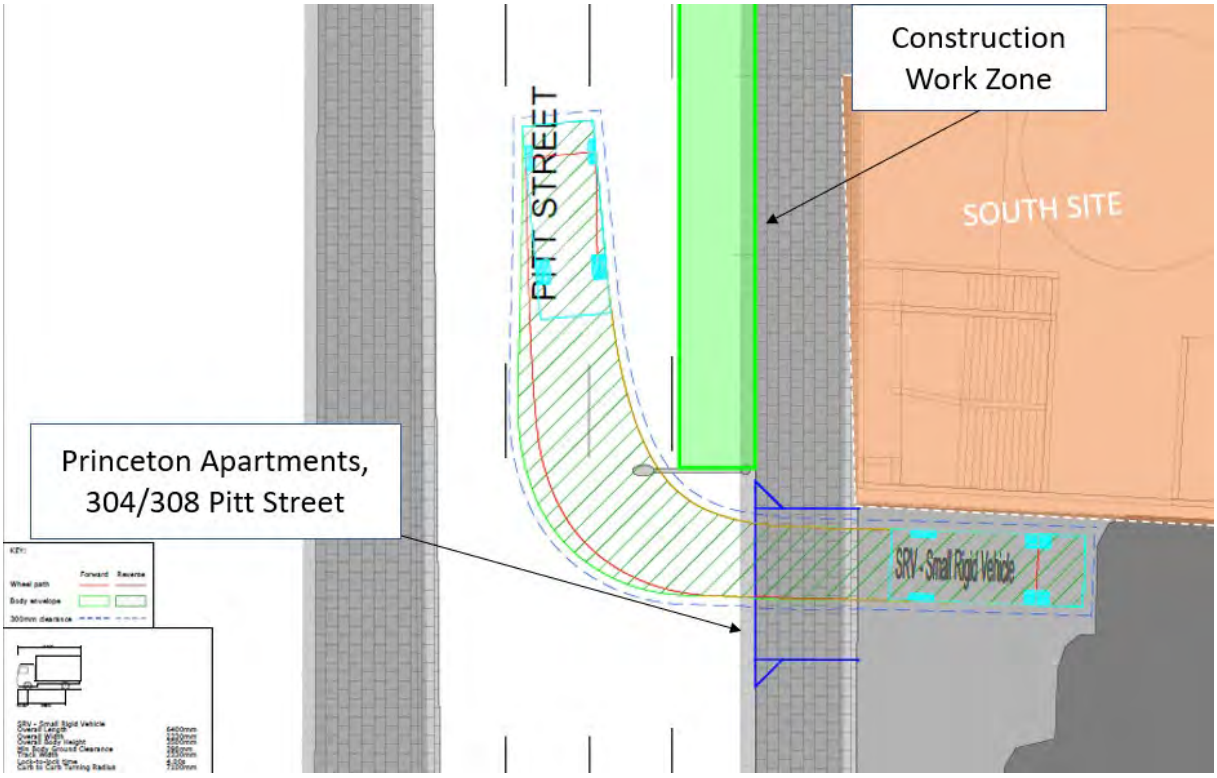
The proposed work zone on Bathurst Street would replace the existing loading zone/ 4P on-street parking in the kerbside lane to the west of the EuroTower Sydney access driveway. Vehicles shall continue to enter and exit the driveway by turning right-in (from Lane 2) and right-out (Bathurst Street is one-way eastbound) with no impact caused by the work zone. This arrangement is shown in Figure 9.6. It is noted that the driveway to the EuroTower also services the NSW Fire and Rescue. This driveway is occasionally used by the commanders who may be required to leave under lights and sirens to attend an emergency. Therefore, vehicular access into and out of the EuroTower driveway will be maintained at all times.

Figure 9.6: Bathurst Street Neighbouring Driveway



The work zone on Pitt Street South will be located to the north of the Princeton Apartments access driveway (which has a headroom clearance of 3.6m). A swept path analysis of a 6.4m SRV has been undertaken for the egress movement from the Princeton Apartments driveway. It shows that the SRV could turn right-out of the driveway (Pitt Street is one-way northbound) without being impeded by the construction work zone. This swept path is shown in Figure 9.7, and has been included in Appendix C.

Figure 9.7: Pitt Street South Neighbouring Driveway



9.10 Cumulative Construction Traffic Impacts

In terms of cumulative impacts, Figure 9.8 shows the location of construction projects which will operate concurrently with the Pitt Street ISD project. Haulage routes used by vehicles accessing surrounding construction sites may partially overlap with those used to access the subject sites. Construction projects having the most common haulage routes used by the Pitt Street ISD project would be those sites located in the immediate vicinity on Pitt Street, Bathurst Street and Castlereagh Street, namely:

- 201 Elizabeth Street
- 115 Bathurst Street
- 116 Bathurst Street, and
- 338 Pitt Street.

Comparatively, the Martin Place ISD and Central Station Main Works projects are situated further away from the subject sites. Furthermore, these projects typically have several access points due to the large size of the site and sometimes utilise multiple compounds. Therefore, impacts due to construction vehicles associated with these projects typically would be disbursed throughout the road network and would have less of a concentrated or cumulative impact with vehicles travelling to/from the subject sites.

Figure 9.8: Location of Concurrent Construction Projects

Table 9.2: Traffic Generation of Other Major Project Constructions

Project	Common Haulage Route Sections (Local Roads)	Peak Hourly Construction Traffic Estimate
Pitt Street ISD (this CTMP)	• Elizabeth Street • Castlereagh Street • Pitt Street • Liverpool Street • Park Street/ Druitt Street • Market Street	28 vehicles/ hour
The Greenland Centre, 115 Bathurst Street		6 vehicles/ hour
116 Bathurst Street		2 vehicles/ hour
201 Elizabeth Street		2 vehicles/ hour
338 Pitt Street		2 vehicles/ hour
Total		**Subject sites: 28 veh/ hour** **Nearby sites: 12 veh/ hour** **Total: 40 veh/ hour**

Whilst these projects are anticipated to overlap, cumulative traffic generation would not last the entire duration of the construction works at the subject sites. Therefore, the above cumulative traffic generation presented in Table 9.2 is considered to be conservative.

As detailed in Section 8.6, SIDRA modelling for existing conditions and the subject site construction period has been undertaken to assess the impact of additional vehicle trips on the surrounding road network. Pitt Street ISD construction vehicles were added to the existing traffic volumes, which already considered construction vehicle movements associated with nearby projects as they were operational at the time of the data collection.

The SIDRA modelling results shows that an additional 28 heavy vehicles (56 heavy vehicle movements) distributed throughout the road network would not have a negative impact at nearby signalised junctions.

Notwithstanding this, CPB Contractors proposes to implement a Logistics Management System to manage truck movements at work zones, and crane and hoist coordination via a booking system. This way, CPB can alleviate impacts due to construction vehicles in the CBD and avoid causing any potential negative impacts to the surrounding road network.

10 Mitigation Measures

10.1 General Traffic Management Mitigation Measures

The effective management of traffic and the provision of a safe road environment are paramount to the success of this project. Measures that can be applied to minimise traffic disruptions are generally divided in four categories: design, isolation of work areas, work methods and road occupancy planning. To achieve these objectives, various measures would be applied which are discussed herein.

Table 10.1: Construction Works

Management & Mitigation Measures	Person Responsible
Traffic controllers with approved clothing shall be provided to guide and control pedestrians on the footpath while trucks are entering/exiting the site.	PM & Site Supervisor
Concertina gates would be used to close the footpath on either side of the driveway to control pedestrian movements whenever a truck is entering/ exiting the site.	Site Supervisor & Traffic Controllers
Designated heavy vehicle routes would be nominated and monitored to minimise impacts on the road network and vehicle kilometres travelled. These routes would be communicated to truck drivers. Where practicable, these routes shall involve using arterial roads such as the Eastern Distributor in preference to city streets.	PM & Site Supervisor
Transportation of materials would be managed to maximise vehicle loads and minimise vehicle movements, where practicable.	Site Supervisor
In addition to relevant Australian Standards and Roads and Maritime guidelines, all traffic management shall also conform to WorkCover NSW Code of Practice for Working Near Traffic and Mobile Plant.	PM & Environmental Officer
All traffic control plans shall comply with AS1742.3:2002 Traffic Control Devices for Works on Roads and Roads and Maritime's Traffic Control at Work Sites.	Environmental Officer & PM
General signposting would be displayed on the hoardings with the appropriate warning signs.	Site Supervisor
Clean-up crews, including street sweepers, would be available to manage material spills.	Site Supervisor
Dust suppression measures would be used to control dust levels when trucks are being loaded on-site.	PM & Site Supervisor
If required, a wheel wash would be set up at the egress points from the site.	Site Supervisor
All loads except loads carrying metals (steel reinforcement, black iron, heavy steel, etc.) would be covered prior to leaving site.	Site Supervisor
Pedestrian and cyclist thoroughfares and road surfaces are kept safe for pedestrians, cyclists and traffic. Any potholes or other failures must be repaired without delay and within two days of the occurrence of the pothole or failure.	PM & Site Supervisor
Pedestrian management measures to be implemented to minimise impacts on pedestrian movement and maintain pedestrian safety (refer to TCP).	PM
General public access to surrounding areas including commercial, retail and residential properties would be maintained during construction.	PM & Site Supervisor
Hoardings would be utilised to separate pedestrians and site vehicle movements and to provide overhead protection.	PM & Site Supervisor
Constant traffic control shall be provided at the site access point to manage the interface between pedestrians and cyclists and site vehicle movements.	PM & Site Supervisor

Management & Mitigation Measures	Person Responsible
Appropriate signage and hoarding will be installed to guide pedestrians and cyclists across the site access driveway.	PM & Site Supervisor
To provide for the safe movement of cyclists, project boundaries would be clearly defined through hoarding and/or fencing to separate site activities from cyclists. Cyclists are to travel as per the existing conditions in the general traffic lane in Castlereagh Street.	PM & Site Supervisor
Upon completion of the works, vehicular crossings would be removed and footpath restored to at least the state which existed prior to the commencement of the works.	PM & Site Supervisor
Upon completion of the temporary weekend works, temporary pedestrian detours, temporary public transport facilities and kerbside lane restored to at least the state which existed prior to the commencement of the works.	PM & Site Supervisor

10.2 Parking/ Loading/ Mail Zone/ Bus Zone Signage

Proposed kerbside uses and associated signage surrounding the North Site and South Site are illustrated in Figure 10.1 and Figure 10.2, respectively.

Figure 10.1: Changes to Kerbside Uses – North Site

Figure 10.2: Changes to Kerbside Uses – South Site

10.3 Traffic Control Plan

TCPs illustrate the arrangement of signage and devices to manage traffic at worksites during construction. The preparation of TCPs for the North Site and South Site consider the following:

- Warning signage for vehicles and pedestrians at the site access to alert them of the presence of heavy vehicle traffic generated by the works, to warn/ inform drivers of changes to the usual road conditions, and to guide drivers through the worksite.
- Qualified traffic controllers to manage pedestrian and control activity at proposed site accesses.
- The movement of trucks to/ from the site access would be under normal traffic conditions.
- Pedestrians and all passing vehicles shall maintain priority at all times.
- Clear definition of the work site boundary to be provided by erection of hoarding around site boundaries adjacent to roads.
- All signage would be clean, clearly visible and not obscured.
- All vehicle movements generated by construction works would be minimised, where possible, during peak periods.

TCPs have been prepared in accordance with AS1742.3 and Roads and Maritime's Traffic Control at Work Sites Manual. It has been designed by qualified personnel with current "Select/Modify Traffic Control Plans", "Design & Inspect Traffic Control Plans" license, and/or possess the "prepare work zone traffic management plan" certification.

Construction vehicles would access the North Site and South Site in a forward direction only. To achieve this the following traffic management measures would be undertaken:

- No queuing or parking shall be permitted in any public road.
- Qualified traffic controllers be located at the site access points.
- Truck drivers to follow call ahead/ radio-in protocols to inform site personnel/ traffic controller when the vehicle is en route to site for immediate access to the site.
- When a truck is entering or leaving the site, pedestrian gates would be used to close the footpath on either side of the driveway to control pedestrian movements.
- Vehicles already on the road would have the right of way. As such every vehicle leaving the site must wait until a suitable gap in traffic allows them to exit under the direction of qualified traffic and pedestrian controllers.
- Pedestrians shall only be held for short periods of time to allow trucks to enter and exit from the site. Pedestrians have the right-of-way on the footpath and would not be stopped in anticipation.

Advanced warning signs would be installed in Pitt Street, Park Street, Castlereagh Street and Bathurst Street on the approach to the site. All signs would be placed in accordance with relevant guidelines and standards. Messages shall be clear and easily interpreted by drivers and should not create a safety hazard.

Traffic control plans for the North Site and South Site are included in Appendix D.

10.4 Pedestrian Access Management

Pedestrian crossing movements and facilities are to be maintained at all nearby signalised intersections on Pitt Street, Park Street, Castlereagh Street and Bathurst Street.

B-class hoarding is proposed around the perimeter of the North Site and South Site at interfaces with the footpath. B-class hoarding would provide overhead protection above the pedestrian footpath on Pitt Street, Park Street, Castlereagh Street and Bathurst Street. All hoardings would feature lighting to ensure pedestrian safety at night, and would remain until the risk of falling objects has been removed and then would be replaced with A-Class hoarding to enable civil footpath works to occur. Footpath widths under the B-class hoarding would allow two-way pedestrian flow in-line with Austroads requirement to provide sufficient space to accommodate prams and wheelchairs.

Suitable signage including the “Watch for Pedestrians” signs would be provided at egress points for construction vehicles to maintain pedestrian safety when pedestrians travel across the proposed vehicular crossings.

TCPs in Appendix D show the location of traffic controllers at the subject site. Based on NSW Road Rules drivers must give way to pedestrians crossing the road into which their vehicles are turning. Qualified traffic controllers with a “Stop-Slow” bat would manage and control vehicle movements at driveway locations in Pitt Street and Castlereagh Street. In addition, traffic controllers would be located at the on-street work zone in Bathurst Street to assist construction vehicles accessing the work zone.

Traffic controllers located at site accesses would be notified by two-way radio whenever there is a heavy vehicle approaching and leaving the subject site. The traffic controllers would ensure the safe and efficient movement of pedestrians across the site access.

Cyclist access and safety would be managed as would general traffic in streets near the site access points.

10.5 Additional Enhancement for Road User Safety

Additional enhancements for pedestrian, cyclist and motorist safety in the vicinity of the subject site are to be implemented during construction works. These measures include:

- Specific heavy driver training to understand route constraints, expectations, safety issues, human error and its relationship with fitness for work and chain of responsibility duties, and to limit the use of compression braking.
- Safety devices on heavy vehicles that warn drivers of the presence of a vulnerable road user located in the vehicles' blind spots and warn the vulnerable road user that a vehicle is about to turn.

10.6 Road Safety Audit

A Road Safety Audit has been conducted independently on this CTMP and associated TCPs in accordance with the RMS 'Guidelines for Road Safety Audit Practices (2011), with reference to current practices outlined in Austroads Guide to Road Safety Part 6 Road Safety Audit (2009) and the Sydney Metro Principal Contractor H&S Standard. The road safety audit has been undertaken with due consideration to the high levels of pedestrian activity in the Sydney CBD environments.

The Road Safety Audit report is contained in Appendix E of this report.

In accordance with the RMS guidelines the auditors do make suggested actions or recommendations to mitigate the road safety risks that have been identified in the audit. Nor is it the responsibility of the audit team to assess whether the mitigation measures proposed by the project manager or road designer are deemed appropriate or effective. This is the responsibility of the project sponsor (RMS Guide to Road Safety Audit Practice page 1:17).

While every effort is made to identify all the road safety risks the audit team cannot guarantee that the road is 'safe'. However, by addressing the audit findings it is considered that road safety would be improved. It is therefore acknowledged that any review of the proposed measures is not standard road safety audit practice.

Notwithstanding, the lead auditor has reviewed the proposed mitigation measures as requested by the project manager. In particular, the item deemed high risk in regard to a loading zone within 7m of the approach of a signalised pedestrian crossing. This would reduce the mutual sight distance between approaching traffic and pedestrians on the crossing. The mitigation measures proposed are to provide a traffic controller at the intersection to monitor pedestrian activity and avoid loading during commuter peaks. It is considered by the lead auditor that these measures are likely to reduce the risk rating from High to Medium at this location.

10.7 Contingency Plans

The Project Team would develop contingency plans for all traffic control operations. Incidents may include late finishing road work, equipment breakdowns, poor weather conditions, and unplanned incidents. The table below briefly outlines the various actions, in respect to traffic management, which would be applied for these types of incidents.

Table 10.2: Contingency Plans

Management & Mitigation Measures	Person Responsible
Late Finishing Road Work	• In the event of late finishing road works, priority would be to make the road trafficable and then to remove all controls as soon as possible. The TMC is to be notified as soon as the possibility of late finishing work has been identified, and updated accordingly. • Where possible, cease work, remove restrictions and reprogram activity. Where works cannot be removed, monitor traffic flows and modify traffic controls / resources. • Expedite completion of works.
Equipment Breakdown	• Notify the TMC immediately, and update accordingly. • Where possible, cease work and remove restrictions. • Where works cannot be removed, source replacement equipment, make safe, or utilise another work method. • Modify traffic control and monitor traffic flows. • Consider use of Variable Message Sign (VMS) in consultation with City of Sydney.
Poor Weather Conditions	• Access risk / hazards, if necessary, postpone and reprogram works. • If works proceed, modify traffic control and source additional equipment to enhance safety. • Notify the TMC immediately and update accordingly.\ • Continue to monitor conditions, and if necessary, cease work and remove restrictions.
Unplanned Incidents	• Notify the TMC immediately, update accordingly. • Where possible, cease work and remove restrictions. • Modify traffic control and manage site until emergency services / RMS arrive. • Support emergency services / Roads and Maritime, as required. • When instructed by TMC, recommence works.

In the case that the construction works result in worsening of the traffic conditions, the Project Team shall review the measures identified in the CTMP in consultation with the TTLG. Any changes to the CTMP shall be submitted to Roads and Maritime for approval following Sydney Coordination Office endorsement.

10.8 Consultation and Communications

In association with TfNSW, the Project Team would undertake proactive consultation and communication with the community, road authorities, Council, emergency service agencies, adjoining properties and key stakeholders in regard to the following but not limited to:

- Changes due to construction,
- The location of works,
- Forecast travel delays they are likely to experience,
- Suitable alternative routes, if available, and
- Timing of any works, including dates and times, to enable informed decisions by the road user regarding times and routes of travel.

All external communication with the community including businesses shall follow the guidelines set out in the Sydney Metro City & Southwest Overarching Community Communication Strategy. The community must be notified of any current and upcoming works and traffic arrangements that have the potential to impact stakeholders and the community prior to them occurring. A Community and Communication Strategy has been developed by the Project Team to notify stakeholders that may be affected by changes to transport, access and local traffic arrangements.

For example, owners and operators of the neighbouring properties and businesses would be notified in advance of construction works by means of letterbox drop.

Any comment, feedback, complaint can be made to the Project Manager and Site Supervisors via the contact details listed in Section 3.4 and 3.5, and shall be recorded in accordance with the Community and Communication Strategy (refer to Section 11).

10.9 Implementation of Corrective Actions

Corrective actions would be implemented when inspections indicate a non-conformance with the objectives of this TMP. The specific type of action undertaken would relate to the issue causing non-conformance with respect to the desired management outcomes.

These corrective actions would be determined in consultation with City of Sydney, the Project Manager, Senior Environmental Officer and the appointed TfNSW representative. Where regulatory authorities are involved they would also be included in any consultation.

To ensure the rectification of any non-conformance within an appropriate timeframe, activities must cease until the situation is under control, or reappraisal of the action plan is completed and additional control measures introduced.

10.10 Site Inspections and Record Keeping

The following inspections would be undertaken to ensure that conditions accord with those stipulated in the plan and there are no potential hazards:

- Pre-start and pre-close down inspections of short-term traffic control.
- Weekly inspections of long-term traffic control (i.e. more than one shift).
- Night inspections of long-term traffic control.

Any possible adverse impacts would be recorded and dealt with if they arise.

10.11 Staff Training

Site Induction

All staff employed on the site (including sub-contractors) would be required to undergo a site induction.

The induction would include approved access routes to/from the subject site for site staff and delivery vehicles as well as standard environmental, WH&S, driver protocols and emergency procedures.

All personnel employed on the Sydney Metro City & Southwest construction stages would perform their duties in accordance with the requirements of this CTMP and in compliance with the manuals and procedures outlined, and any specific Project Plans or instructions.

Driver Training/ Induction

Heavy vehicle drivers shall be made fully aware the worksite traffic management arrangements and site access requirements including specific heavy driver training to understand route constraints, expectations, safety issues, human error and its relationship with fitness for work and chain of responsibility duties, and to limit the use of compression braking. Driver training would take into account current best practice and information including Cycle Awareness Training.

All drivers would take the mandatory Sydney Metro City & Southwest project specific Heavy Vehicle Driver Introduction Training through CPB Logistics Management System

11 Complaint Management

The ROL register would maintain records of traffic accidents and incidents reported at work sites. Any complaints received regarding traffic delays at work sites would be referred to the Project Team and will be shared with the Stakeholder and Community Liaison Manager and recorded in accordance with the Community and Consultation Strategy. Upon request, the register may be required to be provided at meetings with Traffic Control Groups. The person in charge of the work site would be responsible for dealing with complaints regarding safety issues.

Refer to CPB Community Communications Strategy Plan Complaint Management System (SMCSWSPS-CPB-ALL-CL-PLN-000001).

12 CTMP Sign-on Sheet

Project No: N01070

Project Name: Sydney Metro City & Southwest - Chatswood to Sydenham.

Pitt Street Station Delivery Deed at North Site and South Site

Client: Sydney Metro

Note: You are signing to say you understand and will work to this Traffic Management Plan in entirety. Do NOT sign if you are not comfortable, do not understand or are unqualified / untrained to undertake the works outlined in this Traffic Management Plan, if you feel you cannot sign then talk to the site supervisor and he/she shall find alternative tasks for you.

Name	Company	Signature	Traffic Management Ticket No.	Date

Appendix A

City of Sydney CTMP Standard Requirements

APPENDIX A

The City of Sydney
Standard Requirements for Construction Traffic Management Plan

The Applicant or contractor undertakes to follow and abide by the following requirements at all times during the demolition, excavation and construction works at PITT STREET INTEGRATED STATION DEVELOPMENT CSSI 15_7400

1. Details of routes to and from site and entry and exit points from site – site specific

2. Details of roads that may be excluded from use by construction traffic i.e. roads with load limits, quiet residential streets or access/turn restricted streets – site specific

3. The approved truck route plan shall form part of the contract and must be distributed to all truck drivers.

4. All vehicles must enter and exit the site in a forward direction (unless specific approval for a **one-off occasion** is obtained from the City's Construction Regulation Unit).

5. Trucks are not allowed to reverse into the site from the road (unless specific approval for a **one-off occasion** is obtained from the City's Construction Regulation Unit).

6. The Applicant must provide the City with details of the largest truck that will be used during the demolition, excavation and construction.

   NOTE: No dog trailers or articulated vehicles (AV) to be used (unless specific approval for a **one-off occasion** is obtained from the City's Construction Regulation Unit).

7. Oversize and over-mass vehicles are not allowed to travel on Local Roads (unless approval for a **one-off occasion** is obtained from the City's Traffic Operations Unit). Requests to use these vehicles must be submitted to the City 28 days prior to the vehicle's scheduled travel date. For more information please contact the National Heavy Vehicle Regulator (NHVR) on 1300 696 487 or www.nhvr.gov.au.

8. No queuing or marshalling of trucks is permitted on any public road.

9. Any temporary adjustment to Bus Stops or Traffic Signals will require the Applicant to obtain approval from the STA and RMS respectively prior to commencement of works.

10. All vehicles associated with the development shall be parked wholly within the site. All site staff related with the works are to park in a designated off street area or be encouraged to use public transport and not park on the public road.

11. All loading and unloading must be within the development site or at an approved "Works Zone".

12. The Applicant must apply to the City's Traffic Works Co-ordinator to organise appropriate approvals for Work Zones and road closures.

13. The Applicant must apply to the City's Construction Regulations Unit to organise appropriate approvals for partial road closures.

14. The Applicant must apply to the Transport for NSW's Transport Management Centre for approval of any road works on State Roads or within 100m of Traffic Signals and receive an approved Road Occupancy Licence (ROL). A copy of the ROL must be provided to the City.

15. The Applicant must apply to the City's Construction Regulations Unit to organise appropriate approvals for temporary driveways, cranes and barricades etc.

16. The Applicant must comply with development consent for hours of construction.

17. All Traffic Control Plans associated with the CTMP must comply with the Australian Standards and Roads and Maritime Services (RMS) Traffic Control At Work Sites Guidelines.

18. Traffic Controllers are NOT to stop traffic on the public street(s) to allow trucks to enter or leave the site. They MUST wait until a suitable gap in traffic allows them to assist trucks to enter or exit the site. The Roads Act does not give any special treatment to trucks leaving a construction site - **the vehicles already on the road have right-of-way.**

19. Pedestrians may be held only for very short periods to ensure safety when trucks are leaving or entering BUT you must NOT stop pedestrians in anticipation i.e. **at all times the pedestrians have right-of-way on the footpath not the trucks**.

20. Physical barriers to control pedestrian or traffic movements need to be determined by the City's Construction Regulations Unit prior to commencement of work.

21. The Applicant must obtain a permit from the City's Construction Regulation Unit regarding the placing of any plant/equipment on public ways.

22. The Applicant must apply to the City's Building Approvals Unit to organise appropriate approvals for hoarding prior to commencement of works.

23. The CTMP is for the excavation, demolition and construction of building works, not for road works (if required) associated with the development. Any road works will require the Applicant or the contractor to separately seek approval from the City and/or RMS for consideration. Also WorkCover requires that Traffic Control Plans must comply with Australian Standards 1742.3 and must be prepared by a Certified Traffic Controller (under RMS regulations).

24. Please note that the provision of any information in this CTMP will not exempt the Applicant from correctly fulfilling all other conditions relevant to the development consent for the above site.

Appendix B

Consultation and Correspondence

TCG Meeting Minutes

Meeting Notes – Draft

Sydney Metro City & Southwest - Traffic Control Group - Amended

Date	Tuesday 02 June 2020	**Time**	8:00 am – 9:30 am
Venue	Teams videoconference		
Chairperson	Jake Coles JC	**Agency**	**Discipline**
Attendees	Philip Brogan PAB Chris Blanchard CB Santi Botross SBo Stephen Brown SB Sergeij Cantillo SC Martin Carey MC Andrey Collantes AC Berin Gordon BG Bernard Grace BGr Ken Hind KH Garry Hitchcox GHi Wayne Johnson WJ Daniel Kelly DK Abdullah Khan AK Michaela Kemp MK James Mann JM Carl Mella CM Nick Papanikolaou NP Frankie Passarelli FP Vidushi Sahni VS Sajid Shaikh SS Sarah Su SSu Alex Zeidan AZ	SM SM CPB TTPP Cox Arch. L Lease CPB SM L O'Rourke SM SM TTPP L O'Rourke TSE North Syd Cl. SM S Roads CPB SCO SCO SM CPB SM	Traffic & transport Pitt St ISD P Dir. Pitt St ISD contractor Traffic & transport Pitt St ISD contractor V Cross ISD contractor Pitt St ISD contractor Traffic & transport SSJ contractor Traffic & transport Traffic & transport Pitt St ISD contractor Central contractor TSE contractor Traffic & transport M Place contract mgt Metro interface Pitt St ISD contractor Traffic & transport Traffic & transport SSJ contract mgt Pitt St ISD contractor Pitt St contract mgt
Apologies	Gordon Farrelly GF Mong Sim MS	Willoughby Cl. S Connect	

Agenda Item No.	Action / Decision	Action By	Due Date
1.	**Welcome & Confirmation of Minutes**		
	Minutes of previous meeting were confirmed.		
2.	**Actions arising from the previous meeting**		
	Linewide - Crows Nest - ~~Stage 4 Rev F~~ CTMP updates to be detailed and presented to TCG in regards to re-opening Clarke Lane and closing Hume St (for three weeks). *(19/5/20 – to be presented after TTLG)* Linewide - MS to clarify in the CTMP what the volume of general traffic is today in Randle Lane.	MS (Open) MS (Open)	

Agenda Item No.	Action / Decision	Action By	Due Date
	Linewide - MS to provide more detail (for the CTMP) in the draft TCPs including barrier types, work proximity to live traffic, distances for signs, taper lengths etc. *(19/5/20 – Revised CTMP to be submitted early June 2020)* Linewide - MS to include in revised CTMP that Commonwealth St route subject to change Waterloo - CM asked re Botany Road - changes for bus stop and driveway may need to be done under WAD. Sydney Roads to confirm. Waterloo - GR would prefer Botany Rd access to be exit driveway turning left to go south. Would need to look at swept paths to see if manageable. RM to review TSE (Martin Place) - GR advised that in response to the Martin Place RSA, there may be a need for the TSE contractor to modify water filled barriers along Castlereagh Street at the Martin Place intersection. ~~BG to discuss with JM~~GR to advise.	MS (Open) MS FL RM ~~BG~~GR	
3.	**City & Southwest - SSJ**	**BGr**	
	BGr spoke to the attached slides: • Pedestrian swap on Sydenham Road target 3 June 2020, not stopping traffic at Gleeson Ave/Railway Pde intersection. • Burrows Ave AFC linemarking – delayed. • Southern plaza – comments being assessed • George St drainage end of June 2020, three weeks work, staged TCP's tabled. CTMP lodged 29/5/20, minor changes. • Mid-block signalised crossing - defects addressed, inspection today, commission soon. • Culvert and Northern station works overview. • CTMP update provided. • Extension scope Bankstown line, working on methodology for high voltage trenching. • Updated traffic application status. • Garnet Road closure – 27 July 2020 – contra flow lane closure on either side proposed.		
4.	**City & Southwest – TSE**	**AK**	
	AK spoke to the attached slides: Victoria Cross: • Miller St stormwater lane closures for 12 and 19 June 2020. • ROLs approved, CTMP addendum submitted for new dates. • VMS installed this Friday. • Plant demobilisation method being developed. • Plant demob full road closure of Denison St on WE 2, 9 and 16 October 2020. Crane in Denison St. • Traffic control in Berry St to reverse crane into Denison St. • 2 options, load in Denison St or load in Berry St.		

Agenda Item No.	Action / Decision	Action By	Due Date
	JC asked about impact on closing of street on adjoining properties. AK replied will liaise with other buildings re access. JC asked how many movements? AK replied 8-10 across weekend. CM asked if all three weekends required. AK some as contingency, hope to do all in one weekend. CM asked about parking of floats. AK replied would park in parking lane on southern side of Berry St outside site. CM agreed it was acceptable to park in Berry St parking lane. BG asked how Sydney Roads want to proceed. JC indicated that council permit would be required for Denison St plus apply for LTC approval for road closure. Would need concise addendum to CTMP. AK asked if preference to option 1 or 2. JC responded preference would be load in Denison St. CM has concerns with reversing floats into Denison St so would need to check with Network and Safety Services. MK does not have a preference, whatever minimises impact of the work. Pitt St: • Plant demobilisation. Crane on Castlereagh St, scheduled for WE 7/8 August 2020 and contingency for next 2 weekends, full closure of Castlereagh St, outlined detours for buses and traffic, local access maintained. • Close two bus stops, slight impact on third, stops can be relocated to Elizabeth St. • To be presented to July 2020 LTC. FP says need to close Martin Place stop as well, has a plan for this process, take offline and work with TSE. • Alternative option for loading from Pitt St or Park St, larger crane would be required on Park St, obstructions. • Pitt St crane outriggers would impact footpath, tree trimming required GR agreed that Castlereagh St seems to be the better option for the crane placement. FP no issues with Castlereagh St location, can make it work. Marrickville: • Metro shopping centre development proposed design changes to streets, including one way and modification of bus routes, submitted to Council. Marrickville Metro works may impact TSE works. AK noted that TSE is not across all the details from the development contractor but there might be traffic changes in the area not related to TSE. Meeting SCO and bus operators to discuss ~~these measures and~~bus route changes and its impacts on TSE scheduled for next week. CTMP's -		

Agenda Item No.	Action / Decision	Action By	Due Date
	• possible extension of CTMP's required for some sites to December to line up the dates with the current handover dates. - CM said if CTMP issued with update on dates will be able to approve quickly. GR will have to review arrangement at each site to identify any potential conflicts with other contracts. Martin Place: • Martin Place tower crane demobilisation, scheduled for 10 July 2020 and contingency for 31 July 2020. JC asked if Pitt St could be done on same date as Martin Place~~Pitt St~~. AK replied - would need to confirm with the team. ~~that is not possible.~~ • AK noted that GR had asked at the TTLG if TSE Martin Place crane demob and Lendlease crane setup can be done under the same closure. It would not be possible as TSE is~~P~~ planning for 4 crane mobilisations and demobilisations over weekend, would be safer and more efficient to do separately. BG asked about CTMP approvals for Martin Place and Miller St. JC to advise after meeting.		
5.	**City & Southwest – Central**	**DK**	
	DK spoke to the presentation slides • CoS has given approval for right turn into SYAB for pre-cast entry for existing CTMP. GR notes that SCO will not support right turn in during the day. SCO may consider right turn access at night, requires CTMP addendum (times, dates, number of trucks durations etc). • CTMP addendum 12 – Approved date was 2 April 2020, date pushed back to 11 July 2020. Addendum for change of date to be submitted. CM asked if already have approval. DK to confirm. • Transformer delivery to Lee St TCP tabled • Kurri to Central route for delivery of roof components outlined. • CTMP issued Friday for initial comments before formal submission • Steel deliveries commence end of June 2020. Cassettes from mid July 2020. Proposed route tabled. • Steel deliveries 2 x 26m x3.5m loads and 10 x 19m x3m, total 12. • Roof Cassettes 6 x 4.8-5.2m wide loads and 35 x 3m-4.8m wide, total 41. • Deliveries start 9-11 July 2020 over 13 occasions and completed by 17-20 Dec 2020. Some may be impacted by Christmas blockage period. • All deliveries at night (12-5am).		

Agenda Item No.	Action / Decision	Action By	Due Date
	VS asked that any OSOM deliveries take into account cumulative issues with Westconnex movements (Sept, Oct, Nov 2020). DK to action. • TCP's submitted as part of CTMP Rev 7, outlined again. 26mx3m impact two lanes for left turn into SYAB, under ROL 11.30pm-5am, swept paths tabled. CM noted swept paths show possible impact on opposing lanes, may need traffic control. DK to review and advise. • Proposed truck swept paths, 19m x 5.2m, 26m x 4.5m. Have approved ROL for June so want to do trial, any other requirements. No objections from JC and CM. GR asked DK to consult with CoS OSOM group. • Chalmers St footpath closure proposal tabled. • Need to close path under hoarding for potholing for Ausgrid and divert peds to cycle lane, start 9 June 2020 for approx. 2 weeks. Outlined signposting. • 12-15 holes required. JC and GR noted that SCO would not support the cycle lane proposal and asked that for proposals such as this more detailed plans be provided. DK to review for possible night works only and also undertake weekday and weekend pedestrian and cycle counts to support the proposed traffic mgt. methodology to be documented in a TCP and CTMP addendum.		
5.	**City & Southwest – Pitt Street ISD**	**NP**	
	NP spoke to the attached slides: North site - station and commercial tower: • Start works 19 Dec to 1 Feb 2020. • Station completion August 2023 and then minor OSD fitout work. • SIDRA modelling undertaken to support a case for increased peak period truck movements. • Average queue lengths for dedicated right turn lanes identified for work zone proposals South site – residential: • Work zones proposed in Pitt and Bathurst Streets. • Consulted with CoS re hoarding and B class hoarding with high bay entries. • Bathurst St, taking up existing parking spaces for concrete pumping and loading. Consulted with Edinburgh Hotel. GR asked about current kerbside restrictions and hotel loading impacts. NP noted that Hotel loads on Bathurst St. Will co-ordinate with hotel for their loading needs. JC said to ensure this is included in CTMP.		

Agenda Item No.	Action / Decision	Action By	Due Date
	North site: • Looking at work zones and access on each frontage (including Park St) , B class hoarding to all frontages. • Park St – proposal to relocate bus stop to western end of site, closer to adjacent bus stop, assist vision for approaching buses to stop. • Work zone at eastern end, easier exit to travel onto Elizabeth St. PAB noted that Appendix C of the CTMF states that "SCO does not support the use of on-street parking zones by trucks, without prior approval." JC and GR noted that SCO does not support a work zone on Park Street because of its impact on public transport operations. Experience has shown that trucks often park in the bus zones with adverse impacts. NP asked if making the bus zone longer would assist ? GR says it would not assist but a night time Park St work zones may be a possibility. Castlereagh St: • Work zone would partially sit in front of Masonic hotel, Hotel consultation ongoing. • Implementing online construction delivery management including real time advice re truck movements and occupation of work zone. GR asked if the contractor had applied the system elsewhere in the Sydney CBD ? and NP noted that it had been applied to some hospital projects. GR asked what happens if a truck driver arrives unscheduled and NP said he would be sent back to the depot. • Traffic demand study undertaken • Looked at work zones and type of trucks, max duration of delivery and assessed impact. Identified max truck throughput per hour. PAB asked if the volumes were 22 trucks in and 22 trucks out per hour. SB replied yes. • Modelled with truck movements as identified and LOS will remain the same with Av delay only increased by a few seconds. GR asked about truck routing noting that the contractor should look at the EIS routes. GR does not want to impact other key intersections as a result of the proposed outbound movements. JC asked if the contractor is confident that the sites can service these forecast truck volumes and frequencies. SB and NP advised that they will be able to. NP checked the EIS routes and will reflect those in the CTMP. • Temp road closures - 5-6/2/21, one each for south and north sites. Can they occur at the same time or separate.		

Agenda Item No.	Action / Decision	Action By	Due Date
	• To load excavators and other material into site and then to erect tower crane. • Pitt St south of Bathurst St, send residents south to Liverpool St. GR - need to facilitate local access with any closure. Cumulative impacts of all road closures will need to be considered. • North site - close Castlereagh St for tower crane installation • Park St - to erect tower crane, retain two way traffic flow. But could be used to erect both tower cranes and not require Castlereagh St closure. GR said would prefer to do closures on weekends and major concrete works should be scheduled over a weekend to reduce impacts on public transport customers where possible. PAB asked if the CTMP will document the case for an increase in truck movements during peaks. NP agreed it would.		
6.	**Other matters**		
6.1	PAB advised that Michael Holmes of Sydney Metro is undertaking a HV safety review of the Martin Place ISD contractor under the HV National Law, Chain of Responsibility and the Metro Health and Safety Spec. PAB has asked Michael to bring any future audits to the attention of the TCG.		
7.	**Next Meeting:** The next TCG meeting is scheduled for Tuesday 16 June 2020 at 8:00 am – 10:00am (Teams Videoconference).		

Meeting Notes – Draft

Sydney Metro City & Southwest - Traffic Control Group

Date	Tuesday 16 June 2020	**Time**	8:00 am – 9:30 am
Venue	Teams videoconference		
Chairperson	Jake Coles JC	**Agency**	**Discipline**
Attendees	Philip Brogan PAB Stephen Brown SB Andrey Collantes AC Jake Coles JC Paul Enright PE Berin Gordon BG Bernard Grace BGr Elizabeth Harrison EH Ken Hind KH Garry Hitchcox GHi Daniel Kelly Abdullah Khan AK Michaela Kemp MK Sam Laporte SL Ryan Madden RM James Mann JM Carl Mella CM Kevin O'Neill KO Nicholas Papanikolaou NP Frankie Passarelli FP Giovanny Ramirez GR Vidushi Sahni VS Sajid Shaikh SS Mong Sim MS Sarah Su SSu Alex Zeidan AZ	SM SCO CPB SCO SM SM L O'Rourke SCO SM SM L O'Rourke TSE North Syd Cl. L O'Rourke JHG SM S Roads TSE CPB SCO SCO SCO SM S Connect CPB SM	Traffic & transport Traffic & transport Pitt St contractor Traffic & transport Waterloo contract mgt Traffic & transport SSJ contractor Traffic & transport Traffic & transport Traffic & transport Central contractor TSE contractor Traffic & transport Central contractor Waterloo contractor M Place contract mgt Metro interface TSE contractor Pitt St ISD contractor Traffic & transport Traffic & transport Traffic & transport SSJ contract mgt Linewide contractor Pitt St ISD contractor Pitt St contract mgt
Apologies	Gordon Farrelly GF	Willoughby Cl.	

Agenda Item No.	Action / Decision	Action By	Due Date
1.	**Welcome & Confirmation of Minutes**		
	Minutes of previous meeting were confirmed.		
2.	**Actions arising from the previous meeting**		
	Linewide - Crows Nest - ~~Stage 4 Rev F~~ CTMP updates to be detailed and presented to TCG in regards to re-opening Clarke Lane and closing Hume St (for three weeks). *(19/5/20 – to be presented after TTLG)* *(16/06/20 – revised CTMP submitted)*	Closed	

Agenda Item No.	Action / Decision	Action By	Due Date
	Linewide - MS to clarify in the CTMP what the volume of general traffic is today in Randle Lane. *(16/06/20 – revised CTMP submitted)*	Closed	
	Linewide - MS to provide more detail (for the CTMP) in the draft TCPs including barrier types, work proximity to live traffic, distances for signs, taper lengths etc. *(19/5/20 – Revised CTMP to be submitted early June 2020)*	Closed	
	Linewide - MS to include in revised CTMP that Commonwealth St route subject to change *(16/06/20 – revised CTMP submitted)*	Closed	
	Waterloo - CM asked re Botany Road - changes for bus stop and driveway may need to be done under WAD. Sydney Roads to confirm. *(16/06/20 – CM advised that SM and TfNSW P&P have had a meeting over the formal agreement for works and in process of determining resolution)*	Closed	
	Waterloo - GR would prefer Botany Rd access to be exit driveway turning left to go south. Would need to look at swept paths to see if manageable. RM to review *(16/06/20 – Amended arrangement for access proposed – see Item 5 below)*	Closed	
	TSE (Martin Place) - GR advised that in response to the Martin Place RSA, there may be a need for the TSE contractor to modify water filled barriers along Castlereagh Street at the Martin Place intersection. BG to discuss with JM *(16/06/20 – GR advised will be reviewing CTMP's as submitted and advise of any potential issues)*	Closed	
3.	**City & Southwest - Central**	**DK/SL**	
	DK/SL spoke to the attached slides: • SYAB CTMP submitted regarding swept paths for large vehicles CM asked if Saturday day or nights for deliveries and DK said prior approval allows 10am-4pm Saturday. CM noted that the conditional approval does not support right turns into SYAB. CM said P&P would review to advise if day use is not suitable. • Lee St transformer delivery comments received, updated and submitted today. TCP tabled, 19m trailer under traffic control and reverse into driveway • CTMP Addendum 11 - roof deliveries - updated and resubmitted on 10 June 2020. First deliveries on 23 June 2020 & hoping to get approval soon. • Trial done for turn into SYAB, 19m x 5.4m cassette vehicle did not cross centreline when turning left into SYAB. • 26m x 5.4m crossed centreline. Revised TCP provides for closure of one lane on opposite side to temp stop vehicles while entering (at night) about 20-30 seconds per movement, about 5-10 deliveries per night.		

Agenda Item No.	Action / Decision	Action By	Due Date
	CM asked if northbound lane will be closed at night and DK said yes, with traffic stopped during actual truck entry. CM said P&P would return CTMP comments today. Randle Lane (SL): • Outline of CTMPs submitted, CTMP Add. 3 approved, Add. 5 approved, Add. 13 recently submitted and under review. Chalmers St (SLa) • Cycleway and footpath trenching avoided in short term, but will need to trench in mid 2021. Investigations ongoing. • Randle Lane closure for transformer replacement. Temp closure (by Sydney Trains) required at short notice to replace transformer. • SL asked what process is required by Sydney Trains to get approval for this work ? • JC to consider and advise.	**JC**	
4.	**City & Southwest – Linewide**	**MS**	
	MS spoke to the attached slides: Waterloo: • Waterloo rail delivery commencing 1 August 2020. • Rail coming from Newcastle, via Wentworth Ave and Botany Rd, turning right into site from Botany Road using all lanes. JC noted that the right turn would not be supported during the daytime. PE asked if RM of Waterloo contract had spoken with the Linewide contractor, RM said he had but that the access proposals do not align with the draft Waterloo CTMP. Consultation ongoing. MS to review access proposals and resubmit. Marrickville: • Marrickville rail deliveries via Bedwin Rd, left into Edinburgh St and into Gate 6, approx. 6 trucks per day from Aug 2020 over 2.5 months. Daytime access with traffic control proposed. • Alternative is to enter at Murray St. JC noted that the accesses as shown on the slides would not be supported during the daytime. MS to review access proposals and resubmit. BG asked if MS has spoken to TSE and MS noted that the area manager has spoken to TSE. AK highlighted that proposed TSE placement of barriers on Edinburgh St may impact swept path, barriers also run across Murray St Chatswood: • Rail possession 17-21 July 2020. • Concrete pumping from Hopetoun Ave, set up Saturday morning and finish by Sunday afternoon. Stop/slow control at Hopetoun Ave/Orchard Rd. Have applied for ROL.	**MS** **MS**	

Agenda Item No.	Action / Decision	Action By	Due Date
	• Brand St in Stop slow operation, ROL approved. JC asked if a briefing note will be provided for the proposed Marrickville and Waterloo works and MS said yes they will be submitted for both.	MS	
5.	**City & Southwest – Waterloo ISD**	**RM**	
	RM spoke to the attached slides: • CTMP to be submitted soon. • Looking at revised approach which avoids southern Botany Rd access and retains bus stop as existing. • Two separate driveways via Wellington St proposed. • Precast beams would only arrive at night and trucks reverse in, 2 deliveries per night, approx. 20 beams. Swept path details to be determined and traffic counts for inclusion in CTMP. CM asked which driveway would be the entry and RM said trucks would enter via the western driveway subject to swept path analysis. • Separate entry and exit off Botany Road at northern end of site with another entry/exit off Raglan St.		
5.	**City & Southwest – SSJ**	**BGr**	
	BGr spoke to the attached slides: • Outlined upcoming works (see slides) Burrows canopy: • Lift from Burrows Ave for last section of roof, maintain through traffic during week. • Crane placed Wednesday and lift on Saturday night 12-15 Aug 2020. Mid-block signalised crossing: • Temp marking plan submitted • Pedestrian swap once TCS commissioned Southern plaza: • RSA completed, close out comments and submit HV trench: • Detail design underway, 7 separate TCP's • To be placed in third traffic lane along Railway Pde. Refer to slides. Extension scope: • Pedestrian detours for footbridge closure. Ped counts carried out, TMP pending • Wairoa Ave footpath works approved by council 15/6/20.		
6.	**City & Southwest – Pitt St ISD**	**NP**	
	NP spoke to the attached slides: Park St Work Zone: • Existing bus area to be maintained. • Reduced Work Zone size WZ in Loading Zone and Mail Zone. Post boxes relocated to extend work zone in to Mail Zone. To start discussions		

Agenda Item No.	Action / Decision	Action By	Due Date
	with Australia Post regarding relocation of post boxes. • Work Zone proposed for Mon-Fri 10am-3pm and after hours + Sat 8am-1pm • Commissioning survey re loading zone usage. • Work Zone will be manned to ensure queuing doesn't occur into Bus stop. • Will continue to monitor for 3 months • Induction will include instruction on crossing Bus Lane to enter Work Zone • Implementing online traffic logistics monitoring • Gates in Bus Zone section will only be used at night around bus schedule, for deliveries • Road closures - 17/1/21 or 7/2/21 JC suggested NP be aware of the long lead times for LTC agenda items. NP noted that it is planned to go to the Oct 2020 LTC. • Options for temporary road closures • Park St (north site) and Pitt St(south site) or Castlereagh St (north site) and Pitt St (south site) • Park St - close eastbound lanes and one westbound lane, crane location flexible • Full closure of Pitt St and Castlereagh St with traffic management for local access JC noted that the Pitt and Castlereagh St closures could be done on the same weekend but the Park St closure would need to be separate to mitigate public transport impacts. NP to update CTMP's.		
7.	**City & Southwest - TSE**	**AK/KO**	
	AK spoke to the attached slides: Miller St concrete pours: • Currently all concrete pouring from McLaren St site, pumping up to 400m. • Lift shaft for south entry needs to be poured from south site • 10-11 trucks for delivery of concrete, daytime pumping from 10am-6pm with one truck per hour and 3 night pours • Propose to set up pump on footpath area on Miller St and propose to start 22/6 • Take out lane in Miller St to bring trucks in and out after clearway hours • No impact on Taxi zone, no impact on buses • Applying to council for permits JC asked about the residual width of footpath in Miller St and AK said it was planned to maintain existing 2.5m. MK asked if the truck could be parked in the kerbside lane and to pump across the footpath and KO noted that this would create OHS issues for the drivers. MK asked if the manoeuvring of trucks had been considered and AK noted that swept path assessment has		

Agenda Item No.	Action / Decision	Action By	Due Date
	been done. Pedestrian impacts much less than spoil trucks (10/hour v. 1/hour) MK asked that any permit applications include the swept paths.		
8.	**Other matters**		
8.1	FP outlined bus stop change protocols (originally agreed at TCG 9 Jan 2018)as follows: Changes to procedure highlighted below: 1. Contractor consults with SCO on the proposal (which in turn consults with Infrastructure and Services Group (TfNSW) and bus operators). **Contacts include:** Frankie Passarelli Frankie.PASSARELLI@tmc.transport.nsw.gov.au Elizabeth Harrison Elizabeth.Harrison@tmc.transport.nsw.gov.au Jim Niahos jim.niahos@tmc.transport.nsw.gov.au 2. Contractor modifies proposal, as required. **Based on SCO feedback.** 3. Contractor consults with Council(s). **Yes – after SCO feedback.** 4. Contractor documents bus stop change proposal in a CTMP. 5. Contractor tables proposal at TCG and submits CTMP. **Best to talk to SCO first** **6.** Contractor to obtain Traffic Committee approval. **Yes, no need for the Metro contractor to consult directly with Infrastructure and Services Group (TfNSW) or the bus operators, this will be done by Transport Coordination** 7. **Min lead times** – Transport Coordination and bus operators require a minimum of 4 weeks' notice should construction works necessitate re-routing a bus route. This is to allow the diversion route to be plotted on Opal system. Individual bus stop closures or relocations along the same route will require 10 days' notice.		
9.	**Next Meeting:** The next TCG meeting is scheduled for Tuesday 30 June 2020 at 8:00 am – 10:00am (Teams Videoconference).		

Meeting Notes

Sydney Metro City & Southwest - Traffic Control Group

Date	Tuesday 30 June 2020	**Time**	8:00 am – 9:00 am
Venue	Teams videoconference		
Chairperson	Jake Coles JC	**Agency**	**Discipline**
Attendees	Philip Brogan PAB Stephen Brown SB Martin Carey MC Andrey Collantes AC Mark Dunn MD Bernard Grace BGr Ken Hind KH Garry Hitchcox GHi Michael Hodges MH Michaela Kemp MK Abdullah Khan AK Olga Krikelis OK Miles Leadbeater ML James Mann JM Andrew McDonald AMc Carl Mella CM Frankie Passarelli FP Sushane Perera SP Giovanny Ramirez GR Sajid Shaikh SS	SM Trans Coord. L Lease CPB L Lease L O'Rourke SM SM SM North Syd Cl. TSE SM L Lease SM L Lease P&P Trans Coord. T2M Trans Coord SM	Traffic & transport Traffic & transport V Cross contractor Pitt St contractor M Place contractor SSJ contractor Traffic & transport Traffic & transport Southwest contract mgt Traffic & transport TSE contractor Projects V Cross contractor M Place contract mgt M Place contractor Metro Interface Short term bus changes Southwest contractor Traffic & transport SSJ contract mgt
Apologies	David Banjac DB Paul Enright PE Fraser Leishman FL Ryan Madden RM Mong Sim MS Alex Zeidan AZ Alex Wilson AW		

Agenda Item No.	Action / Decision	Action By	Due Date
1.	**Welcome & Confirmation of Minutes**		
	Minutes of previous meeting were confirmed.		
2.	**Actions arising from the previous meeting**		
	Central – Chalmers St – JC to provide information on requirements for closure of Randle Lane for transformer replacement if required. Linewide – Waterloo – MS to review proposal for delivery of rail to site via right turn from Botany Road and resubmit. *(30/06/20 – Revised TMP for night time rail delivery submitted for comment)*	Closed Closed	

Agenda Item No.	Action / Decision	Action By	Due Date
	Linewide – Marrickville – MS to review rail delivery route to site as proposed route would not be supported during the day. *(30/06/20 – TMP for revised route and night deliveries submitted for comment)*	Closed	
3.	**City & Southwest - Southwest**	**SP**	
	SP spoke to the attached slides: Intrusive utility investigation at Marrickville. Pedestrian management approach. • One piece of investigation to be done, at Marrickville along rail corridor footpath, access from Riverdale Ave. • Discussions ongoing with Sydney trains re investigations and reinstatement of footpath. • Diverting all pedestrians to nearby streets during work. JC asked when the works would occur and SP noted within the next two weeks subject to Sydney Trains agreement (one day shift only required). JC asked what volume of pedestrians use the footpath and SP noted that it is minimal.		
4.	**City & Southwest – Central**	**DK**	
	Nil report.		
5.	**City & Southwest – Victoria Cross ISD**	**MC/ML**	
	MC/ML spoke to the attached slides: Upcoming works including Mobilisation works in Q4 2020. • Proposing southbound lane closures on Miller St for mobile crane mgt (weeknights and weekends after 9pm). 350 and 500t mobile cranes. • Footpath closure and southbound lane closure, peds diverted at traffic signals, night works. • Mobilise excavators in Nov 2020 and erection of tower crane, overnight road closure. • B class hoarding installation includes single lane closures, then shed lifting (night works). • Excavation via Denison St, Nov 2020 to Feb 2021 and demob in late Feb 2021. • Looking at two nights to lift all machinery into the hole, least impact on ped and traffic. JC asked about duration as set-up, operation and demobilisation may take longer, and we need to minimise impact on Miller Street. ML noted that the 350t crane would have a 2 hour set up, and the distance from Miller dictates crane size. 500t crane required due to lift radius and has about a 3 hour set up. GR asked contractor to look at lifting from Denison St. ML noted it would require full closure of Denison St. GR feels it would be better for traffic mgt. MC noted that Miller St would still be required for tower crane installation. JC asked if that will that be daytime and ML said yes. MK is concerned about using Denison Street given resident impacts and access needs, and feels that if night		

Agenda Item No.	Action / Decision	Action By	Due Date
	works are to be done this should occur in Miller St on a weekend. MK noted 1 Denison St will be generating commercial tenant activity. GR noted that FP (short term bus changes) of Transport Coordination will need to consider the proposal. MC to provide more detail on detours and crane setup.		
6.	**City & Southwest – Martin Place ISD**	**MD/AMc**	
	MD spoke to the attached slides: • Semi-trailer reinforcement deliveries North Site, late August 2020 TC1 installation. • Bulk excavation ongoing, load out platform installed next month. • CTMP being updated for use of semi-trailers, planned for August 2020. • Comments on CTMP received. Have identified alternative haulage routes, rerun swept paths and a CBD trial proposed. • Plan to deliver 5-7am and leave by 7am. Revised route via King St to Macquarie St and to site. Will send through proposed routes. JC noted that any trial needs to be done at a time that minimises risk in the event of heavy vehicle issues or delays, earlier start in the evening preferred. GR asked if Council feedback has been received and If any concerns have been raised re use of semi-trailers in the CBD. AMc replied that informal feedback has been received and feels that Council has no major issues with semi-trailer use, subject to OSOM permit approval. CM asked about timing and AMc noted that daytime transport is planned avoiding the peaks (no capacity to store reinforcement on site). JC asked the contractor to reaffirm their agreement to daytime semi-trailer use in the CBD. PAB suggested the contractor look at the (City of Sydney) comments register appended to the CTMF. • CTMP to be submitted for use of Bligh St. • 2nd tower crane installed 22/23 August, using TC2A • Lane closure with relocation of peds, maintain access to 50 Martin Place and properties across Castlereagh St. JC asked that the detailed TCP be included in the CTMP.		
7.	**City & Southwest – SSJ**	**BGr**	
	BGr spoke to the attached slides: • Rail possession deliveries, 8/9 Aug 2020 • Precast deliveries for station • Possessions in August 2020. • Briefing with buses and Sydney Trains re possession bussing. Deliveries for station works, first week of August and 8/9 August possession • Crane placed in site but trucks stop on Sydenham Road, bus access will be accommodated.		

Agenda Item No.	Action / Decision	Action By	Due Date
	• Jemena under bore of Hogan Ave planned for same rail possession weekend, Sydney Trains and Transport Coordination discussions ongoing. • Burrows St canopy works require lane closure in Burrows Avenue. • Mid-block crossing commissioning soon after defects resolved. • Southern plaza kerb work CTMP to be resubmitted this week. • RSA underway for 132kv under bore. • Hogan Ave staging tabled, traffic and access to be maintained. Stage 2 works mostly at night, Oct-Nov 2020. • Railway Parade trenching, detailed design underway. Consultation ongoing. • Temp relocation of gate 11. • CTMP update (see slides) • Garnet St on hold. Next works in August 2020. • Pedestrian bridge detours update. • Comments back on TMP's and resubmit today or tomorrow. • Tranche 1B CTMP to be submitted this week. CM noted that the P&P asset team don't support the Railway Parade trenching and require justification as to why an under bore is not feasible.. CM asked if the footbridge closures are submitted through the local traffic committee and BGr said he is awaiting Council confirmation. SB asked about the mid-block traffic signals commissioning and SS noted that an inspection is planned for tomorrow and CM noted that P&P would prefer a post weekend commissioning, not Thursday or Friday.		
8.	**Other matters**		
8.1	AK noted that the Marrickville Metro contractor has works impacting Sydney Steel Road, Edinburgh and other roads near the TSE site and is trying to get more information on potential impacts. AK feels TSE may be able to facilitate the works as they need to finish August or September 2020.		
9.	**Next Meeting:** The next TCG meeting is scheduled for Tuesday 14 July 2020 at 8:00 am – 10:00am (Teams Videoconference).		

Meeting Notes

Sydney Metro City & Southwest - Traffic Control Group

Date	Tuesday 14 July 2020	**Time**	8:00 am – 10:00 am
Venue	Teams videoconference		
Chairperson	Jake Coles JC	**Agency**	**Discipline**
Attendees	Kevin Barry KB Philip Brogan PAB Stephen Brown SB Martin Carey MC Killian Cashin KC Andrey Collantes AC Ken Hind KH Garry Hitchcox GHi Will Jobling WJ Olga Krikelis OK James Mann JM Declan McGarry DMcG Carl Mella CM Nick Papanikolaou NP Vidushi Sahni VS Sajid Shaikh SS Mong Sim MS Sarah Su SS	SM SM Trans Coord. L Lease L O'Rourke CPB SM SM CPB SM SM TSE P&P CPB Trans Coord. SM S Connect CPB	Crows Nest contract Mgt. Traffic & transport Traffic & transport V Cross contractor SSJ contractor Pitt St contractor Traffic & transport Traffic & transport Martin Place contractor TSE contract mgt M Place contract mgt TSE contractor Metro interface Pitt St ISD contractor Traffic & transport SSJ contract mgt Linewide Pitt St ISD contractor
Apologies	David Banjac DB Mark Dunn MD Paul Enright PE Bernard Grace BG Daniel Kelly DK Abdullah Khan AK Myles Leabeater ML Ryan Madden RM Sushane Perera SP Giovanny Ramirez GR Alex Zeidan AZ Alex Wilson AW		

Agenda Item No.	Action / Decision	Action By	Due Date
1.	**Welcome & Confirmation of Minutes**		
	Minutes of previous meeting were confirmed.		
2.	**Actions arising from the previous meeting**		
	No outstanding actions		
3.	**City & Southwest - Linewide**	**MS**	

Agenda Item No.	Action / Decision	Action By	Due Date
	MS spoke to the attached slides Crows Nest Works • Provided outline of revised truck route for rail delivery via North Sydney (see slide) • Special permit was required around Darling Harbour JC asked if can get around Alfred St roundabout. MS replied that has been checked and is possible CTMP status • Waterloo rail delivery CTMP resubmitted last Friday, comments addressed. • Meeting CoS this week re potential footpath damage JC said that for planned implementation date should think about ROL applications. Will have response back today from Transport Coordination re comments close out. MS noted that ROL applications lodged. JC said to let know if approval not received in a timely matter. Crow's Nest shed removal: • Resubmitted last week, covers rail delivery and shed removals. • Rail coming on 3 Aug. May require CTMP approved for rail delivery but shed removal can be a bit later as planned in December 2020. • Shed removal may involve TCS mods and will take time to agree to changes – justification report to avoid changes to TCS, doing report now. • CTMP approval required to meet 3 Aug rail delivery but perhaps a CTMP approval can be issued to condition or exclude the mid shed removal (planned for December 2020). Other: • Plan to submit CTMP this week. • To cover rail delivery and early works Surry Hills CTMP • Currently addressing comments for resubmission Southwest Traction substation – • Received comments from RMS but no others as yet.		
4.	**City & Southwest – SSJ - Sydenham**	**KC**	
	KC spoke to the attached slides: Works Update. • Sydenham Road pedestrian signals, defects close out continues, possible commissioning next week. • George St drainage works, start last week of July • Platform 1,2,3 deliveries Sydney Buses and S Trains consultation has occurred. ROL lodged for layover space. • Jemena underbore, updated CTMP submitted, planned for weekend possession 8-9 August. • Burrows canopy install, lane closure plan consulted with Sydney Buses. • Southern plaza, CTMP resubmitted. • 132 kv underbore, RSA underway, TCP presented to Sydney Buses.		

Agenda Item No.	Action / Decision	Action By	Due Date
	• Railway Pde HV trench, early stages, bussing operations briefed, updating details. • New planned works - Gleeson Ave temp works, retaining wall in rail corridor, not impacting road. • Extension scope: Garnet Rd on hold, ped detour plans submitted to P&P and councils, Wairoa Pde ped diversion to start early August 2020 and Tranche 1b CTMP being updated.		
5.	**City & Southwest – TSE**	**DMcG**	
	DMcG spoke to the attached slides. Castlereagh St closure Review 10-13 July: • Castlereagh St, closure successful removal of tower crane, next closure 28-30 Nov 2020 for removal of crawler crane. JC said should submit to council earlier to allow sufficient approval time by LTC Blues Point: • Gantry removal impacts some parking spaces at Henry Lawson Pde. • Proposed closure of Castlereagh St at Pitt St proposed for 8 August 2020. JC said need ROL. Berry St works: • Crane setup at night for lifting into shaft, require 3 of 4 lanes for 24-27 July 2020, ROL submitted CTMP updates: • Vic Cross CTMP resubmitted. • Denison St closure submitted 9 July, proposed for Oct 2020. WJ noted plan to coordinate CBD tower crane going up for station for Oct. 2020 two weekends, one in Oct and one in Nov 2020. No issues with multiple weekend contingencies.	**DMcG**	
6.	**City & Southwest – Victoria Cross ISD**	**MC**	
	MC spoke to the attached slides: Upcoming works including Mobilisation works in Q4 2020. Miller St site establishment: • 350 t max size crane required from Miller St for loads. Proposed to occur on weeknights after 8pm • Weekend closure for lifting in tower crane • Outlined alternative bus route JC will provide contact details to provide preferred dates for buses Miller St footpath closure: • Closure from 8pm and implement from 9pm weeknights. • Outlined lifting schedule (slide 7) for weekday and weekend (slide 8) for tower crane install Utility works proposed • Miller St for stormwater, night or outside Clearway hours, subject to coordination with TSE.		

Agenda Item No.	Action / Decision	Action By	Due Date
	• Planned to commence late August through to early November 2020. • Early stages do not propose any reduction in ped access on Miller St. JC asked are ped works 24 hours, MC replied that yes, with ped control. JC said not included in CTMP submission but will require addendum. MC will provide updated plans and schedule, include as an appendix.	**MC**	
7.	**City & Southwest – Pitt St ISD**	**NP**	
	NP spoke to the attached slides: • Submitted CTMP last week. • Propose closure of Castlereagh on 17 Jan 2021 with 31 Jan 2021 as contingency. • Concurrent Castlereagh and Pitt St closures. North site: • Mobile crane set up, looking at routes for delivery • Identified property access impacted for Castlereagh St closure, speaking to landowners • Ped closures, peds diverted to eastern side JC asked are there ramps at that point and NP noted if not existing will be putting some in. • Two bus stops impacted by closure as bus services detoured. Intend to move stops north and south of closure. JC will provide contacts to consult re bus impacts South site: • Access to neighbouring properties from Liverpool St. • Checked swept paths at Goulburn St/Pitt St for delivery trucks. • Peds diverted to western side f Pitt St JC noted that submission for LTC should progress in parallel with CTMP.	**NP**	
8.	**Other matters**		
	DM noted the potential for Miller St stormwater works in first week of August 2020 and asked if the CTMP needs to be amended. JC said no, just send notification via Teambinder.		
9.	**Next Meeting:** The next TCG meeting is scheduled for Tuesday 28 July 2020 at 8:00 am – 10:00am (Teams Videoconference).		

Meeting Notes

Sydney Metro City & Southwest - Traffic Control Group

Date	Tuesday 28 July 2020	**Time**	8:00 am – 9:25 am
Venue	Teams videoconference		
Chairperson	Jake Coles JC	**Agency**	**Discipline**
Attendees	Kevin Barry KB Philip Brogan PAB Stephen Brown SB Bernard Grace BG Ken Hind KH Garry Hitchcox GHi Michael Holmes Wayne Johnson WJ Daniel Kelly DK Michaela Kemp MK Olga Krikelis OK Van Le VL Fraser Leishman FL James Mann JM Andrew McDonald AM Declan McGarry DMcG Carl Mella CM John Nguyen JN Nick Papanikolaou NP Sushane Perera SP Giovanny Ramirez GR Vidushi Sahni VS Cameron Savage Sajid Shaikh SS Mong Sim MS Tim Sloan TS Angela Stead AS Luke Wilby	SM SM Trans Coord. L O'Rourke SM SM SM L Lease L O'Rourke North Syd Cl. SM City of Sydney P&P SM L Lease TSE P&P SM CPB T2M Trans Coord. Trans Coord. L Lease SM S Connect SM L O'Rourke TfNSW	Linewide contract Mgt. Traffic & transport Traffic & transport SSJ contractor Traffic & transport Traffic & transport Health & Safety M Place advisor Central contractor Traffic & transport TSE contract mgt Traffic & transport Metro Interface M Place contract mgt Martin Place contractor TSE contractor Metro interface V Cross contract mgt Pitt St ISD contractor Southwest contractor Traffic & transport Traffic & transport M Place contractor SSJ contract mgt Linewide Southwest contract mgt SSJ contractor Centre for Road Safety
Apologies	David Banjac DB Mark Dunn MD Paul Enright PE Abdullah Khan AK Myles Leabeater ML Ryan Madden RM Alex Zeidan AZ Alex Wilson AW		

Agenda Item No.	Action / Decision	Action By	Due Date
1.	**Welcome & Confirmation of Minutes**		
	Minutes of previous meeting were confirmed.		

Agenda Item No.	Action / Decision	Action By	Due Date
2.	**Actions arising from the previous meeting**		
	No outstanding actions		
3.	**City & Southwest - Southwest**	**SP**	
	SP spoke to the attached slides Southwest Works: • Cornelia St and Urunga Pde. Wiley Park service building, water mains run through building site, potholing required on footpath and rail side to assess location. • Suction truck to be parked on footpath for both. • Will need to stop pedestrians along Stanlea Pde • Traffic controllers at each end • One shift only for work JC asked how much of a detour for pedestrians. SP noted that detour would be via Shadforth St and Lakemba St to Cornelia St. JC asked if any property access issues were likely. SP noted that there would be no access issues for residents. JC asked about the council land, and SP noted that the contractor will meet with Council Thursday.		
4.	**City & Southwest – Central**	**DK**	
	DK spoke to the attached slides: • Right turn into SYAB – CTMP Rev 4. Understand only at night, waiting on comments back, asked for this week. • P&P advised that Saturday nights would not be acceptable Eddy Ave hydrant works: • Need to tap into existing main on Eddy Ave. • Outlined works. Need to set up hoarded area – bring in vac truck – excavate – locate water mains – Sydney Water turn off at night and cut into pipe and install new valve & t-section. • No more than 10 vehicle movements per day, 2 tonne tipper for materials, outside of peak times, coordinating with light rail. • Want to start in 2-3 weeks' time, daytime outside peaks, preparing basic CTMP, contractor has approvals for closing of footpath. General discussion about the proposed works. Discussions with Light Rail and Sydney Trains ongoing. GR asked how trucks access the works site and DK noted that they will use emergency lane and mount footpath on Eddy Ave to reverse into the site. Height restrictions have been checked. Chalmers St hydrant: • Need to connect to main in Chalmers Street at eastern entrance to Metro, in footpath, 6 days working 24 hours. • Need to decide where to place vac truck to minimise impact for peds and cyclists.		

Agenda Item No.	Action / Decision	Action By	Due Date
	• May park on footpath in front of hospital, direct peds onto cycle path and have cyclists walk around. • DK looking at same time as Eddy Ave but hope to start earlier. Propose working around the clock with noisy work in day, otherwise could take 10-12 days working only at night • General discussion about the proposed works. GR asked if could work at night. DK said noise is an issue for night works for excavating. VL agreed that noise could be an issue. JC suggested covering hole during day. DK replied hole too big to plate over during day as it is 4m long x 2m wide CM said there is concern about having pedestrians on green cycle path as per previous Network and Safety advice. DK noted that in that case the peds would need to be diverted to other side of the road. LW noted that he shares the concerns already expressed. GR suggested weekends only and backfill during week as has been done for light rail works. DK will investigate but suspects not as 1-2 days to excavate, then 2-3 days of backfilling. DK to check if works can be done on weekend and what diversions for pedestrians via traffic lights would involve.	**DK**	
5.	**City & Southwest – SSJ - Sydenham**	**BG**	
	BG spoke to the attached slides: Works Update. Refer to slides. • Sydenham Road pedestrian signals, possible commissioning today. • Underbore - updated TCP to show ped path on Hogan Ave and resubmitted. 132 kV underbore – hoping to submit CTMP today for comments. Goes for two months in Hogan Ave, most of October and November 2020 • HV trench to Railway Pde, CTMP under preparation, need to go back to bus operators • Temp works – Railway Pde/Gleeson Ave to be submitted soon. • Bus operations briefing, most items closed out • CTMP update Extension works: • Garnet St works still on hold • Ped detours in principle agreement from council • Wairoa Ave ped diversion TCP tabled, now diverting peds to other side of the street • Tranche 1B CTMP update Rev 9 to be submitted.		
6.	**City & Southwest – TSE**	**DMcG**	
	DMcG spoke to the attached slides: • Martin Place - proposing to maintain current arrangement to Nov 2020 or until increased ped		

Agenda Item No.	Action / Decision	Action By	Due Date
	volumes through the area require reinstallation of wings. • Monitoring each day would then reinstall if volumes increased – 5 day operation to reinstall wing JC asked how much longer and DMcG said Nov 2020 or when ped volumes increase. DMcG will update CTMP with the above. JC commented that CTMP will also need to talk about monitoring procedure. DMcG will update each week. FL commented that would have to provide target number which would trigger reinstallation. DMcG to update and send out this week. Castlereagh St stage 2: • Removal of barriers at crossing to previous arrangement. CTMP sent last week and asked if any comments. JC indicated yet to review but should not take too long. DMcG keen to progress. Marrickville: • Marrickville Metro works delayed so TSE pushing ahead. • Edinburgh Rd barrier installation starting 17 Aug 2020. • Bus stop mods on Edinburgh Rd late Aug early Sept 2020, currently used as layover, would remove shelter to do works. May need temporary layover space. • Underbore – starting launch pit at night and plate , underbore done over a weekend, date to be confirmed, how buses operate to be confirmed • Currently in discussion with buses to ensure access is available.		
7.	**City & Southwest – Linewide**	**MS**	
	MS spoke to the attached slides: Crows Nest truck route update • Checked turn path at Alfred St roundabout Elizabeth Street potholing work: • Trenching for conduit happening tonight and tomorrow night Reserve Rd trench BPS: • In addition to 33kV, need to do cutover for existing Ausgrid trench along Reserve Road, showed diagram, also relocate Sydney Water main as well. • Traffic staging under development. • Possible contra flow during work and local road closure when gets to Carlotta Ave. • Joint bay at southern end may require extended lane closure. • Currently programmed for mid-October		

Agenda Item No.	Action / Decision	Action By	Due Date
	JC asked if out of hours work. MS replied that believe to be night work but Carlotta Ave may be day work. Will be speaking with Willoughby Council. JC commented that works permitted depends on local access needs of businesses. • CTMP to be submitted in 4 weeks PAB asked about shed removal and Hume St, is it proposed to deliver any aspect of works by WAD. KB replied that does not form part of a WAD. CM noted that middle shed removal should be submitted as addendum to CTMP and confirm that traffic signals are not impacted. MS replied hope to submit this week.		
8.	**City & Southwest – Martin Place ISD**	**CS/AM**	
	MD spoke to the attached slides • Still operating through Bligh Street • CTMP approved for Castlereagh Street work zone • Use of semis under review. • Responding to comments, alternative haulage route to eliminate corners where issues • Deliveries to be off-peak. • 3 deliveries per day to north and 3 to south site • Want to do the trial run to test swept paths • Deliveries to start August 2020 General discussion about the use of semi-trailers for reinforcement deliveries. CM asked what approval has been received from CoS. Have discussed with J Faull. CS to forward to VL. PAB asked AM to address haulage route deviations / justification in the CTMP. LW noted that the trial will not guarantee safe movements and asked for further mitigations. WJ suggested some form of decals at intersections to be used to ensure peds stand back. LW replied would help VL noted the need to avoid lunch time peaks. CS replied will look at avoiding. WJ suggested some form of decals at intersections to be used to ensure peds stand back. LW replied would help. • Outlined original route, identified restricted intersections and provided swept paths for new route VL noted the Pitt St pop up cycle lane. CS said they will not impact. VL asked if smaller trucks ca be used rather than semi-trailers, CS noted that they could but with an increase in truck generation. VL asked that this justification be included in the CTMP. JC noted that the works will require monitoring and possible reversion to smaller trucks. JM asked what feedback is to be collected during the trial, WJ indicated a series of videos from inside and outside the vehicles. General overview of swept paths.	**CS**	

Agenda Item No.	Action / Decision	Action By	Due Date
	LW noted tight location at Spring St / Bent St with on street parking and narrow street. Hunter St / Castlereagh St also tight. • CS to do additional swept paths at Spring St / Bent St and update CTMP with swept paths. Also identify parking restrictions in place at time of transport. • CTMP to be submitted including use of Bligh St and takeover of south shaft in Dec 2020. 2nd tower crane installation: • Does not require full closure, one lane retained for traffic. In process of obtaining ROL's • Loadout platform operational from 2nd week of August 2020. • In and out from Castlereagh St with traffic control.	**CS**	
8.	**Other matters**		
	Nil other matters.		
9.	**Next Meeting:** The next TCG meeting is scheduled for Tuesday 11 August 2020 at 8:00 am – 10:00am (Teams Videoconference).		

Meeting Notes

Sydney Metro City & Southwest - Traffic Control Group

Date	Tuesday 11 August 2020	**Time**	8:00 am – 8:45 am
Venue	Teams videoconference		
Chairperson	Jake Coles JC	**Agency**	**Discipline**
Attendees	Kevin Barry KB Philip Brogan PAB Haider Bukhari HB Paul Enright PE Kristian Fitzgerald KF Bernard Grace BG Ken Hind KH Garry Hitchcox GHi Michael Hodges MH Daniel Kelly DK Olga Krikelis OK Van Le VL Fraser Leishman FL Ryan Madden RM James Mann JM Andrew McDonald AM Quac Minh La QM Michael Milner MM Frankie Passarelli FP Sushane Perera SP Giovanny Ramirez GR Cameron Savage Sajid Shaikh SS Mong Sim MS Tim Sloan TS Angela Stead AS	SM SM SM SM SM L O'Rourke SM SM SM L O'Rourke SM City of Sydney P&P JHG SM L Lease P&P Ultegra Trans Coord. T2M Trans Coord. L Lease SM S Connect SM L O'Rourke	Linewide contract Mgt. Traffic & transport C Nest ISD Contract mgt. Waterloo contract mgt. SSJ contractor Traffic & transport Traffic & transport Southwest contractor mgt Central contractor TSE contract mgt Traffic & transport Metro Interface Waterloo contractor M Place contract mgt Martin Place contractor Metro interface C Nest utility works Short term bus changes Southwest contractor Traffic & transport M Place contractor SSJ contract mgt Linewide Southwest contract mgt Central contractor
Apologies	Carl Mella CM	P&P	

Agenda Item No.	Action / Decision	Action By	Due Date
1.	**Welcome & Confirmation of Minutes**		
	Minutes of previous meeting were confirmed.		
2.	**Actions arising from the previous meeting**		
	No actions arising.		
3.	**City & Southwest - Southwest**	**SP**	
	SP spoke to the attached slides:		

Agenda Item No.	Action / Decision	Action By	Due Date
	• Update on Wiley Park water main investigation. • Day 1 one pit on road side of fence, one on rail side. • Stanlea Pde will remain open with traffic controllers to guide pedestrians. • Next 4 days non-intrusive works but will barricade around testing equipment. • Propose start on 24th August to 28th August, awaiting permits from council.		
4.	**City & Southwest – Crows Nest ISD (Utility Works)**	**MM/HB**	
	MM / HB spoke to the attached slides: • Utility works proposed along footpath on Pacific Highway. • Starting 24 August 2020, working south of Hume St to remove gas and water mains, 4-5 shifts of night works. • ASP works will commence on 7 Sept 2020 subject to Ausgrid approval. • Working with Linewide re rail deliveries, will be using same traffic control contractor. JC asked if ROLs applied for. MM replied waiting to hear back. • Noisy works will be done during the day outside of clearway hours. • Also works on western side of Pacific Highway, not all work zones will be occupied at once, progressive works area. FL asked about the works on the western side. For installation of new power poles on eastern side and stringing across to western side.		
5.	**City & Southwest – Linewide**	**MS**	
	MS spoke to the attached slides: • Rail deliveries started to Waterloo, second deliveries last night, no problems identified. • Crows Nest handed over to Linewide on 3 August, started site set up, rail deliveries start 7 September 2020. CTMP update: • Rail deliveries approved. • Reserve Rd bulk power supply being updated. • SMTF south update being actioned.		
6.	**City & Southwest – SSJ (Sydenham upgrade)**	**BG**	
	BG spoke to the attached slides: • General works update. • Southern plaza kerb works endorsed. • Revising TCPs to reduce time and combine works • 132 kV underbore submitted on 27th July 2020, expecting comments soon. • HV trench in Railway Pde, trying to resolve Ausgrid aspects. Will come back to P&P soon. • Gleeson Ave temporary works to be submitted soon.		

Agenda Item No.	Action / Decision	Action By	Due Date
	• May St survey data points, ½ day work, TCP prepared for survey work, mostly on footpath with witches hats around survey stations. Submitted with last CTMP update. Work to occur week commencing 17 August 2020. • Bus operations overview. • Burrows Ave-Hogan Avenue kerb works to occur. CTMP update: • Extension scope (Garnet St works still on hold, ped detours to start in October 2020, and Wairoa Rd pedestrian diversion with Council). JC asked if Sydney Water are doing work for SSJ on Hogan Ave. BG doesn't think so but will check and respond to email.		
7.	**City & Southwest – Waterloo ISD**	**RM**	
	RM spoke to the attached slides: • Outlined existing layout on handover to ISD, will remain that way for next 2 months while Linewide working. • Will establish site sheds south of church, will be happening from end of August 2020. • Proposed access modifications as shown in slides, proposed for late September and October 2020. Botany Rd driveways will remain as is. • Cope St utility works, relocation of overhead and underground power to one trench on eastern side of Cope St, 20m section at a time and then progressively move along. Near bus stops will be done out of hours in conjunction with road crossings. • Proposing to adjust hoarding into Cope St carriageway as per PIR, to be discussed further with Council. • Looking for approval to site accesses, other access and hoarding change later on. JC asked if Council has reviewed CTMP and provided comments. RM has received some informal comments from Council but having a further meeting with Council. JC said once meeting has provided way forward to progress Council concerns, and responses to Councils comments, can be forwarded to P&P and TCO to enable conditional approval.	**NOTE**	
8.	**City & Southwest – Martin Place ISD**	**CS/AM**	
	CS/AM spoke to the attached slides: • Still using Bligh St access. Bulk excavation done. • CTMP update, currently under review, to include comments received, have adjusted swept paths and route, can do trial run if needed, pavement decals at turn locations included in CTMP • Will send through updated CTMP in next couple of days. Emailed copy to VL (Council) in advance. • Spring St considered but not suitable, reverted to Bligh St, can make it work. • Precinct wide CTMP to be submitted.		

Agenda Item No.	Action / Decision	Action By	Due Date
	• 2nd tower crane, still planned for 23 August 2020, lane closures only, not full closure of Castlereagh St. • Loadout platform, will be finishing installation this week and in operation from 17 August 2020. JC had some feedback about trucks using bus layover on Bligh St. Requested CM to raise with contract team again. JM said if photo could be provided. JC to see as just been reported to TC. GR suggested rather than closing kerb lane on Bligh St on approach to Hunter St make left turn only. CS to action.	**CS** **CS**	
8.	**City & Southwest - Central**	**DK**	
	DK spoke to the attached slides • Right turn into SYAB, no comments received, JC to check if any comments. • Eddy Ave booster works, outlined works zones with works durations, Zone 1 – 7 days, Zone 2 - 12 days, start at same time as Zone 1, Zone 3 -3 days, Zone 4 - 3 days. Waiting for approval from Sydney Trains, Sydney Water approval received, coordinating with Sydney Trains and Light Rail. Will advise date to mobilise when determined • Outlined routes and works for underground and above ground. • Chalmers St still planning to set up outside hospital, won't impact cycle lane and will divert pedestrians to other side of Chalmers St. JC asked about duration of works. DK replied about 7 days, 24 hours a day.	**JC**	
9.	**Other matters**		
	No matters raised		
9.	**Next Meeting:** The next TCG meeting is scheduled for Tuesday 25 August 2020 at 8:00 am – 10:00am (Teams Videoconference).		

Meeting Notes

Sydney Metro City & Southwest - Traffic Control Group

Date	Tuesday 25 August 2020	**Time**	8:00 am – 8:45 am
Venue	Teams videoconference		
Chairperson	Jake Coles JC	**Agency**	**Discipline**
Attendees	Michael Acs MA David Bechara DB Philip Brogan PAB Stephen Brown SB Andrey Collantes AC Bernard Grace BG Ken Hind KH Garry Hitchcox GHi Michaela Kemp MK Olga Krikelis OK Van Le VL Fraser Leishman FL James Mann JM Declan McGarry DM Carl Mella CM Nick Papanikolaou NP Frankie Passarelli FP Sushane Perera SP Giovanny Ramirez GR Vidushi Sahni VS Sajid Shaikh SS Mong Sim MS Mosaval Tariq MT	SM tba SM Trans Coord. CPB L O'Rourke SM SM North Syd Cl. SM City of Sydney P&P SM TSE P&P CPB Trans Coord. T2M Trans Coord. Trans Coord. SM S Connect T2M	V Cross ISD contract mgt tba Traffic & transport Traffic & transport Pitt St contractor SSJ contractor Traffic & transport Traffic & transport Traffic & transport TSE contract mgt Traffic & transport Metro interface M Place contract mgt TSE contractor Metro interface Pitt St contractor Short term bus changes Southwest contractor Traffic & transport Traffic & transport SSJ contract mgt Linewide contractor Southwest contractor
Apologies			

Agenda Item No.	Action / Decision	Action By	Due Date
1.	**Welcome & Confirmation of Minutes**		
	Minutes of previous meeting were confirmed.		
2.	**Actions arising from the previous meeting**		
	No actions arising.		
3.	**City & Southwest – SSJ (Sydenham Upgrade)**	**BG**	
	BG spoke to the attached slides: • Outlined recent work and upcoming work. • George St and Burrows Ave works to commence next month.		

Agenda Item No.	Action / Decision	Action By	Due Date
	• Canopy installation on 14-15/9, 450t crane, ROL's secured. • Bus ops update provided. • Burrows Ave roof install done. • kerb works reduced scope. • CTMP update - Rev 7 comments received, to update some TCP's. Burrows Ave, comments received for 132kV and being actioned • Extension works - 24-25 Oct at Hurlstone Park CM reminded BG about the need to consult with the P&P Asset team re the HV trenching in Railway Pde. BG noted that the solution at the gate is being developed.	**BG**	
4.	**City & Southwest – Linewide**	**MS**	
	MS spoke to the attached slides: • Crows Nest rail delivery to commence 26 August 2020, aware that Sydney Metro utilities working on corner south of Hume St, to be co-ordinated with rail deliveries. JC if have ROL's for changed date. MS replied that yes, they have been obtained Artarmon substation: • Need to close footpath in Whiting St to provide temp footpath to connect to Reserve Rd and diverting pedestrians in Whiting St past site. • Options overview. Option A move pedestrians to other side of road, Option B divert pedestrians onto road with barriers. Option B preferred by TCG, keep pedestrians on same side of road as much as possible. • Reserve Rd footpath to be closed, divert pedestrians to other side of road at nearby traffic signals. Council requested not to close if not working. Duration of closure 5-6 weeks but may not be closed all the time. Reserve road trenching: • Outlined alignment of Ausgrid trenches and Sydney Water main trench. Staged. • Work mainly at night, some day saw cutting. • Detour traffic when trenching near centre of northbound lane. • Trench 2.6-2.8m deep but generally 1.8m. • Near Carlotta St plan to close northbound lanes. JC asked what businesses will be impacted? MS noted that contact has not been made as yet. JC suggested early contact preferable. • Second Reserve Road section also detour northbound traffic. • Third section at Dickson Ave intersection would be done with 3 way stop/slow. • North of Dickson Ave done as contra flow. • Will submit CTMP late this week or early next week.		

Agenda Item No.	Action / Decision	Action By	Due Date
	FL asked about day works sections. MS replied Carlotta Ave proposed during day, rest at night.		
5.	**City & Southwest – TSE**	**AK/DMcG**	
	AK/DMcG spoke to the attached slides: Pitt St north: • Concrete pour from Pitt St including kerb lane closure and pedestrian detour. • Concrete pump and agitator on footpath. • September dayshift, 10 shifts 10am-3pm. • Peds would be crossed over north of driveway and at Park St lights JC & CM asked about pedestrian volumes and DMcG replied that the pours would be brief and nights avoided. JC concerned about pedestrians volumes when closed. JC said apply for ROL, will be inspected to see if possible. If too many pedestrians then may need to be night work. Need to advise JC when first pour happening so that impacts can be observed on site. VL asked if pram ramp available for pedestrians to cross. DMcG said that there are 2 driveways to act as pram ramps. DMcG to send info to VL. Berry St crane lifts: • Initial proposal from Denison St not supported by North Sydney Council, now looking at Berry St lift and closure with 400t crane. • Would retain one eastbound lane at all times. • 10 lifts, Friday night to Sunday night. • DMcG asked if TMP or ROL required ? JC said to provide briefing note for works, doesn't require full CTMP. CM suggested a CTMP addendum. Martin Place - Castlereagh St closure: • Opportunity to do 30 October 2020, allows avoidance of clash with other contractors works. • Have submitted permit to Council and to present to LTC in Sept 2020. JC asked to ensure no clash with rescheduled special events. DMcG not aware of any clashes.	**DMcG** **DMcG**	
6.	**City & Southwest – Pitt St ISD**	**NP**	
	NP spoke to the attached slides: • CTMP submitted last month and comments received form all but Council. VL said will action this week. • Services survey being planned and will present further info at future meeting. • Done at night with partial closures using sucker truck. • Temp road closures to go to LTC. • Planning tower crane installation, north site installation will require closure of Park St, will consult further with council and Transport Coordination.		

Agenda Item No.	Action / Decision	Action By	Due Date
	• Meeting with Josh and P&P, some linemarking changes occurring in Bathurst St, lane narrowed so won't be able to park concrete agitator. Requires slight reduction in footpath width to accommodate suitable standing lane width. JC when is Bathurst Street work planned? NP noted early 2021. Josh Fall and Ben Borger consulted on site. • Will be included in CTMP update.		
7.	**City & Southwest – Southwest**	**SP**	
	SP spoke to the attached slides: • Condition assessment of water mains at Wiley Park. • Works over 5 days with vac truck. • TCP in place will keep Stanlea Pde walkway open • All permits obtained. • Next few days in rail corridor. • Utility tracing at all 9 stations, Marrickville to Punchbowl. • Non-intrusive tracing. • TCPs for all areas where on road. • Next 3-4 weeks, meeting with Canterbury Council this Thursday, will meet soon with Inner West Cl. • Each TCP runs 2-3 hours at each site and 3-4 per day. • Traffic control will be in place during investigations on road • Propose all as day shift but if required can do at night.		
8.	**Other matters**		
	No matters raised		
10.	**Next Meeting:** The next TCG meeting is scheduled for Tuesday 8 September 2020 at 8:00 am – 10:00am (Teams Videoconference).		

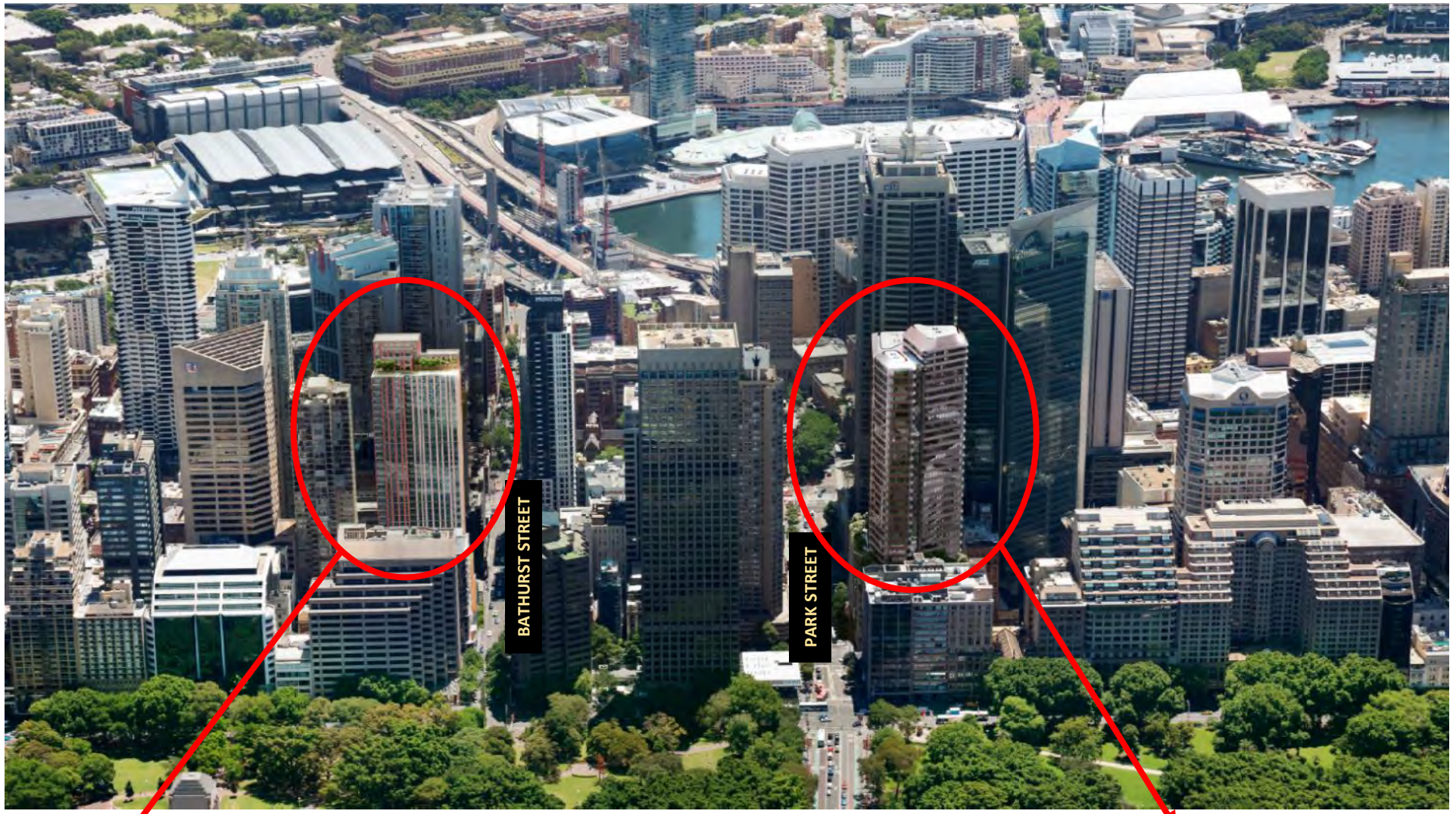
TCG Presentation Slides (2 June 2020)

Pitt Street Integrated Station Development

NSW GOVERNMENT | sydney METRO | CPB CONTRACTORS | OXFORD | CITY OF SYDNEY

Contents

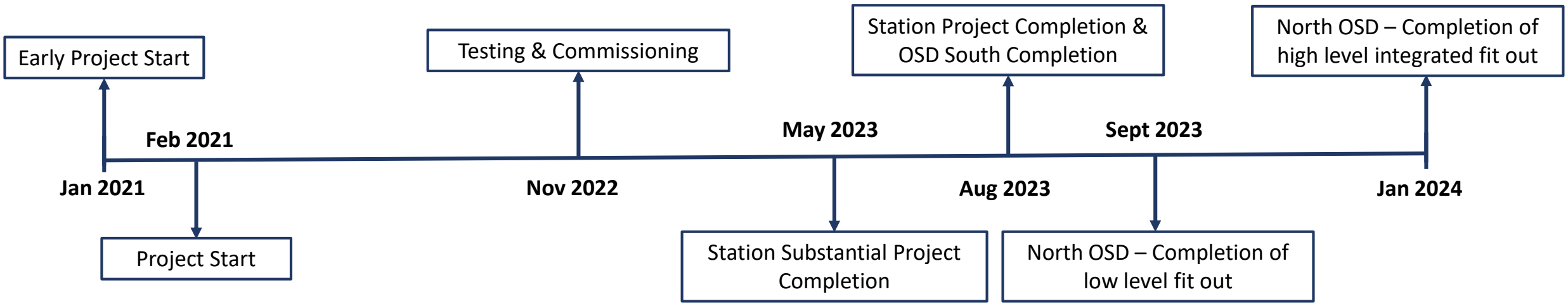
1. Project Overview



South Station and Tower (OSD)

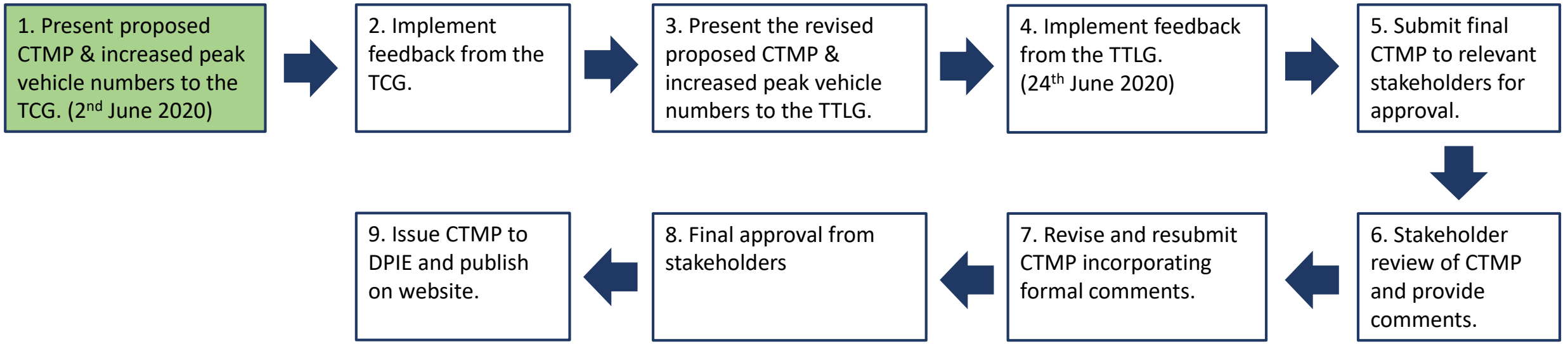
North Station and Tower (OSD)

1. Project Overview



- Project Start/Site Possession – 19 Dec 2020 to 1 Feb 2021.
- Testing & Commissioning Phase Commences – Q4 2022.
- Station Substantial Project Completion 31 May 2023.
- Station Project Completion – 31 Aug 2023.
- OSD South Completion – 30 Aug 2023
- OSD North Completion of low level fit out – 29 Sept 2023.
- OSD North Completion of high level integrated fit out – 15 Jan 2024.

2. Pathway to CTMP Submission and Approval



3. Analysis Undertaken to Date

Intersection Modelling

- SIDRA modelling undertaken at:
  - Park Street – Castlereagh Street (North Site)
  - Bathurst Street – Pitt Street (South Site)
- Data Source:
  - SCATS and IDM data obtained for weekday in March 2020 (pre-COVID). August 2018 turning movement surveys used to determine traffic directional split.
- Modelled scenarios:
  - Existing Conditions: March 2020
  - Future Conditions: Existing + construction traffic
- Weekday Road Network Peaks:
  - Park-Castlereagh: 8:15am-9:15am / 5pm-6pm
  - Pitt-Bathurst: 8am-9am / 5pm-6pm

Intersection	Existing Conditions			
	Demand Flow	Average Delay *(seconds per vehicle)*	Level of Service	Degree of Saturation
Park Street - Castlereagh Street (signalised)				
AM	1689	25	B	0.66
PM	1417	28	B	0.78
Pitt Street – Bathurst Street (signalised)				
AM	1772	18	B	0.44
PM	1808	18	B	0.68

3. Analysis Undertaken to Date

Kerbside Lane Queue Length

Lane Configuration

1 Dedicated left-turn lane
2 Bus Lane
3 Through traffic lane
4 Dedicated right-turn traffic lane

3. Analysis Undertaken to Date

Kerbside Lane Queue Length

<u>Lane Configuration</u>

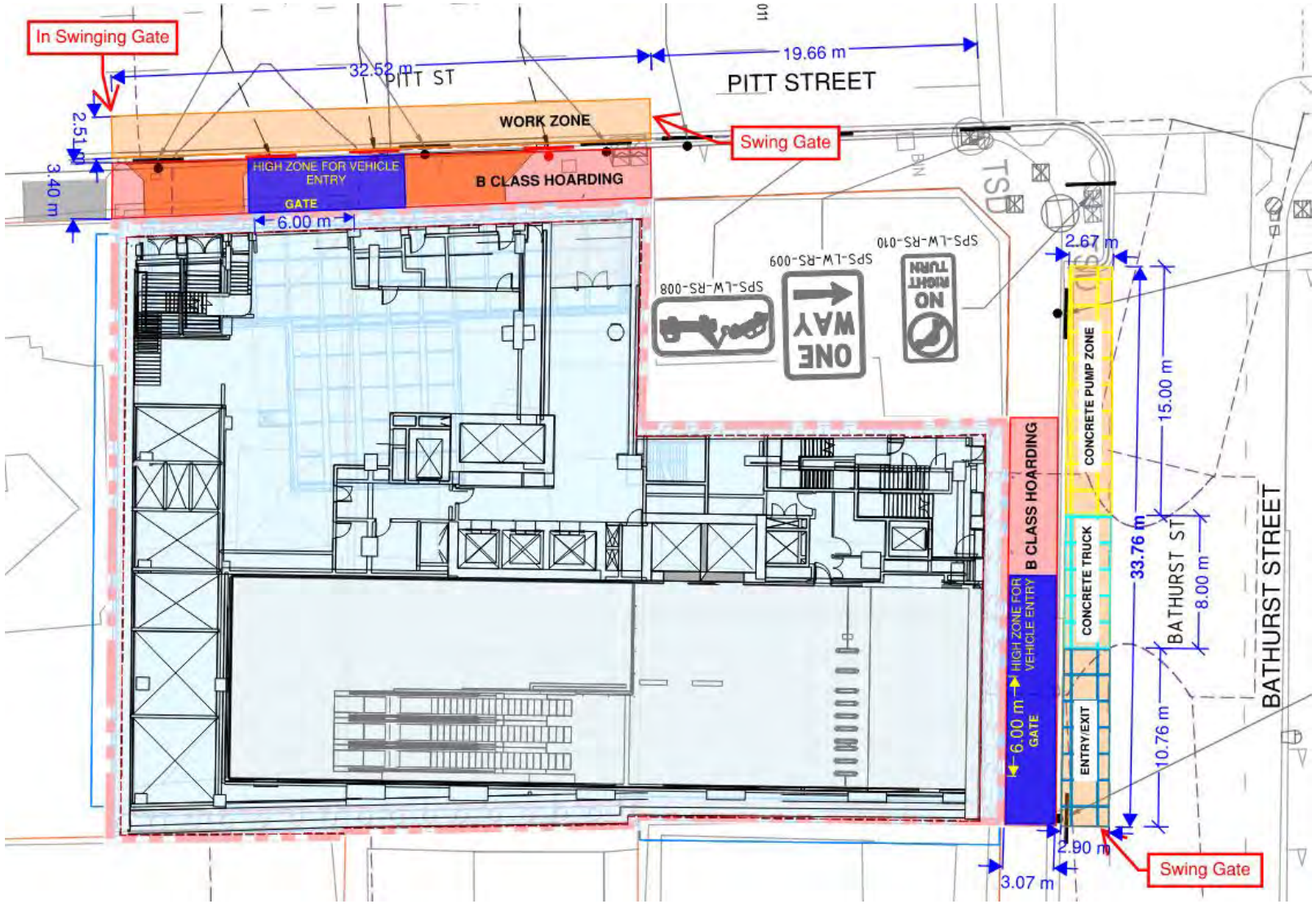
1 Indented parking lane
2 Through traffic lane
3 Through traffic lane
4 Dedicated right-turn traffic lane

4. Work Zones - South Site

- The South Site is a station from B04 to L06.
- Build to Rent (L07 To L38):
  - Mixture of 1, 2 and 3 bedroom apartments
  - Swimming Pool
  - Common facilities

4. Work Zones - South Site

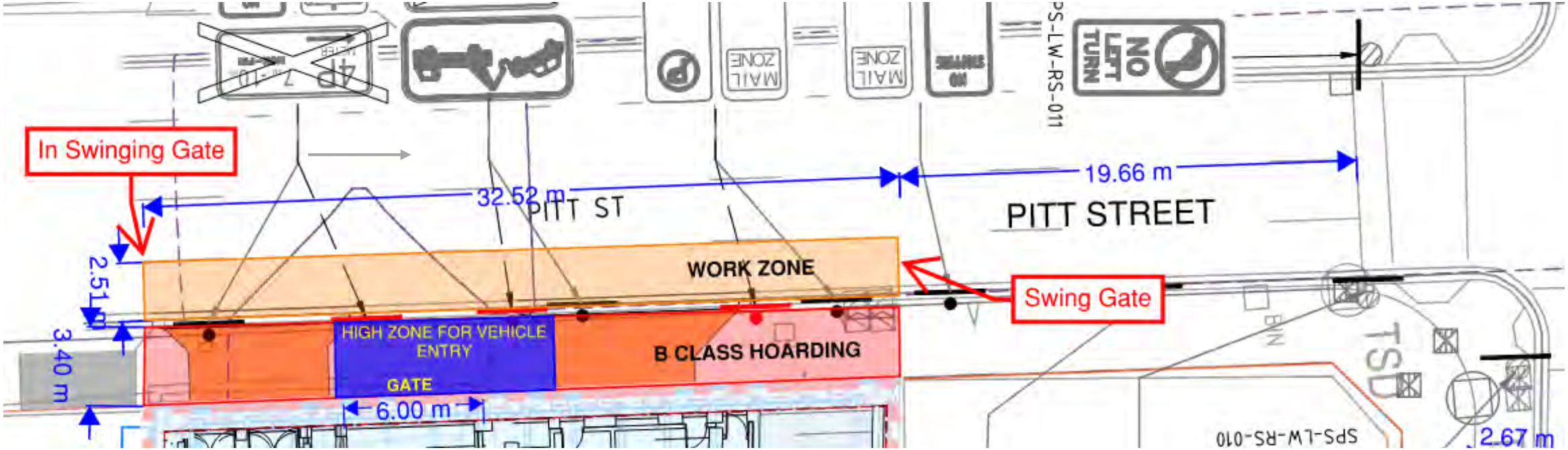
South Site – General Work Zone Arrangement



4. Work Zones - South Site

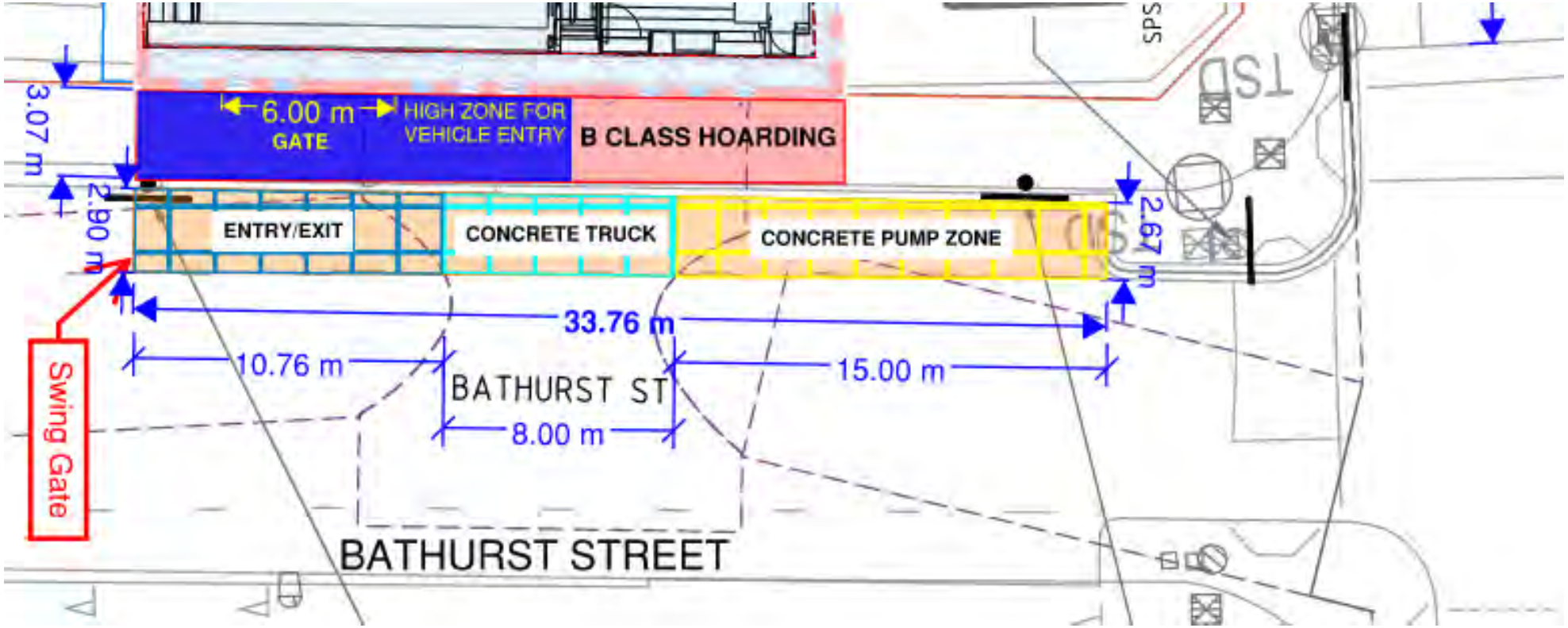
Pitt Street – Work Zone

- Queuing analysis completed by CPB on right hand turn into Bathurst Street ensuring average queue length (Peak) is maintained at all times.



4. Work Zones - South Site

Bathurst Street – Work Zone

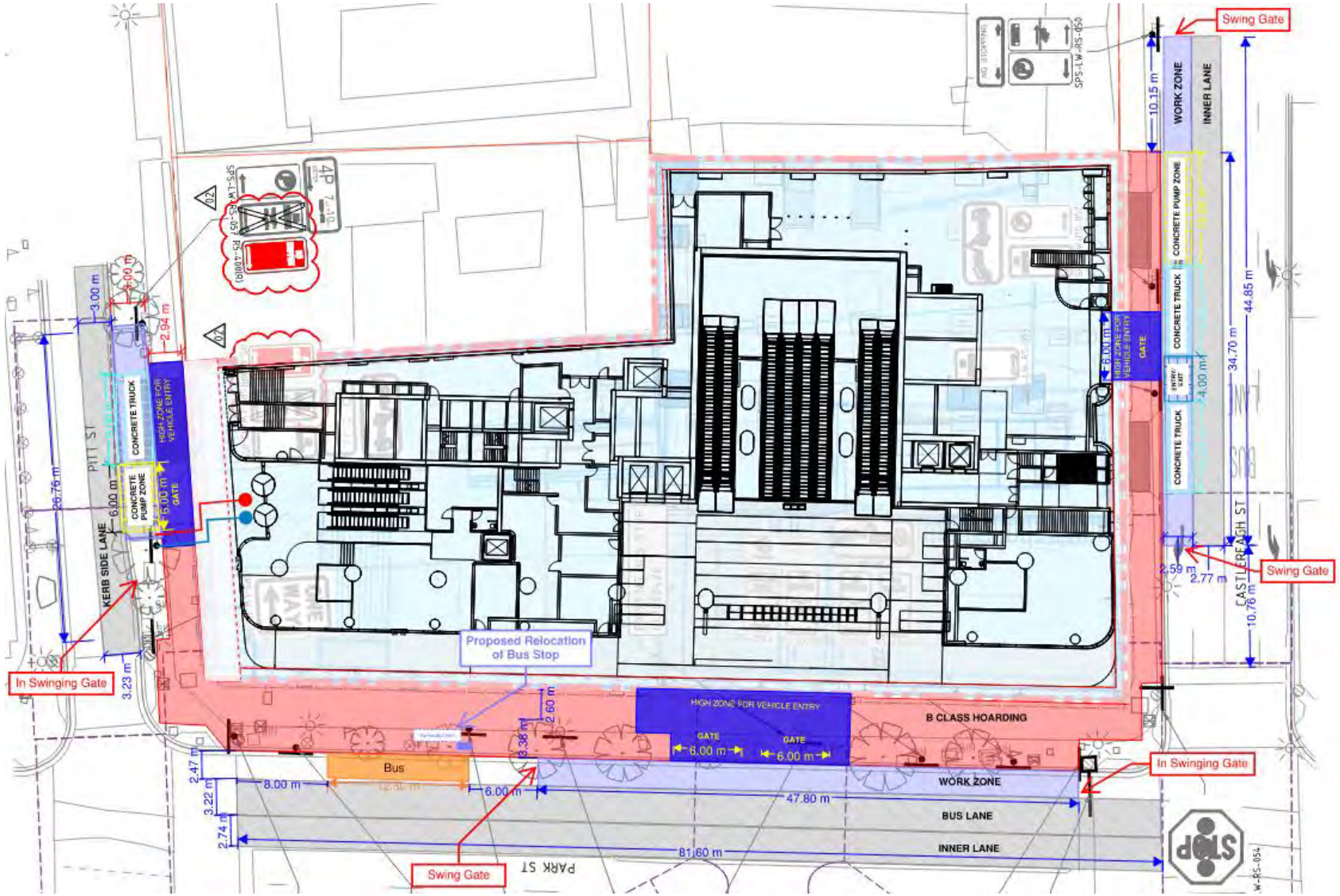


4. Work Zones - North Site

- The North Site is a station from B05 to L05.
- 32 Storey Commercial office tower.

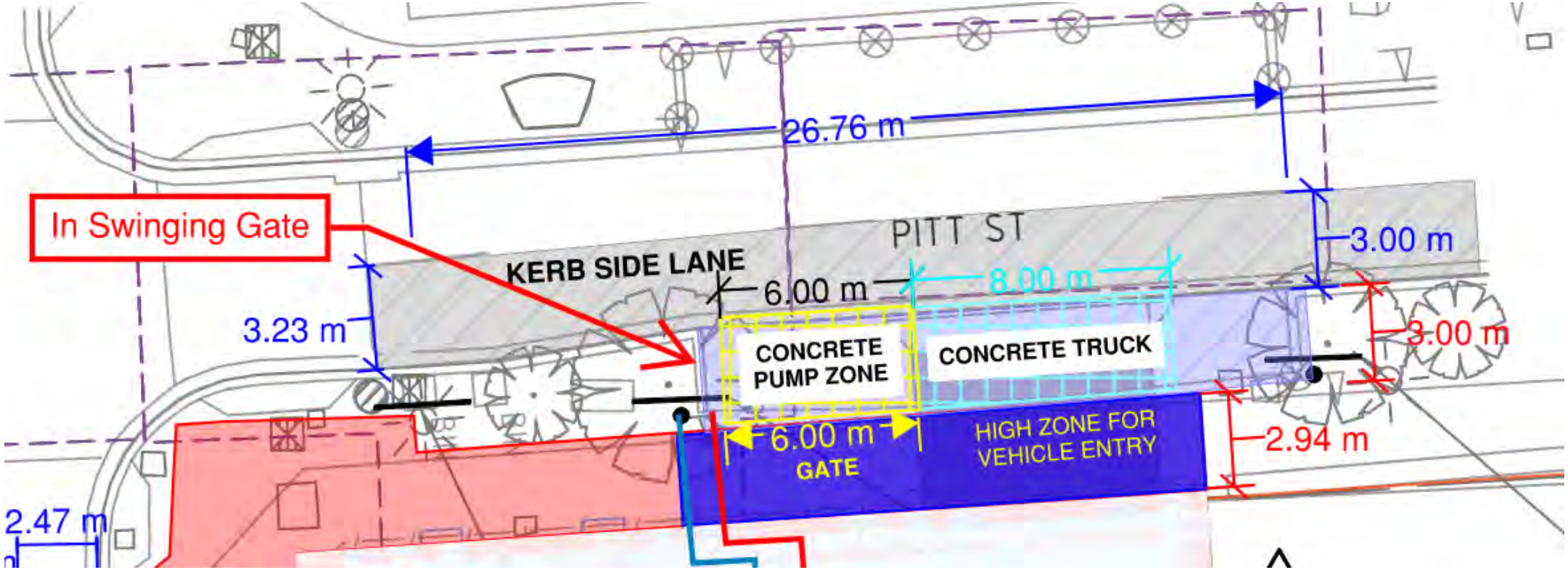
4. Work Zones - North Site

North Site – General Work Zone Arrangement



4. Work Zones - North Site

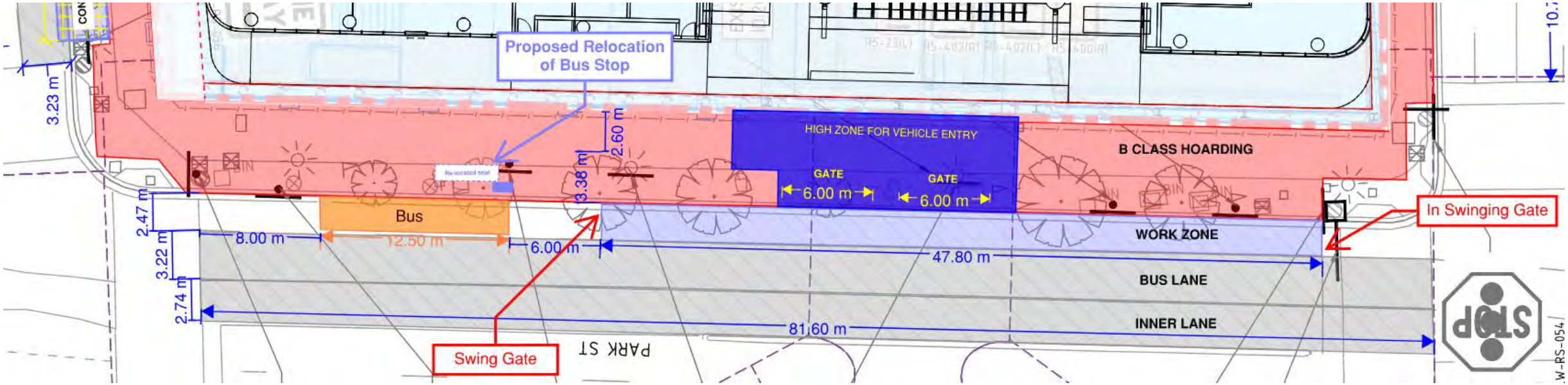
Pitt Street – Work Zone



4. Work Zones - North Site

Park Street – Work Zone

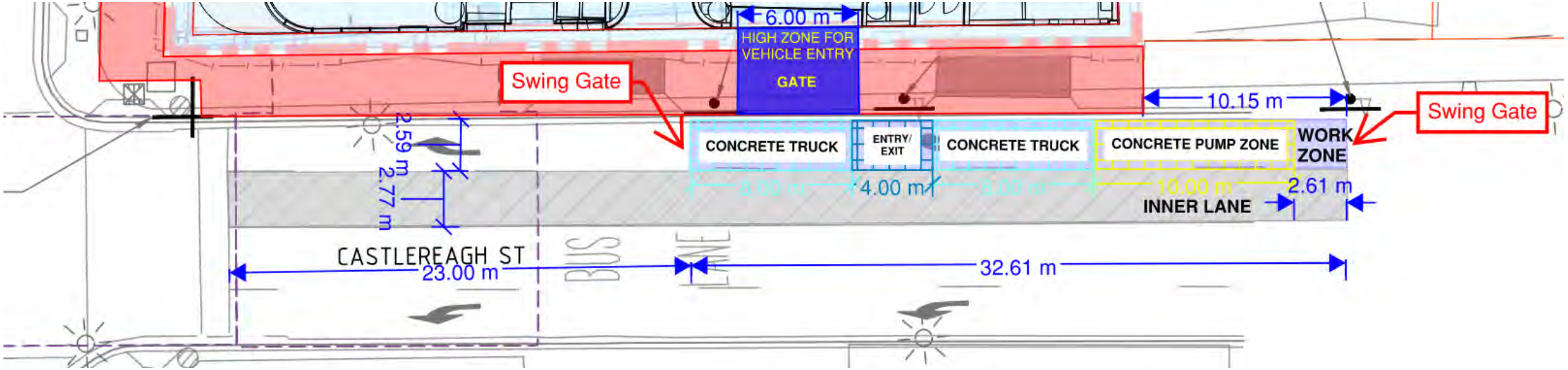
- Buses travelling eastbound from Druitt Street to Park Street can drive straight into the bus stop.
- Construction vehicles can exit the work zone to travel eastbound easier (i.e. eliminates weaving at Castlereagh Street traffic lights)



4. Work Zones - North Site

Castlereagh Street – Work Zone

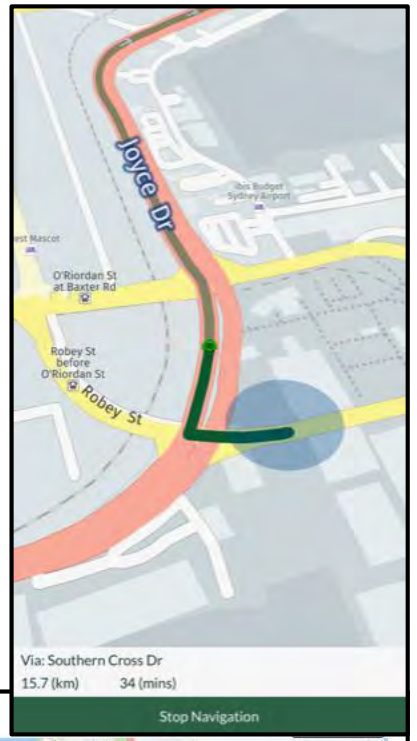
- Queuing analysis completed by CPB on right hand turn into Park Street ensuring average queue length (Peak) is maintained at all times.



5. Increase Traffic Demand (Peak Vehicle Allowance)

CPB Logistics Management System

- Manage work zone, crane and hoist coordination via booking system
- Restrict vehicle numbers and types based on time
- Vehicle called forward by CPB
  - Real time visibility of vehicle locations
  - Directions to drivers
- Vehicle tracked to construction site
- Vehicle departs and is tracked from site



5. Increase Traffic Demand (Peak Vehicle Allowance)

Capacity Assessment and Construction Traffic Generation

- Deliveries:

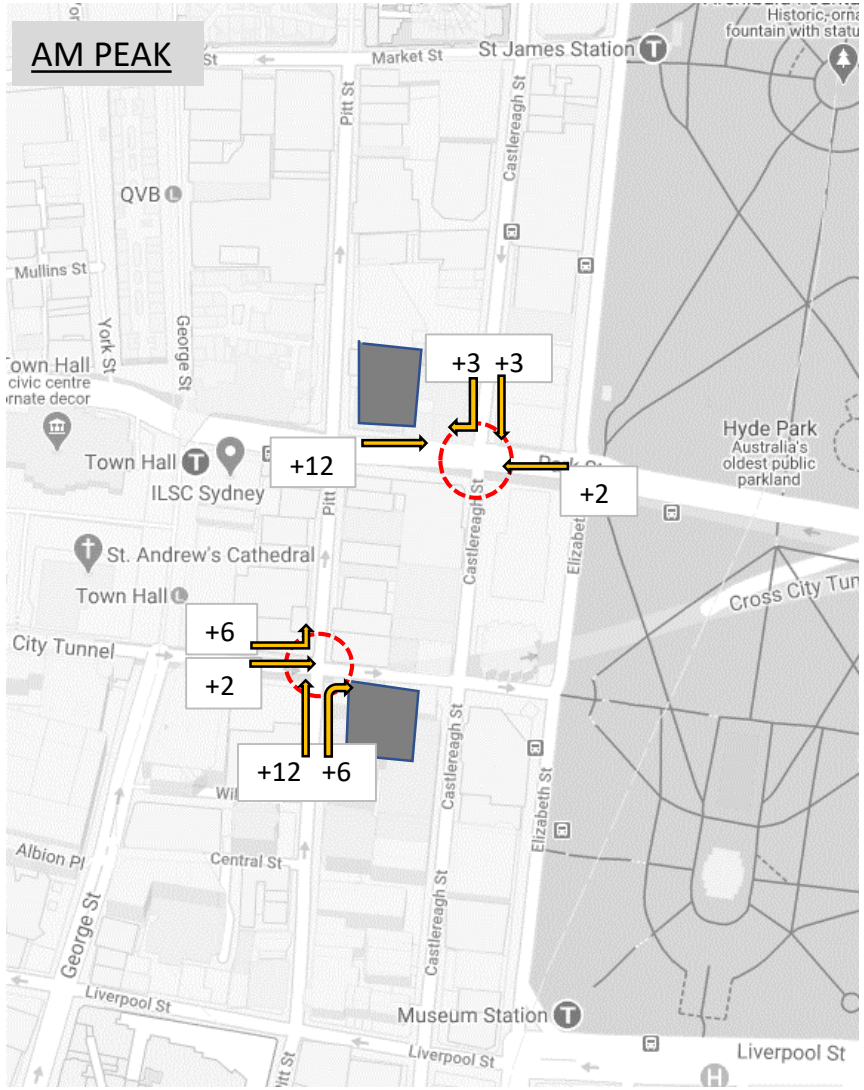
Vehicle	Activity	Duration (max.)
Concrete agitator	Concrete delivery to pump truck	15 min
Medium and heavy rigid trucks	Waterproofing, precast, false work, formwork, reo, façade, services, fitout	20 min
Medium and heavy rigid trucks	Block work, equipment, rubbish, fitout works	30 min

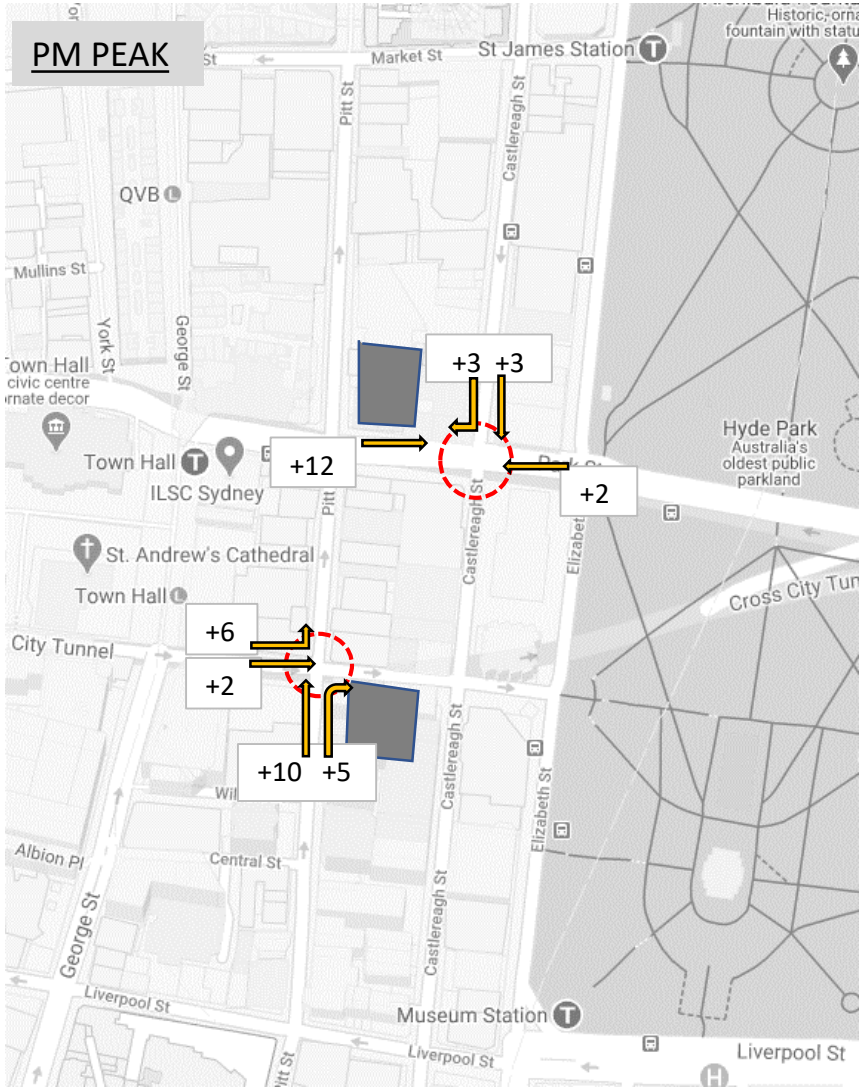
- Traffic generation
  - "Worst case" modelled. i.e greatest traffic generation possible using proposed work zone arrangement:

Peak	North Site	South Site	Combined (i.e. Whole Project)
AM	22 trucks	12 trucks	**34 trucks**
PM	22 trucks	9 trucks	**31 trucks**

5. Increase Traffic Demand (Peak Vehicle Allowance)

Construction Traffic Distribution





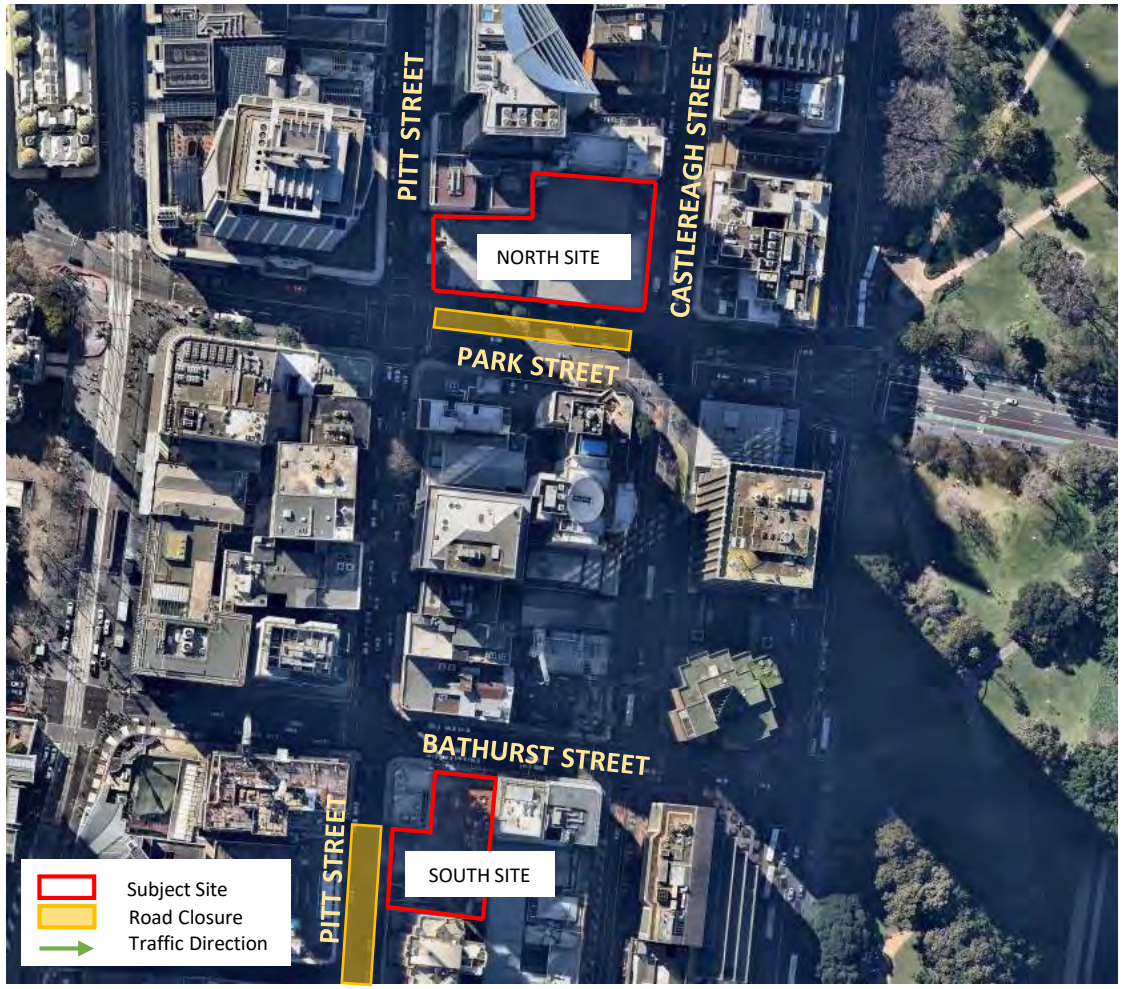
5. Increase Traffic Demand (Peak Vehicle Allowance)

SIDRA Intersection Modelling Results

Intersection	Existing Conditions				Future Conditions (With Construction)			
	Demand Flow	Average Delay *(seconds per vehicle)*	Level of Service	Degree of Saturation	Demand Flow	Average Delay *(seconds per vehicle)*	Level of Service	Degree of Saturation
Park Street - Castlereagh Street (signalised)								
AM	1689	25	B	0.66	1709	25	B	0.69
PM	1417	28	B	0.78	1437	28	B	0.79
Pitt Street – Bathurst Street (signalised)								
AM	1772	18	B	0.44	1798	19	B	0.45
PM	1808	18	B	0.68	1830	19	B	0.72

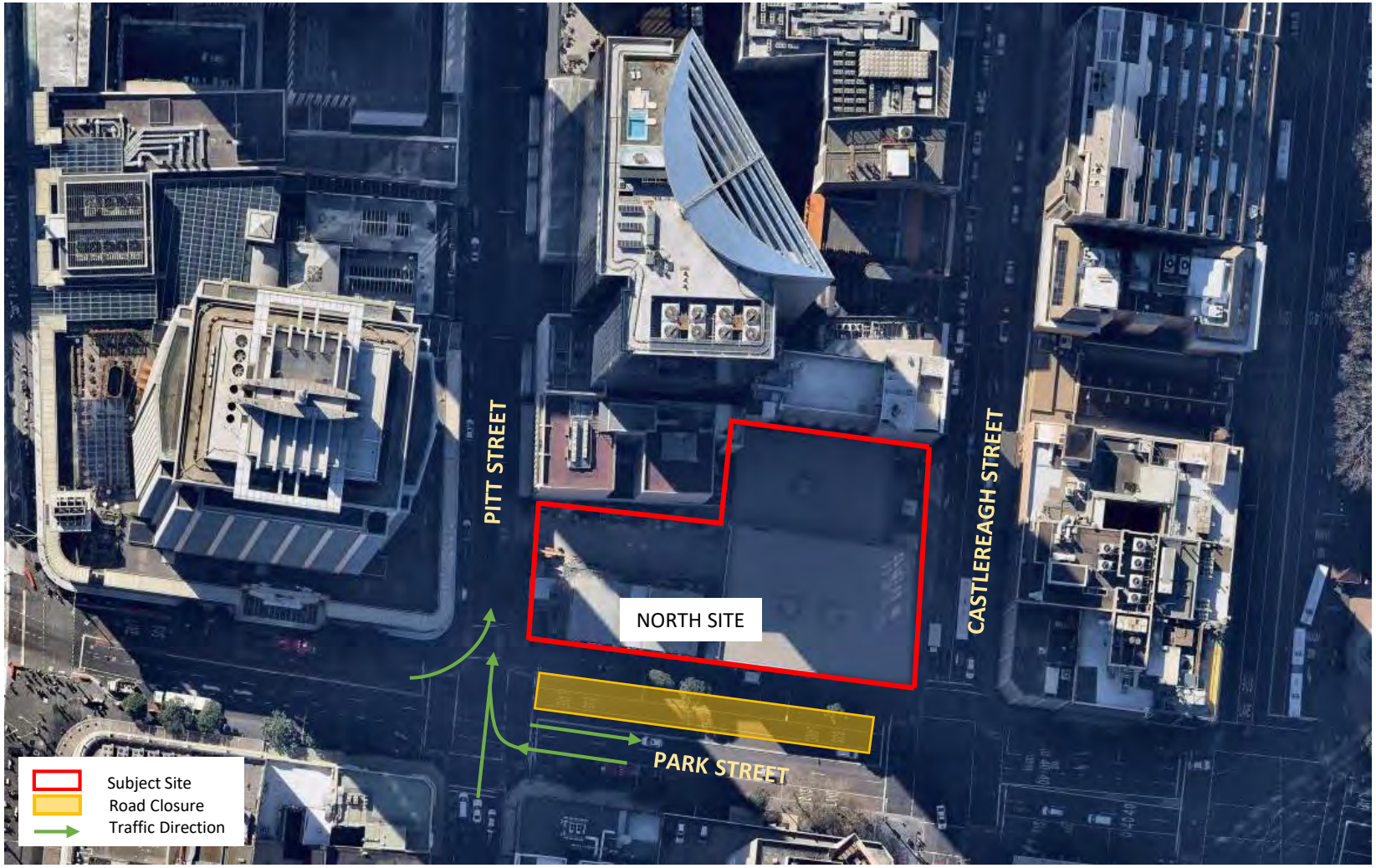
6. Project Start - Road Closures

- Temporary road closures



6. Project Start - Road Closures

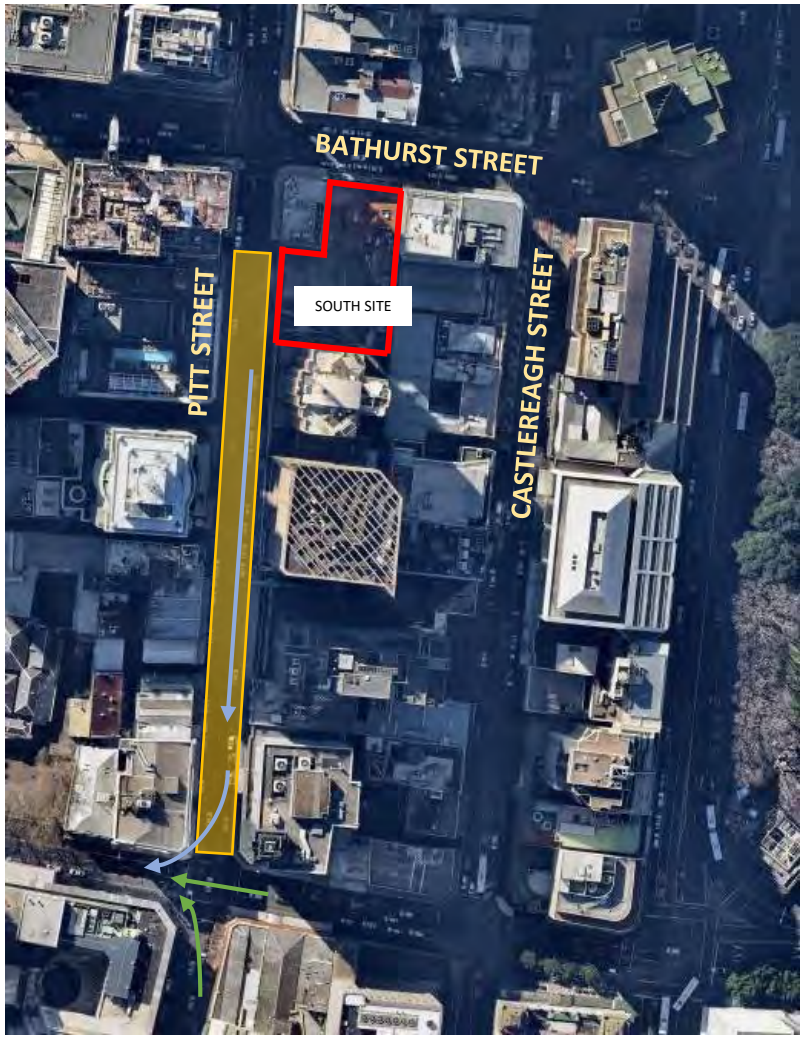
Park Street – Station North Site



6. Project Start - Road Closures

Pitt Street – Station South Site

- A portion of Pitt Street will be temporarily closed.



Dilapidation Reports Correspondence

Santi Botross

From: Asad Rajbhoy <ARajbhoy@cityofsydney.nsw.gov.au>
Sent: Wednesday, 18 November 2020 11:59 AM
To: Papanikolaou, Nicholas
Cc: Elise Webster
Subject: RE: Pitt Street Metro - Road Dilapidation Report South Site

Hi Nick,

Thank you for sending the new links; I have been able to download the files successfully.

I will forward the dilap reports to our properties team and will let you know if they have any comments/questions.

Regards,

Asad

From: Papanikolaou, Nicholas <Nicholas.Papanikolaou@cpbcon.com.au>
Sent: Wednesday, 18 November 2020 11:37 AM
To: Asad Rajbhoy <ARajbhoy@cityofsydney.nsw.gov.au>
Cc: Elise Webster <EWebster@cityofsydney.nsw.gov.au>
Subject: RE: Pitt Street Metro - Road Dilapidation Report South Site

Asad,

Sorry try these links:

North:
https://drive.google.com/drive/folders/1BYI2BBCu7rslGFX3DyfIvpeYDfyxeThS?usp=sharing

South:
https://drive.google.com/drive/folders/1Ubdh2kMAGr7RE06NfMqPem9knRaZGS-a?usp=sharing

Can you confirm you can access this?

Thanks,
Nick

From: Asad Rajbhoy <ARajbhoy@cityofsydney.nsw.gov.au>
Sent: Wednesday, 18 November 2020 11:31 AM
To: Papanikolaou, Nicholas <Nicholas.Papanikolaou@cpbcon.com.au>
Cc: Elise Webster <EWebster@cityofsydney.nsw.gov.au>
Subject: RE: Pitt Street Metro - Road Dilapidation Report South Site

Hi Nicholas,

As with the earlier email of yours, Elise and I are unable to access the document using the links you have provided.

You may need to add our emails into the CPB account as external users or use another file sharing service to send us the documents.

Regards,

Asad

From: Papanikolaou, Nicholas <Nicholas.Papanikolaou@cpbcon.com.au>
Sent: Wednesday, 18 November 2020 11:05 AM
To: Asad Rajbhoy <ARajbhoy@cityofsydney.nsw.gov.au>
Cc: Elise Webster <EWebster@cityofsydney.nsw.gov.au>; Power, Sarah <Sarah.Power@cpbcon.com.au>; Eveleigh, Emma <Emma.Eveleigh@cpbcon.com.au>; Boustani, Chanelle <Chanelle.Boustani@cpbcon.com.au>
Subject: RE: Pitt Street Metro - Road Dilapidation Report South Site

Elise / Asad,

Please see below link of the Pitt Street Metro - Road Dilapidation Reports for the North Site.

Further to issuing this information to the City of Sydney, condition E90 states that the "*Road Dilapidation Report must be provided to the Relevant Council within 3 weeks of completing the survey and no later than 1 month before use of local roads*" . CPB wish to seek dispensation for the time component of this condition from City of Sydney, this is due to the nature of this type of project where there is a hand over from one contractor (TSE) to another (CPB) and it is not feasible to meet the requirements under the CSSI which would require for the previous contractor to finish their works and then enable us to complete our survey 1 month prior to use using these roads.

If you require anything further please let me know.

https://drive.google.com/drive/folders/1BYI2BBCu7rslGFX3DyfIvpeYDfyxeThS?usp=sharing

https://cpbcon-my.sharepoint.com/:f:/g/personal/nicholas_papanikolaou_cpbcon_com_au/ErR_Mz3lh-JPsAhi_HuuGD4BItuHfX6mSMDkoQpto3xe4w?e=LQ6uxD

Regards

Nicholas Papanikolaou
Area Manager

CPB CONTRACTORS

Level 2, 177 Pacific Highway, North Sydney, NSW 2060, Australia
T +61 2 9414 3466 **M** +61408932188
E Nicholas.Papanikolaou@cpbcon.com.au
cpbcon.com.au

A MEMBER OF THE CIMIC GROUP
CIMIC

From: Papanikolaou, Nicholas
Sent: Monday, 16 November 2020 5:59 PM
To: Asad Rajbhoy <ARajbhoy@cityofsydney.nsw.gov.au>

Cc: Elise Webster <EWebster@cityofsydney.nsw.gov.au>
Subject: RE: Pitt Street Metro - Road Dilapidation Report South Site

Asad,

See below two different links:

https://cpbcon-my.sharepoint.com/:f:/g/personal/nicholas_papanikolaou_cpbcon_com_au/EsovxKZT_mlBgMkI32ohLIUBtFpqflHenT_zD3Q7eb14ig?e=oaeO4A

https://drive.google.com/drive/folders/1Ubdh2kMAGr7RE06NfMqPem9knRaZGS-a?usp=sharing

Please let me know if you can access either of these links.

Regards

Nicholas Papanikolaou
Area Manager

CPB CONTRACTORS

Level 2, 177 Pacific Highway, North Sydney, NSW 2060, Australia
T +61 2 9414 3466 **M** +61408932188
E Nicholas.Papanikolaou@cpbcon.com.au
cpbcon.com.au

A MEMBER OF THE CIMIC GROUP
CIMIC

From: Asad Rajbhoy <ARajbhoy@cityofsydney.nsw.gov.au>
Sent: Monday, 16 November 2020 11:59 AM
To: Papanikolaou, Nicholas <Nicholas.Papanikolaou@cpbcon.com.au>
Cc: Elise Webster <EWebster@cityofsydney.nsw.gov.au>
Subject: RE: Pitt Street Metro - Road Dilapidation Report South Site

Hi Nicholas,

Elise and I have been unable to access the Pitt Street Metro - Road Dilapidation Reports for the South Site via the link provided in the email below.

Could you please check and re-send the link. Thank you.

Regards,

Asad

From: Papanikolaou, Nicholas <Nicholas.Papanikolaou@cpbcon.com.au>
Sent: Thursday, 12 November 2020 5:37 PM
To: Asad Rajbhoy <ARajbhoy@cityofsydney.nsw.gov.au>; Elise Webster <EWebster@cityofsydney.nsw.gov.au>
Cc: Eveleigh, Emma <Emma.Eveleigh@cpbcon.com.au>; Power, Sarah <Sarah.Power@cpbcon.com.au>; Boustani,

Chanelle <Chanelle.Boustani@cpbcon.com.au>
Subject: Pitt Street Metro - Road Dilapidation Report South Site

Elise,

Hope you are well. Please see below link of the Pitt Street Metro - Road Dilapidation Reports for the South Site and will send over the North one in the next few days.

Further to issuing this information to the City of Sydney, condition E90 states that the "*Road Dilapidation Report must be provided to the Relevant Council within 3 weeks of completing the survey and no later than 1 month before use of local roads*" . CPB wish to seek dispensation for the time component of this condition from City of Sydney, this is due to the nature of this type of project where there is a hand over from one contractor (TSE) to another (CPB) and it is not feasible to meet the requirements under the CSSI which would require for the previous contractor to finish their works and then enable us to complete our survey 1 month prior to use using these roads.

If you require anything further please let me know.

https://cpbcon-my.sharepoint.com/:f:/g/personal/nicholas_papanikolaou_cpbcon_com_au/EsovxKZT_mIBgMkI32ohLIUBtFpqfIHenT_zD3Q7eb14ig?e=Cgr7Ut

Regards

Nicholas Papanikolaou
Area Manager

CPB CONTRACTORS

Level 2, 177 Pacific Highway, North Sydney, NSW 2060, Australia
T +61 2 9414 3466 **M** +61408932188
E Nicholas.Papanikolaou@cpbcon.com.au
cpbcon.com.au

A MEMBER OF THE CIMIC GROUP
CIMIC

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Australia Post Correspondence

From: Dixon, Shane <Shane.Dixon@auspost.com.au>
Sent: Tuesday, 7 July 2020 12:01 PM
To: Santi Botross
Cc: Papanikolaou, Nicholas; Wayne Johnson
Subject: RE: Australia Post Boxes - Park Street, Sydney CBD

Thank you Santi.

Can you let me know when the signs have been installed and I shall have the boxes moved.

Regards,

Shane Dixon
Operations & Equipment Support
Network Planning NSW/ACT
Australia Post

Level 3 East Wing STRATHFIELD NSW 2135
2 Weeroona Rd Strathfield

T 0429360374

M 0429360374

E Shane.Dixon@auspost.com.au

From: Santi Botross [mailto:Santi.Botross@ttpp.net.au]
Sent: Tuesday, 7 July 2020 11:02 AM
To: Dixon, Shane <Shane.Dixon@auspost.com.au>
Cc: Papanikolaou, Nicholas <Nicholas.Papanikolaou@cpbcon.com.au>; Wayne Johnson <Wayne.Johnson@ttpp.net.au>
Subject: RE: Australia Post Boxes - Park Street, Sydney CBD

Hi Shane,

The post boxes would need to be relocated by December 2020.

Yes, the mail zone will be installed prior to the relocation.

Regards,

Santi Botross

Senior Traffic Engineer
p: +61 2 8437 7828 m: +61 400 777 170
a: Suite 402, 22 Atchison Street, St Leonards NSW 2065
w: www.ttpp.net.au e: Santi.Botross@ttpp.net.au

From: Dixon, Shane <Shane.Dixon@auspost.com.au>
Sent: Tuesday, 7 July 2020 8:28 AM
To: Santi Botross <Santi.Botross@ttpp.net.au>
Cc: Papanikolaou, Nicholas <Nicholas.Papanikolaou@cpbcon.com.au>; Wayne Johnson <Wayne.Johnson@ttpp.net.au>
Subject: RE: Australia Post Boxes - Park Street, Sydney CBD

Good morning Santi,

Could you please let me know when we are required to relocate these SPB's?

Will the mail zone be installed prior to the relocation? Once installed we can go ahead with the move.

Regards,

Shane Dixon
Operations & Equipment Support
Network Planning NSW/ACT
Australia Post

Level 3 East Wing STRATHFIELD NSW 2135
2 Weeroona Rd Strathfield

T 0429360374

M 0429360374

E Shane.Dixon@auspost.com.au

From: Santi Botross [mailto:Santi.Botross@ttpp.net.au]
Sent: Tuesday, 30 June 2020 2:41 PM
To: Dixon, Shane <Shane.Dixon@auspost.com.au>
Cc: Papanikolaou, Nicholas <Nicholas.Papanikolaou@cpbcon.com.au>; Wayne Johnson <Wayne.Johnson@ttpp.net.au>
Subject: FW: Australia Post Boxes - Park Street, Sydney CBD

Hi Shane,

As I understand, the matter below has been forwarded to you.

Have you had a chance to review, and are you able to provide any comment on the proposed arrangement?

Regards,

Santi Botross
Senior Traffic Engineer
p: +61 2 8437 7828 m: +61 400 777 170
a: Suite 402, 22 Atchison Street, St Leonards NSW 2065
w: www.ttpp.net.au e: Santi.Botross@ttpp.net.au

From: Karpenko, Matthew <matthew.karpenko@auspost.com.au>
Sent: Tuesday, 30 June 2020 2:38 PM
To: Santi Botross <Santi.Botross@ttpp.net.au>
Cc: Papanikolaou, Nicholas <Nicholas.Papanikolaou@cpbcon.com.au>; Wayne Johnson <Wayne.Johnson@ttpp.net.au>
Subject: RE: Australia Post Boxes - Park Street, Sydney CBD

Hi Santi,

Shane Dixon is covering Steve's Role the at the moment – his email address is Shane.Dixon@auspost.com.au. Shane has your original email.

Regards

Matt

Matthew Karpenko
Operations Coordinator MyNetwork NSW/ACT/QLD/NT

Customer Excellence Team
Australia Post

2 Herbert St St Leonards NSW 2065

T 0437 276 889

M 0437 276 889

E matthew.karpenko@auspost.com.au

From: Santi Botross [mailto:Santi.Botross@ttpp.net.au]
Sent: Tuesday, 30 June, 2020 1:30 PM
To: Karpenko, Matthew <matthew.karpenko@auspost.com.au>
Cc: Papanikolaou, Nicholas <Nicholas.Papanikolaou@cpbcon.com.au>; Wayne Johnson <Wayne.Johnson@ttpp.net.au>
Subject: RE: Australia Post Boxes - Park Street, Sydney CBD

Hi Matt,

Have you heard from Steve regarding the matter below?

If you don't mind, are you able to provide Steve's email address?

Regards,

Santi Botross

Senior Traffic Engineer
p: +61 2 8437 7828 m: +61 400 777 170
a: Suite 402, 22 Atchison Street, St Leonards NSW 2065
w: www.ttpp.net.au e: Santi.Botross@ttpp.net.au

From: Karpenko, Matthew <matthew.karpenko@auspost.com.au>
Sent: Thursday, 25 June 2020 12:12 PM
To: Santi Botross <Santi.Botross@ttpp.net.au>
Cc: Papanikolaou, Nicholas <Nicholas.Papanikolaou@cpbcon.com.au>; Wayne Johnson <Wayne.Johnson@ttpp.net.au>
Subject: RE: Australia Post Boxes - Park Street, Sydney CBD

Hi Santi,

Thank you for your email. I have forwarded your email to Steven Hatzi from Australia Post as I no longer work in the NSW SPB team. One of the team will respond to you soon

Kind Regards

Matt

Matthew Karpenko
Operations Coordinator MyNetwork NSW/ACT/QLD/NT
Customer Excellence Team
Australia Post

2 Herbert St St Leonards NSW 2065

T 0437 276 889

M 0437 276 889

E matthew.karpenko@auspost.com.au

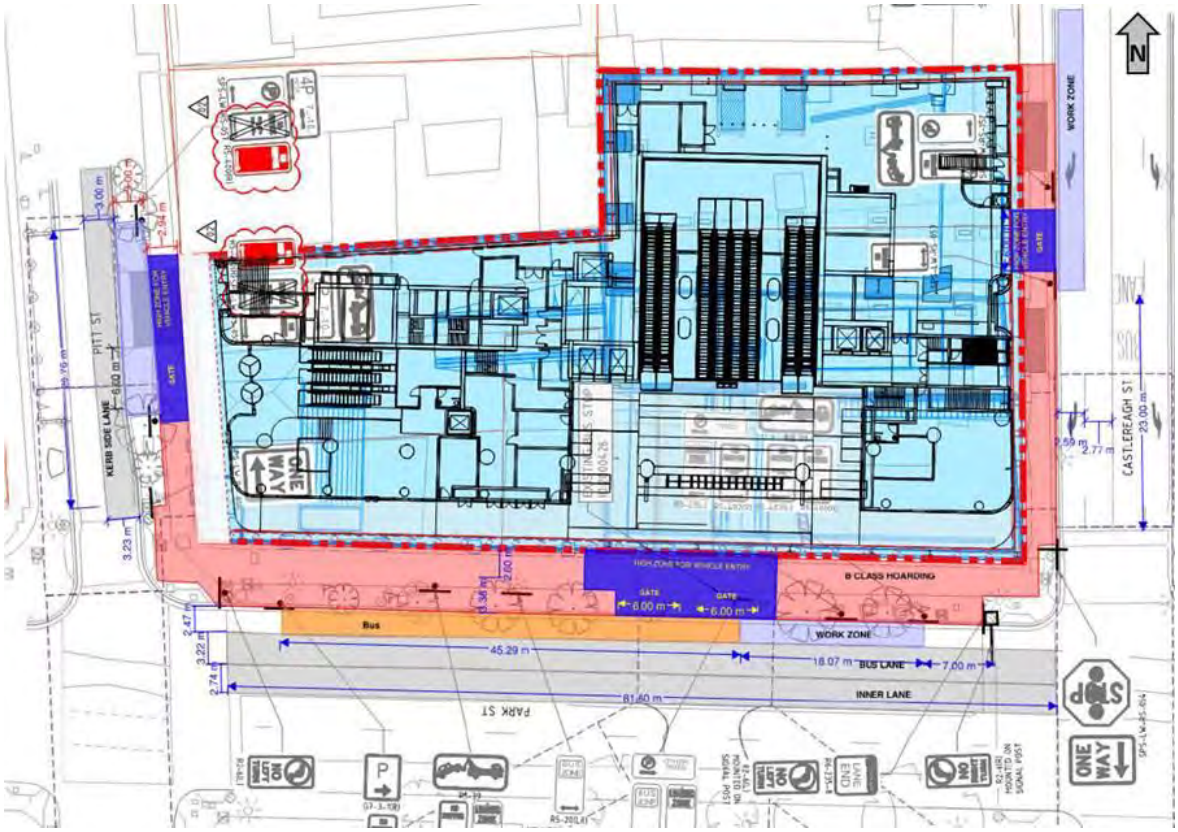
Australia Post

From: Santi Botross [mailto:Santi.Botross@ttpp.net.au]
Sent: Thursday, 25 June, 2020 11:01 AM
To: Karpenko, Matthew <matthew.karpenko@auspost.com.au>
Cc: Papanikolaou, Nicholas <Nicholas.Papanikolaou@cpbcon.com.au>; Wayne Johnson <Wayne.Johnson@ttpp.net.au>
Subject: Australia Post Boxes - Park Street, Sydney CBD

Morning Matt,

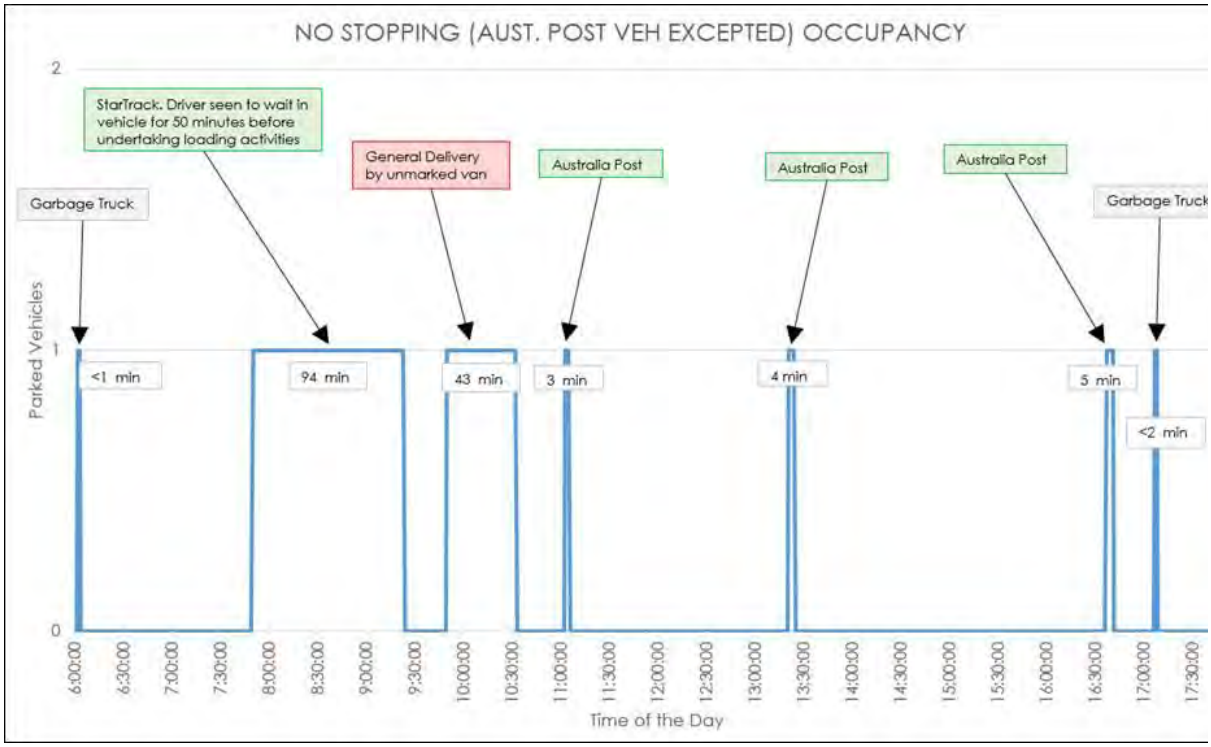
As part of the construction works for Sydney Metro Pitt Street, a work zone is to be proposed on Park Street. The work zone would occupy the existing section of kerbside lane which is signposted as *Loading Zone* and *No Stopping Aust. Post Vehicles Excepted.* Refer below for indicative layout of work zones around the site perimeter.

Notably, there are two Australia Post boxes (red and yellow boxes) located beside the *No Stopping Aust. Post Vehicles Excepted* section. The affected area on Park Street is also shown below.



The work zone at this location would be required for the majority of the construction period, that is, for 2.5 years between February 2021 and August 2023. For now, work zone operating hours are proposed outside of traffic peak periods. However, the intent is to extend the work zone hours to 24 hours a day Monday to Saturday.

A survey of the *No Stopping* area was undertaken on Thursday 18 June between 6am-6pm to identify the frequency and duration of stay of Aust. Post vehicles accessing this space. See below for a summary of the survey results.



Study findings show that:

- For the majority of occurrences, Australia Post vehicles (which include Star Track) accessed this space.

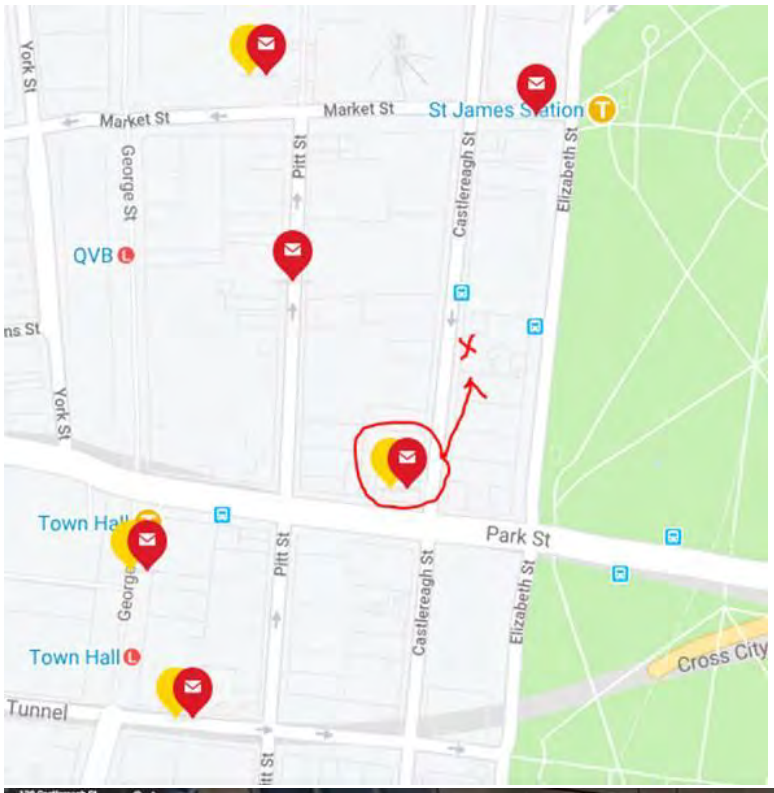
- Notably, the Star Track vehicle was parked for 50 mins before delivering parcels, and all up, was there for 1.5hrs. The amount of time parked within the space seems peculiar, and we assume might be a-typical.
- If we consider typical or average use of this space, the post boxes were emptied three times during the survey period (6am-6pm) by Aust. Post vans for a short duration each time (3-5 minutes).
- Waste collection of the council kerbside bin occurs twice during the day, for 1-2 minutes per collection. We expect that the bin would be removed in order to facilitate a work zone at this location.

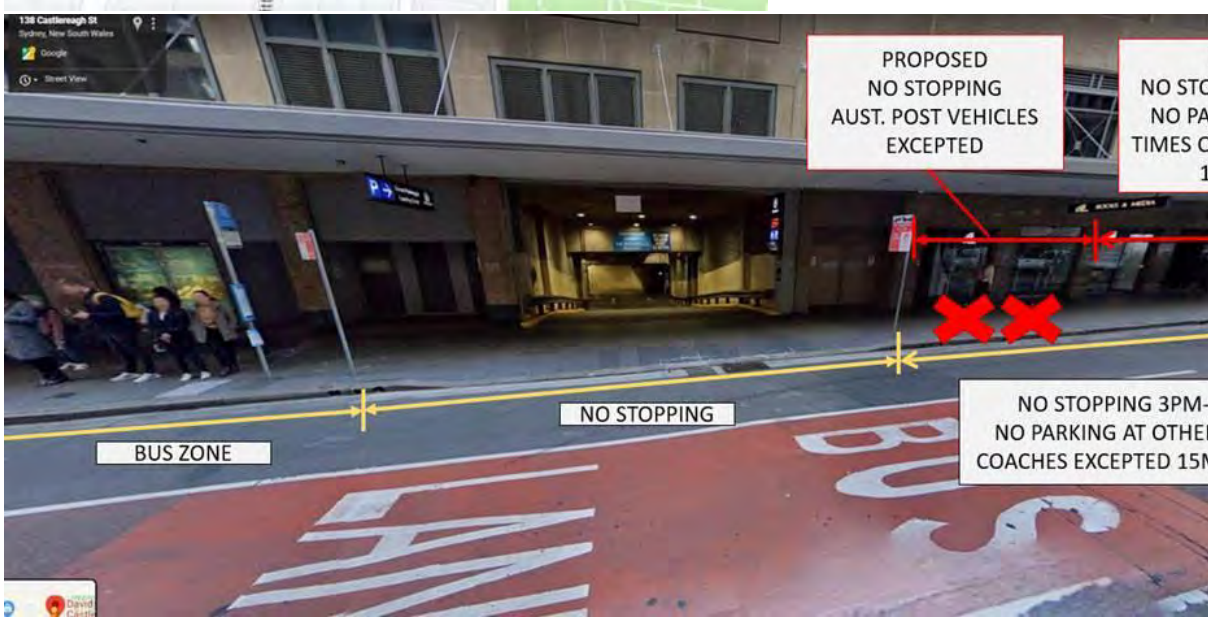
We appreciate that these post boxes could be key post boxes in the CBD. Therefore, if it is not viable to remove the boxes for the construction period, could suggest relocating them?

A potential location could be on Castlereagh Street as shown by the 'X' below. The boxes could be situated within the end section of an space which is currently signposted as *No Stopping 3pm-8pm and No Parking at Other Times Coaches Excepted 15 minute limit.* This signposted space is approximately 20 metres in length, which could accommodate a standard 14.5m coach and a 5.2m Aust. Post van (B99 vehicle) at one time.

Based on a typical short duration of stay, Aust. Post vehicles would not be expected to have a negative impact on traffic, coaches, and the STA bus stop that is located just to the north. Note, there is driveway separating the bus stop and the proposed pos box relocation zone as shown below.

Nearby Street Posting Boxes:





Can you please advise whether Australia Post considers the above a suitable arrangement?

If you have any queries, please do not hesitate to ask.

Kind regards,

Santi Botross

Senior Traffic Engineer
p: +61 2 8437 7828 m: +61 400 777 170
a: Suite 402, 22 Atchison Street, St Leonards NSW 2065
w: www.ttpp.net.au e: Santi.Botross@ttpp.net.au

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Edinburgh Castle Hotel Correspondence

From: Papanikolaou, Nicholas <Nicholas.Papanikolaou@cpbcon.com.au>
Sent: Thursday, 14 January 2021 9:48 AM
To: Santi Botross
Subject: FW: Works Zone Query - Pitt Street, Sydney (Pitt Street South Metro Station)
Attachments: Pitt Street - Edinburgh Castle Hotel delivery Zone R3.pdf; Pitt Street - Edinburgh Castle Hotel delivery Zone R3.pdf

---

From: Moulton, Chris <Chris.Moulton@cpbcon.com.au>
Sent: Saturday, 10 October 2020 9:16 AM
To: Ganesh Vengadasalam <GVengadasalam@cityofsydney.nsw.gov.au>; Papanikolaou, Nicholas <Nicholas.Papanikolaou@cpbcon.com.au>
Cc: Claudia Calabro <CCALABRO@cityofsydney.nsw.gov.au>; Collantes, Andrey <Andrey.Collantes@cpbcon.com.au>
Subject: RE: Works Zone Query - Pitt Street, Sydney (Pitt Street South Metro Station)

Hi Ganesh,

I have clarified with the Edinburgh Castle Hotel that the CPB Work Zone can remain 32m long and the portion of the CPB Work Zone before the new 'No Stopping' area can be shared between CPB and the Edinburgh.
Refer attached email thread and markup attached, which also includes expected Edinburgh delivery requirements..
CPB will also be using an online booking system for deliveries which we can also use to book in deliveries for the Edinburgh if required.

Thanks,
Chris

From: Ganesh Vengadasalam <GVengadasalam@cityofsydney.nsw.gov.au>
Sent: Wednesday, 7 October 2020 3:58 PM
To: Papanikolaou, Nicholas <Nicholas.Papanikolaou@cpbcon.com.au>
Cc: Claudia Calabro <CCALABRO@cityofsydney.nsw.gov.au>; Moulton, Chris <Chris.Moulton@cpbcon.com.au>
Subject: FW: Works Zone Query - Pitt Street, Sydney (Pitt Street South Metro Station)

Hi Nicholas,

Thanks for providing the additional information. I have a further query regarding the Works Zone proposal on Pitt Street. Please refer to the attached proposed Works Zone Plan for Pitt and Bathurst Streets and the WAD.

According to the WAD, the Hotel will use the current "No Parking" zone on Pitt Street for their deliveries whilst the loading zone on Bathurst Street is reallocated to Works Zone. This will not be feasible due to the following reasons:

- The "No Parking" zone on Pitt Street is 5.6 metres long. The proposed Works Zone on Pitt Street is 32 metres long which encroaches 3.3 metres onto the "No Parking" zone leaving only 2.3 metres of "No Parking" zone left.
- It will not be feasible to leave a 2.3 metre long "No Parking" zone and as such this area will be reallocated to "No Stopping".

To comply with the WAD, the current 5.6 metres “No Parking” zone should be retained. As such, the proposed Works Zone on Pitt Street should be reduced to 28.7 metres. This complies with the attached sketch “Pitt Street – Edinburgh Castle Hotel Delivery Zone”.

Could you please review the above and advise if the Works Zone on Pitt Street can be reduced to 28.7 metres.

Regards

Ganesh

From: Papanikolaou, Nicholas <Nicholas.Papanikolaou@cpbcon.com.au>
Sent: Tuesday, 6 October 2020 6:04 PM
To: Ganesh Vengadasalam <GVengadasalam@cityofsydney.nsw.gov.au>
Cc: Claudia Calabro <CCALABRO@cityofsydney.nsw.gov.au>; Moulton, Chris <Chris.Moulton@cpbcon.com.au>
Subject: RE: Works Zone Query - Pitt Street, Sydney (Pitt Street South Metro Station)

Ganesh,

Please see attached approval from The Edinburgh Castle Hotel for this work zone in front of there property.

We have agreed that deliveries for the pub would be in the Pitt Street Loading Zone.

Please let me know if you require any additional information.

Regards

Nicholas Papanikolaou
Area Manager

CPB CONTRACTORS

Level 2, 177 Pacific Highway, North Sydney, NSW 2060, Australia
T +61 2 9414 3466 **M** +61408932188
E Nicholas.Papanikolaou@cpbcon.com.au
cpbcon.com.au

A MEMBER OF THE CIMIC GROUP
CIMIC

From: Ganesh Vengadasalam <GVengadasalam@cityofsydney.nsw.gov.au>
Sent: Friday, 2 October 2020 12:39 PM
To: Papanikolaou, Nicholas <Nicholas.Papanikolaou@cpbcon.com.au>
Cc: Claudia Calabro <CCALABRO@cityofsydney.nsw.gov.au>
Subject: RE: Works Zone Query - Pitt Street, Sydney (Pitt Street South Metro Station)

Hi Nicholas,

I have a query regarding your Works Zone application on Bathurst Street, Sydney. I have attached a plan of the proposal for your reference.

You have requested a 33.8 metre Works Zone on Bathurst Street. The Works Zone extends past the Metro Station site boundary onto the loading zone located in front of The Edinburgh Castle Hotel. The Hotel would require the use

of the loading zone for their deliveries. As such, if you need a 33.8 metre loading zone, could you please discuss with the Hotel management if they could schedule their deliveries outside of the Works Zone hours. Alternatively, you could also provide access to the Works Zone during the Works Zone hours to accommodate deliveries to the Hotel. Please advise on the outcome following your discussion with the Hotel management.

Regards

Ganesh

Ganesh Vengadasalam
Senior Traffic Engineer
City Infrastructure & Traffic Operations

CITY OF SYDNEY

Telephone: 02 9288 5941
cityofsydney.nsw.gov.au

From: Papanikolaou, Nicholas <Nicholas.Papanikolaou@cpbcon.com.au>
Sent: Tuesday, 29 September 2020 4:44 PM
To: Ganesh Vengadasalam <GVengadasalam@cityofsydney.nsw.gov.au>
Cc: Claudia Calabro <CCALABRO@cityofsydney.nsw.gov.au>; Moulton, Chris <Chris.Moulton@cpbcon.com.au>
Subject: TRIM CM: RE: Works Zone Query - Pitt Street, Sydney (Pitt Street South Metro Station)

Ganesh,

The 32m will suffice to the boundary.

Thanks,
Nick

From: Ganesh Vengadasalam <GVengadasalam@cityofsydney.nsw.gov.au>
Sent: Friday, 25 September 2020 3:06 PM
To: Papanikolaou, Nicholas <Nicholas.Papanikolaou@cpbcon.com.au>
Cc: Claudia Calabro <CCALABRO@cityofsydney.nsw.gov.au>
Subject: Works Zone Query - Pitt Street, Sydney (Pitt Street South Metro Station)

Hi Nicholas,

I refer to your attached Works Zone application on the eastern side of Pitt Street, Sydney south of Bathurst Street. You had requested for a 32.5 metre Works Zone. Following a site visit, the site boundary of the construction site is 32 metres long.

Could you please confirm if you require a 32.5 metre Works Zone or a 32 metre Works Zone is suffice? I have attached a plan for your reference.

Regards

Ganesh

Ganesh Vengadasalam
Senior Traffic Engineer
City Infrastructure & Traffic Operations

CITY OF SYDNEY

Telephone: 02 9288 5941
cityofsydney.nsw.gov.au

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From: Papanikolaou, Nicholas <Nicholas.Papanikolaou@cpbcon.com.au>
Sent: Thursday, 14 January 2021 9:48 AM
To: Santi Botross
Subject: FW: Pitt Street South Station Work Zone Clarification Revision 2

From: Luke Rule <luke.rule@solotel.com.au>
Sent: Friday, 9 October 2020 6:51 PM
To: Moulton, Chris <Chris.Moulton@cpbcon.com.au>
Subject: Re: Pitt Street South Station Work Zone Clarification Revision 2

Hi Chris,

Ah, understood. Then there'd definitely be deliveries Monday through to Thursday, most of them being smaller and of less than twenty minutes duration.

As you can imagine, deliveries themselves vary with trade so it would be difficult to pin anything near an exact schedule this far out but I imagine there'll be a line of communication and we'll advise of anything expected.

LUKE RULE
General Manager / Licensee

The Edinburgh Castle Hotel

T +61 2 9264 8616

294 Pitt Street

Sydney NSW 2000

Solotel.com.au

From: Moulton, Chris <Chris.Moulton@cpbcon.com.au>
Sent: Friday, 9 October 2020, 6:44 pm
To: Luke Rule
Subject: RE: Pitt Street South Station Work Zone Clarification Revision 2

Sorry Josh,

Further update below and attached..

The No-Parking Zone will need to change to a No-Stopping Zone, this is because the No-Parking Zone as been reduced in size due the extended CPB Work Zone.
The council has advised the reduction in the No-Parking Zone size is not feasible (from 5.6m to 2.3m) for vehicles. All smaller deliveries can be by the CPB Work Zone too if this is acceptable with yourself and the Edinburgh team

Cheers
Chris

From: Luke Rule <luke.rule@solotel.com.au>
Sent: Friday, 9 October 2020 5:53 PM
To: Moulton, Chris <Chris.Moulton@cpbcon.com.au>
Subject: RE: Pitt Street South Station Work Zone Clarification Revision 2

Hi Chris,

Thanks for the update. I'm happy with the changes as outlined.

Our major delivery days are across Tuesday and Wednesday. The major one of note is CUB kegs on a flatbed truck from 7am Wednesday morning, approximately taking an hour (assuming timely arrival). There is also a gas delivery Tuesday morning on a similar sized truck but the timing isn't consistent. There are also usually some smaller deliveries throughout the week, particularly Monday and Tuesday, but these are normally van-sized deliveries and are likely to fit in the no-parking with minimal disruption.

In summary, Wednesday mornings would be the key morning needing comminication for use of the work zone. Let me know if you need any further clarification.

Thanks,

LUKE RULE
General Manager/Licensee

The Edinburgh Castle Hotel

T +61 2 9264 8616
294 Pitt Street
Sydney NSW 2000

Solotel.com.au

SOLOTEL

From: Moulton, Chris <Chris.Moulton@cpbcon.com.au>
Sent: Friday, 9 October 2020 5:42 PM
To: Luke Rule <luke.rule@solotel.com.au>
Subject: Pitt Street South Station Work Zone Clarification Revision 2

Hi Luke,

Thanks for the phone call, as discussed, please see attached updated Pitt Street/Edinburgh Castle Deliver Zone arrangement which clarifies the agreement between the Edinburgh and CPB, and also differs slightly from the WAD.

Update includes clarity on the 5.6m Edinburgh Castle Delivery Zone being fully within the CPB Contractor Working Zone up to the existing 'No Parking' sign.
The CPB Pitt Street Station team will coordinate with the Edinburgh Castle to ensure Delivery Zone is available for Edinburgh deliveries. Can you please advise of any issues with this?

Can you please advise rough delivery times/days per week? My understanding is every Thursday or Wednesday morning? What time in the morning, and approximately how long is the duration of the delivery?

CPB will also remove the redundant post office plinth for the Edinburgh Castle.

Thanks a lot

Chris Moulton
Senior Project Engineer

CPB CONTRACTORS

Level 18, 177 Pacific Highway, North Sydney, NSW 2060, Australia
T +61291119046 **M** 0428 850 592
E Chris.Moulton@cpbcon.com.au
cpbcon.com.au

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Appendix C

Swept Path Analysis

VEHICLE ENTERING

VEHICLE EXITING

PITT STREET

PITT STREET

No 250

LIFT WELL

GROUND LEVEL
BLD (0.085) CLEAR
PLINTH (0.01) CLEAR

GROUND LEVEL
FACE OF WALL
(0.07) CLEAR

20.665

12400mm

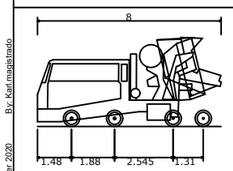
6000mm

3000mm

CONCRETE PUMP

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



Isuzu FYJ 300-350 Agitator

Overall Length	8000mm
Overall Width	2445mm
Overall Body Height	3878m
Min Body Ground Clearance	209mm
Track Width	2010mm
Lock-to-lock time	3.80s
Curb to Curb Turning Radius	8950mm

By: Kiel.maglestrado
Date: 3 September 2020
Filename: 19433CAD011 - SWEPT PATH - 200903.dwg

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	03/09/20

ttpp transport planning

PROJECT
PITT STREET STATION

TITLE
SWEPT PATH ANALYSIS- NORTH SITE (PITT STREET)
8.0m AGITATOR

DWG No. 19433CAD011
FIGURE 1

DATE STAMP
03 SEPTEMBER 2020

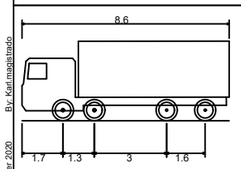
PROJECT No.	SCALE	REV.
19433	1:300 @A3	A

VEHICLE ENTERING

VEHICLE EXITING

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



Hook Truck	
Overall Length	8600mm
Overall Width	2500mm
Overall Body Height	3300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10000mm

By: Kiel.maplestrado
Date: 3 September 2020
Filename: 19433CAD011 - SWEPT PATH - 200903.dwg

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	03/09/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- NORTH SITE (PITT STREET)
8.6m HOOK TRUCK

DWG No. 19433CAD011
FIGURE 2

DATE STAMP 03 SEPTEMBER 2020

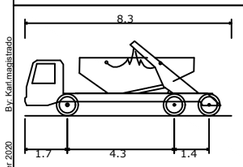
PROJECT No.	SCALE	REV.
19433	1:300 @A3	A

VEHICLE ENTERING

VEHICLE EXITING

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



Double Axle Marrel	
Overall Length	8300mm
Overall Width	2500mm
Overall Body Height	3000mm
Min Body Ground Clearance	414mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	03/09/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- NORTH SITE (PITT STREET)
8.3m DOUBLE AXLE MARREL TRUCK

DWG No.	19433CAD011 FIGURE 3
DATE STAMP	03 SEPTEMBER 2020
PROJECT No.	19433
SCALE	1:300 @A3
REV.	A

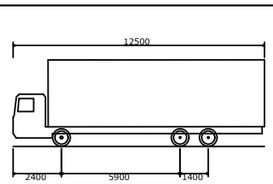
By: Kiet.magiastrado
Date: 3 September 2020
Filename: 19433CAD011 - SWEPT PATH - 200903.dwg

VEHICLE ENTERING

VEHICLE EXITING

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



HRV - Heavy Rigid Vehicle

Overall Length	12500mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

By: Kiel.magistrado Date: 3 September 2020 Filename: 19433CAD011 - SWEPT PATH - 200903.dwg

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	03/09/20

ttpp transport planning

PROJECT

PITT STREET STATION

TITLE

SWEPT PATH ANALYSIS- NORTH SITE (PITT STREET)
AS2890.2 12.5m HEAVY RIGID VEHICLE

DWG No. 19433CAD011 FIGURE 4

DATE STAMP 03 SEPTEMBER 2020

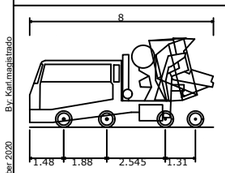
PROJECT No.	SCALE	REV.
19433	1:300 @A3	A

VEHICLE ENTERING

VEHICLE EXITING

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



Isuzu FYJ 300-350 Agitator

Overall Length	8000mm
Overall Width	2445mm
Overall Body Height	3878m
Min Body Ground Clearance	209mm
Track Width	2010mm
Lock-to-lock time	3.80s
Curb to Curb Turning Radius	8950mm

By: Karl.maistrello

Date: 3 September 2020

Filename: 19433CAD007 - SWEPT PATH - 200903.dwg

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	03/09/20

ttpp transport planning

PROJECT

PITT STREET STATION

TITLE

SWEPT PATH ANALYSIS- NORTH SITE (CASTLEREAGH STREET)
8.0m AGITATOR

DWG No. 19433CAD007
FIGURE 5

DATE STAMP 03 SEPTEMBER 2020

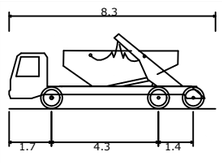
PROJECT No.	SCALE	REV.
19433	1:300 @A3	A

VEHICLE ENTERING

VEHICLE EXITING

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



Double Axle Marrel	
Overall Length	8300mm
Overall Width	2500mm
Overall Body Height	3000mm
Min Body Ground Clearance	414mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	30/10/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- NORTH SITE (CASTLEREAGH STREET)
8.3m DOUBLE AXLE MARREL

DWG No. 19433CAD029
FIGURE 6

DATE STAMP 30 OCTOBER 2020

PROJECT No.	SCALE	REV.
19433	1:300 @A3	A

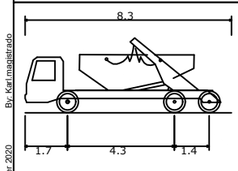
By: Karl.magistrado
Date: 30 October 2020
Filename: 19433CAD029 - SWEPT PATH - 291030.dwg

VEHICLE ENTERING

VEHICLE EXITING

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



Double Axle Marrel

Overall Length	8300mm
Overall Width	2500mm
Overall Body Height	3000mm
Min Body Ground Clearance	414mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	30/10/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- NORTH SITE (CASTLEREAGH STREET)
8.3m DOUBLE AXLE MARREL

DWG No.	19433CAD029 FIGURE 7
DATE STAMP	30 OCTOBER 2020
PROJECT No.	19433
SCALE	1:300 @A3
REV.	A

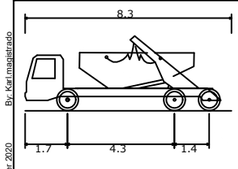
By: Karl.magistrado
Date: 30 October 2020
Filename: 19433CAD029 - SWEPT PATH - 291030.dwg

VEHICLE ENTERING

VEHICLE EXITING

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



Double Axle Marrel	
Overall Length	8300mm
Overall Width	2500mm
Overall Body Height	3000mm
Min Body Ground Clearance	414mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	30/10/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- NORTH SITE (CASTLEREAGH STREET)
8.3m DOUBLE AXLE MARREL

DWG No. 19433CAD029
FIGURE 8

DATE STAMP 30 OCTOBER 2020

PROJECT No. 19433 | SCALE 1:300 @A3 | REV. A

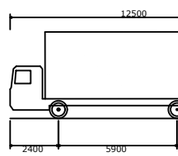
By: Karl.magistrado
Date: 30 October 2020
Filename: 19433CAD029 - SWEPT PATH - 291030.dwg

VEHICLE ENTERING

VEHICLE EXITING

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



HRV - Heavy Rigid Vehicle

Overall Length	12500mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	03/09/20

ttpp transport planning

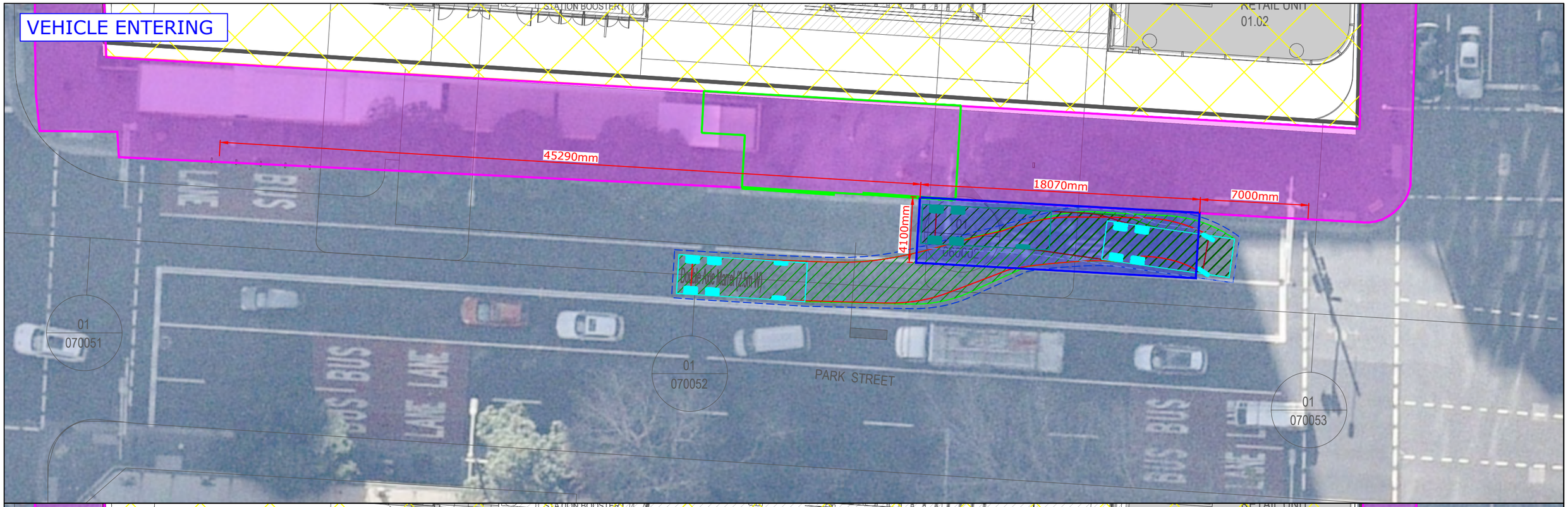
PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- NORTH SITE (CASTLEREAGH STREET)
AS2890.2 12.5m HEAVY RIGID TRUCK

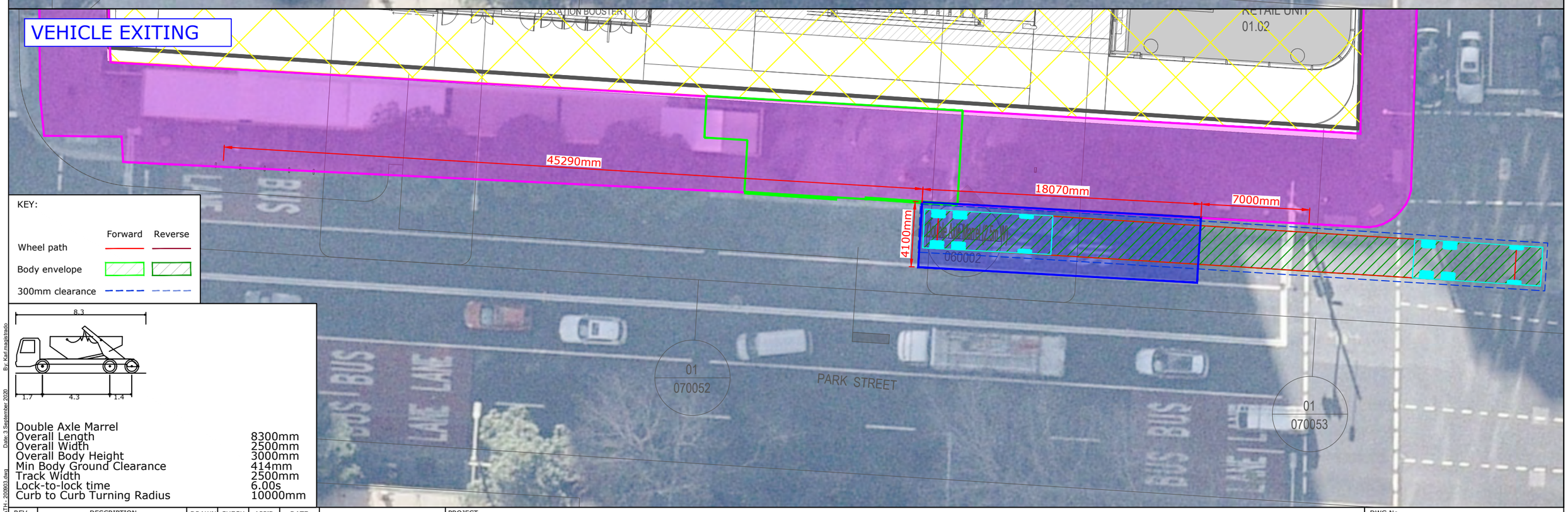
DWG No.	19433CAD007 FIGURE 9
DATE STAMP	03 SEPTEMBER 2020
PROJECT No.	19433
SCALE	1:300 @A3
REV.	A

Filename: 19433CAD007 - SWEPT PATH - 200903.dwg Date: 3 September 2020 By: Karl.magis/ttpp

VEHICLE ENTERING



VEHICLE EXITING



KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

Double Axle Marrel	
Overall Length	8300mm
Overall Width	2500mm
Overall Body Height	3000mm
Min Body Ground Clearance	414mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10000mm

By: Kaif.magistrado
Date: 3 September 2020
Filename: 19433CAD014 -SWEPT PATH - 200903.dwg

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	03/09/20

ttpp transport planning

PROJECT
PITT STREET STATION

TITLE
SWEPT PATH ANALYSIS- NORTH SITE (PARK STREET)
8.3m DOUBLE AXLE MARREL

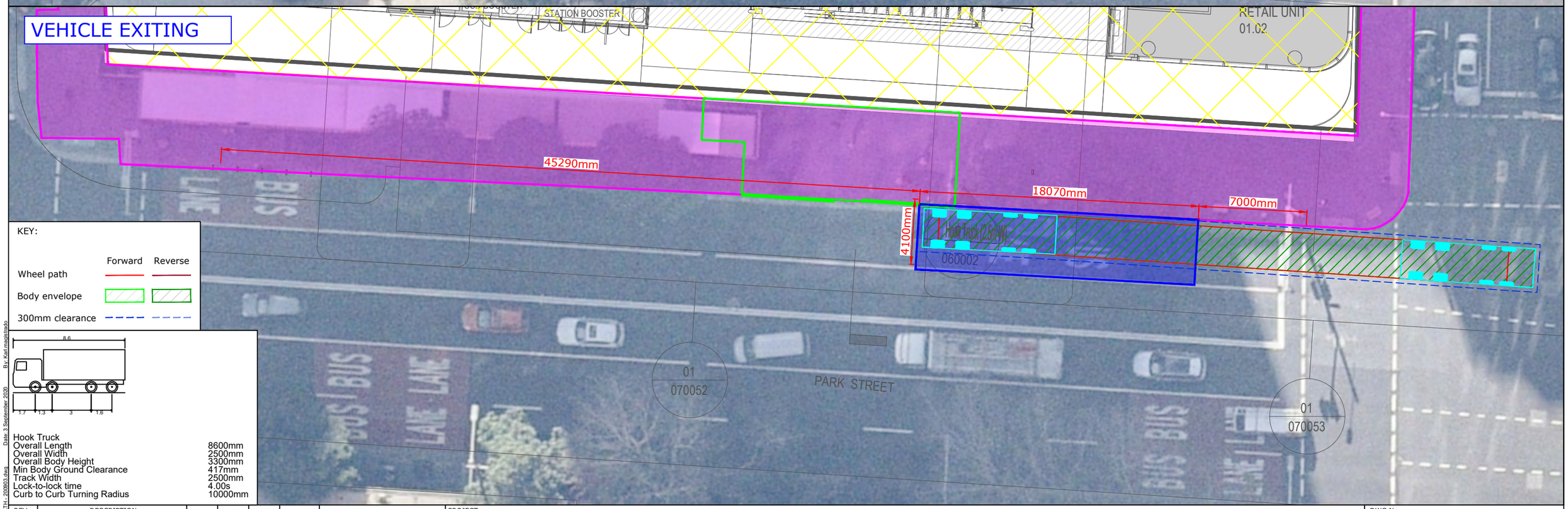
DWG No. 19433CAD014
FIGURE 10

DATE STAMP 03 SEPTEMBER 2020

PROJECT No.	SCALE	REV.
19433	1:250 @A3	A

VEHICLE ENTERING

VEHICLE EXITING



KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

Hook Truck

Overall Length	8600mm
Overall Width	2500mm
Overall Body Height	3300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	03/09/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- NORTH SITE (PARK STREET)
8.6m HOOK TRUCK

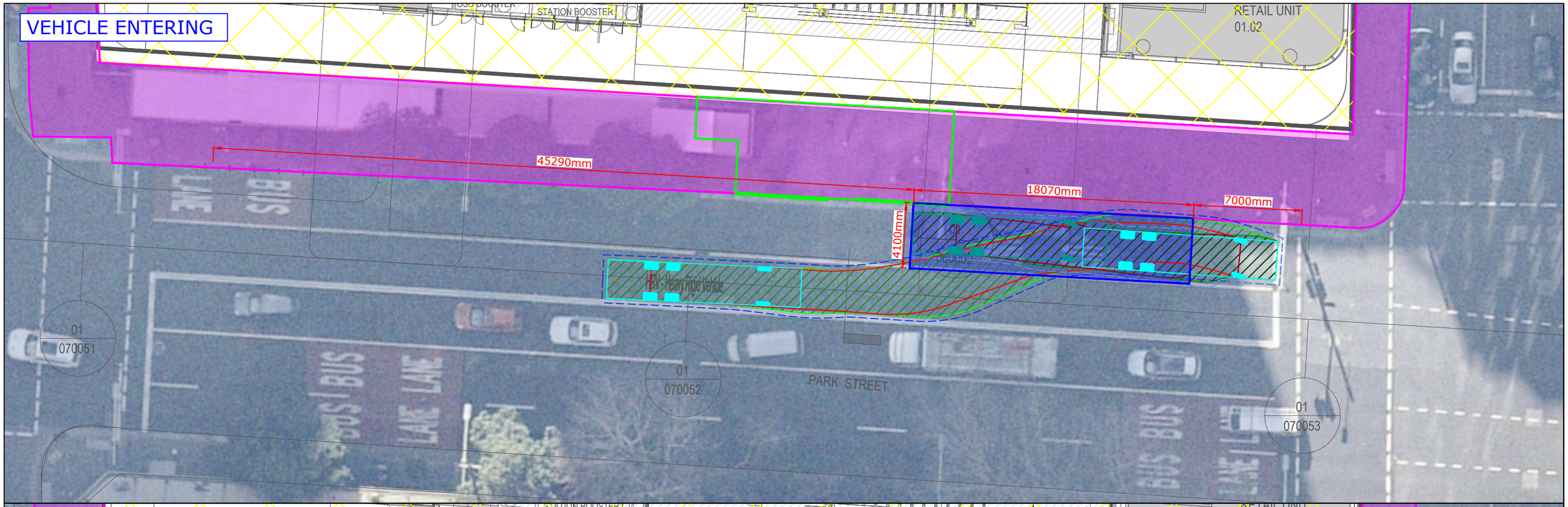
DWG No. 19433CAD014
FIGURE 11

DATE STAMP 03 SEPTEMBER 2020

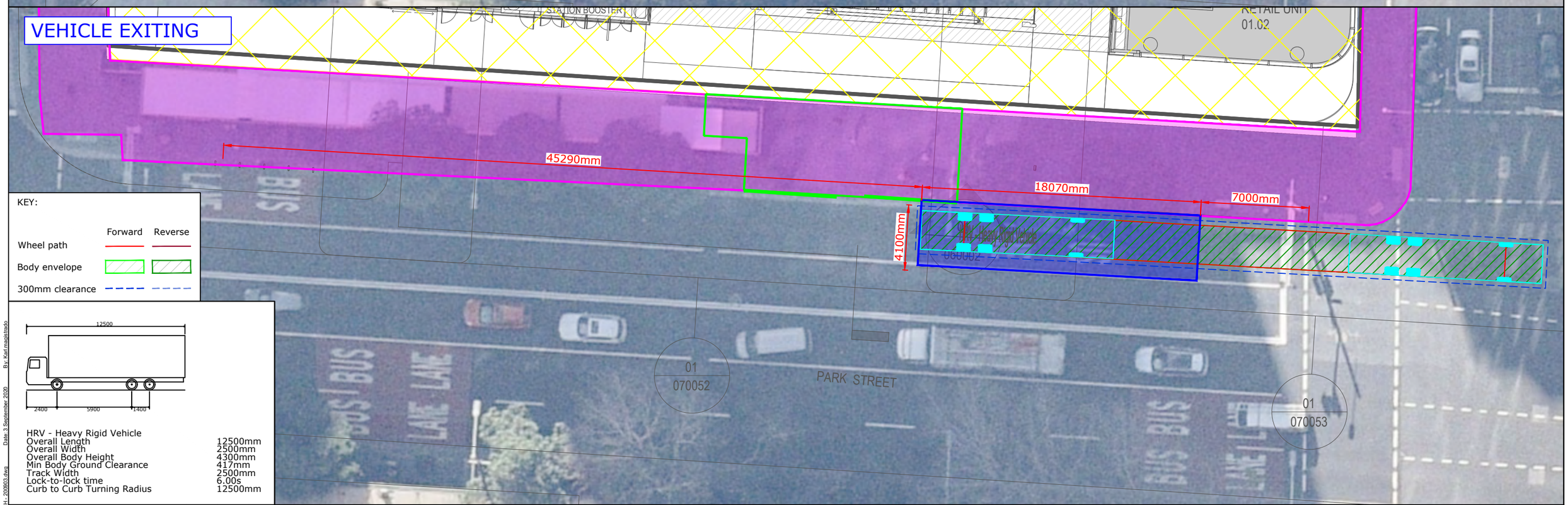
PROJECT No.	SCALE	REV.
19433	1:250 @A3	A

By: Kiel.magistrado
Date: 3 September 2020
Filename: 19433CAD014 -SWEPT PATH - 200903.dwg

VEHICLE ENTERING



VEHICLE EXITING



KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

HRV - Heavy Rigid Vehicle

Overall Length	12500mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	03/09/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- NORTH SITE (PARK STREET)
AS2890.2 12.5m HEAVY RIGID TRUCK

DWG No. 19433CAD014
FIGURE 12

DATE STAMP 03 SEPTEMBER 2020

PROJECT No.	SCALE	REV.
19433	1:250 @A3	A

Filename: 19433CAD014 -SWEPT PATH - 200903.dwg Date: 3 September 2020 By: Karl magistrado

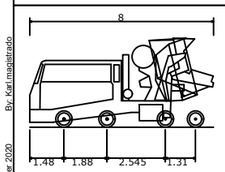
VEHICLE ENTERING

VEHICLE EXITING

19660mm
2700mm
2700mm
2900mm
32520mm
PITT STREET
2510mm

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



Isuzu FYJ 300-350 Agitator

Overall Length	8000mm
Overall Width	2445mm
Overall Body Height	3878m
Min Body Ground Clearance	209mm
Track Width	2010mm
Lock-to-lock time	3.80s
Curb to Curb Turning Radius	8950mm

By: Karl.magistrado
Date: 3 November 2020
Filename: 19433CAD028 -SWEPT PATH - 201103.dwg

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	03/11/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- SOUTH SITE (PITT STREET)
8.0m AGITATOR

DWG No. 19433CAD028
FIGURE 13

DATE STAMP 03 NOVEMBER 2020

PROJECT No.	SCALE	REV.
19433	1:400 @A3	A

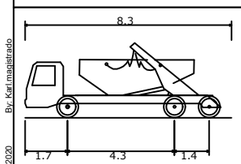
VEHICLE ENTERING

VEHICLE EXITING

19660mm
2700mm
2700mm
2900mm
32520mm
PITT STREET
ONE WAY

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



Double Axle Marrel	
Overall Length	8300mm
Overall Width	2500mm
Overall Body Height	3000mm
Min Body Ground Clearance	414mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10000mm

By: Karl.magistrado
Date: 3 November 2020
Filename: 19433CAD028 -SWEPT PATH - 201103.dwg

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	03/11/20

ttpp transport planning

PROJECT

PITT STREET STATION

TITLE

SWEPT PATH ANALYSIS- SOUTH SITE (PITT STREET)
8.3m DOUBLE AXLE MARREL

DWG No. 19433CAD028
FIGURE 14

DATE STAMP 03 NOVEMBER 2020

PROJECT No.	SCALE	REV.
19433	1:400 @A3	A

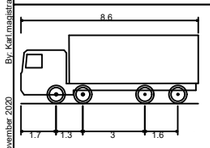
VEHICLE ENTERING

VEHICLE EXITING

2700mm
2700mm
2900mm
19660mm
32520mm
2510mm
PITT STREET

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



Hook Truck	
Overall Length	8600mm
Overall Width	2500mm
Overall Body Height	3300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10000mm

By: Karl.manistrado
Date: 3 November 2020
Filename: 19433CAD028 -SWEPT PATH - 201103.dwg

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	03/11/20

ttpp transport planning

PROJECT
PITT STREET STATION

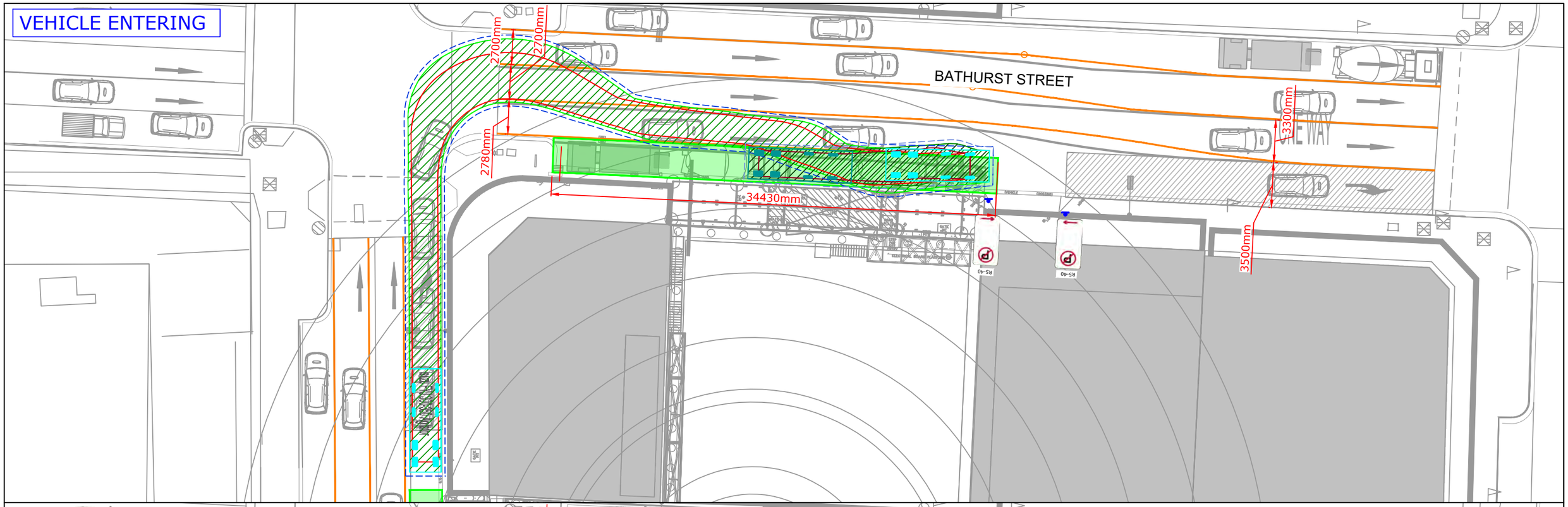
TITLE
SWEPT PATH ANALYSIS- SOUTH SITE (PITT STREET)
8.729m TRUCKMIXER

DWG No. 19433CAD028
FIGURE 15

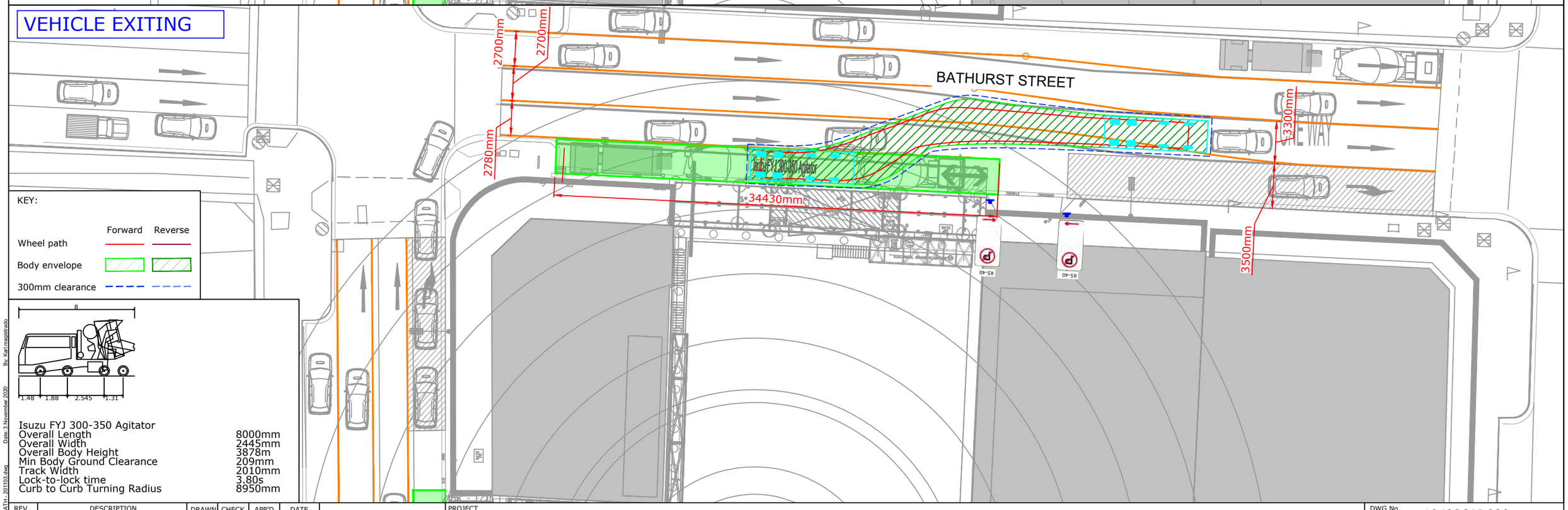
DATE STAMP 03 NOVEMBER 2020

PROJECT No.	SCALE	REV.
19433	1:400 @A3	A

VEHICLE ENTERING



VEHICLE EXITING



KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

Isuzu FYJ 300-350 Agitator

Overall Length	8000mm
Overall Width	2445mm
Overall Body Height	3878m
Min Body Ground Clearance	209mm
Track Width	2010mm
Lock-to-lock time	3.80s
Curb to Curb Turning Radius	8950mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	03/11/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- SOUTH SITE (BATHURST STREET)
8.0m AGITATOR

DWG No. 19433CAD028
FIGURE 16

DATE STAMP 03 NOVEMBER 2020

PROJECT No.	SCALE	REV.
19433	1:300 @A3	A

By: Karl.magdirado
Date: 3 November 2020
Filename: 19433CAD028 -SWEPT PATH - 201103.dwg

VEHICLE ENTERING

BATHURST STREET

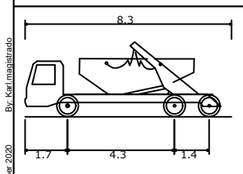
ONE WAY

2700mm
2700mm
2780mm
3300mm
3500mm
34430mm

Double Axle Marrel (2.5m W)

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



Double Axle Marrel	
Overall Length	8300mm
Overall Width	2500mm
Overall Body Height	3000mm
Min Body Ground Clearance	414mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	03/11/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- SOUTH SITE (BATHURST STREET)
8.3m DOUBLE AXLE MARREL

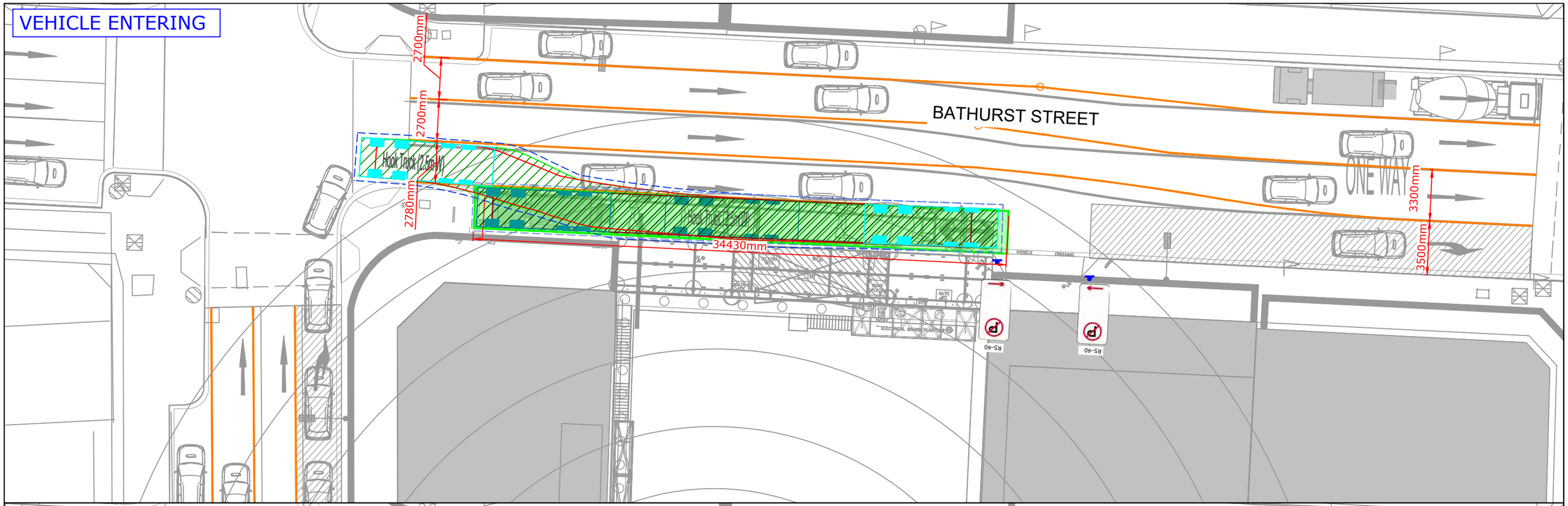
DWG No. 19433CAD028
FIGURE 17

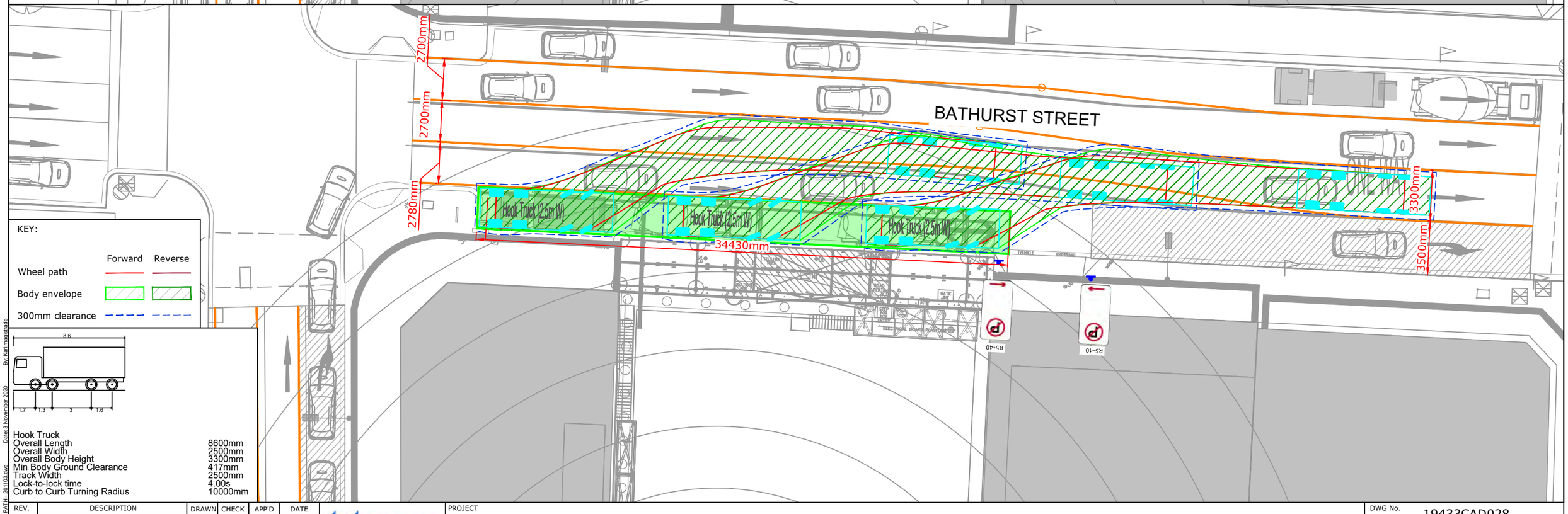
DATE STAMP 03 NOVEMBER 2020

PROJECT No. 19433 | SCALE 1:250 @A3 | REV. A

By: Karl.magistrado
Date: 3 November 2020
Filename: 19433CAD028 -SWEPT PATH- 201103.dwg

VEHICLE ENTERING





KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

Hook Truck	
Overall Length	8600mm
Overall Width	2500mm
Overall Body Height	3300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	03/11/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- SOUTH SITE (BATHURST STREET)
8.6m HOOK TRUCK

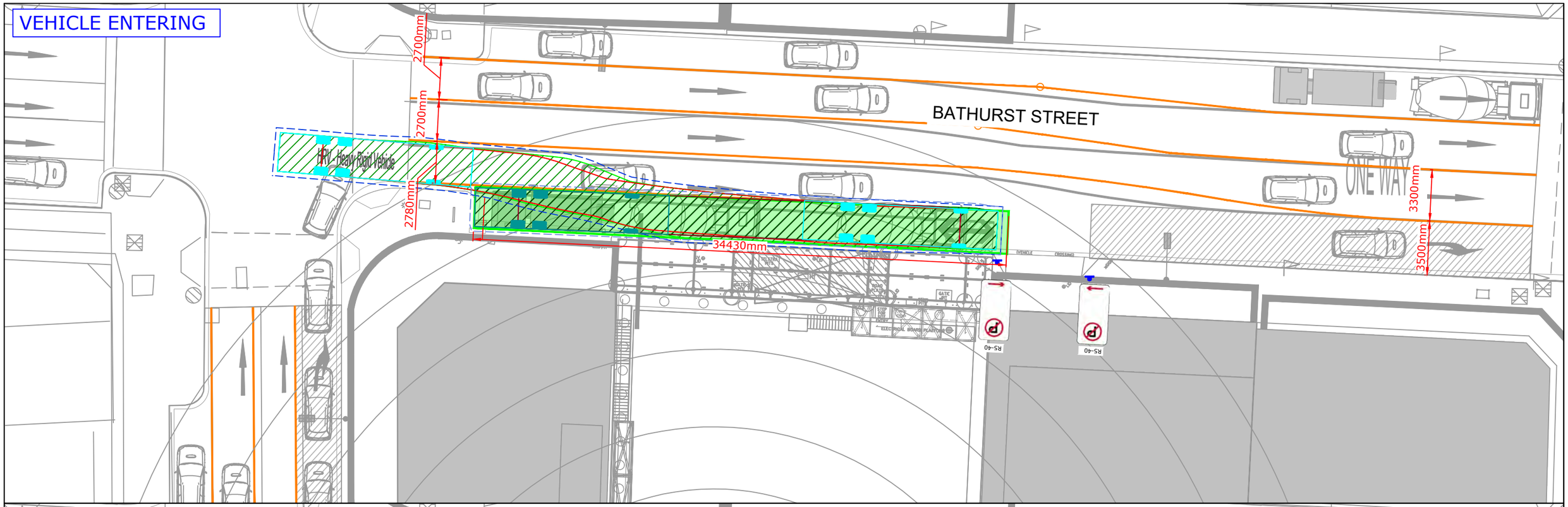
DWG No. 19433CAD028
FIGURE 18

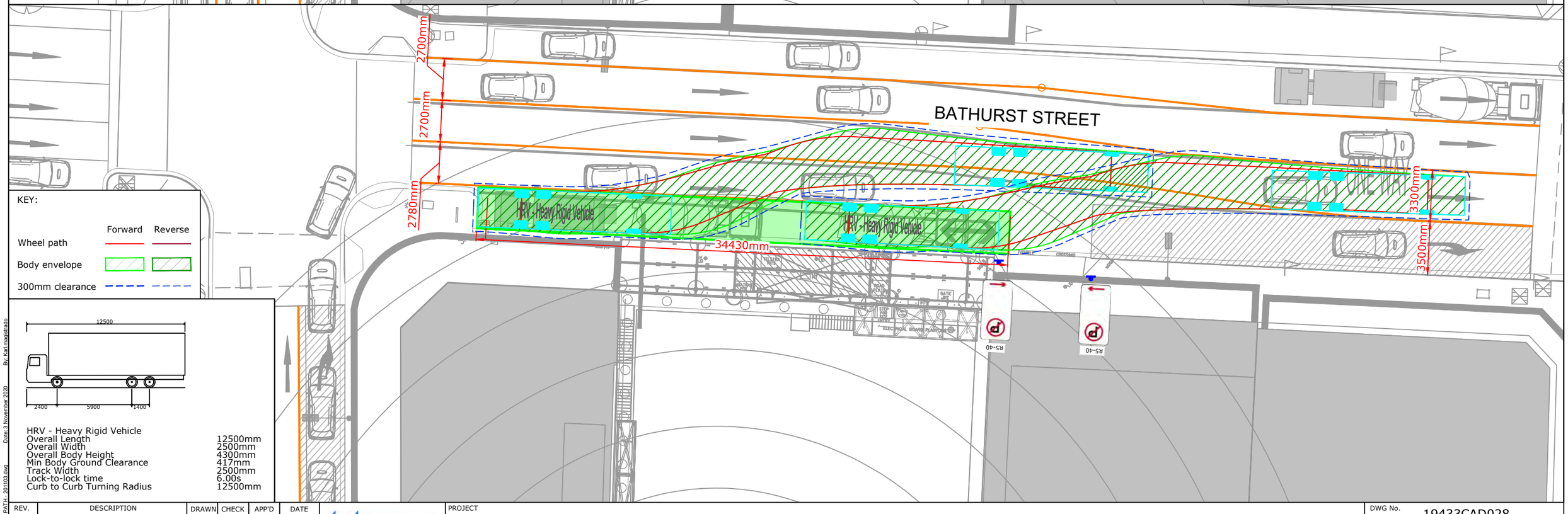
DATE STAMP 03 NOVEMBER 2020

PROJECT No. 19433 | SCALE 1:250 @A3 | REV. A

Filename: 19433CAD028 -SWEPT PATH- 201103.dwg Date: 3 November 2020 By: Karl magistrado

VEHICLE ENTERING





KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

HRV - Heavy Rigid Vehicle

Overall Length	12500mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	03/11/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- SOUTH SITE (BATHURST STREET)
AS2890.2 12.5m HEAVY RIGID VEHICLE

DWG No. 19433CAD028
FIGURE 19

DATE STAMP 03 NOVEMBER 2020

PROJECT No.	SCALE	REV.
19433	1:250 @A3	A

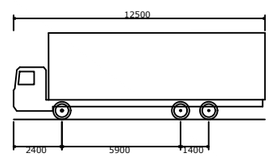
Filename: 19433CAD028 -SWEPT PATH- 201103.dwg Date: 3 November 2020 By: Karl.magistrado

CASTLEREAGH STREET

PARK STREET

KEY:

	Forward	Reverse
Wheel path		
Body envelope		



HRV - Heavy Rigid Vehicle

Overall Length	12500mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	03/09/20

ttpp transport planning

PROJECT

PITT STREET STATION

TITLE

SWEPT PATH ANALYSIS (CASTLEREAGH STREET - PARK STREET)
AS2890.2 12.5m HEAVY RIGID VEHICLE

DWG No. 194333CAD01
FIGURE 20

DATE STAMP 03 SEPTEMBER 2020

PROJECT No.	SCALE	REV.
19433	1:250 @A3	A

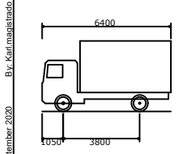
Filename: 194333CAD017-SWEPT PATH-200903.dwg
Date: 3 September 2020
By: Karl.magistrado

PITT STREET

SRV - Small Rigid Vehicle

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



SRV - Small Rigid Vehicle	
Overall Length	6400mm
Overall Width	2330mm
Overall Body Height	3500mm
Min Body Ground Clearance	398mm
Track Width	2330mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	7100mm

By: Kiel.magistrado
Date: 3 September 2020
Filename: 19433CAD012 - SWEPT PATH - 200903.dwg

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	03/09/20

ttpp transport planning

PROJECT

PITT STREET STATION

TITLE

SWEPT PATH ANALYSIS - SOUTH SITE (PITT STREET)
AS2890.2m 6.4m SMALL RIGID VEHICLE

DWG No. 19433CAD012
FIGURE 21

DATE STAMP 03 SEPTEMBER 2020

PROJECT No.	SCALE	REV.
19433	1:100 @A3	A

Appendix D

Traffic Control Plans

TRAFFIC MANAGEMENT NOTES:

1. NOT ALL DIMENSIONS SHOWN ARE TO SCALE.
2. LOCATION OF SIGNS ARE TO BE CONFIRMED ON-SITE TO ENSURE APPROPRIATE VISIBILITY.
3. ALL SIGNS TO BE MINIMUM SIZE A.
4. ALL SIGNS TO BE CLASS 1 REFLECTIVE OR DIAMOND GRADE.
5. ALL WORKERS WILL BE CONFINED TO THE DEDICATED WORKS AREA SHOWN ON THE PLAN.
6. ALL TRAFFIC CONTROL PLANS ARE TO BE IMPLEMENTED IN ACCORDANCE WITH THE RMS "TRAFFIC CONTROL AT WORK SITES" MANUAL, VER5 (RMS 2018) AND AUSTRALIAN STANDARDS AS1742.3:2009 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, PART 3: TRAFFIC CONTROL DEVICES FOR WORKS ON ROADS.
7. THIS TRAFFIC CONTROL PLAN MUST BE SETUP BY A PERSON HOLDING AN "APPLY TRAFFIC CONTROL PLANS" (YELLOW TICKET) AND THE RTA TRAFFIC CONTROL AT WORK SITES CHECKLIST SHALL BE COMPLETED PRIOR TO IMPLEMENTATION.
8. IT IS THE SITE FOREMAN'S RESPONSIBILITY TO ENSURE THE FOLLOWING:
   - THE INTEGRITY OF ALL TRAFFIC CONTROL MEASURES THROUGH TO THE FINAL REMOVAL. THIS INCLUDES DAILY CHECKS OF ALL SIGNS AND DEVICES. THE CORRESPONDING RECORDS OF CHECKS SHALL BE KEPT ON FILE FOR AUDITING PURPOSES.
   - VEHICULAR ACCESS AND SERVICING REQUIREMENTS ARE TO BE MAINTAINED AT ALL TIMES TO ADJACENT PROPERTIES AFFECTED BY TRAFFIC CONTROL MEASURES
   - PEDESTRIAN ACCESS AROUND THE WORK AREA TO BE MAINTAINED AT ALL TIMES EXCEPT ALONG FOOTPATH CLOSURES INDICATED ON THE PLAN.
   - AT ALL TIMES UP-TO-DATE COPY OF "TRAFFIC CONTROL AT WORK SITES" SHOULD BE AVAILABLE FOR REFERENCE AND IMPLEMENTATION AS REQUIRED ON-SITE
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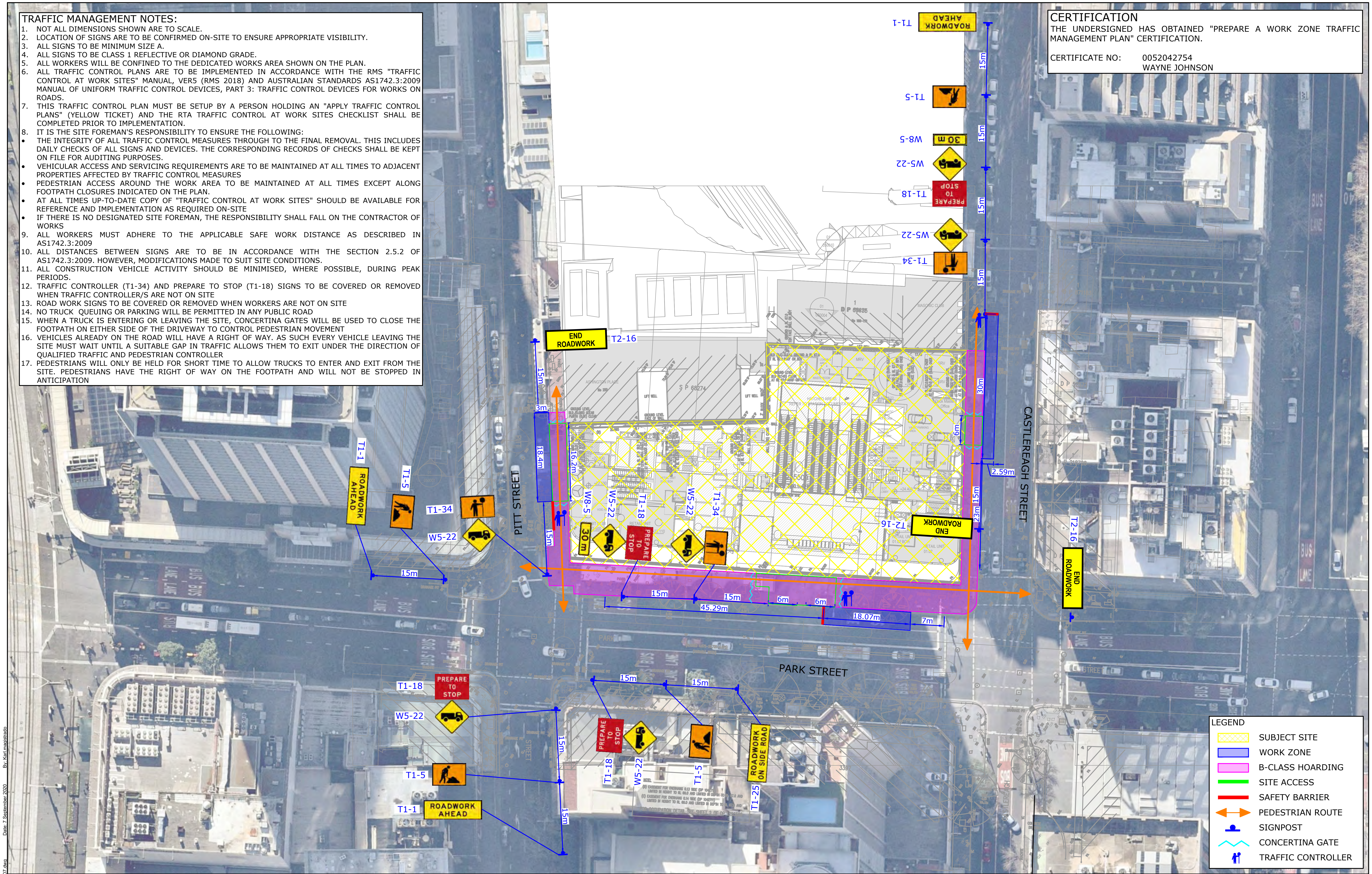
CERTIFICATE NO: 0052042754
WAYNE JOHNSON



LEGEND
- SUBJECT SITE
- WORK ZONE
- B-CLASS HOARDING
- SITE ACCESS
- SAFETY BARRIER
- PEDESTRIAN ROUTE
- SIGNPOST
- CONCERTINA GATE
- TRAFFIC CONTROLLER

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	03/09/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: TRAFFIC CONTROL PLAN NORTH SITE

DWG No. 19433CAD001 FIGURE 1

DATE STAMP 03 SEPTEMBER 2020

PROJECT No. 19433 | SCALE NTS | REV. A

Filename: 19433CAD0013-TCP - 200907.dwg Date: 7 September 2020 By: Karl.magistrado

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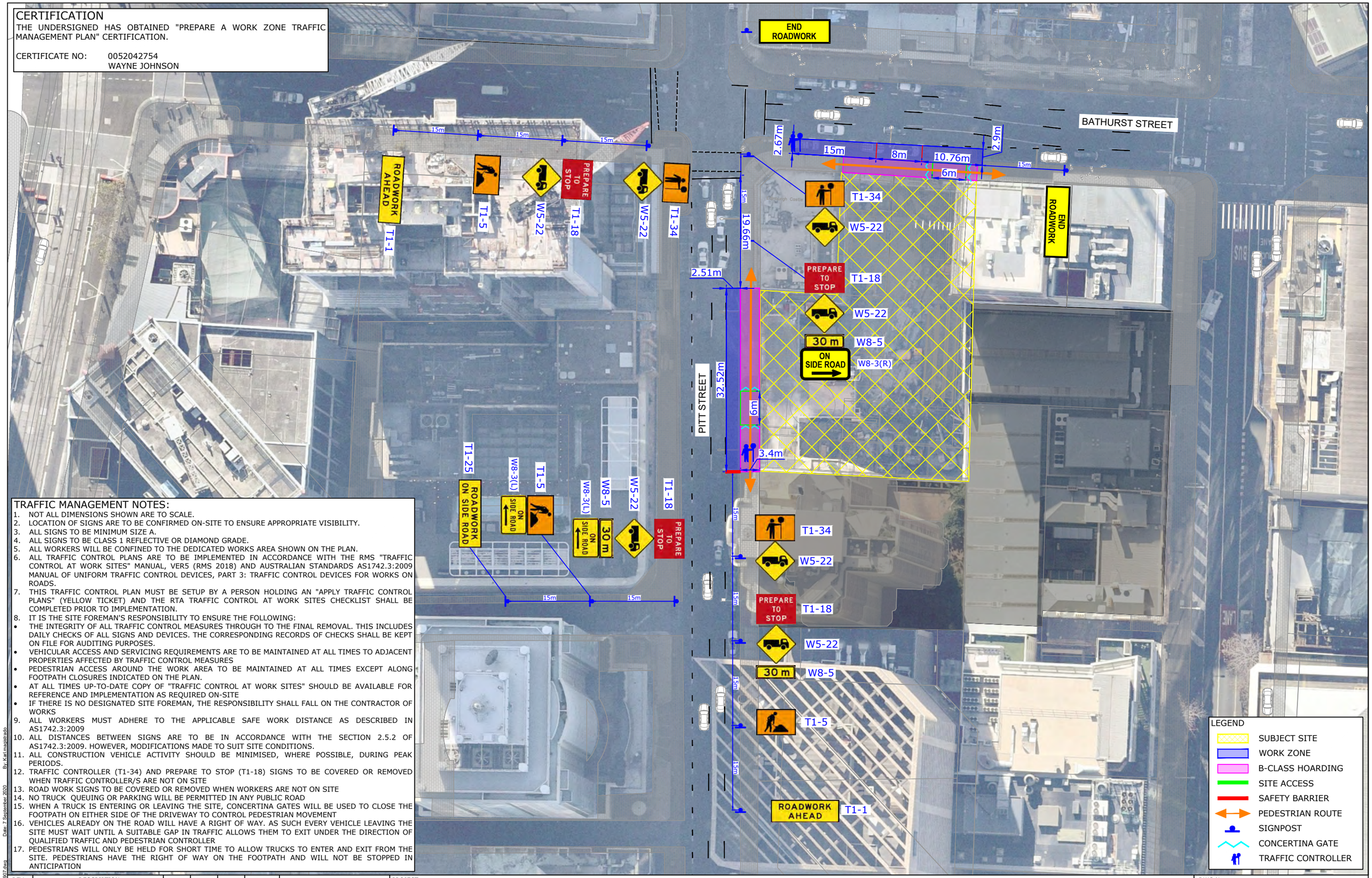

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REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	03/09/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: TRAFFIC CONTROL PLAN
SOUTH SITE

DWG No. 19433CAD001
FIGURE 2

DATE STAMP 03 SEPTEMBER 2020

PROJECT No. 19433 | SCALE NTS | REV. A

By: Karl.maidstrado
Date: 7 September 2020
Filename: 19433CAD0013 -TCP- 2020907.dwg

Appendix E

Road Safety Audit

Pitt Street Station Sydney Metro Construction Road Works Road Safety Audit

Prepared for:

CPB Contractors

3 July 2020

The Transport Planning Partnership

Pitt Street Station Sydney Metro

Construction Road Works Road Safety Audit

Client: CPB Contractors

Version: V02

Date: 3 July 2020

TTPP Reference: 18228

Quality Record

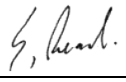
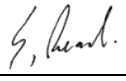
Version	Date	Prepared by	Reviewed by	Approved by	Signature
V 01	2/07/2020	S.Read	D.Lee	S.Read	
V 02	3/07/2020	S.Read	D.Lee	S.Read	

Table of Contents

Tables

APPENDICES

1 Road Safety Audit Summary

Audited project:	Pitt Street Station Sydney Metro Construction Traffic Management
Client:	CPB Contractors
Project manager:	Nicholas Papanikolaou
Email address:	Nicholas.Papanikolaou@cpbcon.com.au
Telephone:	T +61 2 9414 3466, M +61408932188
Audit Team:	Stephen Read (level 3 lead road safety auditor) Doris Lee (level 3 road safety auditor)
Audit type:	Construction Road Works
Commencement meeting:	Not required
Audit date:	2 July 2020
Completion meeting:	Not required

The objective of this road safety audit is to examine and identify road safety concerns regarding the construction traffic and construction management plan.

The findings of the road safety audit have been detailed in Section 4.3 of this report.

2 Introduction

2.1 Background

This report has been prepared on behalf of CPB Contractors to present road safety audit findings that have been identified for the construction works associated with the construction of the Pitt Street Integrated Station Development as part of the Sydney Metro project. The works are to be undertaken at two sites as shown in Figure 2.1.

Figure 2.1: Subject Site and Surrounding Road Network

2.2 Audit Objective

The objective of this Audit was to ensure that there are no fundamental flaws in the Traffic Control Plans in relation to road safety that will be costly to fix at a later date both in terms of cost and time.

2.3 Procedures and Reference Material

The procedures used are described in the following guidelines:

- Roads and Maritime Services' 2011 Guidelines for Road Safety Audit Practices
- Austroads Guide to Road Safety 2019: Part 6 Managing Road Safety Audits
- Austroads Guide to Road Safety 2019: Part 6A Implementing Road Safety Audits.

Austroads checklist was used by the audit team as a reference in this road safety audit. Key elements examined included:

- general topics – type and degree of access to development
- design issues
- intersections
- footpaths
- lighting, signs and delineation
- physical objects
- environmental constraints
- other matters including over size vehicles.

2.4 Audit Team

The RSA was carried out by the following team:

- Stephen Read (RSA-02-0652) – level 3 road safety auditor (lead auditor)
- Doris Lee (RSA-02-0128) – level 3 road safety auditor (team member).

Stephen and Doris are registered road safety auditors with the NSW Centre for Road Safety and are experienced in traffic engineering and design/ inspection of traffic management schemes.

3 Road Safety Audit Program

3.1 Commencement Meeting

A formal meeting was not held.

3.2 Site and Field Audit

A site inspection was carried out on Thursday 2 July 2020 in fine weather conditions.

The site was viewed to identify possible road safety concerns. Several photographs and video footage were taken.

3.3 Completion Meeting

Not required.

4 Road Safety Audit Findings

4.1 Introduction

Table 4.1 provides specific details of the audit findings and a risk rating as high, medium or low. The risk ratings have been based on the risk matrix presented in Table 4.1, which has been adopted from the standard Austroads Risk Matrix.

Table 4.1: Risk Matrix

Likelihood / Severity	Highly probable	Occasional	Improbable
Major	High	High	Medium
Moderate	High	Medium	Low
Minor	Medium	Low	Low

The terms in Table 4.1 are described below.

Likelihood:

- Highly probable: It is likely that more than one crash of this type could occur within a five-year period.
- Occasional: It is likely that less than one crash of this type could occur within a five-year period.
- Improbable: Less than one crash of this type could occur within a 10-year period.

Severity:

- Major: The crash is likely to result in a fatality or serious injuries

  For example, high/medium speed vehicle collision, high/medium speed collision with a fixed object, pedestrian struck at high speed, and cyclist hit by car.
- Moderate: The crash is likely to result in minor injuries or large scale of property damage

  For example, some slow speed vehicle collisions, cyclist falls, and rear end crashes.
- Minor: The crash is likely to result in minor property damage or many near miss crash events

  For example, some slow speed collisions, pedestrian walks into object (no head injury), and car reverses into post.

Priority:

- High: Very important, and needs to be addressed urgently.
- Medium: Important, and needs to be addressed as soon as possible.
- Low: Needs to be considered as part of regular maintenance/planning program.

4.2 Responding to the Audit Report

As set out in the road safety audit guidelines, the responsibility for the road rests with the project manager, not with the auditor. The project manager is under no obligation to accept the audit findings. Neither is it the role of the auditor to agree to, or approve the project manager's responses to the audit.

The audit provides the opportunity to highlight potential road safety problems and have them formally considered by the project manager in conjunction with all other project considerations.

4.3 Road Safety Audit Findings

The audit findings are documented in Table 4.2 which provides:

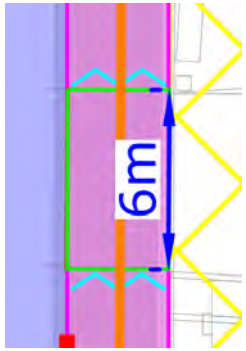
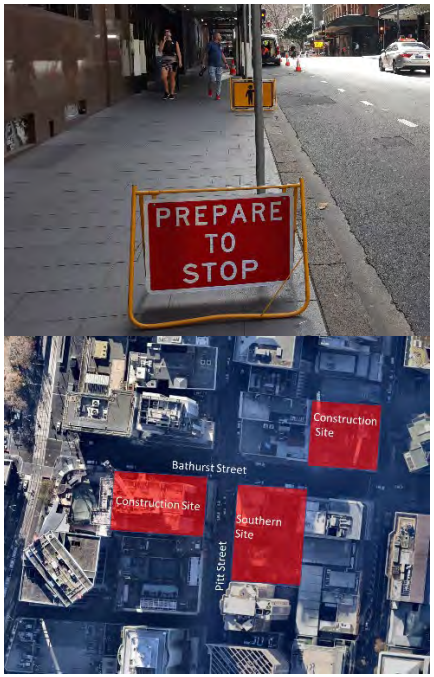
- specific details of the road safety issues identified during the audit
- a risk level rating for each of the road safety audit findings.

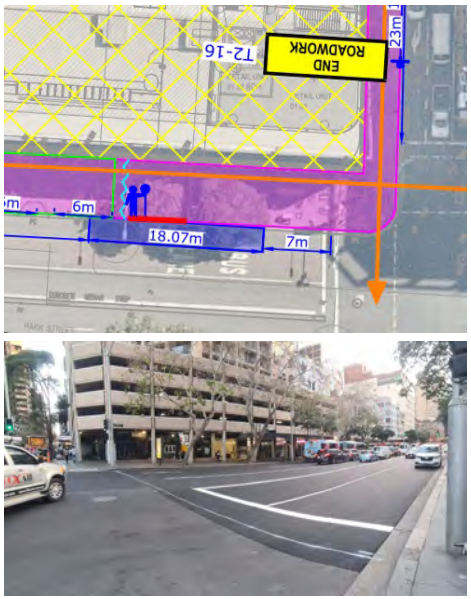
It should be acknowledged that positive attributes of the audited road section have not been discussed. Deficiencies that do not cause a safety problem are also not listed.

In-line with Roads and Maritime Services' best practice recommendations have not been included in the road safety audit findings.

Table 4.2: Road Safety Audit Findings

Item No.	Location	Descriptions of Findings	Design/ Photo	Likelihood	Severity	Risk Rating	Designer Response
1.	Various locations	The TCPs show traffic controllers and prepare to stop signs on multi-lane roads on Pitt Street, Bathurst Street, Castlereagh Street and Park Street. Traffic controllers on multilane roads are not visible when the vehicle in the lane closest to the work zone have stopped. The sight distance restriction may increase the risk of collisions with trucks pulling out across two lanes.		Occasional	Minor	Low	A specific note shall be included in the driver induction to ensure that construction vehicles do not cross two lanes upon exiting the work zone.

Item No.	Location	Descriptions of Findings	Design/ Photo	Likelihood	Severity	Risk Rating	Designer Response
2	Pedestrian footpaths Pitt Street, Bathurst Street, Castlereagh Street, Park Street.	The traffic control plans show concertina gates to close the pedestrian footpath during loading activities. This occurs on Pitt Street, Bathurst Street, Castlereagh Street, Park Street. The streets around the construction sites are heavily trafficked by pedestrians. Closure of the gates may cause congestion on the footpaths and encourage pedestrians to cross the street at uncontrolled locations increasing the risk of a pedestrian being struck by a car.		Improbable	Moderate	Low	Crossing will be in use once the structure reaches street level. When in use, crossings will be shut momentarily circa 20-30 seconds. CPB shall monitor crossings and minimise this where possible.
3	Southern Site Signage	There are two other construction sites in the vicinity of the southern site. These sites have their own signage on Pitt Street and Bathurst Street. It is likely that the cumulative effects of each site's signage will create conflicting messages and overwhelm drivers assessment of the risks. This may lead to driver complacency of the risks.		Improbable	Moderate	Low	At the time of construction at the south site, the site on the western end of Bathurst Street will be complete. CPB shall liaise with adjoining builder (Hutchison) to coordinate signage.

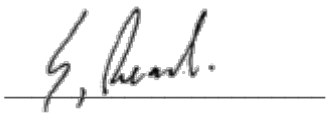
Item No.	Location	Descriptions of Findings	Design/ Photo	Likelihood	Severity	Risk Rating	Designer Response
4	Park Street at Castlereagh Street	The work zone is located 7m from a signalised pedestrian crossing. This is likely to reduce the sight distance between vehicles in the bus lane and the crossing. Given this is a high pedestrian activity area and entertainment area there is a risk of an intoxicated pedestrian being struck by a vehicle that has not seen them step onto the road. Note: the traffic lane arrangement has been observed to have recently changed from three lanes reduced to two lanes in the eastbound direction. However, the function of each lane is unclear (bus lane or traffic lane) due to incomplete linemarking.		Occasional	Major	High	It is noted that the traffic lane arrangement within this section of Park Street was recently changed (sometime around 1 or 2 July 2020). Pavement linemarking is incomplete, therefore the future traffic lane arrangement is unclear. Once the changes are complete, sight distance shall be re-evaluated.
5	Park Street west of Pitt Street	There is no provision of regulatory roadwork ahead sign on Park Street eastbound to inform motorists of the upcoming works prior to Pitt Street. Risk of motorists not aware of the changed prevailing traffic conditions.		Improbable	Low	Low	Additional signage shall be included in updated TCP.

5 Concluding Statement

The findings and opinions in the report are based on the examination of the specific road and environs, and might not address all concerns existing at the time of the audit.

The auditors have endeavoured to identify features of the road that could be modified in order to improve safety, although it must be recognised that safety cannot be guaranteed since no road can be regarded as absolutely safe.

While every effort has been made to ensure the accuracy of this report, it is made available strictly on the basis that anyone relying on it does so at their own risk without any liability to the Auditors.



Stephen Read
Level 3 Lead Road Safety Auditor
The Transport Planning Partnership

Doris Lee
Level 3 Road Safety Auditor
The Transport Planning Partnership

Appendix A

Audited Plans

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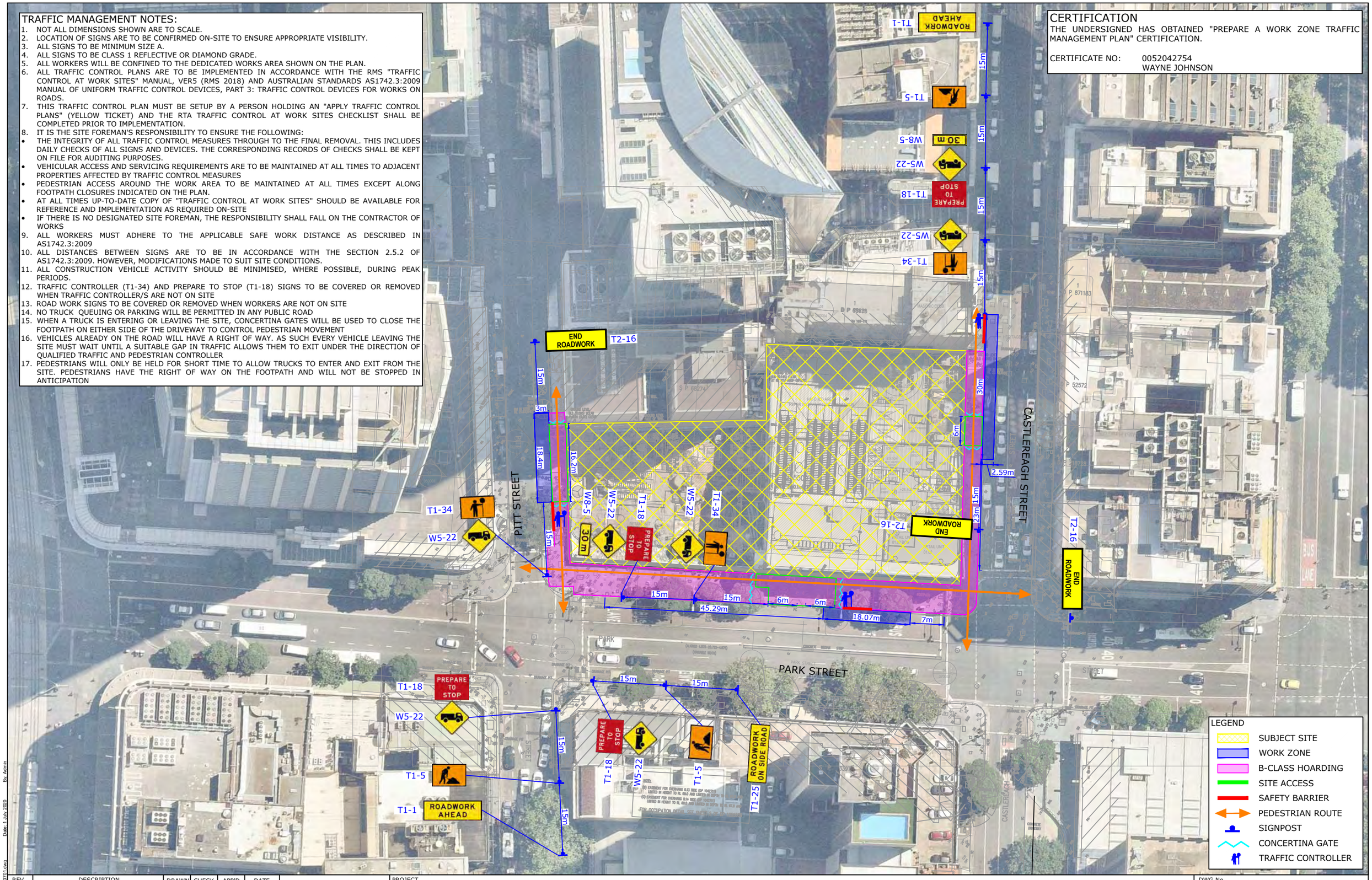

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
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ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: TRAFFIC CONTROL PLAN
NORTH SITE

DWG No. 19433CAD001
FIGURE 1

DATE STAMP: 01 JULY 2020

PROJECT No.	SCALE	REV.
19433	NTS	A

Filename: 19433CAD0013 -TCP- 200701.dwg Date: 1 July 2020 By: Admin

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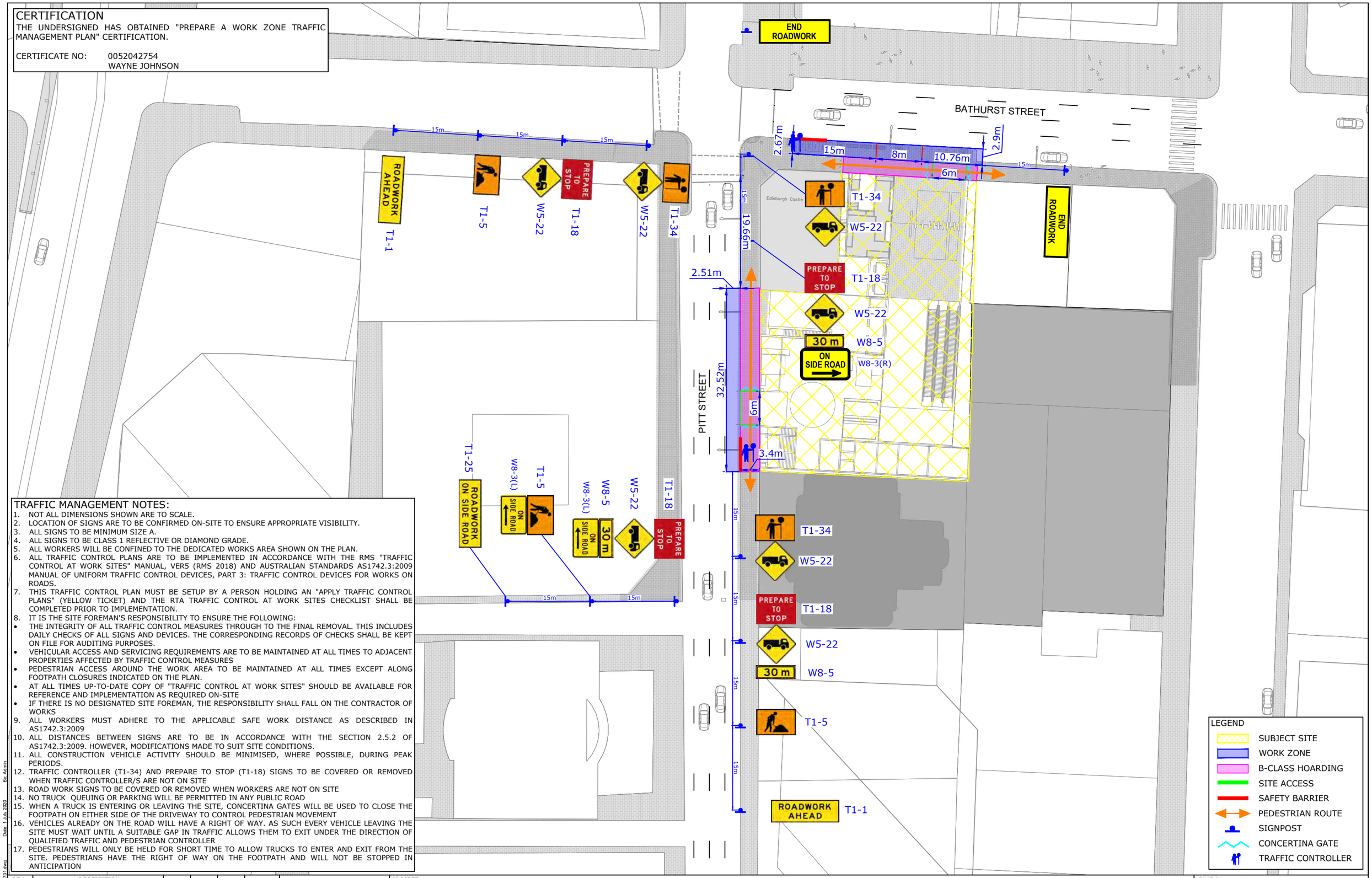

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17. PEDESTRIANS WILL ONLY BE HELD FOR SHORT TIME TO ALLOW TRUCKS TO ENTER AND EXIT FROM THE SITE. PEDESTRIANS HAVE THE RIGHT OF WAY ON THE FOOTPATH AND WILL NOT BE STOPPED IN ANTICIPATION

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	01/07/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: TRAFFIC CONTROL PLAN
SOUTH SITE

DWG No. 19433CAD001
FIGURE 2

DATE STAMP 01 JULY 2020

PROJECT No. 19433 | SCALE NTS | REV. A

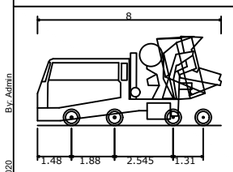
Filename: 19433CAD0013-TCP_200701.dwg Date: 1 July 2020 By: Admin

VEHICLE ENTERING

VEHICLE EXITING

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



Isuzu FYJ 300-350 Agitator

Overall Length	8000mm
Overall Width	2445mm
Overall Body Height	3878m
Min Body Ground Clearance	209mm
Track Width	2010mm
Lock-to-lock time	3.80s
Curb to Curb Turning Radius	8950mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	19/06/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- NORTH SITE (PITT STREET)
8.0m AGITATOR

DWG No. 19433CAD011
FIGURE 3

DATE STAMP 19 JUNE 2020

PROJECT No. 19433 | SCALE 1:300 @A3 | REV. A

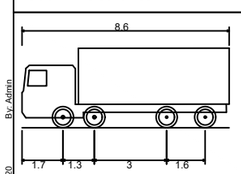
By: Admin
Date: 19 June 2020
Filename: 19433CAD011 - SWEPT PATH - 200619.dwg

VEHICLE ENTERING

VEHICLE EXITING

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



Hook Truck	
Overall Length	8600mm
Overall Width	2500mm
Overall Body Height	3300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10000mm

By: Admin
Date: 19 June 2020
Filename: 19433CAD011 - SWEPT PATH - 200619.dwg

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	19/06/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- NORTH SITE (PITT STREET)
8.6m HOOK TRUCK

DWG No. 19433CAD011
FIGURE 4

DATE STAMP: 19 JUNE 2020

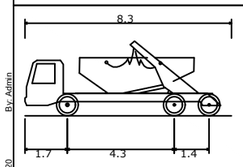
PROJECT No. 19433 | SCALE 1:300 @A3 | REV. A

VEHICLE ENTERING

VEHICLE EXITING

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



Double Axle Marrel	
Overall Length	8300mm
Overall Width	2500mm
Overall Body Height	3000mm
Min Body Ground Clearance	414mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	19/06/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- NORTH SITE (PITT STREET)
8.3m DOUBLE AXLE MARREL TRUCK

DWG No.	19433CAD011 FIGURE 5
DATE STAMP	19 JUNE 2020
PROJECT No.	19433
SCALE	1:300 @A3
REV.	A

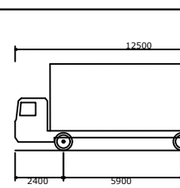
By: Admin
Date: 19 June 2020
Filename: 19433CAD011 - SWEPT PATH - 200619.dwg

VEHICLE ENTERING

VEHICLE EXITING

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



HRV - Heavy Rigid Vehicle

Overall Length	12500mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

By: Admin
Date: 19 June 2020
Filename: 19433CAD011 - SWEPT PATH - 200619.dwg

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	19/06/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- NORTH SITE (PITT STREET)
AS2890.2 12.5m HEAVY RIGID VEHICLE

DWG No.	19433CAD011 FIGURE 6
DATE STAMP	19 JUNE 2020
PROJECT No.	19433
SCALE	1:300 @A3
REV.	A

VEHICLE ENTERING

VEHICLE EXITING

MASONIC CLUB

HERITAGE DISPLAY

MRV

B99

LOADING DOCK PLATFORM

+24.400

SRV

SRV

Dock Master Office

LADDER TO B1

AUTOMATIC PARKING PLATFORM

AUTOMATIC PARKING PLATFORM

VALET PARKING AREA

STATION SUBSTATION VENTILATION

LOADING AREA

STATION ACC. HATCH (ABOVE)

STATION ACC. HATCH (BELOW)

B99

B99

B99

EOT LIFT

EOT LIFT

UP

+24.400

+24.200

UP

+24.400

UNIT

SHARED DOCK

CONCRETE PUMP

MANOEUVRING AREA

10150mm

10000mm

22460mm

2590mm

23000mm

CASTLEREAGH STREET

EOT LOBBY

+24.400

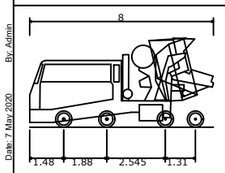
RETAIL UNIT 01.02 BOH

+24.400

RETAIL UNIT 01.02

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



Isuzu FYJ 300-350 Agitator

Overall Length	8000mm
Overall Width	2445mm
Overall Body Height	3878m
Min Body Ground Clearance	209mm
Track Width	2010mm
Lock-to-lock time	3.80s
Curb to Curb Turning Radius	8950mm

By: Admin

Date: 7 May 2020

Filename: 19433CAD007 - SWEPT PATH - 200508 -CASTLEREAGH.dwg

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	07/05/20

ttpp transport planning

PROJECT

PITT STREET STATION

TITLE

SWEPT PATH ANALYSIS- NORTH SITE (CASTLEREAGH STREET)
8.0m AGITATOR

DWG No. 19433CAD007
FIGURE 7

DATE STAMP 07 MAY 2020

PROJECT No.	SCALE	REV.
19433	1:300 @A3	A

VEHICLE ENTERING

VEHICLE EXITING

MASONIC CLUB

MRV

B99

SRV

SRV

LOADING DOCK PLATFORM

+24.400

Dock Master Office

LADDER TO B1

AUTOMATIC PARKING PLATFORM

AUTOMATIC PARKING PLATFORM

VALET PARKING AREA

STATION SUBSTATION VENTILATION

LOADING AREA

STATION ACC. HATCH (ABOVE)

STATION ACC. HATCH (BELOW)

B99

B99

B99

EOT LIFT

EOT LIFT

UP

+24.400

+24.200

UP

10150mm

10000mm

22460mm

2590mm

23000mm

CASTLEREAGH STREET

EOT LOBBY

+24.400

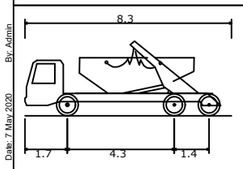
RETAIL UNIT 01.02 BOH

+24.400

RETAIL UNIT 01.02

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



Double Axle Marrel	
Overall Length	8300mm
Overall Width	2500mm
Overall Body Height	3000mm
Min Body Ground Clearance	414mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10000mm

By: Admin
Date: 7 May 2020
Filename: 19433CAD007 - SWEPT PATH - 200508 -CASTLEREAGH.dwg

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	07/05/20

ttpp transport planning

PROJECT

PITT STREET STATION

TITLE

SWEPT PATH ANALYSIS- NORTH SITE (CASTLEREAGH STREET)
8.3m DOUBLE AXLE MARREL

DWG No.	19433CAD007 FIGURE 8
DATE STAMP	07 MAY 2020
PROJECT No.	19433
SCALE	1:300 @A3
REV.	A

VEHICLE ENTERING

VEHICLE EXITING

MASONIC CLUB

MRV

B99

SRV

LOADING DOCK PLATFORM

+24.400

Dock Master Office

AUTOMATIC PARKING PLATFORM

VALET PARKING AREA

STATION SUBSTATION VENTILATION

LOADING AREA

STATION ACC. HATCH (ABOVE)

STATION ACC. HATCH (BELOW)

EOT LIFT

EOT LOBBY

RETAIL UNIT 01.02

RETAIL UNIT 01.02 BOH

+24.200

10150mm

10000mm

22460mm

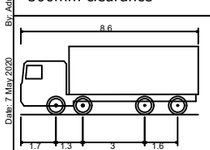
2590mm

23000mm

CASTLEREAGH STREET

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



Hook Truck	
Overall Length	8600mm
Overall Width	2500mm
Overall Body Height	3300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	07/05/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- NORTH SITE (CASTLEREAGH STREET)
8.6m HOOK TRUCK

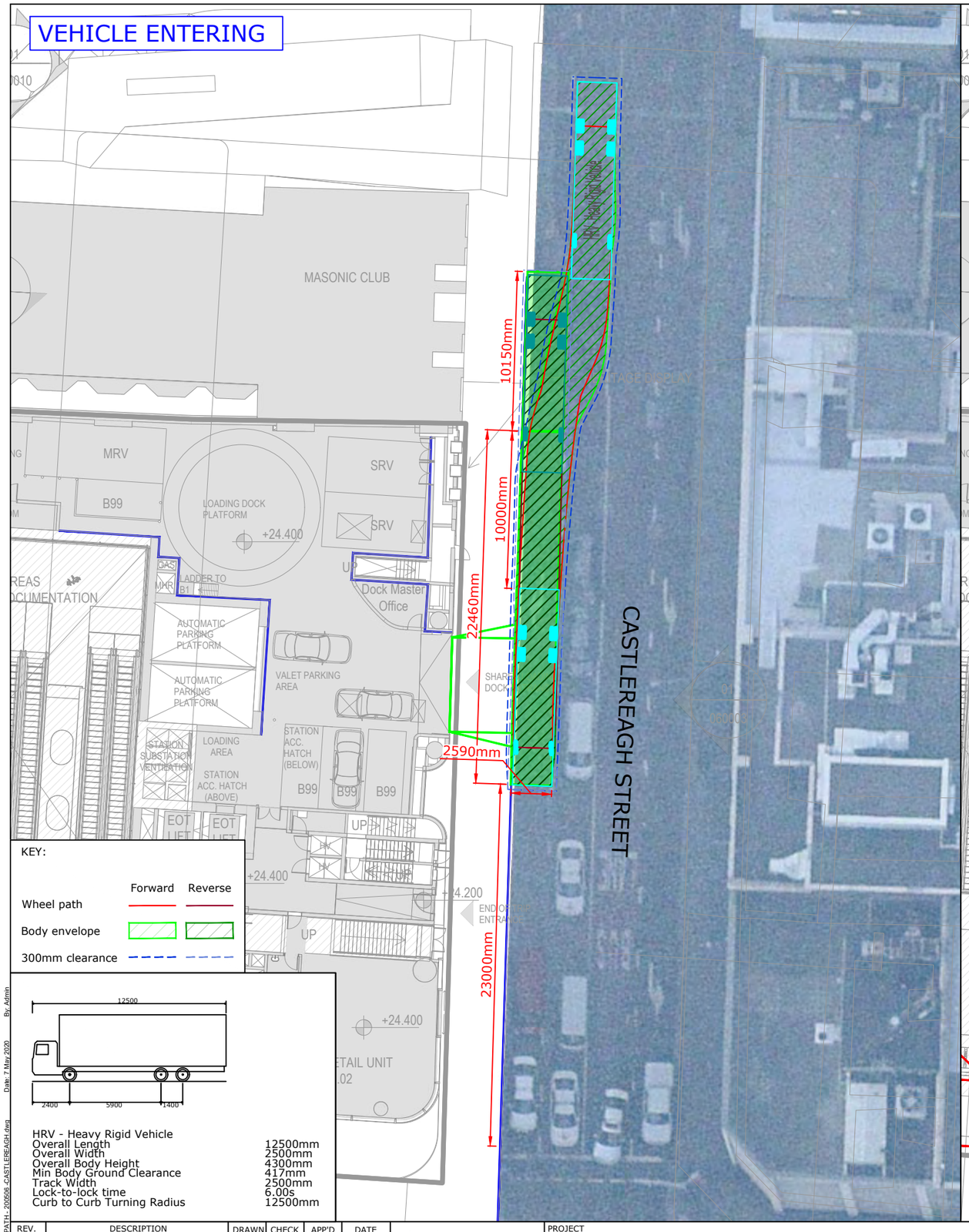
DWG No. 19433CAD007
FIGURE 9

DATE STAMP 07 MAY 2020

PROJECT No. 19433 | SCALE 1:300 @A3 | REV. A

By: Admin
Date: 7 May 2020
Filename: 19433CAD007 - SWEPT PATH - 200508 -CASTLEREAGH.dwg

VEHICLE ENTERING



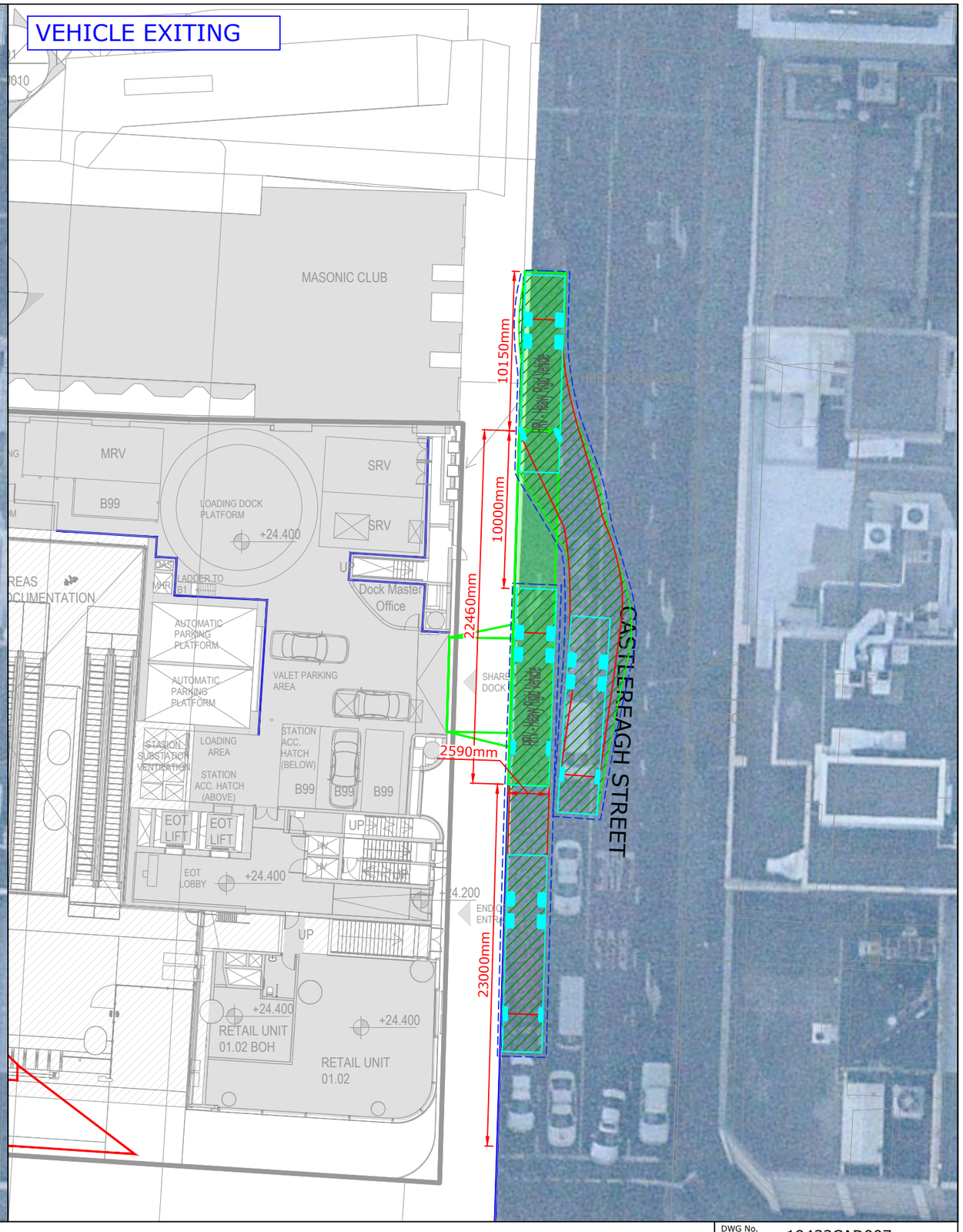
KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

HRV - Heavy Rigid Vehicle

Overall Length	12500mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

VEHICLE EXITING



REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	07/05/20

ttpp transport planning

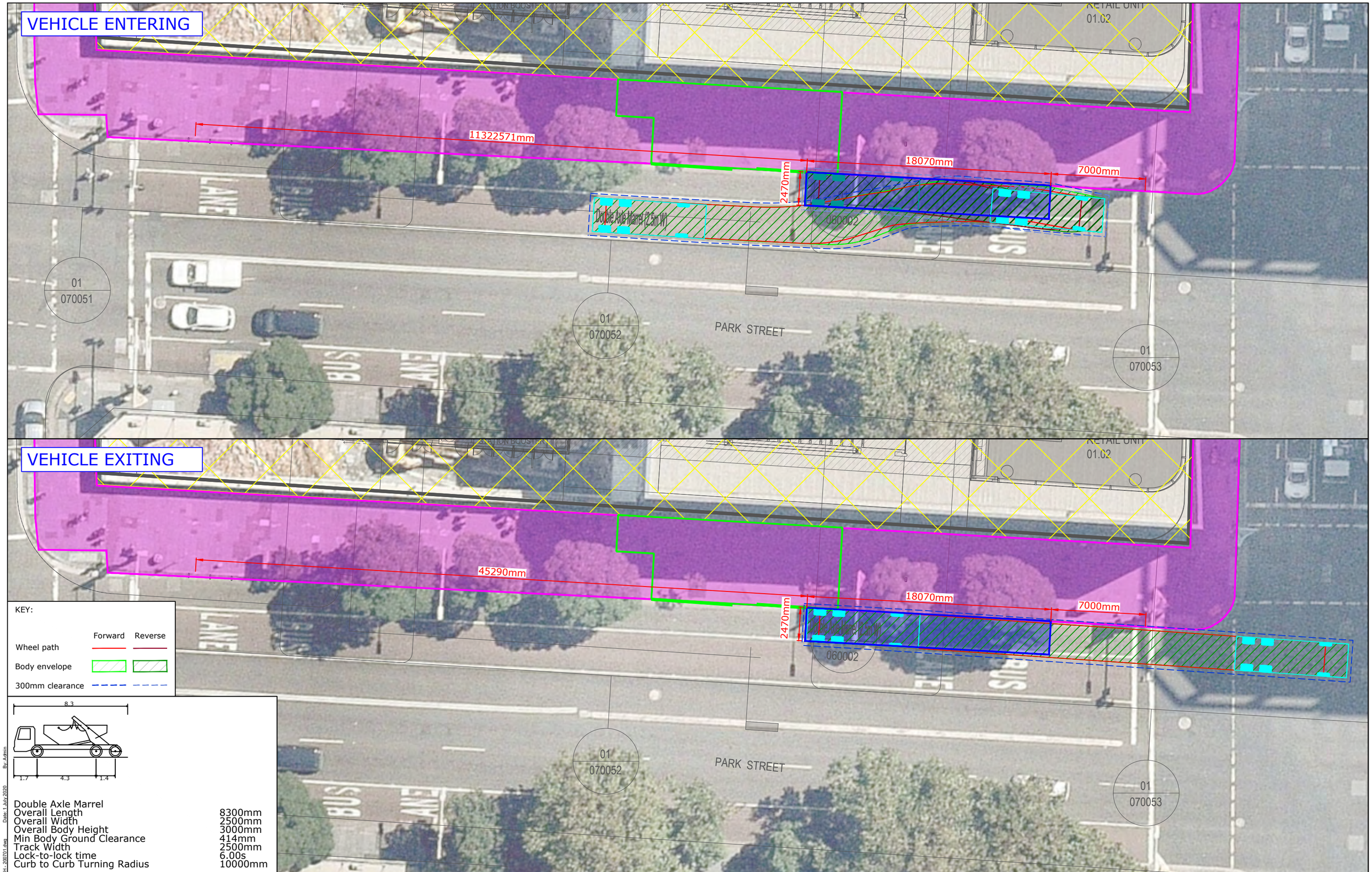
PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- NORTH SITE (CASTLEREAGH STREET)
AS2890.2 12.5m HEAVY RIGID TRUCK

DWG No.	19433CAD007 FIGURE 10
DATE STAMP	07 MAY 2020
PROJECT No.	19433
SCALE	1:300 @A3
REV.	A

Filename: 19433CAD007 - SWEPT PATH - 200508 -CASTLEREAGH.dwg
Date: 7 May 2020
By: Admin

VEHICLE ENTERING



VEHICLE EXITING

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

Double Axle Marrel	
Overall Length	8300mm
Overall Width	2500mm
Overall Body Height	3000mm
Min Body Ground Clearance	414mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10000mm

By: Admin
Date: 1 July 2020
Filename: 19433CAD0014 -SWEPT PATH - 290701.dwg

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	01/07/20

ttpp transport planning

PROJECT
PITT STREET STATION

TITLE
SWEPT PATH ANALYSIS- NORTH SITE (PARK STREET)
8.3m DOUBLE AXLE MARREL

DWG No. 19433CAD001
FIGURE 11

DATE STAMP 01 JULY 2020

PROJECT No. 19433 | SCALE 1:250 @A3 | REV. A

VEHICLE ENTERING

45290mm

2470mm

18070mm

7000mm

Hook Truck (7.5m W)

060002

01
070051

01
070052

PARK STREET

01
070053

RETAIL UNIT
01.02

VEHICLE EXITING

45290mm

2470mm

18070mm

7000mm

Hook Truck (7.5m W)

060002

01
070052

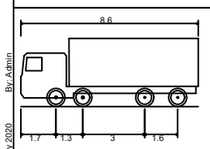
PARK STREET

01
070053

RETAIL UNIT
01.02

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



Hook Truck	
Overall Length	8600mm
Overall Width	2500mm
Overall Body Height	3300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	01/07/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- NORTH SITE (PARK STREET)
8.6m HOOK TRUCK

DWG No. 19433CAD001
FIGURE 12

DATE STAMP 01 JULY 2020

PROJECT No. 19433 | SCALE 1:250 @A3 | REV. A

Filename: 19433CAD0014 -SWEPT PATH - 200701.dwg Date: 1 July 2020 By: Admin

VEHICLE ENTERING

VEHICLE EXITING

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

HRV - Heavy Rigid Vehicle

Overall Length	12500mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	01/07/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- NORTH SITE (PARK STREET)
AS2890.2 12.5m HEAVY RIGID TRUCK

DWG No. 19433CAD001
FIGURE 13

DATE STAMP 01 JULY 2020

PROJECT No. 19433 | SCALE 1:250 @A3 | REV. A

Filename: 19433CAD0014 -SWEPT PATH - 200701.dwg Date: 1 July 2020 By: Admin

VEHICLE ENTERING

VEHICLE EXITING

Edinburgh Castle Hotel

PITT STREET

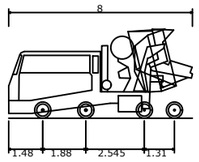
19660mm

32520mm

2510mm

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



Isuzu FYJ 300-350 Agitator

Overall Length	8000mm
Overall Width	2445mm
Overall Body Height	3878m
Min Body Ground Clearance	209mm
Track Width	2010mm
Lock-to-lock time	3.80s
Curb to Curb Turning Radius	8950mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	07/05/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- SOUTH SITE (PITT STREET)
8.0m AGITATOR

DWG No. 19433CAD006
FIGURE 14

DATE STAMP: 07 MAY 2020

PROJECT No.	SCALE	REV.
19433	1:400 @A3	A

Filename: 19433CAD006 - SWEPT PATH - 200505 - PITT.dwg
Date: 7 May 2020
By: Admin

VEHICLE ENTERING

VEHICLE EXITING

Edinburgh Castle Hotel

PITT STREET

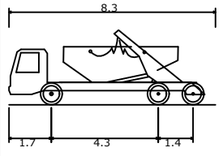
19660mm

32520mm

2510mm

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



Double Axle Marrel

Overall Length	8300mm
Overall Width	2500mm
Overall Body Height	3000mm
Min Body Ground Clearance	414mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	07/05/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- SOUTH SITE (PITT STREET)
8.3m DOUBLE AXLE MARREL

DWG No. 19433CAD006
FIGURE 15

DATE STAMP 07 MAY 2020

PROJECT No. 19433 | SCALE 1:400 @A3 | REV. A

Filename: 19433CAD006 - SWEPT PATH - 200505 - PITT.dwg Date: 7 May 2020 By: Admin

VEHICLE ENTERING

VEHICLE EXITING

Edinburgh Castle Hotel

PITT STREET

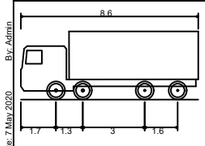
19660mm

32520mm

2510mm

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



Hook Truck

Overall Length	8600mm
Overall Width	2500mm
Overall Body Height	3300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	07/05/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- SOUTH SITE (PITT STREET)
8.729m TRUCKMIXER

DWG No. 19433CAD006
FIGURE 16

DATE STAMP 07 MAY 2020

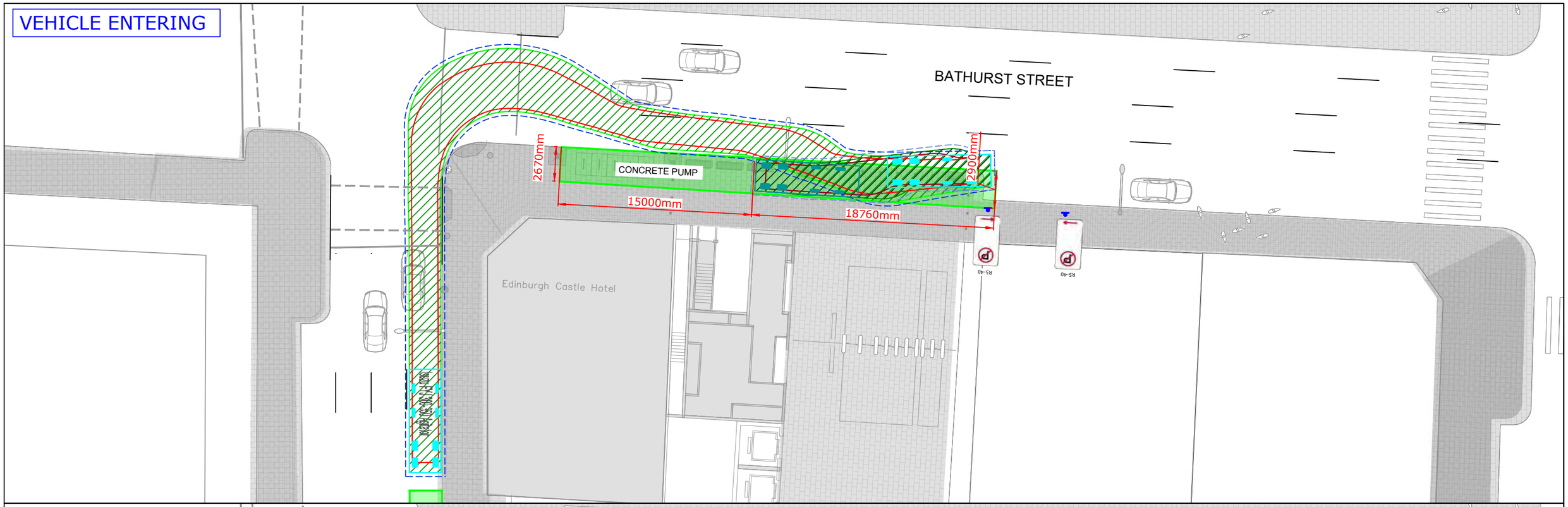
PROJECT No. 19433

SCALE 1:400 @A3

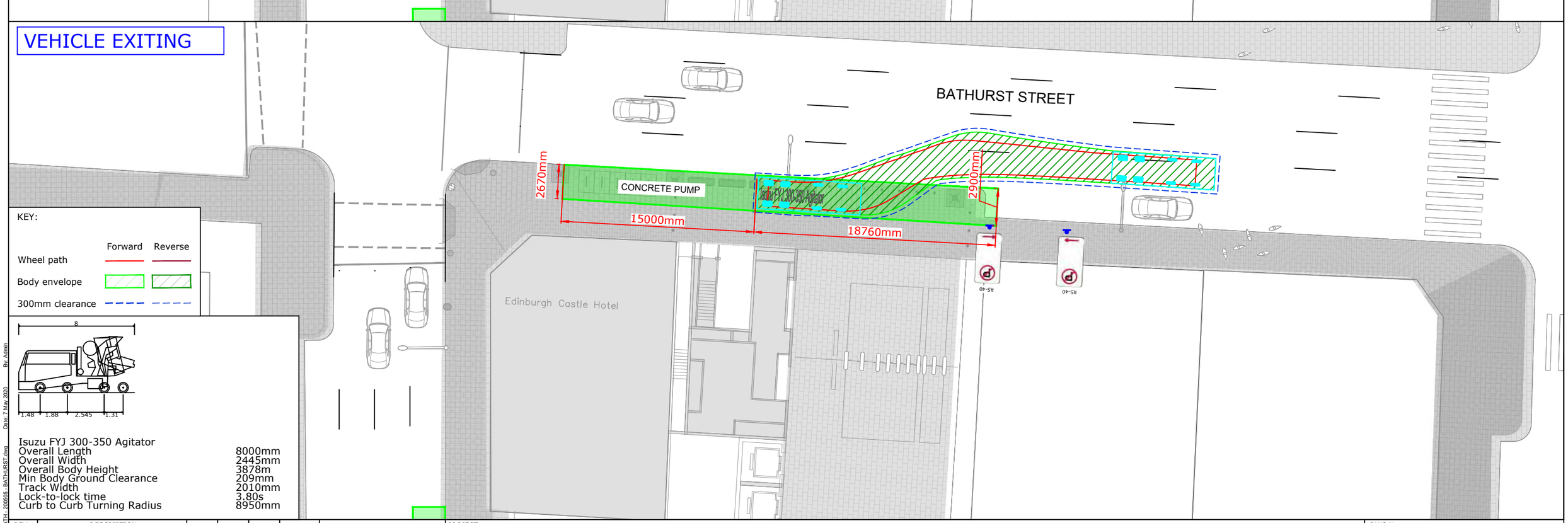
REV. A

Filename: 19433CAD006 - SWEPT PATH - 200505 - PITT.dwg
Date: 7 May 2020
By: Admin

VEHICLE ENTERING



VEHICLE EXITING



KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

Isuzu FYJ 300-350 Agitator

Overall Length	8000mm
Overall Width	2445mm
Overall Body Height	3878m
Min Body Ground Clearance	209mm
Track Width	2010mm
Lock-to-lock time	3.80s
Curb to Curb Turning Radius	8950mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	07/05/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- SOUTH SITE (BATHURST STREET)
8.0m AGITATOR

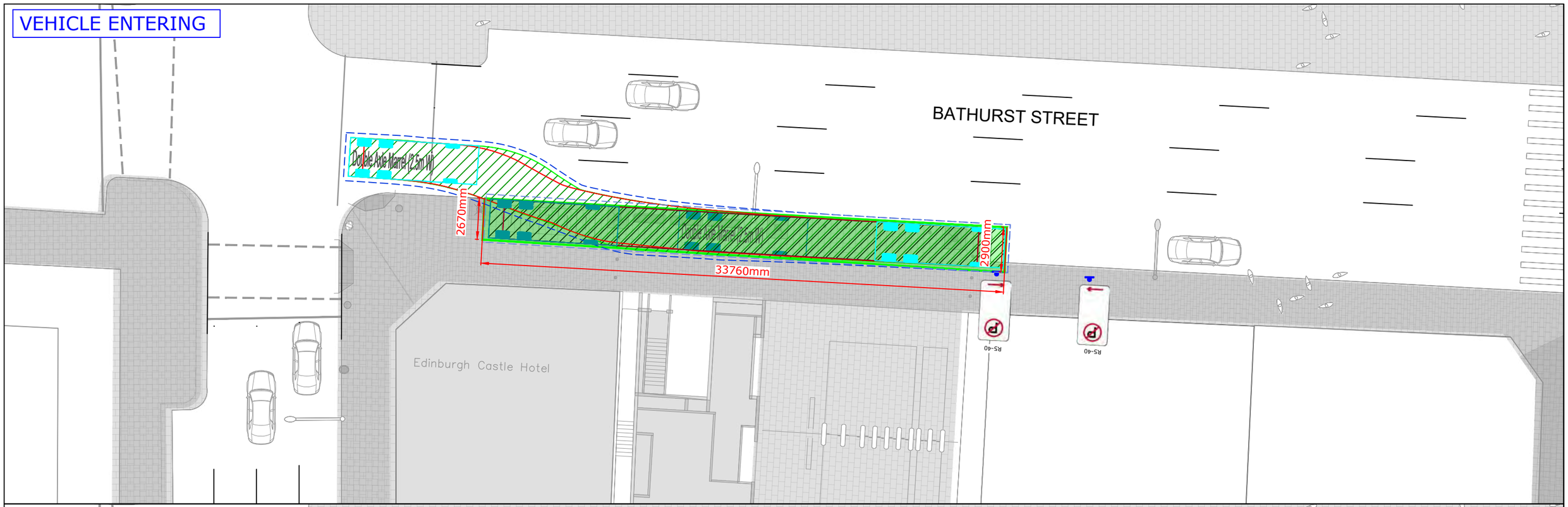
DWG No. 19433CAD006
FIGURE 17

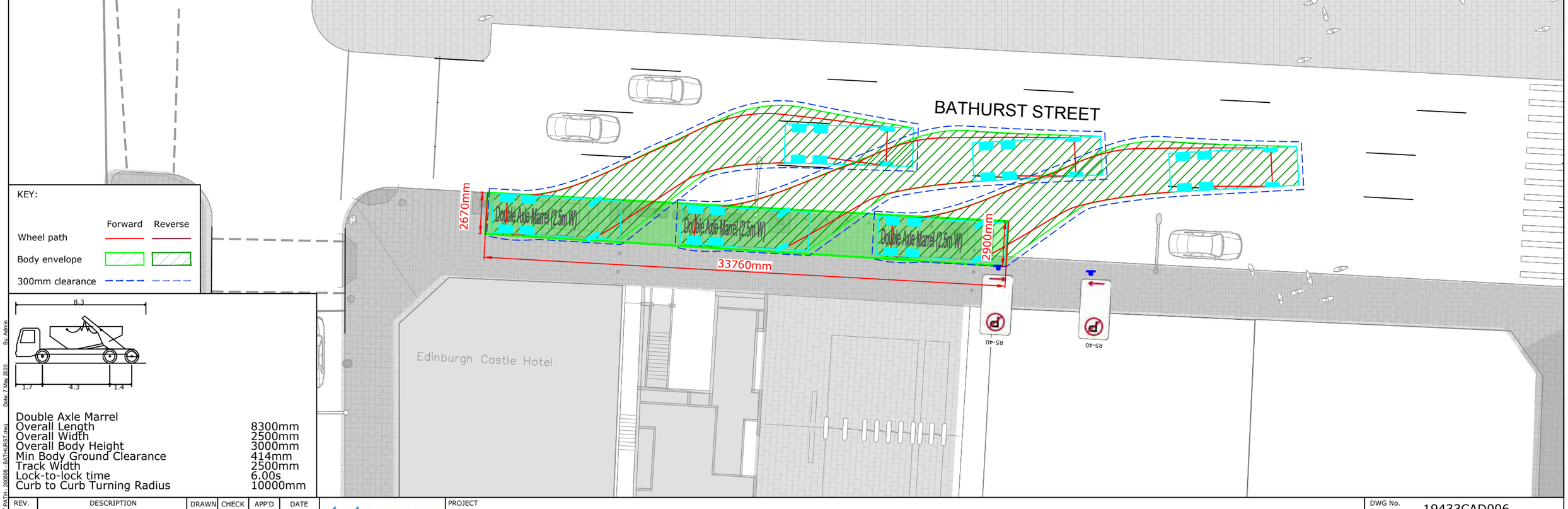
DATE STAMP: 07 MAY 2020

PROJECT No.	SCALE	REV.
19433	1:300 @A3	A

Filename: 19433CAD006 - SWEPT PATH - 200505 - BATHURST.dwg
Date: 7 May 2020
By: Admin

VEHICLE ENTERING





KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

Double Axle Marrel	
Overall Length	8300mm
Overall Width	2500mm
Overall Body Height	3000mm
Min Body Ground Clearance	414mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	07/05/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- SOUTH SITE (BATHURST STREET)
8.3m DOUBLE AXLE MARREL

DWG No. 19433CAD006
FIGURE 18

DATE STAMP: 07 MAY 2020

PROJECT No. 19433 | SCALE 1:250 @A3 | REV. A

By: Admin
Date: 7 May 2020
Filename: 19433CAD006 - SWEPT PATH - 200505 - BATHURST.dwg

VEHICLE ENTERING

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

Hook Truck	
Overall Length	8600mm
Overall Width	2500mm
Overall Body Height	3300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	07/05/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- SOUTH SITE (BATHURST STREET)
8.6m HOOK TRUCK

DWG No. 19433CAD006
FIGURE 19

DATE STAMP 07 MAY 2020

PROJECT No. 19433 | SCALE 1:250 @A3 | REV. A

Filename: 19433CAD006 - SWEPT PATH - 200505 - BATHURST.dwg Date: 7 May 2020 By: Admin

VEHICLE ENTERING

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

HRV - Heavy Rigid Vehicle	
Overall Length	12500mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	07/05/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- SOUTH SITE (BATHURST STREET)
AS2890.2 12.5m HEAVY RIGID VEHICLE

DWG No. 19433CAD006
FIGURE 20

DATE STAMP: 07 MAY 2020

PROJECT No.	SCALE	REV.
19433	1:250 @A3	A

Filename: 19433CAD006 - SWEPT PATH - 200505 - BATHURST.dwg Date: 7 May 2020 By: Admin

VEHICLE ENTERING

VEHICLE EXITING

Edinburgh Castle Hotel

PITT STREET

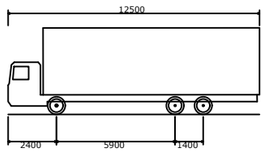
19660mm

32520mm

2510mm

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



HRV - Heavy Rigid Vehicle

Overall Length	12500mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	417mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	07/05/20

ttpp transport planning

PROJECT: PITT STREET STATION

TITLE: SWEPT PATH ANALYSIS- SOUTH SITE (PITT STREET)
AS2890.2 12.5m HEAVY RIGID VEHICLE

DWG No. 19433CAD006
FIGURE 21

DATE STAMP 07 MAY 2020

PROJECT No.	SCALE	REV.
19433	1:400 @A3	A

Filename: 19433CAD006 - SWEPT PATH - 200505 - PITT.dwg
Date: 7 May 2020
By: Admin

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Appendix B

Consultation Summary - June 2020

Agency Consultation	Comments	Status
City of Sydney Council	1 comment received and addressed	Closed
Sydney Coordination Office (SCO)	1 comments received and addressed	Closed
Australia Post	no comment	Closed
Castlereagh Boutique Hotel	no objections	Closed
Edinburgh Castle Hotel	no objections	Closed

Appendix F

Concept Drawings for Pitt Street South and Bathurst Street Line Marking

SITE INSTALLATION SOUTH - PITT STREET
NEW LINE MARKING PROPOSED

PITT STREET STATION
SOUTH SITE

PITT STREET

PITT STREET

CURRENT LINE MARKING

PROPOSED NEW LINE MARKING

CURRENT LINE MARKING

PROPOSED NEW LINE MARKING

CURRENT LINE MARKING

3200

500

2700

2700

450

2900

ONE WAY

DOUBLE STACKED SHED 6X2.4

SHED 6X2.4

DOUBLE STACKED SHED 6X2.4

SHED 4.8X2.4

WASTE BIN

600A TEMP KIOSK

PLAN VIEW

SCALE: 1:200 (A3)

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

50mm ON A3 SIZE ORIGINAL

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..	..	..-..-..	..	..	..	CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA94) HEIGHT DATUM: AHD	COMPANY NAME / LOGO

PLOT DATE / TIME	PLOT BY
15/01/2020 3:57:54 PM	nwalter

	TITLE	NAME	DATE
DRAWN		N. WALTER	..
DRG CHECK			
DESIGN			
DESIGN CHECK			
DESIGN MNGR			
PROJECT MNGR			

CLIENT: NSW GOVERNMENT sydney METRO

PREPARED FOR: Sydney Metro

SYDNEY METRO
PITT STREET STATION
METHODOLOGY AND CONSTRUCTABILITY
Site installation
..
..

A3

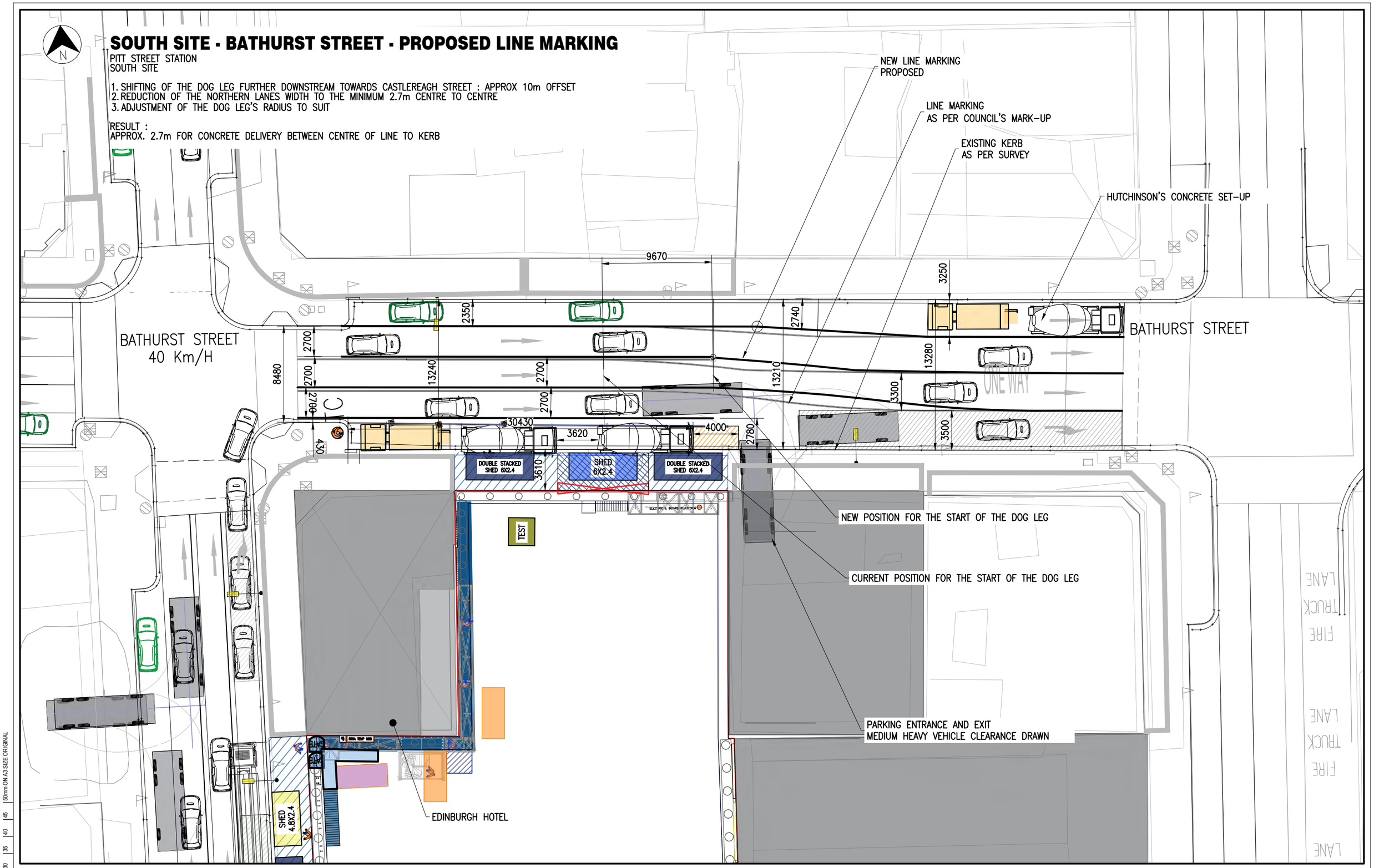
EDMS REGISTRATION No. SMCSWSPS-CPB-PSN-CM-DWG-00004			PART
ISSUE STATUS: DESIGN STAGE - DESIGN PHASE	EDMS No.: ..	SHEET No.: XX-0000	ISSUE: A

SOUTH SITE - BATHURST STREET - PROPOSED LINE MARKING

PITT STREET STATION
SOUTH SITE

1. SHIFTING OF THE DOG LEG FURTHER DOWNSTREAM TOWARDS CASTLEREAGH STREET : APPROX 10m OFFSET
2. REDUCTION OF THE NORTHERN LANES WIDTH TO THE MINIMUM 2.7m CENTRE TO CENTRE
3. ADJUSTMENT OF THE DOG LEG'S RADIUS TO SUIT

RESULT :
APPROX. 2.7m FOR CONCRETE DELIVERY BETWEEN CENTRE OF LINE TO KERB



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0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME \\006nf\N01070-PittStSD\Delivery\CS Construction\Working Folder\2. METHODS\8. SITE INSTALLATION\PT-MT-08-traffic bathurst street.dwg				DESIGN LOT CODE ..	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING		PLOT DATE / TIME 15/01/2020 3:57:54 PM	PLOT BY nwalter		CLIENT	SYDNEY METRO PITT STREET STATION METHODOLOGY AND CONSTRUCTABILITY Site installation .. ..
EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL	SCALES ON A3 SIZE DRAWING	DRAWINGS / DESIGN PREPARED BY	TITLE	NAME	DATE		A3
..	..	-.-.-.-	..	..	..		COMPANY NAME / LOGO	DRAWN	N. WALTER	..		
								DRG CHECK				
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						CO-ORDINATE SYSTEM MGA ZONE 56 (GDA94)	HEIGHT DATUM AHD	PROJECT MNGR			Drawing No. SMCSWSPS-CPB-PSN-CM-DWG-00004	PART
											ISSUE STATUS DESIGN STAGE - DESIGN PHASE	EDMS No. ..	SHEET No. XX-0000	ISSUE A

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APPENDIX D

TRANSPORT AND ACCESSIBILITY IMPACT ASSESSMENT PITT STREET NORTH OSD SSD DA

Sydney Metro State Significant Development, Development Application (SSD DA) Pitt Street North Over Station Development

Appendix V1 - Transport and Accessibility Impact Assessment

Pitt Street Developer North Pty Ltd

Reference: 507262

Revision: C – Issue for DPIE

2020-06-23

SMCSWSPS-AUR-OSN-TF-PLN-000001

aurecon

Bringing ideas to life

Document control record

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Document control						aurecon
Report title		Appendix V1 - Transport and Accessibility Impact Assessment				
Document code		SMCSWSPS-AUR-OSN-TF-PLN-000001	**Project number**		507262	
File path						
Client		Pitt Street Developer North Pty Ltd				
Client contact		Michael Muller	**Client reference**			
Rev	**Date**	**Revision details/status**	**Author**	**Reviewer**	**Verifier** (if required)	**Approver**
A	2020-02-14	Draft	WL. Khoo	M. La Galia / Iris Brkic		A. Reynolds
A2	2020-02-21	Draft including automatic car lift assessment	WL. Khoo	M. La Galia / Iris Brkic		A. Reynolds
A3	2020-03-27	Final Draft	Sonja Stemler	M. La Galia / Iris Brkic		A. Reynolds
D	2020-04-03	Final issue for Sydney Metro	Sonja Stemler	M. La Galia / Iris Brkic		A. Reynolds
E	2020-04-06	Final issue for Sydney Metro (v2)	Iris Brkic	M. La Galia		A. Reynolds
B	2020-05-22	Issued for LOC	Iris Brkic	M. La Galia		A. Reynolds
C	2020-06-23	Issued for DPIE	Iris Brkic	A. Johnstone / G. Austin		J. Pereira
Current revision		**C – Issue for DPIE**				

Approval			
Author signature		Approver signature	
Name	Iris Brkic	Name	Jason Pereira
Title	Senior Transport Engineer	Title	Technical Director

Contents

Appendices

Appendix A: Delivery Service Plan

1 Executive Summary

Aurecon was appointed by Pitt Street Developer North (PS Developer) to undertake a Transport and Accessibility Impact Assessment (TAIA) as part of a State Significant Development Application (SSDA) for the Stage 2 design of the mixed use development above the northern portal of Pitt Street Station, otherwise known as the Pitt Street North Over Station Development (North OSD).

This TAIA has re-assessed the development in accordance with the Secretary's Environmental Assessment Requirements (SEARs) that form part of the essential aspects of the Environmental Impact Statement (EIS), addressing transport, traffic, parking and access. A summary of the assessment against each of the SEARs related to transport, traffic and parking is provided in Section 2.1.

The aim of this study was to assess the transport related impacts of the development; Pitt Street North OSD. The development comprises of 39 floors and approximately 52,951m^2 of commercial space and 1,700m^2 of retail space (the combined commercial and retail total GFA is 54,651m^2). The dedicated loading dock area is services by seven bays.

The following summarises the transport impacts of the development:

- **Public Transport:** The site is situated within the centre of Sydney CBD and is accessible (within 400m radius) to high frequency public transport services including buses and trains. With the high frequency service operating from the Pitt Street Metro Station, which will be directly beneath the site, the travel distance and time to public transport services for tenants and visitors will be shortened. The recently opened Sydney CBD and South East Light Rail service has one of its stops (Town Hall) within 400m of the development. There are also three heavy rail stations located within 400m radius from the site, with Town Hall Station sits closest to the site. This provides another public transport option for the development. Overall, the site is accessible to numerous public transport options and is estimated to be the primary travel mode for most tenants and visitors.
- **Cycling:** According to City of Sydney's Cycleway map, both the adjacent Pitt Street and Castlereagh Street are classified as "direct routes with higher traffic". These routes are considered to be the most direct route to access major land uses within the CBD, and provide connection to other cycling infrastructure. There are numerous public bicycle parking spaces provided within the Sydney CBD, as well as in close proximity to the development. This is estimated to encourage the use of bicycles by tenants of the development for shorter trips within the City of Sydney.
- **Bicycle Parking:** The opening year (2024) of the development will provide 200 bicycle spaces, with allowance for additional bike parking spaces to be built as site demand increases, to the maximum number in line with the DCP 2012 bike parking requirements. The 200 bike parking bays is equivalent to a 4.1% cycle mode share which is an increase from the baseline 1.4% (based on the 2016 Census).
- **Pedestrians:** Assessment of the Pedestrian access to the North OSD Development has been undertaken as part of the Pitt Street Metro Development Application which formed part of the Critical State Significant Infrastructure (CSSI) submission. The dynamic pedestrian modelling integrated the metro station, the precinct and both the North and South OSD development. The report has concluded that the pedestrian level of service is generally satisfactory.
- **Private Vehicle Parking:** The development provides a total of 40 parking bays for commercial tenants only via a car stacker with the two car lifts.
- **Private Vehicle Use:** The development is estimated to generate less than 40 vehicle trips during the road network peak periods. With this minimal number of trips, the development is an improvement to the road network compared to the previous land uses.
- **Loading Dock Provision and Operation:** The North OSD has been designed to integrate with the Pitt Street Metro Station. The North OSD development will provide seven loading dock spaces on the ground level of the loading dock and three B99 spaces within the automatic car stacker to accommodate the longer dwell times of B99 vehicles. The seven loading dock spaces on the ground level include a dedicated Sydney Metro bay within the loading dock facility. By using an actively managed approach, the seven bays are estimated to be able to accommodate the peak demand estimated for the North OSD. A service delivery plan has been included in Appendix A.

2 Purpose of this report

2.1 Alignment with the SEARs and SSD 8875

2.1.1 SEARs

This report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements (SEARS) Dated 25 October 2019. Specifically, this report has been prepared to respond to the SEARS requirements summarised in Table 2-1 below.

Table 2-1: SEARs requirement list

Item	Description of Requirement	Report Section	Comments
8a - Traffic, parking and access (operation)	Details on the current and likely estimated future mode share for the various users (residents, visitors, etc) accessing the proposed development.	5.1 and the Green Travel Plan document: SMCSWSPS-AUR-OSN-EM-REP-000002	The assessment has been based on the existing transport mode share for the City of Sydney to estimate the expected mode share for the development, considering the existing and future infrastructure in close proximity to the site as well as the future transport facilities. The Green Travel Plan has been included as part of SMCSWSPS-AUR-OSN-EM-REP-000002
8b	Details of the current and likely estimated future daily and peak hour vehicle, public transport, point to point transport, pedestrian and bicycle movements to/from the site, including an indication of whether it relates to the station or OSD, and any associated impacts and/or mitigation measures required.	4 and 5	The assessment provides a review of potential traffic generation from the development to determine the likely impact on the road network in the vicinity. Traffic generation is limited as a result of limited parking provisions within the development to 40 bays, which in in line with City of Sydney's objectives.
8c	Measures to encourage users of the development to make sustainable travel choices, including a green travel plan, walking, cycling, public transport and car sharing, adequate provision of bicycle parking and end of trip facilities and the minimisation of private car trips.	3, 4, 5 and the Green Travel Plan document: SMCSWSPS-AUR-OSN-EM-REP-000002 alongside the Pedestrian Modelling report submitted as part of the Pitt Street Station SSDA: SMCSWSPS-AUR-ALL-TF-REP-000001	The assessment focuses on the accessibility to sustainable transport options available for the development. The Green Travel Plan has been included as part of SMCSWSPS-AUR-OSN-EM-REP-000002. The Pedestrian Modelling report submitted as part of the Pitt Street Station SSDA: SMCSWSPS-AUR-ALL-TF-REP-000001.

Item	Description of Requirement	Report Section	Comments
8d	Modelling and analysis of pedestrian and cyclist access to the proposed development in consultation with TfNSW, taking into account the existing and planned Sydney Bike Network.	3.6.5 and 3.6.6, 5.3 and 5.5	The assessment has provided a review of the pedestrian analysis undertaken for the Pitt Street Metro Station with the proposed development demands included. The Green Travel Plan has been provided in SMCSWSPS-AUR-OSN-EM-REP-000002.
8e	An assessment and details of existing and proposed vehicle access arrangements, including vehicle parking and access, a Delivery Service Plan detailing loading dock and servicing provision, adequacy and management with consideration of precinct wide shared loading docks and/or remote or off-site loading zone hub facilities, ensuring all servicing and loading occurs on-site and does not rely on kerbside controls.	4.2, 4.3, 5.8 and a Delivery Service Plan has been attached in Appendix A.	The assessment for the proposed loading bays has been checked against the City of Sydney DCP 2012, as well as a loading dock activity study to support the loading bay provision. A Delivery Service Plan has been attached in Appendix A.
8f	Details of measures to segregate hostile vehicles from public transport users and areas of people congregation.	N/A	A detailed assessment has been undertaken to identify the risk locations and provide measures to segregate the hostile vehicles from areas that people occupy. Refer SMCSWSPS-K&C-OSN-SC-REP-000001 Blast Vulnerability Assessment.
8g	An assessment of pedestrian and cyclist safety with consideration of the relationship with design, access and operation of the station.	4.3.4	The assessment has included a review of the potential risks for pedestrians and cyclists with respect to the development's access, design and operation.

2.1.2 Conditions of Consent

This report has also been prepared in response to the following Condition of Consent for the State Significant Development Concept (SSD 8875) for the OSD summarised in Table 2-2.

Table 2-2: Concept approval of Conditions of Consent

Item	Description of Requirement	Section Reference	Comments
B16/17 Traffic, Access and parking	Traffic and Transport Impact Assessment including: consideration of responsibilities, timing and commitments to the development of car share parking, motorcycle parking and preparation of travel plans.	This document.	This document is the Traffic and Transport Impact Assessment undertaken for OSD North.

B18 Traffic, Access and parking	Independent road safety audits are to be undertaken for all stages of detailed design development involving road operations and traffic issues relevant to the OSD. Any issues identified by the audits shall be closed out in consultation with the Sydney Coordination Office and the City of Sydney to the satisfaction of the relevant road authorities.		This will be undertaken as part of the design development in accordance with Station design process, separate to this report.

2.2 Introduction

This report has been prepared to accompany a detailed State Significant Development (SSD) development application (DA) for a commercial mixed-use Over Station Development (OSD) above the new Sydney Metro Pitt Street North Station. The detailed SSD DA is consistent with the Concept Approval (SSD 17_8875) granted for the maximum building envelope on the site, as proposed to be modified.

The Minister for Planning, or their delegate, is the consent authority for the SSD DA and this application is lodged with the NSW Department of Planning, Industry and Environment (NSW DPIE) for assessment.

This report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) dated 25 October 2019.

The detailed SSD DA seeks development consent for:

- Construction of new commercial tower of approximately 38 storeys
- The tower includes maximum GFA, excluding floor space approved in the CSSI.
- Integration with the approved CSSI proposal including though not limited to:
  - Structures, mechanical and electronic systems, and services; and
  - Vertical transfers.
- Use of spaces within the CSSI 'metro box' building envelope for the purposes of:
  - Retail tenancies;
  - Commercial lobby and commercial amenities;
  - Car parking spaces within the podium for the purposes of the commercial premises; and
  - Loading and services access.
- Utilities and services provision.
- Stratum subdivision (staged).

2.3 The Site

The site is located within the Sydney CBD. It has three separate street frontages, Pitt Street to the west, Park Street to the south and Castlereagh Street to the east. The area surrounding the site consists of predominantly commercial high-density buildings and some residential buildings, with finer grain and heritage buildings dispersed throughout.

The site has an approximate area of 3,150.1sqm and is legally described as follows:

- 252 Pitt Street (Lot 20 in DP1255509)

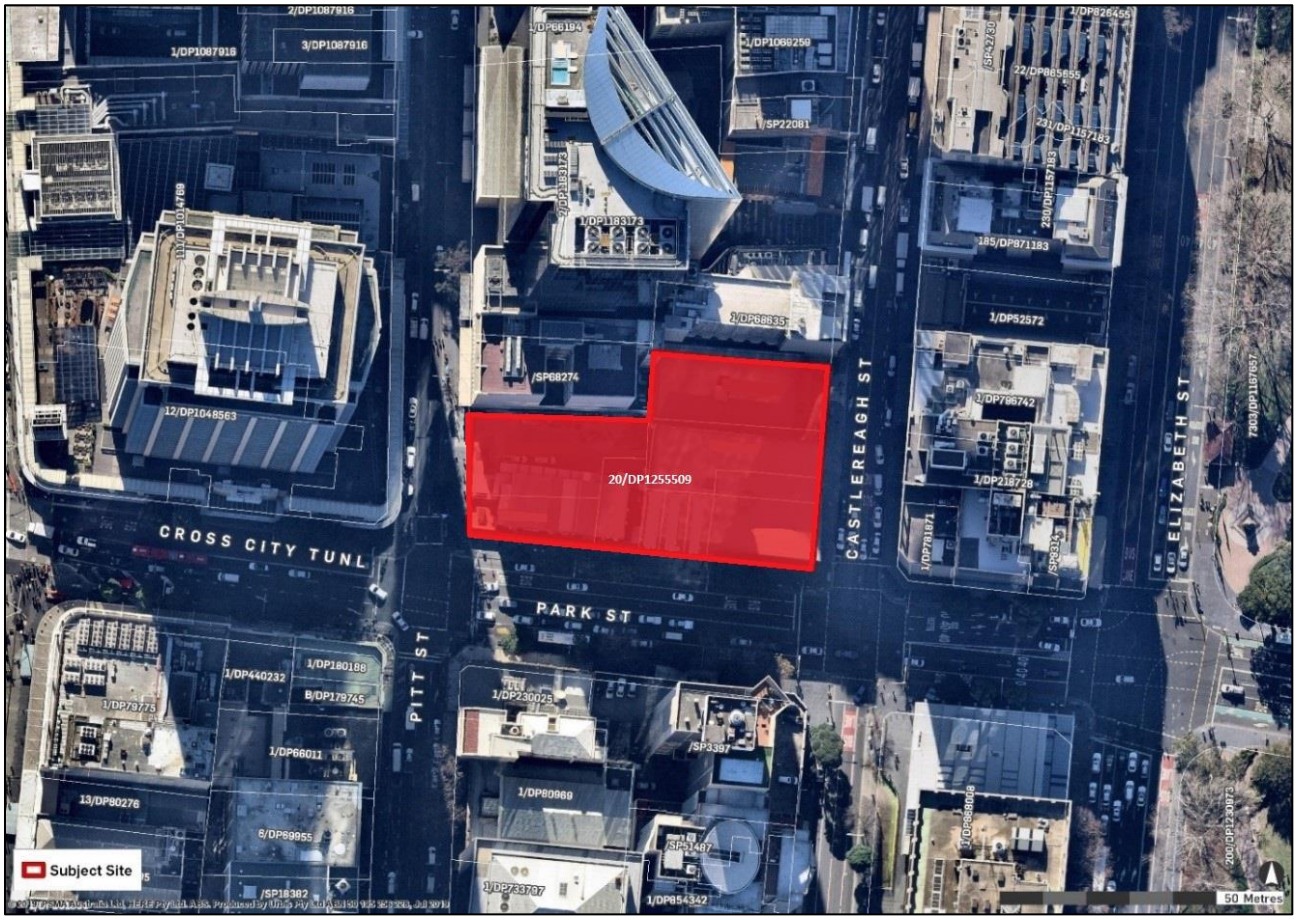


Figure 2-1: Location Plan (Source: Urbis)

2.4 Sydney Metro

Sydney Metro is Australia's biggest public transport program. A new standalone railway, this 21st century network will revolutionise the way Sydney travels.

There are four core components:

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

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

- **Sydney Metro City & Southwest**

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

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

In 2024, customers will benefit from a new fully-air conditioned Sydney Metro train every four minutes in the peak in each direction with lifts, level platforms and platform screen doors for safety, accessibility and increased security.

- **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.

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

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

- **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. The Australian and NSW governments are equal partners in the delivery of this new railway.

The Sydney Metro Project is illustrated in Figure 2-2.

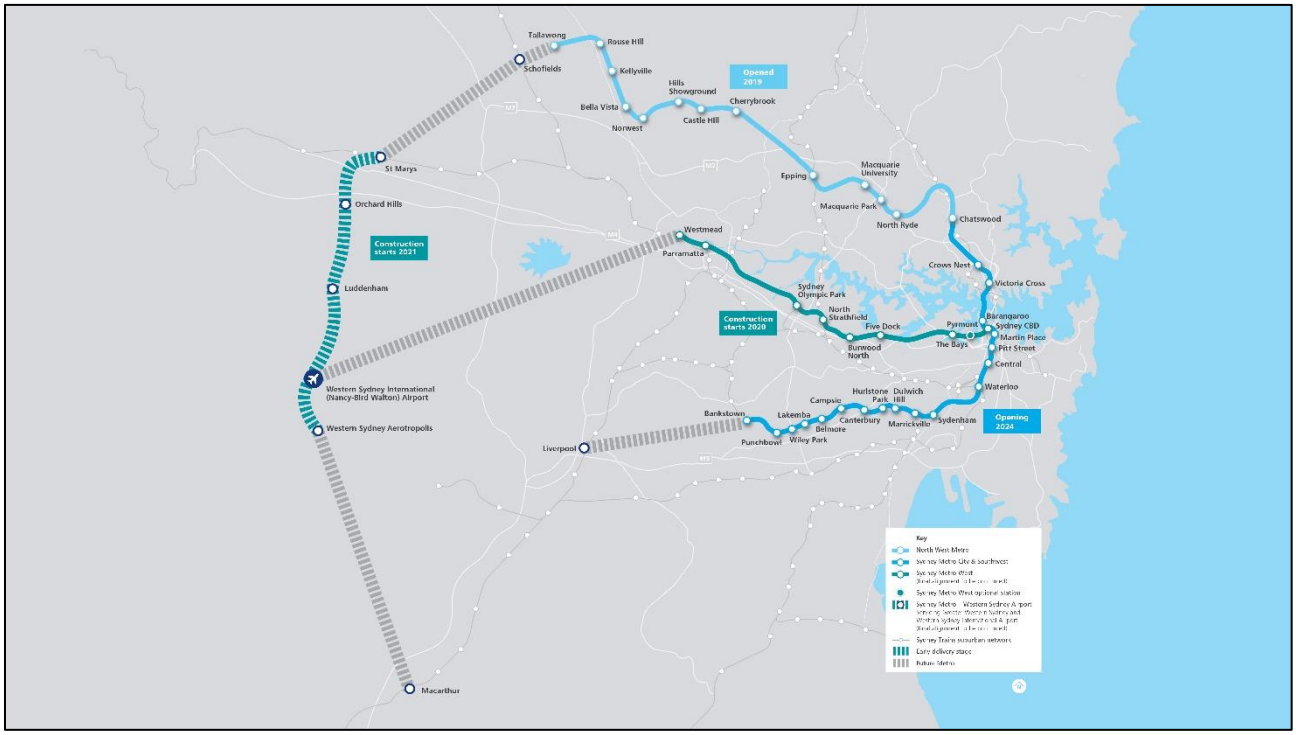


Figure 2-2: Sydney Metro Alignment Map (source: Sydney Metro)

On 9 January 2017, the Minister for Planning approved the Sydney Metro City & Southwest - Chatswood to Sydenham project as a Critical State Significant Infrastructure project (reference SSI 15_7400) (CSSI Approval). The terms of the CSSI Approval includes all works required to construct the Sydney Metro Pitt Street Station, including the demolition of existing buildings and structures on both sites (north and south). The CSSI Approval also includes construction of below and above ground works within the metro station structure for appropriate integration with over station developments.

The CSSI Approval included Indicative Interface Drawings for the below and above ground works at Pitt Street North Metro Station site. The delineation between the approved Sydney Metro works, generally described as within the “metro box”, and the Over Station Development (OSD) elements are illustrated in Figure 2-3 and Figure 2-4. The delineation line between the CSSI Approved works and the OSD envelope is generally described below or above the transfer slab level respectively.

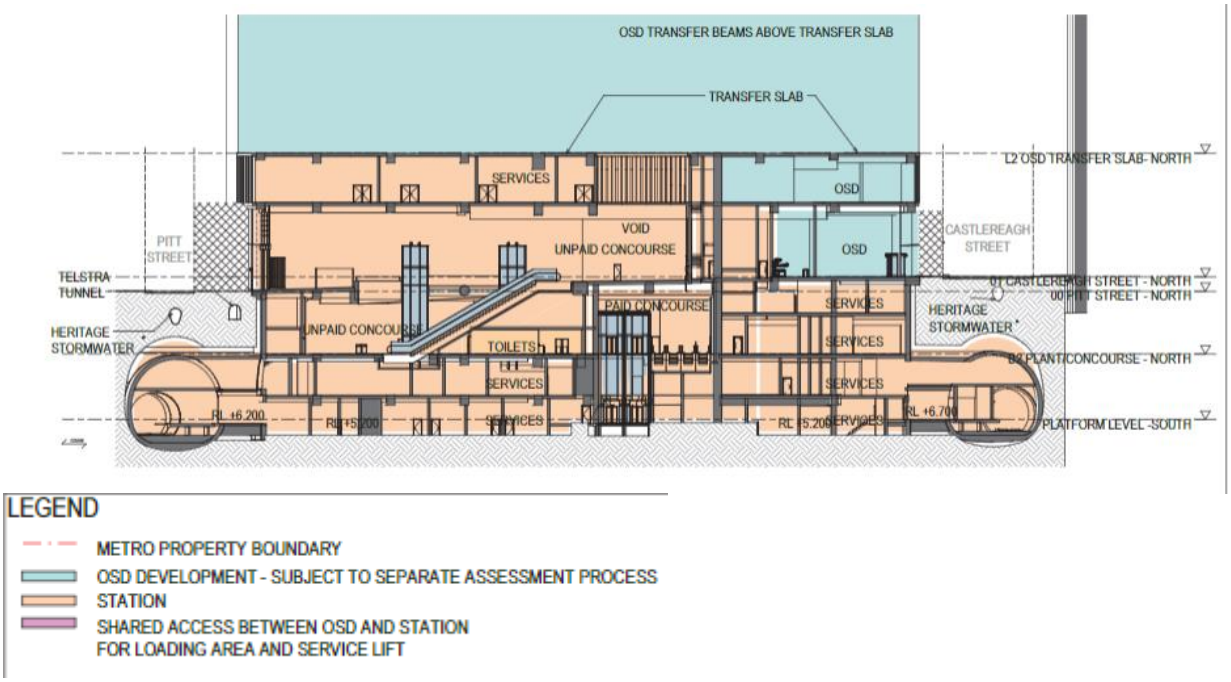


Figure 2-3: Pitt Street Station – North (East-West Section) (Source: CSSI Preferred Infrastructure Report (TfNSW))

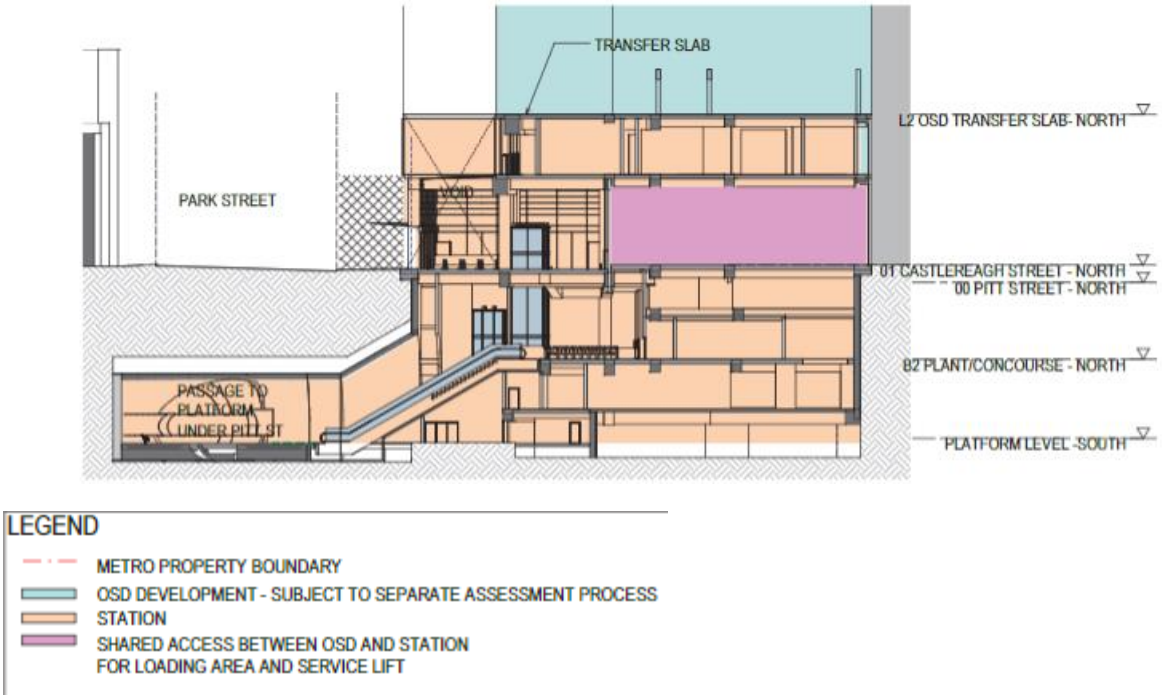


Figure 2-4: Pitt Street Station – North (North-South Section) (Source: CSSI Preferred Infrastructure Report (TfNSW))

The Preferred Infrastructure Report (PIR) noted that the integration of the OSD elements and the metro station elements would be subject to the design resolution process, noting that the detailed design of the "metro box" may vary from the concept design assessed within the planning approval.

As such in summary:

- The CSSI Approval provides consent for the construction of all structures within the approved "metro box" envelope for Pitt Street North.
- The CSSI Approval provides consent for the fit out and use of all areas within the approved "metro box" envelope that relate to the ongoing use and operation of the Sydney Metro.
- The CSSI Approval provides consent for the embellishment of the public domain, and the architectural design of the "metro box" envelope as it relates to the approved Sydney Metro and the approved Pitt Street North Station Design & Precinct Plan.
- Separate development consent however is required to be issued by the NSW DPIE for the use and fit-out of space within the "metro box" envelope for areas related to the OSD, and notably the construction and use of the OSD itself.

As per the requirements of clause 7.20 of the *Sydney Local Environmental Plan 2012*, as the OSD exceeds a height of 55 metres above ground level (among other triggers), development consent is first required to be issued in a Concept (formerly known as Stage 1) DA. This is described in Figure 2-5, Figure 2-6 and Figure 2-7 below.

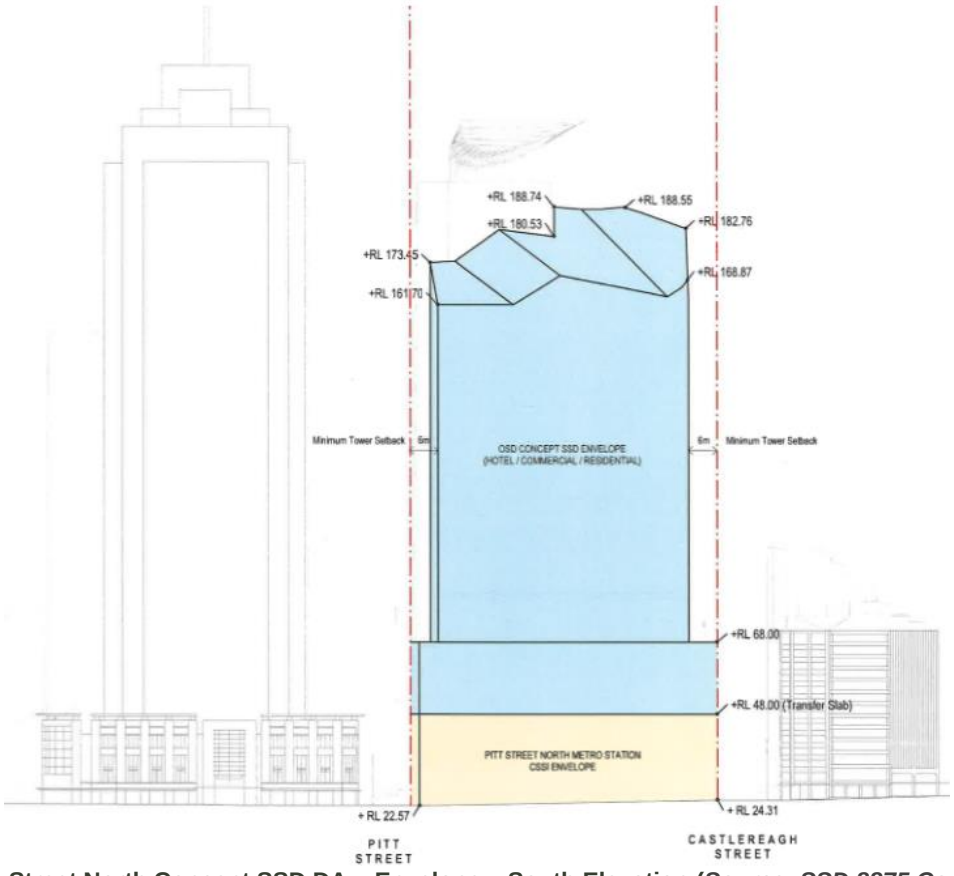


Figure 2-5: Pitt Street North Concept SSD DA – Envelope – South Elevation (*Source: SSD 8875 Concept Stamped Plans)*

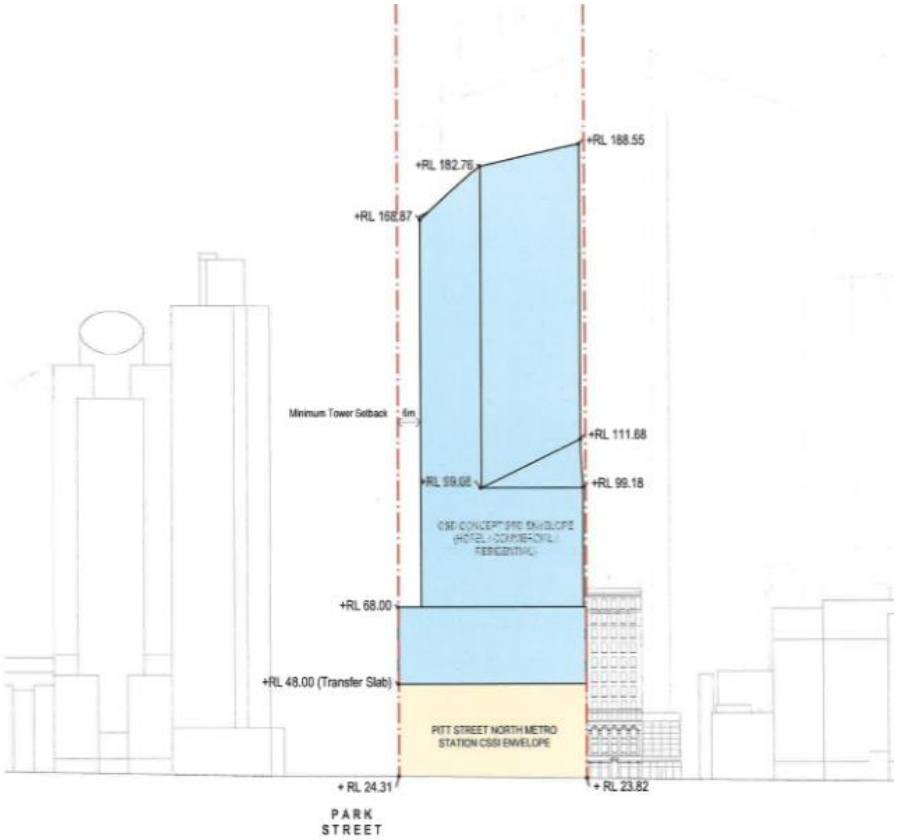


Figure 2-6: Pitt Street North Concept SSD DA – Envelope – East Elevation (*Source: SSD 8875 Concept Stamped Plans)*

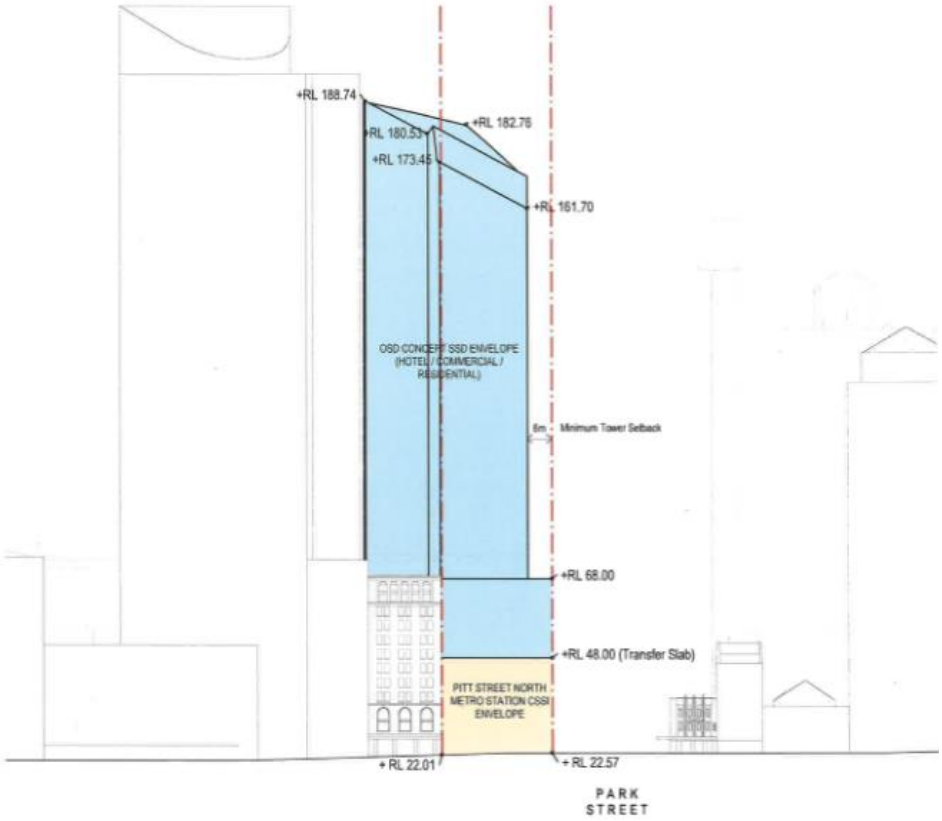


Figure 2-7: Pitt Street North Concept SSD DA – Envelope – West Elevation (*Source: SSD 8875 Concept Stamped Plans)*

2.5 Study Assumptions and Limitations

The assessment is based on the following assumptions and limitations:

- The previous TTIA prepared for the site concept design as part of the SSD application, "*Appendix T: Sydney Metro City & Southwest Pitt Street North Over Station Development – Transport and Traffic Impact Assessment Report*" dated August 2018 has been used as the main reference for this TIA to ensure consistency of the adopted methodology and analysis approach. It is assumed the data and assumptions remain valid and representative.
- The previous supplementary traffic report prepared for the site concept design as one of the supplementary documents for the SSD application, "*Appendix M: Sydney Metro City and Southwest Pitt Street North Over Station Development – Transport and Traffic Impact Assessment Report Addendum – Alternate Commercial Development* " dated 29 November 2018 has been used as the main reference for this TIA to ensure consistency of the adopted methodology and analysis approach. It is assumed the data and assumptions remain valid and representative.
- RMS Traffic Generating Guideline – The traffic generation rates recommended in the RMS Guide to Traffic Generating Developments (2002) and the more recent RMS Technical Direction 2013/04a: Guide to Traffic Generating Developments – Updated Traffic Surveys (RMS, 2013) are to be adopted for the trip estimation.
- The land uses are consistent with the detail provided in the DA application for the Pitt Street station and include consideration of the land uses in the CSSI Approval (including station retail).
- The assessment is based on an existing situation and full development of the site as an integrated station development.
- The assessment is limited by the data obtained and identified in this report.
- The Pitt Street North Dock Activity Assessment undertaken by Sydney Coordination Office Planning and Freight has been used to forecast the potential vehicle service profile for the propose development.
- The journey to work data sourced from the Australia Bureau Statistics 2016 is representative for the current transport mode trends.
- The pedestrian data for this TAIA is based on the study undertaken by METRON for Sydney Metro with detailed in "*Pedestrian Modelling Report – Precinct, Pitt Street Station*" dated May 2018. This initial study by Metro was used as the basis for the updated assessment undertaken by Aurecon which reflects the latest layout and pedestrian demands associated with North OSD.

3 Existing Situation

This section discusses the existing situation with regards to access and the transport network surrounding the development.

3.1 Surrounding Road Network Characteristics

The site is currently surrounded by collector roads and local streets. The characteristics of the surrounding roads are summarised below:

- **Pitt Street**

Pitt Street is a one-way northbound corridor with segments of two traffic lanes between Market Street and Park Street, aligned in a north-south direction. It is classified as a local road and has a posted speed limit of 40km/hr. Along the corridor, on-street parking spaces are available on both sides with parking metered and limited to up to four hours, and some spaces restricted as loading zones during the weekdays (6am-6pm) and Saturday (6am-10am). The corridor is to the west of the development and Figure 3-1 outlines the road characteristics for Pitt Street.

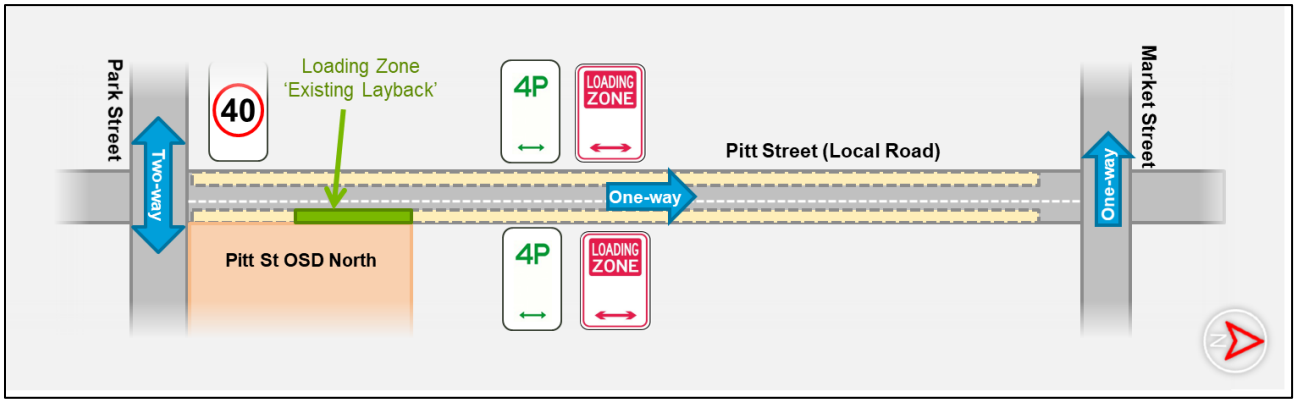


Figure 3-1: Pitt Street Road Characteristics

- **Park Street**

Park Street is a two-way corridor with segments of six traffic lanes between Pitt Street and Castlereagh Street, with two lanes restricted for bus only. It is classified as a collector road and has a posted speed limit of 40km/hr. The corridor is to the south of the development and Figure 3-2 outlines the road characteristics for Park Street.

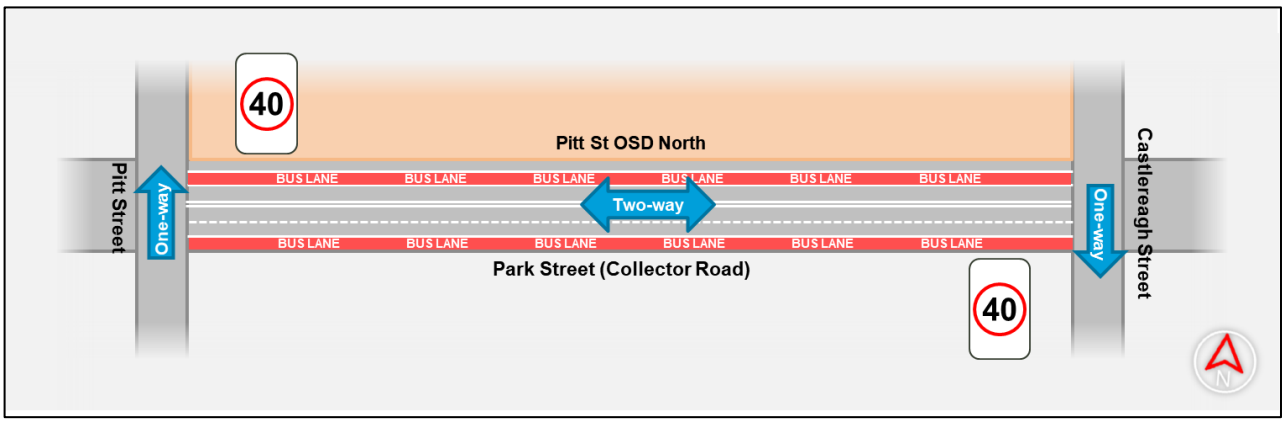


Figure 3-2: Park Street Road Characteristics

- **Castlereagh Street**

Castlereagh Street is a one-way southbound corridor with segments of three traffic lanes aligned in a north-south direction, with one lane restricted for bus only between Market Street and Park Street. It is classified as a local road and has a posted speed limit of 40km/hr. Along the corridor, parking metered and limited to up to four hours on both sides, with some of the spaces restricted as loading zones during the weekdays (6am-

10am and 3pm-6pm) and Saturday (6am-10am). On the eastern side, a clearway from 3pm to 8pm is in place for some sections with “no stopping” signs. The corridor is to the east of the development and Figure 3-3 outlines the road characteristics for Castlereagh Street.

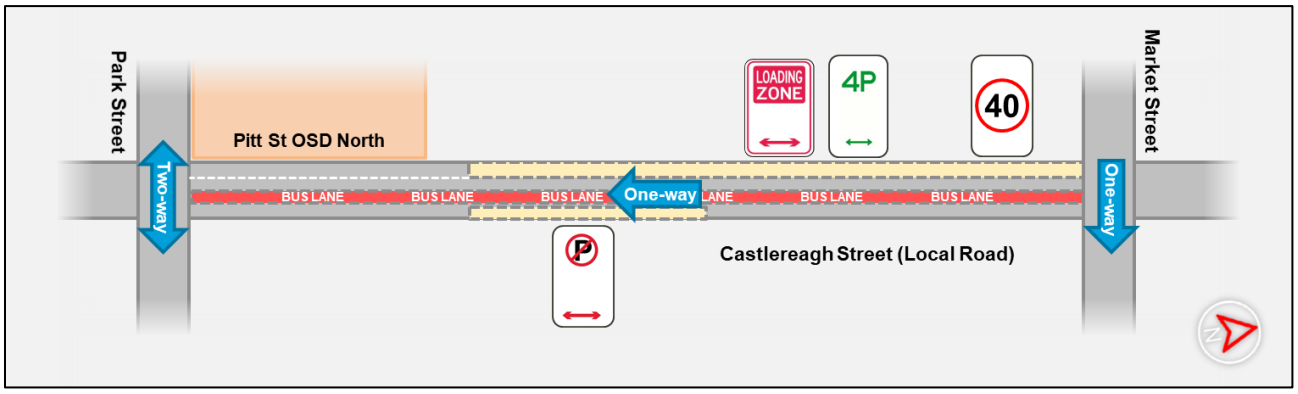


Figure 3-3: Castlereagh Street Road Characteristics

3.2 Planning Context

Based on the City of Sydney Planning Controls Map, as shown in Figure 3-4, the Sydney Local Environmental Plans (LEP) 2012 applies to the development, providing guidelines and recommendations on the development design.

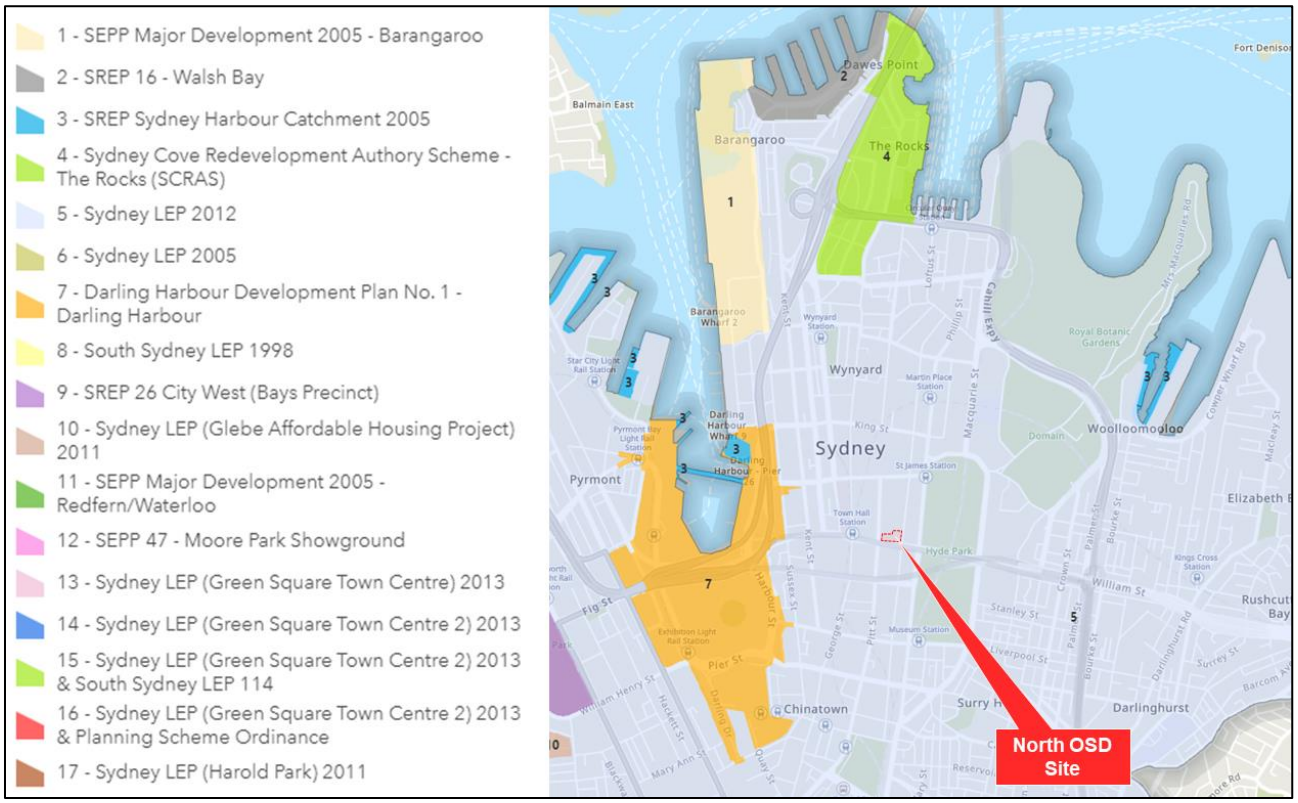


Figure 3-4: City of Sydney Planning Controls Map (source: City of Sydney, last modified 13 September 2019)

3.3 Previous Site Development

The previous land uses had comprised approximately 170 parking spaces, including commercial service spaces. It is understood that these parking spaces were predominantly used by employees with mail delivery vehicles associated with the Australia Post office, located at 175 Castlereagh Street.

As no traffic survey was undertaken for the previous site land use prior to demolition, RMS Traffic Generating Guidelines has been used to estimate the trips that were potentially generated from the previous site assuming “office”. Based on this assessment, it is estimated the previous site had generated approximately 55 vehicles in the AM and PM peak hours respectively during the weekday. The estimation has assumed that the on-site parking spaces were only available for employees and based on a traffic generation of 0.33 vehicle/parking space per peak hour. However, the previous site is likely to have generated more trips than the estimated trips as a greater proportion of parking spaces were potentially used for mail and delivery services. The parking spaces were only accessible via the access on Castlereagh Street, approximately 25m to the north of Park Street intersection. The access has been retained and is currently being used as the main access for the Metro construction work on the site.

It is noted that apart from these parking spaces, no other parking spaces or service bays were provided on site for other land uses. It is likely the trips generated by these other land uses were generated by passing pedestrian trade and therefore vehicle trips were expected to be limited. The vehicle trips (including service vehicles) generated by the other land uses such as fast food, retail, hotel and medical centre on the site were potentially utilising the kerbside parking spaces and loading zones available in the vicinity as described in Section 3.4.

3.4 Parking Areas and Loading Zones

As mentioned in Section 3.1, kerbside parking spaces are available along the Pitt Street and Castlereagh Street with parking metered and limited to up to four hours. Along these two corridors, other restrictions are in place as well, including Loading Zones, No Parking, and Bus Zones.

There are currently a number of public parking buildings located within 400m from the sites as shown in Figure 3-5 and Figure 3-6. These parking buildings are as tabulated in Table 3-1 below. These parking facilities (totalling 2,227 bays) are available to public with various parking fees required. Additionally, on-street parking spaces are available in the surrounding network as shown in Figure 3-7, with parking metered and limited for set maximum parking durations.

The loading zones shown in Figure 3-6 will only be used by North OSD for loading as a contingency.

Table 3-1: Public parking within 400m of the site

Parking Building	Address	Operation Hour	Number of Parking Space
Sheraton	123 Castlereagh Street	24 hours	115
Piccadily	133 Castlereagh Street	6:00am – 1:00am	231
Citigroup Centre	271 Pitt Street	6:00am – 7:00pm	275
Hilton	259 Pitt Street	24 hours	429
Wilson (St Andrew’s House)	464 Kent Street	6:00am – 12:00am	243
Wilson (HSBC Centre)	14 Wilmot Street	7:00am – 7:00pm	137
Queen Victoria	111 York Street	6.00am – 12.00am	634
St Martins Tower	190 Clarence Street	7.00am – 10.00pm	163
		Total	**2,227**

** Source: TfNSW Tomorrow’s Sydney Interactive Map, updated on 30/08/2018*

Figure 3-5: Available parking station in the vicinity of the site (Source: City of Sydney Accessibility Map)

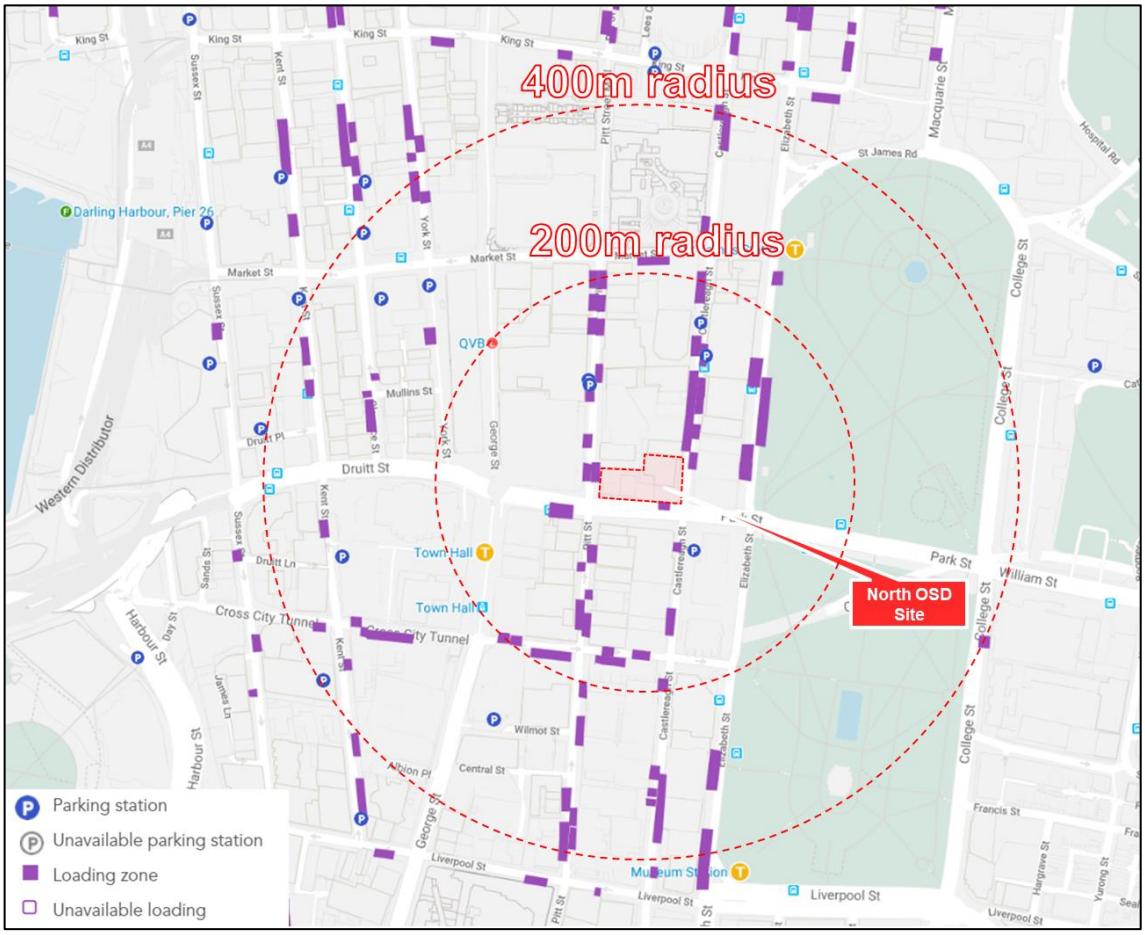


Figure 3-6: Available loading bays in the vicinity of the site (Source: TfNSW Tomorrow's Sydney Interactive Map)

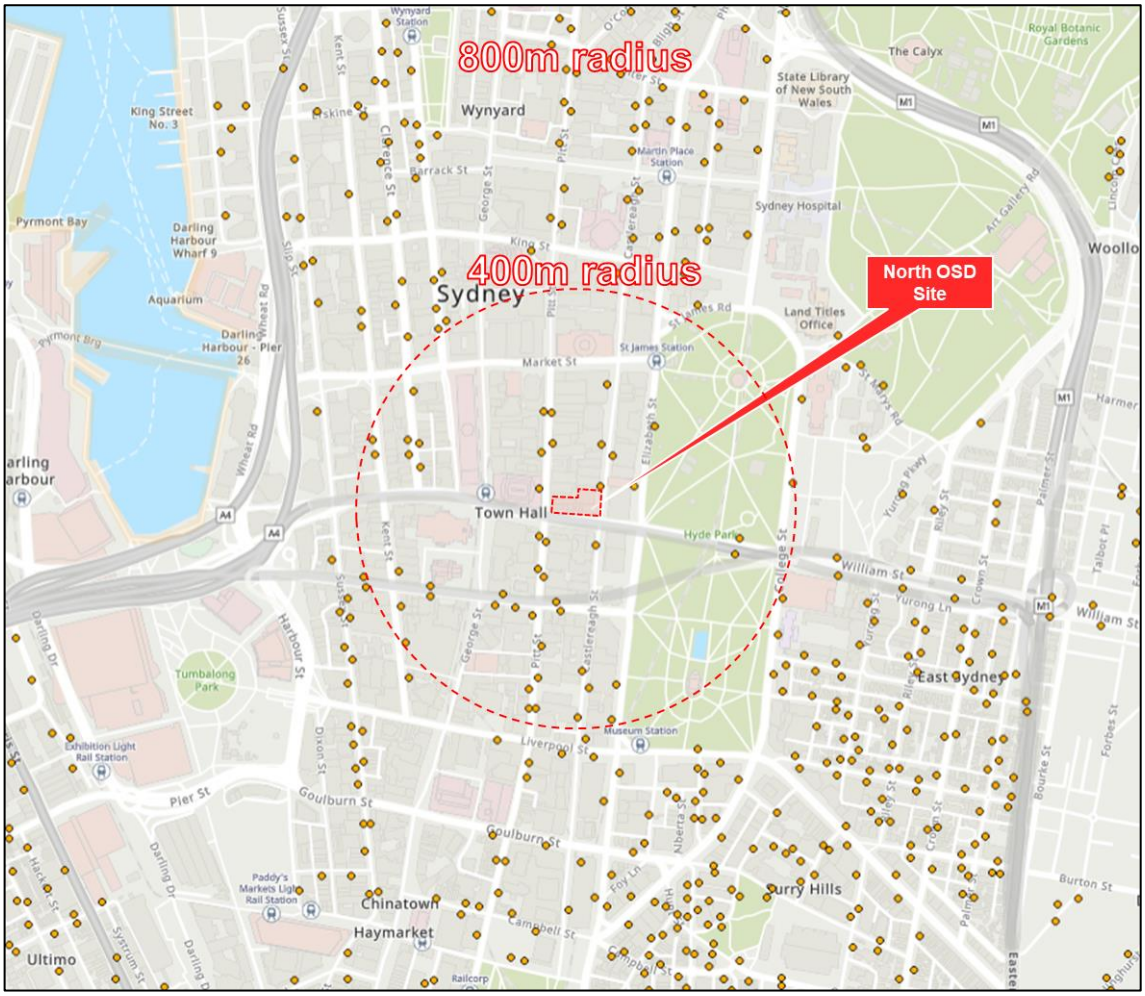


Figure 3-7: Available on-street parking spaces in the vicinity of the site (Source: City of Sydney Map of parking meters in the city)

3.5 Taxi Zones

According to the TfNSW Tomorrow's Sydney interactive map, there are numerous taxi zones that are currently located within 400m of the site. With the reference to Figure 3-8, the nearest taxi zone located to the southwest of the site (40m away) along Pitt Street. The taxi zone is classified as a taxi rank with 5 parking spaces.

Figure 3-8: Taxi rank locations in the vicinity of the site (Source: TfNSW Tomorrow's Sydney Interactive Map)

3.6 Public, Active and Sustainable Transport

The site is situated in the heart of Sydney CBD, which has a range of public transport services. The Australian Bureau Statistics 2016 Census of Population and Housing (ABS 2016 Census) identifies that the majority of commuters (approximately 88%) who reside within the CBD (refer to Figure 3-9) took public transport or active transport to work (refer to Figure 3-10). The public transport stops within the vicinity of the site include bus, light rail, and train, and are shown in Figure 3-11.

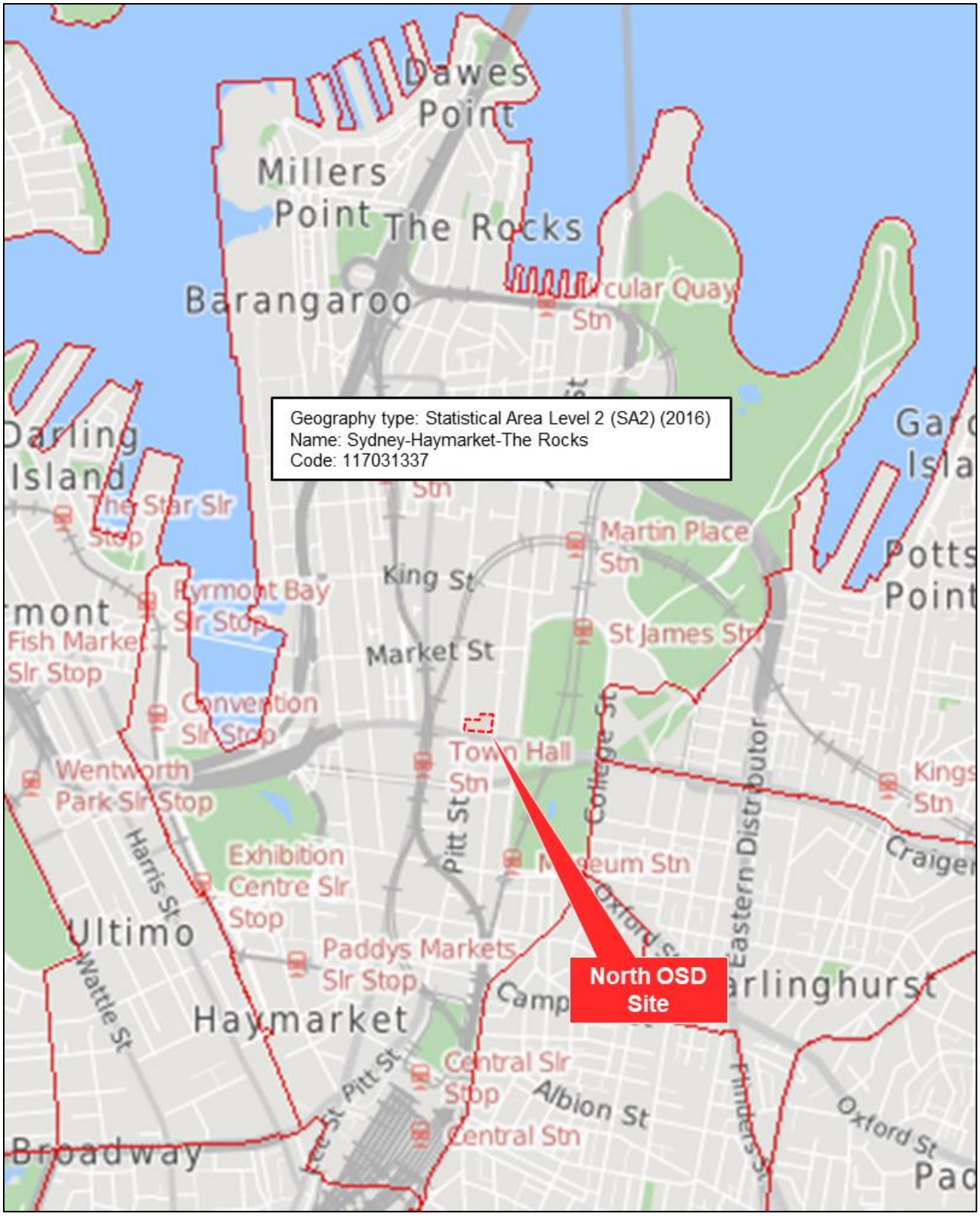


Figure 3-9: ABS 2016 State Suburb boundary (basemap: ABS Map)

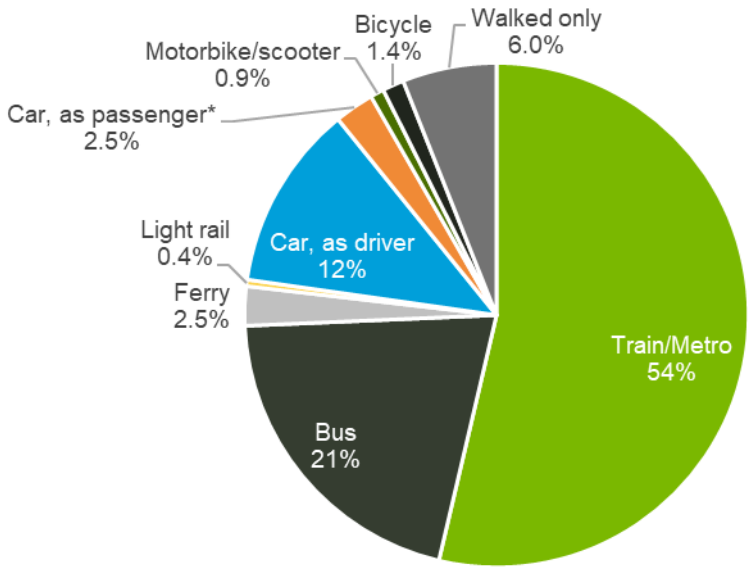


Figure 3-10: Mode of transport to work for people working within Sydney (source: ABS 2016 Census)

Figure 3-11: Public transport facilities in the vicinity of the site (base map: City of Sydney Accessibility Map)

3.6.1 Bus Services

There are several bus stops located within close proximity (400m) from the site along Castlereagh Street, Elizabeth Street, Market Street, York Street, Clarence Street and Park Street. The closest bus stops to the site are as shown in Figure 3-12. These bus stops are served by Sydney CBD high frequency buses during peak and off-peak periods, circulating within and around the Sydney CBD, as well as providing services to other suburbs and regions as summarised in Table 3-2.

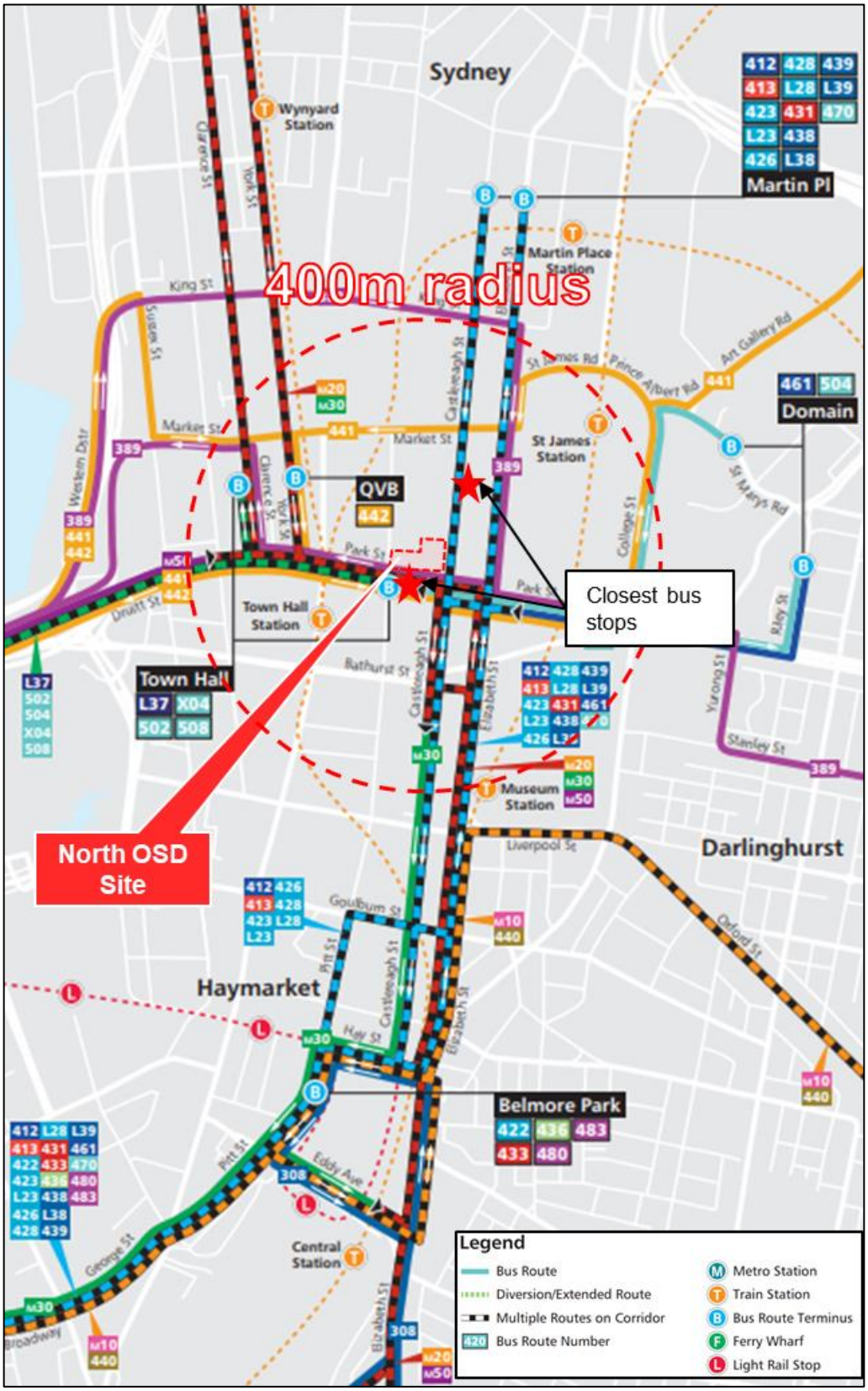


Figure 3-12: Bus routes in the vicinity of the site (Source: Transport NSW, effective from 28/07/2019)

Table 3-2: Bus services operate within 400m from the site (source: Transport NSW)

Bus Route	Route Description	Bus Route	Route Description
M10	Maroubra Junction to Leichhardt via City	439	Mortlake to City Martin Place
M20	Botany to Gore Hill	440	Bondi Junction to Rozelle
M30	Sydenham to Taronga Zoo	441	City Art Gallery to Birchgrove via City QVB
M50	Coogee to Drummoyne	442	City QVB to Balmain East Wharf
311	Millers Point to Central Railway Square via Darlinghurst & Potts Point	461	Burwood to City Domain
324	Watsons Bay to Walsh Bay via Old South Head Road	470	Lilyfield to City Martin Place
325	Watsons Bay to Walsh Bay via Vaucluse Road	502	Five Dock to City Town Hall
389	Bondi Junction Pyrmont	504	Chiswick to City Domain
412	City Martin Place via Earlwood	508	Drummoyne to City Town Hall
413	Muswellbrook to Highbrook	L23	Kingsgrove to City Martin Place
423	Kingsgrove to City Martin Place	L28	Cantebry to City Martin Place
426	Dulwich Hall to City Martin Place	L37	Haberfield to City Town Hall
428	Cantebry to City Martin Place	L38	Abbotsford to City Martin Place
431	Glebe Point to City Martin Place	L39	Mortlake to City Martin Place
438	Abbotsford to City Martin Place	X04	City Domain to Chiswick

3.6.2 Train Services

The site has good accessibility to the existing train services within the Sydney CBD. With reference to Figure 3-13, there are three stations located within a 400m radius of the site, with Town Hall Station closest to the site to the southwest, and Museum Station and St James Station close to the 400m radius boundary to the southeast and northeast respectively. In a wider area (within 800m), there is Martin Place Station and Wynyard Station. There are eight railway lines that are currently operate via these stations as tabulated in Table 3-3 and schematically shown in Figure 3-14.

Figure 3-13: Train stations within the vicinity of the site (source: City of Sydney Accessibility Map)

Table 3-3: Railway services operating at Town Hall Station (source: Transport NSW)

Rail Service	Route Description	Weekday Frequency (Peak/ Off-peak)	Weekend Frequency
T1 North Shore Line & Northern Line	Berowra to City via Gordon	5-15 minutes/ 30 minutes	15 minutes
T1 Northern Line	Hornsby to City via Macquarie University	15 minutes	15 minutes
T1 Western Line	Emu Plains or Richmond to City	5-20 minutes/ 30 minutes	30 minutes
T2 Inner West & Leppington Line	Parramatta or Leppington to City	10 minutes/ 15 minutes	15 minutes
T3 Bankstown Line	Liverpool or Lidcombe to City via Bankstown	10-15 minutes/ 30 minutes	30 minutes
T4 Eastern Suburbs & Illawarra Line	Waterfall or Cronulla to Bondi Junction	20 minutes/ 30 minutes	30 minutes

Rail Service	Route Description	Weekday Frequency (Peak/ Off-peak)	Weekend Frequency
T8 Airport & South Line	Macarthur to City via Airport or Sydenham	10-15 minutes/ 30 minutes	15 minutes
Central Coast & Newcastle Line	Newcastle Interchange to Central via Strathfield or Gordon	10-15 minutes/ 60 minutes	60 minutes

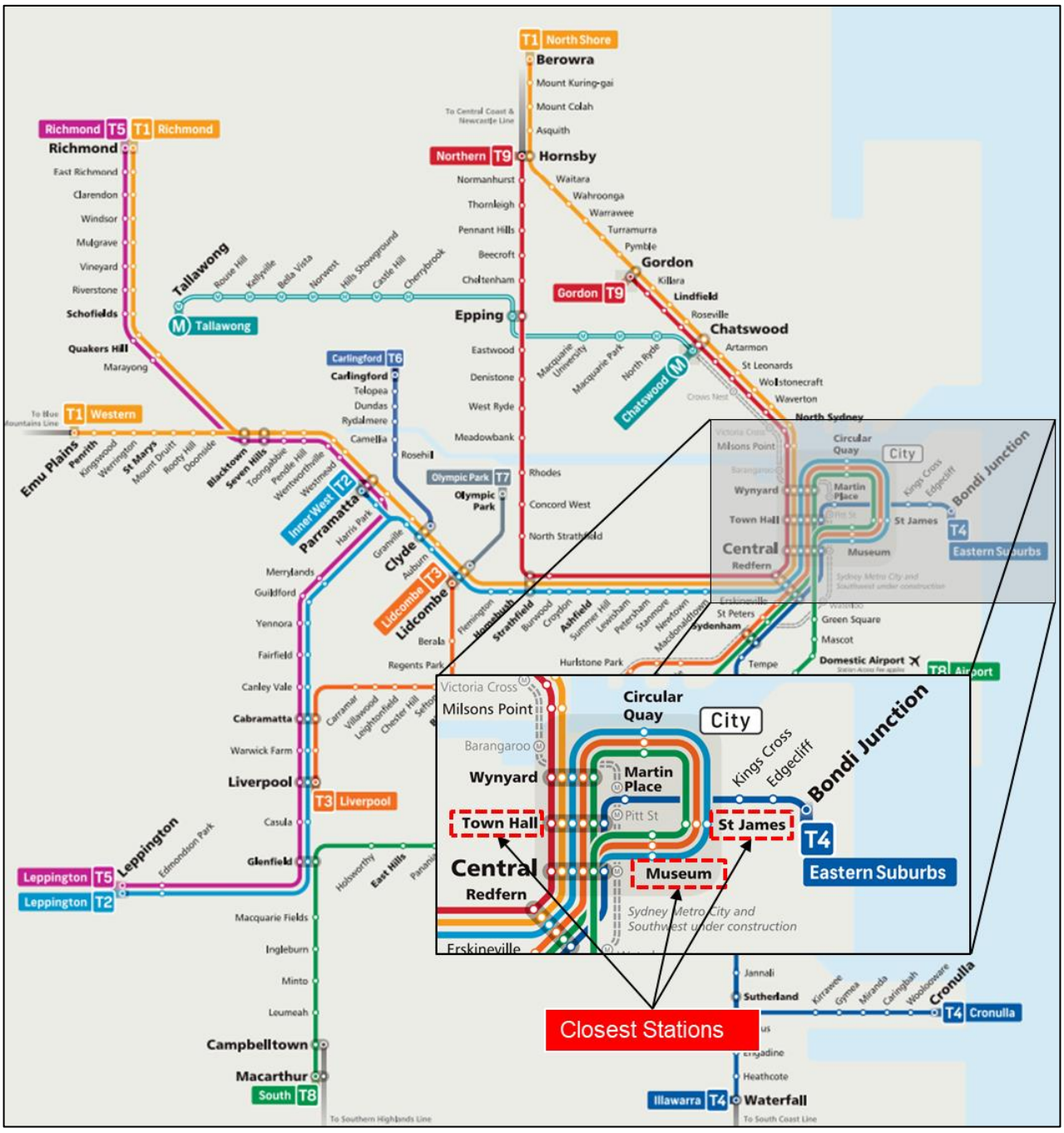


Figure 3-14: NSW Railway routes (source: Transport for NSW)

3.6.3 Light Rail Services

The Sydney Inner West Light Rail operates between Dulwich Hill and Central. The closest stop from the site is Capital Square at approximately 800m to the south of the site as shown in Figure 3-15. The light rail operates with a service frequency of every eight minutes during the weekday peak periods and 10 minutes during weekday off-peak. On the weekend, it only operates on Saturday with a service every 15 minutes.

The new light rail, Sydney CBD and South East Light Rail, was opened to the public in December 2019. The route and stops are shown in Figure 3-15. The total length of the light rail route is 12km and includes 19 stops. The route extends from Circular Quay along George Street to Central Station, through Surry Hills to the Moore Park precinct, and includes key stops the Sydney Cricket Ground and Allianz Stadium. From Central Station, the route continues in a southbound direction to Kensington and Kingsford (Line 3) via Anzac Parade, Alison Road and High Street to Randwick (Line 2), stopping at the race course, the University of NSW, and the Prince of Wales Hospital. The completion of the light rail to Kingsford (Line 3) in both directions is, however, expected to be delayed until March 2020. The light rail service operates with a frequency of every four to eight minutes between Circular Quay and Central, and every eight to ten minutes between Central and Randwick, from 7:00am to 7:00pm every day. The closest stop from the site is Town Hall stop, located approximately 160m from the site on Druitt Street.

Figure 3-15: Sydney CBD & South East Light Rail (source: Sydney Light Rail Interactive Map)

3.6.4 Ferry Services

The Barangaroo Ferry Wharf is located at approximately 1km to the northwest of the site. There are currently two ferry lines operating at the wharf; the Parramatta River line (F3) and the Cross Harbour line (F4), as shown in Figure 3-16 and Figure 3-17. There is currently no public transport servicing between the site and Barangaroo Ferry Wharf. However, the new Sydney Metro line will have a station at Barangaroo and improves accessibility for the site towards the ferry services from Pitt Street Station as shown in Figure 3-18. Alternatively, the users could access all the ferry services at Circular Quay on the north via the train services (T2, T3 and T8) as shown in Figure 3-13, or the new Town Hall light rail stop for the Sydney CBD and South East Light Rail as shown Figure 3-15 to reach Circular Quay.

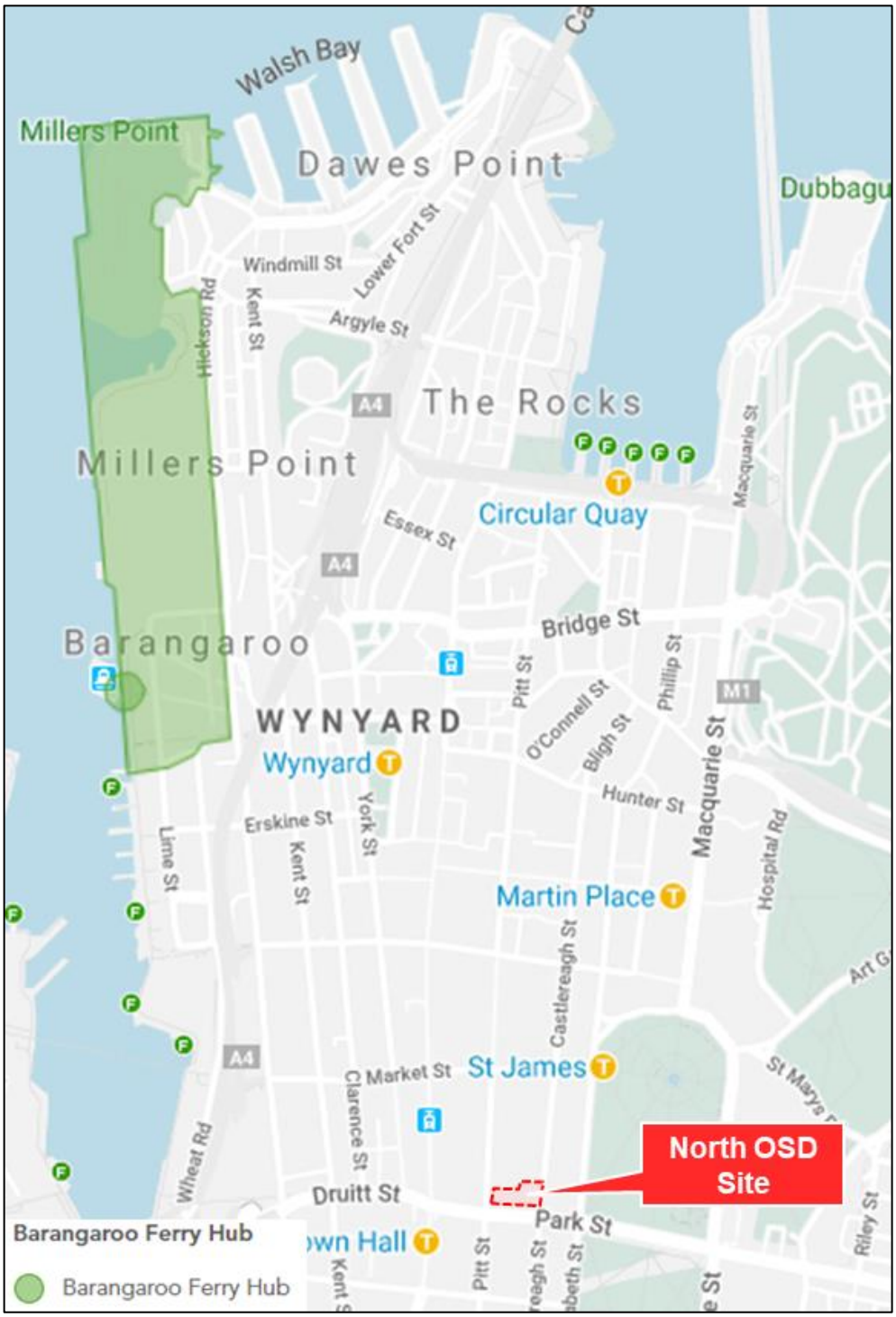


Figure 3-16: Barangaroo Ferry Hub (source: TfNSW Tomorrow Sydney Interactive Map)

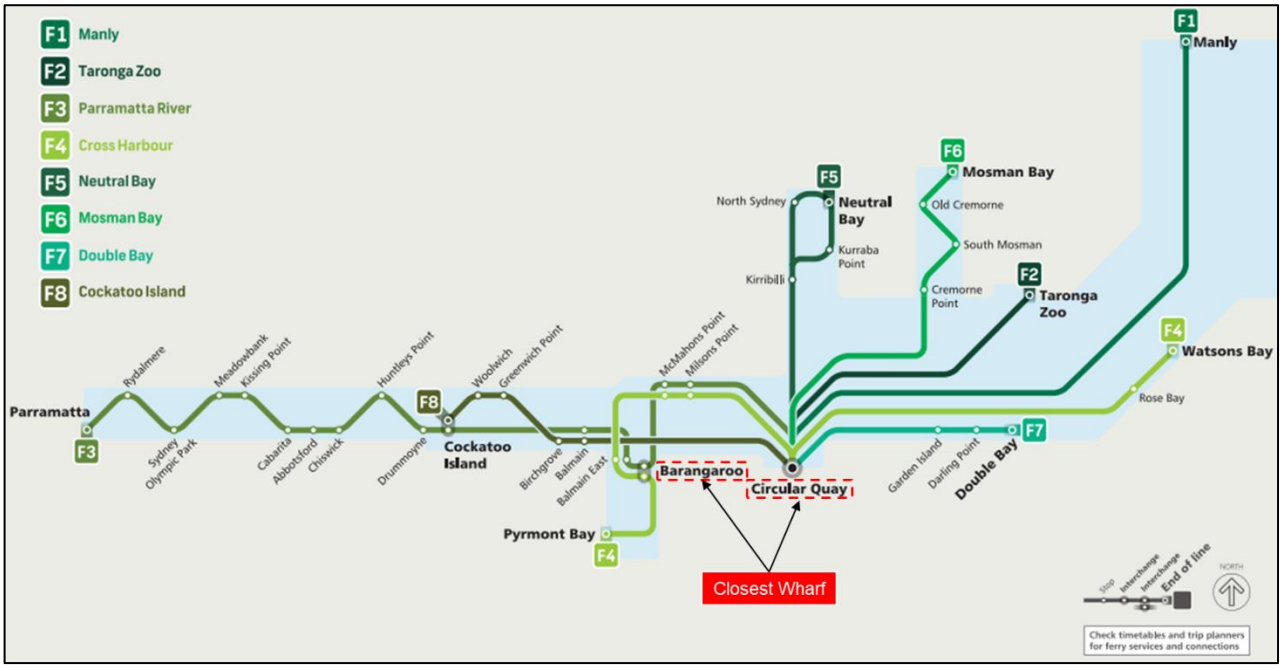


Figure 3-17: Sydney ferry lines (source: TfNSW)

Figure 3-18: Barangaroo Metro Station (source: Pitt Street Over Station Development – Concept State Significant Development Application – Environmental Impact Statement Overview, 23/08/2018)

3.6.5 Cycling

Cycling routes on the surrounding network include separated off-road cycle ways, off-road shared paths and on-road bicycle lanes. Based on the City of Sydney's Cycleway map shown in Figure 3-19, the following infrastructure is provided in the vicinity of the site:

- Pitt Street and Castlereagh Street are classified as "direct routes with higher traffic" with no dedicated bicycle infrastructure;
- Park Street on the frontage of the site is classified as a "direct route with higher traffic" with no dedicated bicycle infrastructure;
- Kent Street on the west of the site (approximately 280m) is classified as "separated off-road cycleway", with a solid median strip separating on-street cycling lanes and traffic lanes;
- George Street on the west of the site (approximately 180m) is classified as "low traffic street or bike lane", with no bike lanes available along the corridor; and
- Wide shared paths are available within Hyde Park (east of the site), which are classified as "off-road shared paths".

The "direct routes with higher traffic" adjacent to the site along Pitt Street connects to the "off-street shared path" to the west of Sydney Tower, between the Pitt Street Mall section, and extends to Circular Quay along a "low traffic street or bike lane". Similar infrastructure is also provided circulating the northern suburbs; The Rocks, Miller Points, and Barangaroo, via George Street to the west of Pitt Street.

The "separated off-road cycleway" along Kent Street to the west of the site provides a connection to the northern suburbs as well. While to the south, the facility on Kent Street continues onto Castlereagh Street leading to the Sydney Central Station with an off-street shared path closer to the station.

To reach destinations on the east of the site, Park Street, which is classified as a "direct route with higher traffic" provides the most direct access connecting to numerous "low traffic street or bike lane" corridors, as well as to the Elan Tower on William Street. While to the southwest, similar classification on Liverpool Street provides access to the local "low traffic street or bike lane" corridors and other cycling facilities connecting to multiple significant destinations such as Sydney high schools, Moore Park, stadiums and others.

To the west, Kent Street provides the access to the off-street shared path on Pyrmont Bridge and continues to the Anzac Bridge and Rozelle. While to the southwest, Liverpool Street provides the connectivity towards the cycling facility within the regions.

In addition, substantial numbers of public bicycle parking spaces are available within the City of Sydney as shown in Figure 3-20, with concentrated provision along the corridors that are surrounded by high density developments.

The NSW Government's Sydney City Centre Access Strategy issued in December 2013 has identified that the city centre cycleways will be a significant transport solution for keeping people moving. The strategy has recommended a north-south separated cycleway between Central and Circular Quay that runs along Castlereagh Street to King street, then down Pitt Street as the key north-south connectivity, which sits next to the site. This is also seen as a priority for City of Sydney as outlined in the Cycling Strategy and Action Plan 2018-2030, shown in Figure 3-21.

The cycleway on the south side of Castlereagh Street opened in September 2015, connecting between Central Station (Hay Street) and Liverpool Street. While the northern section of the cycleway has been deferred due to the Sydney CBD and South East Light Rail construction.

The completion of the cycle network connection along Castlereagh Street will provide direct access for cyclists (employees and visitors) to the site and minimise the reliance on private motor vehicles.

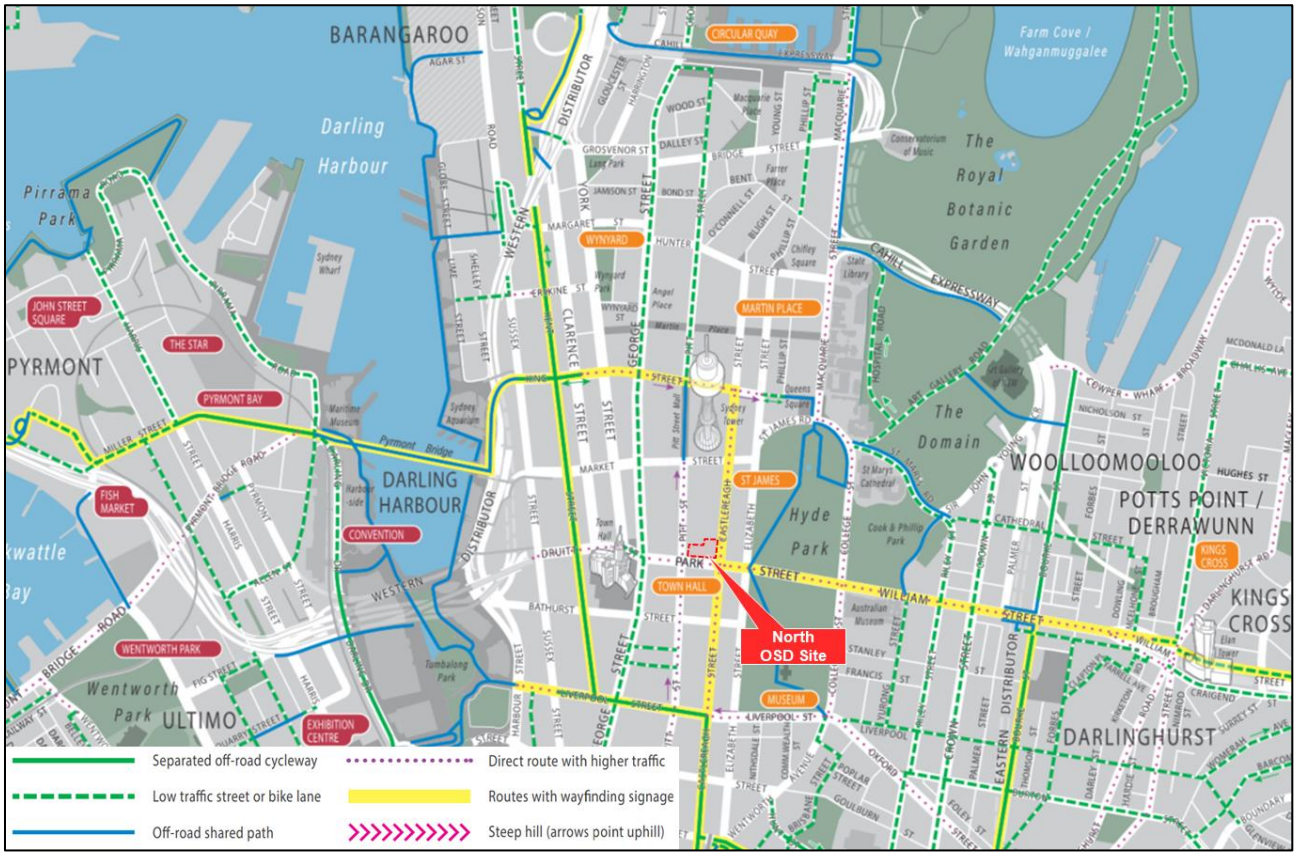


Figure 3-19: Sydney cycling map June 2019 version 1.3 (source: City of Sydney)

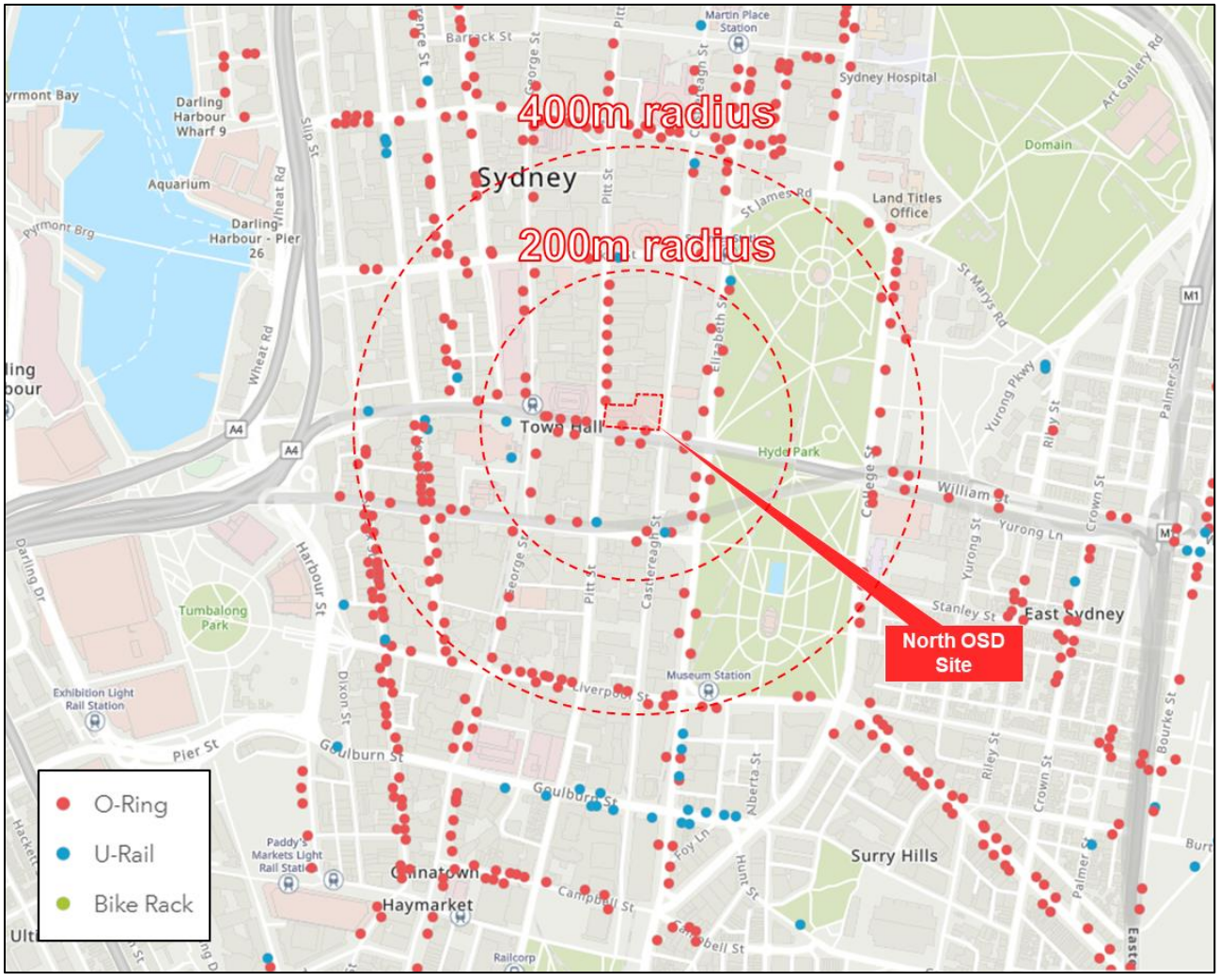


Figure 3-20: City of Sydney bike parking map (source: City of Sydney, last modified 11/07/2019)

Figure 3-21: Cycling Strategy and Action Plan For a more sustainable Sydney, Priority 1 (source: City of Sydney)

3.6.6 Walking Access

The site is surrounded by approximately 3.3m wide footpaths along its frontages, with signalised pedestrian crossings available to the southwest at the Park Street/ Pitt Street intersection and southeast at the Park Street/ Castlereagh Street intersection. Footpaths of similar widths are also available along the surrounding corridors with pedestrian signal protection at signalised intersections, and at the midblocks of corridors that have high pedestrian volumes.

The Sydney CBD has relatively high levels of pedestrian density and demand due to the concentration of businesses in the precinct. During peak periods, the pedestrian crossings on the road network can become congested as a result of limited space provided. For the footpaths on the surrounding network of the site, there is notable pedestrian demand, including along the frontages on Park Street, Pitt Street and Castlereagh Street. Both the signalised intersections on Park Street at Pitt Street and Castlereagh Street have designated signalised pedestrian crossings on all approaches. It is anticipated that with the ongoing implementation of the Sydney City Centre Access Strategy, as well as the future operation of a new Pitt Street Metro Station, there is likely to be growth in pedestrian volumes on the surrounding footpaths. The pedestrian movement within the public domain has been assessed as part of the CSSI planning pathway.

The City of Sydney Council and Transport for NSW have been developing strategies to assist with prioritising pedestrians and their movements such as allocating sufficient space to support the current levels of demand, as well the estimated growth in numbers in the CBD.

The recently completed Sydney CBD and South East Light Rail includes pedestrianisation of George Street that will deliver a significant shift in the priority of spatial allocation towards pedestrians, by providing more space and an alternative route to Pitt Street for pedestrians walking between Hunter Street and Bathurst Street.

4 Overview of The Development

The North OSD development consist of 39 floor levels of predominantly commercial land use, with retail. The development comprises of the following.

- Commercial (office) – 52,951m^2 GFA
- Retail (ground level and level 2) – 1,700m^2 GFA.
- Bicycle parking facilities (level 1):
  - 200 bicycle parking spaces (for opening year 2024);
  - An accessible shower room including 16 showers for each male and female and one Universal Access Toilet (UAT) shower.
- Vehicle parking provision – 40 bays, with a fully automated car stacker parking system.
  - Of the 40-vehicle parking provision within the automatic car stacker, 3 of the 40 bays may be used for service vehicle parking, accommodating vehicles no larger than a B99 vehicle.
- Service vehicle parking bays (ground level):
  - 1 Metro Station maintenance bay
  - 3 courier service bays;
  - 2 Small Rigid Vehicle (SRV) loading bays; and
  - 1 Medium Rigid Vehicle (MRV) loading bay suitable for a waste vehicle.
-

4.1.1 Proposed Access Arrangement

The North OSD is proposed to have only one vehicle access. This access will be located on Castlereagh Street with only right-in and right-out movements on the east side of the site, as shown in Figure 4-1 below. The access is to be shared between the commercial tenants parking (i.e. to the automatic car stacker) and the service vehicles for both the North OSD and Pitt Street Metro North.

The loading dock is a shared facility between the North OSD and Sydney Metro Station. A loading dock booking system will be maintained to ensure the Sydney Metro operator has unimpeded access to the loading dock at all times for servicing and maintenance.

The lobby entrance on Pitt Street will provide pedestrian access for North OSD tenants and visitors. Retail access to various retail hubs is available via Pitt Street, Park Street, and Castlereagh Street as shown in Figure 4-1.

Cyclists will access the development via a dedicated access off Castlereagh Street as indicated in Figure 4-1 to use the End-of-Trip (EoT) lifts to access the bicycle parking facilities on level 1.

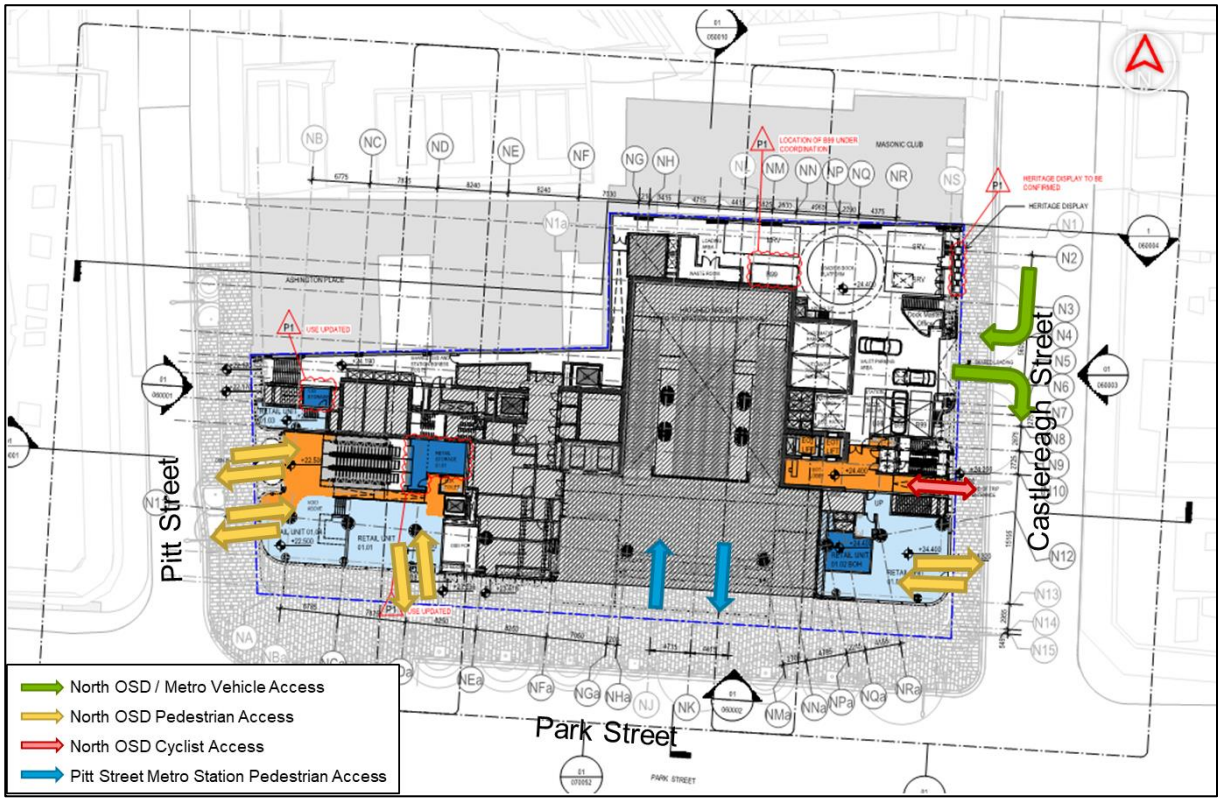


Figure 4-1: North OSD access locations on the ground floor (Reference: SMCSWSPS-FOS-OSN-AT-DWG-030013 Rev P1)

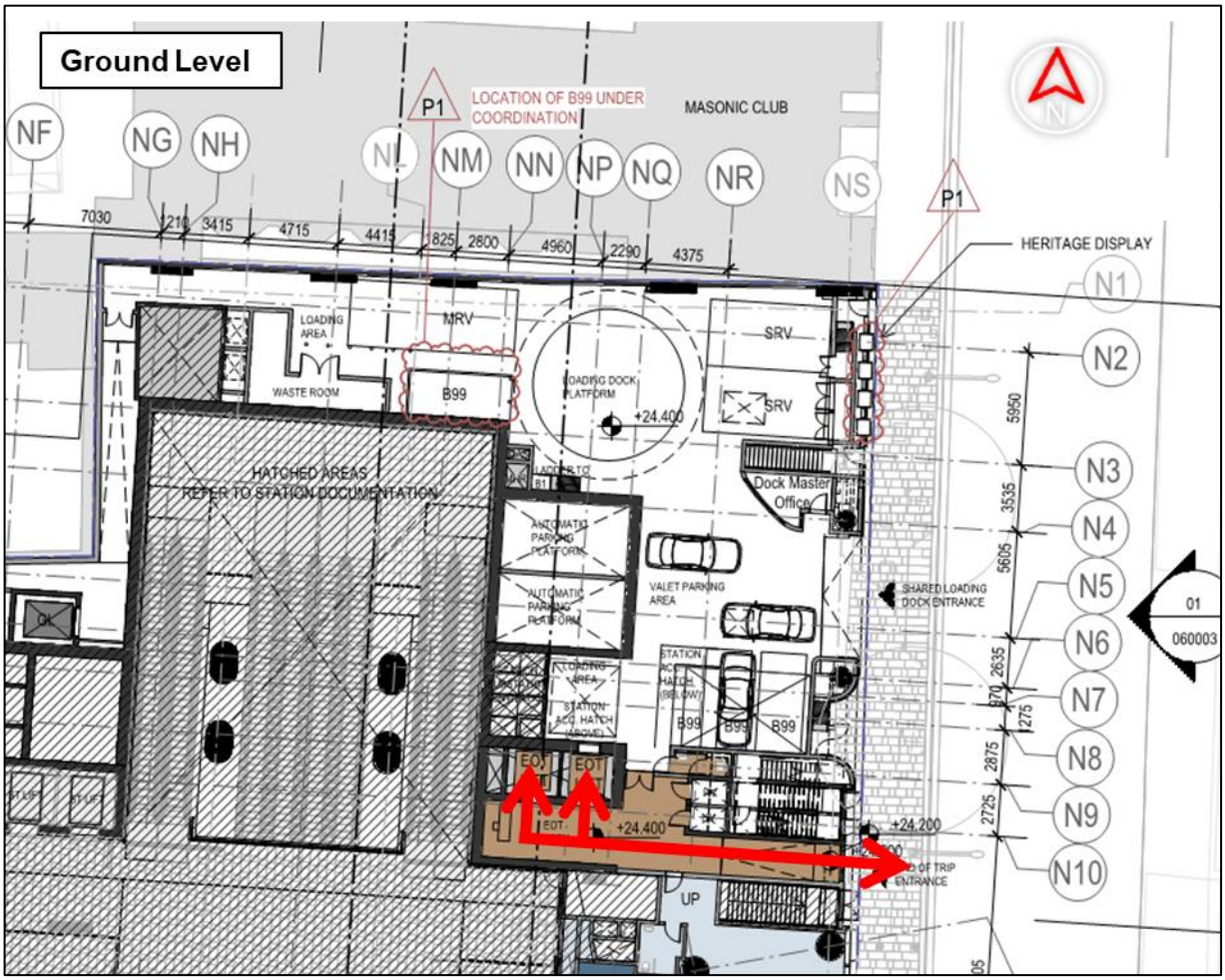


Figure 4-2: Cyclist route to access on-site EoT facilities (Reference: SMCSWSPS-FOS-OSN-AT-DWG-030013 Rev P1)

4.2 Vehicle Parking Provision

The maximum car parking provision allowed for the North OSD development as per the Sydney LEP 2012 Section 7.5 (last updated on 29 November 2019), is summarised in Table 4-1 below. Access to the car park will be via a car stacker.

Table 4-1: Maximum parking provision allowed

Land use	Maximum parking rates	Proposed Gross Floor Area (GFA)	Maximum parking provision allowed
Office* (Category D)	$\frac{Land\ Use\ Area\ (GFA)\ \times Site\ Area}{50\ \times Total\ Building\ Floor\ Area\ (GFA)}$	52,942m^2	63 spaces
Retail land use (Category D)	1 space per 90m^2	1,700m^2	19 spaces
	Total	**54,642m^2**	**82 spaces**

** The site floor area is approximately 3,150m^2*

As the North OSD site is surrounded by numerous multi-modal transport options as illustrated in Section 3.6 and 5.4, private vehicle usage by tenants is estimated to be minimal. The North OSD has been designed to integrate with the Pitt Street Metro Station, a high frequency service, every 3 minutes located directly beneath the North OSD site, which will significantly improve the accessibility to public transport. Furthermore, the North OSD is expecting and promoting employees and visitors to utilise sustainable travel options (public transport and active transport) as their primary transport and therefore is proposing a total of 40 car spaces. Encouraging active transport usage is further documented as part of the Green Travel Plan in SMCSWSPS-AUR-OSN-EM-REP-000002.

The 40 vehicle parking spaces within the development is below the maximum 82 vehicle parking spaces allowed.

4.2.1 Estimated Trip Generation for Private Vehicles

As part of the Stage 1 submission for North OSD, a Traffic Impact Assessment (TIA) was prepared by TTPP for the development concept design to support a State Significant Development (SSD) application in August 2018, with a subsequent addendum prepared on 29 November 2018 to include an alternate scenario for commercial as the primary land use instead of residential. The trip rates adopted in the previous TIA have been replicated in Table 4-2 for reference and was based on trip generation rates sourced from the *New South Wales Transport for Roads & Maritime Services (RMS) Technical Direction TD 2013/4a Guide to Traffic Generating Development: Updated Surveys* ('RMS Trip Generation Guidelines).

Table 4-2: The previous TIA adopted light vehicle trips generation for the network peak hour (Concept Design TIA, August 2018)

Peak Period	Land Use	Previous TIA Parking Provision	Previous TIA Adopted Peak Hour Trip Rate	Previously Forecasted Traffic
AM Peak	Office Block	51 bays	0.65 trips/ bay	32 vehicles
PM Peak			0.49 trips/ bay	24 vehicles

The adopted trip rates were the average of the surveys conducted across 10 sites within the wider Sydney metropolitan area, which took in to account trips that had vehicles parked elsewhere within the survey sites (e.g. at commercial parking lots). This process of developing the trip generation is referred to as 'road network peak generation' as it is relevant to traffic impact on the wider network, and it is not considered reflective to estimate site specific trips directly in/out from a specific site such as North OSD. It should be noted that the North OSD visitor or tenant trips who may park at nearby car parks are part of the car park trip generation accounted by the car parks, not North OSD. These potential trips are assumed to be minimal.

In line with the previous TIA assessment and assumptions for light vehicle trip generation, the nominated 40 bays equates to up to 26 vehicles during the AM peak and up to 20 vehicles during the PM peak hour.

Table 4-3: Based on the previous TIA assumptions around the adopted peak hour trip rate for the current parking provision of 40 bays

Peak Period	Land Use	Current Parking Provision	Previous TIA Adopted Peak Hour Trip Rate	Forecasted Traffic
AM Peak	Office Block	40 bays	0.65 trips/ bay	26 vehicles
PM Peak			0.49 trips/ bay	20 vehicles

For this study, it is proposed that peak traffic generation rates specific to OSD North are adopted (i.e. reflective of vehicles parking at the development site). This is referred to as 'site specific trip generation' and is considered more relevant and appropriate for the trip generation associated with North OSD. These trip rates are summarised in Table 4-4.

Table 4-4: Road and Traffic Authority Trip Generation and Parking Generation survey site peak hour trip generation rates for general traffic

Survey Site	Location	Site Peak Hour Trip Rates (vehicle/bay)	
		AM Peak	PM Peak
Site 1	**North Sydney**	**0.32**	**0.24**
Site 2	**Chatswood**	**0.28**	**0.33**
Site 3	Olympic Park	0.20	0.16
Site 4	Hurstville	0.41	0.26
Site 5	Macquarie Park	0.29	0.23
Site 6	**Parramatta**	**0.16**	**0.14**
Site 7	Liverpool	0.32	0.29
Site 8	Bella Vista	0.22	0.07
Site 9	Newcastle	0.40	0.36
Site 10	Wollongong	0.34	0.38

The development is located within the Sydney CBD and has been designed to integrate with Sydney Metro infrastructure. With such high accessibility to public transport and low total car park numbers, North OSD development is expected to generate low volumes of traffic. Therefore, to avoid overestimation it is proposed that survey sites which share a similar environment as the site (i.e. that of a Sydney CBD) are considered for the OSD North development. The survey sites which are considered of similar nature to the Sydney CBD are: North Sydney (Site 1), Chatswood (Site 2) and Parramatta (Site 6), which have been highlighted in bold in Table 4-4. The estimated resulting trip generation for the development is summarised in Table 4-5 and is based on the maximum AM and PM peak hour trip generation rate for the three comparable sites.

Table 4-5: Estimated peak hour light vehicle trips generation for OSD North

Peak Period	Parking Provision	Trip rate (vehicles/ bay)	Proposed development trips
AM Peak	40 bays	0.32*	13 vehicles
PM Peak		0.33**	14 vehicles

** Survey Site 1 (North Sydney); ** Survey Site 2 (Chatswood)*

As discussed in Section 3.3, the previous land use at the site included 160-170 parking bays, which was estimated to generate approximately 55 trips during both the AM and PM peak hours. The North OSD development is estimated to generate a maximum of approximately 14 vehicle trips during the peak periods. Therefore, in regard to vehicle trips, the development is likely to be an improvement compared to the previous land uses.

As part of the overall loading dock capacity and analysis, the development trips for the car stacker for the AM peak hour may range from 13 – 26 vehicles. For the analysis of the typical automatic car stacker access, the more conservative approach of 26 vehicles during the AM peak hour has been assumed. As the commercial

car parking will be predominantly accessed in the AM peak as commercial tenants arrive to work in the morning, all 40 bays are assumed to be occupied in line with a typical ‘start of a working day’ for the AM peak between 6 – 9am with a peak hour between 7 – 8am and shown in Figure 4-3. The departure of vehicles from the automatic car stacker is assumed with the typical ‘end of day’ between 4 – 7pm, where the peak hour is from 5 – 6pm.

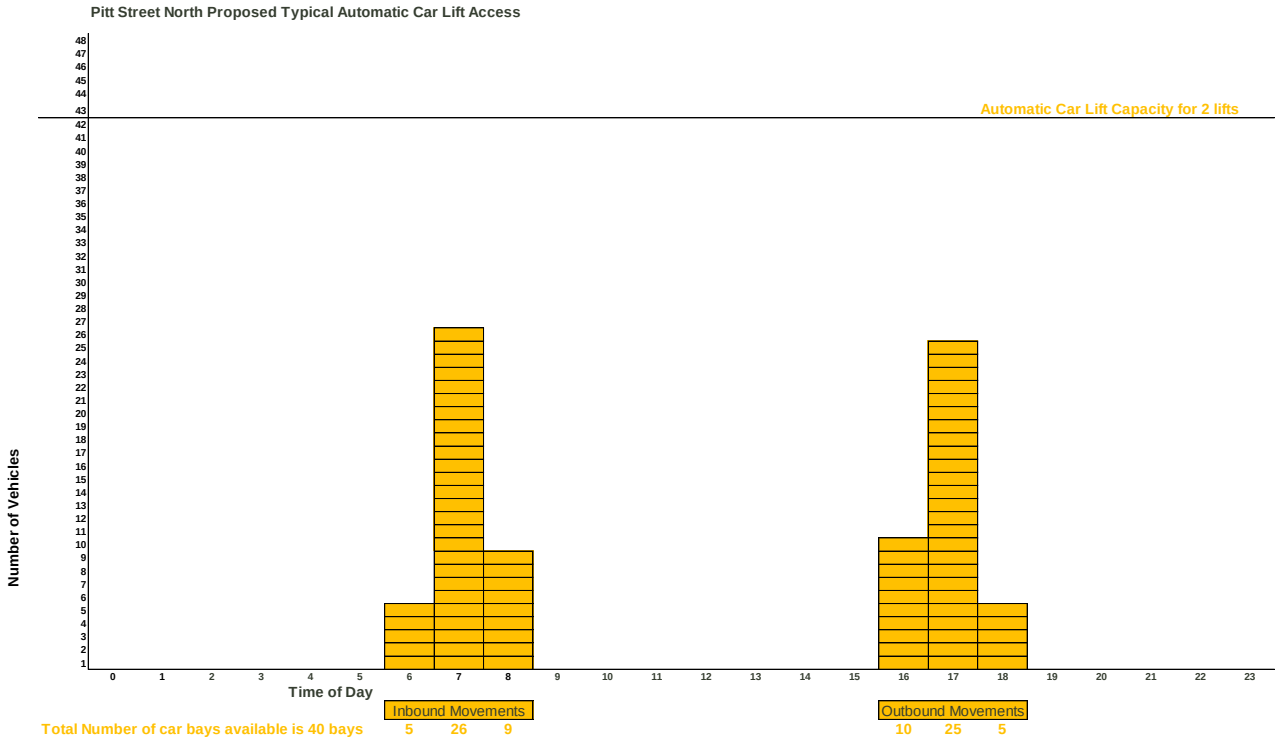


Figure 4-3: Typical Automatic Car Lift arrival profile for Pitt Street North

The above typical automatic car stacker arrival profile has been used when assessing the overall loading dock capacity. This is further described in Section 4.3.

4.2.2 Automatic Car Lift Operations

Access to the commercial parking is provided from Castlereagh Street and shown in Figure 4-4. There are two dedicated automatic car lifts available for a total of 40 car parking bays stacked over three levels. The 40 bays will be utilised by commercial tenants and longer dwell time service delivery vehicles only and no public parking has been allowed for at North OSD.

Prior to access to use the automatic car lift, the specific commercial tenant will need to undertake an induction on '*How to use the Automatic Car Lift'* which will provide them access to the car lift. The induction will cover critical components around where the driver should stop the car and how access the car lift will be undertaken, including any after hour restrictions that may be imposed by the building operations.

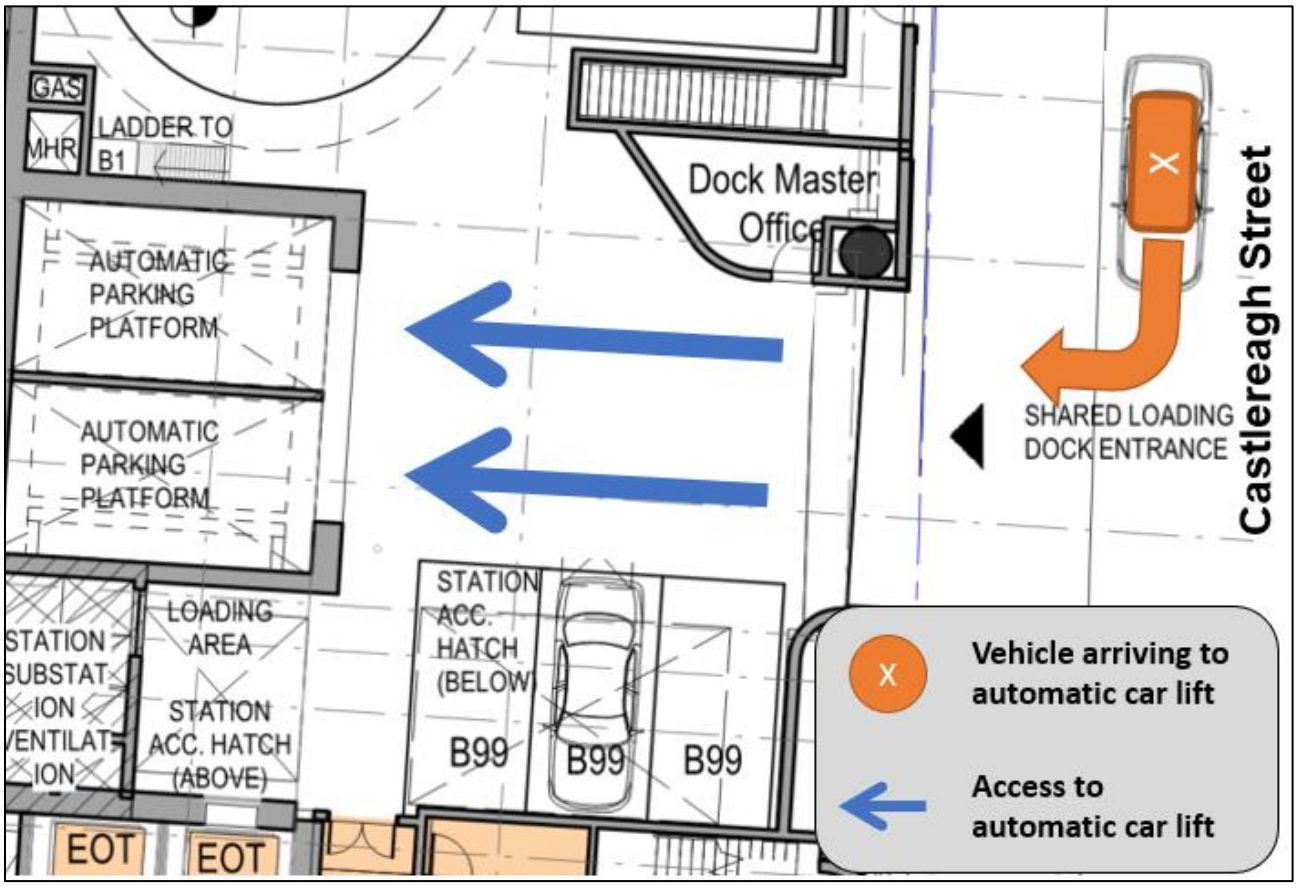


Figure 4-4: North OSD Automatic Car Stacker Commercial Vehicle Access

The assumptions associated with the automatic car lift have been provided by the automatic car lift manufacturer as noted in Table 4-6. To assess the potential vehicle queue that may occur at the automatic car lift, each individual stage of the vehicle journey has been considered to estimate the service rate of the automatic car park lift and its operations. As a worst-case scenario, assessment for the car lift has assumed the commercial tenant is required to vacate their car.

Table 4-6: Automatic Car Lift Assumptions

Item	Assumption	Comment
Average time taken for drivers to exit/ enter the lift from waiting area (i.e. parking the car inside the lift).	30 seconds	Assumed as the average time. If additional time is required, it is assumed that if the adjacent B99 bays are available that these will be used. In addition, for DDA compliance, these adjacent B99 bays will be used and require the loading dock master to assist.
Once the vehicle is within the lift, the average time taken for the driver to exit / enter the vehicle in the lift.	30 seconds	Assumed as the average time.
Average time taken for the driver to send the lift using the digital screen.	30 seconds	Assumed as the average time.

Item	Assumption	Comment
Lift service rate for a single lift	21 vehicles/ hour	Provided by car lift manufacturer.

With two automatic car lifts in operation, the service rate is assumed to double with the use of both lifts, equating to a total of 42 vehicles per hour which is greater than the available number of commercial parking bays. This capacity has also been shown in Figure 4-3.

As OSD North is a commercial site, it is assumed that during the AM peak usage of the lifts will be for inbound flow, and similarly for the PM peak usage of the lifts will be predominantly for outbound flow.

Based on the arrival rates summarised in section 4.2.1, the estimated demand for the automatic car stacker has been assumed as 26 vehicles/ hour for the inbound AM peak. This is equivalent to 2 cars arriving every 4 to 5 minutes.

The closest signalised intersection to the North OSD loading dock is Market Street and Castlereagh Street. It is assumed that during the AM peak, this signalised intersection has a total cycle time of 110 seconds, and similarly for the PM peak. Both Market Street and Castlereagh Street are one-way streets, as such the likelihood of vehicles arriving can either be equally distributed which equates to a vehicle arriving approximately every minute, or dominant for one approach only which equates to a vehicle arriving approximately every two minutes. Based on the arrival profile for commercial vehicles noted earlier, two commercial vehicles are likely to arrive every 4 to 5 minutes during the peak hour, which is accommodated within 2 signal cycle times at the Market Street / Castlereagh Street intersection and also accommodated by the two automatic car lifts.

To further supplement the commercial tenant queuing, based on the queueing theory outlined in *Austroads Guide to Traffic Management Part 2: Traffic Theory*, Table 4-7 summarises queueing probabilities as estimated for the two lifts for the peak inbound AM Peak demand of up to 26 vehicles/ hour (summarised in section 4.2.1). Based on this, the 95th percentile queue for the two automatic car lifts is estimated as 2 vehicles in queue, which can be accommodated as one vehicle per automatic car lift within the overall design.

Table 4-7: Queuing Probabilities based on queuing theory outlined in Austroads Guide to Traffic Management

Vehicles in Queue	0	1	2	More than 2
Probability	69%	21%	7%	3%

As shown in Figure 4-5, the area within the OSD North loading dock on approach to the automatic car lift is estimated to hold up to four B99 vehicles without impacting the Castlereagh Street public domain. It should be noted that this does not include the two vehicles already using the automatic car lift. As such, the automatic car lift is not estimated to have a significant regular impact on the adjacent corridor or access to the loading dock via Castlereagh Street including the pedestrian footpath.

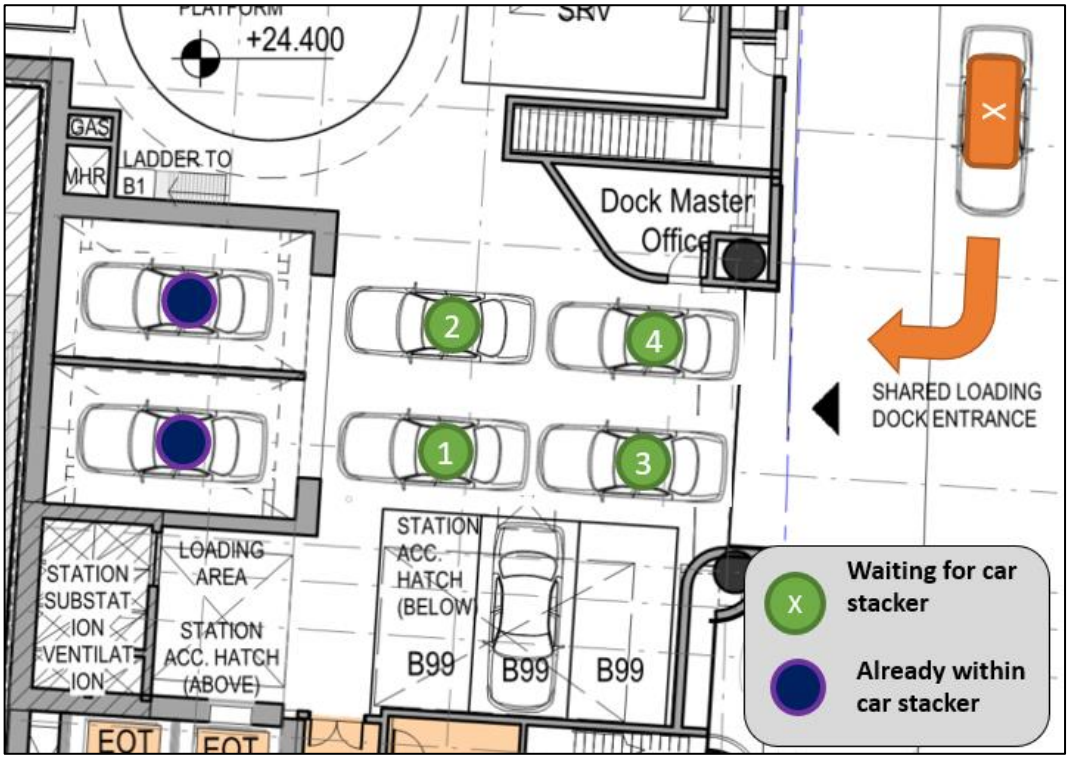


Figure 4-5: North OSD automatic car stacker available queuing space for vehicles (B99)

Furthermore, with the 4 to 5 minute arrival internal to the loading dock during the AM peak for the estimated 26 vehicles, and the operation of each car lift allowing access every 3 minutes, (or with the two lifts this improves access for vehicles to every 1.5 minutes), there is a high probability that the commercial vehicle will be able to arrive and access the automatic car lift with minimal queuing required. The probability of more than two vehicles arriving at the same time is 3% which, over the hour equates to 2 minutes which is likely to clear up before the arrival of the successive vehicle to use the loading dock.

Direct liaison between the commercial tenant and the loading dock master will be beneficial in ensuring minimal impact to the overall loading dock operations. This may be undertaken by providing the commercial tenant with a remote-control dongle or a phone application, which when activated, not only signals to the loading dock master that the automatic car lift is going to be in operation, but it also manages any vehicle queuing of the loading dock to occur off street (i.e. within the loading dock), and not on street (i.e. outside of the loading dock) due to possible conflicting vehicle movements between a loading dock vehicle and a commercial vehicle.

The impact of the use of the automatic car lift on the loading dock use is further discussed in Section 4.3, and proposed operation of the automatic car lift and communication to the commercial tenants is further summarised below.

While the estimated queue that may result from the automatic car stacker will be kept within the development, there is the possibility this may still impact on the loading dock performance as service vehicle movements may at times be restricted. As such the strategy proposed for the operation of the loading dock considers a nominal time period when the arrival of commercial tenants to use the automatic car stacker is likely to occur. A typical arrival profile of the 40 commercial bays has been shown in Figure 4-3 which shows the peak arrival of up to 26 vehicles during a peak hour.

As such a nominated 2-hour period (between 7am – 9am) is proposed where no bookings for the loading dock will be accepted. Although there is no formal booking facility available for loading dock operations, there is contingency within the loading dock and arrival of the commercial tenants to the automatic car stacker to accommodate arrival and departure of loading vehicles such that in the event that a vehicle arrives at the loading dock without a booking, it can still access the loading dock, however the online booking facility is not proposed during this time (except for Sydney Metro Bay access).

The North OSD designers of the automatic car lift have indicated that in the event that the automatic car lift breaks down it will be approximately one week (worst case) for the car lift to be operational again. As part of the loading dock management plan, operational measures will be put in place to minimise any disruption for all loading dock users. During the event that one of the automatic car lifts breaks down and requires serviceability, the peak volume of 26 vehicles per hour will exceed the capacity of one lift. During an event where an automatic car lift has broken down, the commercial tenants will be informed, and encouraged to arrive during the adjacent hour, when access capacity will be available for the car stacker. As no bookings are available during the nominated two hours in the AM peak, this is estimated to have a minimal impact on loading dock operations.

4.3 Loading Dock and Service Vehicles

It is understood that the Sydney LEP 2012 has been referred to as the main policy for the site to comply with. However, as no specification for service vehicle parking provision is outlined in the Sydney LEP 2012, the North OSD has therefore adopted the recommendations from the Sydney Development Control Plan (DCP) 2012. DCP 2012 states the objective for developments is to ensure the potential demand can be adequately accommodated on site and/ or without any adverse implication external to the site.

4.3.1 North OSD Stage 2 Loading Requirements

As noted earlier the DCP 2012 does not provide specific detail around the loading bay requirements. As such, the RMS guidelines were referenced to understand the North OSD Stage 2 loading requirements which are summarised as follows:

- **Commercial**: 5 bays for the first 20,000m^2, and then one space per 8,000m^2
- **Retail**: one bay per 400m^2

Table 4-8 provides a summary comparison of the Stage 1 (as reference in section 4.3.1) and current design requirements. For the current design, 13 bays are required for North OSD for the commercial and retail land use.

Table 4-8: North OSD Loading Dock requirements

Land Use	Stage 1 (as reference in section 4.3.1)		Current Design	
	Area (m^2)	Service Requirements	Area (m^2)	Service Requirements
Commercial	49,120 m^2	8.6	52,951 m^2	9.1
Retail	500 m^2	1.3	1,700 m^2	4.3
Total	**49,620 m^2**	**10 bays**	**54,651 m^2**	**13 bays**

From Table 4-8, the forecast profiles for the current North OSD design show an indicative total maximum of 13 bays are required for commercial and retail land uses without any management and re-arrangement of loading bays. As management measures, including an on-site dock manager, converting 3 bays into courier spaces, and implementing a delivery service plan, are included as part of the loading dock operations strategy, this reduces the loading spaces required if such measures were not in place, as it keeps the loading dock operating with a high utilisation. With the operational management measures in place, a lower provision of 6 bays was considered acceptable and in line with the previous measures recommended for a similar land use. The reduction from 13 to 6 bays assessment is shown in Figure 4-6.

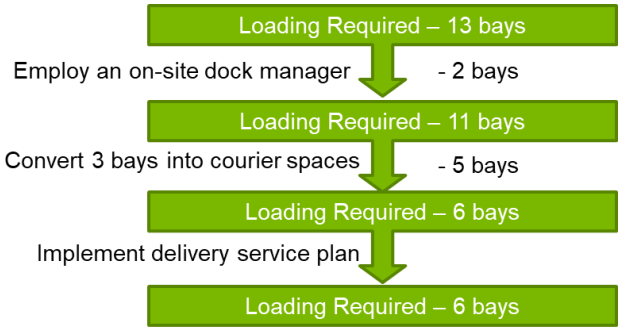


Figure 4-6: Loading bays required with management measures (source: Pitt Street North Dock Activity Assessment – Draft Version 2, 9 April 2018)

4.3.2 Loading Dock Service Bay Provision

North OSD will provide a total of seven on-site service vehicle bays with the bays designed to mainly accommodate the vehicle types below:

- 1 x Sydney Metro operational bay (B99, 99th percentile of class of cars);
- 3 x light commercial vehicles (B99, 99th percentile of class of cars);
- 2 x Small Rigid Vehicle (SRV);
- 1 x Medium Rigid Vehicle (MRV); and
- 3 x light commercial vehicle bays within the automatic car stacker (B99, 99th percentile size of cars).

The indicative location of each of the loading dock service bays within the loading dock is shown in Figure 4-7 (it should be noted the image reference used for this image is an older drawing but the location of the proposed parking bays within the loading dock remains unchanged).

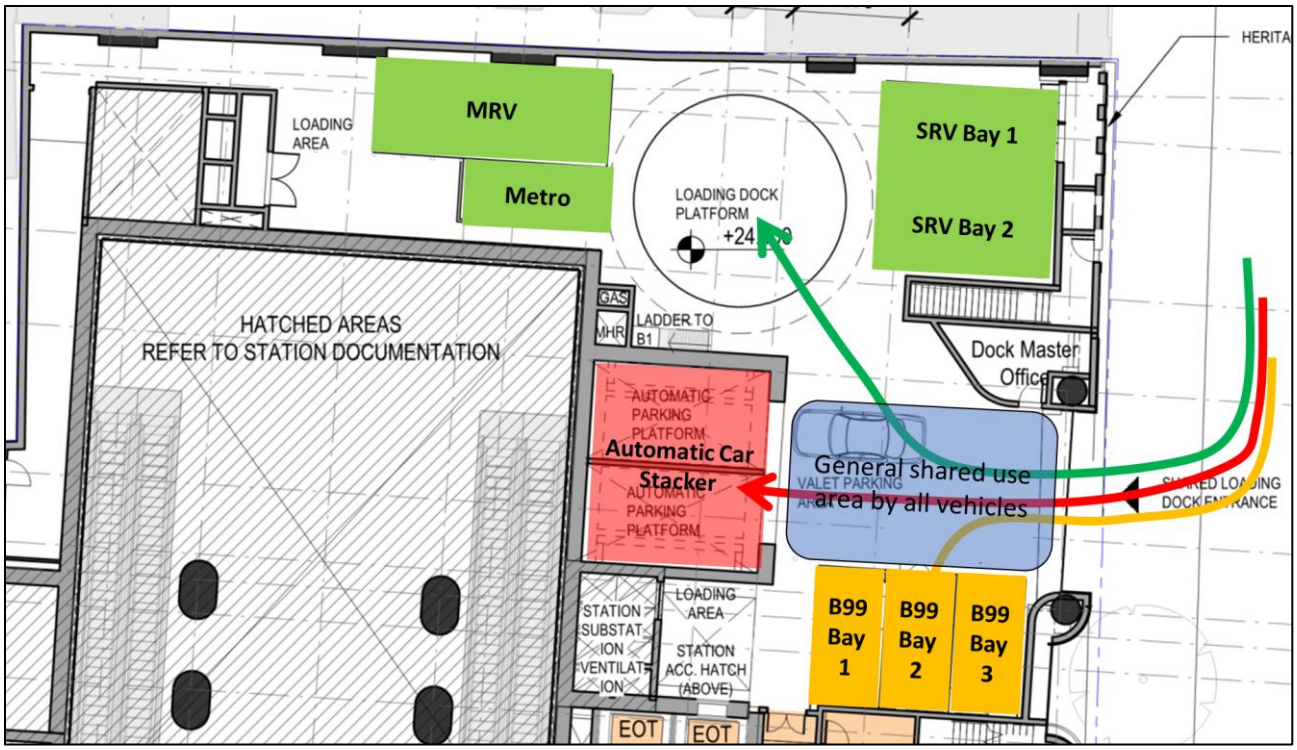


Figure 4-7: North OSD Loading bay locations (note: the image reference used for this image is an older drawing but the location of the proposed parking bays within the loading dock remains unchanged)

Within the loading zone there is a 'general share use area', highlighted blue, which will be used by all vehicles using the loading dock. This includes the commercial tenants who will access the automatic car stacker (highlighted in red), the B99 bays at the southern section of the loading dock for service deliveries

(highlighted in orange), and larger vehicles and the Sydney Metro Bay in the northern section of the loading dock (highlighted in green).

4.3.3 Loading Dock Service Bay Typical Demand Profile

The North OSD loading dock is estimated, but not limited to the following services via the loading dock bays:

- Grocery deliveries (regularly);
- Goods deliveries for retail (weekly);
- Furniture delivery (prior to opening and rarely occurring after opening);
- Waste collection (daily);
- Cleaning and maintenance service (regularly);
- Building maintenance service (occasionally);
- Mail and parcel delivery (daily where arrival is irregular and difficult to manage); and
- Sydney Metro transformer replacement service (emergency).

The loading dock assessment (excluding the automatic car use) has considered the typical daily maximum number of loading dock vehicles for the proposed land use (including commercial and retail), alongside an hourly maximum number.

Based on research including the Institute of Transport (ITE) trip generation handbook 1992, a local Sydney CBD research study presented at the AITPM National conference, alongside recent development applications in the Sydney CBD including the Sydney Metro Martin Place OSD, for a development of the size of North OSD, between 14 and 17 peak hour service vehicle trips are estimated, with the daily maximum number of vehicles estimated as 101 vehicles per day.

The operation of the loading dock for OSD North can accommodate up to a maximum of 17 vehicles per hour based on operational procedures (this is further explained in Section 4.3.4 below). As such, the loading dock facility is estimated to have sufficient capacity to cater for a peak demand for deliveries, which reduces the risk of external on street loading facilities being used.

There are likely to be periods where the loading dock may operate at a maximum hourly demand of 17 vehicles per hour and outside of these periods the loading dock is likely to operate at a lower demand (i.e. less than 17 vehicles per hour), totalling to a maximum of 101 vehicles per day.

The proposed typical loading dock bookings for the ground floor loading dock bays is shown in Figure 4-8 (excluding the use of the Sydney Metro bay or the three additional bays within the car stacker which are accounted for as part of the automatic car stacker analysis). The capacity of the loading dock, shown as a solid green line, accounts for the typical arrival and departure of the commercial tenants via the automatic car stacker (shown in Figure 4-3). The typical loading dock bookings shows that there is capacity within the loading dock to reach the maximum capacity of 17 vehicles per hour. The total number of proposed typical loading dock bookings is summarised at the base of the table where a maximum of no more than 12 vehicles per hour are proposed for the typical loading dock booking period.

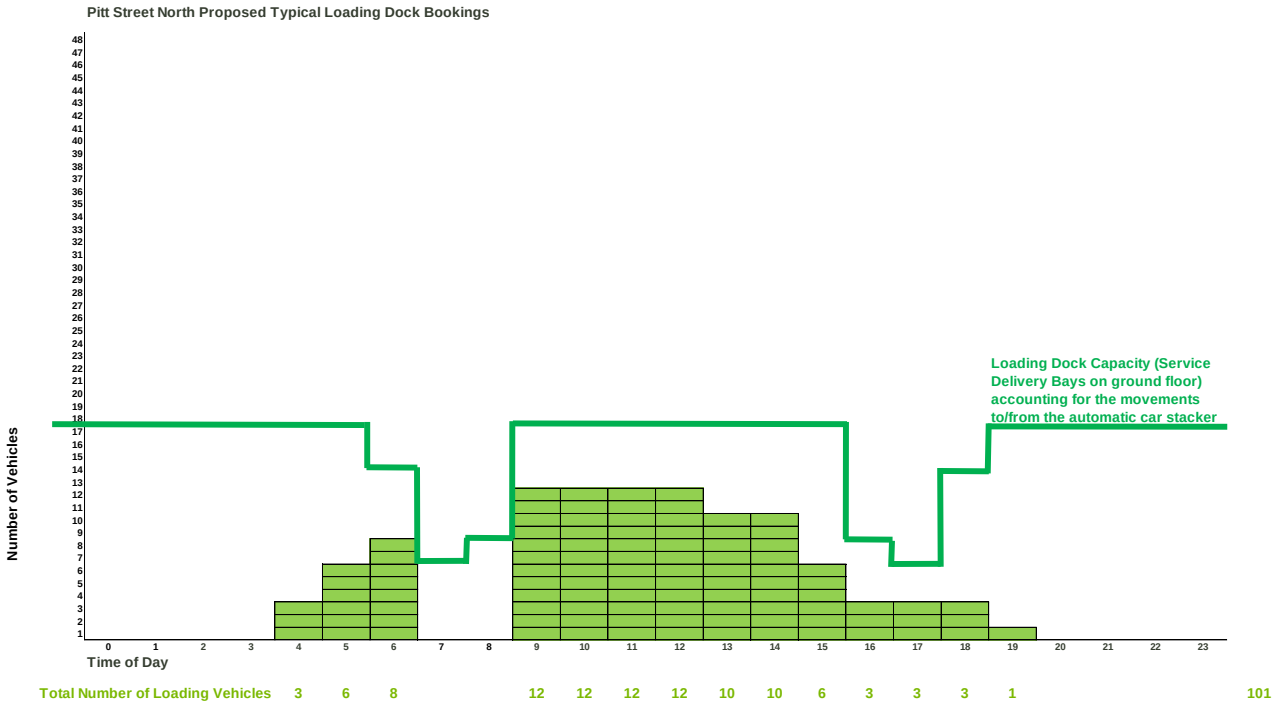


Figure 4-8: Typical Loading Dock Bookings arrival profile for Pitt Street North

As shown by the solid green line in Figure 4-8, the peak service delivery vehicle period where up to 17 vehicles are able to use the loading dock based on a upper managed limit for the loading dock, is proposed to fall outside the period where the highest movement for the automatic car lift is estimated. Within the time where the highest movement for the automatic car lift occurs (assumed to be 7 – 9 am), it is recommended that the online booking facility accepts no bookings during this time (except for Sydney Metro Bay access). Although there is no online booking facility proposed between the assumed 7 – 9am, there is allowance for contingency within the loading dock to accommodate arrival and departure of loading vehicles such that in the event that a vehicle arrives at the loading dock mistakenly during the two hours where the highest movement of vehicles is assumed for the automatic car lift, the loading dock vehicle can still use the loading dock, with no greater than 6 – 8 service vehicles accessing the loading dock during the peak 7 – 9am time period.

To accommodate the provision of loading dock vehicles which require longer dwell times, access to three B99 bays has been allowed for within the automatic car stacker and access to these will also be booked via the loading dock booking system.

With the booking system in place for managing the arrival and departures of the loading dock requirements, a typical loading dock booking activity profile is shown in the diagram below combining the use of the loading dock and the commercial tenant access to the automatic car stacker. As noted earlier , a delivery exclusion period during the peak commercial tenant arrival (i.e. 7 – 9am) is proposed and there is contingency within the loading dock to accommodate the arrival and departure of loading vehicles such that in the event that a vehicle arrives to the loading dock it can still use the loading dock, however the online booking facility is not proposed during this time (except for Sydney Metro Bay access).

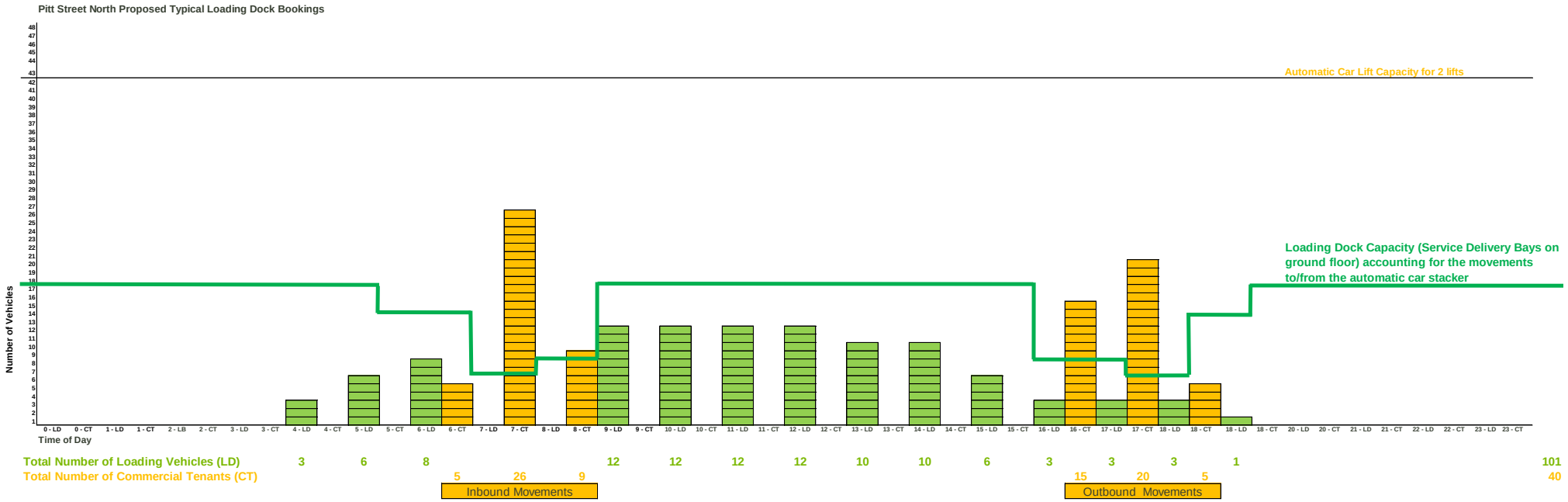


Figure 4-9: Typical Loading Dock Bookings and arrival of automatic car lift arrival profile for Pitt Street North

4.3.4 Loading Dock Management

The Delivery Service Plan (Attached in Appendix A) will be managed by a dedicated on-site loading dock master through an integrated loading dock digital system notifying when deliveries are arriving and time allocation to specific loading requirements. To assist with the development of the Delivery Service Plan, a high-level assessment has been undertaken to understand if there will be any issues with the loading dock, and provide guiding principles to be integrated as part of the Delivery Service Plan.

Access to the loading dock and the automatic car lift usage are intertwined with two customer types. The first are the commercial tenants who will use the automatic car stacker at an ad hoc basis (this is further described in Section 4.2.2 of this document). The second are the loading dock users who can arrive to the loading dock based on a time allocated to them.

The general operation of the loading dock is simplified into a northern loading dock section, a southern loading dock section and the automatic car stacker as shown in Figure 4-10 (it should be noted the image reference used for this image is an older drawing but the location of the proposed parking bays within the loading dock remains unchanged).

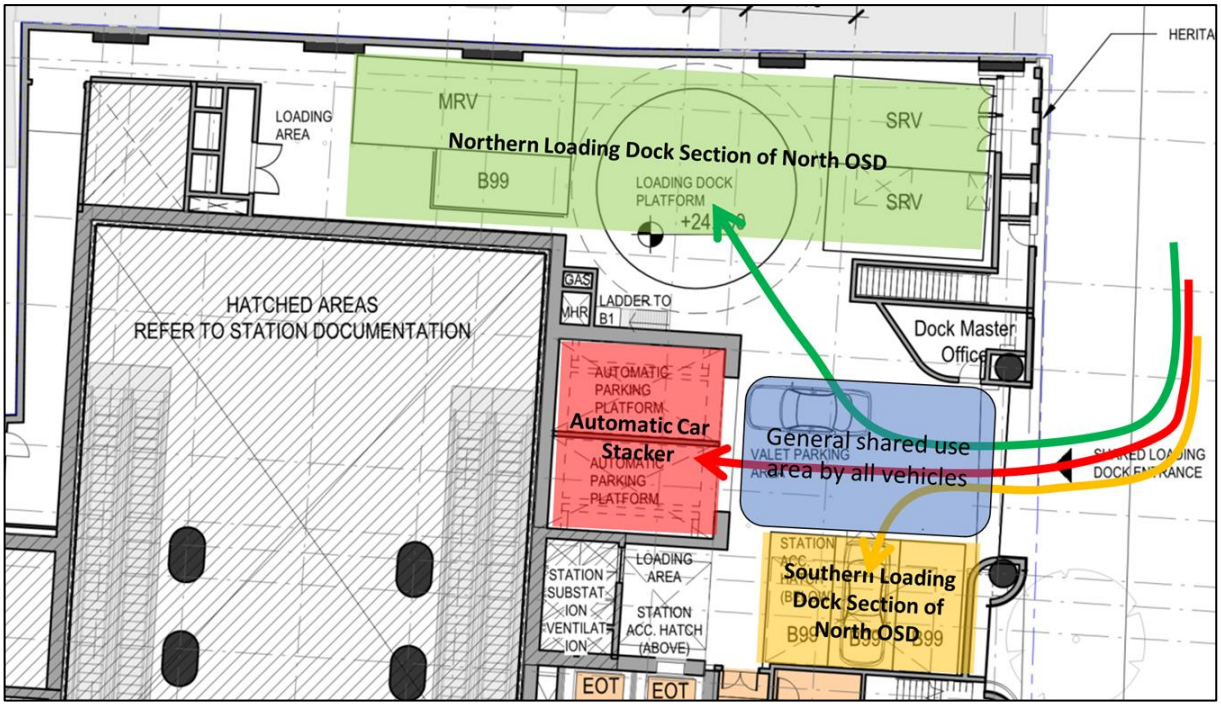


Figure 4-10: North OSD Loading operations (note: the image reference used for this image is an older drawing but the location of the proposed parking bays within the loading dock remains unchanged)

As shown in Figure 4-10, 'the general shared use area by all vehicles' shows that the arrival of commercial tenants impacts the use of the loading dock and vice versa. To minimise an arrival overlap of the two customer types arriving at the same time, the following governing principles are proposed to be incorporated as part of the loading dock Delivery Service Plan:

- Arrival of commercial tenants during a dedicated time period where no loading dock bookings are available (except for access to the Sydney Metro Bay). To inform what this time period is, it is recommended that as part of the automatic car stacker induction, that every individual commercial tenant who uses the automatic car stacker will need to undertake, a question regarding the preferred arrival and departure time is included to determine the typical peak arrival time. For example, this may be determined to be between 7am and 9am (as shown in Figure 4-3), during which time the arrival of loading dock vehicles will need to be reduced and actively managed. This is in line with the operations management strategy described in Section 4.2.2.
  - A delivery exclusion period during the peak commercial tenant arrival (i.e. 7 - 9am) is proposed. There is contingency within the loading dock to accommodate arrival and departure of loading vehicles such

that in the event that a vehicle arrives to the loading dock it can still use the loading dock, however the online booking facility will not accept bookings during this time (except for Sydney Metro Bay access).

- Outside of this time period the loading dock will operate based on a booking system to manage loading dock arrivals and departures.

Outside of the commercial tenants, as shown in Figure 4-10, the loading dock design is separated into a north and south loading component where:

- The northern segment requires the use of a turn table for loading for the Sydney Metro (B99) bay, two SRV bays and one MRV bay, and
- The southern segment is used by three B99 bays, preferably accessed by reversing into the bay and egressed by forward movement out of the loading dock.
- To accommodate the provision of loading dock vehicles which may require longer dwell times, access to three B99 bays have been allowed for within the automatic car stacker and access to these will also be booked via the loading dock booking system.

At any given time, a vehicle accessing the northern segment of the loading dock does not hinder the use of the southern segment of the loading dock, however the use of a vehicle in the southern segment of the loading dock does hinder the use of the northern segment of the loading dock. To minimise loading dock northern and southern segment overlap access issues, it is proposed that loading dock arrivals are staggered such that the arrival of two consecutive northern segment vehicles (or southern segment vehicles) do not arrive to the loading dock in less than 10-minute intervals. This allows for the staggering of the northern segment and the southern segment loading activities. In addition, a time limit is recommended to be imposed for vehicles using the loading dock which will need to be defined at the time of booking / arrival. At a minimum this is assumed to be 30 minutes per loading bay (including the time allocated to parking and egress from the bay) for either the northern or southern loading dock segments. Based on this, a total of 12 loading vehicles are able to use the loading dock per hour (6 on the northern segment and 6 on the southern segment), which allows for a maximum of 6 vehicles parked in the loading dock at the same time (excluding the Sydney Metro B99 bay). If loading is required for a longer period for a particular bay (excluding the Sydney Metro B99 bay), it is recommended that this is scheduled in for later in the day when the traditional need to use the loading dock is reduced.

Depending on the loading requirements in particular the deliveries each day, the loading strategy each day may change. To understand the total capacity of the loading dock, the following scenarios logic is outlined (excluding the loading dock being used by the commercial tenants for the automatic car lift):

- A 30 minute time allocation for loading for all vehicles. As shown in Table 4-9, this equates to an assumed 12 vehicles per hour for the North OSD loading dock, and over a typical 8-hour day this is equivalent to 96 vehicles accessing the loading dock. Over a 10-hour day this is equivalent to 120 vehicles accessing the loading dock.

Table 4-9: North OSD Loading capacity based on a 30-minute round trip (time allocation in bay is assumed approximately 20-minutes)

B99 Bay 3					Out	In					Out	In
B99 Bay 2			Out	In					Out	In		
B99 Bay 1	Out	In					Out	In				
SRV Bay 2				Out	In					Out	In	
SRV Bay 1		Out	In					Out	In			
MRV	In					Out	In					Out
Metro	Access available at all times											
TIME	**0 - 5min**	**5 - 10min**	**10 - 15min**	**15 - 20min**	**20 - 25min**	**25 - 30min**	**30 - 35min**	**35 - 40min**	**40 - 45min**	**45 - 50min**	**50 - 55min**	**55 - 60min**
Proposed Management Procedure	To minimise and mitigate any conflict, all loading dock vehicles will be provided with a timeslot prior to arrival. Furthermore the Loading Dock Master will manage arrival and departure of the two vehicles within each 5 minute window. The role of the Loading Dock Master is beyond the traditional role of a security guard, and will include knowledge of logistics and traffic management training.											

- A 45 minute time allocation for loading for all vehicles. As shown in Table 4-10, this equates to an assumed 9 vehicles per hour for the North OSD loading dock, and over a typical 8-hour day this is equivalent to 72 vehicles accessing the loading dock. Over a 10-hour day this is equivalent to 90 vehicles accessing the loading dock.

Table 4-10: North OSD Loading capacity based on a 45 minute round trip (time allocation in bay is assumed approximately 35-minutes)

B99 Bay 3	Out	In								Out	In	
B99 Bay 2								Out	In			
B99 Bay 1						Out	In					
SRV Bay 2				Out	In							
SRV Bay 1		Out	In								Out	In
MRV	In								Out	In		
Metro	Access available at all times											
TIME	**0 - 5min**	**5 - 10min**	**10 - 15min**	**15 - 20min**	**20 - 25min**	**25 - 30min**	**30 - 35min**	**35 - 40min**	**40 - 45min**	**45 - 50min**	**50 - 55min**	**55 - 60min**
Proposed Management Procedure	As per above		Risk has been mitigated between the arrival and departure of two vehicles.						As per above		Risk has been mitigated between the arrival and departure of	

- A 60 minute time allocation for loading for all vehicles. As shown in Table 4-11, this equates to an assumed 6 vehicles per hour for the North OSD loading dock, and over a typical 8-hour day this is equivalent to 48 vehicles accessing the loading dock. Over a 10-hour day this is equivalent to 60 vehicles accessing the loading dock.

Table 4-11: North OSD Loading capacity based on a 60 minute round trip (time allocation in bay is assumed approximately 50-minutes)

B99 Bay 3										Out	In	
B99 Bay 2						Out	In					
B99 Bay 1		Out	In									
SRV Bay 2								Out	In			
SRV Bay 1				Out	In							
MRV	In											Out
Metro	Access available at all times											
TIME	**0 - 5min**	**5 - 10min**	**10 - 15min**	**15 - 20min**	**20 - 25min**	**25 - 30min**	**30 - 35min**	**35 - 40min**	**40 - 45min**	**45 - 50min**	**50 - 55min**	**55 - 60min**
Proposed Management Procedure	Risk has been mitigated between the arrival and departure of two vehicles.											

Increasing the loading dock operating hours allows for additional vehicles to access the loading dock, which may be required to manage peak periods of operation. As noted earlier to accommodate the provision of loading dock vehicles which require longer dwell times, access to three B99 bays has been allowed for within the automatic car stacker and access to these will also be booked via the loading dock booking system.

A combination of various time allocation for loading vehicles may be possible such that a different time allocation is assumed for the northern segment to that of the southern segment. Furthermore, the system could also allow loading vehicles to make ‘double’ or ‘triple’ bookings or specify a duration of the loading time they require which may be accommodated by the loading dock master if there is adequate capacity to accommodate the request.

As discussed earlier, based on research (ITE, a local Sydney CBD research study and other recent developments in the Sydney CBD), for a development of the size of North OSD, between 14 and 17 peak hour vehicle trips can be expected. During periods where there is little to no automatic car stacker demands, it is anticipated that the loading dock could accommodate up to 17 vehicles per hour (loading of each loading bay is limited to approximately 15 - 18 minutes) which is equivalent to approximately 15% of the total daily requirements for North OSD.

A Delivery Service Plan for North OSD is required in accordance with the SEARs condition. The Delivery Service Plan is recommended to be in place for the loading dock to actively manage the service operations, and to ensure the loading requirements can be undertaken with minimal disruption or adverse impacts to the external road network. The design components associated with a Delivery Service Plan have been attached in Appendix A.

Contingency Responses for Potential Incidents

A number of potential incidents may limit the operation of the loading dock and automatic car stacker. These are outlined in Table 4-12.

Table 4-12: Contingency Responses for Potential Incidents at North OSD

Incident	Impact	Response
Blocked Access to Northern Segment of the Loading Dock	A vehicle has broken down within the northern segment of the loading facility.	If the vehicle is broken down in a particular bay, then all vehicles scheduled to use that particular bay will need to be notified immediately. Towing Service to be called immediately to remove the vehicle. If the vehicle is broken down on the turntable, towing service to be called immediately to remove the vehicle.
Blocked Access to Loading Dock	Loading Dock and Automatic Car Lift not available due to blocked access to the loading dock.	Towing Service to be called immediately to remove the vehicle that is blocking access to the loading dock. Any scheduled deliveries will need to be rescheduled to following when the broken-down vehicle is removed.
Delivery outside of nominated booking time	Vehicle blocking access to the loading dock.	Dock Master to allow vehicle to use turn table to egress from the loading dock area, or if available to undertake required loading in available bay.
Loading taking longer than time limit	Arrival and delay of consecutive vehicles arriving to the loading dock.	If time is available, the bay may be utilised for the extra time required. If it is impacting the operations of other vehicles, then the loading dock master is to decide if this vehicle is to vacate the bay or notify the next vehicle to come at a different time slot.
Failure of the turntable	Northern Segment of loading dock is not able to be utilised due to turntable being broken.	Determine the time required to fix the turntable. One of the Southern Segment service bays to be allocated to a Sydney Metro bay, and all loading for that bay to be managed. If it is a short-term fix, loading to recommence for high priority deliveries once the turntable is fixed, followed by lower priority deliveries. If it is a long-term fix, high priority loading deliveries to be undertaken at surrounding on-street loading facilities.

Incident	Impact	Response
Failure of the automatic car lift	Lowers access time for commercial tenants potentially resulting in an increase in slower operations for the overall loading dock.	In the event the automatic car lift breaks down, a one-week down time is noted (the automatic car lift designer) to fix the automatic car lift. With one lift in operation, there is sufficient capacity to meet the estimated demand for the automatic car stacker.

4.3.5 Swept Paths Analysis

Swept path analysis was undertaken for a 5.2m length B99 vehicle and a 6.4m length SRV and a 8.8m length MRV.

Figure 4-11 to Figure 4-14 illustrate that the design layout can adequately accommodate the design vehicle movements to service the loading dock. The swept paths show that the vehicles do not require more than three points of turn to manoeuvre in and out from the bays. It should be noted that loading of small goods from the SRV bays may be undertaken on the turntable, and if bulky goods loading is required, these should be undertaken from the MRV service bay.

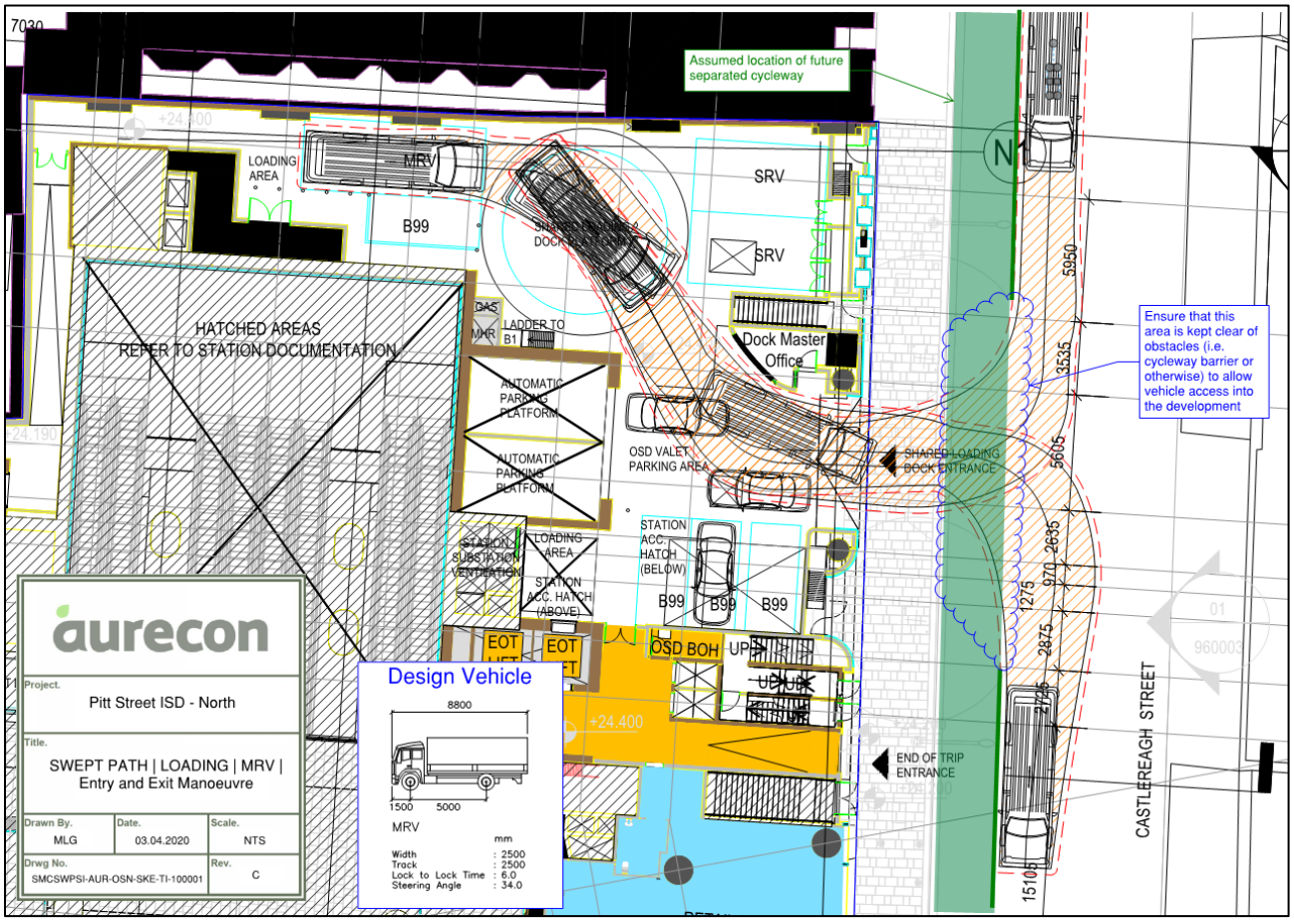


Figure 4-11: Vehicle swept path analysis for MRV – forward in and forward out from loading area

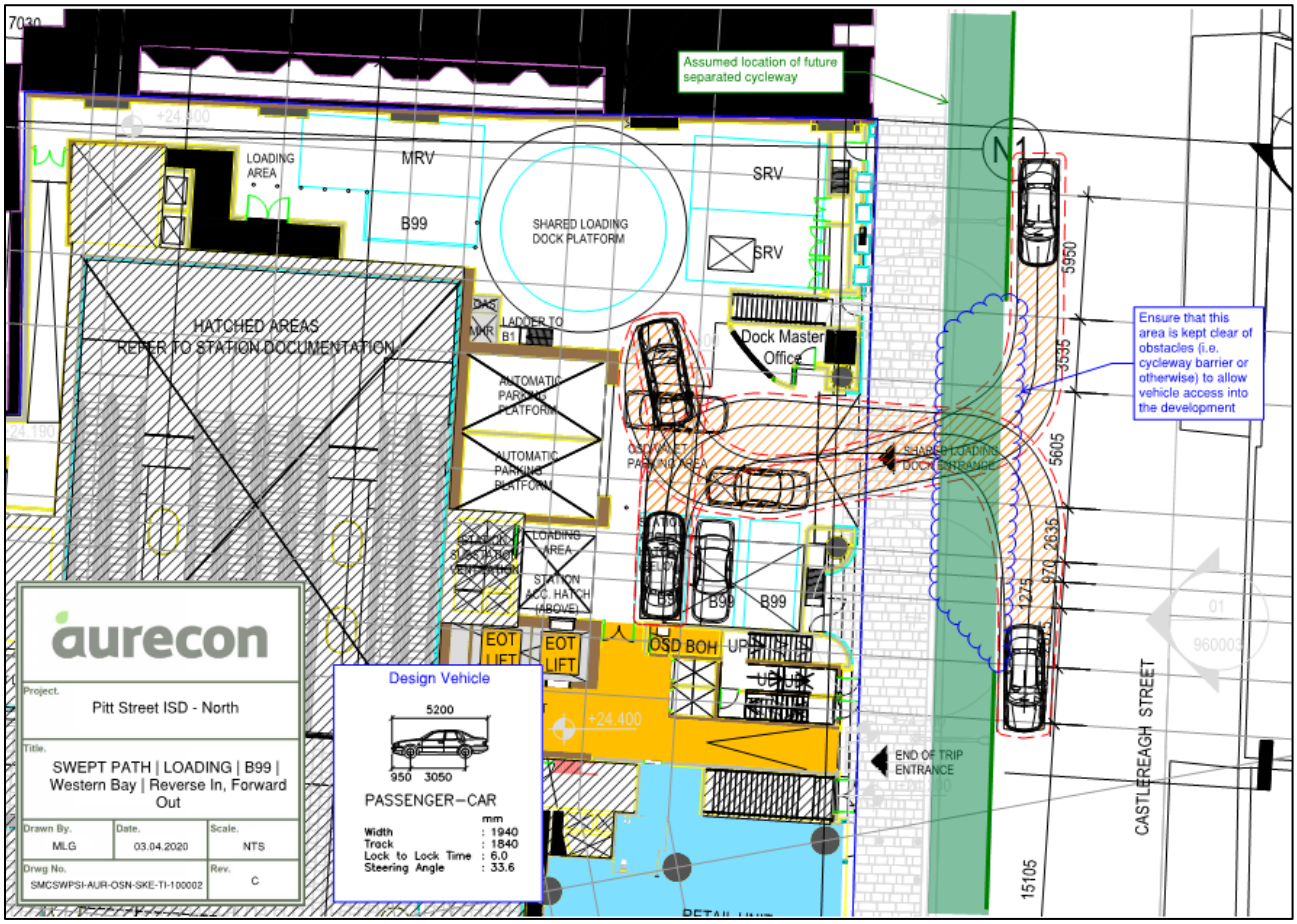


Figure 4-12: Vehicle swept path analysis for the B99 western bay – reverse in and forward out from bay

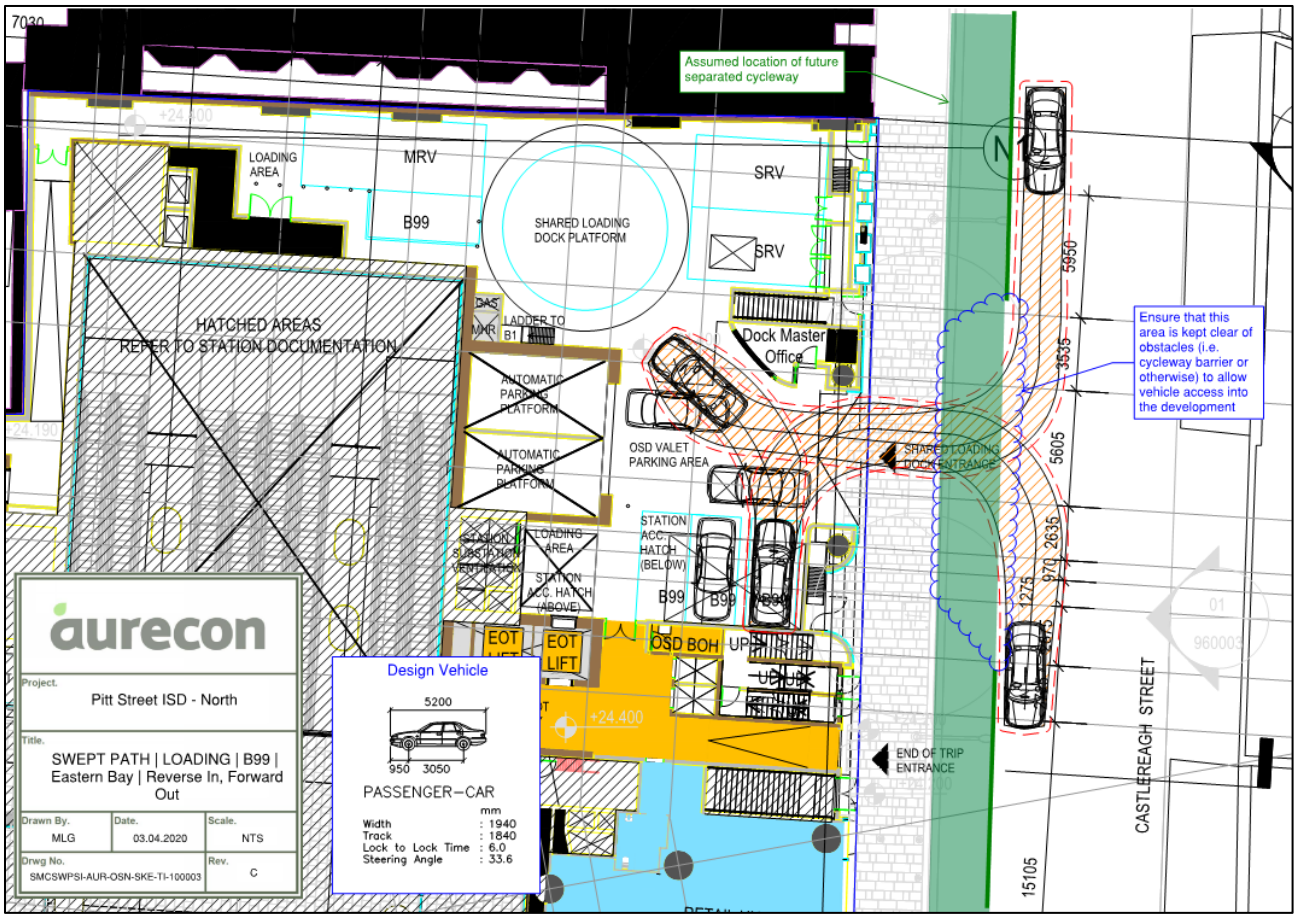


Figure 4-13: Vehicle swept path analysis for the B99 eastern bay – reverse in and forward out from bay

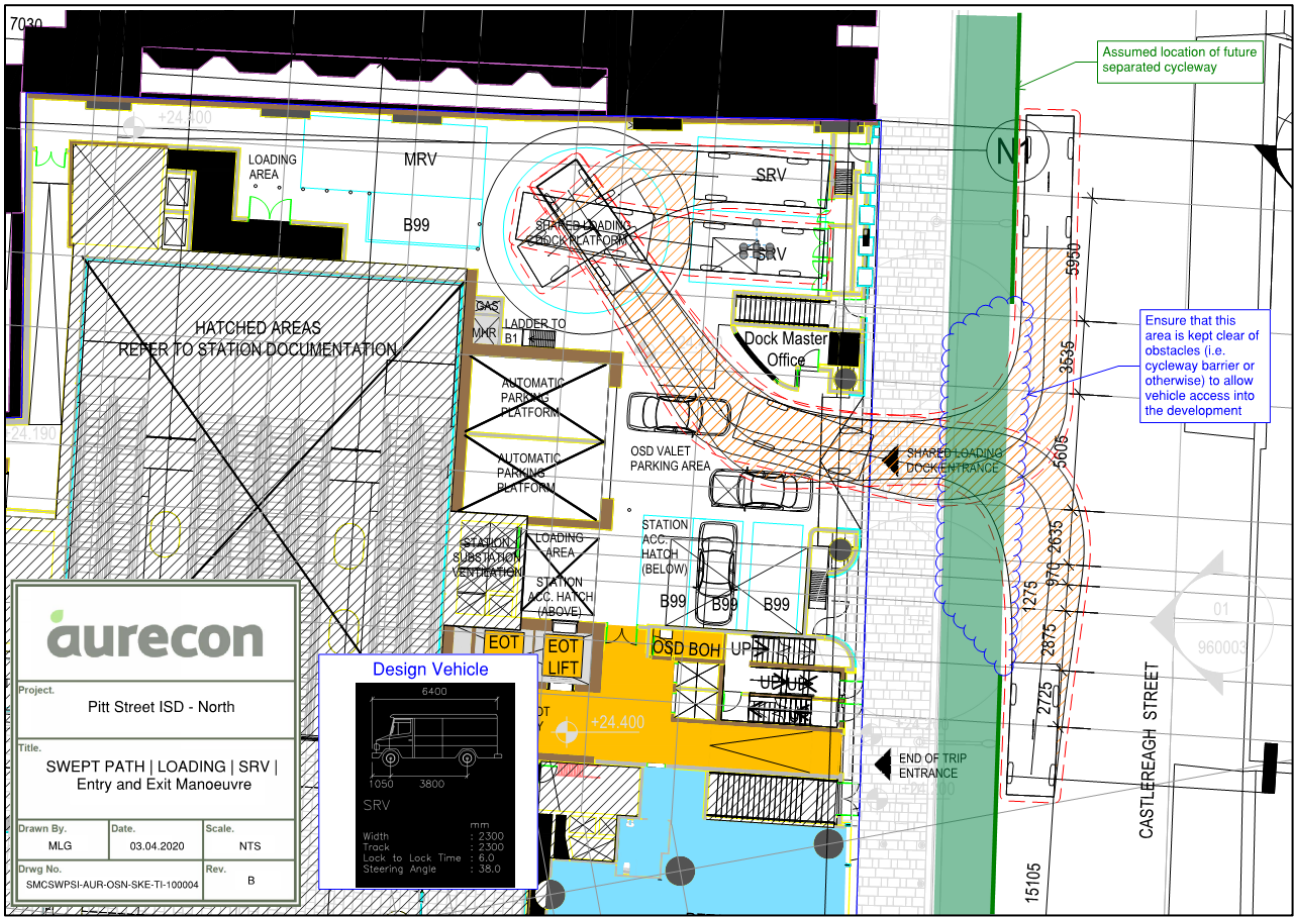


Figure 4-14: Vehicle swept path analysis for the SRV – forward in and forward out from loading area

4.3.6 Sydney Metro Vehicle Loading

The Sydney Metro Operation bay will be occasionally occupied to undertake maintenance services for the Pitt Street Station. The Sydney Metro loading bay is for a B99 size vehicle and access to the Sydney Metro Bay is via the turn table within the loading dock.

4.3.7 Waste Vehicle Loading

A detailed Operational Waste Management Plan can be found in SMCSWSPS-TTM-OSN-CE-PLN-000001. All waste loading is noted to occur off street. Waste vehicles are proposed to use the MRV bay for all waste servicing. Swept path analysis for a 9.25m waste vehicle was undertaken and shown in Figure 4-15.

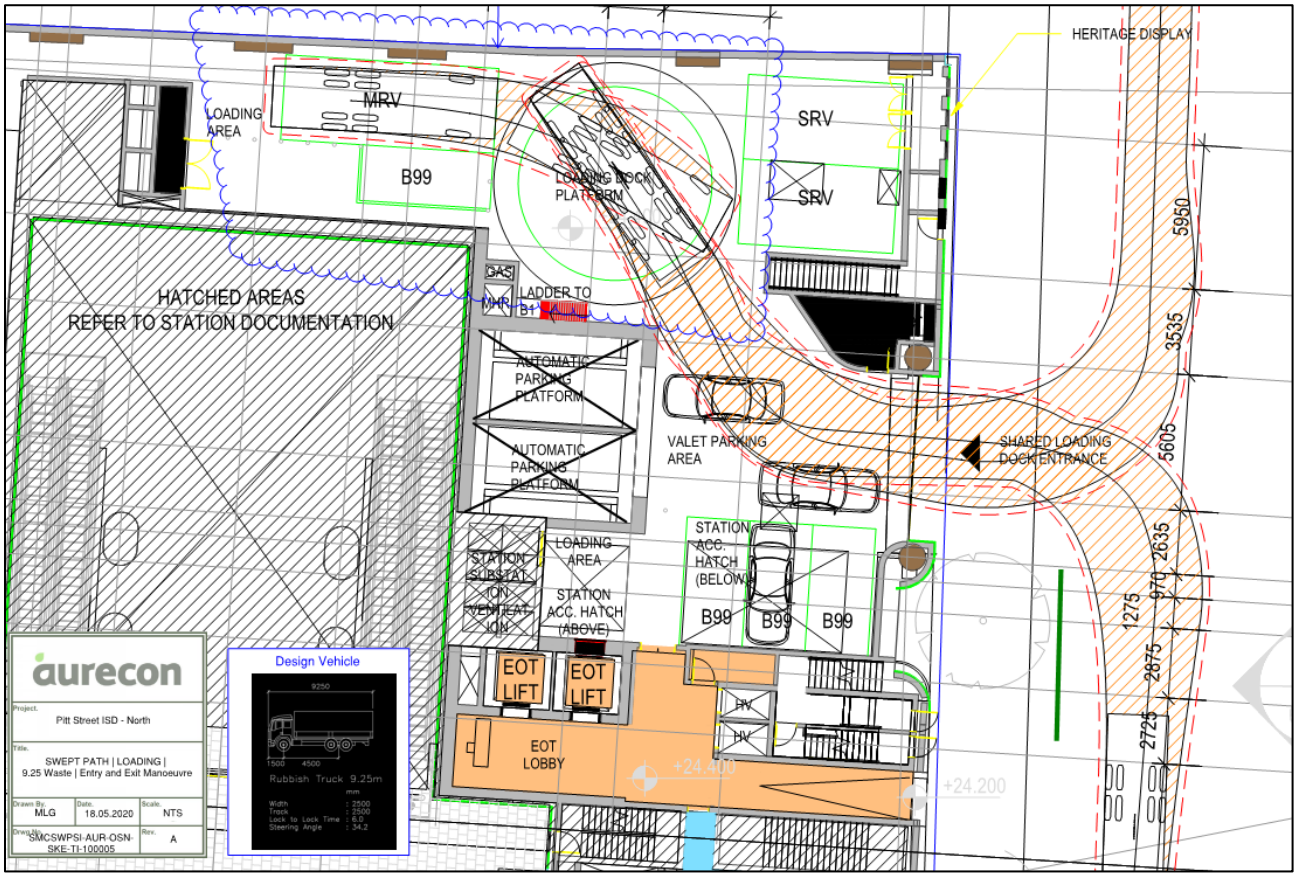


Figure 4-15: Vehicle swept path analysis for the 9.25m waste vehicle – forward in and forward out from loading area

4.3.8 Safety Considerations

Cyclists will access the development via a dedicated access off Castlereagh Street as indicated in Figure 4-1 to use the End-of-Trip (EoT) lifts to access the bicycle parking facilities on level 1.

As the cyclist access is located close to the vehicle access to the east, the users are exposed to some safety risks, particularly the on-street cyclists who travel in a southbound direction will ride across the vehicle access crossover from Castlereagh Street to access the development loading dock. It is recommended that awareness improvements be implemented in the area to reduce the risk, such as a warning system and convex mirror mounted onto street poles as shown in Figure 4-16. This has been included as part of the Green Travel Plan recommendations in SMCSWSPS-AUR-OSN-EM-REP-000002 as it impacts North OSD cyclists who use the EoT facilities. It is however noted that public domain measures fall under the planning pathway of the CSSI and are not a matter for consideration under this SSDA application.

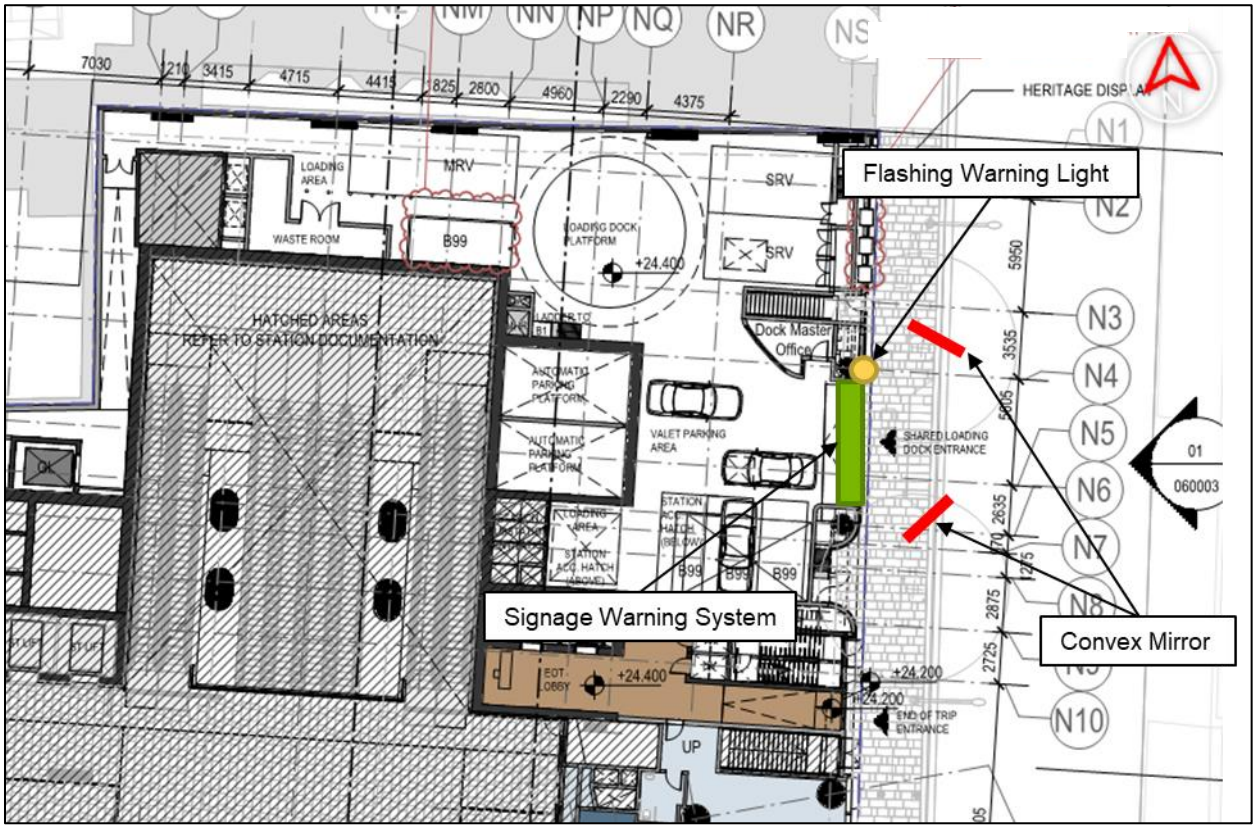


Figure 4-16: Suggested safety\measures at loading dock access (Reference: SMCSWSPS-FOS-OSN-AT-DWG-030013 Rev P1)

4.4 Bicycle Parking Facilities

The North OSD has adopted the recommendations from the Sydney Development Control Plan (DCP) 2012 to ensure adequate spaces are provided on site to accommodate the demand for cycling[1]. The recommended bicycle parking provision required for the North OSD development as per the Sydney DCP 2012 Section 3.11.3, is summarised in Table 4-13 below.

Table 4-13: Bicycle parking provision required

Land use	Bicycle parking space rates	Proposed North OSD Gross Floor Area (GFA)	Minimum service parking provision required
Office	Employees – 1 per 150m^2	52,951m^2	353 spaces
	Visitor – 1 per 400m^2		133 spaces
Shop	Employees – 1 per 250m^2	1,700m^2	7 spaces
	Customers – 2 plus 1 per 100m^2		19 spaces
	Total	**54,651m^2**	**512 spaces**

The development allows for a total of 512 bicycle parking spaces in line with the Sydney DCP requirements. It is proposed that 200 bicycle spaces are provided upon opening of the development, with allowance for additional bike parking spaces to be built as demand increases, to the maximum number in line with the DCP 2012 bike parking requirements. The location of bicycle End Of Trip (EOT) facilities upon opening of the development in 2024 is shown in Figure 4-17 and Figure 4-18.

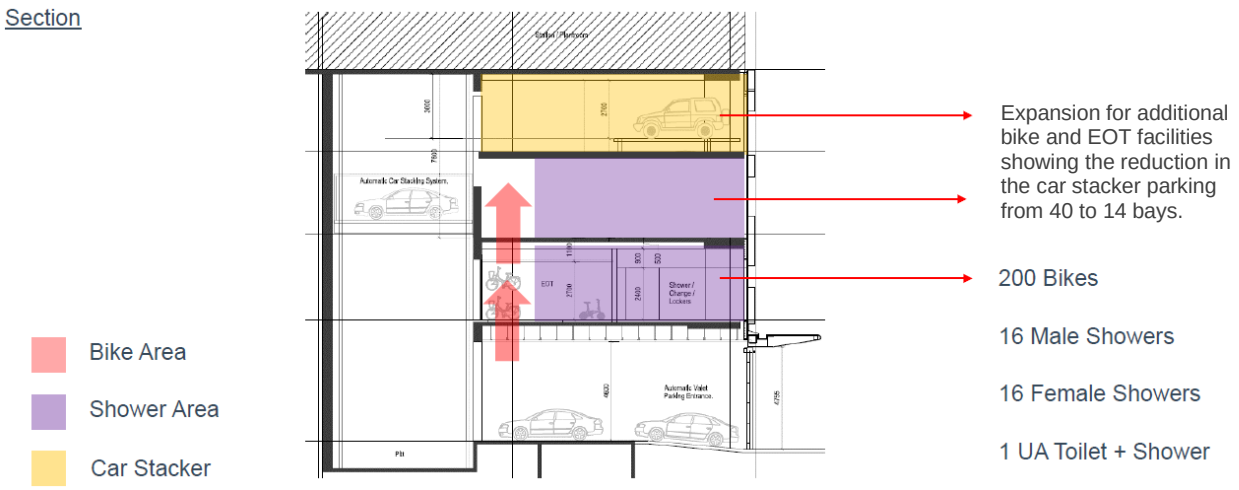


Figure 4-17: Opening Year (2024) of the development bike parking (Reference: Foster & Partners)

[1] It is understood the Sydney LEP 2012 has been referred as the main policy for the site to comply. However, as no specification for bicycle parking provision is outlined in the Sydney LEP 2012, the Sydney DCP 2012 has been used.

Figure 4-18: Level 2 End of Trip Facilities for opening year (2024) of the development (Reference: Foster & Partners)

A designated area has been allocated to increase the number of bike parking spaces and EOT facilities to accommodate future demand as required. Figure 4-17 shows the location for additional bike parking spaces and EOT facilities for future upgrades. The existing automatic car parking will be repurposed to provide bike parking facilities to provide increased capacity. This is proposed to be undertaken based on bike parking demand which will be regularly monitored and reported. This is further discussed within the Green Travel Plan for North OSD.

A lower provision for bicycle parking upon opening of the development is considered appropriate. The North OSD is a Transport Orientated Development (TOD) where a Metro Station is being developed below the North OSD. Typically at TOD locations, the walking and cycling (active transport) mode share is higher than average, with walking and cycling as first/last mile options for people using public transport. Given the location of North OSD adjacent to multiple public transport options, for people living near and working at the site, it is likely that these traditionally active transport mode trips could be replaced by public transport (including short trips). This trend can be seen from Figure 3-10 where 1.4% of those who work in the Sydney SA2 area travel by bicycle to work, whereas a total of 77% use public transport.

It should be noted that the Sydney DCP 2012 also refers to the mode share target for trips by bike in the *Cycle Strategy and Action Plan 2007-2017*, which has been superseded by the more recent plan, the *City of Sydney Cycle Strategy and Action Plan 2018-2030* (City of Sydney, 2018). Figure 4-19 below is extracted from the *City of Sydney Cycling Strategy and Action Plan 2018 – 2030*, which shows a bike mode share target of 10% for the City of Sydney (LGA) by 2030 with interim targets in 2021.

Proportion of trips made by bike

Indicator	Baseline	Interim targets	2030	Data source	Data frequency
proportion of journeys to work by bike by City residents	1.9% (2006) 3.4% (2016)	5% (2021)	10%	Census	Every 5 years
proportion of journeys to work by bike by people working in the City	1.01% (2006) 1.8% (2016)	3% (2021)	10%	Census	Every 5 years

Note: Census data is used as a proxy for cycling for all trip purposes, since NSW has no reliable data on non-work cycling trips.

Figure 4-19: Proportion of trips made by bike

The earliest the OSD North development will be operational is in 2024, with the opening of the Pitt Street Metro. Linear interpolation of the *City of Sydney Cycle Strategy and Action Plan 2018-2031* using a baseline 2016 value of 1.4% (which is based on the 2016 Census mode share statistics for the Sydney, Haymarket

and The Rocks (refer to Figure 3-10)), equates to a target bike mode share of 4.0% in 2024. The provision for 200 bicycle spaces upon opening corresponds to a mode share of 4.1% for cycling based on the estimated number of staff with the development fully occupied which represents an approximate 300% increase from the travel mode share as measured in 2016. In line with the above, the development is targeting a significant shift in mode share for cycling, with the provision of sufficient bicycle parking to effect this change.

Furthermore, recent trends towards the use of bike share offers may see an increase in this mode share but this relies upon on-street parking and therefore does not require bike parking facilities. There are numerous public bike parking facilities located surrounding the development, as shown in Figure 4-20.

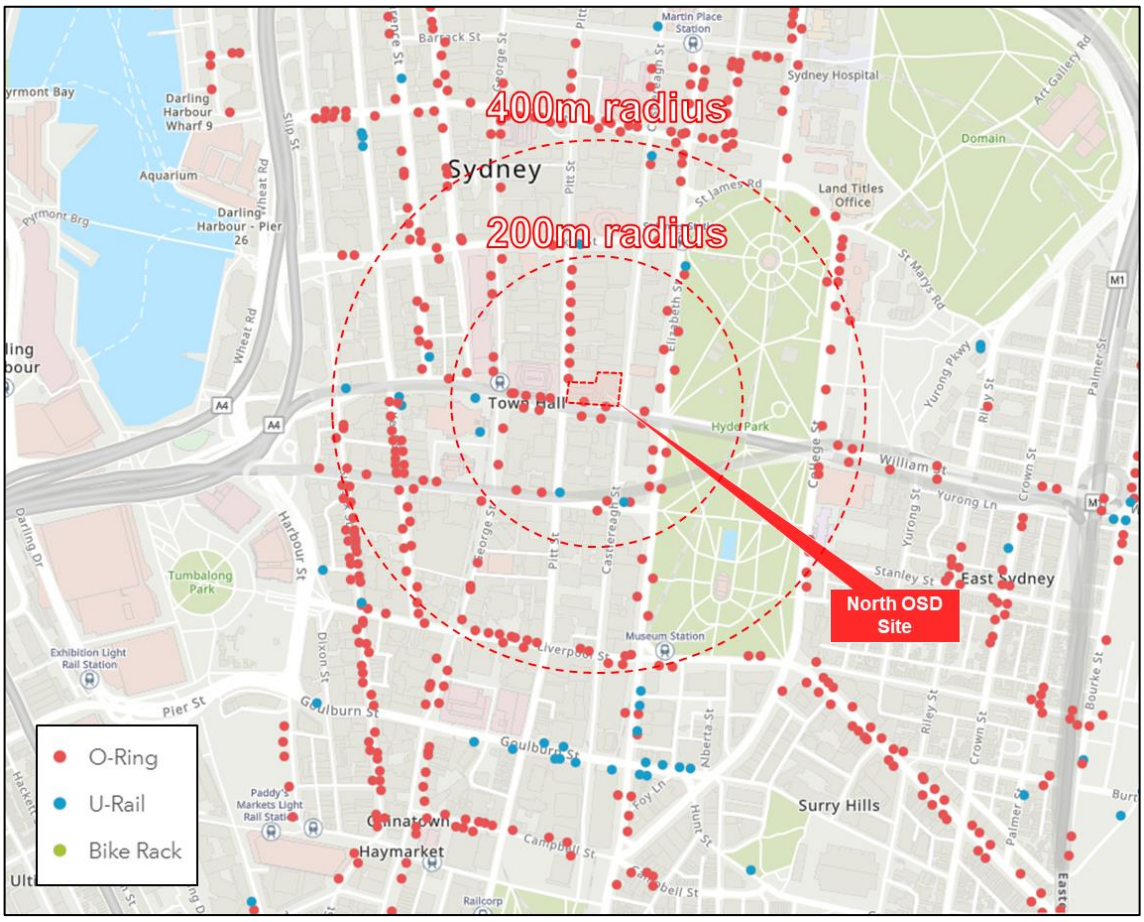


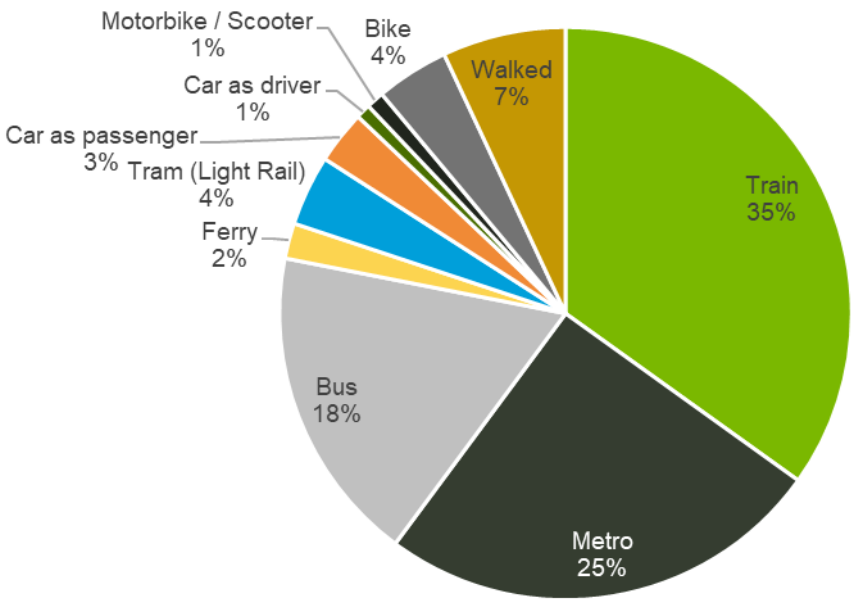
Figure 4-20: Location of public bicycle parking facilities surrounding the development

5 Transport Assessment

This section outlines the discussions on the transport impacts resulting from the development, as well as the integration with the surrounding transport infrastructure.

5.1 Mode Share

The existing and target mode share with resulting total number of both commercial and retail staff per travel mode for North OSD is shown in Table 5-1.



Mode	Existing*	Proposed and Total Number of Staff	
	%	%	Volume
Train	54%	35%	1691
Metro	0%	25%	1224
Bus	21%	18%	870
Ferry	2%	2%	97
Light Rail	0%	4%	190
TOTAL PT	**77%**	**84%**	**4072**
Taxi	1%	N/A	
Car as passenger	2%	3%	145
Car as driver	12%	1%	40
Truck	0%	0%	0
Motorbike / Scooter	1%	1%	46
Bike	1%	4%	200
Walked	6%	7%	330
Total	**100%**	**100%**	**4833**

Table 5-1: Existing and target mode share with resulting total number of staff (commercial and retail) per travel mode for North OSD

The target mode share for the site is likely to have similar mode splits as the current trend observed in the surrounding developments, however, it is estimated to fluctuate in association with the development infrastructure (i.e. vehicle and bicycle parking provision) and future changes (i.e. public transport accessibility and frequency). While it is noted that the active and public transport facilities within the City of Sydney have been well developed, these are constantly improving to match the growth in demand and to maintain high usage and reliability.

With the existing parking provisions and restrictions within the CBD, people are encouraged to travel in and around Sydney via sustainable transport modes of travel, as evidenced by the ABS 2016 Census data, where a considerably high proportion of commuters (88%) who live within Sydney are using sustainable transport to travel to work, which includes bus (11%), train (25%), tram (1%), ferry (<1%), walk (50%) and bicycle (1%). While the remaining 12% of commuters travel to work via private vehicle or taxi.

The site is surrounded by and accessible to numerous public transport facilities and sustainable transport options. It is noted that currently some of the facilities that have been identified are outside the comfortable walking distance (400m), these can still be accessed via other intermediate public transport services such as trains, buses, or trams to reduce the walking distance. It should be noted that the new Pitt Street Metro Station that sits beneath the site and the new Sydney CBD and South East Light Rail in close proximity (see Figure 3-15) will increase the accessibility to public transport and replace the need for intermediate travel modes.

Regarding the public transport options, as the new metro station (Pitt Street North) will be located directly below the development (OSD North), it is assumed that the Metro specific mode share will be approximately 25%, which is in line with the Stage 1 of the pedestrian modelling assessment undertaken for Pitt Street Metro. Furthermore, the mode share of the new light rail has been assumed to be 4%, based on estimated uptake due to the proximity of the development. Ferry as a further option of public transport has been kept at 2%, as no increase in patronage is expected there due to the distance of the ferry terminals from the site. As a consequence, the train and bus mode shares were reduced to 35% and 18% respectively.

As the parking provided within the North OSD development is limited to a total of 40 parking bays, the mode share for car as a driver is estimated to be generated from occasional use for specific trips. The proportion will be considerably less than the current trend (12%). This reduction is likely to cause a mode shift towards public transport and active transport, given the high accessibility available at the site.

Similarly, the primary transport mode for visitors and customers are likely to be via active or public transport, with a similar mode share as work trips.

Overall, with the parking control planned in the vicinity (maximum parking rates recommended by the Sydney LEP 2012) and the very high accessibility to public transport and walkable destinations, a substantial proportion of work trips generated by the North OSD development are estimated to commute via public transport and active travel modes.

With respect to the active transport options, as mentioned in Section 3.4, the development is targeting a significant shift in mode share for cycling. The development allows for a total of 531 bicycle parking spaces in line with the Sydney DCP requirements. It is that 200 bicycle spaces are provided upon opening of the development, with allowance for additional bike parking spaces to be built as demand increases, to the maximum number in line with the DCP 2012 bike parking requirements. The provision for 200 bicycle spaces upon opening corresponds to a mode share of 4% for cycling based on the estimated number of staff with the development fully occupied, which is approximately and increase of 300% from the 2016 mode share value. This has been considered based on the current journey to work trends from 2016 Census mode share statistics for the Sydney SA2 where the development site falls. Due to the close proximity of the OSD South development and surrounding changes in land use, the mode share for walking was slightly increased to 7%.

The mode share by taxi was added to ‘car as passenger’, taking on a value of 3%, which contains taxi as well as ride share and ride hailing options. There are currently 2,227 bays available to public, located within 400m from the site, with various parking fees required. Additionally, on-street parking spaces are available in the surrounding network, with parking metered and limited for set maximum parking durations. However, as only 40 unlimited car parking bays are provided within the Pitt Street North OSD development, the mode share for ‘car as a driver’ for employees working within the building is estimated to be generated from the full utilisation of these car bays only. Although no parking for motorbikes or scooters is provided within the

development, this mode share was kept at 1%, assuming there will be a low number who will travel via scooter or motorbike but utilise the nearby public parking facilities.

5.2 Traffic generation and road network impacts

The development includes a total of 40 parking bays for commercial tenants and seven service vehicle bays. As discussed in Section 4.2 and 4.3, the development is forecast to generate approximately 14 vehicle trips/ hour and 8 service trips / hour during peak periods. Given these low trip volumes, the impact of any new primary trips generated by the development is considered negligible within the wider road network, and is an improvement compared to the previous land uses.

The pick-up and drop-off demand is unlikely to be substantial, given the ABS 2016 Census indicated only 2% of commuters who lived within Sydney arrive at work via car as a passenger.

5.2.1 Private Vehicle Use Assessment

The development will provide limited parking provision of 40 parking bays for use by tenants. Due to the limited nature of parking spaces, these bays are likely to only be utilised by a specific group of users. Access to the private vehicle car park is via a dedicated automatic car lift which is further discussed in Section 4.2.1.

5.3 Pedestrian Assessment

The existing and potential future pedestrian infrastructure within Sydney CBD is as illustrated in Section 3.6.6. As most of the trips generated from the site are estimated to travel via walking or other transport modes that require walking from/to the site (see Section 5.1), the pedestrian demand is estimated to be the main mode of travel occurring directly to/from the development.

A modelling assessment was initially undertaken by METRON and updated by Aurecon to reflect the latest station and precinct design to assess the potential impact by/to pedestrians. This assessment was documented in the *Pedestrian Modelling Report*, dated 28 January 2020 and included as part of the Station SSD DA application. The modelling assessment includes the pedestrian trip generation and movements that are likely to result from the Pitt Street Metro Station and OSD developments (including South OSD).

The pedestrian modelling assessment included a review of the footpath capacity of the network within the vicinity of the Pitt Street Metro station. This includes the pedestrian entry / exit points within the North OSD development on Park Street and Pitt Street. The analysis adopted a 2036 peak hour scenario with 0.85% annual background growth forecast from 2015 existing demands. The impact and operation conditions of the footpaths are measured as Fruin Pedestrian Level of Service (LoS) Criteria in two aspects; walkway and queueing, as illustrated in Table 5-2. The outputs were assessed against the design requirement of a minimum performance of LoS C. The result outputs for the surrounding network are as presented in Figure 5-1 and Figure 5-2 for the AM peak and similarly Figure 5-3 and Figure 5-4 for the PM peak.

Level of service	Description (for queuing areas, walkways and stairways)
A	Free circulation.
B	Uni-directional flows and free circulation. Reverse and cross-flows with only minor conflicts.
C	Slightly restricted circulation due to difficulty in passing others. Reverse and cross-flows with difficulty.
D	Restricted circulation for most pedestrians. Significant difficulty for reverse and cross-flows.
E	Restricted circulation for all pedestrians. Intermittent stoppages and serious difficulties for reverse and cross-flows.
F	Complete breakdown in traffic flow with many stoppages.

Table 5-2: Level of service description (source: London Underground – Station Planning Standards and Guidelines 2012 Edition)

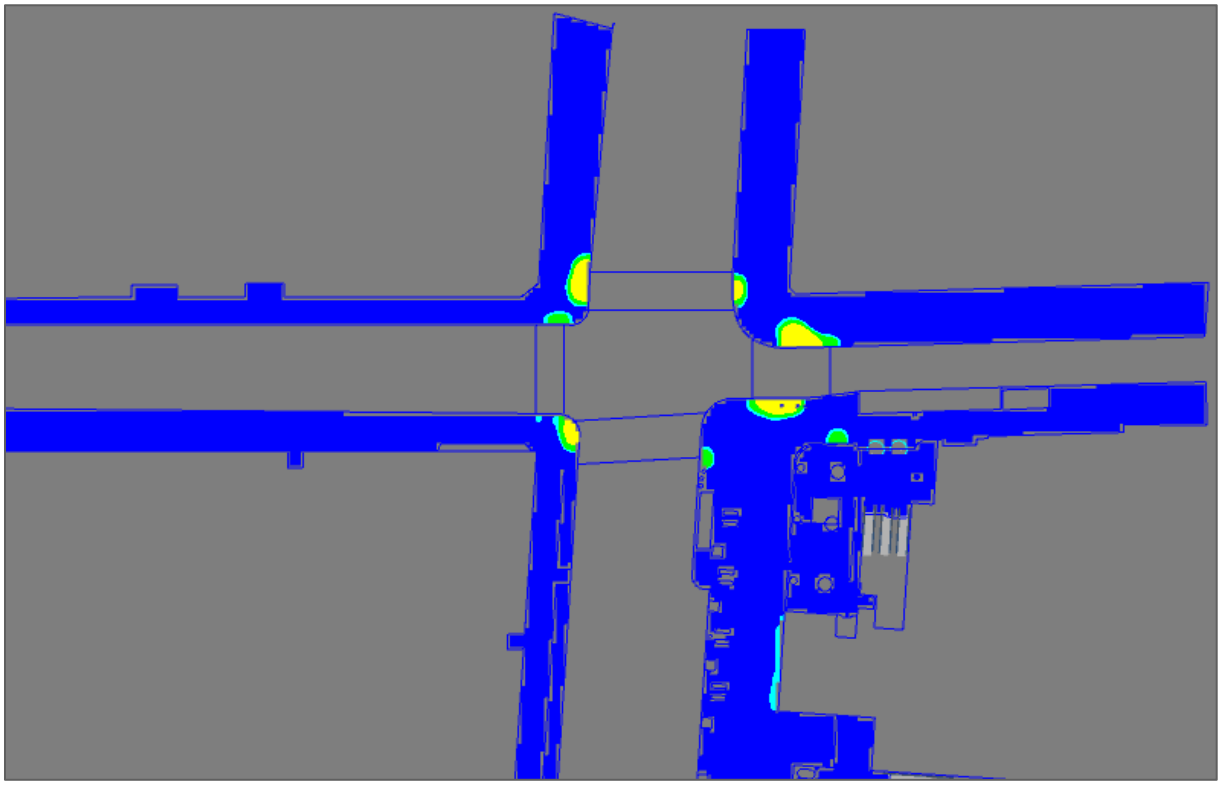


Figure 5-1: Pitt Street Precinct Area – Pitt St / Park St Intersection Level of Service (2036 AM) - Fruin Queuing LoS Map

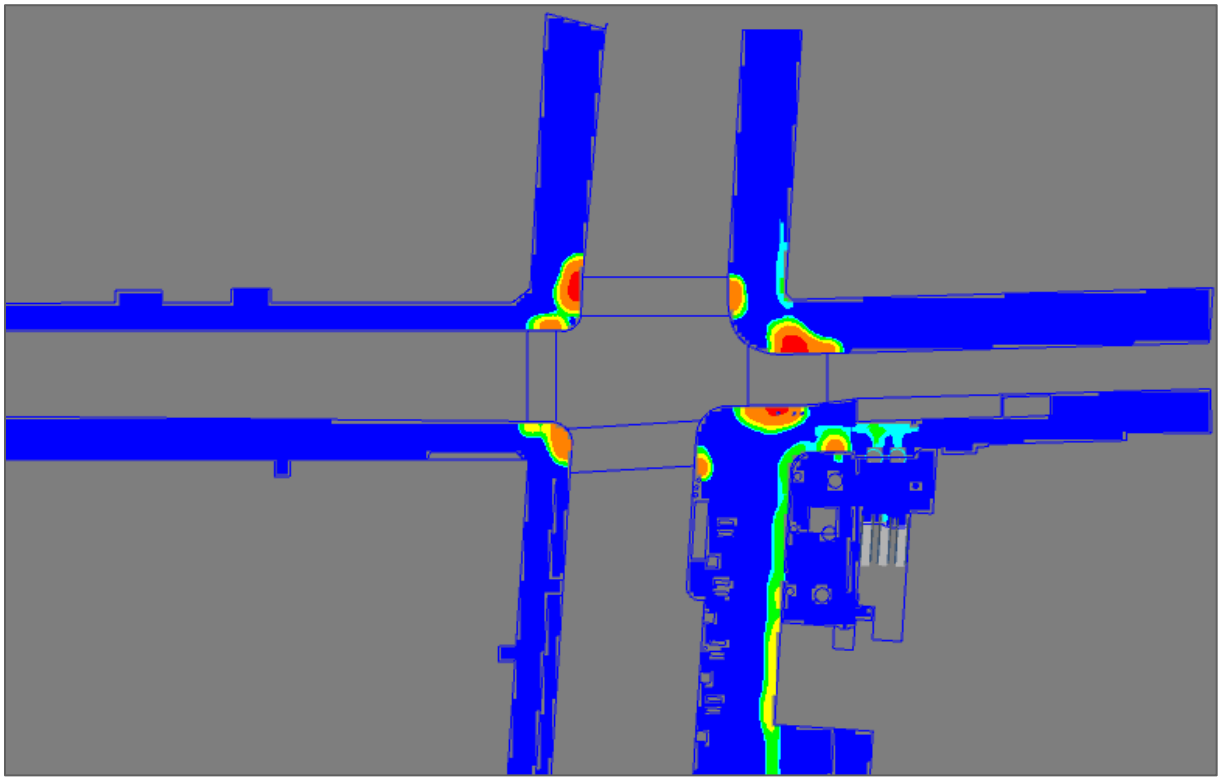


Figure 5-2: Pitt Street Precinct Area – Pitt St / Park St Intersection Level of Service (2036 AM) - Fruin Walkways LoS Map

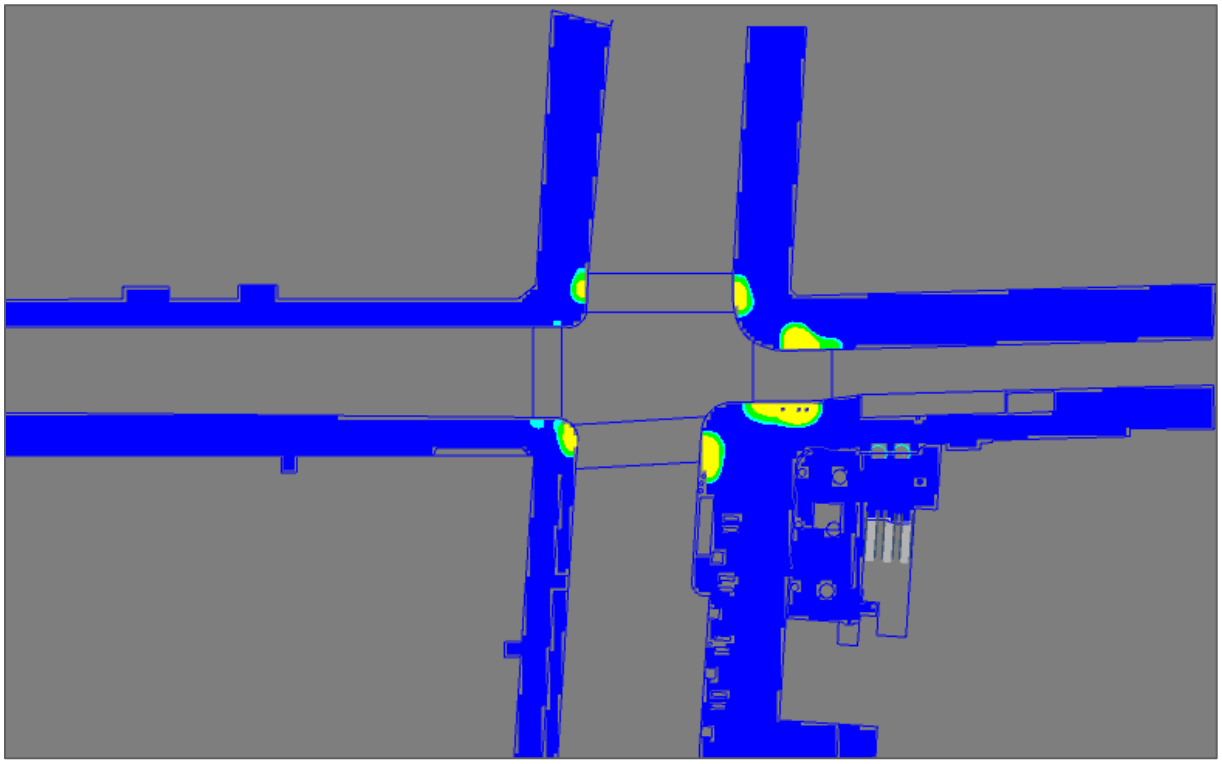


Figure 5-3: Pitt Street Precinct Area – Pitt St / Park St Intersection Level of Service (2036 PM) - Fruin Queuing LoS Map

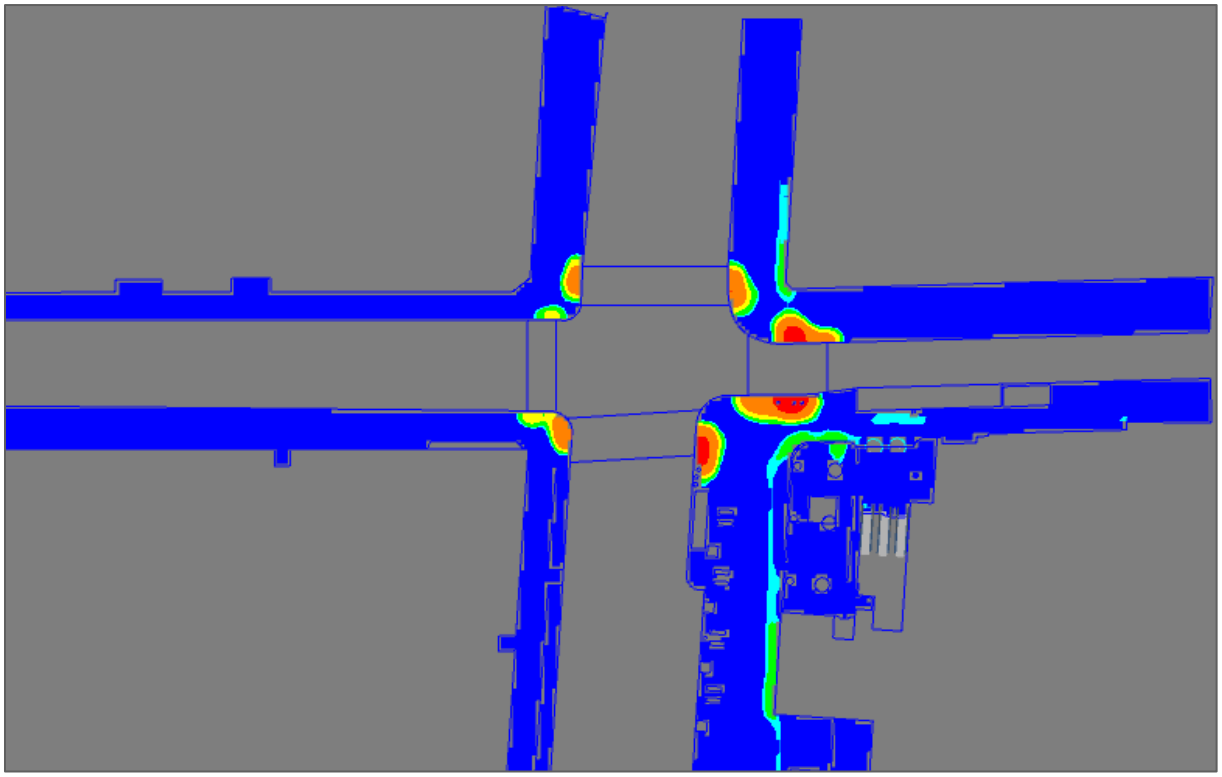


Figure 5-4: Pitt Street Precinct Area – Pitt St / Park St Intersection Level of Service (2036 PM) - Fruin Walkways LoS Map

From the AM and PM peak queueing analysis, it identified that pedestrians experience up to a Queueing LoS D and this highest level occurs at the Pitt Street / Park Street intersection. The report has suggested that the high densities could be reduced by modifying the signal cycle times and changing the signal phasing/timings to favour pedestrians, noting that the Park Street / Pitt Street intersection is being widened to 10.0m as part of the Station Precinct Development.

For the AM and PM peak walkway analysis, the footpaths along the corridors are observed to generally experience Walkways LoS A to LoS C, while at some isolated areas, the pedestrians experience drops to a LoS D. Overall the pedestrian performance is considered satisfactory and the North OSD development

entries along Pitt Street, Park Street and Castlereagh Street are not estimated to affect general footpath operations in the immediate surrounds, or the Pitt Street North Metro Station operations.

5.4 Public Transport Assessment

As illustrated in Section 3.6, the North OSD site is currently highly accessible by public transport. The site is located within the centre of Sydney CBD and is accessible (within 400m radius) to high frequency public transport services including buses, trains and light rail. Accessibility to public transport will be further increased with the new Pitt Street Metro Station directly beneath the site, which will significantly shorten the travel distance to public transport services for tenants and visitors and will provide an average service frequency of 4 minutes throughout the day. In addition, the recently opened Sydney CBD and South East Light Rail service has one of its stops (Town Hall) within 400m of the proposed development, which will provide another public transport option for development tenants and users. Overall, the site is accessible to numerous public transport options and this is expected to be the primary travel mode for most tenants and visitors. Therefore, the development is considered to offer high levels of public transport accessibility and connectivity.

5.5 Cycling Assessment

The site is situated within the centre of Sydney CBD which presently has some cycling infrastructure, which will be further enhanced following construction of the planned cycling infrastructure, with the most notable of these the cycleway along Castlereagh Street. A Green Travel Plan has been prepared as a separate document in SMCSWSPS-AUR-OSN-EM-REP-000002to encourage and ensure the tenants are aware of the alternative transport options that are available within the vicinity of the site.

5.6 Taxi facilities and pick-up / drop-off operations

As described in Section 3.5, existing taxi ranks are available at the site's frontage along Pitt Street. These can be used to facilitate any pick-up and drop-off demand from the site. Rideshare services such as Uber and Ola can also be accessed from the site via the adjacent on-street public facilities on the adjacent corridors. As shown in Figure 5-5, there are parking spaces, loading zones, and mail zones spaces available on all surrounding road corridors.

Figure 5-5: On-street public parking and loading facilities available at the site's frontage (basemap: Bing Map)

6 Summary and Conclusion

The aim of this study was to assess the transport related impacts of the development; Pitt Street North OSD. The development comprises of 39 floors, 52,951m^2 of commercial space, 1,700m^2 of retail space (the combined commercial and retail total GFA is 54,651m^2), and seven service bays in a dedicated loading dock area.

The following summarises the transport impacts of the development:

- **Public Transport:** The site is situated within the centre of Sydney CBD and is accessible (within 400m radius) to high frequency public transport services including buses and trains. With the high frequency service operating from the Pitt Street Metro Station, which will be directly beneath the site, the travel distance and time to public transport services for tenants and visitors will be shortened. The recently opened Sydney CBD and South East Light Rail service has one of its stops (Town Hall) within 400m of the development. There are also three heavy rail stations located within 400m radius from the site, with Town Hall Station sits closest to the site. This provides another public transport option for the development. Overall, the site is accessible to numerous public transport options and is estimated to be the primary travel mode for most tenants and visitors.
- **Cycling:** According to City of Sydney's Cycleway map, both the adjacent Pitt Street and Castlereagh Street are classified as "direct routes with higher traffic". These routes are considered to be the most direct route to access major land uses within the CBD, and provide connection to other cycling infrastructure. There are numerous public bicycle parking spaces provided within the Sydney CBD, as well as in close proximity to the development. This is estimated to encourage the use of bicycles by tenants of the development for shorter trips within the City of Sydney.
- **Bicycle Parking:** The opening year (2024) of the development will provide 200 bicycle spaces, with allowance for additional bike parking spaces to be built as demand increases, to the maximum number in line with the DCP 2012 bike parking requirements. The 200 bike parking bays is equivalent to a 4.1% cycle mode share which is an increase from the baseline 1.4% (based on the 2016 Census).
- **Pedestrians:** Assessment of the Pedestrian access to the North OSD Development has been undertaken as part of the Pitt Street Metro Development Application which formed part of the Critical State Significant Infrastructure (CSSI) submission. The dynamic pedestrian modelling integrated the metro station, the precinct and both the North and South OSD development. The report has concluded that the pedestrian level of service is generally satisfactory.
- **Private Vehicle Parking:** The development provides a total of 40 parking bays for commercial tenants only via a car stacker with two car lifts.
- **Private Vehicle Use:** The development is estimated to generate less than 40 vehicle trips during the road network peak periods. With this minimal number of trips, the development is an improvement to the road network compared to the previous land uses.
- **Loading Dock Provision and Operation:** The North OSD has been designed to integrate with the Pitt Street Metro Station. The North OSD development will provide seven loading dock spaces on the ground level of the loading dock and three B99 vehicle spaces within the automatic car stacker to accommodate the longer dwell times of B99 vehicles. The seven loading dock spaces on the ground level include a dedicated Sydney Metro bay within the loading dock facility. Through a managed approach, the seven bays are estimated to be able to manage the demand estimated for the North OSD. A Service Delivery Plan has been included in Appendix A.

Appendix A: Delivery Service Plan

Pitt Street North OSD

Service Delivery Plan

(Appendix A)

Pitt Street Developer North Pty Ltd

Reference: 507262

Revision: C – Issue for DPIE

23 June 2020

aurecon

Bringing ideas to life

Document control record

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Current revision		**C – Issue for DPIE**				

Approval			
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Title	Senior Transport Engineer	Title	Associate – Transport Services

Contents

1 Introduction

The purpose of this document is to provide context associated with the service delivery plan for North OSD as defined during the Pitt Street Over Station Development North Stage 2 Design process. The information provided in SMCSWSPS-AUR-OSN-TF-PLN-000001 provides detailed information to the referenced information provided in this Service Delivery Plan.

1.1 The Site

The site is located within the Sydney CBD. It has three separate street frontages, Pitt Street to the west, Park Street to the south and Castlereagh Street to the east. The area surrounding the site consists of predominantly commercial high-density buildings and some residential buildings, with finer grain and heritage buildings dispersed throughout.

The site has an approximate area of 3,150.1sqm and is legally described as follows:

- 252 Pitt Street (Lot 20 in DP1255509)

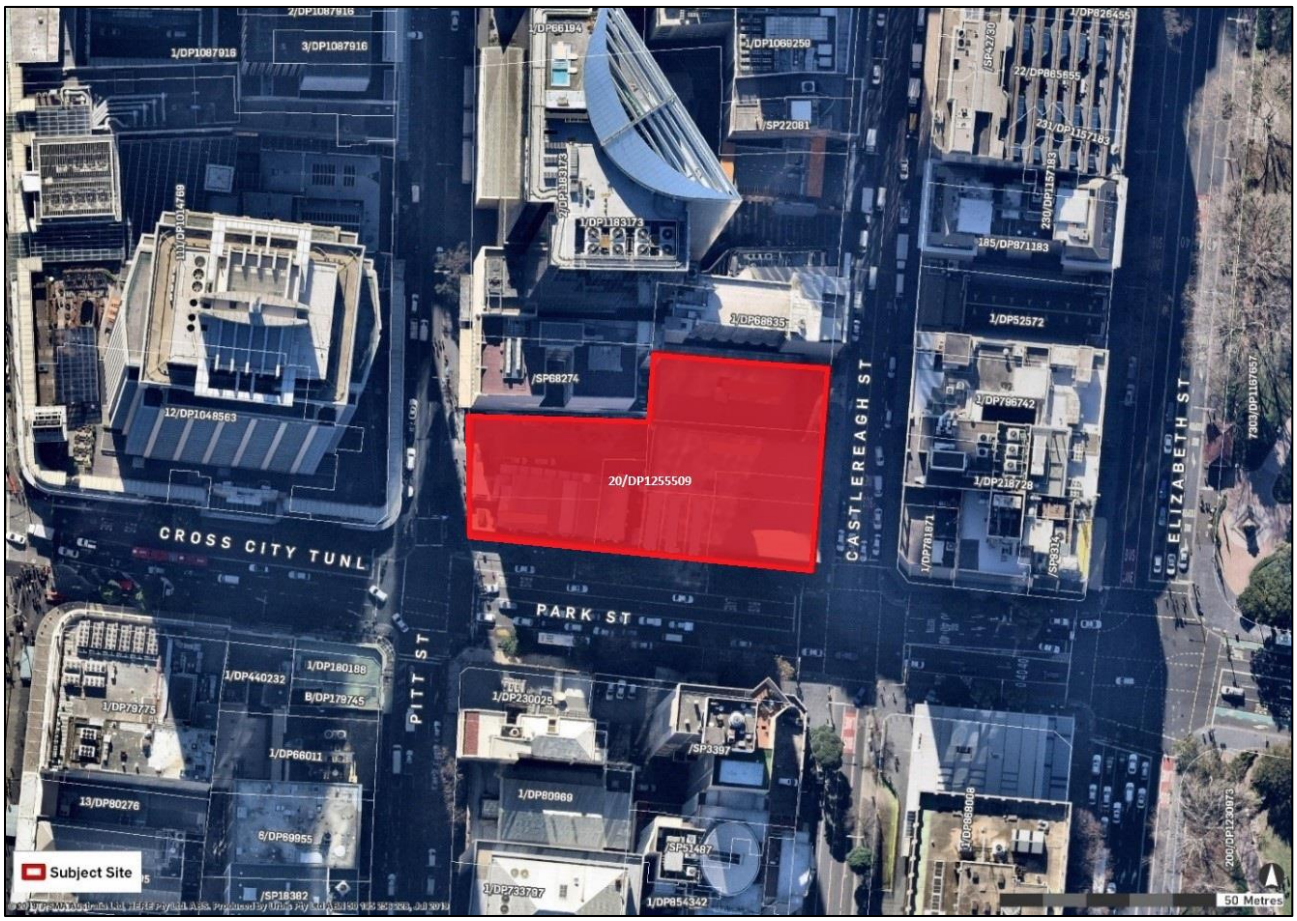

Figure 1-1: Location Plan (Source: Urbis)

2 North OSD Vehicle Access

2.1 North OSD Vehicle Access Overview

The North OSD is proposed to have only one vehicle access which includes access to the loading dock and the dedicated car parking for the site. This access will be located on Castlereagh Street with only right-in and right-out movements on the east side of the site as shown in Figure 2-1 below. The access is to be shared between the tenants parking and the service vehicles.

The loading dock is a shared facility between the North OSD and Sydney Metro Station. A loading dock booking system will be maintained to ensure the Sydney Metro operator has unimpeded access to the loading dock at all times for servicing and maintenance.

The lobby entrance on Pitt Street will provide pedestrian access for North OSD tenants and visitors. Retail access to various retail hubs is available via Pitt Street, Park Street, and Castlereagh Street as shown in Figure 2-1.

Cyclists will access the development via a dedicated access off Castlereagh Street as indicated in Figure 2-1 to use the End-of-Trip (EoT) lifts to access the bicycle parking facilities on level 1.

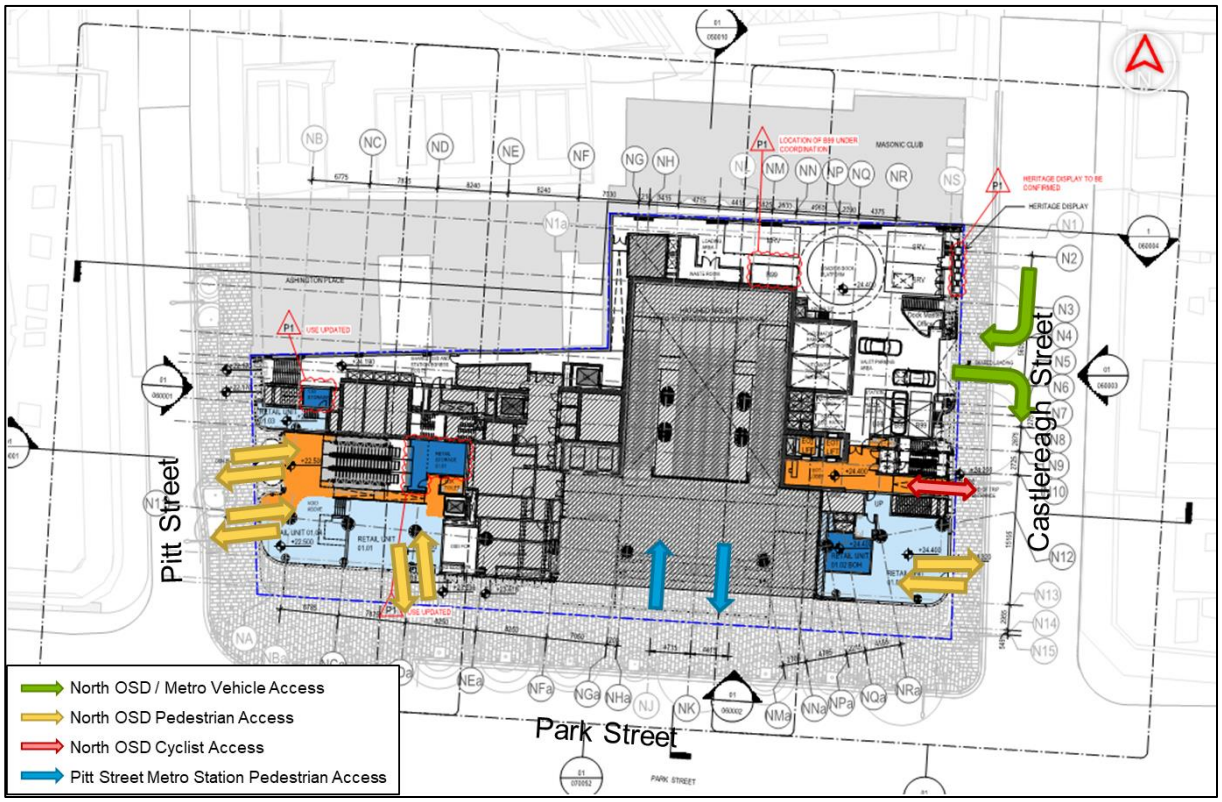

Figure 2-1: North OSD access locations on the ground floor (Reference: SMCSWSPS-FOS-OSN-AT-DWG-030013 Rev P1)

2.2 Automatic Car Lift

Access to the commercial parking is provided from Castlereagh Street and shown in Figure 2-2. There are two dedicated automatic car lifts available for a total of 40 car parking bays stacked over three levels. The 40 bays will be utilised by commercial tenants only and no public parking has been allowed for at North OSD.

Prior to access to use the automatic car lift, the specific commercial tenant will need to undertake an induction on '*How to use the Automatic Car Lift'* which will provide them access to the car lift. The induction will cover critical components around where the driver should stop the car and how access the car lift will be undertaken, including any after hour restrictions that may be imposed by the building operations.

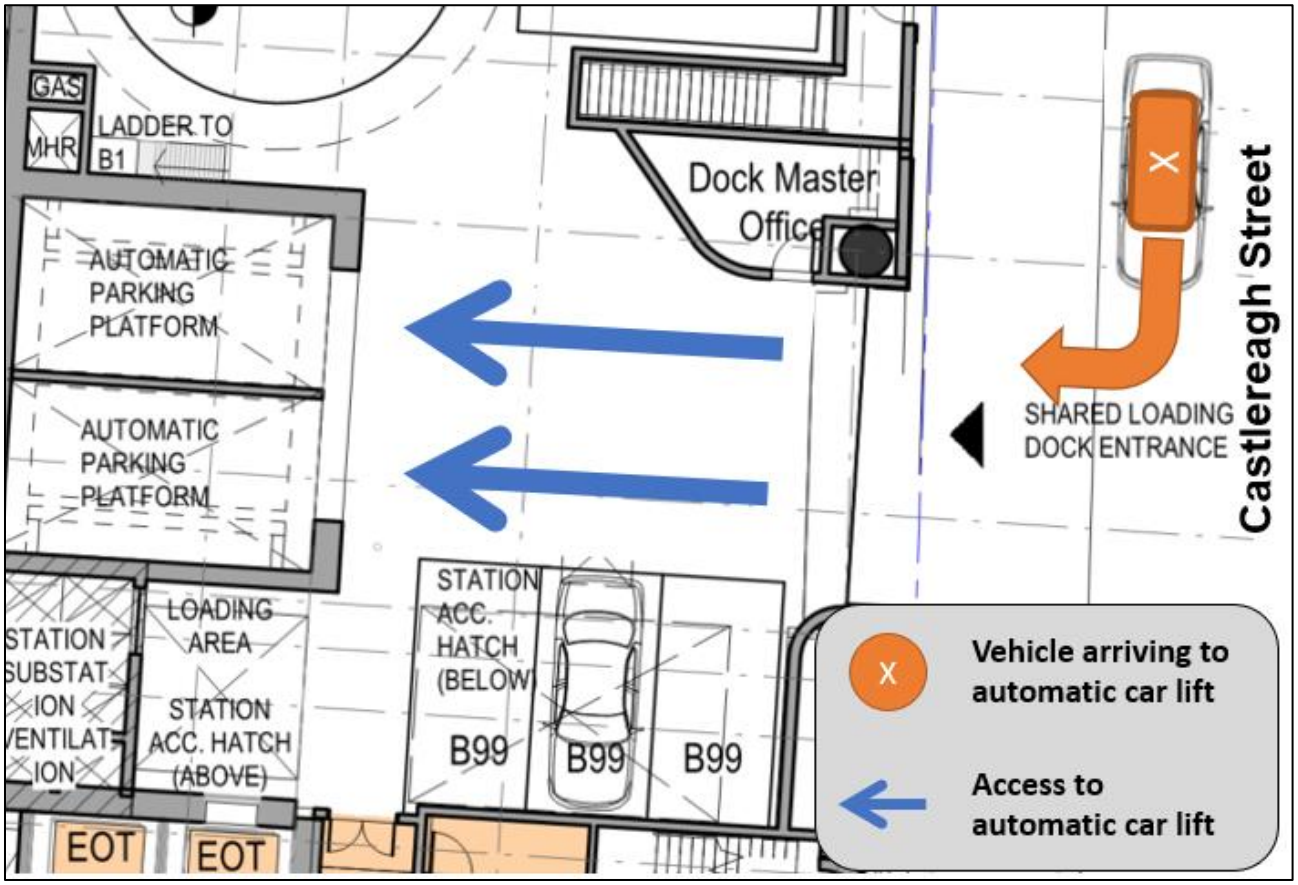

Figure 2-2: North OSD Automatic Car Stacker Commercial Vehicle Access

The assumptions associated with the automatic car lift have been provided by the automatic car lift manufacturer as noted in Table 2-1. To assess the potential vehicle queue that may occur at the automatic car lift, each individual stage of the vehicle journey has been considered to estimate the service rate of the automatic car park lift and its operations. As a worst-case scenario, assessment for the car lift has assumed the commercial tenant is required to vacate their car.

Table 2-1: Automatic Car Lift Assumptions

Item	Assumption	Comment
Average time taken for drivers to exit/ enter the lift from waiting area (i.e. parking the car inside the lift).	30 seconds	Assumed as the average time. If additional time is required, it is assumed that if the adjacent B99 bays are available that these will be used. In addition, for DDA compliance, these adjacent B99 bays will be used and require the loading dock master to assist.
Once the vehicle is within the lift, the average time taken for the driver to exit / enter the vehicle in the lift.	30 seconds	Assumed as the average time.
Average time taken for the driver to send the lift using the digital screen.	30 seconds	Assumed as the average time.
Lift service rate for a single lift	21 vehicles/ hour	Provided by car lift manufacturer.

With two automatic car lifts in operation, the service rate is assumed to double with the use of both lifts, equating to a total of 42 vehicles per hour which is greater than the available number of commercial parking bays.

As OSD North is a commercial site, it is assumed that during the AM peak usage of the lifts will be for inbound flow, and similarly for the PM peak usage of the lifts will be predominantly for outbound flow.

As part of the overall loading dock capacity and analysis, the development trips for the car stacker for the AM peak hour may range from 13 – 26 vehicles. For the analysis of the typical automatic car stacker access, the more conservative approach of 26 vehicles during the AM peak hour has been assumed. As the commercial car parking will be predominantly accessed in the AM peak as commercial tenants arrive to work in the

morning, all 40 bays are assumed to be occupied in line with a typical 'start of a working day' for the AM peak between 6 – 9am with a peak hour between 7 – 8am and shown in Figure 2-3. The departure of vehicles from the automatic car stacker is assumed with the typical 'end of day' between 4 – 7pm, where the peak hour is from 5 – 6pm.

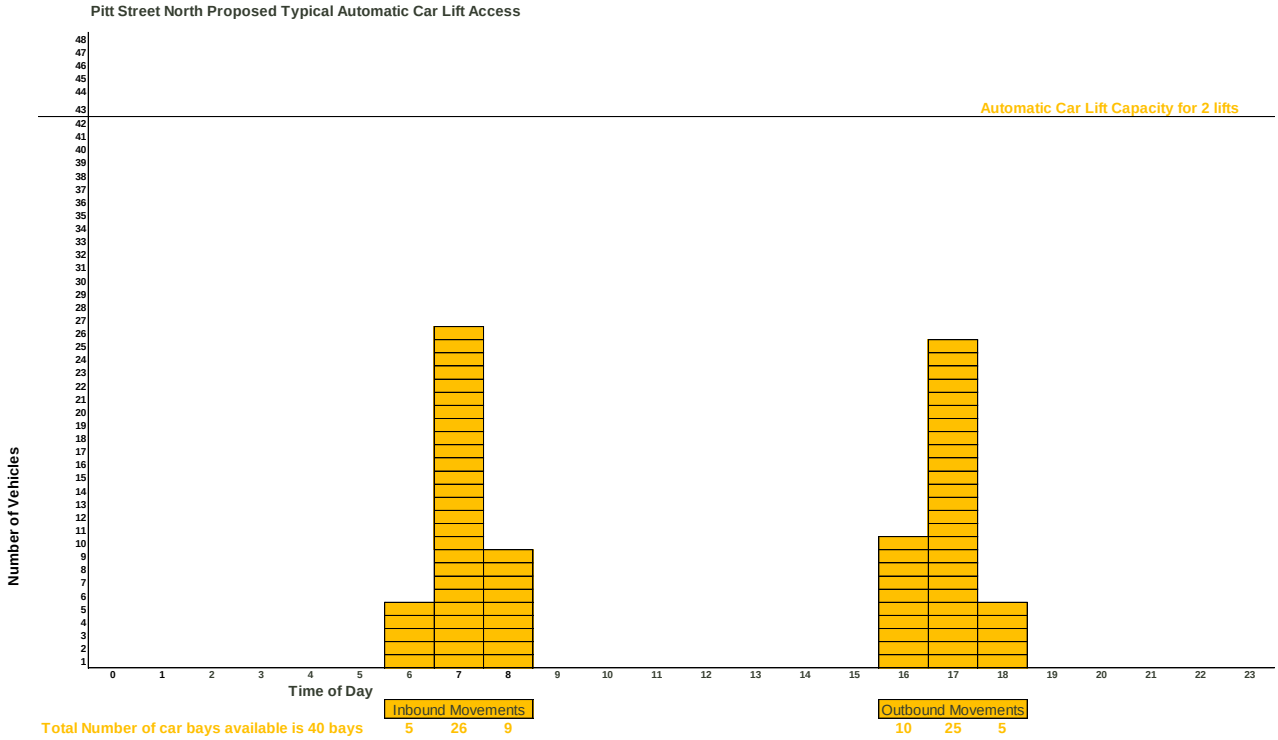

Figure 2-3: Typical Automatic Car Lift arrival profile for Pitt Street North

The typical automatic car stacker arrival profile as shown in Figure 2-3 has been used when assessing the overall loading dock capacity.

Based on the arrival rates, the estimated demand for the automatic car stacker has been assumed as 26 vehicles/ hour for the inbound AM peak. This is equivalent to 2 cars arriving every 4 to 5 minutes.

The closest signalised intersection to the North OSD loading dock is Market Street and Castlereagh Street. It is assumed that during the AM peak, this signalised intersection has a total cycle time of 110 seconds, and similarly for the PM peak. Both Market Street and Castlereagh Street are one-way streets, as such the likelihood of vehicles arriving can either be equally distributed which equates to a vehicle arriving approximately every minute, or dominant for one approach only which equates to a vehicle arriving approximately every two minutes. Based on the arrival profile for commercial vehicles noted earlier, two commercial vehicles are likely to arrive every 4 to 5 minutes during the peak hour, which is accommodated within 2 signal cycle times at the Market Street / Castlereagh Street intersection and also accommodated by the two automatic car lifts.

To further supplement the commercial tenant queuing, based on the queueing theory outlined in *Austroads Guide to Traffic Management Part 2: Traffic Theory*, Table 2-2 summarises queueing probabilities as estimated for two lifts for the peak inbound AM Peak demand of 13 vehicles/ hour (summarised in Table 2-2). Based on this, the 95th percentile queue for the two automatic car lifts is estimated as 2 vehicles in queue, which can be accommodated as one vehicle per automatic car lift within the overall design.

Table 2-2: Queuing Probabilities based on queuing theory outlined in Austroads Guide to Traffic Management

Vehicles in Queue	0	1	2	More than 2
Probability	69%	21%	7%	3%

As shown in Figure 2-4, the area within the OSD North loading dock on approach to the automatic car lift is estimated to hold up to four B99 vehicles without impacting the Castlereagh Street public domain. It should be noted that this does not include the two vehicles already using the automatic car lift. As such, the

automatic car lift is not estimated to have a significant regular impact on the adjacent corridor or access to the loading dock via Castlereagh Street including the pedestrian footpath.

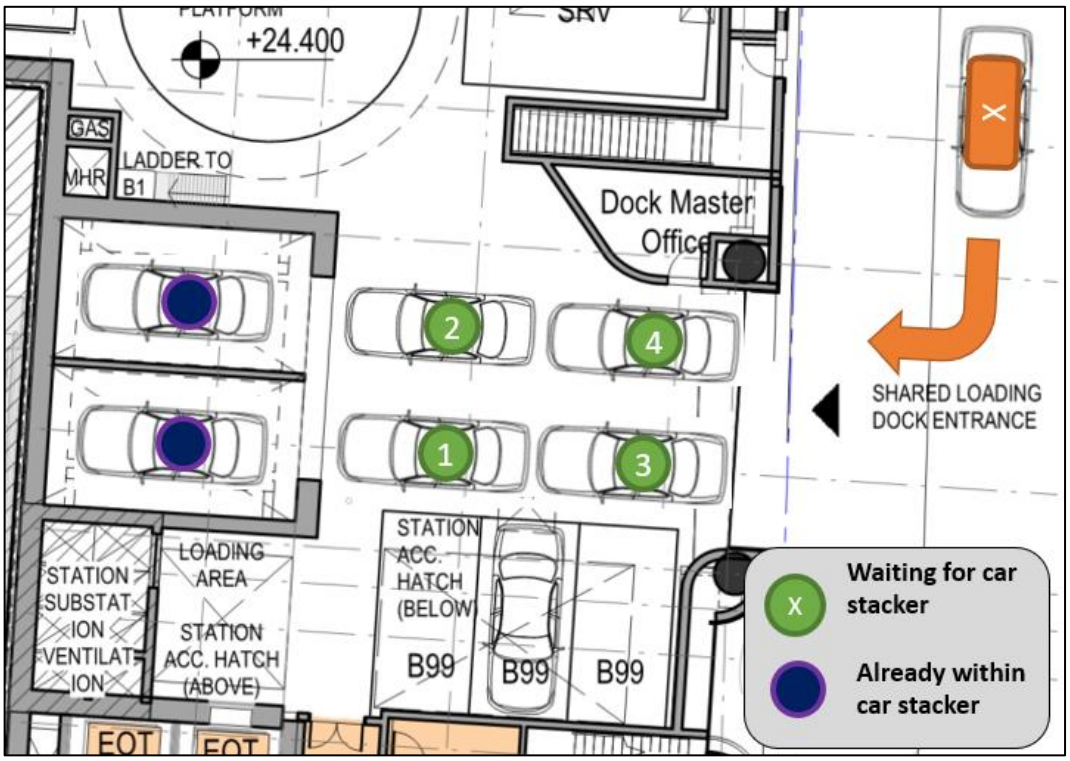

Figure 2-4: North OSD automatic car stacker available queuing space for vehicles (B99)

Furthermore, with the 4 to 5 minute arrival internal to the loading dock during the AM peak for the estimated 26 vehicles, and the operation of each car lift allowing access every 3 minutes, (or with the two lifts this improves access for vehicles to every 1.5 minutes), there is a high probability that the commercial vehicle will be able to arrive and access the automatic car lift with minimal queuing required. The probability of more than two vehicles arriving at the same time is 3% which, over the hour equates to 2 minutes which is likely to clear up before the arrival of the successive vehicle to use the loading dock.

Direct liaison between the commercial tenant and the loading dock master will be beneficial in ensuring minimal impact to the overall loading dock operations. This may be undertaken by providing the commercial tenant with a remote-control dongle or a phone application, which when activated, not only signals to the loading dock master that the automatic car lift is going to be in operation, but it also manages any vehicle queuing of the loading dock to occur off street (i.e. within the loading dock), and not on street (i.e. outside of the loading dock) due to possible conflicting vehicle movements between a loading dock vehicle and a commercial vehicle.

The impact of the use of the automatic car lift on the loading dock use is further discussed in Section 2.3, and proposed operation of the automatic car lift and communication to the commercial tenants is further summarised below.

While the estimated queue that may result from the automatic car stacker will be kept within the development, there is the possibility this may still impact on the loading dock performance as service vehicle movements may at times be restricted. As such the strategy proposed for the operation of the loading dock considers a nominal time period when the arrival of commercial tenants to use the automatic car stacker is likely to occur. A typical arrival profile of the 40 commercial bays has been shown in Figure 2-3 which shows the peak arrival of up to 26 vehicles during a peak hour.

As such a nominated 2-hour period (between 7am – 9am) is proposed where no bookings for the loading dock will be accepted. Although there is no formal booking facility available for loading dock operations, there is contingency within the loading dock and arrival of the commercial tenants to the automatic car stacker to accommodate arrival and departure of loading vehicles such that in the event that a vehicle arrives at the loading dock without a booking, it can still access the loading dock, however the online booking facility is not proposed during this time (except for Sydney Metro Bay access).

The North OSD designers of the automatic car lift have indicated that in the event that the automatic car lift breaks down it will be approximately one week (worst case) for the car lift to be operational again. As part of the loading dock management plan, operational measures will be put in place to minimise any disruption for all loading dock users. During the event that one of the automatic car lifts breaks down and requires serviceability, the peak volume of 26 vehicles per hour will exceed the capacity of one lift. During an event where an automatic car lift has broken down, the commercial tenants will be informed, and encouraged to arrive during the adjacent hour, when access capacity will be available for the car stacker. As no bookings are available during the nominated two hours in the AM peak, this is estimated to have a minimal impact on loading dock operations.

2.3 Loading Dock and Service Vehicles

The development will provide a total of seven on-site service vehicle bays with the bays designed to mainly accommodate the vehicle types below:

- 1 x Metro operational bay (B99, 99th percentile of class of cars);
- 3 x light commercial vehicles (B99, 99th percentile of class of cars);
- 2 x Small Rigid Vehicle (SRV);
- 1 x Medium Rigid Vehicle (MRV); and
- 3 x light commercial vehicle bays within the automatic car stacker (B99, 99th percentile size of cars).

The indicative location of each of the loading dock service bays within the loading dock is shown in Figure 2-5 (it should be noted the image reference used for this image is an older drawing but the location of the proposed parking bays within the loading dock remains unchanged).

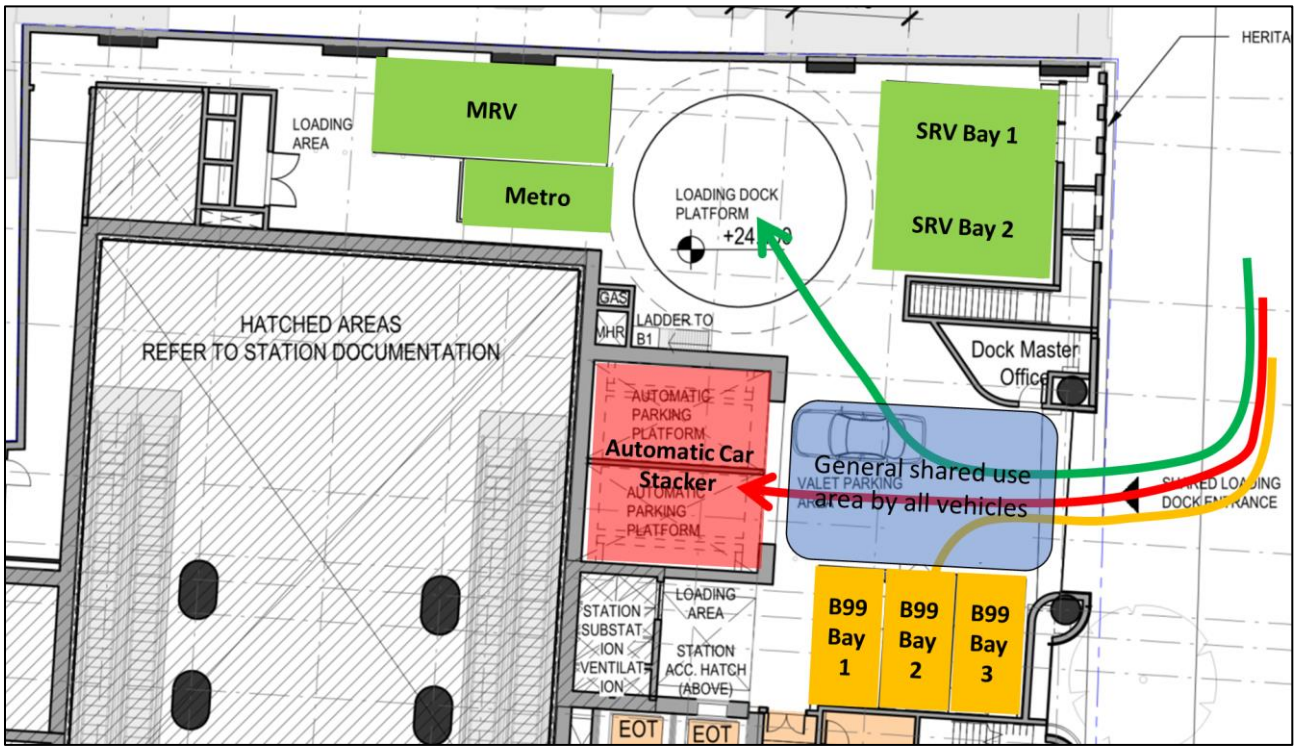

Figure 2-5: North OSD Loading bay locations (note: the image reference used for this image is an older drawing but the location of the proposed parking bays within the loading dock remains unchanged)

Within the loading zone there is a 'general share use area', highlighted blue, which will be used by all vehicles using the loading dock. This includes the commercial tenants who will access the automatic car stacker (highlighted in red), the B99 bays at the southern section of the loading dock for service deliveries (highlighted in orange), and larger vehicles and the Metro Bay in the northern section of the loading dock (highlighted in green).

2.3.1 Loading Dock Service Bay Typical Demand Profile

The North OSD loading dock is estimated, but not limited to the following services via the loading dock bays:

- Grocery deliveries (regularly);
- Goods deliveries for retail (weekly);
- Furniture delivery (prior to opening and rarely occurring after opening);
- Waste collection (daily);
- Cleaning and maintenance service (regularly);
- Building maintenance service (occasionally);
- Mail and parcel delivery (daily where arrival is irregular and difficult to manage); and
- Sydney Metro transformer replacement service (emergency).

The loading dock assessment (excluding the automatic car use) has considered the typical daily maximum number of loading dock vehicles for the proposed land use (including commercial and retail), alongside an hourly maximum number.

Based on research including the Institute of Transport (ITE) trip generation handbook 1992, a local Sydney CBD research study presented at the AITPM National conference, alongside recent development applications in the Sydney CBD including the Sydney Metro Martin Place OSD, for a development of the size of North OSD, between 14 and 17 peak hour service vehicle trips are estimated, with the daily maximum number of vehicles estimated as 101 vehicles per day.

The operation of the loading dock for OSD North can accommodate up to a maximum of 17 vehicles per hour based on operational procedures (this is further explained in Section 4.3.4 below). As such, the loading dock facility is estimated to have sufficient capacity to cater for a peak demand for deliveries, which reduces the risk of external on street loading facilities being used.

There are likely to be periods where the loading dock may operate at a maximum hourly demand of 17 vehicles per hour and outside of these periods the loading dock is likely to operate at a lower demand (i.e. less than 17 vehicles per hour), totalling to a maximum of 101 vehicles per day.

The proposed typical loading dock bookings for the ground floor loading dock bays is shown in Figure 2-6 (excluding the use of the Sydney Metro bay or the three additional bays within the car stacker which are accounted for as part of the automatic car stacker analysis). The capacity of the loading dock, shown as a solid green line, accounts for the typical arrival and departure of the commercial tenants via the automatic car stacker (shown in Figure 2-3). The typical loading dock bookings shows that there is capacity within the loading dock to reach the maximum capacity of 17 vehicles per hour. The total number of proposed typical loading dock bookings is summarised at the base of the table where a maximum of no more than 12 vehicles per hour are proposed for the typical loading dock booking period.

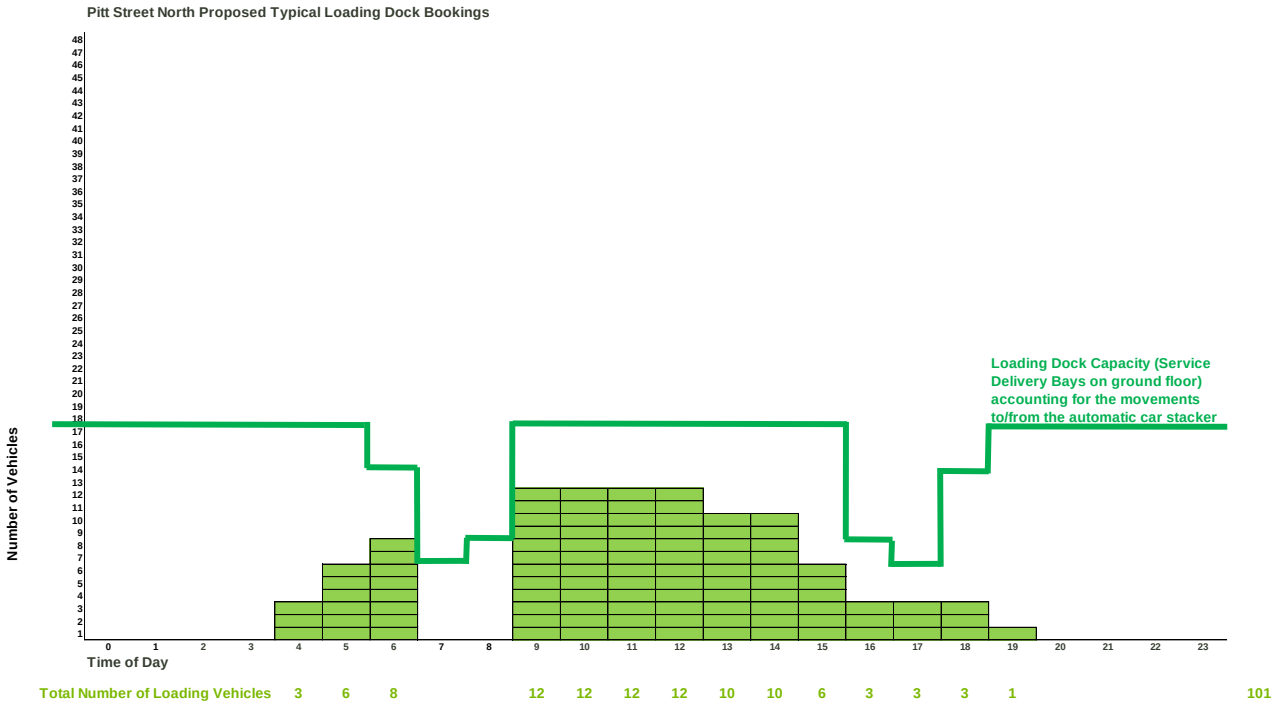

Figure 2-6: Typical Loading Dock Bookings arrival profile for Pitt Street North

As shown by the solid green line in Figure 2-6, the peak service delivery vehicle period where up to 17 vehicles are able to use the loading dock based on a upper managed limit for the loading dock, is proposed to fall outside the period where the highest movement for the automatic car lift is estimated. Within the time where the highest movement for the automatic car lift occurs (assumed to be 7 – 9 am), it is recommended that the online booking facility accepts no bookings during this time (except for Sydney Metro Bay access). Although there is no online booking facility proposed between the assumed 7 – 9am, there is allowance for contingency within the loading dock to accommodate arrival and departure of loading vehicles such that in the event that a vehicle arrives at the loading dock mistakenly during the two hours where the highest movement of vehicles is assumed for the automatic car lift, the loading dock vehicle can still use the loading dock, with no greater than 6 – 8 service vehicles accessing the loading dock during the peak 7 – 9am time period.

To accommodate the provision of loading dock vehicles which require longer dwell times, access to three B99 bays has been allowed for within the automatic car stacker and access to these will also be booked via the loading dock booking system.

With the booking system in place for managing the arrival and departures of the loading dock requirements, a typical loading dock booking activity profile is shown in the diagram below combining the use of the loading dock and the commercial tenant access to the automatic car stacker. As noted earlier , a delivery exclusion period during the peak commercial tenant arrival (i.e. 7 – 9am) is proposed and there is contingency within the loading dock to accommodate the arrival and departure of loading vehicles such that in the event that a vehicle arrives to the loading dock it can still use the loading dock, however the online booking facility is not proposed during this time (except for Sydney Metro Bay access).

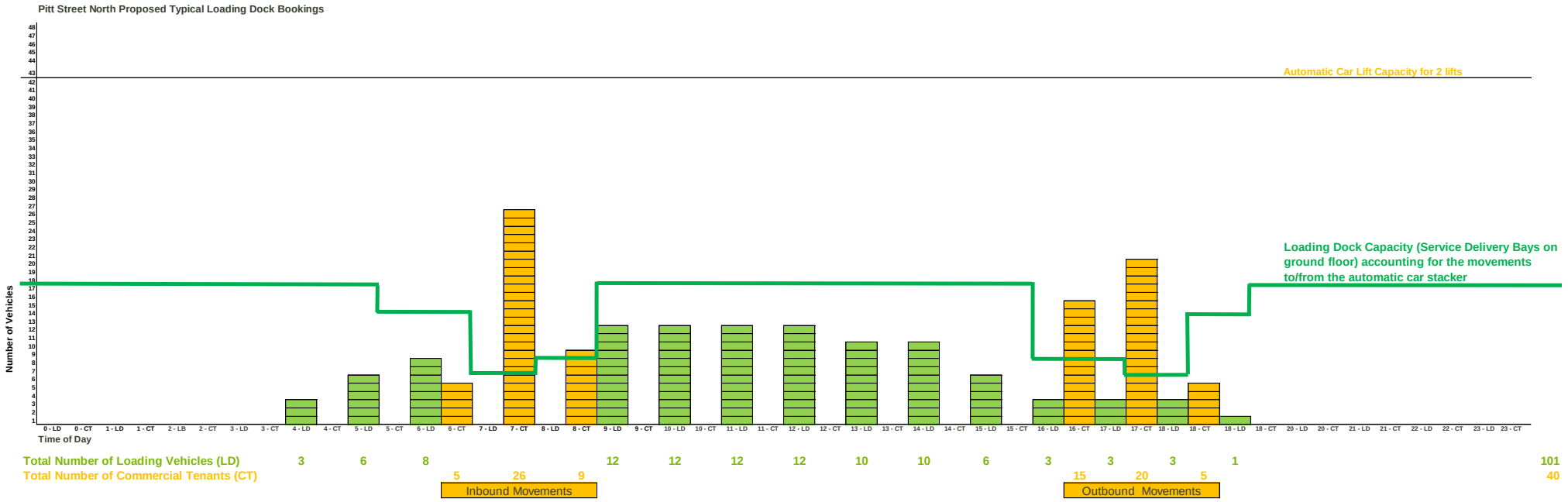

Figure 2-7: Typical Loading Dock Bookings and arrival of automatic car lift arrival profile for Pitt Street North

2.4 Sydney Metro Loading

The Sydney Metro Operation bay will be occasionally occupied to undertake maintenance services for the Pitt Street Station. The Sydney Metro loading bay is for a B99 size vehicle and access to the Sydney Metro Bay is via the turn table within the loading dock.

Any possession of the loading dock for occasional major services, such as a transformer replacement that needs to be undertaken by Sydney Metro, Sydney Metro is to consult with the North OSD loading dock manager.

2.5 Waste Management

A detailed Operational Waste Management Plan can be found in SMCSWSPS-TTM-OSN-CE-PLN-000001. All waste loading is noted to occur off street. Waste vehicles are proposed to use the MRV bay for all waste servicing. Swept path analysis for a 9.25m waste vehicle was undertaken and shown in Figure 2-8.

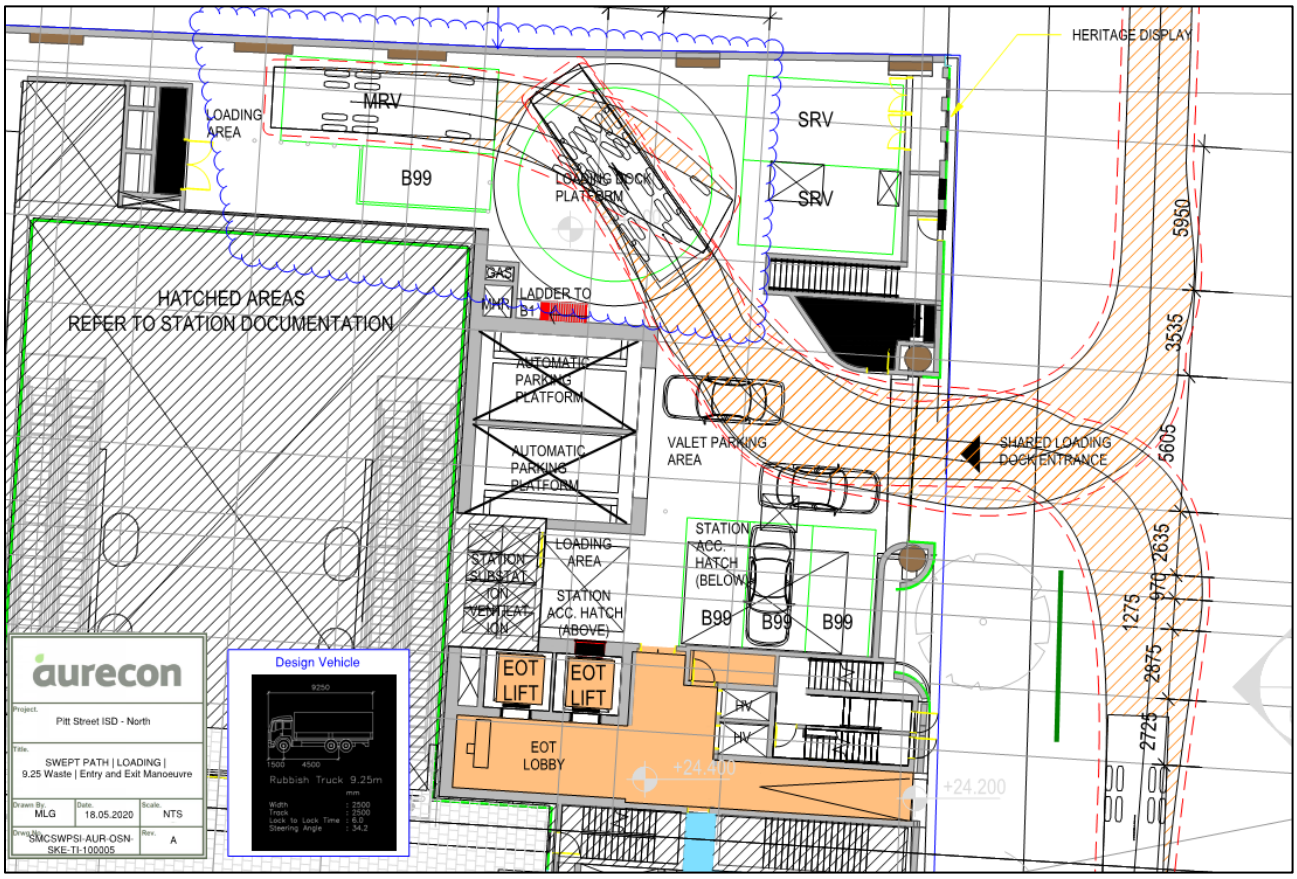

Figure 2-8: Vehicle swept path analysis for the 9.25m waste vehicle – forward in and forward out from loading area

3 Loading Dock Management

The Delivery Service Plan (Attached in Appendix A) will be managed by a dedicated on-site loading dock master through an integrated loading dock digital system notifying when deliveries are arriving and time allocation to specific loading requirements. To assist with the development of the Delivery Service Plan, a high-level assessment has been undertaken to understand if there will be any issues with the loading dock, and provide guiding principles to be integrated as part of the Delivery Service Plan.

Access to the loading dock and the automatic car lift usage are intertwined with two customer types. The first are the commercial tenants who will use the automatic car stacker at an ad hoc basis. The second are the loading dock users who can arrive to the loading dock based on a time allocated to them. The general operation of the loading dock is simplified into a northern loading dock section, a southern loading dock section and the automatic car stacker as shown in Figure 3-1 (it should be noted the image reference used for this image is an older drawing but the location of the proposed parking bays within the loading dock remains unchanged).

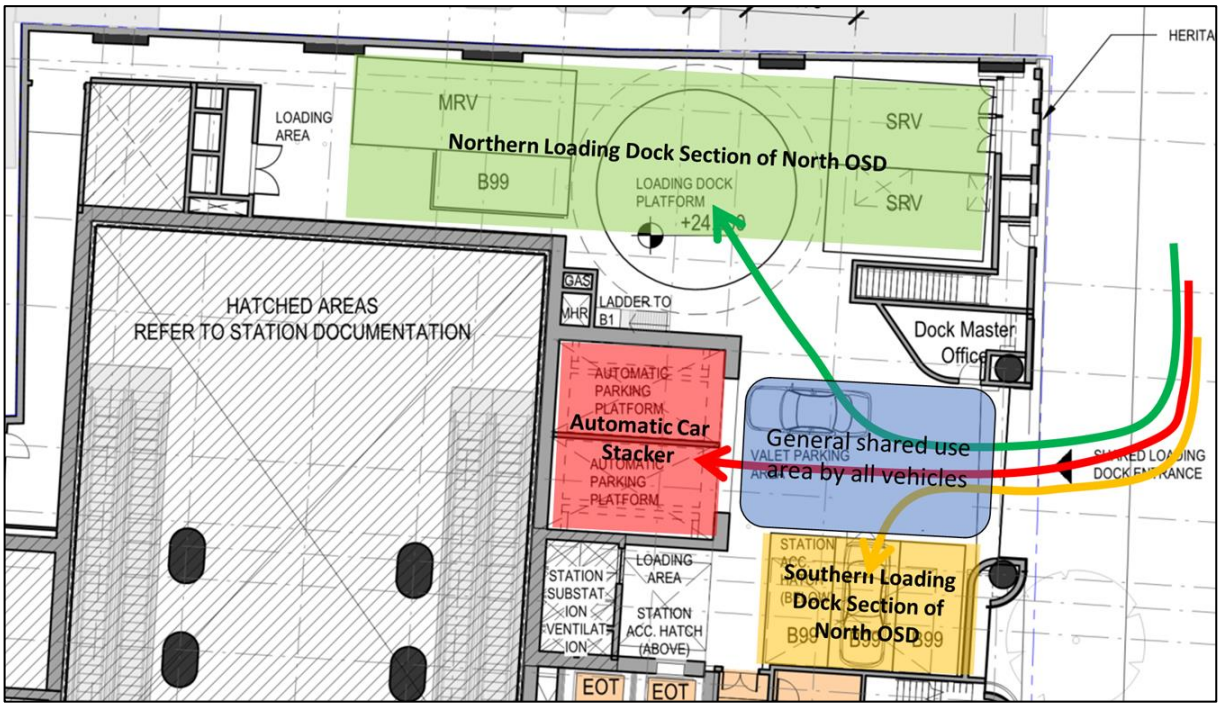

Figure 3-1: North OSD Loading operations (note: the image reference used for this image is an older drawing but the location of the proposed parking bays within the loading dock remains unchanged)

As shown in Figure 3-1, 'the general shared use area by all vehicles' shows that the arrival of commercial tenants impacts the use of the loading dock and vice versa. To minimise the arrival overlap of the two customer types arriving at the same time, the following governing principles are proposed to be incorporated as part of the loading dock Delivery Service Plan:

- Arrival of commercial tenants during a dedicated time period where no loading dock bookings are available (except for access to the Sydney Metro Bay). To inform what this time period is, it is recommended that as part of the automatic car stacker induction, that every individual commercial tenant who uses the automatic car stacker will need to undertake, a question regarding the preferred arrival and departure time is included to determine the typical peak arrival time. For example, this may be determined to be between 7am and 9am (as shown in Figure 2-3), during which time the arrival of loading dock vehicles will need to be reduced and actively managed. This is in line with the operations management strategy described in Section 4.2.2.
  - A delivery exclusion period during the peak commercial tenant arrival (i.e. 7 - 9am) is proposed. There is contingency within the loading dock to accommodate arrival and departure of loading vehicles such that in the event that a vehicle arrives to the loading dock it can still use the loading dock, however the online booking facility will not accept bookings during this time (except for Sydney Metro Bay access).

- Outside of this time period the loading dock will operate based on a booking system to manage loading dock arrivals and departures.

Outside of the commercial tenants, as shown in Figure 3-1, the loading dock design is separated into a north and south loading component where:

- The northern segment requires the use of a turn table for loading for the Sydney Metro (B99) bay, two SRV bays and one MRV bay, and
- The southern segment is used by three B99 bays, preferably accessed by reversing into the bay and egressed by forward movement out of the loading dock.
- To accommodate the provision of loading dock vehicles which may require longer dwell times, access to three B99 bays have been allowed for within the automatic car stacker and access to these will also be booked via the loading dock booking system.

At any given time, a vehicle accessing the northern segment of the loading dock does not hinder the use of the southern segment of the loading dock, however the use of a vehicle in the southern segment of the loading dock does hinder the use of the northern segment of the loading dock. To minimise loading dock northern and southern segment overlap access issues, it is proposed that loading dock arrivals are staggered such that the arrival of two consecutive northern segment vehicles (or southern segment vehicles) do not arrive to the loading dock in less than 10-minute intervals. This allows for the staggering of the northern segment and the southern segment loading activities. In addition, a time limit is recommended to be imposed for vehicles using the loading dock which will need to be defined at the time of booking / arrival. At a minimum this is assumed to be 30 minutes per loading bay (including the time allocated to parking and egress from the bay) for either the northern or southern loading dock segments. Based on this, a total of 12 loading vehicles are able to use the loading dock per hour (6 on the northern segment and 6 on the southern segment), which allows for a maximum of 6 vehicles parked in the loading dock at the same time (excluding the Metro B99 bay). If loading is required for a longer period for a particular bay (excluding the Metro B99 bay), it is recommended that this is scheduled in for later in the day when the traditional need to use the loading dock is reduced.

Depending on the loading requirements in particular the priority of deliveries each day, the loading strategy each day may change. To understand the total capacity of the loading dock, the following scenarios logic is outlined (excluding the loading dock being used by the commercial tenants for the automatic car lift):

- A 30 minute time allocation for loading for all vehicles. As shown in Table 3-1, this equates to an assumed 12 vehicles per hour for the North OSD loading dock, and over a typical 8-hour day this is equivalent to 96 vehicles accessing the loading dock. Over a 10-hour day this is equivalent to 120 vehicles accessing the loading dock.

Table 3-1: North OSD Loading capacity based on a 30-minute round trip (time allocation in bay is assumed approximately 20-minutes)

B99 Bay 3					Out	In					Out	In
B99 Bay 2			Out	In					Out	In		
B99 Bay 1	Out	In					Out	In				
SRV Bay 2				Out	In					Out	In	
SRV Bay 1		Out	In					Out	In			
MRV	In					Out	In					Out
Metro	Access available at all times											
TIME	**0 - 5min**	**5 - 10min**	**10 - 15min**	**15 - 20min**	**20 - 25min**	**25 - 30min**	**30 - 35min**	**35 - 40min**	**40 - 45min**	**45 - 50min**	**50 - 55min**	**55 - 60min**
Proposed Management Procedure	To minimise and mitigate any conflict, all loading dock vehicles will be provided with a timeslot prior to arrival. Furthermore the Loading Dock Master will manage arrival and departure of the two vehicles within each 5 minute window. The role of the Loading Dock Master is beyond the traditional role of a security guard, and will include knowledge of logistics and traffic management training.											

- A 45 minute time allocation for loading for all vehicles. As shown in Table 3-2, this equates to an assumed 9 vehicles per hour for the North OSD loading dock, and over a typical 8-hour day this is equivalent to 72 vehicles accessing the loading dock. Over a 10-hour day this is equivalent to 90 vehicles accessing the loading dock.

Table 3-2: North OSD Loading capacity based on a 45 minute round trip (time allocation in bay is assumed approximately 35-minutes)

B99 Bay 3	Out	In								Out	In	
B99 Bay 2								Out	In			
B99 Bay 1						Out	In					
SRV Bay 2				Out	In							
SRV Bay 1		Out	In								Out	In
MRV	In								Out	In		
Metro	Access available at all times											
TIME	**0 - 5min**	**5 - 10min**	**10 - 15min**	**15 - 20min**	**20 - 25min**	**25 - 30min**	**30 - 35min**	**35 - 40min**	**40 - 45min**	**45 - 50min**	**50 - 55min**	**55 - 60min**
Proposed Management Procedure	As per above		Risk has been mitigated between the arrival and departure of two vehicles.						As per above		Risk has been mitigated between the arrival and departure of	

- A 60 minute time allocation for loading for all vehicles. As shown in Table 3-3, this equates to an assumed 6 vehicles per hour for the North OSD loading dock, and over a typical 8-hour day this is equivalent to 48 vehicles accessing the loading dock. Over a 10-hour day this is equivalent to 60 vehicles accessing the loading dock.

Table 3-3: North OSD Loading capacity based on a 60 minute round trip (time allocation in bay is assumed approximately 50-minutes)

B99 Bay 3										Out	In	
B99 Bay 2						Out	In					
B99 Bay 1		Out	In									
SRV Bay 2								Out	In			
SRV Bay 1				Out	In							
MRV	In											Out
Metro	Access available at all times											
TIME	**0 - 5min**	**5 - 10min**	**10 - 15min**	**15 - 20min**	**20 - 25min**	**25 - 30min**	**30 - 35min**	**35 - 40min**	**40 - 45min**	**45 - 50min**	**50 - 55min**	**55 - 60min**
Proposed Management Procedure	Risk has been mitigated between the arrival and departure of two vehicles.											

Increasing the loading dock operating hours allows for additional vehicles to access the loading dock, which may be required to manage peak periods of operation. As noted earlier to accommodate the provision of loading dock vehicles which require longer dwell times, access to three B99 bays has been allowed for within the automatic car stacker and access to these will also be booked via the loading dock booking system.

A combination of various time allocation for loading vehicles may be possible such that a different time allocation is assumed for the northern segment to that of the southern segment. Furthermore, the system could also allow loading vehicles to make ‘double’ or ‘triple’ bookings or specify a duration of the loading time they require which may be accommodated by the loading dock master if there is adequate capacity to accommodate the request.

As discussed earlier, based on research (ITE, a local Sydney CBD research study and other recent developments in the Sydney CBD), for a development of the size of North OSD, between 14 and 17 peak hour vehicle trips can be expected. During periods where there is little to no automatic car stacker demands, it is anticipated that the loading dock could accommodate up to 17 vehicles per hour (loading of each loading bay is limited to approximately 15 - 18 minutes) which is equivalent to approximately 15% of the total daily requirements for North OSD.

3.1 Booking System

A digital booking system will be implemented to manage loading dock operations. This section to be updated by the loading dock manager once the formal loading dock booking system is known.

3.2 Swept Path Analysis

Swept path analysis was undertaken for a 5.2m length B99 vehicle, a 6.4m length SRV, a 8.8m length MRV and a 9.25m waste vehicle.

Figure 3-2 to Figure 3-6 illustrate that the design layout can adequately accommodate the designed vehicle movement to service the loading dock. The swept paths show that the vehicles do not require more than three points of turn to manoeuvre in and out from the bays. It should be noted that loading from the SRV bays may be undertaken on the turntable and if bulky goods loading is required, these should be undertaken from the MRV service bay.

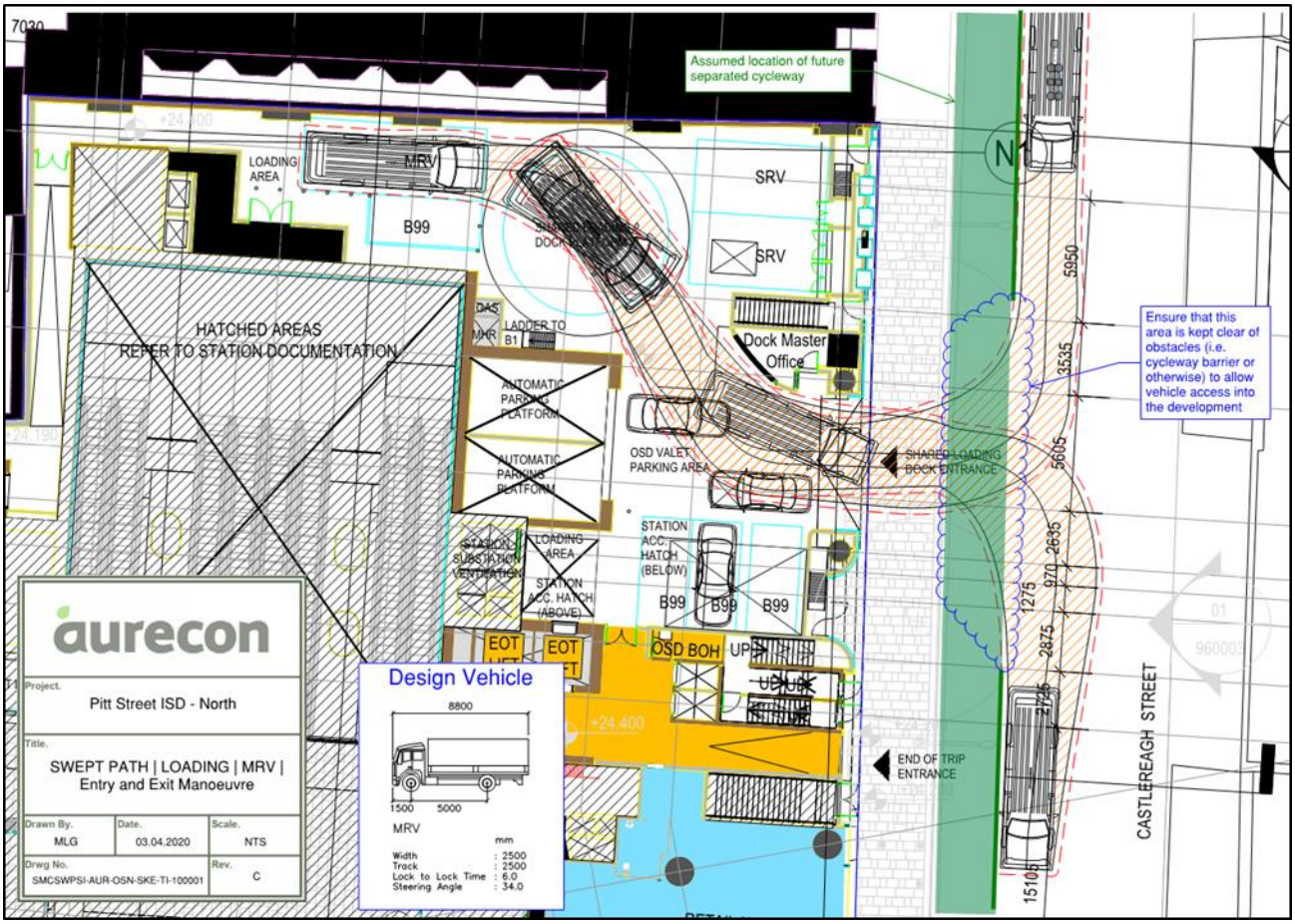

Figure 3-2: Vehicle swept path analysis for MRV – forward in and forward out from loading area

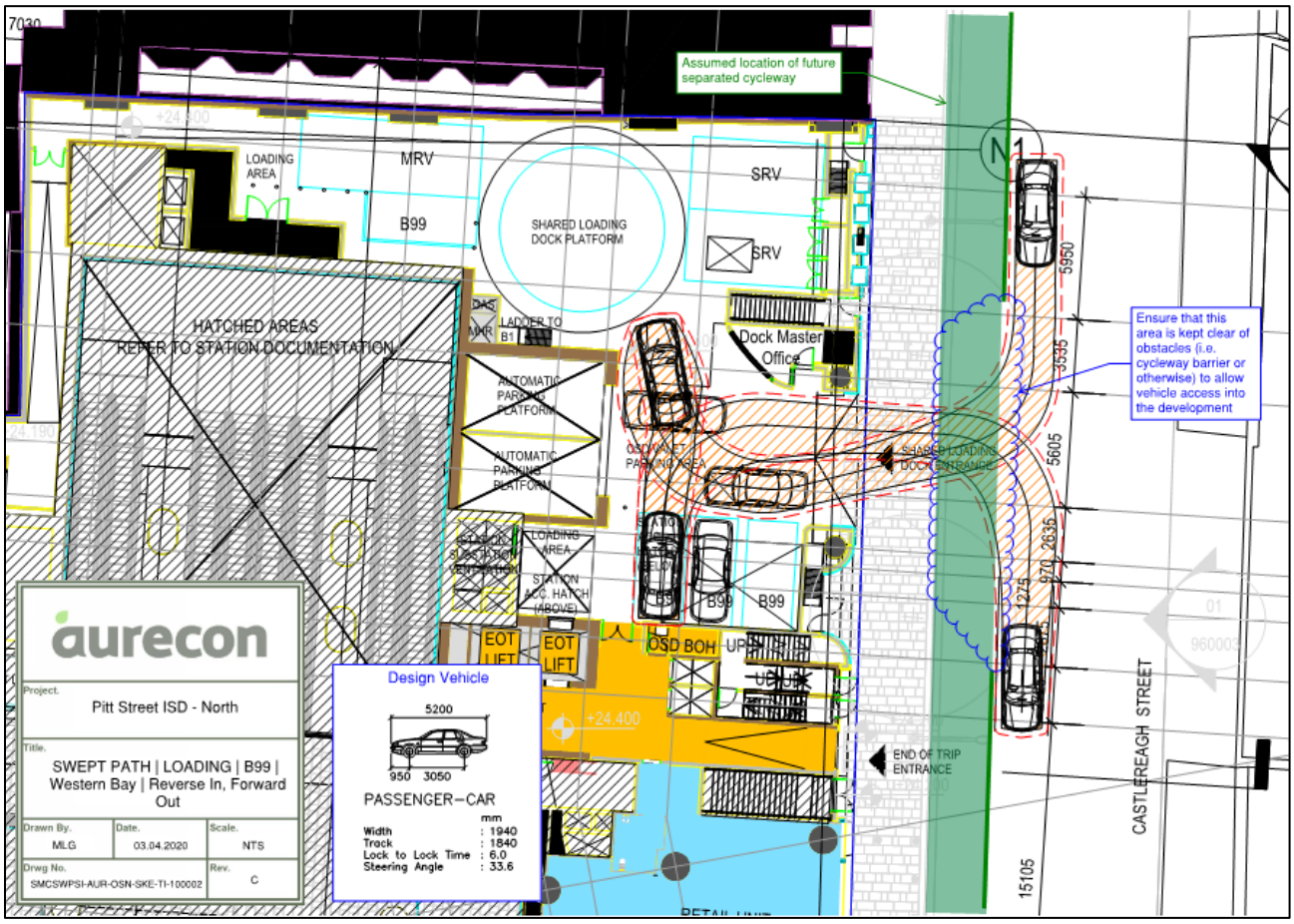

Figure 3-3: Vehicle swept path analysis for the B99 western bay – reverse in and forward out from bay

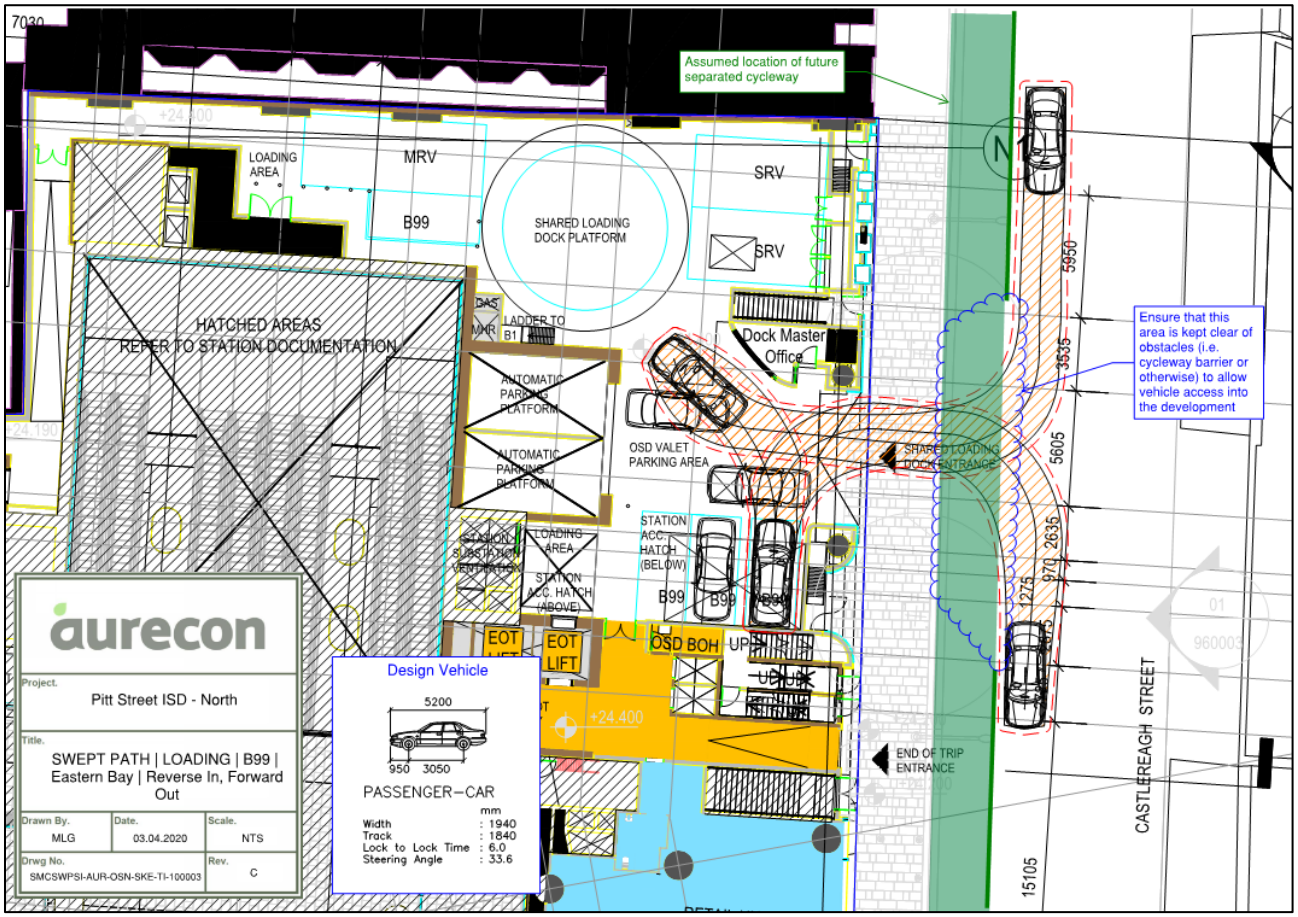

Figure 3-4: Vehicle swept path analysis for the B99 eastern bay – reverse in and forward out from bay

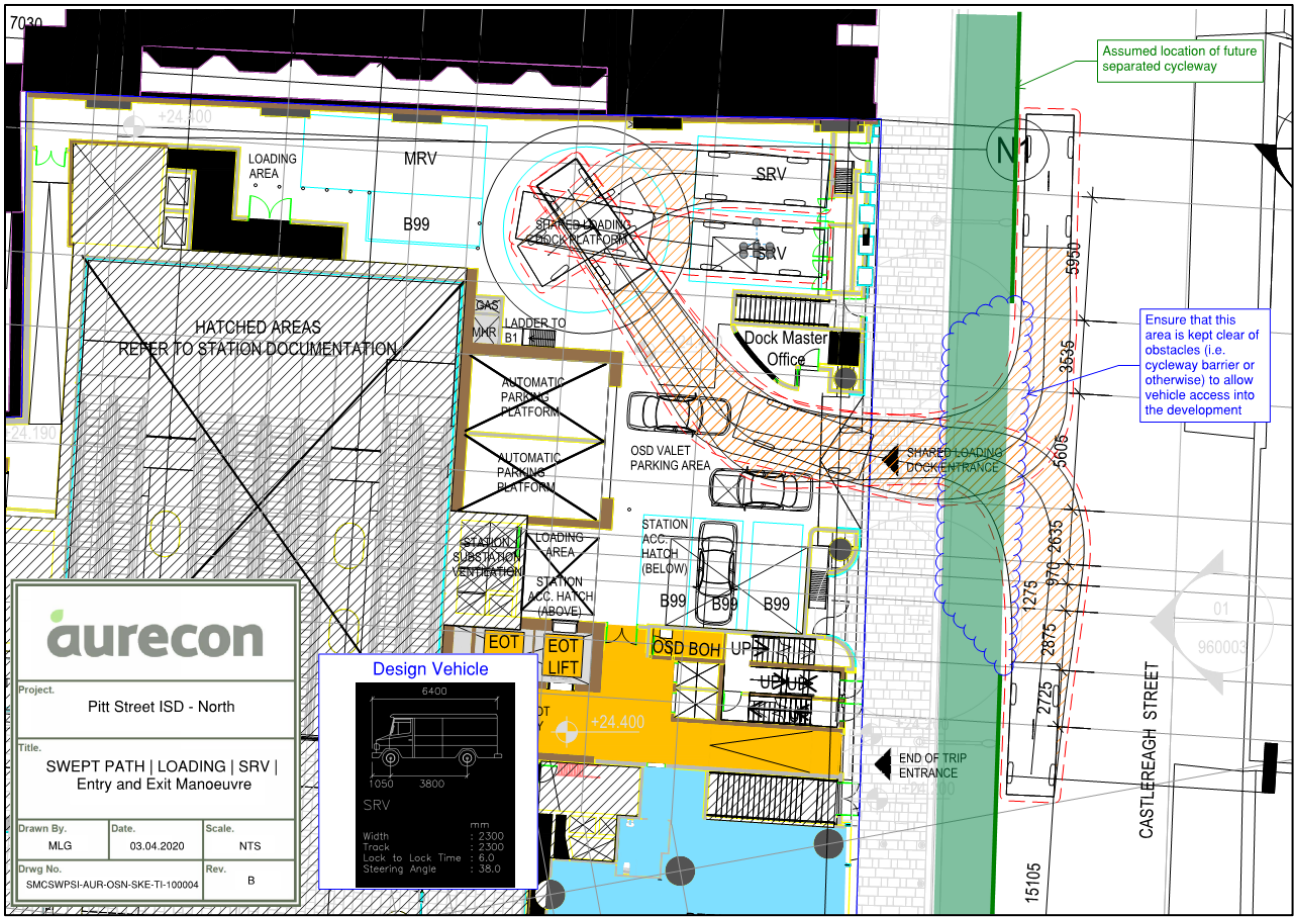

Figure 3-5: Vehicle swept path analysis for the SRV – forward in and forward out from loading area

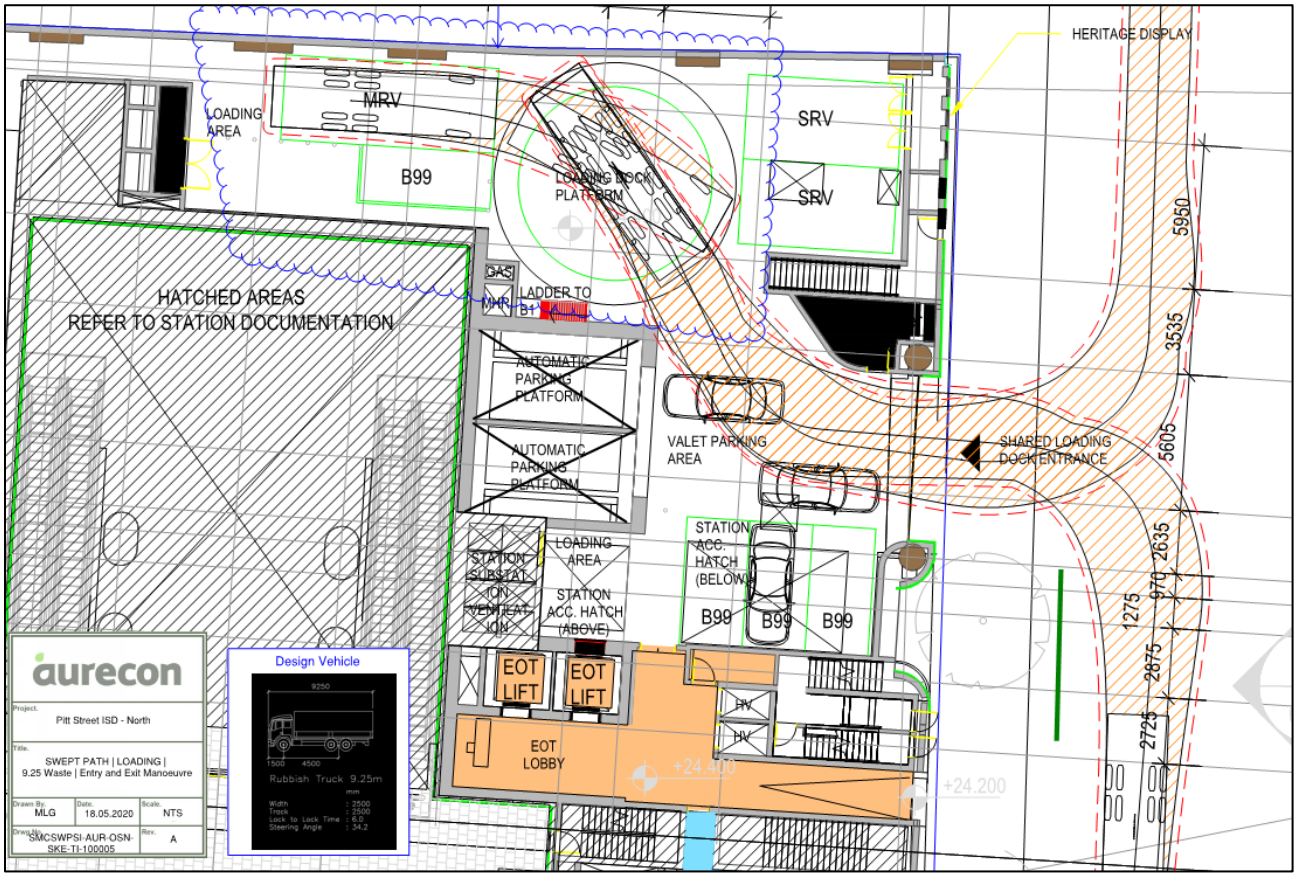

Figure 3-6: Vehicle swept path analysis for the 9.25m waste vehicle – forward in and forward out from loading area

3.3 Safety Considerations

Cyclists will access the development via a dedicated access off Castlereagh Street as indicated in Figure 2-1 to use the End-of-Trip (EoT) lifts to access the bicycle parking facilities on level 1.

As the cyclist access is located close to the vehicle access to the east, the users are exposed to some safety risks, particularly the on-street cyclists who travel in a southbound direction will ride across the vehicle access crossover from Castlereagh Street to access the development loading dock. It is recommended that awareness improvements be implemented in the area to reduce the risk, such as a warning system and convex mirror mounted onto street poles. This has been included as part of the Green Travel Plan recommendations in SMCSWSPS-AUR-OSN-EM-REP-000002 it impacts North OSD cyclists who use the EoT facilities. It is however noted that public domain measures fall under the planning pathway of the CSSI and are not a matter for consideration under this SSDA application.

4 Contingency Response to Potential Incidents

A number of potential incidents may limit the operation of the loading dock and automatic car stacker. These are shown in Table 4-1.

Table 4-1: Contingency Responses for Potential Incidents at North OSD

Incident	Impact	Response
Blocked Access to Northern Segment of the Loading Dock	A vehicle has broken down within the northern segment of the loading facility.	If the vehicle is broken down in a particular bay, then all vehicles scheduled to use that particular bay will need to be notified immediately. Towing Service to be called immediately to remove the vehicle. If the vehicle is broken down on the turntable, towing service to be called immediately to remove the vehicle.
Blocked Access to Loading Dock	Loading Dock and Automatic Car Lift not available due to blocked access to the loading dock.	Towing Service to be called immediately to remove the vehicle that is blocking access to the loading dock. Any scheduled deliveries will need to be rescheduled to following when the broken-down vehicle is removed.
Delivery outside of nominated booking time	Vehicle blocking access to the loading dock.	Dock Master to allow vehicle to use turn table to egress from the loading dock area, or if available to undertake required loading in available bay.
Loading taking longer than time limit	Arrival and delay of consecutive vehicles arriving to the loading dock.	If time is available, the bay may be utilised for the extra time required. If it is impacting the operations of other vehicles, then the loading dock master is to decide if this vehicle is to vacate the bay, or notify the next vehicle to come at a different time slot.
Failure of the turntable	Northern Segment of loading dock is not able to be utilised due to turntable being broken.	Determine the time required to fix the turntable. One of the Southern Segment service bays to be allocated to a Metro bay, and all loading for that bay to be managed. If it is a short-term fix, loading to recommence for high priority deliveries once the turntable is fixed, followed by lower priority deliveries. If it is a long-term fix, high priority loading deliveries to be undertaken at surrounding on-street loading facilities.

Incident	Impact	Response
Failure of the automatic car lift	Lowers access time for commercial tenants potentially resulting in an increase in slower operations for the overall loading dock.	In the event the automatic car lift breaks down, a one-week down time is noted by LCI (the automatic car lift designer) to fix the automatic car lift. With one lift in operation, there is sufficient capacity to meet the estimated demand for the automatic car stacker.

5 Next Steps

As the building becomes operational, the Delivery Service Plan will be updated accordingly to reflect any changes within the site, in particular as the commercial and retail tenants become known. This Service Deliver Plan is proposed to be updated in line with the developing design and once the Loading Dock master is appointed for North OSD. The role of the Loading Dock Master is beyond the traditional role of a security guard, and will include knowledge of logistics and traffic management training.

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