Transport Impact Assessment;

Harbourside

For Mirvac

15th April 2024

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1. Introduction

This Traffic Impact Assessment (TIA) has been prepared by ptc. on behalf of Mirvac Retail Sub SPV Pty Ltd (Mirvac) and is submitted in support of a Section 4.55(2) Modification Application submitted to the Department of Planning, Housing and Infrastructure (DPHI), to modify development consent SSD 49295711 relating to the detailed design, construction, and operation of the new Harbourside mixed-use podium and tower building.
The proposed Modification Application (SSD 49295711 MOD 2) relates to the following:

- Expansion of permissible uses on level 1 to include Commercial / Events and Conference uses;
- Amendments to the design of the ground floor residential and southern commercial lobbies;
- Amendments to level 4 office layout;
- Amendments to level 5 internal pool, external amenities and communal open space;
- Amendments to the general layout of levels 6 – 8;
- Amendments to levels 46 – 49 penthouse and rooftop plant;
- Various amendments to building services, plant, podium rooftop and facades following further design development and coordination; and
- Inclusion of design changes to the Bunn Street through-site link as required by the consent.

For a detailed description of the proposed modifications, please refer to the Modification Report prepared by Ethos Urban. This report demonstrates that the above amendments will not give rise to unreasonable environmental impacts from a traffic perspective.

1.1 Purpose of this Report

This report presents the following considerations in relation to the Transport Impact Assessment of the proposal:

Section 2	A description of the transport environment;
Section 3	Assessment of the proposed parking provision in the context of the relevant planning control requirements;
Section 4	Determination of the traffic activity associated with the development proposal, and the adequacy of the surrounding road network;
Section 5	Assessment of the proposed car park, vehicular access and internal circulation arrangements in relation to compliance with the relevant standards and planning policies; and
Section 7	Summary.

1.2 Consistency with SSD 7874

The Harbourside Concept Approval (SSD 7874) sets out the relevant planning parameters to guide the detailed design and construction of the redeveloped Harbourside site. The proposed development is required to be consistent with SSD 7874 pursuant to section 4.24 of the EP&A Act, which states that "*while any consent granted on the determination of a concept development application for a site remains in force,*

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the determination of any further development application in respect of the site cannot be inconsistent with the consent for the concept proposals for the development of the site".

Part 3 of the SSD 7874 conditions of consent sets out conditions which must be met in all future detailed design applications at the site (the Future Environmental Assessment Requirements – FEARs). The proposal is consistent with all relevant SSD 7874 FEARs, with the relevant FEARs addressed in the table below.

Table 1: SEARs Conditions

FEAR	Condition	Response / Location in Report
C34	Future development application(s) must be accompanied by a Traffic Impact Assessment (TIA) that assesses the traffic, transport and pedestrian impacts on the road and footpath networks and nearby intersection capacity. The TIA must also address: (a) traffic generation impacts and any necessary road infrastructure upgrades to adjoining and nearby roads and intersections (b) vehicle and pedestrian safety within and around the site (c) loading / unloading, servicing, coach, pick-up/drop-off arrangements (d) on-site car parking provision consistent with Condition A17, location, access and operation (e) the impact of the removal of any existing on-street car parking spaces (f) pedestrian and bicycle infrastructure and facilities and any necessary upgrades	(a) Addressed in Section 4.7 SIDRA Analysis, no major impact to the surrounding road network is expected to come about due to the development. (b) Detailed assessment of the carpark arrangement and access is undertaken throughout Section 5. As a result of compliance with the Australian Standards, vehicle and pedestrian safety follows. (c) Arrangements are detailed in the Loading Dock, Basement, Arrivals Management Plan prepared by ptc. (d) Section 3.1 (e) N/A (f) An assessment of the pedestrian and cyclist infrastructure, as well as potential improvements are included in Section 6 and Attachment 3.
C36 – Road Safety Audit	Future Development Application(s) must include a Road Safety Audit for the cycleway/ drop off area on Darling Drive, in accordance with Austroads Guide to Road Safety Part 6: Managing Road Safety Audits and Austroads Guide to Road Safety Part 6A: Implementing Road Safety Audits prepared by an independent TfNSW accredited road safety auditor.	The independent Road Safety Audit has been conducted by DC Traffic Engineering and will be submitted separately.

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	Based on the results of the road safety audit, the Applicant must review the design drawings and implement safety measures if required, in consultation with TfNSW.	
C37 – Drop off	Future Development Application(s) must include queuing analysis and/ or traffic modelling to demonstrate the drop off area has adequate capacity and propose mitigation measures to ensure queuing on Darling Drive does not occur, to the satisfaction of TfNSW.	Refer to Section 4.4
C40 – Bicycle Parking	Future Development Application(s) must include bicycle parking for employees / visitors and end of trip facilities (toilets, change/locker rooms and showers) in accordance with the Sydney Development Control plan 2012 bicycle parking rates and end of trip facilities design requirements.	Refer to Section 3.3
C41 – Bicycle Strategy	Future Development Application(s) must include a Bicycle Strategy demonstrating: a) How the safe and efficient movement of cyclists is managed around the site b) The design and location of any proposed bicycle parking infrastructure Alignment with PMNSW's bicycle strategy for Darling Harbour	Refer to Section 4.8
C42 – Bicycle Strategy	Future Development Application(s) must, in consultation with Council, PMNSW, and TfNSW, explore opportunities to improve cycleway connections within and around the development.	Refer to Section 4.8
C43 – Bicycle Strategy	Future Development Application(s) must, in accordance with Council, PMNSW, and TfNSW, explore and implement feasible opportunities to upgrade the Darling Drive Cycleway within the constraints of the existing carriageway, between Murray Street/Union Street intersection (major cycleway) to the roundabout adjacent to the site.	Refer to Section 4.8

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1.3 Secretary's Environmental Assessment Requirements

In accordance with section 4.39 of the *Environmental Planning & Assessment Act 1979* (EP&A Act), Secretary's Environmental Assessment Requirements (SEARs) for SSD 49295711 have been issued. This report has been prepared to respond to the issued SEARs, as set out in the table below.

SEAR	Response / Location in Report
10. Traffic, Transport and Accessibility Provide a transport and accessibility impact assessment, which includes:	
• an analysis of the existing transport network, including the road hierarchy and any pedestrian, bicycle or public transport infrastructure, current daily and peak hour vehicle movements, and existing performance levels of nearby intersections.	Sections 2.1, 2.2, 2.3, 4.2, 4.7
• details of the proposed development, including pedestrian and vehicular access arrangements (including swept path analysis of the largest vehicle and height clearances), parking arrangements and rates (including bicycle and end-of-trip facilities), drop-off/pick-up-zone(s) and bus bays (if applicable), and provisions for servicing and loading/unloading.	Sections 1, 3, 3.3, 55.1, 5.4, 5.7, 5.7.1
• analysis of the impacts of the proposed development during construction and operation (including justification for the methodology used), including predicted modal split, a forecast of additional daily and peak hour multimodal network flows as a result of the development (using industry standard modelling), identification of potential traffic impacts on road capacity, intersection performance and road safety (including pedestrian and cyclist conflict) and any cumulative impact from surrounding approved developments.	Sections 4.3, 4.4, 4.6, 4.7
• measures to mitigate any traffic impacts, including details of any new or upgraded infrastructure to achieve acceptable performance and safety, and the timing, viability and mechanisms of delivery (including proposed arrangements with local councils or government agencies) of any infrastructure improvements in accordance with relevant standards.	Section 4.7 details that no detrimental impact on the traffic network come about as a result of the development

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2. Transport Environment

2.1 Road Hierarchy

Harbourside is located in the City of Sydney Local Government Area (LGA) and is serviced by a mix of state, regional and local roads as presented in Figure 2.1.

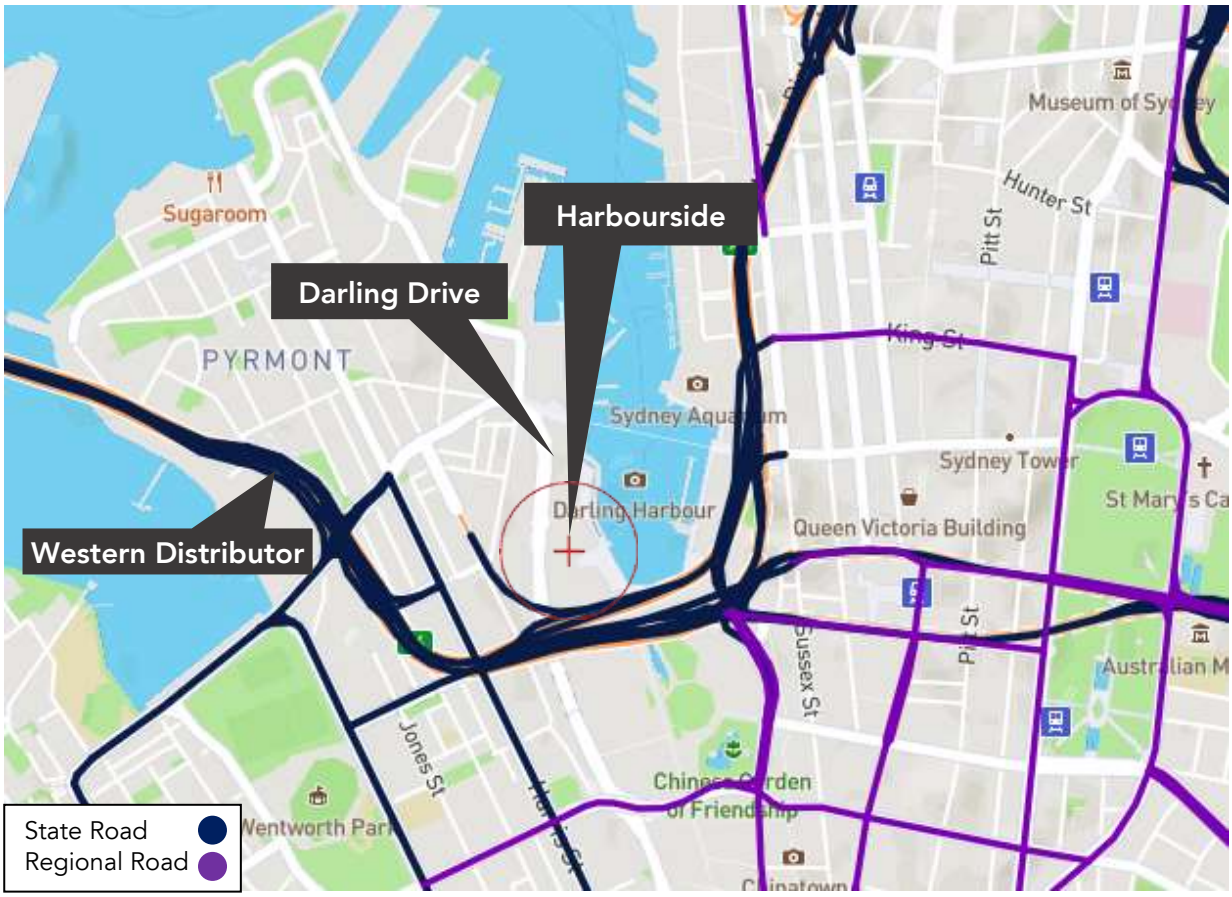

Figure 2.1 - Road Hierarchy (Source: TfNSW State and Regional Roads)

The NSW administrative road hierarchy comprises the following road classifications, which align with the generic road hierarchy:

- State Roads: Freeways and Primary Arterials (TfNSW managed);
- Regional Roads: Secondary or sub-arterials (Council managed, partly funded by the State);
- Local Roads: Collector and local access roads (Council managed/Place Management NSW managed).

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Darling Drive	
Road Classification	Local Road (Place Management NSW)
Alignment	North – South
Number of Lanes	Varies
Carriageway Type	Divided
Carriageway Width	Varies
Speed Limit	50km/hr
School Zone	No
Parking Controls	Parking not permitted
Forms Site Frontage	Yes

Figure 2.2: Darling Drive (Southbound)

Pyrmont Bridge Road	
Road Classification	Local and State Road
Alignment	East – West
Number of Lanes	Varies
Carriageway Type	Undivided
Carriageway Width	12m
Speed Limit	40km/hr
School Zone	No
Parking Controls	Parking not permitted
Forms Site Frontage	No

Figure 2.3 – Pyrmont Bridge Road (Westbound)

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Western Distributor off-ramp to Pyrmont Bridge Road	
Road Classification	State Road
Alignment	South
Number of Lanes	2
Carriageway Type	Undivided
Carriageway Width	6m
Speed Limit	60km/hr
School Zone	No
Parking Controls	Parking not permitted
Forms Site Frontage	No

Figure 2.4 - Western Distributor off-ramp (Southbound)

Iron Wharf Place	
Road Classification	Local
Alignment	East - West
Number of Lanes	1
Carriageway Type	Divided
Carriageway Width	3.8m
Speed Limit	Shared Zone
School Zone	No
Parking Controls	No Parking
Forms Site Frontage	No

Figure 2.5 - Iron Wharf Place (Eastbound)

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Wattle Street	
Road Classification	State
Alignment	North – South
Number of Lanes	2
Carriageway Type	Undivided
Carriageway Width	12m
Speed Limit	40km/hr
School Zone	No
Parking Controls	No Parking
Forms Site Frontage	No

Figure 2.6 - Wattle Street (Northbound)

2.2 Key Intersections

The key intersections in the vicinity of the development site and their characteristics are listed below:

1. Darling Drive / Ultimo Road — 3-leg roundabout
2. Darling Drive / Pier Street / Zollner Circuit — 5-leg roundabout
3. Darling Drive / Iron Wharf Place — 3-leg roundabout
4. Darling Drive / Murray Street / Pyrmont Bridge Road — 4 leg signalised intersection

The key intersections are illustrated in Figure 2.7.

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Figure 2.7 - Key Intersection Locations (Source: Nearmap)

2.3 Public & Active Transport

The locality has been assessed in relation to the available public transport options that may serve the various users of the subject development. This assessment considered the *NSW Planning Guidelines for Walking and Cycling (2004)*, which suggests that a distance of 400-800m is a walkable catchment and 1,500m is a suitable cycling catchment when the development is within proximity to public transport. Figure 2.8 presents the catchment within 800m radius of the site.

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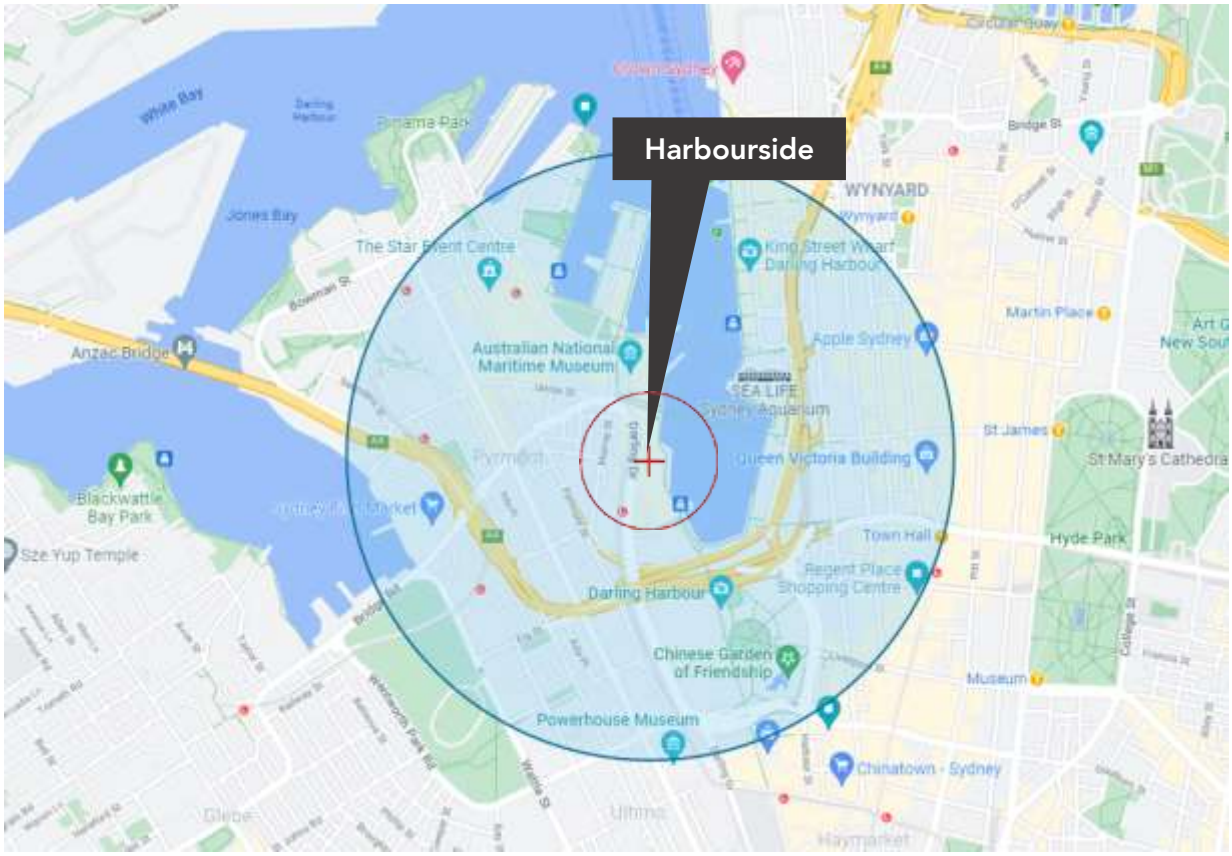

Figure 2.8 - 800m Walking Catchment surrounding Harbourside

Given that the subject site is located near to the Sydney CBD, there is abundant public transport facilities within close proximity, all of which provide high frequency services throughout each day, including train services, bus routes, ferry and light rail options, as outlined in the following sub-sections.

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2.3.1 Bus

The site is serviced by the 389-bus service, within the 800m walking catchment and provides bus connection to the city and further public transit modes. A summary of the available bus routes is illustrated in Figure 2.9.

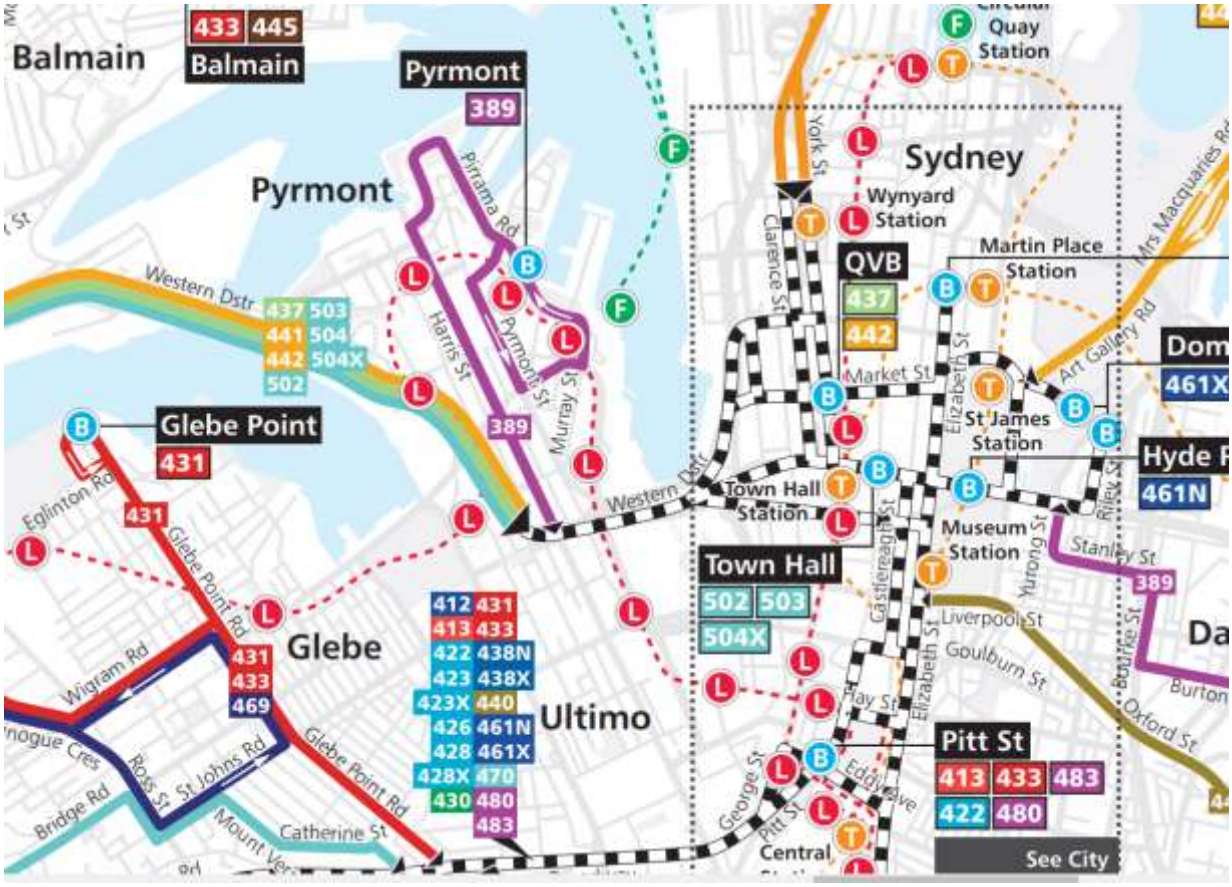

Figure 2.9 - Surrounding Bus Routes (Source: TfNSW)

2.3.2 Train

Harbourside is located 800m (12 minutes' walk) from Town Hall Station, and less than a 20-minute walk to Wynyard and St James stations. These railway stations provide access to extensive train services connecting to the Sydney Metropolitan area, providing frequent services seven days a week.

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Figure 2.10 - Sydney Trains Network Map

A summary of the train services operating at Town Hall Station is presented in Table 2.

Table 2: Summary of Train Services at Town Hall Station

Train Line	Station	Coverage (to and from, and vice versa)	Approximate Frequency
T1	Town Hall	Berowra to City via Gordon	Every 3-6 minutes during peak hours Every 8 minutes during off-peak
T2	Town Hall	City to Parramatta or Leppington	Every 3-6 minutes during peak hours Every 6-12 minutes during off-peak
T3	Town Hall	City to Liverpool or Lidcombe via Bankstown	Every 6-12 minutes during peak hours Every 15 minutes during off-peak

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Train Line	Station	Coverage (to and from, and vice versa)	Approximate Frequency
T4	Town Hall	Bondi Junction to Waterfall or Cronulla	Every 4-10 minutes during peak hours Every 10-15 minutes during off-peak
T8	Town Hall	City to Macarthur via Airport or Sydenham	Every 3-15 minutes during peak hours Every 10-20 minutes during off-peak
T9	Town Hall	North Shore to Hornsby via City	Every 6-15 minutes

In summary, the train services at Town Hall Station are frequent and provide excellent connection throughout the broader Sydney Trains network.

2.3.3 Ferry

The development site is 450m walking distance from Pyrmont Bay Wharf. Due to the proximity of the ferry wharf, it is anticipated that the ferry services provide a convenient transport option for construction workers, site employees and visitors. The Pyrmont Bay Wharf provides direct access to Circular Quay, or access to Parramatta via Barangaroo. Figure 2.11 presents the layout of the ferry service areas.

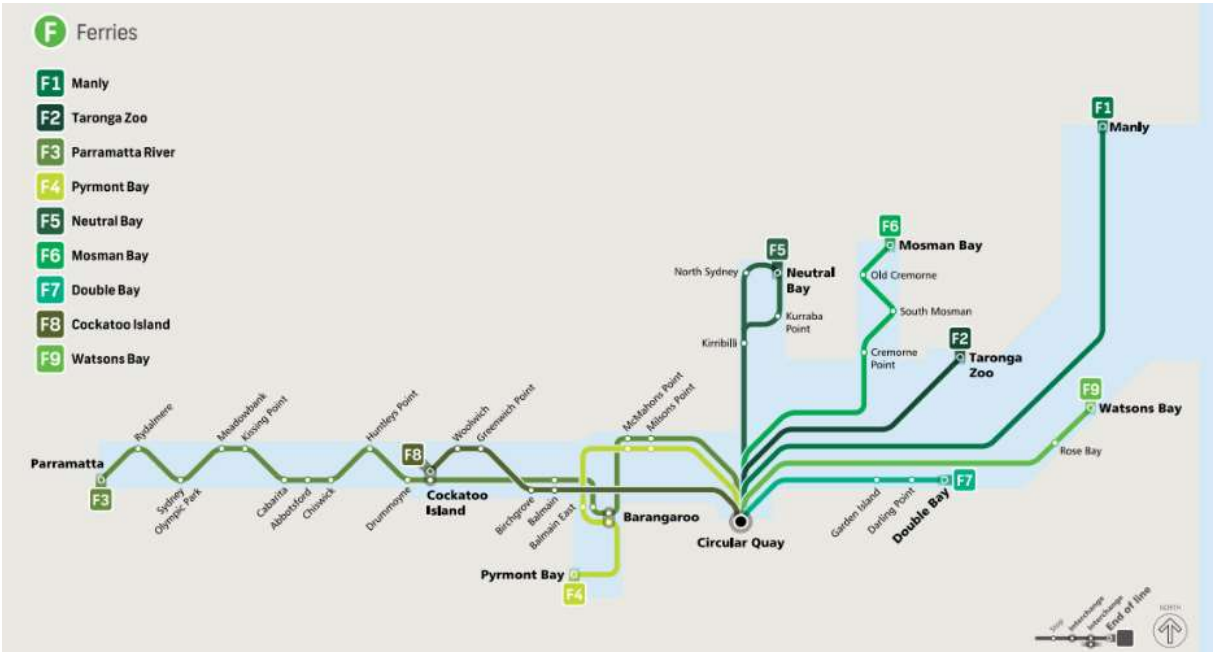

Figure 2.11 - Ferry Service Map

A summary of the ferry services is presented in Table 3.

Table 3: Summary of Ferry Services

Route No.	Coverage	Frequency
F4	Pyrmont Bay to Circular Quay	Every 20-30 minutes at peak from Mon-Fri Every 15-30 minutes on weekends

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2.3.4 Light Rail

The Sydney light rail network provides connectivity between the Dulwich Hill, Circular Quay, Randwick, Kingsford and Central stations. The Pyrmont Bay and Convention light rail stations are located within 200m (approximately 3-minute walk) from the site, thus providing convenient access to high frequency light rail services which operate every 15 minutes.

The Sydney Light Rail network map is illustrated in Figure 2.12.

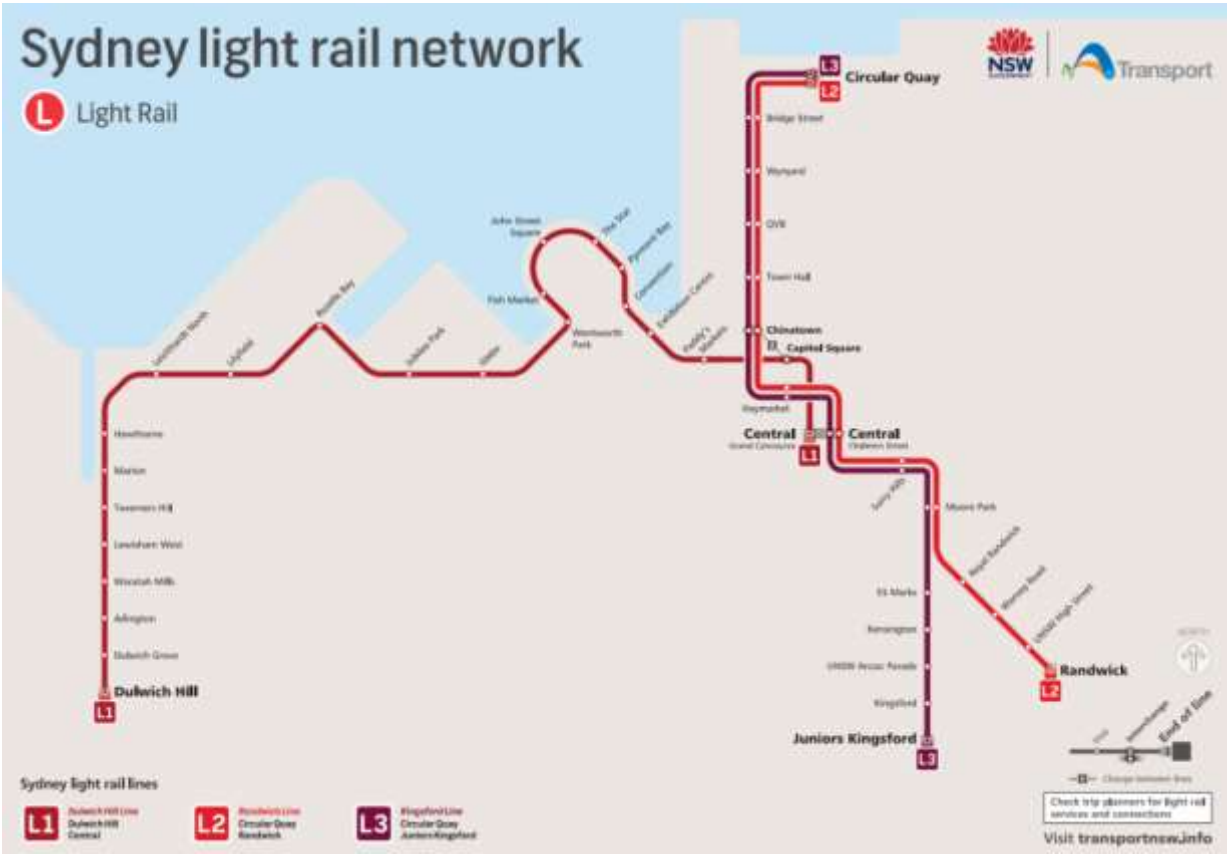

Figure 2.12 - Sydney Light Rail Network Map (Source: TfNSW)

2.3.5 Car Share

In addition to the public transport options, there are car share facilities available in the vicinity of the site for those who wish to access a vehicle. Figure 2.13 presents the nearby car share facilities of the popular car share provider GoGet.

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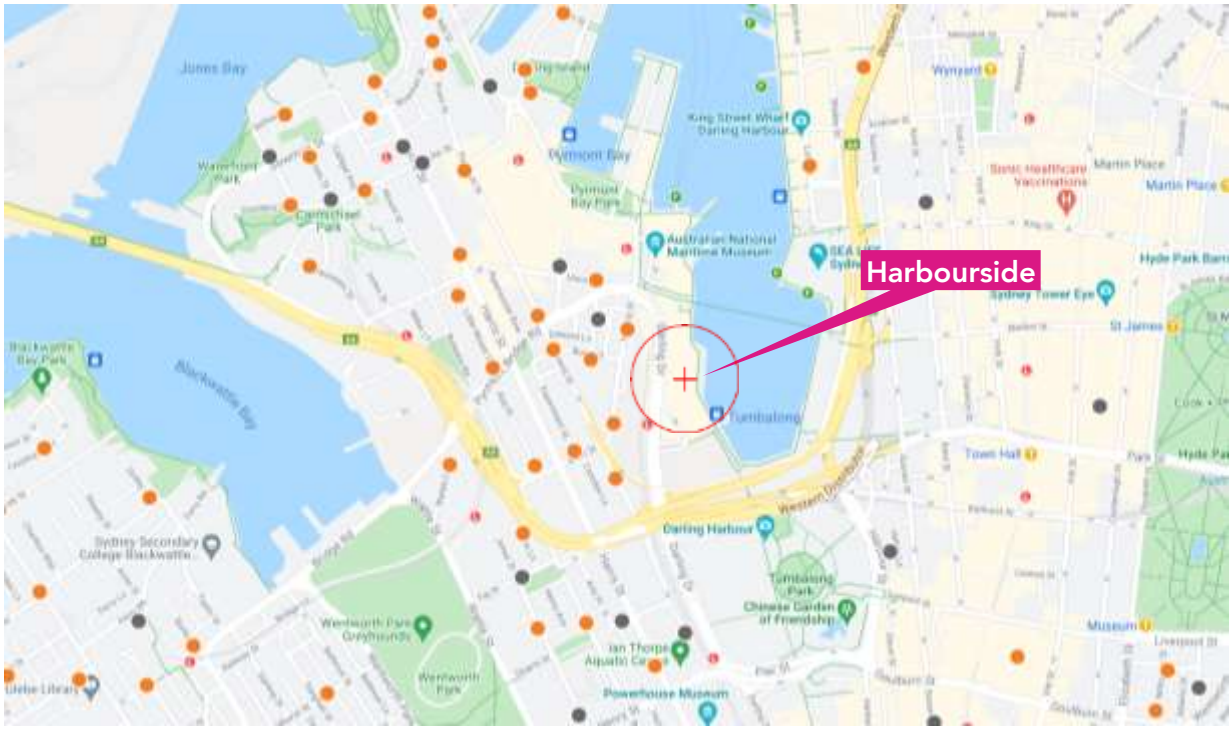

Figure 2.13 - Car Share Facilities in the vicinity of the Site (Source: GoGet)

2.3.6 Cycling

Cycling connections around the Harbourside site are generally good, with various separated (off-road) cycleways provided, particularly around the Darling Harbour foreshore areas. Furthermore, the City of Sydney has categorised many of the surrounding streets as 'low traffic streets', suitable for use by cyclists with adequate safety. Further details of the surrounding cycle network can be seen in Figure 2.14.

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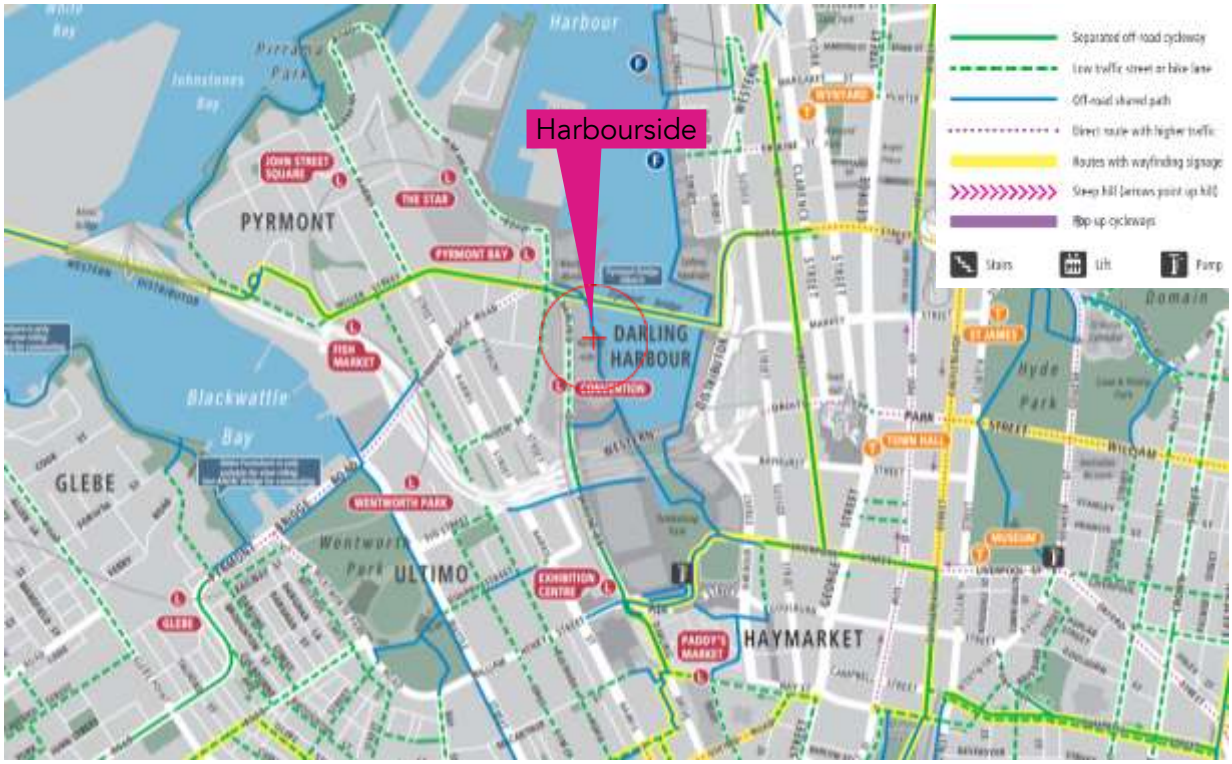

Figure 2.14 - Sydney Cycling Map (Source: City of Sydney)

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3. Parking Provision

The car parking provision requirements has been assessed with reference to the following planning documents:

- *Concept DA Conditions of Consent SSD 7874 (dated 25 June 2021);*
- *Concept DA Conditions of Consent SSD 7874 S4.55(1A) Modification 2 (dated 19 July 2022);*
- *Sydney Development Control Plan 2012 (SDCP); and*
- *National Construction Code 2019 Building Code of Australia – Volume One* (BCA).

3.1 Car Parking

The car parking provision requirements outlined in DA Condition A.17 is as follows:

Car Parking Control

A17. The maximum number of on-site car parking spaces must be in accordance with the following rates:

Table 4 – Maximum Resident Parking Rates

Resident Spaces	Maximum Car Parking Rate
For each studio dwelling	0.2 spaces
For each 1-bedroom dwelling	0.4 spaces
For each 2-bedroom dwelling	0.8 spaces
For each 3-bedroom or more dwelling	1.1 spaces

Table 5 - Maximum Visitor Parking Rates

Visitor Spaces	Maximum Car Parking Rate
For each dwelling up to 30 dwellings	0.167 spaces
For each dwelling more than 30 and up to 70 dwellings	0.1 spaces
For each dwelling more than 70 dwellings	0.05 spaces

A18. Resident car parking spaces may be used for the purposes of providing parking for residents of the building only and not for any other purpose.

A19. Visitor car parking spaces must be used for the purposes of providing parking for visitors to the residential building only and not for any other purpose.

A20. No parking is permitted for non-residential uses.

Applying the rates outlined to the development proposal results in the following car parking provisions:

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Table 6 - Car Parking Provision Summary

Land Use Type		No. of Units / GFA (m^2)	Concept DA Consent Condition A.17 Maximum Car Parking Rate	Maximum Permissible Parking Provision	Proposed Parking Provision
Resident	Studio	0	0.2 spaces/unit	0	242
	1-bedroom unit	29	0.4 spaces/unit	11.6	
	2-bedroom unit	91	0.8 spaces/unit	72.8	
	3-bedroom	116	1.1 spaces/unit	127.6	
	4-bedroom	27	1.1 spaces/unit	29.7	
			Subtotal	**241.7**	**242**
Resident Visitor		263	0.167 for each dwelling up to 30 dwellings	5.01	
			0.1 for each dwelling more than 30 and up to 70 dwellings	4.0	
			0.05 for each dwelling more than 70 dwellings	9.65	
			Subtotal	**19**	**0**
Commercial		33,500m^2	30 commercial parking spaces approved DA Conditions of Consent SSD 7874	-	30
Retail		10,000m^2	Non-residential parking not permitted	0	0
			TOTAL	**262**	**273**

Therefore, the total maximum provision for car parking established under the SLEP and Concept DA Conditions of Consent 7874 is 242 residential spaces, 19 residential visitor spaces and zero retail car space.

The development proposes 242 residential spaces, zero Residential Visitor spaces, 1 Residential Car wash bay 30 commercial office spaces and zero retail spaces.

Provisions for EV charging facilities will be provided in the basement, for residential and commercial Parking.

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3.2 Accessible Parking

The SLEP does not outline specific accessible car parking rates for commercial office or retail uses. In lieu of such information, reference has been made to the *National Construction Code 2019/2022 Building Code of Australia – Volume One* (BCA). As per Part A6 of the BCA, the corresponding building class for commercial office use is Class 5.

In accordance with Table D3.5 of the BCA, the minimum accessible car parking provision rate for a Class 5 building is as follows:

- *1 space for every 100 car parking spaces or part thereof*

Applying this rate to the proposed car parking provision of 30 car spaces for commercial use results in a minimum provision of one (1) accessible parking space.

The proposed commercial car park includes two accessible spaces, thus meeting the accessible parking requirements in accordance with the BCA.

Accessible car parking for residents is to be at a rate of one accessible space per adaptable unit.

A summary of the minimum and proposed accessible car parking is outlined in Table 7.

Table 7 - Accessible Parking Summary

Land Use Type		No. of Adaptable Units / Proposed Car Spaces	Concept DA Consent Condition A.17 Accessible Parking Rate	Minimum Required Parking Provision	Proposed Parking Provision
Resident	Adaptable	27	1 accessible space / adaptable unit	27	27
Commercial	Staff	30	1 accessible space / 20 car spaces (DCP rate)	2 (1.5)	2
			Total	**29**	**29**

The development proposes to provide 29 accessible car parking spaces comprising 27 resident accessible spaces and 2 commercial staff accessible space.

3.3 Bicycle Parking

3.3.1 City of Sydney Bicycle Parking Requirements

As per Section 3.11.3 of the *Sydney DCP 2012* (DCP), the minimum on-site bicycle parking requirements for commercial office and retail uses are outlined in Table 8.

In accordance with the DCP, bicycle spaces are to be provided as follows:

(a) Class 1 bike lockers for occupants of residential buildings;

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(b) Class 2 bike facilities for staff/employees of any land use; and

(c) Class 3 bike rails for visitors of any land use.

Table 8 – Summary of Minimum Bicycle Parking Provision Rates (Source: Sydney DCP 2012)

Proposed Land Use	User Group	No. of Dwellings/ GFA (m^2)	Minimum Bicycle Parking Rate	Minimum Bicycle Parking Provision
Residential	**Resident**	263 dwellings	1 per dwelling	263
	Visitor		1 per 10 dwelling	27
Commercial (Office or Business Premises)	**Staff**	33,500m^2	1 per 150sqm GFA	223
	Visitors		1 per 400sqm GFA	83 (To be located in SSDA 3)
Retail (Shop, Restaurant or Café)	**Staff**	10,000m^2	1 per 200sqm sales area	50
	Customers		1 per 300sqm sales GFA	33 (To be located in SSDA 3)
			TOTAL	**679**

The development proposes to provide 263 residential bicycle spaces which meets the minimum requirements of the DCP. The provision of the residential bicycle parking is proposed under Darling Drive within the extents of SSDA 2.

In accordance with the most recent set of plans and compliance with AS2890.3, the following bicycle parking shall be provided within the development:

The development proposes to provide 223 commercial staff bicycle spaces which meets the minimum requirements of the DCP.

The development proposes to provide 50 retail staff bicycle spaces which meets the minimum requirements of the DCP.

The Harbourside Development commits to providing Commercial and Retail visitor bicycle parking which meets the minimum requirements of the DCP for bicycle parking numbers. These bicycle parking areas shall be located in SSDA3 for approval.

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3.4 End of Trip Facilities (EOTF)

3.4.1 City of Sydney EOTF Requirements

As per Section 3.11.3 of the *Sydney DCP 2012* (DCP), the minimum EOTF requirements for commercial office and retail staff uses are outlined in Table 9.

Table 9 – Summary of Minimum EOTF Provision Rates (Source: Sydney DCP 2012)

EOTF Type	Required Retail and Commercial Bike Spaces	Minimum DCP Rate	Minimum EOTF Provision	Proposed EOTF
Personal Lockers	273 total staff bike spaces	1 personal locker for each bike parking space	273 lockers	273
Shower & Change Cubicles		1 shower and change cubicle for up to 10 bike parking spaces; 2 shower and change cubicles for 11 to 20 or more bike parking spaces are provided; 2 additional showers and cubicles for each additional 20 bike parking spaces or part thereof;	28 shower and change cubicles	28

The development proposes to provide 28 showers and 278 personal lockers as part of the EoTF.

Mirvac commits to meeting the minimum requirements of the DCP for bicycle parking and EoTF, and the visitor bicycle parking will be located in SSDA3.

3.5 Motorcycle Parking

In accordance with Schedule 7 - Section 7.8.4 of the DCP, there is a minimum provision rate of 1 motorcycle parking space for every 12 car parking spaces.

Applying this rate to the development, results in the following motorcycle parking provision requirements outlined in Table 10.

Table 10 - Summary of Minimum Motorcycle Parking Provision Rates (Source: Sydney DCP 2012)

Land Use	Proposed Car Parking	Minimum DCP Motorcycle Parking Rate	Minimum Motorcycle Parking Requirement	Proposed Motorcycle Parking Provision
Residential	242	1 space / 12 car spaces	21 (20.16)	21
Commercial	30	1 space / 12 car spaces	3 (2.5)	10

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TOTAL	**24**	**31**

As outlined in Table 10, the minimum motorcycle parking provision is 24 spaces, and the development proposes to provide 31 motorcycle spaces.

3.6 Service Vehicle Parking

The following subsections outline the various planning controls relating to service vehicle parking requirements.

3.6.1 City of Sydney Service Vehicle Parking Requirements

In accordance with Schedule 7 – Section 7.8 of the Sydney DCP, the minimum service vehicle parking requirements for commercial and retail premises are outlined in Table 11.

Table 11 – City of Sydney Service Vehicle Parking Provisions Summary

Land Use Type	GFA (m^2)	DCP Minimum Service Vehicle Parking Rate	Minimum DCP Service Vehicle Parking Provision
Residential	42,000m^2 263 units	1 space for the first 50 dwellings plus; 0.5 spaces per 50 dwellings thereafter	3
Commercial	33,500m^2	For the first 50,000m^2 GFA: **1 space per 3,300m^2 GFA**	10
Retail	10,000	For up to 2,000m^2 GFA: **1 space per 350m^2** Beyond 2,000m^2 GFA: **1 space per 800m^2**	16
TOTAL	**85,500m^2**		**29**

3.6.2 TfNSW (RMS) Service Vehicle Parking Requirements

With regards to service vehicle parking, reference has been made to the *RMS Guide to Traffic Generating Developments (2002).* A summary of the required service vehicle parking bays is outlined in Table 12.

Table 12 – RMS Service Vehicle Parking Provisions Summary

Land Use Type	GFA (m^2)	RMS Minimum Service Vehicle Parking Rate	Minimum Service Vehicle Parking Provision
Residential	42,0000m^2 263 units	For developments > 200 flats or home units: **4 + 1 per 100 units over 200**	5

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Land Use Type	GFA (m^2)	RMS Minimum Service Vehicle Parking Rate	Minimum Service Vehicle Parking Provision
Commercial Offices	33,500m^2	For developments >20,000m^2 GFA: **5 + 1 space per 8,000m^2 over 20,000m^2**	6.7
Retail	10,000	For developments >2,000m^2 GFA: **5 + 1 space per 1000m^2 over 2000m^2**	13
TOTAL	**84,500m^2**		**25**

The proposed service bay provision comprises the following to be located in the basement loading dock (unless otherwise noted):

- 1 x Refuse vehicle bay accommodating a 9.24m City of Sydney vehicle (up to a maximum body height of 3.8m);
- 4 x MRV bay accommodating vehicles up to 8.8m in length (up to a maximum body height of 3.8m);
- 5 x 6.4m SRV bays accommodating vehicles up to 6.4m in length; and
- 6 x courier service bays accommodating B99 car-derived vans/utes.
- 4 x resident service bays accommodating B99 car-derived vans/utes within basement 3 and 4.

This results in an overall loading and service vehicle parking provision of 20 spaces.

Whilst it is acknowledged that the proposed service vehicle parking provision is lower than the DCP and TfNSW requirements, the loading dock and service bays are able to be managed onsite, such as by way of a booking system. A designated Loading Dock Manager will be present on site to coordinate any internal traffic movements within the loading dock.

The provision of loading dock spaces, this has been determined based on the projected demands of each of the land uses within the development and the ability to overlap these demands through the management of the loading area.

A strict application of the DCP requirements or the loading dock toolkit results in a 'stacking' of the requirements and a larger provision of the dock than required. The docks associated with each land use are not in constant use and these gaps between activities allow the provision of docks to be reduced, while still able to accommodate the daily activity.

ptc. has also undertaken a review of various comparable commercial developments owned and managed by Mirvac which identifies the likely usage of the associated loading docks. This will provide a real-world comparison of loading docks which are currently in operation and provide a benchmark for identifying the estimated number of deliveries which may be generated due to loading and servicing activities.

A summary of the loading dock usage at the similar sites is presented in Table 13.

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Table 13 – Loading Dock Usage Comparison with Similar Sites

Site	NLA (m^2)	Loading and Service Bay Provision	Daily MRV Deliveries	Daily SRV/B99 Deliveries	Total Daily Deliveries	Total Daily Deliveries per 10,000m^2	Daily MRV Deliveries per 10,000m^2	Daily SRV/B99 Deliveries per 10,000m^2
200 George Street, Sydney	38,000m^2	• 1 MRV bay • 2 SRV/B99 bays	15	45	60	16	4	12
8-12 Chifley Square, Sydney	20,000m^2	• 1 MRV bay • 5 SRV/B99 bays	5	25	30	15	3	13
275 Kent Street, Sydney	65,000m^2	• 3 MRV bay • 7 SRV/B99 bays	6	50	56	9	1	8
B1 South Eveleigh, Sydney	47,000m^2	• 3 MRV bay • 1 SRV/B99 bay	23	29	52	11	5	6
B2 South Eveleigh, Sydney	51,000m^2	• 2 MRV bay • 3 SRV/B99 bays	21	34	55	11	4	7
477 Collins Street, Melbourne	59,000m^2	• 1 MRV bay • 2 SRV/B99 bays	15	30	45	8	3	5
AVERAGE			**14.2**	**35.5**	**49.7**	**10.6**	**3.2**	**8.3**

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Based on our study of these buildings the average daily deliveries per 10,000m2 for MRV and SRV/B99 deliveries have been calculated. Applying these rates to the proposed development results in the following estimated loading and servicing deliveries:

$Estimated\ Daily\ MRV\ Deliveries = 3.2\ deliveries\ /\ 10{,}000m2\ NLA\ x\ 67{,}462m2\ NLA = 22$

$Estimated\ Daily\ SRV/B99\ Deliveries = 8.3\ deliveries\ /\ 10{,}000m2 NLA\ x\ 67{,}462m2\ NLA = 56$

This results in a total estimated loading and servicing of 78 deliveries on a typical day. It is noted that this may vary depending on the final operation and management of the loading dock and is indicative only. A basic averaging of this activity means that each of the 16 loading spaces will need to accommodate 5 vehicles per day, which is well within the capacity, particularly when managed by a booking system as detailed in the TIA.

A Loading Dock Management Plan (LDMP) has been prepared and will be submitted to TfNSW for endorsement once we have been able to consult.

It is noted that the former Harbourside Centre accommodated 7 loading dock spaces and a compactor, which were able to service the entire retail area and public domain. The proposal significantly reduces the retail component, which generates the majority of servicing activity. The proposal doubles the provision of loading dock spaces while maintaining a similar demand.

As an indication of nearby examples, we have prepared a benchmark comparison to demonstrate that the proposed loading provision is suitable for the development and exceeds the precedent set.

3.6.3 Indicative Loading Dock Schedule

Based on the estimated traffic generation calculated in Section 3.6.2 and the proposed service bay provision, an indicative loading dock timetable has been prepared (refer to Figure 3.1).

Each bay shall be booked in advance using the loading dock booking system to ensure availability of parking. The indicative timetable utilises 20-minute time slots for each booking and adopts the estimated number of deliveries outlined in Section 4.3.4.

The timetable demonstrates that the expected number of deliveries, servicing and maintenance vehicles are readily accommodated with a significant number of free time slots provided throughout a typical day. It should also be noted that the analysis indicates that the courier bays are likely to be free all day and available for long-term maintenance/service use.

NOTES:
During the normal operational hours between 6AM – 6PM (extended to 10pm for retailer operations), a summary of the loading bay demand and available timeslots are provided as follows:

LOADING AND SERVICING CAPACITY
In normal dock operations 6:00AM – 6:00PM there are:

36 x 4 = 144 time slots available for MRV use;

36 x 5 = 180 available time slots for SRV;

36 x 6 = 216 available time slots for B99 vans/utes.

During extended hours retail loading dock operations there are:

12 x 4 = 48 time slots available for MRV use;

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12 x 5 = 60 available time slots for SRV;

12 x 6 = 72 available time slots for B99 vans/utes.

DELIVERIES & MAINTENANCE

Approximately 22 MRV delivery trips; 70 SRV and B99 trips are generated for deliveries.

LOADING DOCK UTILISATION

In normal operating hours managed by the Dock manager (Mon-Sun 6am to 6pm), there are 540 x 20-minute time slots available across the MRV, SRV and B99 bays. If access to the loading dock for longer than 20 minutes, multiple time slots can be booked.

Retailers will be utilising the locating dock beyond the normal operating hours (Mon-Sun , 6am to 10pm), during the extended hours access are area management will be provided by the onsite 24/7 building security manager.

The loading dock will also available after hours, managed by the building security manager. A handover period at 6pm will occur, where the loading dock management team gives management of the loading dock over to the 24/7 building security. Loading dock management is to return prior to the 6am first time slot the next day.

In light of the above timetable allocations, the available time slots readily accommodates the expected usage with a significant number of free time slots provided throughout the day.

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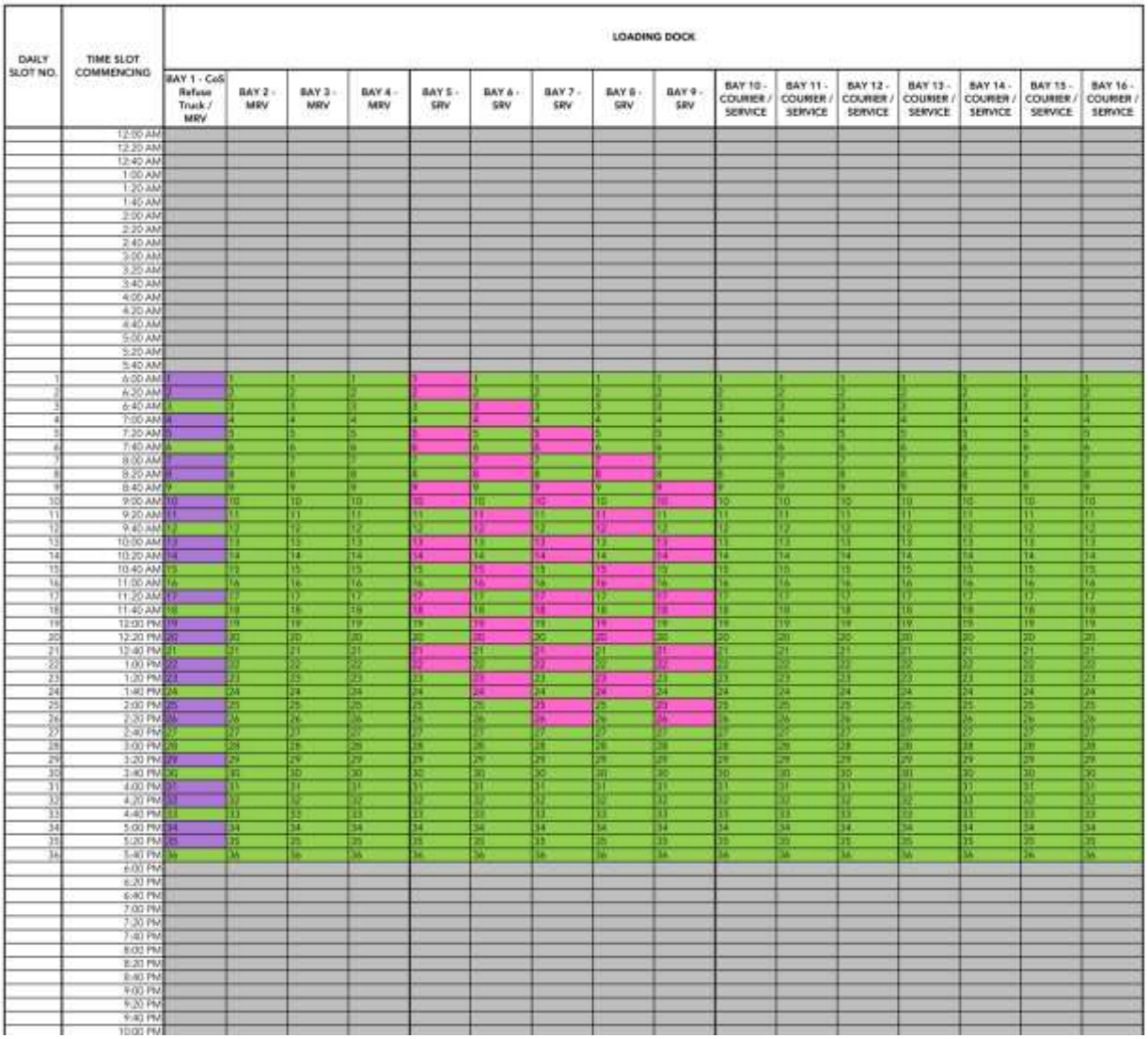
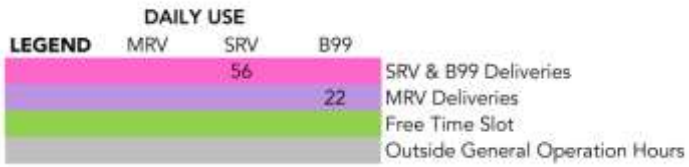


Figure 3.1 - Indicative Loading Dock Bay Timetable[1]



In light of this, the review of comparable loading docks at similar commercial developments currently in operation indicates that the proposed service vehicle provision is generous and sufficient for accommodating the anticipated loading and servicing needs of the development.

Further details of the operations of the loading dock and management procedures of the available loading and service bays are outlined within the Loading Dock Basement Arrival Management Plan (LDBAMP) prepared by **ptc.**, which has been separately prepared and submitted.

[1] Indicative only. Loading Dock Manager to confirm refuse/recycling collection days with Council waste contractor

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3.7 Car Share

Section 3.11 Transport and Parking of the DCP outlines minimum requirements for "development that provides parking spaces for exclusive use by an organised car share scheme". The DCP states that "*Car share parking spaces are to be provided in addition to the maximum number of car parking spaces permitted in the development.*"

The proposed development will provide 3 car share space for resident use only, to be located on Basement 4 of the secure residential basement.

Management of the resident carshare will be addressed in the Loading Dock Building Access Management Plan (LDBAMP).

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4. Transport Impact Assessment

The traffic generation of the proposed development has been established with reference to the *RMS Guide to Traffic Generating Developments (2002)* (RMS Guide) and *RMS Technical Direction 2013/04a* (TDT) (which provides as an update to the RMS Guide and presents the traffic generation rates for a number of land uses based on updated surveys).

It should be noted that limited on-site car parking is provided within the development and thus vehicle trip generation to the site will not accurately be reflected by the floor area rates presented in the RMS Guide.

It is noted that the office blocks that were surveyed for RMS Guide and TDT do not reside within Sydney CBD and typically overestimate the traffic generated by developments within Sydney CBD. Though the RMS guide and TDT are considered in this report, for developments that limit the available off-street parking, the traffic generation will generally depend on the off-street parking provided within the site.

4.1 Surrounding Intersections

5. Darling Drive / Ultimo Road — 3-leg roundabout
6. Darling Drive / Pier Street / Zollner Circuit — 5-leg roundabout
7. Darling Drive / Iron Wharf Place — 3-leg roundabout
8. Darling Drive / Murray Street / Pyrmont Bridge Road — 4 leg signalised intersection

4.2 Existing Traffic Volume

Intersection surveys were undertaken at the five listed intersections on Tuesday 22nd March 2022 (outside of school holiday period), between 7:00am-10:00am and 4:00pm-7:00pm. These periods were selected in order to coincide with the morning and evening commuter peaks. The survey locations are presented in Figure 4.1 and the results are shown in Attachment 3.

The AM and PM network peak hours have been determined to be the following:

Morning Peak Period: 08:00am – 09:00am

Afternoon Peak Period 17:00pm – 18:00pm

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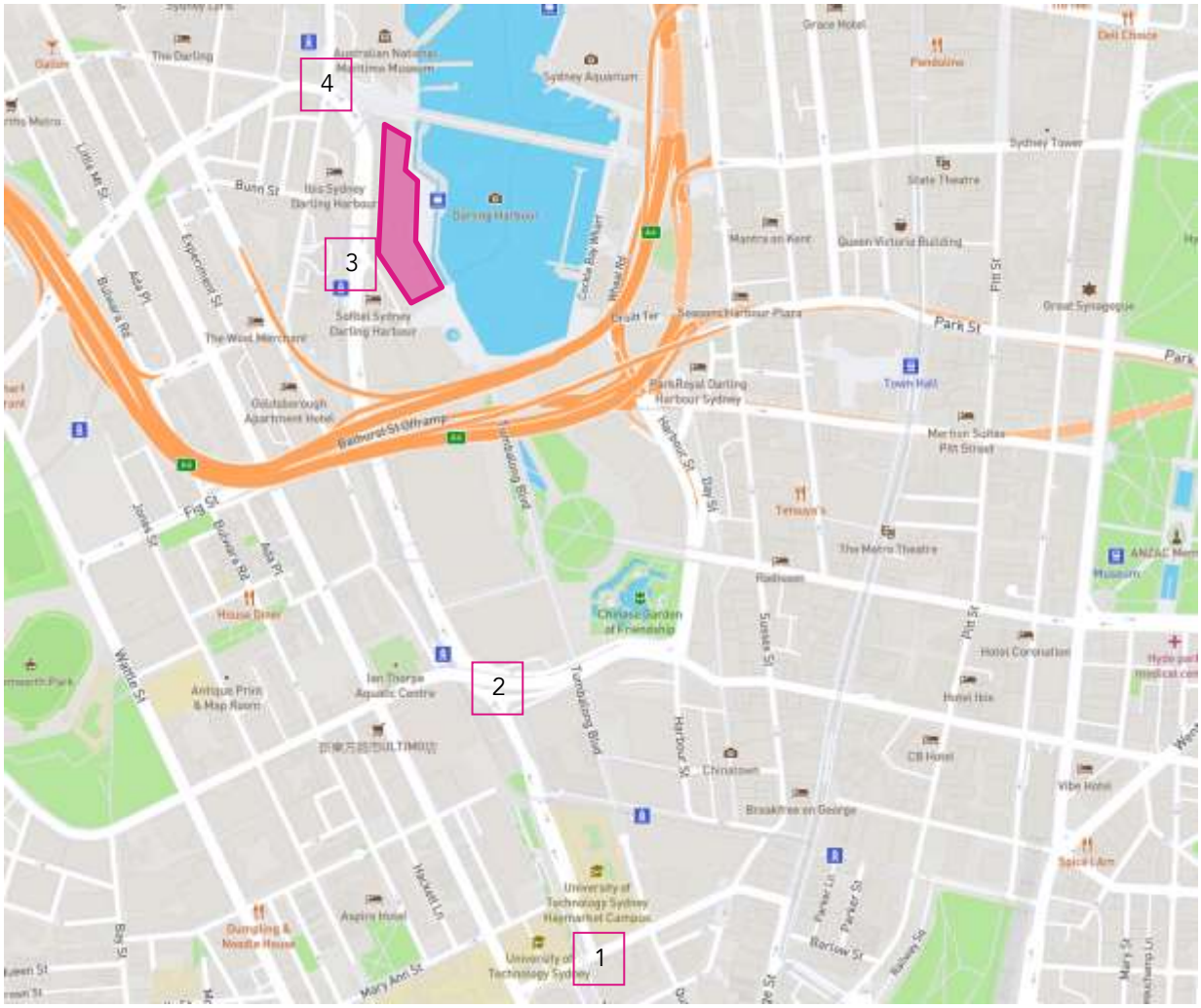

Figure 4.1: Survey Intersections

4.3 Development Traffic Generation

4.3.1 Traffic Generation based on Net Increase in GFA Provision

The RMS Guide and TDT specifies the following retail trip generation rates based on the proposed gross floor area for the proposed use:

Retail Use:

Range in Total Floor Area (GLFA – m^2)	Peak Hour Generation Rate (vehicles per 100m^2 GLFA)			
	Thursday (V(P)/A)	Friday (V(P)/A)	Saturday PVT (A)	Sunday
0 – 10,000	12.3	12.5	16.3	
10,000 – 20,000	7.6 (6.2)	6.2 (6.7)	7.5 (7.5)	(6.6)
20,000 – 30,000	5.9 (6.0)	5.6 (5.9)	7.5 (7.0)	(6.3)
30,000 – 40,000	4.6	3.7	6.1	
40,000 – 70,000	(4.4)	(4.4)	(5.5)	(4.6)
70,000+	(3.1)	(4.0)	(3.6)	(3.2)

Figure 4.2: RMS Retail Traffic Generation Rates

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However, it is important to note that there is no retail parking provision. Any traffic generation associated with retail is deemed to occur via the Porte Cochere, detailed in Section 4.4.

High Density Residential:

Weekday Rates	Sydney Average	Sydney Range	Regional Average	Regional Range
AM peak (1 hour) vehicle trips per unit	0.19	0.07-0.32	0.53	0.39-0.67
AM peak (1 hour) vehicle trips per car space	0.15	0.09-0.29	0.35	0.32-0.37
AM peak (1 hour) vehicle trips per bedroom	0.09	0.03-0.13	0.21	0.20-0.22
PM peak (1 hour) vehicle trips per unit	0.15	0.06-0.41	0.32	0.22-0.42
PM peak (1hour) vehicle trips per car space	0.12	0.05-0.28	0.26	0.11-0.40
PM peak (1 hour) vehicle trips per bedroom	0.07	0.03-0.17	0.15	0.07-0.22
Daily vehicle trips per unit	1.52	0.77-3.14	4.58	4.37-4.78
Daily vehicle trips per car space	1.34	0.56-2.16	3.22	2.26-4.18
Daily vehicle trips per bedroom	0.72	0.35-1.29	1.93	1.59-2.26

Figure 4.3: Residential Traffic Generation Rates

Commercial Office Use: *(updated survey rates from RMS TDT for an office block in North Sydney)*

- AM Peak 0.17 trips per 100m^2 of GFA
- PM Peak 0.14 trips per 100m^2 of GFA

However, as this site has limited (and allocated) parking spaces for commercial, the traffic generation is likely to be guided by the provision of parking rather than the GFA. As such, the 30 on site commercial spaces are capable of generating, at most, 30 vehicle trips per peak hour.

Table 14 - Traffic Generation Summary based on car spaces

Land Use Type	Parking spaces	Peak Period	Peak Hour Maximum Trip Generation	Estimated Traffic Generation based on parking spaces
Proposed Commercial	**32,700m² 30 spaces**	**AM Peak**	1 trip per space	30 trips
		PM Peak	1 trip per space	30 trips
Proposed Residential	**42,000m² 263 units 242 spaces**	**AM Peak**	0.15 trips per car space	37 trips
		PM Peak	0.12 trips per car space	30 trips
			Total AM Peak Hour Trip Generation	**67 trips**
			Total PM Peak Hour Trip Generation	**60 trips**

As shown in Table 14 the calculated traffic generation results in 67 trips in the AM peak and 60 trips in the PM peak. As mentioned previously, in a development that limits off-street parking, the traffic generated by the development will typically depend on the off-street parking available. The constrained parking scenario is further discussed in the following subsection.

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4.3.2 Traffic Generation based on Parking Provision

It has been noted that the existing building does not provide basement off-street car parking. The proposed development will provide limited basement car parking. As mentioned, traffic generated by developments which limit off-street parking typically depends on the off-street car parking provision; hence, it is reasonable to assume that changes to the traffic generation would typically correlate with changes to the parking provision. It is noted that there is a nearby Wilson carpark, offering paid parking. As this is outside the extents of the development, the provision of this parking is not considered in the development traffic generation.

The development is proposed to provide 30 commercial parking spaces, 10 courier/loading spaces, 5 SRV loading spaces and 4 MRV loading spaces.

4.3.3 Traffic Generation of Event and Conference Use

The development proposes to include a commercial/event and conference space on Level 1.

The traffic generated from any event/conference operator would be dependent on the type, frequency and size of the event/conference use. In general:

- Staff would be expected to travel to and from the site by public or active transport, or if by private vehicle, will not be parking at the site. As such, the vehicle trips to the site generated by the 120 staff would equate to zero.
- Patrons making use of the event and conference space would travel to the site using a combination of travel modes.

Travel Mode Study

ptc. have identified a State Significant Development used as a large event venue in the inner Sydney area, which has been used to generate an indicative travel mode distribution of event space patrons at the Harbourside development. The average mode share collected from surveys undertaken by ptc. are presented below:

Mode	Mode Share
Hired Car, Taxi, Car Share (Uber)	37%
Private Bus, Shuttle	5.5%
Public Transport	27.5%
Active Transport	5%
Private Vehicle (as driver or passenger, requiring parking)	25%

The following should be considered when evaluating the trips generated by land use such as event and conference spaces:

- Typical events and conferences of a business or corporate nature typically occur during working hours, and thus patrons are unlikely to be travelling on the road network during the commuter peak hours.

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- Evening events and conferences are typically held following the PM commuter peak hour, and attendees may already be in proximity the site in nearby Darling Harbour, or the Sydney CBD.
- Events and conferences of maximum capacity would not be expected to occur daily, and as such are not considered part of typical daily traffic generation.

Based on the typical considerations above, it is unlikely that traffic generated by the events and conferences space would align with network AM or PM peak commuter hours. Thus, it is not expected that these vehicle trips would increase the peak network traffic volumes.

Furthermore, the road network of the Darling Harbour precinct has been designed to accommodate the fluctuating activity associated with the Darling Harbour precinct and that the event space is consistent with this ongoing use.

4.3.4 Loading and Service Vehicle Trip Generation

With regard to loading and service vehicle trip generation, ptc. has undertaken a review of various loading docks at similar commercial sites which are owned and managed by Mirvac. This will provide a real-world comparison of loading docks which are currently in operation and provide a benchmark for identifying the estimated number of deliveries which may be generated due to loading and servicing activities.

A summary of the loading dock usage at the similar sites is presented in Table 13.

As outlined, the average daily deliveries per 10,000m^2 for MRV and SRV/B99 deliveries have been calculated. Applying these rates to the proposed development results in the following estimated loading and servicing deliveries:

$$Estimated\ Daily\ MRV\ Deliveries\ =\ 3.2\ deliveries\ /\ 10{,}000m^2\ NLA\ x\ 67{,}462m^2\ NLA\ =\ 22$$
$$Estimated\ Daily\ SRV/B99\ Deliveries\ =\ 8.3\ deliveries\ /\ 10{,}000m^2 NLA\ x\ 67{,}462m^2\ NLA\ = 56$$

This results in a total estimated loading and servicing of 78 deliveries on a typical day. It is noted that this may vary depending on the final operation and management of the loading dock and is indicative only.

Based on the assumed operating hours of 6am – 6pm and assuming a uniform arrival and departure rate over this 12-hour period, this results in the following number of peak hour deliveries:

$$Estimated\ Peak\ Hour\ MRV\ Deliveries\ =\ 22\ deliveries\ /\ 12\ hours\ =\ 2$$

$$Estimated\ Peak\ \ Hour\ SRV/\ B99\ Deliveries\ =\ 56\ \ deliveries\ /\ 12\ hours\ \ =5$$

This represents a robust assessment as deliveries will be encouraged to occur outside of peak hours where possible. It is noted that even with a conservative estimate on the service vehicle trip generation in the peak hours, the number of trips will not significantly impact the road network.

4.3.5 Traffic Generation Conclusion

The RMS Guide and TDT provide a traffic generation rate based on the GFA of the proposed development. It was noted that the surveys undertaken to establish these rates did not include a site within Sydney CBD. The most applicable traffic generation rate is the rate provided for North Sydney which, when considering the GFA, will generate an additional 67 trips in the AM peak and 60 trips in the PM peak for retail and commercial, and an average of 7 service vehicle trips per hour.

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Traffic generated by the events and conferences space is not expected to coincide with the network AM or PM peak hours.

Though the traffic generation provided in the RMS Guide and TDT provides a reasonable estimation of the potential traffic generated by most developments, when considering developments that limit off-street parking, the traffic generation is typically dependent on the off-street parking provision.

4.4 Building Arrival (Drop-off and Pick-up) Traffic Generation

Condition C37 makes comment that "*queuing analysis and/ or traffic modelling to demonstrate the drop off area has adequate capacity and propose mitigation measures to ensure queuing on Darling Drive does not occur to the satisfaction of TfNSW".* It is important to note that at the time of the condition writing, the development planned to have a Porte Cochere directly onto Darling Drive. This is not the case now, and thus addresses condition C37 regarding queue management. Despite this, we present the following analysis.

It is important to note that several key considerations have been taken into account when assessing the impact of the Building Arrival (Drop-off and Pick-up). These are as follows;

- The design has been modified from the Concept Approval whereby the Building Arrival (Drop-off and Pick-up) is no longer located directly off Darling Drive (as shown in the competition scheme). The access to the relocated Building Arrival (Drop-off and Pick-up) is provided via the Darling Drive underpass, and not directly from Darling Drive (southbound). Thus any vehicles approaching/entering the Building Arrival (Drop-off and Pick-up) are doing so from the access road, not Darling Drive.
- Position of the Building Arrival (Drop-off and Pick-up) on the Darling Drive Slip road provides vehicle storage in excess of any potential queue length based on calculations below, in the unlikely event that a queue does form.
- The Building Arrival contains four (4) drop-off / pick-up spaces. If a conservative vehicle dwell time of 2 minutes is assumed for an hour, the theoretical capacity is 90 vehicles events per hour, which is in excess of the anticipated demand given that it will serve primarily residential and commercial areas.
- Signposted parking limits for the Building Arrival (Drop-off and Pick-up) will apply to regulate vehicle stop times. It is estimated that these restrictions will be 2 minute or 5 minute parking restrictions, or "No Parking" which allows for vehicles to stop and drop off passengers.

For the purposes of traffic generation associated with the Building Arrival (Drop-off and Pick-up), a nominated typical day peak hour traffic generation of 30 vehicles has been adopted, which assumes one car arrival every two minutes within the peak hour. Event and conference spaces trip generation has not been included in this hourly volume as it has been assumed to sit outside of typical daily peak hour traffic generation.

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4.5 Modelling Scenarios

The following scenarios have been assessed in this report for both the existing undeveloped site and the proposed development site:

- **Scenario 1A – 2022 Existing AM Peak** – The existing road network with the existing AM peak traffic volumes as observed in the traffic survey.
- **Scenario 1B – 2022 Existing PM Peak** – The existing road network with the existing PM peak traffic volumes as observed in the traffic survey.
- **Scenario 2A – 2027 Future Base AM Peak** – The existing AM peak traffic volumes with background growth factor applied for five years, without the development.
- **Scenario 2B – 2027 Future Base PM Peak** – The existing PM peak traffic volumes with background traffic growth factor applied for five years, without the development.
- **Scenario 3A – 2027 Future Base AM Peak + Development** – The existing AM peak traffic volumes with background traffic growth factor applied for five years, with the development.
- **Scenario 3B – 2027 Future Base PM Peak + Development** – The existing PM peak traffic volumes with background traffic growth factor applied for five years, with the development.
- **Scenario 4A – 2037 Future Base AM Peak** – The existing AM peak traffic volumes with background traffic growth factor applied for 10 years after year of opening, without the development.
- **Scenario 4A – 2037 Future Base PM Peak** – The existing PM peak traffic volumes with background traffic growth factor applied for 10 years after year of opening, without the development.
- **Scenario 5A – 2037 Future Base AM Peak + Development** – The existing AM peak traffic volumes with background traffic growth factor applied for 10 years after year of opening, with the development.
- **Scenario 5B – 2037 Future Base PM Peak + Development** – The existing AM peak traffic volumes with background traffic growth factor applied for 10 years after year of opening, with the development.

4.6 Background Traffic Growth

In order to assess the future performance of the surrounding intersections, a background traffic growth factor would need to be applied to the existing survey data to determine the future base traffic volumes. To determine an applicable growth rate, reference has been made to the TfNSW Traffic Volume Viewer which indicates the closest permanent traffic counter is situated on the Western Distributor (Anzac Bridge) Station ID: 20001.

An analysis of the weekday daily traffic volumes at this counter for the years 2006 – 2019[2] (pre COVID-19 periods) has been undertaken. From this, the average percentage yearly change in traffic volumes has been tabulated as shown in Table 15.

[2] Excluding 2016 as there is no data available for this year in the Traffic Volume Viewer

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Table 15 - Background Traffic Growth Summary (Source: TfNSW Traffic Volume Viewer)

Year	Period	Eastbound (All Vehicles)	Westbound (All Vehicles)	Total (All Vehicles)	Average Yearly % Change
2006	Weekdays	71,275	65,740	137,015	-
2007	Weekdays	72,216	67,215	139,431	1.76%
2008	Weekdays	71,985	66,871	138,856	-0.41%
2009	Weekdays	73,289	66,512	139,801	0.68%
2010	Weekdays	73,063	66,717	139,780	-0.02%
2011	Weekdays	73,174	66,137	139,311	-0.34%
2012	Weekdays	72,379	65,266	137,645	-1.20%
2013	Weekdays	73,350	65,507	138,857	0.88%
2014	Weekdays	71,449	63,667	135,116	-2.69%
2015	Weekdays	71,579	63,442	135,021	-0.07%
2016	Weekdays	-	-	-	-
2017	Weekdays	72,712	65,811	138,523	1.30%
2018	Weekdays	74,116	64,099	138,215	-0.22%
2019	Weekdays	74,989	64,329	139,318	0.80%
				AVERAGE (ALL YEARS)	**0.04%**
				AVERAGE (GROWTH YEARS ONLY)	**1.08%**

From the traffic counter data, the average yearly percentage change from 2006 to 2019 is approximately 0.04%. Given that this growth rate is negligible, a conservative assumption has been adopted whereby only the years which have experienced growth have been used to calculate the average growth. From this, an annual average growth rate of 1.08% has been adopted in the traffic modelling analysis.

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4.7 SIDRA Analysis

A volume analysis was performed using the SIDRA Intersection 9 software, a micro-analytical tool for individual intersection and whole-network modelling. The models are based on the collected traffic survey data. SIDRA provides a number of performance indicators outlined below:

- Degree of Saturation – The total usage of the intersection expressed as a factor of 1 with 1 representing 100% use/saturation. (e.g. 0.8=80% saturation)
- Average Delay – The average delay encountered by all vehicles passing through the intersection. It is often important to review the average delay of each approach as a side road could have a long delay time, while the large free flowing major traffic will provide an overall low average delay.
- 95% Queue Lengths (Q95) – is defined to be the queue length in metres that has only a 5-percent probability of being exceeded during the analysis time period. It transforms the average delay into measurable distance units.
- Level of Service (LoS) – This is a categorization of average delay, intended for simple reference. It is a good indicator of overall performance for individual intersections. The RMS adopts the following bands:

Table 16: Intersection Performance - Levels of Service

Level of Service	Average Delay (secs/vehicle)	Traffic Signals, Roundabout	Give Way & Stop Signs
A	<14	Good operation	
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity. At signals, incidents would cause excessive delays. Roundabouts require other control mode	At capacity, requires other control mode
F	>70	Extra capacity required	Extreme delay, major treatment required

The summary of the existing and post development performance of the local road network is summarised in Table 17. A detailed breakdown of the SIDRA movement summaries is provided in Attachment 2.

4.7.1 Model Calibration and Validation

Analysis of survey video and data regarding queue lengths have been compared to SIDRA Scenarios 1A and 1B. This is to ensure that the SIDRA model output for the existing current day (2022) networks matches the real world data captured. Upon review of this data, it is confirmed that the SIDRA output and survey data are comparable and the model required no further calibration.

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4.7.2 Intersection Performance

Table 17: Intersection Performance

Intersection	Time	Scenario	LoS	Average Delay (s)[3]	DoS (v/c)	Q95 (m)
Darling Drive / Ultimo Road	Weekday AM Peak	Scenario 1A	B	15.8	0.439	27.5
		Scenario 2A	B	15.9	0.461	29.4
		Scenario 3A	B	17.3	0.562	39.5
		Scenario 4A	B	16.1	0.513	33.5
		Scenario 5A	B	17.5	0.604	43.4
	Weekday PM Peak	Scenario 1B	B	17.3	0.646	54.6
		Scenario 2B	B	17.5	0.681	58.9
		Scenario 3B	B	18.8	0.756	72.8
		Scenario 4B	B	18.2	0.751	68.9
		Scenario 5B	B	19.8	0.822	85.8
Darling Drive / Pier Street / Zollner Circuit	Weekday AM Peak	Scenario 1A	B	11.8	0.309	12
		Scenario 2A	B	11.9	0.330	13.1
		Scenario 3A	B	12.1	0.340	13.6
		Scenario 4A	B	12.3	0.378	15.5
		Scenario 5A	B	12.5	0.389	16.4
	Weekday PM Peak	Scenario 1B	B	11.2	0.299	11.4
		Scenario 2B	B	11.3	0.319	12.3
		Scenario 3B	B	11.4	0.324	12.8
		Scenario 4B	B	11.6	0.362	14.6
		Scenario 5B	B	11.6	0.368	15.2
Darling Drive / Iron Wharf Place	Weekday AM Peak	Scenario 1A	A	8.3	0.267	12.3
		Scenario 2A	A	8.2	0.258	11.8
		Scenario 3A	A	8.2	0.269	12.9
		Scenario 4A	A	8.2	0.285	13.5
		Scenario 5A	A	8.2	0.296	14.7
	Weekday PM Peak	Scenario 1B	A	8.2	0.230	10.4
		Scenario 2B	A	8.2	0.242	11.1
		Scenario 3B	A	8.2	0.249	11.8
		Scenario 4B	A	8.2	0.267	12.7

[3] For signalised intersections, the average performance indicators have been reported. For priority and roundabout intersections, the average delay of the worst movement is used to determine the LoS.

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Intersection	Time	Scenario	LoS	Average Delay (s)[3]	DoS (v/c)	Q95 (m)
		Scenario 5B	A	8.2	0.274	13.5
Darling Drive / Murray Street / Pyrmont Bridge Road	Weekday AM Peak	Scenario 1A	C	32.6	0.382	46.2
		Scenario 2A	C	32.8	0.401	48.8
		Scenario 3A	C	33.4	0.403	56.0
		Scenario 4A	C	32.7	0.440	53.9
		Scenario 5A	C	33.9	0.440	71.6
	Weekday PM Peak	Scenario 1B	C	33.9	0.433	61.2
		Scenario 2B	C	33.9	0.454	64.6
		Scenario 3B	D	35.3	0.473	65.5
		Scenario 4B	C	34.2	0.501	72.1
		Scenario 5B	D	35.5	0.522	73

4.7.3 Darling Drive / Ultimo Road

All existing and future scenarios retain LoS B, with a queue length increase of approximately 10 metres as a result of development traffic in the AM peak, and approximately 15 metres in the PM peak. No noticeable degradation of the intersection LoS, average delay, or queue length is noted as a result of future growth or the proposed development.

4.7.4 Darling Drive / Pier Street / Zollner Circuit

This intersection has negligible deterioration of LoS nor increase to queue length or average delay as a result of future growth and proposed development.

4.7.5 Darling Drive / Iron Wharf Place

LoS A is maintained throughout all existing and future scenarios. Minimal increases to the average delay or queue length occurs as a result of the future development.

4.7.6 Darling Drive / Pyrmont Bridge Road / Murray Street

All existing and future scenarios that do not include the proposed development have a LoS C. It is noted that the including of the proposed development traffic degrades the intersection to LoS D in both Scenario 3B and 5B (PM Peak Hours in 2027 and 2037 + Development Traffic). In these scenarios, average delay increases were approximately 1.5 seconds, and queue lengths increase only 1 metre compared to the non-development scenarios (2B and 4B).

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4.8 Bicycle Strategy

In accordance with conditions C41, C42 and C43 of the Planning Proposal Conditions, the following information is presented as summary of Sections 3.3 and 3.4, as well as the ptc. response to the cycleway road safety audit attached as Attachment 3.

- Dedicated entry and exit points, as well as connection to the existing and future foreshore shared paths provide safe and efficient access for cyclists into the development. The separation of the various cycling user group (residential, commercial and retail staff, visitor) access points and internal connection to End of Trip and the rest of the site aids in providing efficient and safe access from the public domain into the site.
- All bicycle parking infrastructure is detailed on plan (provided by Snohetta and Hassall) and is detailed in Attachment 1.
- ptc.'s response to the road safety audit findings gives suggestion and provides input to the possible remedy actions and upgrades that could be incorporated along Darling Drive and in the vicinity of the site to improve cyclists' safety and cyclists' connections around the site (Attachment 3).
- The use of existing cycle paths around the site, including the promenade shared path, is beneficial to the safe management and movement of cyclists to and from the site.

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5. Access and Car Park Assessment

The following section presents an assessment of the proposed development with reference to the requirements of *AS2890.1:2004 Off-street Car Parking; AS2890.2:2018 Off-street Commercial Vehicle Facilities; AS2890.3:2015 Bicycle Parking;* and *AS2890.6:2009 Off-street Parking for People with Disabilities*.

The following sections should be read in conjunction with the architectural plans prepared by Snohetta and Hassall and **ptc.**'s review of the concept car parking arrangements (Attachment 1). It is noted that a detailed design review is to be undertaken during the design development stage, prior to the issue of a Construction Certificate.

5.1 Vehicular Access

Access into the site is the existing underpass off the Darling Drive/Iron Wharf Place roundabout which is currently used as the loading dock entry for the existing shopping centre. Access into the loading dock and basement car park is via a two-way consolidated driveway. The entryway is fit for purpose to allow access for residential and commercial passenger vehicles, as well as service vehicles including up to MRV trucks and the 9.24m City of Sydney refuse vehicle.

The design of the driveway has taken into consideration the requirements of AS2890.2 for commercial vehicle access, in conjunction with other design requirements (e.g. flood levels) to develop a performance solution that meets the intent of the Standard.

Table 3.1 of AS2890.1 outlines the access facility category for the proposed car park. It is noted that the applicable user class is Class 1A (staff or employee parking) and access into the car park is via a local road.

The car park comprises between 101 to 300 spaces, and the corresponding classification is Category 2 in accordance with Table 3.2 of AS2890.1. A Category 2 facility requires a minimum combined driveway width of 6-9m (between kerbs).

However, given that access is required by heavy vehicles, the proposed driveway width of 15 has been determined based on a performance assessment for the largest anticipated vehicles, being a 9.24m City of Sydney refuse vehicle and an 8.8m MRV.

The access driveway and internal ramp has been designed and assessed on the basis that vehicles will have line of sight of approaching vehicles. The typical swept paths for unimpeded two way traffic is a passenger car and an MRV (8.8m) passing each other. Two-way movement for larger vehicles, such as two passing MRV's relies on sufficient sight distance of an oncoming vehicle with the provision of suitable waiting space. All straight sections of ramp are adequate to facilitate two-way movement. Refer to Attachment 1.

5.2 Access Control

The Loading Dock and carparking basement levels will be accessible from a shared secure entry point at street level and ramp. The access is with the service vehicles accessing the loading dock until level B1, where the ramp access to the Loading dock is separated from the carparking. The car parking spaces will operate on an allocation basis whereby only authorised vehicles will be permitted into the car park.

The proposed controls to manage access into the basement car park are;

- Access (security gate) and intercom control point at street level;
- Roller shutter door at street level (After hours)

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- Access control point at level B1 with roller shutter door at separating the secure Residential Basement;
- Residential Services spaces will be available through a booking system managed by the residential building manager/concierge
- Resident Care Share will be available through a booking system managed by the residential building manager/concierge or third party operator.

The street level roller shutter door will remain open during the day to facilitate access into the loading dock and the basement car park, a boom gate at this level may be used to control access. After hours the roller door will be closed to provide a secure line into and out of the site. Further details of the after-hours access and egress arrangements for the various user groups of the car park are outlined in the following sections.

Further access control for residential parking levels is located on Basement Level 1. It is anticipated that this will be in the form of a roller shutter door, with remote access to mitigate the need of a central traffic island.

Commercial parking spaces are not access controlled, other than the main security point at ground level.

5.3 Driveway Grades

In terms of driveway grades, it is noted that AS2890.1 and AS2890.2 requires the following grade requirements for the various vehicle use cases:

Service Vehicle, Commercial and Residential (Entry Ramp):

- A 1:20 (5%) maximum grade for the first 6m into the site measured from the property boundary; however, this may be increased if the following conditions are satisfied:
    - The grade is a downgrade for traffic leaving the property and entering the frontage road;
    - The user class is Class 1, 1A or 2 only; and
    - The maximum car park size is:
        - For entry into an arterial road – 25 spaces; or
        - For entry into a local road – 100 spaces.
- Maximum ramp grades of 1:20 if ramp length exceeds 20m or maximum 1:25 if less than 20m; and
- Grade transitions of usually 2 metres length with grade half of the algebraic sum of adjacent grades.

Loading Dock:

- Maximum roadway and ramp grade of 1:6.5
- Maximum transition grades of 1:16 running for at least 7.0m.

As the entry way is consolidated, with both commercial and residential vehicles sharing the ramp with service vehicles, the design shall be based on the criteria with higher requirements. As such, the following design requirements shall be in place for the entryway driveway and ramps where :

- Maximum grade of 1:6.5
- Maximum grade transitions of 1:16 running for at least 7.0m.

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Once the residential ramp separates from the shared loading dock/basement ramp, the design requirements for B99 commercial and residential access can be adopted.

Based on our assessment, the proposed ramp is able to accommodate access into the loading dock for a 9.24m long City of Sydney refuse vehicle with a maximum vehicle body height of 3.8m, which is the largest vehicle expected to access the lower basement loading dock. The vertical clearance assessment also confirms that there is no underbody or overhead scraping associated with access by this vehicle. On this basis, the proposed service vehicle ramp is considered to be fit-for-purpose on a performance basis and deemed to meet the intent of the Standards.

5.4 Sight Distance

The proposed entryway is accessed in a straight-on direction, providing sight distance to the driveway from the approaching street (Darling Drive Slip Lane). This road is one way. As the driveway will be utilised by heavy vehicles, the sight distance assessment has been conducted with reference to the minimum requirements stipulated within Clause 3.4.5 of *AS2890.2:2015 Off-street Commercial Vehicle Facilities*.

In accordance with Figure 3.3 of AS2890.2, for a frontage road speed of 40km/h[4] the minimum stopping sight distance required is 55m. This minimum stopping sight distance is provided for the check to the right for an oncoming vehicle. It is noted that given the one-way nature of the road, the check left is not intended for oncoming vehicles, however, is still to be achieved in case of queued vehicles or other activity in that area such as pedestrian.

As there is a pedestrian footpath along the driveway frontage, the typical 2.5m x 2.0m pedestrian sight triangle as per AS2890.1 are required and provided.

5.5 Car Park Layout and Circulation

5.5.1 Typical Requirements

Table 1.1 of *AS2890.1 (2004)* presents a number of car park classifications applicable to different land-uses. As the development includes commercial and residential uses, the car park is classified as a Class 1A facility. The minimum parking space dimensions and associated aisle width requirements for a Class 1A facility are as follows:

- Space: 2.4m x 5.4m (however, the proposed development is to provide 2.6m x 5.4m parking spaces)
- Aisle widths: 5.8m (plus an additional 300mm to any vertical obstructions greater than 150mm in height including, but not limited to, walls, bollards etc.)

5.5.2 Headroom

- A minimum height clearance of 2.2m shall be maintained in all vehicular circulation areas (including motorcycle and bicycle access paths) and above all standard Class 1A parking bays.
- Wherever access is required by 9.24m City of Sydney refuse vehicles (with a maximum body height of 3.8m), a minimum clear headroom of 4m shall be provided (i.e. within the loading dock and along the entire vehicle access path). A clearance height of min. 4.8m over the waste collection areas in the loading

[4] It is noted that there is no specific posted speed limit on the slip road. Whilst it is acknowledged that the default speed limit for unsigned urban roads is 50km/h, it has been assumed that the speed limit of the slip road is 40km/h to be consistent with the function of the roads which is an access road to service docks and high pedestrian areas.

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dock shall be provided. This clear headroom is to be measured to the underside of any overhead obstructions including, but not limited to, utilities, mechanical ducts, sprinklers, lighting or any other overhead fixtures, etc.)

- The service vehicle dock and access ramps to this area are suitable for up to 9.24m City of Sydney refuse vehicles, suitable for the 4m headroom clearance and the design access road and ramp alignment. No vehicles larger than the dimensions of this City of Sydney refuse have been assessed or permitted in the design provision.

5.5.3 Accessible Parking

Accessible parking spaces are to satisfy minimum dimensions of 2.4m x 5.4m, with an adjacent shared bay of equal dimensions. Shared bays and accessible spaces shall be installed in accordance with AS2890.6:2009, including the installation of bollards and relevant pavement markings.

A minimum height clearance of 2.5m shall be maintained above all accessible and shared bays.

5.6 Bicycle Parking

The various types of bicycle parking provided within the development include:

- Double Stacked bicycle racks, requiring 2.7m headroom and a minimum 2m aisle opposite all spaces. The Five at Heart Arc stacked bicycle rack has been used as reference with product width 700mm, height 2400mm, and depth 2000mm.
- Standard horizontal spaces (1.8m x 0.5m) with a minimum 1.5m aisle
- Vertical bicycle parking spaces (1.2m x 0.5m) with a minimum 1.5m aisle

The bicycle parking shown on plan is deemed to meet the intent of the AS2890.3 (bicycle parking facilities).

5.7 Service Vehicle Access

Access into the site for service vehicles is the same as for light vehicles, utilising the proposed driveway within the Darling Drive underpass frontage. A loading dock has been provided within basement level 2.

As outlined in Section 3.6, the proposed service vehicle provision comprises the following located in the loading dock (unless otherwise notes):

- 1 x 9.24m City of Sydney refuse vehicle
- 4 x MRV bay accommodating vehicles up to 8.8m in length (up to a maximum body height of 3.8m);
- 5 x 6.4m SRV bays accommodating vehicles up to 6.4m in length; and
- 6 x B99 courier service bays accommodating B99 car-derived vans/utes.
- 4 x B99 residential service bays accommodating B99 car-derived vans/utes located in Basement 3-4

As specified in Section 5.5.2, a minimum vertical clearance of 4.0m is proposed accessing the loading dock and along the driveway ramp. A higher minimum vertical clearance of 4.8m is proposed generally in the loading dock and over waste collection areas. A vertical clearance assessment has been undertaken to demonstrate that 9.24m CoS refuse vehicles (with a maximum vehicle body height of 3.8m) is able to enter and exit the loading dock without underbody or overhead scraping.

The proposed access arrangement allows heavy vehicles to enter and exit the site in a forward direction.

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Where access is required by heavy vehicles (e.g. refuse, MRV, SRV), all grades are to comply with the provisions of Table 3.2 of *AS2890.2: 2018 Off-street Commercial Vehicle Facilities*. All access within the loading dock is to be designed for the largest design vehicle (i.e. 9.24m CoS refuse vehicle).

A minimum vertical clearance of 2.2m is proposed accessing and within the residential basement, including along the driveway ramp in accordance with AS2890.1.

5.7.1 Waste Collection

Waste collection is proposed to be undertaken using the City of Sydney 9.24m Refuse Vehicle of similar vehicle of equal or lesser length, width and height dimensions. The proposed loading dock is able to accommodate waste collection using this vehicle with a body height of 3.8m.

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6. Road Safety Audit Findings

6.1 Audit Findings

In accordance with conditions of the Concept Approval, a road safety audit has been conducted of the existing bicycle infrastructure along Darling Drive in the vicinity of the project site.

The Audit was conducted by DC Traffic Engineering, who are independent of the design team in accordance with the Road Safety Audit process.

The audit has been undertaken to satisfy the following conditions:

C36 - Future Development Application(s) must include a Road Safety Audit for the cycleway / drop off area on Darling Drive, in accordance with Austroads Guide to Road Safety Part 6: Managing Road Safety Audits and Austroads Guide to Road Safety Part 6A: Implementing Road Safety Audits prepared by an independent TfNSW accredited road safety auditor. Based on the results of the road safety audit the Applicant must review the design drawings and implement safety measures if required, in consultation with TfNSW.

C41. Future development Applications(s) must include a Bicycle Strategy demonstrating:

(a) how the safe and efficient movement of cyclists is managed around the site

(b) the design and location of any proposed bicycle parking infrastructure

(c) alignment with PMNSW's bicycle strategy for Darling Harbour

C42. Future Development Application(s) must, in consultation with Council, PMNSW and TfNSW, explore opportunities to improve cycleway connections within and around the development.

C43. Future Development Application(s) must, in consultation with Council, PMNSW and TfNSW, explore and implement feasible opportunities to upgrade the Darling Drive Cycleway within the constraints of the existing carriageway, between Murray Street/Union Street intersection (major cycleway) to the roundabout adjacent the site.

The area of the audit extends along Darling Drive from the southern edge of the roundabout at Iron Wharf Lane to the intersection of Darling Drive and Murray Street as shown in the following figure extracted from the audit report. These extents have been defined by DC Engineering as the subject matter experts.

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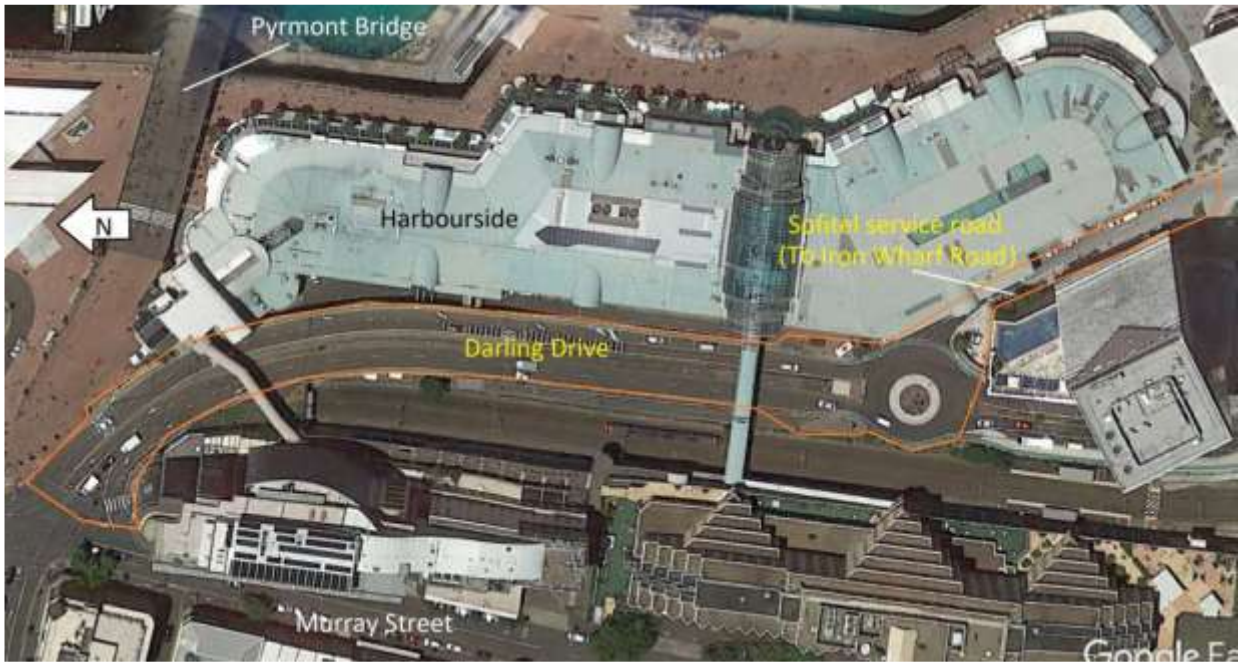

Figure 6.1 - Extent of Road Safety Audit Area

ptc's response to the Road Safety Audit is attached in full in Attachment 3.

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7. Summary

ptc. has been engaged by Mirvac to prepare a Transport Impact Assessment to accompany the Concept Development Application to City of Sydney Council for the construction of a mixed-use building at 2-10 Darling Drive. The proposed development comprises of an events and conferences centre, office premises and associated ground floor retail space, with a residential tower above.

In the context of parking, the development provides a total of 30 commercial car spaces, inclusive of two accessible commercial staff space. In addition to the 30 commercial staff car parking spaces, there is also provision for 242 residential car spaces, inclusive of 27 accessible spaces to be allocated to the proposed adaptable apartments.

1 x carwash bay and 3 car share spaces are proposed in the residential basement 4.

Motorcycle parking quantum and design meets the requirements of the DCP and Australian Standards.

With regards to bicycle parking, the development proposes 273 commercial and retail staff bicycle spaces, and 263 resident bicycle parking. The proposed commercial (83) visitor bicycle spaces, retail (33) visitor bicycle spaces shall be located in SSDA3, and residential (27) visitor bicycle spaces will be located as part of SSDA2.

The requirements of the DCP for bicycle parking are either met, or Mirvac commits to meeting the minimum requirements outlined in the City of Sydney DCP. ptc has counted on plan compliant bicycle parking spaces only, and any additionally required bicycle parking numbers shall be detailed and located in SSDA 3.

For site servicing, a loading dock is provided on basement level 2 which includes an overall provision of five MRV bays (including one CoS 9.24m refuse vehicle bay); five SRV bays; and six B99 courier service bays accommodating car-derived vans and utes. An additional 4 residential services/loading spaces are proposed to be located in basement 3 and 4. A total of 20 service/loading spaces are proposed.

A review of the potential traffic activity associated with the development site has found that the proposed development is anticipated to have minimal impact on the surrounding road network or traffic. As the development is constrained by on-site car parking provision, traffic generation of the site is also constrained.

For the purposes of this assessment, **ptc.** has undertaken a review of the concept car parking layout. Based on our assessment, the proposed car park is deemed to be capable of complying with the requirements of the relevant Australian Standards and planning policies.

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Attachment 1. Car Park Design Review – ptc.

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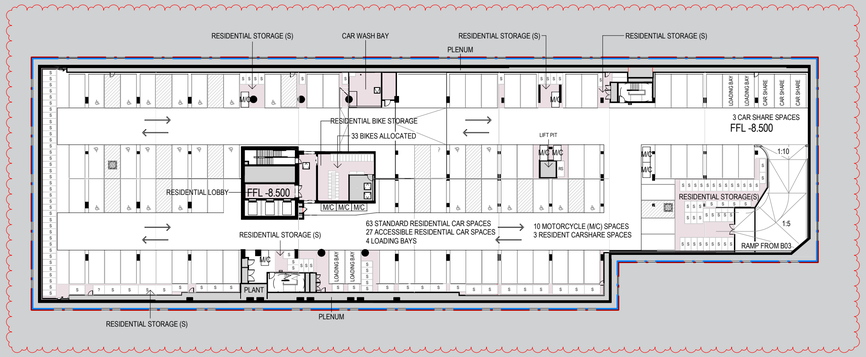

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REV	DESCRIPTION	DATE
A	FOR SSDA2 APPROVAL	02/11/22
B	FOR SSDA2 RTS	29/06/2023
C	S4.55 MODIFICATION 2	01/05/2024

LEGEND

- BOH / PLANT
- RESIDENTIAL COMMON AREAS

- SSDA EXTENT
- SSDA STAGE 1 ENVELOPE
- AREA SUBJECT TO FUTURE SSDA APPLICATION
- EXISTING STRUCTURES

NORTH

SCALE

0m 10m 20m 30m 40m

CLIENT

50 mirvac

PROJECT

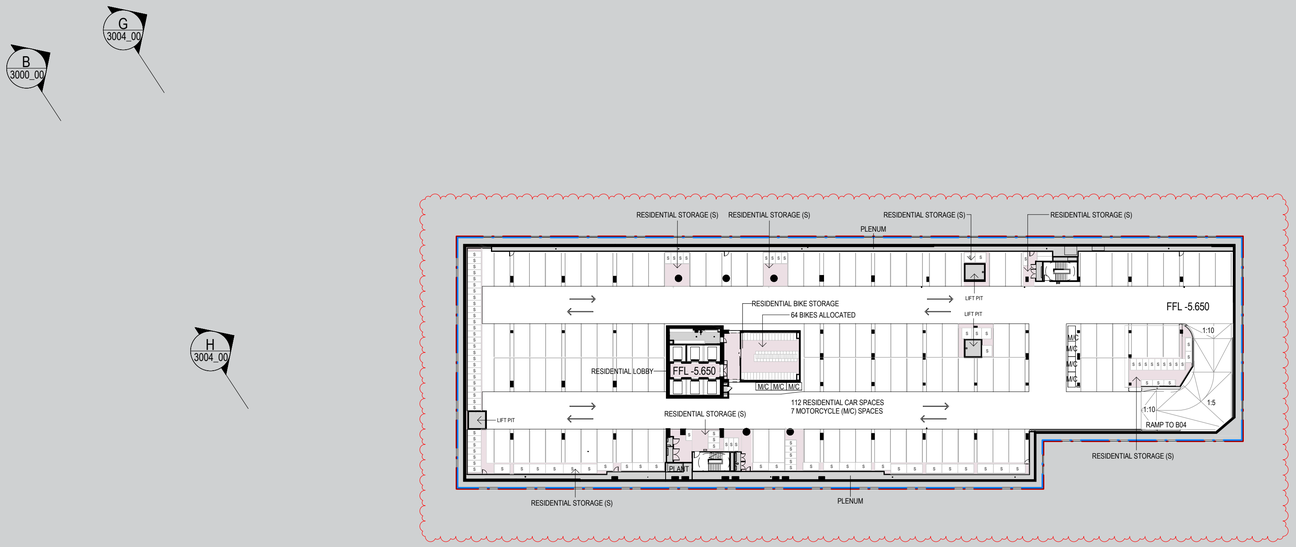
MIRVAC HARBOURSIDE

2 - 10 DARLING DRIVE, DARLING HARBOUR NSW 2000

DRAWING TITLE

General Arrangement - Basement 4 Plan

REVIEWED	SCALE @ A1
MI	As indicated
APPROVED	**PROJECT NO.**
KK	016152-61A-P
DRAWING NO.	**REV NO.**
AR-SSDA2- 1096_B4	C



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LEGEND

- BOH / PLANT
- RESIDENTIAL
- COMMON AREAS

- SSDA EXTENT
- SSDA STAGE 1 ENVELOPE
- AREA SUBJECT TO FUTURE SSDA APPLICATION
- EXISTING STRUCTURES

NORTH

SCALE

0m 2m 4m 6m 8m

CLIENT

PROJECT

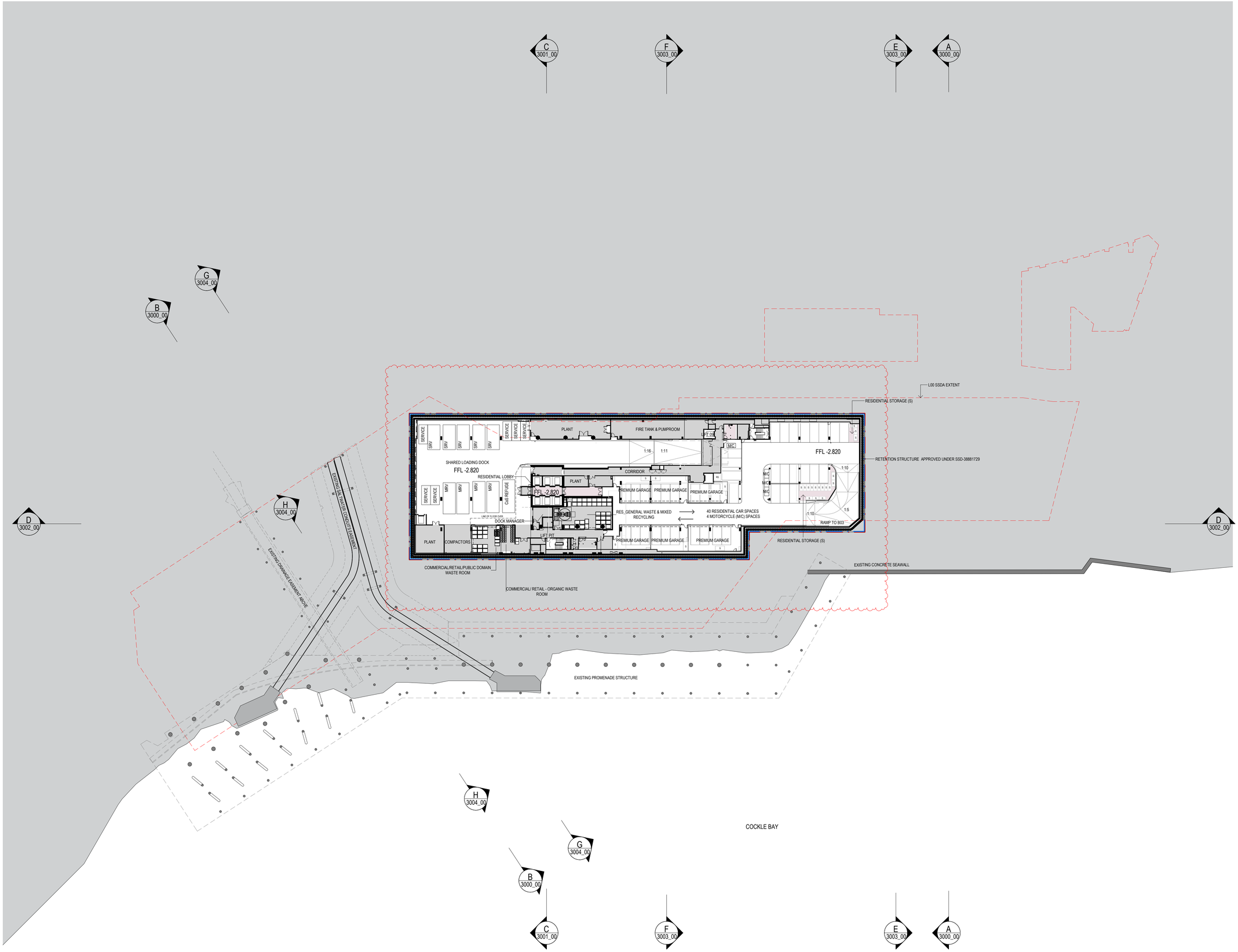
MIRVAC HARBOURSIDE

2 - 10 DARLING DRIVE, DARLING HARBOUR NSW 2000

DRAWING TITLE

General Arrangement - Basement 3 Plan

REVIEWED	SCALE @ A1
MI	As indicated
APPROVED	**PROJECT NO.**
KK	016152-61A-P
DRAWING NO.	**REV NO.**
AR-SSDA2- 1097_B3	C



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Nominated Architects NSW:
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Glenn Scott 6842
Ross de la Motte 7398

NOTES

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4. This drawing must be read in conjunction with all relevant contracts, specifications and drawings

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REV	DESCRIPTION	DATE
A	FOR SSDA2 APPROVAL	02/11/22
B	FOR SSDA2 RTS	29/06/2023
C	S4.55 MODIFICATION 2	01/05/2024

LEGEND

- BOH / PLANT
- RESIDENTIAL COMMON AREAS

- SSDA EXTENT
- SSDA STAGE 1 ENVELOPE
- AREA SUBJECT TO FUTURE SSDA APPLICATION
- EXISTING STRUCTURES

NORTH

SCALE

0m 10m 20m 30m 40m

CLIENT

50 mirvac

PROJECT

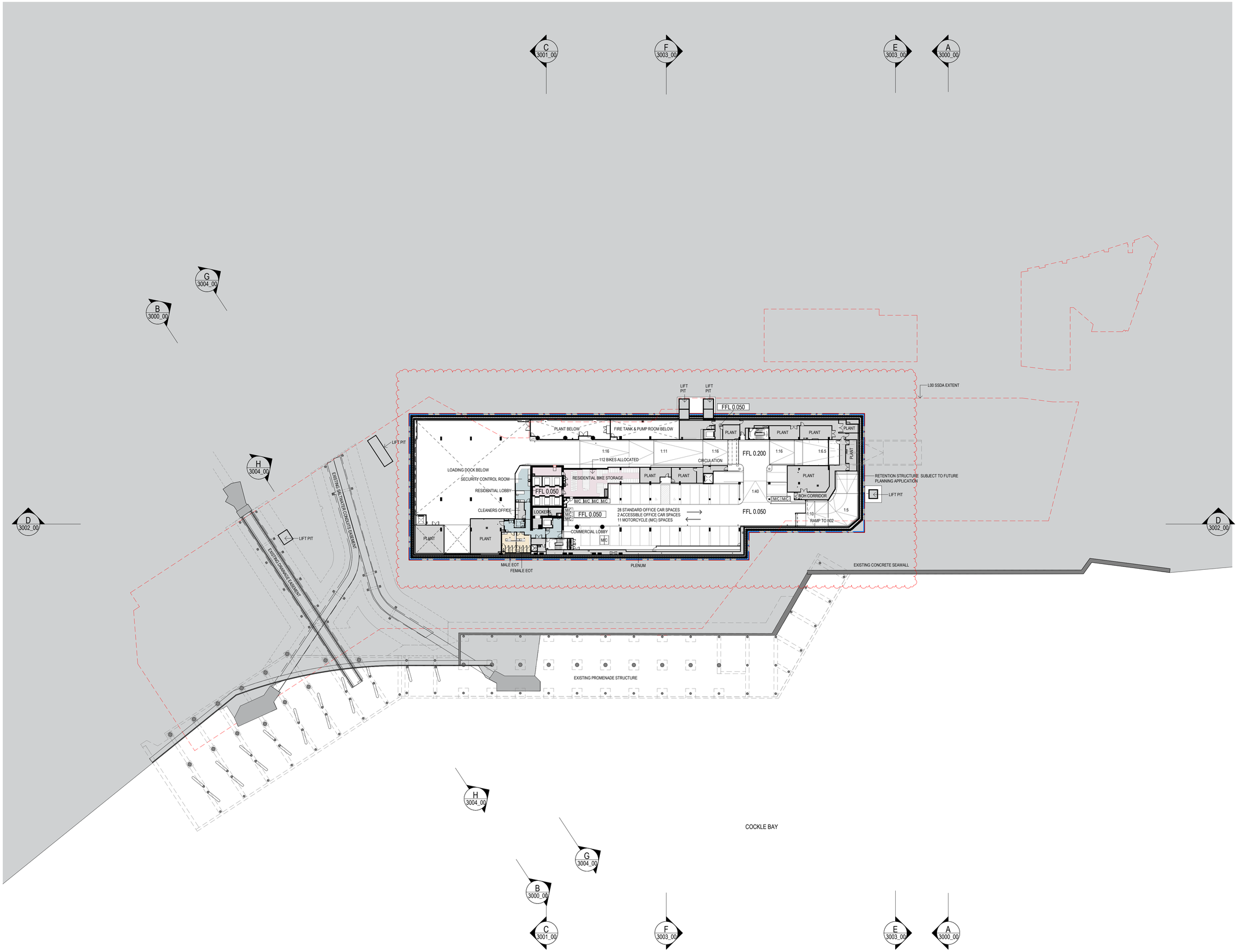
MIRVAC HARBOURSIDE

2 - 10 DARLING DRIVE, DARLING HARBOUR NSW 2000

DRAWING TITLE

General Arrangement - Basement 2 Plan

REVIEWED	**SCALE @ A1**
MI	As indicated
APPROVED	**PROJECT NO.**
KK	016152-61A-P
DRAWING NO.	**REV NO.**
AR-SSDA2- 1098_B2	C



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REV	DESCRIPTION	DATE
A	FOR SSDA2 APPROVAL	02/11/22
B	FOR SSDA2 RTS	29/06/2023
C	S4.55 MODIFICATION 2	01/05/2024

LEGEND

- BOH / PLANT
- OFFICE
- RESIDENTIAL COMMON AREAS

- SSDA EXTENT
- SSDA STAGE 1 ENVELOPE
- AREA SUBJECT TO FUTURE SSDA APPLICATION
- EXISTING STRUCTURES

NORTH

SCALE

0m 10m 20m 30m 40m

CLIENT

50 mirvac

PROJECT

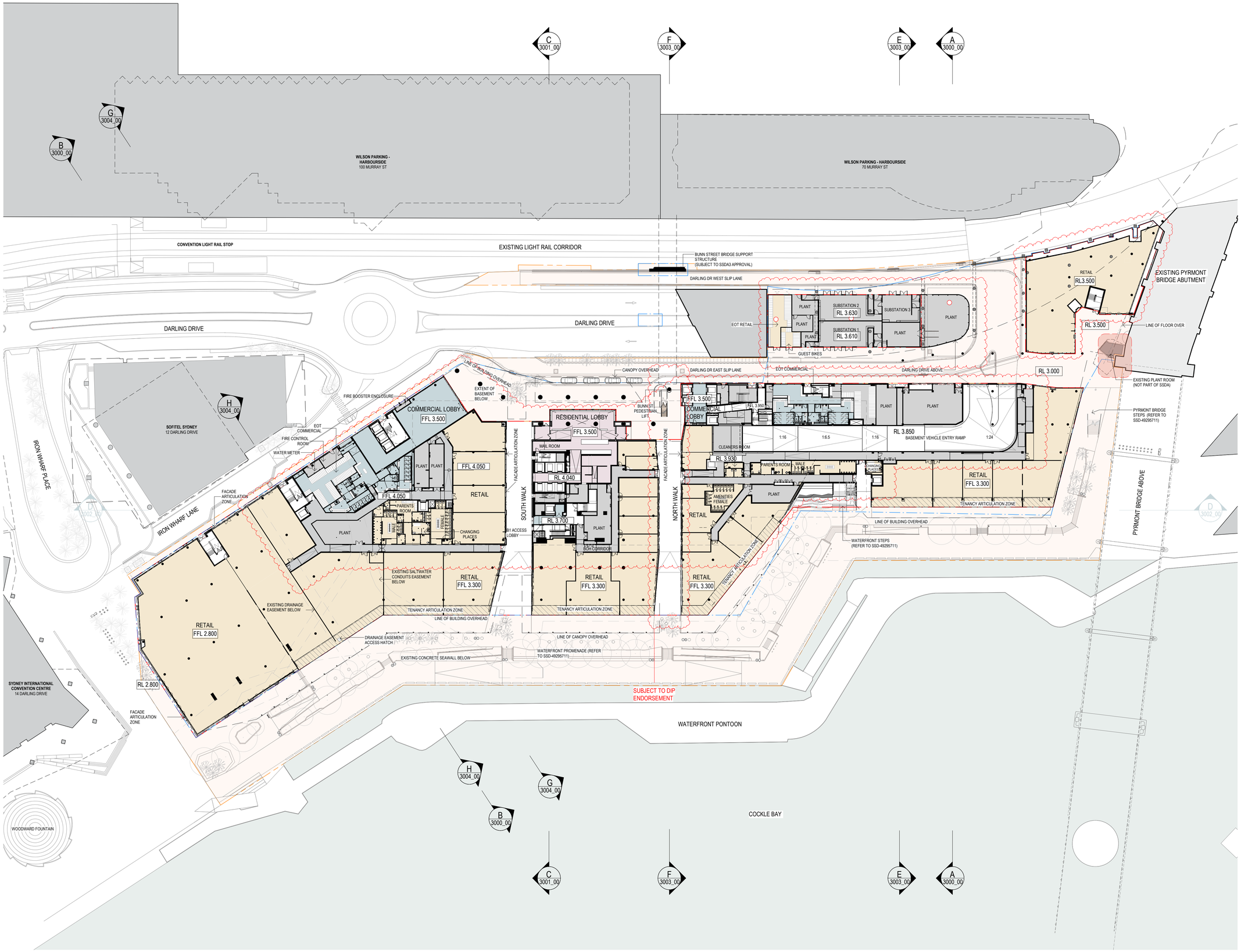
MIRVAC HARBOURSIDE

2 - 10 DARLING DRIVE, DARLING HARBOUR NSW 2000

DRAWING TITLE

General Arrangement - Basement 1 Plan

REVIEWED	**SCALE @ A1**
MI	As indicated
APPROVED	**PROJECT NO.**
KK	016152-61A-P
DRAWING NO.	**REV NO.**
AR-SSDA2- 1099_B1	C



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REV	DESCRIPTION	DATE
A	FOR SSDA2 APPROVAL	02/11/22
B	FOR SSDA2 RTS	29/06/2023
C	FOR SSDA2 RTS	27/09/23
D	S4.55 MODIFICATION 2	01/05/2024

LEGEND

- BOH
- BOH / PLANT
- COMMERCIAL
- OFFICE
- PLANT
- RESIDENTIAL COMMON AREAS
- RETAIL

LEGEND

- SSDA EXTENT
- SSDA STAGE 1 ENVELOPE
- AREA SUBJECT TO SSDA3 SSD-49653211 APPLICATION
- 500MM ZONE – TENANCY 'KIT OF PARTS' OPTION FOR SHOPFRONT FAÇADE ALIGNMENT & OPERABILITY*
- 2500MM ZONE – TENANCY 'KIT OF PARTS' OPTION FOR SHOPFRONT FAÇADE ALIGNMENT & OPERABILITY*
- *SUBJECT TO TENANT SHOPFRONT GUIDELINES
- INDICATIVE INTER-TENANCY WALLS
- EXISTING STRUCTURES

NORTH

SCALE

0m 10m 20m 30m 40m

CLIENT

50 mirvac

PROJECT

MIRVAC HARBOURSIDE

2 - 10 DARLING DRIVE, DARLING HARBOUR NSW 2000

DRAWING TITLE

General Arrangement - L00 Ground Plan

REVIEWED
MI

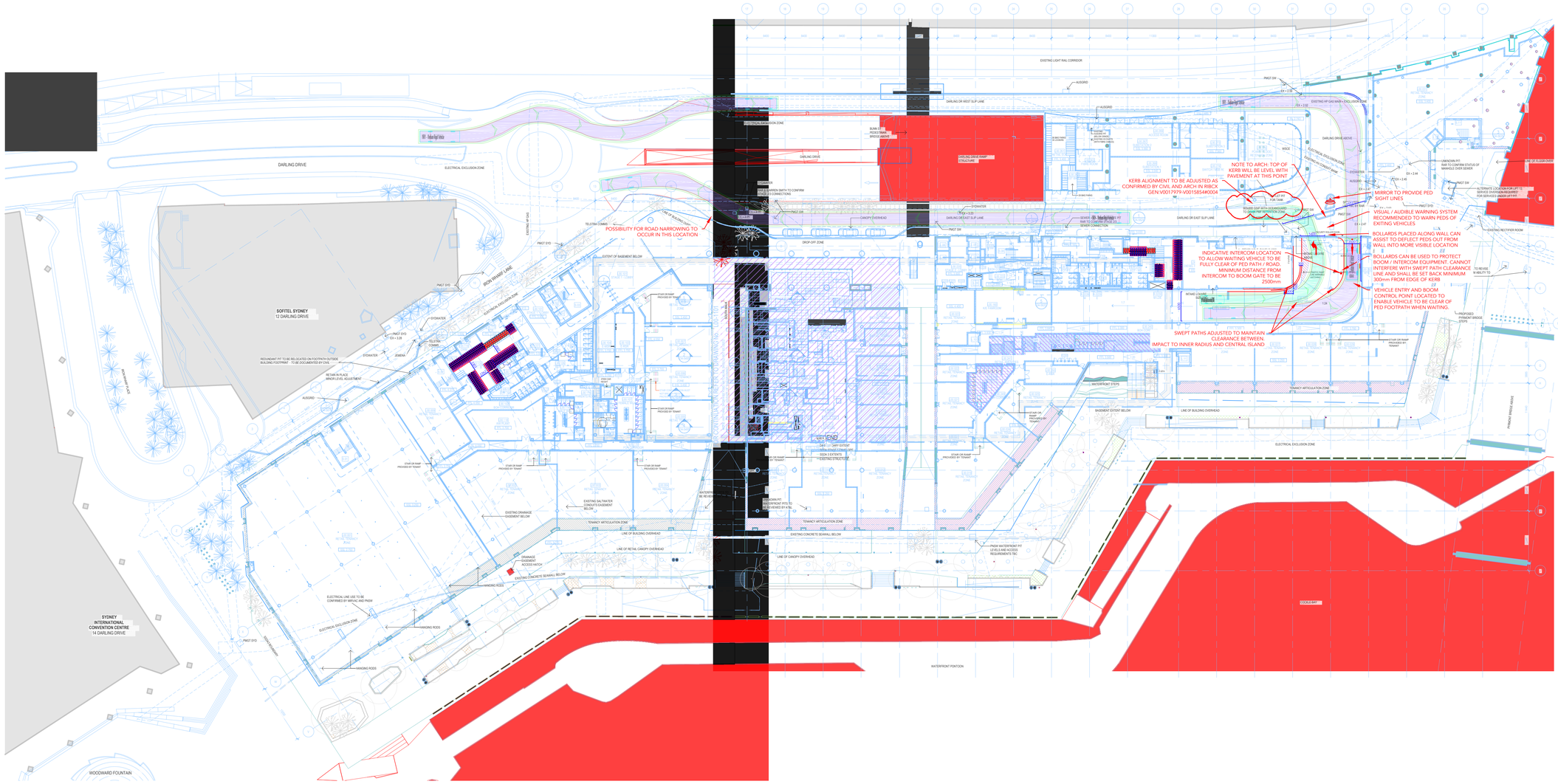
SCALE @ A1
1 : 500

APPROVED
KK

PROJECT NO.
016152-61A-P

DRAWING NO.
AR-SSDA2- 1100_00

REV NO.
D


DARLING DRIVE
SOFITEL SYDNEY
12 DARLING DRIVE
SYDNEY INTERNATIONAL CONVENTION CENTRE
14 DARLING DRIVE
WOODWARD FOUNTAIN
IRON WHARF LANE
DARLING DR WEST SLIP LANE
DARLING DR EAST SLIP LANE
DARLING DRIVE RAMP
DARLING DRIVE ABOVE
EXISTING LIGHT RAIL CORRIDOR
EXISTING HP GAS MAIN + EXCLUSION ZONE
ELECTRICAL EXCLUSION ZONE
EXISTING HP GAS MAIN
EXISTING MP GAS MAIN
EXISTING LP GAS MAIN
EXISTING WATER MAIN
EXISTING SEWER MAIN
EXISTING STORMWATER MAIN
EXISTING TELSTRA COMMS
EXISTING ELECTRICAL
EXISTING SALTWATER CONDUITS EASEMENT BELOW
EXISTING DRAINAGE EASEMENT BELOW
EXISTING CONCRETE SEAWALL BELOW
EXTENT OF BASEMENT BELOW
BASEMENT EXTENT BELOW
DROP-OFF ZONE
CANOPY OVERHEAD
LINE OF BUILDING OVERHEAD
LINE OF RETAIL CANOPY OVERHEAD
LINE OF CANOPY OVERHEAD
TENANCY ARTICULATION ZONE
WATERFRONT STEPS
WATERFRONT PONTOON
PROPOSED PYRMONT BRIDGE STEPS
EXISTING RECTIFIER ROOM
EXISTING SYDNEY WATER MANHOLE
UNKNOWN PIT - RAB TO CONFIRM STATUS OF MANHOLE OVER SEWER
ALTERNATE LOCATION FOR LIFT TO BE CONFIRMED BY ARCH FOR SERVICEABILITY AND ACCESSIBILITY
TO REVISE W ABUTT TO
TO BE DEMOLISHED
RETAIN IN PLACE MINOR LEVEL ADJUSTMENT
REDUNDANT PIT TO BE RELOCATED ON FOOTPATH OUTSIDE BUILDING FOOTPRINT - TO BE DOCUMENTED BY CIVIL
ELECTRICAL LINE USE TO BE CONFIRMED BY MECHC AND PM/SY
RETAIL TENANCY
RETAIL TENANCY (BELOW)
RETAIL TENANCY (ABOVE)
HIGH END
LOW END
STAIR OR RAMP PROVIDED BY TENANT
STAIR OR RAMP PROVIDED BY TENANT (BELOW)
STAIR OR RAMP PROVIDED BY TENANT (ABOVE)
STAIR OR RAMP PROVIDED BY TENANT (BELOW)
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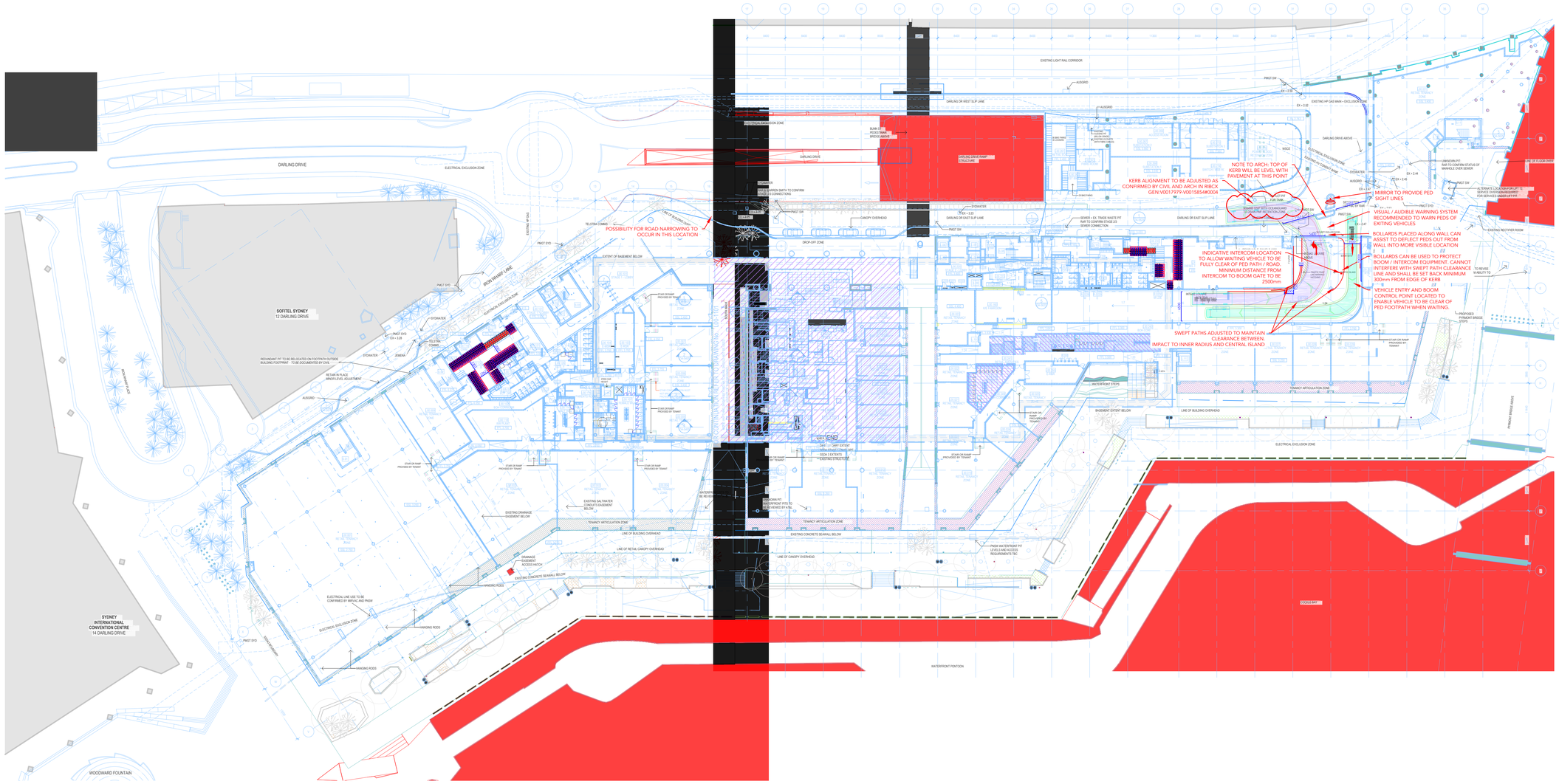

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REV	DATE	DESCRIPTION	DRAWN	REVIEWED
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X	X	X	x	x
5	25.03.24	FOR INFORMATION	JAJ	
4	18.03.24	FOR INFORMATION	JAJ	
3	07/03/24	FOR INFORMATION	JAJ	AM
2	20/02/24	FOR INFORMATION	JJ/SW	SW
1	07.02.24	FOR INFORMATION	JAJ	AM

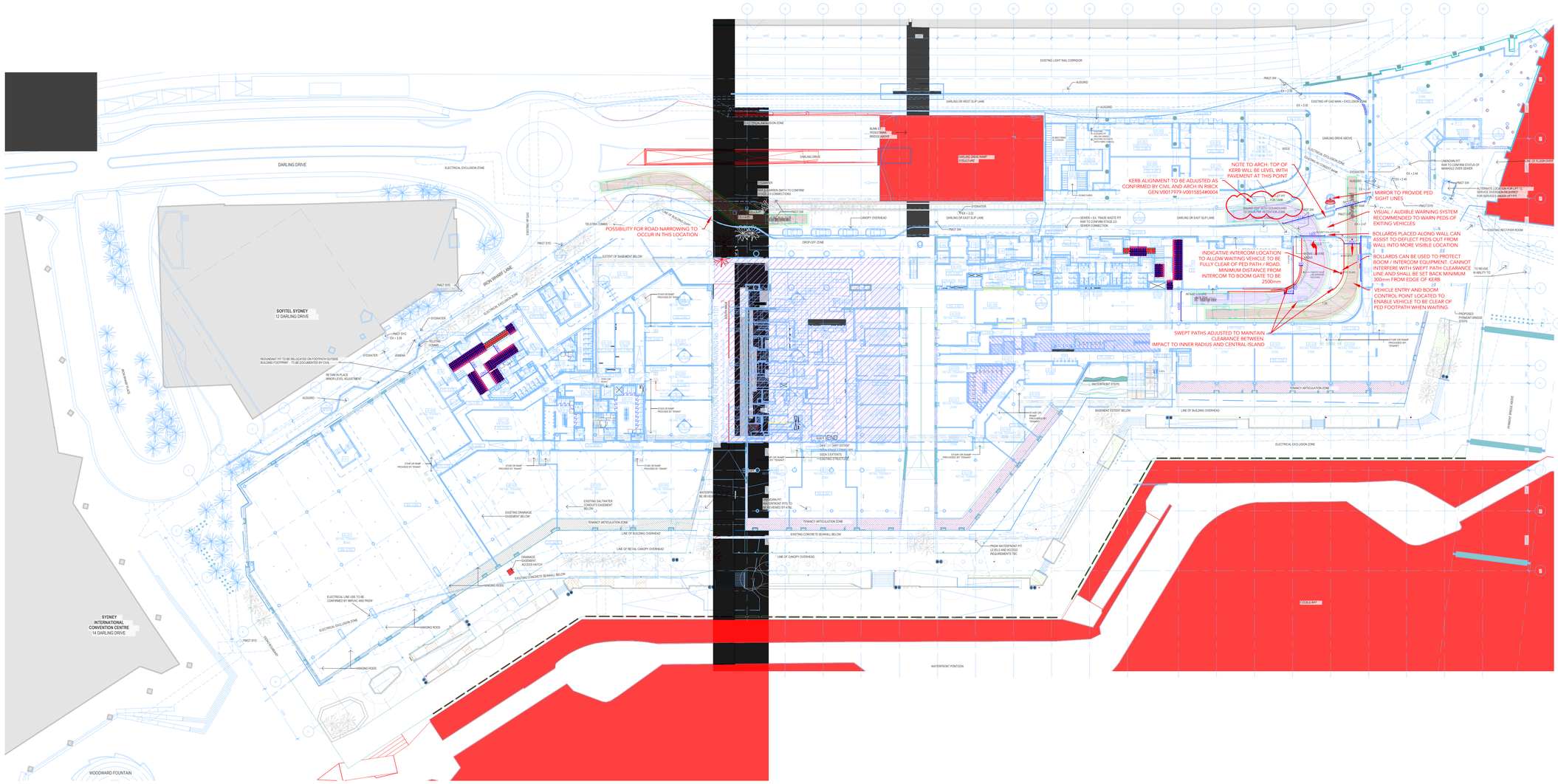
DRAWING KEY

PROJECT
HARBOURSIDE

DRAWING TITLE
CC Basement Documentation
Swept Path Review
L00 Ground

CLIENT	MIRVAC
DRAWING #	ptc-(2)
PROJECT #	22-0036
SCALE	1 : 500 @ A1

CC DOCUMENTATION
REV 5


DARLING DRIVE
SOFITEL SYDNEY
12 DARLING DRIVE
SYDNEY INTERNATIONAL CONVENTION CENTRE
14 DARLING DRIVE
WOODWARD FOUNTAIN
IRON WHARF LANE
DARLING DR WEST SLIP LANE
DARLING DR EAST SLIP LANE
DARLING DRIVE RAMP
DARLING DRIVE ABOVE
EXISTING LIGHT RAIL CORRIDOR
EXISTING HP GAS MAIN + EXCLUSION ZONE
ELECTRICAL EXCLUSION ZONE
EXISTING GAS MAIN
EXISTING SEWER
EXISTING WATER MAIN
EXISTING STORMWATER
EXISTING TELSTRA COMMS
EXISTING ELECTRICAL
EXISTING CONCRETE SEAWALL BELOW
EXISTING DRAINAGE EASEMENT BELOW
EXISTING SALTWATER CONDUITS EASEMENT BELOW
EXTENT OF BASEMENT BELOW
BASEMENT EXTENT BELOW
DROP-OFF ZONE
CANOPY OVERHEAD
LINE OF BUILDING OVERHEAD
LINE OF RETAIL CANOPY OVERHEAD
LINE OF CANOPY OVERHEAD
TENANCY ARTICULATION ZONE
WATERFRONT STEPS
WATERFRONT PONTOON
PROPOSED PYRMONT BRIDGE STEPS
PYRMONT BRIDGE ABOVE
EXISTING RECTIFIER ROOM
FUEL TANK
BOOM GATE WITH CCTV CAMERA ON COLUMN
INTERCOM
INTAKE LOUVRE ABOVE
EXHAUST LOUVRE ABOVE
SUBSTATION
SWITCHROOM
LIFT
STAIR OR RAMP PROVIDED BY TENANT
STAIR OR RAMP PROVIDED BY TFNSW
RETAIN IN PLACE MINOR LEVEL ADJUSTMENT
REDUNDANT PIT TO BE RELOCATED ON FOOTPATH OUTSIDE BUILDING FOOTPRINT - TO BE DOCUMENTED BY CIVIL
HANGING RODS
TO REMAIN
TO BE DEMOLISHED
TO BE REVISED
TO REVISE W ADLPTI TO
TO BE ADJUSTED
TO BE RELOCATED
TO BE REVISED BY ATBL
TO BE REVISED BY TFNSW
TO BE REVISED BY TFNSW AS REQUIRED
TO BE REVISED BY TFNSW AS REQUIRED TBC
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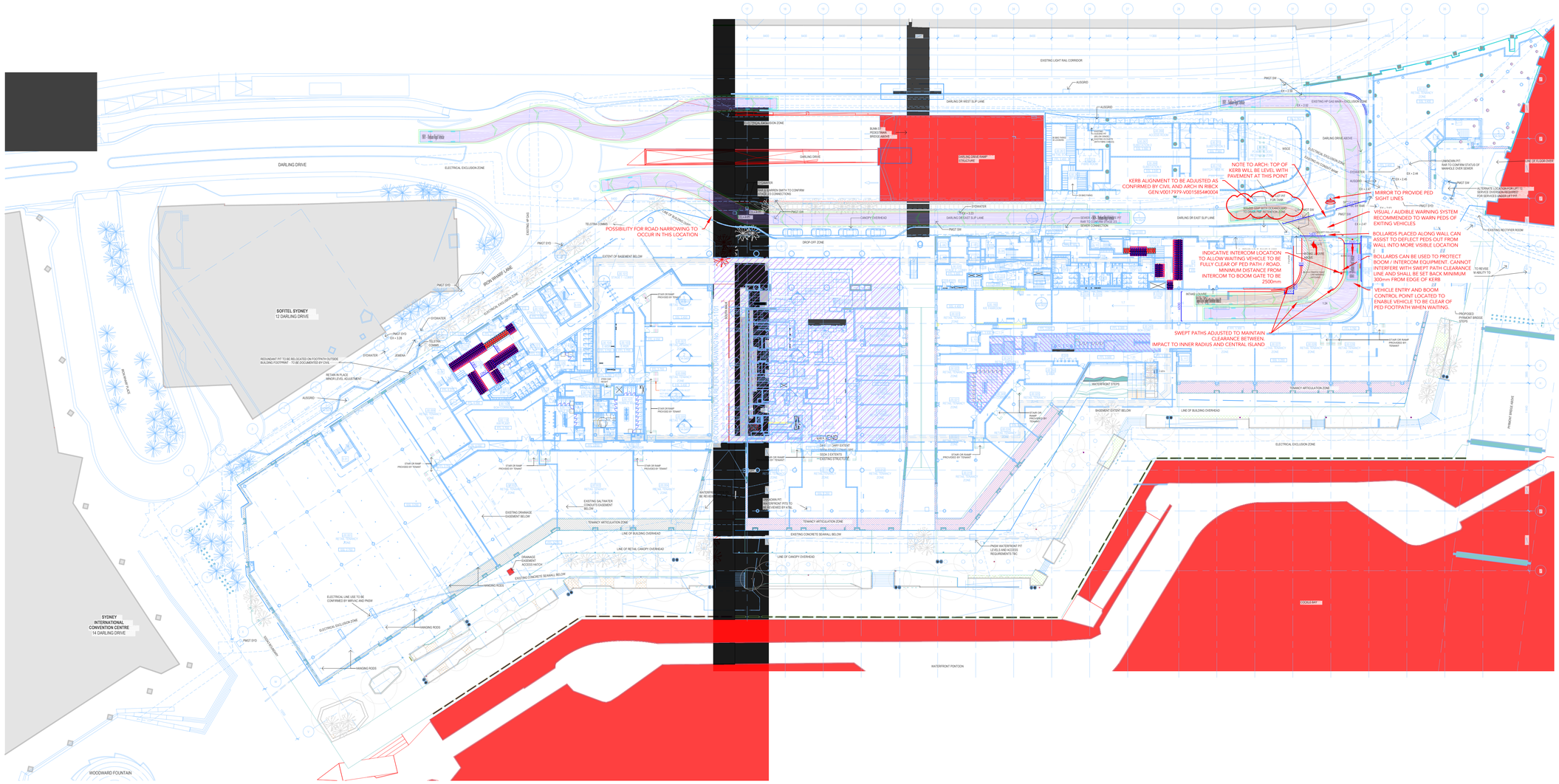
TO BE REVISED BY TFNSW AS REQUIRED TBC



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4	18.03.24	FOR INFORMATION	JAJ	
3	07/03/24	FOR INFORMATION	JAJ	AM
2	20/02/24	FOR INFORMATION	JJ/SW	SW
1	07.02.24	FOR INFORMATION	JAJ	AM

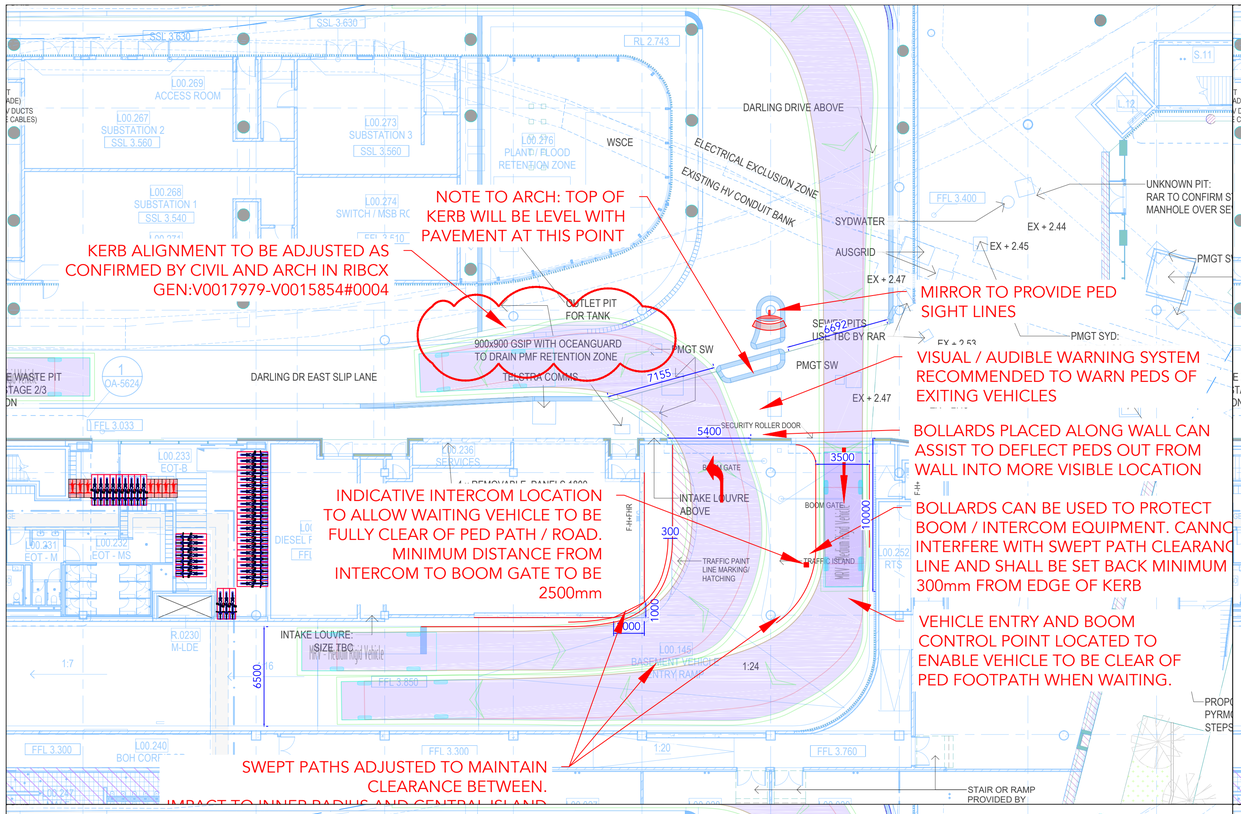
DRAWING KEY

PROJECT
HARBOURSIDE

DRAWING TITLE
CC Basement Documentation
Swept Path Review
L00 Ground

CLIENT	MIRVAC
DRAWING #	ptc-(5.1)
PROJECT #	22-0036
SCALE	1 : 500 @ A1

CC DOCUMENTATION
REV 5



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REV	DATE	DESCRIPTION	DRAWN	REVIEWED
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5	25.03.24	FOR INFORMATION	JAJ	
4	18.03.24	FOR INFORMATION	JAJ	
3	07/03/24	FOR INFORMATION	JAJ	AM
2	20/02/24	FOR INFORMATION	JJ/SW	SW
1	07.02.24	FOR INFORMATION	JAJ	AM

DRAWING KEY

Review of 10.5m Refuse Vehicle
Penrith City Council Vehicle has been used in lieu of CoS 10.5m Refuse
Note conflict points at egress of 10.5m vehicle with columns, roller doors and external kerbs / laybacks

PROJECT
HARBOURSIDE

DRAWING TITLE
CC Basement Documentation
Swept Path Review
L00 Ground

CLIENT	MIRVAC
DRAWING #	ptc-(6)
PROJECT #	22-0036
SCALE	1 : 500 @ A1

CC DOCUMENTATION
REV 5

MIRROR SUGGESTED.
WILL IMPROVE LEVEL
OF SERVICE AND
DRIVER VISIBILITY

KERB CONFLICT

BICYCLE RESIDENTIAL: 113
48 Arc Double Stacked
65 Vertical

ARC BICYCLE RACKS ARE 0.4m
WIDE BY 2m LONG.
min headroom of 2.7m

M/C BAYS TO SHIFT 100mm
SOUTH TO BE CLEAR OF
PARKING ENVELOPE

BOLLARD REQUIRED
IN ALL SHARED BAYS
AS PER AS2890.6

AREA UNDER
REVIEW WITH ARCH

KERB CONFLICT

MIRROR SUGGESTED.
NOT REQUIRED BUT WILL
IMPROVE LEVEL OF SERVICE

ADJUSTMENT TO LOCATION OF
PARKING SPACES TO SUIT
COLUMN GRID. NOTE USE OF 2.5m
WIDE SPACES AS REQUIRED TO FIT

CHILLERS BELOW
FIRE TANK & PUMP ROOM BELOW
VEHICLE RAMP BELOW
LOADING DOCK BELOW
VOID TO BELOW
COMPACTORS BELOW
FALLS TO STRIP DRAINS WITHIN EACH SHOWER
FULL HEIGHT MESH FENCE/ WALL
EXISTING CONCRETE SEAWALL
EXISTING PROMENADE STRUCTURE
EXISTING SALTWATER CONDUITS EASEMENT
EXISTING DRAINAGE EASEMENT
113 BIKES ALLOCATED (B1)
28 STANDARD OFFICE CAR SPACES
2 ACCESSIBLE OFFICE CAR SPACES
10 MOTORCYCLE (M/S) SPACES
LEVEL

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REV	DATE	DESCRIPTION	DRAWN	REVIEWED
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X	X	X	x	x
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3	25.03.24	FOR INFORMATION	JAJ	AM
2	14.02.24	FOR INFORMATION	JAJ	AM
1	07.02.24	FOR INFORMATION	JAJ	AM

DRAWING KEY

PROJECT
HARBOURSIDE

DRAWING TITLE
CC Basement Documentation
Swept Path Review
B1

CLIENT	MIRVAC
DRAWING #	ptc-(1)
PROJECT #	22-0036
SCALE	1 : 250

CC DOCUMENTATION
REV 3

VEHICULAR BARRIER/
GUARDRAILS - DETAIL TBC

PROTRUSION ZONE FROM SOUTHERN WALL (HATCHED) FOR HYDRAULIC PIPES & ASSOCIATED PROTECTIVE ELEMENTS SHOWN INDICATIVELY

OVERHEAD SLAB TO BE PAINTED FOR VISUAL CONTRAST AND POTENTIAL KERB LOCATION

BAY LENGTHENING REQUIRED TO ACCOMMODATE LARGER VEHICLE

CLEANING CONNECTION POINT - REFER TO SERVICES ENGINEERS DRAWINGS

EXISTING SALTWATER CONDUITS EASEMENT

EXISTING DRAINAGE EASEMENT ABOVE

CLEAR LOADING ZONE

LINE OF FLOOR OVER

SLUDGE TANK

DAF UNIT

1:80 FALLS TO FLOOR WASTES TYPICAL THROUGHOUT U.N.O.

RECOMMEND HATCHING TO INDICATE THAT VEHICLES SHALL NOT DRIVE IN THIS SPACE UNDER FLOOR OVERHEAD OR EXTEND KERBING AS SHOWN

SORTING TABLE

FULL HEIGHT MESH FENCE/ WALL

B02.035 FIRE TANK & PUMPROOM

MIRROR SUGGESTED. NOT REQUIRED BUT WILL IMPROVE LEVEL OF SERVICE

FUTURE PROVISION FOR EV CHARGING POINTS FOR ALL RESIDENTIAL CAR PARK BAYS

ADJUSTMENT TO LOCATION OF HYDRANT AND COLUMN TO SUIT 2.6m WIDE SPACES. OTHERWISE, USE OF 2.5m WIDE SPACES REQUIRED TO FIT.

MIRROR SUGGESTED. NOT REQUIRED BUT WILL IMPROVE LEVEL OF SERVICE

FUTURE PROVISION FOR EV CHARGING POINTS FOR ALL RESIDENTIAL CAR PARK BAYS

EXISTING CONCRETE SEAWALL

EXISTING PROMENADE STRUCTURE

RAMP TO B03

LEGE
DA BOU
SSDA S
SSDA 3
EXISTIN

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REV	DATE	DESCRIPTION	DRAWN	REVIEWED
X	X	X	x	x
X	X	X	x	x
5	25.03.24	FOR INFORMATION	JAJ	AM
4	18.03.24	FOR INFORMATION	JAJ	
3	14.02.24	FOR INFORMATION	JAJ	-
2	12.02.24	B2 DESIGN ADVICE	JAJ	SW
1	07.02.24	FOR INFORMATION	JAJ	AM

DRAWING KEY

PROJECT
HARBOURSIDE

DRAWING TITLE
CC Basement Documentation
Swept Path Review
B2

CLIENT	MIRVAC
DRAWING #	ptc-(1)
PROJECT #	22-0036
SCALE	1 : 250

CC DOCUMENTATION

REV 5

VEHICULAR BARRIER/
GUARDRAILS - DETAIL TBC

PROTRUSION ZONE FROM SOUTHERN WALL (HATCHED) FOR HYDRAULIC PIPES & ASSOCIATED PROTECTIVE ELEMENTS SHOWN INDICATIVELY

OVERHEAD SLAB TO BE PAINTED FOR VISUAL CONTRAST AND POTENTIAL KERB LOCATION

BAY LENGTHENING REQUIRED TO ACCOMMODATE LARGER VEHICLE

CLEANING CONNECTION POINT - REFER TO SERVICES ENGINEERS DRAWINGS

EXISTING SALTWATER CONDUITS EASEMENT

EXISTING DRAINAGE EASEMENT ABOVE

CLEAR LOADING ZONE

LINE OF FLOOR OVER

CLEAN LOADING ZONE

SLUDGE TANK

DAF UNIT

1:80 FALLS TO FLOOR WASTES TYPICAL THROUGHOUT U.N.O.

RECOMMEND HATCHING TO INDICATE THAT VEHICLES SHALL NOT DRIVE IN THIS SPACE UNDER FLOOR OVERHEAD OR EXTEND KERBING AS SHOWN

SORTING TABLE

FULL HEIGHT MESH FENCE/ WALL

FUTURE PROVISION FOR EV CHARGING POINTS FOR ALL RESIDENTIAL CAR PARK BAYS

MIRROR SUGGESTED. NOT REQUIRED BUT WILL IMPROVE LEVEL OF SERVICE

FUTURE PROVISION FOR EV CHARGING POINTS FOR ALL RESIDENTIAL CAR PARK BAYS

ADJUSTMENT TO LOCATION OF HYDRANT AND COLUMN TO SUIT 2.6m WIDE SPACES. OTHERWISE, USE OF 2.5m WIDE SPACES REQUIRED TO FIT.

MIRROR SUGGESTED. NOT REQUIRED BUT WILL IMPROVE LEVEL OF SERVICE

RAMP TO B03

EXISTING CONCRETE SEAWALL

EXISTING PROMENADE STRUCTURE

LEGE
DA BOU
SSDA S
SSDA 3
EXISTIN

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REV	DATE	DESCRIPTION	DRAWN	REVIEWED
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5	25.03.24	FOR INFORMATION	JAJ	AM
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2	12.02.24	B2 DESIGN ADVICE	JAJ	SW
1	07.02.24	FOR INFORMATION	JAJ	AM

DRAWING KEY

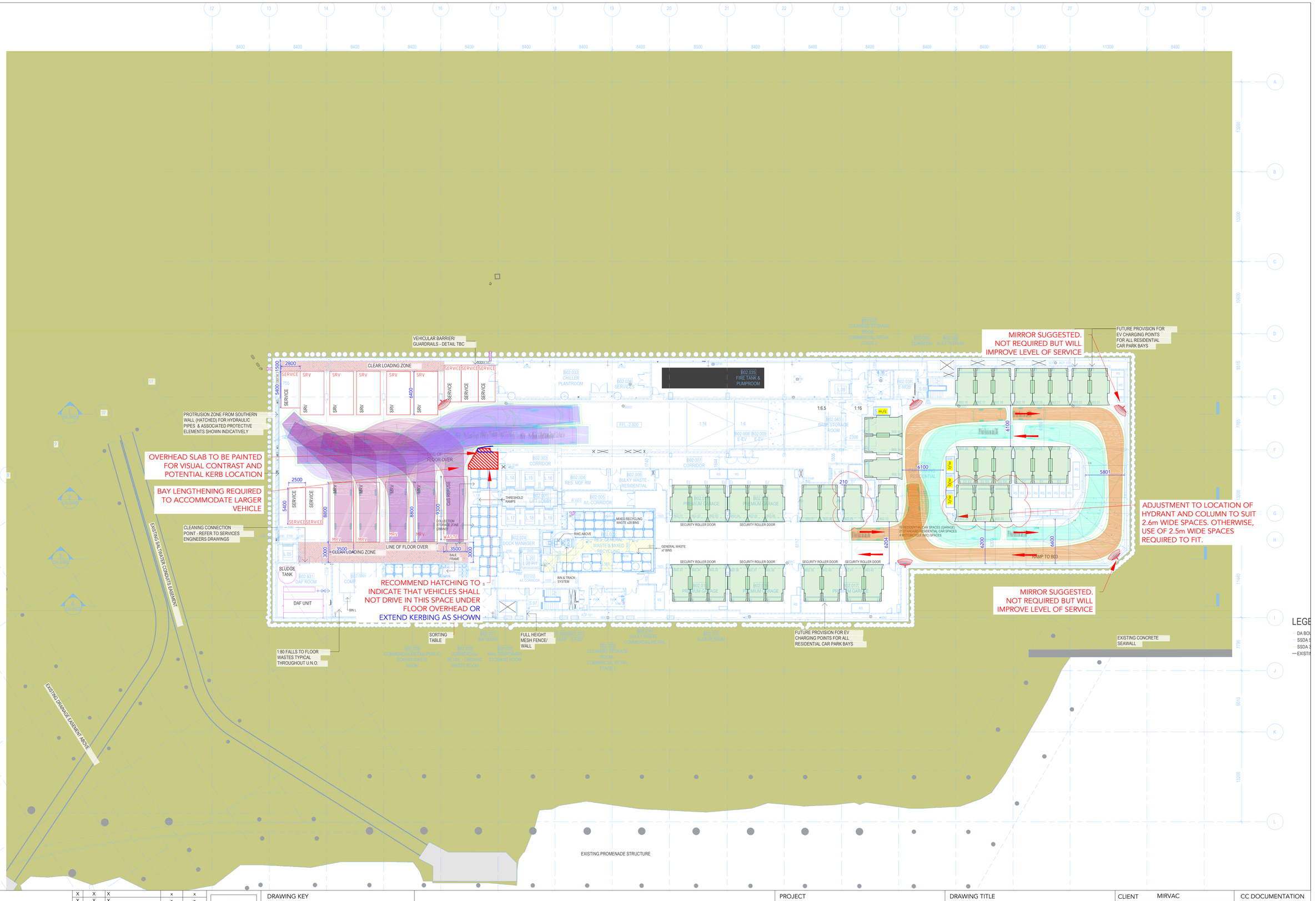
PROJECT
HARBOURSIDE

DRAWING TITLE
CC Basement Documentation
Swept Path Review
B2

CLIENT	MIRVAC
DRAWING #	ptc-(2.1)
PROJECT #	22-0036
SCALE	1 : 250

CC DOCUMENTATION

REV 5



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2	12.02.24	B2 DESIGN ADVICE	JAJ	SW
1	07.02.24	FOR INFORMATION	JAJ	AM

DRAWING KEY

PROJECT
HARBOURSIDE

DRAWING TITLE
CC Basement Documentation
Swept Path Review
B2

CLIENT	MIRVAC
DRAWING #	ptc-(3)
PROJECT #	22-0036
SCALE	1 : 250

CC DOCUMENTATION

REV 5

VEHICULAR BARRIER/
GUARDRAILS - DETAIL TBC

MIRROR SUGGESTED.
NOT REQUIRED BUT WILL
IMPROVE LEVEL OF SERVICE

FUTURE PROVISION FOR
EV CHARGING POINTS
FOR ALL RESIDENTIAL
CAR PARK BAYS

PROTRUSION ZONE FROM SOUTHERN
WALL (HATCHED) FOR HYDRAULIC
PIPES & ASSOCIATED PROTECTIVE
ELEMENTS SHOWN INDICATIVELY

OVERHEAD SLAB TO BE PAINTED
FOR VISUAL CONTRAST AND
POTENTIAL KERB LOCATION

BAY LENGTHENING REQUIRED
TO ACCOMMODATE LARGER
VEHICLE

CLEANING CONNECTION
POINT - REFER TO SERVICES
ENGINEERS DRAWINGS

EXISTING SALTWATER CONDUITS EASEMENT

EXISTING DRAINAGE EASEMENT ABOVE

CLEAR LOADING ZONE

LINE OF
FLOOR OVER

LINE OF FLOOR OVER

CLEAN LOADING ZONE

COLLECTION
STORAGE ZONE
(BINS)

SLUDGE
TANK

DAF UNIT

B02.031
DAF ROOM

B02.033
CHILLER
PLANTROOM

B02.034
SERVICES

B02.035
FIRE TANK &
PUMPROOM

B02.003
CORRIDOR

B02.004
RES. MDF RM

B02.005
A/L CORRIDOR

B02.006
BULKY WASTE -
RESIDENTIAL

B02.007
CORRIDOR

B02.008
E-EV

B02.009
E-EV

B02.040
BASE STORAGE
ROOM

B02.036
E-MDF

B02.001
LIFT LOBBY

B02.024
DOCK MANAGER

B02.022
A/L CORRIDOR

B02.021
WASTE & MIXED
RECYCLING

B02.010
PREMIUM STORAGE

B02.011
PREMIUM STORAGE

B02.012
PREMIUM STORAGE

B02.013
PREMIUM STORAGE

B02.014
PREMIUM STORAGE

B02.015
PREMIUM STORAGE

B02.016
PREMIUM STORAGE

B02.017
PREMIUM CAR
STORAGE

B02.018
PREMIUM CAR
STORAGE

B02.019
PREMIUM CAR
STORAGE

B02.020
PREMIUM CAR
STORAGE

B02.017
PREMIUM CAR
STORAGE

B02.018
PREMIUM CAR
STORAGE

B02.019
PREMIUM CAR
STORAGE

B02.020
PREMIUM CAR
STORAGE

B02.032
A/L CORRIDOR

B02.030
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.029
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B01.035
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B01.036
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B01.037
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B01.038
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B01.039
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B01.040
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B01.041
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B01.042
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.037
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.038
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.039
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.040
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.041
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.042
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.043
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.044
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.045
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.046
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.047
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.048
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.049
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.050
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.051
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.052
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.053
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.054
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.055
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.056
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.057
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.058
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.059
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.060
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.061
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.062
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.063
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.064
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.065
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.066
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.067
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.068
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.069
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.070
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.071
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.072
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.073
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.074
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.075
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.076
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.077
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.078
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.079
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.080
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.081
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.082
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.083
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.084
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.085
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.086
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.087
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.088
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.089
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.090
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.091
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.092
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.093
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.094
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.095
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.096
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.097
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.098
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.099
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.100
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.101
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.102
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.103
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.104
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.105
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.106
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.107
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.108
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.109
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.110
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.111
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.112
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.113
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.114
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.115
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.116
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.117
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.118
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.119
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.120
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.121
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.122
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.123
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.124
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.125
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.126
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.127
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.128
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.129
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.130
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.131
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.132
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.133
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.134
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.135
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.136
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.137
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.138
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.139
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.140
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.141
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.142
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.143
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.144
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.145
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.146
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.147
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.148
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.149
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.150
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.151
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.152
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.153
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.154
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.155
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.156
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.157
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.158
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.159
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.160
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.161
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.162
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.163
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.164
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.165
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.166
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.167
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.168
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.169
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.170
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.171
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.172
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.173
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.174
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.175
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.176
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.177
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.178
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.179
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.180
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.181
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.182
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.183
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.184
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.185
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.186
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.187
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.188
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.189
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.190
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.191
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.192
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.193
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.194
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.195
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.196
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.197
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.198
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.199
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.200
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.201
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.202
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.203
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.204
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.205
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.206
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.207
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.208
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.209
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.210
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.211
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.212
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.213
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.214
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.215
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.216
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.217
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.218
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.219
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.220
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.221
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.222
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.223
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.224
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.225
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.226
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.227
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.228
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.229
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.230
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.231
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.232
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.233
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.234
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.235
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.236
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.237
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.238
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.239
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.240
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.241
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.242
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.243
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.244
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.245
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.246
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.247
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.248
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.249
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.250
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.251
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.252
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.253
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.254
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.255
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.256
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.257
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.258
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.259
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.260
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.261
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.262
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.263
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.264
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.265
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.266
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.267
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.268
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.269
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.270
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.271
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.272
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.273
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.274
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.275
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.276
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.277
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.278
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.279
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.280
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.281
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.282
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.283
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.284
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.285
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.286
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.287
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.288
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.289
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.290
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.291
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.292
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.293
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.294
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.295
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.296
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.297
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.298
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.299
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.300
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.301
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.302
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.303
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.304
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.305
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.306
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.307
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.308
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.309
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.310
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.311
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.312
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.313
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.314
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.315
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.316
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.317
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.318
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.319
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.320
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.321
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.322
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.323
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.324
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.325
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.326
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.327
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.328
COMMERCIAL RETAIL
GROUND TOILET
FACILITIES

B02.329
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.330
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.331
COMMERCIAL
RETAIL - GROUND
STORAGE ROOM

B02.332
COMMERCIAL
RETAIL - GROUND
WASTE ROOM

B02.333
COMMERCIAL RETAIL
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B02.335
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STORAGE ROOM

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FACILITIES

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FACILITIES

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RETAIL - GROUND
WASTE ROOM

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GROUND TOILET
FACILITIES

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FACILITIES

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STORAGE ROOM

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STORAGE ROOM

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RETAIL - GROUND
WASTE ROOM

B02.457
COMMERCIAL
RETAIL - GRO

VEHICULAR BARRIER/
GUARDRAILS - DETAIL TBC

MIRROR SUGGESTED.
NOT REQUIRED BUT WILL
IMPROVE LEVEL OF SERVICE

FUTURE PROVISION FOR
EV CHARGING POINTS
FOR ALL RESIDENTIAL
CAR PARK BAYS

PROTRUSION ZONE FROM SOUTHERN
WALL (HATCHED) FOR HYDRAULIC
PIPES & ASSOCIATED PROTECTIVE
ELEMENTS SHOWN INDICATIVELY

OVERHEAD SLAB TO BE PAINTED
FOR VISUAL CONTRAST AND
POTENTIAL KERB LOCATION

BAY LENGTHENING REQUIRED
TO ACCOMMODATE LARGER
VEHICLE

CLEANING CONNECTION
POINT - REFER TO SERVICES
ENGINEERS DRAWINGS

EXISTING SALTWATER CONDUITS EASEMENT

EXISTING DRAINAGE EASEMENT ABOVE

CLEAR LOADING ZONE

LINE OF
FLOOR OVER

CLEAR LOADING ZONE

LINE OF FLOOR OVER

SLUDGE
TANK

DAF UNIT

1:80 FALLS TO FLOOR
WASTES TYPICAL
THROUGHOUT U.N.O.

RECOMMEND HATCHING TO
INDICATE THAT VEHICLES SHALL
NOT DRIVE IN THIS SPACE UNDER
FLOOR OVERHEAD OR
EXTEND KERBING AS SHOWN

SORTING
TABLE

FULL HEIGHT
MESH FENCE/
WALL

FUTURE PROVISION FOR EV
CHARGING POINTS FOR ALL
RESIDENTIAL CAR PARK BAYS

EXISTING PROMENADE STRUCTURE

EXISTING CONCRETE
SEAWALL

ADJUSTMENT TO LOCATION OF
HYDRANT AND COLUMN TO SUIT
2.6m WIDE SPACES. OTHERWISE,
USE OF 2.5m WIDE SPACES
REQUIRED TO FIT.

MIRROR SUGGESTED.
NOT REQUIRED BUT WILL
IMPROVE LEVEL OF SERVICE

LEGE
DA BOU
SSDA S
SSDA 3
EXISTIN

ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
X	X	X	x	x
X	X	X	x	x
5	25.03.24	FOR INFORMATION	JAJ	AM
4	18.03.24	FOR INFORMATION	JAJ	
3	14.02.24	FOR INFORMATION	JAJ	-
2	12.02.24	B2 DESIGN ADVICE	JAJ	SW
1	07.02.24	FOR INFORMATION	JAJ	AM

DRAWING KEY

PROJECT
HARBOURSIDE

DRAWING TITLE
CC Basement Documentation
Swept Path Review
B2

CLIENT	MIRVAC
DRAWING #	ptc-(5)
PROJECT #	22-0036
SCALE	1 : 250

CC DOCUMENTATION

REV 5

GARAGE 14

GARAGE 13

GARAGE 15

GARAGE 16

GARAGE 17

B02.007
CORRIDOR

B02.014
PREMIUM GARAGE

B02.013
PREMIUM GARAGE

B02.015
PREMIUM GARAGE

B02.016
PREMIUM GARAGE

B02.017
PREMIUM GARAGE

B02.012
CAR PARKING -
RESIDENTIAL

SECURITY ROLLER DOOR

GENERAL WASTE
x7 BINS

19 RESIDENTIAL CAR SPACES (GARAGE)
21 STANDARD RESIDENTIAL CAR SPACES
4 MOTORCYCLE (M/C) SPACES

6100
6204
6200
6117
2300
1805
1740
1644
1600
210

NO
IMPRO

ptc.
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ptcconsultants.co

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
X	X	X	x	x
X	X	X	x	x
5	25.03.24	FOR INFORMATION	JAJ	AM
4	18.03.24	FOR INFORMATION	JAJ	-
3	14.02.24	FOR INFORMATION	JAJ	-
2	12.02.24	B2 DESIGN ADVICE	JAJ	SW
1	07.02.24	FOR INFORMATION	JAJ	AM

DRAWING KEY

PROJECT
HARBOURSIDE

DRAWING TITLE
CC Basement Documentation
Swept Path Review
B2

CLIENT	MIRVAC
DRAWING #	ptc-(6)
PROJECT #	22-0036
SCALE	1 : 100

CC DOCUMENTATION

REV 5

POOR VISIBILITY.
MIRROR SUGGESTED TO
ASSIST DRIVER

ADJUSTMENT TO
COLUMN TO KEEP OUT
OF PARKING ENVELOPE

ADJUSTMENT TO LOCATION OF
PARKING SPACES TO SUIT
COLUMN GRID

SHIFT M/C BAYS

MIRROR SUGGESTED.
NOT REQUIRED BUT WILL
IMPROVE LEVEL OF SERVICE

BOLLARD IN LOCATION
WOULD ASSIST IN
PREVENTING VEHICLE
PARKING IN PED AISLE

CoS DOES NOT PERMIT STORAGE CAGES FOR
BICYCLES DIRECTLY BEHIND CAR BAYS

POOR VISIBILITY.
MIRROR SUGGESTED TO
ASSIST DRIVER

FULL HEIGHT
MESH FENCE/
WALL

NO KERB. 5.8M MIN AISLE REQUIRED

SHIFT BAY SO DOOR ENVELOPE
IS BE CLEAR OF RS CAGE

GIVE WAY LINEMARKING REQUIRED

MIRROR SUGGESTED.
NOT REQUIRED BUT WILL
IMPROVE LEVEL OF SERVICE

LEGE
DA BOU
SSDA S
SSDA 3
EXISTIN

ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
X	X	X	x	x
X	X	X	x	x
X	X	X	x	x
X	X	X	x	x
X	X	X	x	x
2	25.03.24	FOR INFORMATION	JAJ	AM
1	07.02.24	FOR INFORMATION	JAJ	AM

DRAWING KEY

PROJECT
HARBOURSIDE

DRAWING TITLE
CC Basement Documentation
Swept Path Review
B3

CLIENT	MIRVAC
DRAWING #	ptc-(1)
PROJECT #	22-0036
SCALE	1 : 250

CC DOCUMENTATION
REV 2

POOR VISIBILITY.
MIRROR SUGGESTED TO
ASSIST DRIVER

ADJUSTMENT TO
COLUMN TO KEEP OUT
OF PARKING ENVELOPE

NO KERBING AROUND M/C
BAYS TO ALLOW ACCESS.
SHIFT BAYS

MIRROR SUGGESTED.
NOT REQUIRED BUT WILL
IMPROVE LEVEL OF SERVICE

34 BICYCLE SPACES PROVIDED

BOLLARD IN LOCATION
WOULD ASSIST IN
PREVENTING VEHICLE
PARKING IN PED AISLE

CORNER RADIUS TO BE INSTATED IF KERBED

MIRROR SUGGESTED.
NOT REQUIRED BUT WILL
IMPROVE LEVEL OF SERVICE

POOR VISIBILITY.
MIRROR SUGGESTED TO
ASSIST DRIVER

NO KERB. 5.8M MIN AISLE REQUIRED

SHIFT BAY SO DOOR ENVELOPE
IS BE CLEAR OF RS CAGE

GIVE WAY LINEMARKING REQUIRED

LEGE
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SSDA 3
EXISTI

ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
X	X	X	x	x
X	X	X	x	x
X	X	X	x	x
X	X	X	x	x
X	X	X	x	x
2	25.03.24	FOR INFORMATION	JAJ	AM
1	07.02.24	FOR INFORMATION	JAJ	AM

DRAWING KEY

PROJECT
HARBOURSIDE

DRAWING TITLE
CC Basement Documentation
Swept Path Review
B4

CLIENT	MIRVAC
DRAWING #	ptc-{1}
PROJECT #	22-0036
SCALE	1 : 250

CC DOCUMENTATION
REV 2

Attachment 2. SIDRA Analysis

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MOVEMENT SUMMARY

Site: 101 [1A. Darling Dr / Ultimo Rd (Site Folder: 1A Existing AM Peak)]

Network: N101 [1A Existing AM Peak (Network Folder: General)]

Existing AM Peak
8-9am
22nd March 2022
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: 29B Ultimo Rd Driveway														
1	L2	1	0.0	1	0.0	0.011	23.0	LOS C	0.1	0.6	0.85	0.54	0.85	17.7
2	T1	1	0.0	1	0.0	0.011	23.4	LOS C	0.1	0.6	0.85	0.54	0.85	16.0
3	R2	1	0.0	1	0.0	0.011	23.0	LOS C	0.1	0.6	0.85	0.54	0.85	17.3
Approach		3	0.0	3	0.0	0.011	23.1	LOS C	0.1	0.6	0.85	0.54	0.85	17.0
East: Ultimo Rd (E)														
4	L2	2	0.0	2	0.0	0.056	9.2	LOS A	0.7	5.3	0.40	0.32	0.40	48.0
5	T1	132	4.0	132	4.0	0.056	4.4	LOS A	0.7	5.3	0.40	0.32	0.40	31.2
6	R2	239	2.2	239	2.2	* 0.296	11.5	LOS B	3.9	27.5	0.66	0.70	0.66	15.9
Approach		373	2.8	373	2.8	0.296	9.0	LOS A	3.9	27.5	0.57	0.56	0.57	21.9
North: Darling Dr (N)														
7	L2	118	3.6	118	3.6	0.115	11.1	LOS B	1.6	11.5	0.49	0.66	0.49	37.0
8	T1	4	0.0	4	0.0	* 0.439	25.7	LOS C	3.5	25.4	0.94	0.78	0.94	36.6
9	R2	121	4.3	121	4.3	0.439	30.3	LOS C	3.5	25.4	0.94	0.78	0.94	26.7
Approach		243	3.9	243	3.9	0.439	20.9	LOS C	3.5	25.4	0.72	0.72	0.72	31.0
West: Ultimo Rd (W)														
10	L2	67	0.0	67	0.0	0.229	26.4	LOS C	2.1	14.6	0.88	0.73	0.88	10.9
11	T1	117	1.8	117	1.8	* 0.229	20.9	LOS C	2.5	17.9	0.85	0.67	0.85	17.1
Approach		184	1.1	184	1.1	0.229	22.9	LOS C	2.5	17.9	0.86	0.69	0.86	14.9
All Vehicles		803	2.8	803	2.8	0.439	15.8	LOS B	3.9	27.5	0.68	0.64	0.68	24.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: 29B Ultimo Rd Driveway											
P1	Full	206	24.5	LOS C	0.3	0.3	0.91	0.91	186.5	210.6	1.13
East: Ultimo Rd (E)											
P2	Full	32	24.3	LOS C	0.0	0.0	0.90	0.90	192.8	219.0	1.14
North: Darling Dr (N)											
P3	Full	141	24.4	LOS C	0.2	0.2	0.91	0.91	190.0	215.2	1.13

All Pedestrians	379	24.5	LOS C	0.3	0.3	0.91	0.91	188.3	213.0	1.13

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 201 [2A. Darling Drive / Pier St (Site Folder: 1A Existing AM Peak)]

Network: N101 [1A Existing AM Peak (Network Folder: General)]

Existing AM Peak
8-9am
22nd March 2022
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Darling Dr (S)														
2	T1	108	1.9	108	1.9	0.309	3.8	LOS A	1.7	12.0	0.51	0.64	0.51	40.2
3a	R1	74	0.0	74	0.0	0.309	8.7	LOS A	1.7	12.0	0.51	0.64	0.51	28.4
3	R2	142	3.0	142	3.0	0.309	9.8	LOS A	1.7	12.0	0.51	0.64	0.51	47.2
3u	U	4	0.0	4	0.0	0.309	11.8	LOS B	1.7	12.0	0.51	0.64	0.51	40.2
Approach		328	1.9	328	1.9	0.309	7.6	LOS A	1.7	12.0	0.51	0.64	0.51	40.8
SouthEast: Pier St (SE)														
21b	L3	163	3.2	163	3.2	0.095	2.5	LOS A	0.5	3.8	0.17	0.38	0.17	46.2
23a	R1	326	2.6	326	2.6	0.228	6.7	LOS A	1.4	10.4	0.24	0.53	0.24	41.9
23	R2	52	4.1	52	4.1	0.228	7.7	LOS A	1.4	10.4	0.24	0.53	0.24	29.0
23b	R3	8	0.0	8	0.0	0.228	8.7	LOS A	1.4	10.4	0.24	0.53	0.24	48.3
Approach		549	2.9	549	2.9	0.228	5.6	LOS A	1.4	10.4	0.22	0.49	0.22	41.1
North: Darling Dr (N)														
7b	L3	27	3.8	27	3.8	0.069	3.8	LOS A	0.4	3.1	0.42	0.46	0.42	45.4
7	L2	68	9.2	68	9.2	0.069	3.6	LOS A	0.4	3.1	0.42	0.46	0.42	47.6
8	T1	48	0.0	48	0.0	0.064	3.3	LOS A	0.4	2.5	0.44	0.50	0.44	43.6
9u	U	27	0.0	27	0.0	0.064	10.6	LOS B	0.4	2.5	0.44	0.50	0.44	43.6
Approach		172	4.3	172	4.3	0.069	4.7	LOS A	0.4	3.1	0.43	0.48	0.43	45.8
All Vehicles		1049	2.8	1049	2.8	0.309	6.1	LOS A	1.7	12.0	0.34	0.53	0.34	41.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 301 [3A. Darling Dr / Iron Wharf Pl (Site Folder: 1A Existing AM Peak)]

Network: N101 [1A Existing AM Peak (Network Folder: General)]

Existing AM Peak
8-9am
22nd March 2022
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Darling Dr (S)														
2	T1	340	2.5	340	2.5	0.266	3.9	LOS A	1.7	12.3	0.14	0.46	0.14	45.0
3b	R3	9	11.1	9	11.1	0.266	7.7	LOS A	1.7	12.3	0.14	0.46	0.14	44.8
3u	U	43	2.4	43	2.4	0.266	8.3	LOS A	1.7	12.3	0.14	0.46	0.14	45.0
Approach		393	2.7	393	2.7	0.266	4.5	LOS A	1.7	12.3	0.14	0.46	0.14	45.0
SouthEast: Iron Wharf Pl (E)														
21b	L3	1	0.0	1	0.0	0.009	4.5	LOS A	0.0	0.4	0.39	0.52	0.39	29.4
23a	R1	6	16.7	6	16.7	0.009	6.3	LOS A	0.0	0.4	0.39	0.52	0.39	29.4
23u	U	1	0.0	1	0.0	0.009	7.9	LOS A	0.0	0.4	0.39	0.52	0.39	35.3
Approach		8	12.5	8	12.5	0.009	6.3	LOS A	0.0	0.4	0.39	0.52	0.39	30.5
North: Darling Dr (N)														
7a	L1	26	4.0	26	4.0	0.165	2.5	LOS A	0.7	5.5	0.15	0.38	0.15	37.3
8	T1	166	4.4	166	4.4	0.165	2.8	LOS A	0.7	5.5	0.15	0.38	0.15	34.9
9u	U	19	22.2	19	22.2	0.165	7.1	LOS A	0.7	5.5	0.15	0.38	0.15	34.9
Approach		212	6.0	212	6.0	0.165	3.1	LOS A	0.7	5.5	0.15	0.38	0.15	35.3
All Vehicles		613	4.0	613	4.0	0.266	4.0	LOS A	1.7	12.3	0.15	0.43	0.15	42.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 401 [4A. Pyrmont Bridge Rd / Murray St / Darling Dr (Site Folder: 1A Existing AM Peak)]

Network: N101 [1A Existing AM Peak (Network Folder: General)]

Existing AM Peak
8-9am
22nd March 2022
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Murray St (S)														
1	L2	21	5.0	21	5.0	* 0.183	30.3	LOS C	1.4	10.8	0.91	0.69	0.91	30.6
2	T1	43	9.8	43	9.8	* 0.183	36.6	LOS D	2.0	17.9	0.92	0.70	0.92	28.3
3	R2	21	45.0	21	45.0	0.183	54.7	LOS D	2.0	17.9	0.92	0.71	0.92	18.8
Approach		85	17.3	85	17.3	0.183	39.5	LOS D	2.0	17.9	0.92	0.70	0.92	26.9
East: Darling Dr (E)														
4	L2	111	2.9	111	2.9	0.077	5.5	LOS A	0.5	3.6	0.15	0.54	0.15	40.5
5	T1	122	2.6	122	2.6	* 0.382	49.9	LOS D	6.5	46.2	0.94	0.76	0.94	24.0
6	R2	117	4.5	117	4.5	0.241	35.9	LOS D	4.9	35.6	0.83	0.75	0.83	27.5
Approach		349	3.3	349	3.3	0.382	31.2	LOS C	6.5	46.2	0.65	0.69	0.65	29.0
North: Murray St (N)														
7	L2	22	19.0	22	19.0	0.041	20.0	LOS C	0.6	4.8	0.70	0.64	0.70	28.1
8	T1	22	9.5	22	9.5	* 0.243	50.3	LOS D	3.2	24.7	0.93	0.73	0.93	25.7
9	R2	38	13.9	38	13.9	0.243	54.1	LOS D	3.2	24.7	0.93	0.73	0.93	26.1
Approach		82	14.1	82	14.1	0.243	43.9	LOS D	3.2	24.7	0.87	0.71	0.87	26.3
West: Pyrmont Bridge Rd (W)														
10	L2	109	11.5	109	11.5	0.225	33.6	LOS C	5.4	41.1	0.75	0.71	0.75	29.5
11	T1	154	5.5	154	5.5	0.243	34.2	LOS C	5.9	43.5	0.80	0.66	0.80	23.0
12	R2	88	0.0	88	0.0	* 0.118	18.0	LOS B	2.4	16.7	0.65	0.68	0.65	33.4
Approach		352	6.0	352	6.0	0.243	29.9	LOS C	5.9	43.5	0.75	0.68	0.75	28.3
All Vehicles		868	6.8	868	6.8	0.382	32.7	LOS C	6.5	46.2	0.74	0.69	0.74	28.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Murray St (S)											
P1	Full	81	54.3	LOS E	0.3	0.3	0.95	0.95	217.3	211.9	0.97
East: Darling Dr (E)											
P2	Full	269	54.8	LOS E	0.9	0.9	0.96	0.96	220.7	215.7	0.98
North: Murray St (N)											

P3 Full	1149	56.9	LOS E	3.9	3.9	1.00	1.00	222.4	215.2	0.97
West: Pyrmont Bridge Rd (W)										
P4 Full	137	54.5	LOS E	0.4	0.4	0.96	0.96	220.0	215.2	0.98
All Pedestrians	1637	56.2	LOS E	3.9	3.9	0.99	0.99	221.7	215.1	0.97

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [1B. Darling Dr / Ultimo Rd (Site Folder: 1B Existing PM Peak)]

Network: N101 [1B Existing PM Peak (Network Folder: General)]

Existing PM Peak
5-6pm
22nd March 2022
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 65 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: 29B Ultimo Rd Driveway														
1	L2	2	0.0	2	0.0	0.010	20.0	LOS C	0.1	0.7	0.78	0.51	0.78	18.1
2	T1	1	0.0	1	0.0	0.010	20.5	LOS C	0.1	0.7	0.78	0.51	0.78	16.5
3	R2	1	0.0	1	0.0	0.010	20.0	LOS C	0.1	0.7	0.78	0.51	0.78	17.8
Approach		4	0.0	4	0.0	0.010	20.1	LOS C	0.1	0.7	0.78	0.51	0.78	17.6
East: Ultimo Rd (E)														
4	L2	1	0.0	1	0.0	0.124	11.7	LOS B	2.0	14.1	0.49	0.40	0.49	45.5
5	T1	272	1.6	272	1.6	0.124	6.9	LOS A	2.0	14.1	0.49	0.40	0.49	27.8
6	R2	274	2.3	274	2.3	* 0.392	14.9	LOS B	5.6	39.9	0.75	0.74	0.75	13.6
Approach		546	1.9	546	1.9	0.392	10.9	LOS B	5.6	39.9	0.62	0.57	0.62	20.8
North: Darling Dr (N)														
7	L2	94	1.1	94	1.1	0.089	11.4	LOS B	1.3	9.5	0.48	0.66	0.48	36.8
8	T1	1	0.0	1	0.0	* 0.646	25.2	LOS C	7.7	54.6	0.95	0.84	0.99	36.6
9	R2	253	2.1	253	2.1	0.646	29.8	LOS C	7.7	54.6	0.95	0.84	0.99	26.7
Approach		347	1.8	347	1.8	0.646	24.8	LOS C	7.7	54.6	0.82	0.79	0.85	28.8
West: Ultimo Rd (W)														
10	L2	42	0.0	42	0.0	0.154	27.7	LOS C	1.5	10.7	0.86	0.70	0.86	10.6
11	T1	88	0.0	88	0.0	* 0.154	21.5	LOS C	1.9	13.2	0.83	0.64	0.83	16.8
Approach		131	0.0	131	0.0	0.154	23.5	LOS C	1.9	13.2	0.84	0.66	0.84	14.9
All Vehicles		1028	1.6	1028	1.6	0.646	17.3	LOS B	7.7	54.6	0.72	0.66	0.73	24.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: 29B Ultimo Rd Driveway											
P1	Full	295	27.1	LOS C	0.5	0.5	0.92	0.92	189.1	210.6	1.11
East: Ultimo Rd (E)											
P2	Full	83	26.9	LOS C	0.1	0.1	0.91	0.91	195.3	219.0	1.12
North: Darling Dr (N)											
P3	Full	198	27.0	LOS C	0.3	0.3	0.92	0.92	192.5	215.2	1.12

All Pedestrians	576	27.0	LOS C	0.5	0.5	0.92	0.92	191.2	213.4	1.12

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 201 [2B. Darling Drive / Pier St (Site Folder: 1B Existing PM Peak)]

Network: N101 [1B Existing PM Peak (Network Folder: General)]

Existing PM Peak
5-6pm
22nd March 2022
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Darling Dr (S)														
2	T1	106	5.0	106	5.0	0.299	3.2	LOS A	1.6	11.4	0.44	0.60	0.44	40.5
3a	R1	12	0.0	12	0.0	0.299	8.1	LOS A	1.6	11.4	0.44	0.60	0.44	28.6
3	R2	217	1.0	217	1.0	0.299	9.2	LOS A	1.6	11.4	0.44	0.60	0.44	47.4
3u	U	5	0.0	5	0.0	0.299	11.2	LOS B	1.6	11.4	0.44	0.60	0.44	40.5
Approach		340	2.2	340	2.2	0.299	7.3	LOS A	1.6	11.4	0.44	0.60	0.44	45.2
SouthEast: Pier St (SE)														
21b	L3	180	2.3	180	2.3	0.108	2.7	LOS A	0.6	4.4	0.24	0.39	0.24	45.9
23a	R1	245	2.6	245	2.6	0.174	6.9	LOS A	1.0	7.5	0.29	0.54	0.29	41.7
23	R2	31	0.0	31	0.0	0.174	7.8	LOS A	1.0	7.5	0.29	0.54	0.29	29.0
23b	R3	8	0.0	8	0.0	0.174	8.8	LOS A	1.0	7.5	0.29	0.54	0.29	48.1
Approach		464	2.3	464	2.3	0.174	5.3	LOS A	1.0	7.5	0.27	0.48	0.27	41.8
North: Darling Dr (N)														
7b	L3	13	16.7	13	16.7	0.105	4.0	LOS A	0.7	4.6	0.42	0.45	0.42	44.9
7	L2	139	0.0	139	0.0	0.105	3.5	LOS A	0.7	4.6	0.42	0.45	0.42	47.6
8	T1	87	0.0	87	0.0	0.099	3.3	LOS A	0.6	4.1	0.44	0.47	0.44	44.0
9u	U	31	0.0	31	0.0	0.099	10.7	LOS B	0.6	4.1	0.44	0.47	0.44	44.0
Approach		269	0.8	269	0.8	0.105	4.3	LOS A	0.7	4.6	0.43	0.46	0.43	46.3
All Vehicles		1074	1.9	1074	1.9	0.299	5.7	LOS A	1.6	11.4	0.36	0.52	0.36	44.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 301 [3B. Darling Dr / Iron Wharf Pl (Site Folder: 1B Existing PM Peak)]

Network: N101 [1B Existing PM Peak (Network Folder: General)]

Existing PM Peak
5-6pm
22nd March 2022
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Darling Dr (S)														
2	T1	342	3.4	342	3.4	0.230	3.8	LOS A	1.4	10.4	0.06	0.44	0.06	45.6
3b	R3	9	0.0	9	0.0	0.230	7.5	LOS A	1.4	10.4	0.06	0.44	0.06	45.3
3u	U	17	0.0	17	0.0	0.230	8.2	LOS A	1.4	10.4	0.06	0.44	0.06	45.6
Approach		368	3.1	368	3.1	0.230	4.1	LOS A	1.4	10.4	0.06	0.44	0.06	45.6
SouthEast: Iron Wharf Pl (E)														
21b	L3	1	0.0	1	0.0	0.004	4.4	LOS A	0.0	0.2	0.35	0.51	0.35	29.5
23a	R1	2	0.0	2	0.0	0.004	5.8	LOS A	0.0	0.2	0.35	0.51	0.35	29.5
23u	U	1	0.0	1	0.0	0.004	7.7	LOS A	0.0	0.2	0.35	0.51	0.35	35.4
Approach		4	0.0	4	0.0	0.004	5.9	LOS A	0.0	0.2	0.35	0.51	0.35	31.5
North: Darling Dr (N)														
7a	L1	16	13.3	16	13.3	0.143	2.4	LOS A	0.6	4.4	0.09	0.34	0.09	37.7
8	T1	180	1.2	180	1.2	0.143	2.6	LOS A	0.6	4.4	0.09	0.34	0.09	35.5
9u	U	4	0.0	4	0.0	0.143	6.8	LOS A	0.6	4.4	0.09	0.34	0.09	35.5
Approach		200	2.1	200	2.1	0.143	2.6	LOS A	0.6	4.4	0.09	0.34	0.09	35.8
All Vehicles		573	2.8	573	2.8	0.230	3.6	LOS A	1.4	10.4	0.07	0.41	0.07	43.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 401 [4B. Pyrmont Bridge Rd / Murray St / Darling Dr (Site Folder: 1B Existing PM Peak)]

Network: N101 [1B Existing PM Peak (Network Folder: General)]

Existing PM Peak
5-6pm
22nd March 2022
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Murray St (S)														
1	L2	55	0.0	55	0.0	* 0.218	24.6	LOS C	1.9	13.4	0.87	0.71	0.87	31.9
2	T1	44	4.8	44	4.8	* 0.218	33.1	LOS C	2.8	20.4	0.90	0.72	0.90	28.8
3	R2	37	2.9	37	2.9	0.218	49.0	LOS D	2.8	20.4	0.92	0.73	0.92	19.8
Approach		136	2.3	136	2.3	0.218	34.0	LOS C	2.8	20.4	0.89	0.72	0.89	28.0
East: Darling Dr (E)														
4	L2	93	3.4	93	3.4	0.065	5.7	LOS A	0.6	4.0	0.18	0.55	0.18	40.3
5	T1	166	1.3	166	1.3	* 0.430	43.3	LOS D	7.9	56.0	0.92	0.77	0.92	25.5
6	R2	93	6.8	93	6.8	0.203	33.6	LOS C	3.6	26.4	0.83	0.74	0.83	28.1
Approach		352	3.3	352	3.3	0.430	30.9	LOS C	7.9	56.0	0.70	0.71	0.70	29.1
North: Murray St (N)														
7	L2	56	1.9	56	1.9	0.076	15.0	LOS B	1.1	7.7	0.65	0.66	0.65	30.4
8	T1	99	2.1	99	2.1	* 0.433	39.6	LOS D	8.6	61.2	0.91	0.77	0.91	27.6
9	R2	86	1.2	86	1.2	0.433	43.0	LOS D	8.6	61.2	0.91	0.77	0.91	27.8
Approach		241	1.7	241	1.7	0.433	35.1	LOS D	8.6	61.2	0.85	0.74	0.85	28.0
West: Pyrmont Bridge Rd (W)														
10	L2	78	12.2	78	12.2	0.243	40.5	LOS D	4.2	32.1	0.85	0.73	0.85	27.9
11	T1	114	3.7	114	3.7	0.263	40.6	LOS D	4.4	32.0	0.89	0.71	0.89	21.2
12	R2	58	1.8	58	1.8	* 0.122	24.6	LOS C	1.8	13.0	0.79	0.70	0.79	31.5
Approach		249	5.9	249	5.9	0.263	36.9	LOS D	4.4	32.1	0.85	0.71	0.85	26.3
All Vehicles		978	3.4	978	3.4	0.433	33.9	LOS C	8.6	61.2	0.80	0.72	0.80	27.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Murray St (S)											
P1	Full	142	49.5	LOS E	0.4	0.4	0.95	0.95	212.5	211.9	1.00
East: Darling Dr (E)											
P2	Full	347	49.9	LOS E	1.0	1.0	0.96	0.96	215.8	215.7	1.00
North: Murray St (N)											

P3 Full	1381	52.2	LOS E	4.3	4.3	1.00	1.00	217.7	215.2	0.99
West: Pyrmont Bridge Rd (W)										
P4 Full	171	49.5	LOS E	0.5	0.5	0.95	0.95	215.1	215.2	1.00
All Pedestrians	2041	51.4	LOS E	4.3	4.3	0.99	0.99	216.8	215.1	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [1A. Darling Dr / Ultimo Rd (Site Folder: 2A Future Base AM 2027)]

Network: N101 [2A Future Base AM 2027 (Network Folder: General)]

Existing AM Peak
8-9am
22nd March 2022
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: 29B Ultimo Rd Driveway														
1	L2	1	0.0	1	0.0	0.011	23.0	LOS C	0.1	0.6	0.85	0.54	0.85	17.7
2	T1	1	0.0	1	0.0	0.011	23.4	LOS C	0.1	0.6	0.85	0.54	0.85	16.0
3	R2	1	0.0	1	0.0	0.011	23.0	LOS C	0.1	0.6	0.85	0.54	0.85	17.3
Approach		3	0.0	3	0.0	0.011	23.1	LOS C	0.1	0.6	0.85	0.54	0.85	17.0
East: Ultimo Rd (E)														
4	L2	2	0.0	2	0.0	0.058	9.2	LOS A	0.8	5.6	0.40	0.32	0.40	48.0
5	T1	138	3.8	138	3.8	0.058	4.5	LOS A	0.8	5.6	0.40	0.32	0.40	31.2
6	R2	252	2.1	252	2.1	* 0.313	11.6	LOS B	4.1	29.4	0.67	0.71	0.67	15.8
Approach		392	2.7	392	2.7	0.313	9.1	LOS A	4.1	29.4	0.57	0.57	0.57	21.8
North: Darling Dr (N)														
7	L2	124	3.4	124	3.4	0.121	11.1	LOS B	1.7	12.2	0.49	0.67	0.49	36.9
8	T1	4	0.0	4	0.0	* 0.461	25.8	LOS C	3.7	26.7	0.95	0.78	0.95	36.5
9	R2	127	4.1	127	4.1	0.461	30.4	LOS C	3.7	26.7	0.95	0.78	0.95	26.6
Approach		256	3.7	256	3.7	0.461	20.9	LOS C	3.7	26.7	0.73	0.73	0.73	30.9
West: Ultimo Rd (W)														
10	L2	71	0.0	71	0.0	0.241	26.5	LOS C	2.2	15.4	0.88	0.73	0.88	10.9
11	T1	123	1.7	123	1.7	* 0.241	21.0	LOS C	2.7	18.9	0.85	0.68	0.85	17.1
Approach		194	1.1	194	1.1	0.241	23.0	LOS C	2.7	18.9	0.86	0.70	0.86	14.9
All Vehicles		844	2.6	844	2.6	0.461	15.9	LOS B	4.1	29.4	0.69	0.65	0.69	24.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: 29B Ultimo Rd Driveway											
P1	Full	206	24.5	LOS C	0.3	0.3	0.91	0.91	186.5	210.6	1.13
East: Ultimo Rd (E)											
P2	Full	32	24.3	LOS C	0.0	0.0	0.90	0.90	192.8	219.0	1.14
North: Darling Dr (N)											
P3	Full	141	24.4	LOS C	0.2	0.2	0.91	0.91	190.0	215.2	1.13

All Pedestrians	379	24.5	LOS C	0.3	0.3	0.91	0.91	188.3	213.0	1.13

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 201 [2A. Darling Drive / Pier St (Site Folder: 2A Future Base AM 2027)]

Network: N101 [2A Future Base AM 2027 (Network Folder: General)]

Existing AM Peak
8-9am
22nd March 2022
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Darling Dr (S)														
2	T1	114	1.9	114	1.9	0.330	4.0	LOS A	1.8	13.1	0.52	0.66	0.52	40.0
3a	R1	78	0.0	78	0.0	0.330	8.9	LOS A	1.8	13.1	0.52	0.66	0.52	28.3
3	R2	149	2.8	149	2.8	0.330	10.0	LOS A	1.8	13.1	0.52	0.66	0.52	47.1
3u	U	4	0.0	4	0.0	0.330	11.9	LOS B	1.8	13.1	0.52	0.66	0.52	40.0
Approach		345	1.8	345	1.8	0.330	7.8	LOS A	1.8	13.1	0.52	0.66	0.52	40.7
SouthEast: Pier St (SE)														
21b	L3	172	3.1	172	3.1	0.100	2.5	LOS A	0.6	4.1	0.17	0.38	0.17	46.2
23a	R1	343	2.5	343	2.5	0.240	6.7	LOS A	1.5	11.1	0.25	0.53	0.25	41.9
23	R2	55	3.8	55	3.8	0.240	7.8	LOS A	1.5	11.1	0.25	0.53	0.25	29.0
23b	R3	8	0.0	8	0.0	0.240	8.7	LOS A	1.5	11.1	0.25	0.53	0.25	48.2
Approach		578	2.7	578	2.7	0.240	5.6	LOS A	1.5	11.1	0.23	0.49	0.23	41.0
North: Darling Dr (N)														
7b	L3	28	3.7	28	3.7	0.073	3.9	LOS A	0.4	3.2	0.44	0.46	0.44	45.4
7	L2	72	8.8	72	8.8	0.073	3.7	LOS A	0.4	3.2	0.44	0.46	0.44	47.6
8	T1	51	0.0	51	0.0	0.068	3.3	LOS A	0.4	2.7	0.45	0.51	0.45	43.5
9u	U	28	0.0	28	0.0	0.068	10.7	LOS B	0.4	2.7	0.45	0.51	0.45	43.5
Approach		179	4.1	179	4.1	0.073	4.7	LOS A	0.4	3.2	0.44	0.48	0.44	45.8
All Vehicles		1102	2.7	1102	2.7	0.330	6.2	LOS A	1.8	13.1	0.36	0.54	0.36	41.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 301 [3A. Darling Dr / Iron Wharf Pl (Site Folder: 2A Future Base AM 2027)]

Network: N101 [2A Future Base AM 2027 (Network Folder: General)]

Existing AM Peak
8-9am
22nd March 2022
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Darling Dr (S)														
2	T1	358	2.4	358	2.4	0.258	3.8	LOS A	1.7	11.8	0.07	0.46	0.07	45.3
3b	R3	9	11.1	9	11.1	0.258	7.6	LOS A	1.7	11.8	0.07	0.46	0.07	45.0
3u	U	45	2.3	45	2.3	0.258	8.2	LOS A	1.7	11.8	0.07	0.46	0.07	45.3
Approach		413	2.6	413	2.6	0.258	4.3	LOS A	1.7	11.8	0.07	0.46	0.07	45.3
SouthEast: Iron Wharf Pl (E)														
21b	L3	1	0.0	1	0.0	0.009	4.2	LOS A	0.0	0.3	0.34	0.52	0.34	29.6
23a	R1	6	16.7	6	16.7	0.009	5.9	LOS A	0.0	0.3	0.34	0.52	0.34	29.6
23u	U	1	0.0	1	0.0	0.009	7.5	LOS A	0.0	0.3	0.34	0.52	0.34	35.5
Approach		8	12.5	8	12.5	0.009	5.9	LOS A	0.0	0.3	0.34	0.52	0.34	30.7
North: Darling Dr (N)														
7a	L1	65	4.8	65	4.8	0.151	2.5	LOS A	0.7	4.8	0.15	0.35	0.15	37.6
8	T1	128	3.3	128	3.3	0.151	2.8	LOS A	0.7	4.8	0.15	0.35	0.15	35.3
9u	U	1	0.0	1	0.0	0.151	6.9	LOS A	0.7	4.8	0.15	0.35	0.15	35.3
Approach		195	3.8	195	3.8	0.151	2.7	LOS A	0.7	4.8	0.15	0.35	0.15	36.3
All Vehicles		616	3.1	616	3.1	0.258	3.8	LOS A	1.7	11.8	0.10	0.43	0.10	43.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 401 [4A. Pyrmont Bridge Rd / Murray St / Darling Dr (Site Folder: 2A Future Base AM 2027)]

Network: N101 [2A Future Base AM 2027 (Network Folder: General)]

Existing AM Peak
8-9am
22nd March 2022
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Murray St (S)														
1	L2	22	4.8	22	4.8	* 0.191	30.3	LOS C	1.5	11.0	0.91	0.70	0.91	30.6
2	T1	45	9.3	45	9.3	* 0.191	36.6	LOS D	2.2	18.7	0.92	0.70	0.92	28.2
3	R2	22	42.9	22	42.9	0.191	54.7	LOS D	2.2	18.7	0.93	0.71	0.93	18.8
Approach		89	16.5	89	16.5	0.191	39.5	LOS D	2.2	18.7	0.92	0.70	0.92	26.9
East: Darling Dr (E)														
4	L2	117	2.7	117	2.7	0.081	5.6	LOS A	0.6	4.3	0.16	0.54	0.16	40.5
5	T1	128	2.5	128	2.5	* 0.401	50.1	LOS D	6.8	48.8	0.94	0.77	0.94	24.0
6	R2	123	4.3	123	4.3	0.262	36.8	LOS D	5.3	38.2	0.84	0.76	0.84	27.2
Approach		368	3.1	368	3.1	0.401	31.6	LOS C	6.8	48.8	0.66	0.69	0.66	28.9
North: Murray St (N)														
7	L2	28	14.8	28	14.8	0.052	20.5	LOS C	0.8	6.1	0.71	0.65	0.71	27.9
8	T1	23	9.1	23	9.1	* 0.255	50.4	LOS D	3.4	25.9	0.93	0.74	0.93	25.7
9	R2	40	13.2	40	13.2	0.255	54.2	LOS D	3.4	25.9	0.93	0.74	0.93	26.0
Approach		92	12.6	92	12.6	0.255	42.8	LOS D	3.4	25.9	0.86	0.71	0.86	26.3
West: Pyrmont Bridge Rd (W)														
10	L2	53	26.0	53	26.0	0.193	37.1	LOS D	4.2	33.2	0.78	0.68	0.78	28.9
11	T1	161	5.2	161	5.2	0.209	33.6	LOS C	5.1	37.5	0.79	0.65	0.79	23.1
12	R2	94	0.0	94	0.0	* 0.125	18.1	LOS B	2.5	17.8	0.65	0.68	0.65	33.4
Approach		307	7.2	307	7.2	0.209	29.5	LOS C	5.1	37.5	0.74	0.66	0.74	27.9
All Vehicles		857	7.0	857	7.0	0.401	32.8	LOS C	6.8	48.8	0.74	0.69	0.74	28.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Murray St (S)											
P1	Full	81	54.3	LOS E	0.3	0.3	0.95	0.95	217.3	211.9	0.97
East: Darling Dr (E)											
P2	Full	269	54.8	LOS E	0.9	0.9	0.96	0.96	220.7	215.7	0.98
North: Murray St (N)											

P3 Full	1149	56.9	LOS E	3.9	3.9	1.00	1.00	222.4	215.2	0.97
West: Pyrmont Bridge Rd (W)										
P4 Full	137	54.5	LOS E	0.4	0.4	0.96	0.96	220.0	215.2	0.98
All Pedestrians	1637	56.2	LOS E	3.9	3.9	0.99	0.99	221.7	215.1	0.97

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [1B. Darling Dr / Ultimo Rd (Site Folder: 2B Future Base PM 2027)]

Network: N101 [2B Future Base PM 2027 (Network Folder: General)]

Existing PM Peak
5-6pm
22nd March 2022
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 65 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: 29B Ultimo Rd Driveway														
1	L2	2	0.0	2	0.0	0.010	20.0	LOS C	0.1	0.7	0.78	0.51	0.78	18.1
2	T1	1	0.0	1	0.0	0.010	20.5	LOS C	0.1	0.7	0.78	0.51	0.78	16.5
3	R2	1	0.0	1	0.0	0.010	20.0	LOS C	0.1	0.7	0.78	0.51	0.78	17.8
Approach		4	0.0	4	0.0	0.010	20.2	LOS C	0.1	0.7	0.78	0.51	0.78	17.6
East: Ultimo Rd (E)														
4	L2	1	0.0	1	0.0	0.131	11.7	LOS B	2.1	14.9	0.49	0.40	0.49	45.4
5	T1	286	1.5	286	1.5	0.131	7.0	LOS A	2.1	14.9	0.49	0.40	0.49	27.8
6	R2	288	2.2	288	2.2	* 0.415	15.1	LOS B	6.0	42.7	0.76	0.75	0.76	13.5
Approach		576	1.8	576	1.8	0.415	11.0	LOS B	6.0	42.7	0.63	0.58	0.63	20.7
North: Darling Dr (N)														
7	L2	99	1.1	99	1.1	0.094	11.4	LOS B	1.4	10.0	0.48	0.66	0.48	36.8
8	T1	1	0.0	1	0.0	* 0.681	26.0	LOS C	8.3	58.9	0.96	0.86	1.04	36.3
9	R2	266	2.0	266	2.0	0.681	30.6	LOS C	8.3	58.9	0.96	0.86	1.04	26.4
Approach		366	1.7	366	1.7	0.681	25.4	LOS C	8.3	58.9	0.83	0.81	0.89	28.6
West: Ultimo Rd (W)														
10	L2	44	0.0	44	0.0	0.163	27.8	LOS C	1.6	11.3	0.86	0.70	0.86	10.6
11	T1	94	0.0	94	0.0	* 0.163	21.6	LOS C	2.0	13.9	0.83	0.65	0.83	16.8
Approach		138	0.0	138	0.0	0.163	23.6	LOS C	2.0	13.9	0.84	0.67	0.84	14.9
All Vehicles		1084	1.6	1084	1.6	0.681	17.5	LOS B	8.3	58.9	0.72	0.67	0.74	24.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: 29B Ultimo Rd Driveway											
P1	Full	295	27.1	LOS C	0.5	0.5	0.92	0.92	189.1	210.6	1.11
East: Ultimo Rd (E)											
P2	Full	83	26.9	LOS C	0.1	0.1	0.91	0.91	195.3	219.0	1.12
North: Darling Dr (N)											
P3	Full	198	27.0	LOS C	0.3	0.3	0.92	0.92	192.5	215.2	1.12

All Pedestrians	576	27.0	LOS C	0.5	0.5	0.92	0.92	191.2	213.4	1.12

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 201 [2B. Darling Drive / Pier St (Site Folder: 2B Future Base PM 2027)]

Network: N101 [2B Future Base PM 2027 (Network Folder: General)]

Existing PM Peak
5-6pm
22nd March 2022
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Darling Dr (S)														
2	T1	112	4.7	112	4.7	0.319	3.4	LOS A	1.7	12.3	0.45	0.61	0.45	40.4
3a	R1	13	0.0	13	0.0	0.319	8.3	LOS A	1.7	12.3	0.45	0.61	0.45	28.5
3	R2	228	0.9	228	0.9	0.319	9.3	LOS A	1.7	12.3	0.45	0.61	0.45	47.3
3u	U	5	0.0	5	0.0	0.319	11.3	LOS B	1.7	12.3	0.45	0.61	0.45	40.4
Approach		358	2.1	358	2.1	0.319	7.4	LOS A	1.7	12.3	0.45	0.61	0.45	45.1
SouthEast: Pier St (SE)														
21b	L3	189	2.2	189	2.2	0.114	2.7	LOS A	0.7	4.7	0.24	0.39	0.24	45.9
23a	R1	258	2.4	258	2.4	0.184	6.9	LOS A	1.1	8.0	0.30	0.54	0.30	41.7
23	R2	33	0.0	33	0.0	0.184	7.9	LOS A	1.1	8.0	0.30	0.54	0.30	28.9
23b	R3	8	0.0	8	0.0	0.184	8.9	LOS A	1.1	8.0	0.30	0.54	0.30	48.1
Approach		488	2.2	488	2.2	0.184	5.3	LOS A	1.1	8.0	0.28	0.49	0.28	41.8
North: Darling Dr (N)														
7b	L3	14	15.4	14	15.4	0.112	4.1	LOS A	0.7	5.0	0.44	0.46	0.44	44.9
7	L2	146	0.0	146	0.0	0.112	3.6	LOS A	0.7	5.0	0.44	0.46	0.44	47.6
8	T1	92	0.0	92	0.0	0.105	3.4	LOS A	0.6	4.4	0.45	0.48	0.45	43.9
9u	U	33	0.0	33	0.0	0.105	10.7	LOS B	0.6	4.4	0.45	0.48	0.45	43.9
Approach		284	0.7	284	0.7	0.112	4.4	LOS A	0.7	5.0	0.45	0.47	0.45	46.2
All Vehicles		1131	1.8	1131	1.8	0.319	5.8	LOS A	1.7	12.3	0.38	0.52	0.38	44.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 301 [3B. Darling Dr / Iron Wharf Pl (Site Folder: 2B Future Base PM 2027)]

Network: N101 [2B Future Base PM 2027 (Network Folder: General)]

Existing PM Peak
5-6pm
22nd March 2022
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Darling Dr (S)														
2	T1	361	3.5	361	3.5	0.242	3.8	LOS A	1.5	11.1	0.06	0.44	0.06	45.6
3b	R3	9	0.0	9	0.0	0.242	7.5	LOS A	1.5	11.1	0.06	0.44	0.06	45.3
3u	U	18	0.0	18	0.0	0.242	8.2	LOS A	1.5	11.1	0.06	0.44	0.06	45.6
Approach		388	3.3	388	3.3	0.242	4.1	LOS A	1.5	11.1	0.06	0.44	0.06	45.6
SouthEast: Iron Wharf Pl (E)														
21b	L3	1	0.0	1	0.0	0.004	4.4	LOS A	0.0	0.2	0.36	0.51	0.36	29.5
23a	R1	2	0.0	2	0.0	0.004	5.9	LOS A	0.0	0.2	0.36	0.51	0.36	29.5
23u	U	1	0.0	1	0.0	0.004	7.7	LOS A	0.0	0.2	0.36	0.51	0.36	35.4
Approach		4	0.0	4	0.0	0.004	6.0	LOS A	0.0	0.2	0.36	0.51	0.36	31.5
North: Darling Dr (N)														
7a	L1	17	12.5	17	12.5	0.150	2.4	LOS A	0.7	4.7	0.09	0.34	0.09	37.7
8	T1	189	1.1	189	1.1	0.150	2.6	LOS A	0.7	4.7	0.09	0.34	0.09	35.5
9u	U	4	0.0	4	0.0	0.150	6.8	LOS A	0.7	4.7	0.09	0.34	0.09	35.5
Approach		211	2.0	211	2.0	0.150	2.7	LOS A	0.7	4.7	0.09	0.34	0.09	35.8
All Vehicles		603	2.8	603	2.8	0.242	3.6	LOS A	1.5	11.1	0.07	0.41	0.07	43.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 401 [4B. Pyrmont Bridge Rd / Murray St / Darling Dr (Site Folder: 2B Future Base PM 2027)]

Network: N101 [2B Future Base PM 2027 (Network Folder: General)]

Existing PM Peak
5-6pm
22nd March 2022
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Murray St (S)														
1	L2	58	0.0	58	0.0	* 0.229	24.6	LOS C	2.0	14.2	0.87	0.71	0.87	31.9
2	T1	46	4.5	46	4.5	* 0.229	33.2	LOS C	3.0	21.5	0.90	0.72	0.90	28.8
3	R2	39	2.7	39	2.7	0.229	49.1	LOS D	3.0	21.5	0.92	0.73	0.92	19.7
Approach		143	2.2	143	2.2	0.229	34.0	LOS C	3.0	21.5	0.90	0.72	0.90	28.0
East: Darling Dr (E)														
4	L2	98	3.2	98	3.2	0.069	5.9	LOS A	0.6	4.6	0.19	0.55	0.19	40.3
5	T1	175	1.2	175	1.2	* 0.452	43.5	LOS D	8.4	59.1	0.93	0.78	0.93	25.5
6	R2	97	6.5	97	6.5	0.212	33.7	LOS C	3.7	27.6	0.84	0.75	0.84	28.1
Approach		369	3.1	369	3.1	0.452	31.0	LOS C	8.4	59.1	0.71	0.71	0.71	29.0
North: Murray St (N)														
7	L2	64	1.6	64	1.6	0.087	15.1	LOS B	1.2	8.9	0.65	0.66	0.65	30.3
8	T1	104	2.0	104	2.0	* 0.454	39.9	LOS D	9.1	64.6	0.91	0.77	0.91	27.6
9	R2	91	1.2	91	1.2	0.454	43.2	LOS D	9.1	64.6	0.91	0.77	0.91	27.7
Approach		259	1.6	259	1.6	0.454	34.9	LOS C	9.1	64.6	0.85	0.74	0.85	28.0
West: Pyrmont Bridge Rd (W)														
10	L2	82	11.5	82	11.5	0.256	40.6	LOS D	4.5	33.9	0.85	0.74	0.85	27.9
11	T1	120	3.5	120	3.5	0.277	40.8	LOS D	4.7	33.8	0.89	0.71	0.89	21.2
12	R2	61	1.7	61	1.7	* 0.129	24.6	LOS C	1.9	13.7	0.79	0.70	0.79	31.5
Approach		263	5.6	263	5.6	0.277	37.0	LOS D	4.7	33.9	0.86	0.72	0.86	26.3
All Vehicles		1035	3.3	1035	3.3	0.454	33.9	LOS C	9.1	64.6	0.81	0.72	0.81	27.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Murray St (S)											
P1	Full	142	49.5	LOS E	0.4	0.4	0.95	0.95	212.5	211.9	1.00
East: Darling Dr (E)											
P2	Full	347	49.9	LOS E	1.0	1.0	0.96	0.96	215.8	215.7	1.00
North: Murray St (N)											

P3 Full	1381	52.2	LOS E	4.3	4.3	1.00	1.00	217.7	215.2	0.99
West: Pyrmont Bridge Rd (W)										
P4 Full	171	49.5	LOS E	0.5	0.5	0.95	0.95	215.1	215.2	1.00
All Pedestrians	2041	51.4	LOS E	4.3	4.3	0.99	0.99	216.8	215.1	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [1A. Darling Dr / Ultimo Rd (Site Folder: 3A Future Base AM 2027 + Dev)]

Network: N101 [3A Future Base AM 2027 + Dev (Network Folder: General)]

Existing AM Peak
8-9am
22nd March 2022
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: 29B Ultimo Rd Driveway														
1	L2	1	0.0	1	0.0	0.009	20.1	LOS C	0.1	0.5	0.80	0.51	0.80	18.1
2	T1	1	0.0	1	0.0	0.009	20.5	LOS C	0.1	0.5	0.80	0.51	0.80	16.5
3	R2	1	0.0	1	0.0	0.009	20.1	LOS C	0.1	0.5	0.80	0.51	0.80	17.8
Approach		3	0.0	3	0.0	0.009	20.2	LOS C	0.1	0.5	0.80	0.51	0.80	17.4
East: Ultimo Rd (E)														
4	L2	2	0.0	2	0.0	0.063	10.5	LOS B	0.9	6.3	0.45	0.36	0.45	46.6
5	T1	138	3.8	138	3.8	0.063	5.8	LOS A	0.9	6.4	0.45	0.36	0.45	29.3
6	R2	253	2.5	253	2.5	* 0.355	13.6	LOS B	4.6	33.0	0.73	0.73	0.73	14.4
Approach		393	2.9	393	2.9	0.355	10.8	LOS B	4.6	33.0	0.63	0.60	0.63	20.0
North: Darling Dr (N)														
7	L2	124	3.4	124	3.4	0.121	11.1	LOS B	1.7	12.2	0.49	0.67	0.49	36.9
8	T1	4	0.0	4	0.0	* 0.562	23.8	LOS C	5.5	39.5	0.94	0.80	0.94	37.4
9	R2	196	3.2	196	3.2	0.562	28.3	LOS C	5.5	39.5	0.94	0.80	0.94	27.3
Approach		324	3.2	324	3.2	0.562	21.7	LOS C	5.5	39.5	0.77	0.75	0.77	30.5
West: Ultimo Rd (W)														
10	L2	71	0.0	71	0.0	0.241	26.5	LOS C	2.2	15.4	0.88	0.73	0.88	10.9
11	T1	123	1.7	123	1.7	* 0.241	21.0	LOS C	2.7	18.9	0.85	0.68	0.85	17.1
Approach		194	1.1	194	1.1	0.241	23.0	LOS C	2.7	18.9	0.86	0.70	0.86	14.9
All Vehicles		914	2.6	914	2.6	0.562	17.3	LOS B	5.5	39.5	0.73	0.67	0.73	24.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: 29B Ultimo Rd Driveway											
P1	Full	206	24.5	LOS C	0.3	0.3	0.91	0.91	186.5	210.6	1.13
East: Ultimo Rd (E)											
P2	Full	32	24.3	LOS C	0.0	0.0	0.90	0.90	192.8	219.0	1.14
North: Darling Dr (N)											
P3	Full	141	24.4	LOS C	0.2	0.2	0.91	0.91	190.0	215.2	1.13

All Pedestrians	379	24.5	LOS C	0.3	0.3	0.91	0.91	188.3	213.0	1.13

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 201 [2A. Darling Drive / Pier St (Site Folder: 3A Future Base AM 2027 + Dev)]

Network: N101 [3A Future Base AM 2027 + Dev (Network Folder: General)]

Existing AM Peak
8-9am
22nd March 2022
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Darling Dr (S)														
2	T1	115	2.8	115	2.8	0.340	4.1	LOS A	1.9	13.6	0.53	0.67	0.53	39.9
3a	R1	78	0.0	78	0.0	0.340	9.0	LOS A	1.9	13.6	0.53	0.67	0.53	28.3
3	R2	149	2.8	149	2.8	0.340	10.1	LOS B	1.9	13.6	0.53	0.67	0.53	47.1
3u	U	4	0.0	4	0.0	0.340	12.1	LOS B	1.9	13.6	0.53	0.67	0.53	39.9
Approach		346	2.1	346	2.1	0.340	7.9	LOS A	1.9	13.6	0.53	0.67	0.53	40.6
SouthEast: Pier St (SE)														
21b	L3	172	3.1	172	3.1	0.107	2.8	LOS A	0.6	4.3	0.28	0.40	0.28	45.8
23a	R1	358	3.2	358	3.2	0.265	7.0	LOS A	1.7	12.4	0.35	0.56	0.35	41.5
23	R2	55	3.8	55	3.8	0.265	8.0	LOS A	1.7	12.4	0.35	0.56	0.35	28.8
23b	R3	8	0.0	8	0.0	0.265	9.0	LOS A	1.7	12.4	0.35	0.56	0.35	48.0
Approach		593	3.2	593	3.2	0.265	5.9	LOS A	1.7	12.4	0.33	0.51	0.33	40.7
North: Darling Dr (N)														
7b	L3	28	3.7	28	3.7	0.113	4.2	LOS A	0.7	4.9	0.47	0.50	0.47	45.4
7	L2	98	9.7	98	9.7	0.113	4.1	LOS A	0.7	4.9	0.47	0.50	0.47	47.7
8	T1	119	0.9	119	0.9	0.104	3.1	LOS A	0.6	4.5	0.45	0.43	0.45	44.3
9u	U	28	0.0	28	0.0	0.104	10.5	LOS B	0.6	4.5	0.45	0.43	0.45	44.3
Approach		274	4.2	274	4.2	0.113	4.4	LOS A	0.7	4.9	0.46	0.46	0.46	46.0
All Vehicles		1213	3.1	1213	3.1	0.340	6.1	LOS A	1.9	13.6	0.42	0.54	0.42	42.0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 301 [3A. Darling Dr / Iron Wharf Pl (Site Folder: 3A Future Base AM 2027 + Dev)]

Network: N101 [3A Future Base AM 2027 + Dev (Network Folder: General)]

Existing AM Peak
8-9am
22nd March 2022
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Darling Dr (S)														
2	T1	374	3.4	374	3.4	0.269	3.8	LOS A	1.8	12.9	0.08	0.46	0.08	45.4
3b	R3	9	11.1	9	11.1	0.269	7.6	LOS A	1.8	12.9	0.08	0.46	0.08	45.0
3u	U	45	2.3	45	2.3	0.269	8.2	LOS A	1.8	12.9	0.08	0.46	0.08	45.4
Approach		428	3.4	428	3.4	0.269	4.3	LOS A	1.8	12.9	0.08	0.46	0.08	45.4
SouthEast: Iron Wharf Pl (E)														
21b	L3	1	0.0	1	0.0	0.009	4.8	LOS A	0.0	0.4	0.42	0.53	0.42	29.1
23a	R1	6	16.7	6	16.7	0.009	6.5	LOS A	0.0	0.4	0.42	0.53	0.42	29.1
23u	U	1	0.0	1	0.0	0.009	8.1	LOS A	0.0	0.4	0.42	0.53	0.42	35.2
Approach		8	12.5	8	12.5	0.009	6.5	LOS A	0.0	0.4	0.42	0.53	0.42	30.2
North: Darling Dr (N)														
7a	L1	65	4.8	65	4.8	0.220	2.5	LOS A	1.0	7.5	0.15	0.35	0.15	37.7
8	T1	223	3.8	223	3.8	0.220	2.8	LOS A	1.0	7.5	0.15	0.35	0.15	35.4
9u	U	1	0.0	1	0.0	0.220	6.9	LOS A	1.0	7.5	0.15	0.35	0.15	35.4
Approach		289	4.0	289	4.0	0.220	2.8	LOS A	1.0	7.5	0.15	0.35	0.15	36.1
All Vehicles		726	3.8	726	3.8	0.269	3.7	LOS A	1.8	12.9	0.11	0.42	0.11	42.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 401 [4A. Pyrmont Bridge Rd / Murray St / Darling Dr (Site Folder: 3A Future Base AM 2027 + Dev)]

Network: N101 [3A Future Base AM 2027 + Dev (Network Folder: General)]

Existing AM Peak
8-9am
22nd March 2022
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Murray St (S)														
1	L2	22	4.8	22	4.8	* 0.191	30.4	LOS C	1.5	11.3	0.91	0.70	0.91	30.6
2	T1	45	9.3	45	9.3	* 0.191	36.7	LOS D	2.2	18.7	0.92	0.70	0.92	28.2
3	R2	22	42.9	22	42.9	0.191	54.7	LOS D	2.2	18.7	0.93	0.71	0.93	18.8
Approach		89	16.5	89	16.5	0.191	39.6	LOS D	2.2	18.7	0.92	0.70	0.92	26.9
East: Darling Dr (E)														
4	L2	117	2.7	117	2.7	0.081	5.6	LOS A	0.6	4.3	0.16	0.55	0.16	40.5
5	T1	133	5.6	133	5.6	* 0.403	49.2	LOS D	7.0	51.3	0.93	0.77	0.93	24.3
6	R2	123	4.3	123	4.3	0.254	36.0	LOS D	5.2	37.6	0.84	0.76	0.84	27.5
Approach		373	4.2	373	4.2	0.403	31.2	LOS C	7.0	51.3	0.66	0.69	0.66	29.1
North: Murray St (N)														
7	L2	28	14.8	28	14.8	0.051	20.2	LOS C	0.8	6.0	0.70	0.65	0.70	28.1
8	T1	23	9.1	23	9.1	* 0.255	50.4	LOS D	3.4	25.9	0.93	0.74	0.93	25.7
9	R2	40	13.2	40	13.2	0.255	54.2	LOS D	3.4	25.9	0.93	0.74	0.93	26.0
Approach		92	12.6	92	12.6	0.255	42.7	LOS D	3.4	25.9	0.86	0.71	0.86	26.3
West: Pyrmont Bridge Rd (W)														
10	L2	53	26.0	53	26.0	0.284	38.9	LOS D	6.3	49.0	0.82	0.70	0.82	28.7
11	T1	256	4.9	256	4.9	0.307	35.7	LOS D	7.7	56.0	0.82	0.69	0.82	22.7
12	R2	94	0.0	94	0.0	* 0.128	18.3	LOS B	2.5	17.8	0.66	0.68	0.66	33.3
Approach		402	6.5	402	6.5	0.307	32.1	LOS C	7.7	56.0	0.78	0.69	0.78	26.6
All Vehicles		956	7.2	956	7.2	0.403	33.4	LOS C	7.7	56.0	0.75	0.69	0.75	27.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Murray St (S)											
P1	Full	81	54.3	LOS E	0.3	0.3	0.95	0.95	217.3	211.9	0.97
East: Darling Dr (E)											
P2	Full	269	54.8	LOS E	0.9	0.9	0.96	0.96	220.7	215.7	0.98
North: Murray St (N)											

P3 Full	1149	56.9	LOS E	3.9	3.9	1.00	1.00	222.4	215.2	0.97
West: Pyrmont Bridge Rd (W)										
P4 Full	137	54.5	LOS E	0.4	0.4	0.96	0.96	220.0	215.2	0.98
All Pedestrians	1637	56.2	LOS E	3.9	3.9	0.99	0.99	221.7	215.1	0.97

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [1B. Darling Dr / Ultimo Rd (Site Folder: 3B Future Base PM 2027 + Dev)]

Network: N101 [3B Future Base PM 2027 + Dev (Network Folder: General)]

Existing PM Peak
5-6pm
22nd March 2022
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 65 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: 29B Ultimo Rd Driveway														
1	L2	2	0.0	2	0.0	0.010	19.2	LOS B	0.1	0.7	0.76	0.50	0.76	18.2
2	T1	1	0.0	1	0.0	0.010	19.7	LOS B	0.1	0.7	0.76	0.50	0.76	16.6
3	R2	1	0.0	1	0.0	0.010	19.2	LOS B	0.1	0.7	0.76	0.50	0.76	17.9
Approach		4	0.0	4	0.0	0.010	19.3	LOS B	0.1	0.7	0.76	0.50	0.76	17.7
East: Ultimo Rd (E)														
4	L2	1	0.0	1	0.0	0.134	12.2	LOS B	2.2	15.5	0.51	0.42	0.51	44.9
5	T1	286	1.5	286	1.5	0.134	7.5	LOS A	2.2	15.5	0.51	0.42	0.51	27.2
6	R2	289	2.5	289	2.5	* 0.435	15.8	LOS B	6.2	44.4	0.78	0.76	0.78	13.1
Approach		577	2.0	577	2.0	0.435	11.7	LOS B	6.2	44.4	0.65	0.59	0.65	20.1
North: Darling Dr (N)														
7	L2	99	1.1	99	1.1	0.094	11.4	LOS B	1.4	10.0	0.48	0.66	0.48	36.8
8	T1	1	0.0	1	0.0	* 0.756	27.6	LOS C	10.2	72.8	0.98	0.92	1.14	35.7
9	R2	312	2.0	312	2.0	0.756	32.2	LOS C	10.2	72.8	0.98	0.92	1.14	25.8
Approach		412	1.8	412	1.8	0.756	27.1	LOS C	10.2	72.8	0.86	0.86	0.98	27.8
West: Ultimo Rd (W)														
10	L2	44	0.0	44	0.0	0.163	27.8	LOS C	1.6	11.3	0.86	0.70	0.86	10.6
11	T1	94	0.0	94	0.0	* 0.163	21.6	LOS C	2.0	13.9	0.83	0.65	0.83	16.8
Approach		138	0.0	138	0.0	0.163	23.6	LOS C	2.0	13.9	0.84	0.67	0.84	14.9
All Vehicles		1131	1.7	1131	1.7	0.756	18.8	LOS B	10.2	72.8	0.75	0.69	0.79	23.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: 29B Ultimo Rd Driveway											
P1	Full	295	27.1	LOS C	0.5	0.5	0.92	0.92	189.1	210.6	1.11
East: Ultimo Rd (E)											
P2	Full	83	26.9	LOS C	0.1	0.1	0.91	0.91	195.3	219.0	1.12
North: Darling Dr (N)											
P3	Full	198	27.0	LOS C	0.3	0.3	0.92	0.92	192.5	215.2	1.12

All Pedestrians	576	27.0	LOS C	0.5	0.5	0.92	0.92	191.2	213.4	1.12

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 201 [2B. Darling Drive / Pier St (Site Folder: 3B Future Base PM 2027 + Dev)]

Network: N101 [3B Future Base PM 2027 + Dev (Network Folder: General)]

Existing PM Peak
5-6pm
22nd March 2022
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Darling Dr (S)														
2	T1	113	5.6	113	5.6	0.324	3.5	LOS A	1.8	12.8	0.46	0.62	0.46	40.3
3a	R1	13	0.0	13	0.0	0.324	8.3	LOS A	1.8	12.8	0.46	0.62	0.46	28.5
3	R2	228	0.9	228	0.9	0.324	9.4	LOS A	1.8	12.8	0.46	0.62	0.46	47.3
3u	U	5	0.0	5	0.0	0.324	11.4	LOS B	1.8	12.8	0.46	0.62	0.46	40.3
Approach		359	2.3	359	2.3	0.324	7.5	LOS A	1.8	12.8	0.46	0.62	0.46	45.0
SouthEast: Pier St (SE)														
21b	L3	189	2.2	189	2.2	0.119	2.8	LOS A	0.7	4.9	0.30	0.41	0.30	45.6
23a	R1	266	3.6	266	3.6	0.197	7.1	LOS A	1.2	8.8	0.36	0.56	0.36	41.5
23	R2	33	0.0	33	0.0	0.197	8.0	LOS A	1.2	8.8	0.36	0.56	0.36	28.9
23b	R3	8	0.0	8	0.0	0.197	9.0	LOS A	1.2	8.8	0.36	0.56	0.36	47.9
Approach		497	2.8	497	2.8	0.197	5.5	LOS A	1.2	8.8	0.34	0.50	0.34	41.6
North: Darling Dr (N)														
7b	L3	14	15.4	14	15.4	0.139	4.1	LOS A	0.9	6.4	0.45	0.47	0.45	45.0
7	L2	183	1.7	183	1.7	0.139	3.7	LOS A	0.9	6.4	0.45	0.47	0.45	47.7
8	T1	137	0.8	137	0.8	0.143	3.4	LOS A	0.9	6.2	0.47	0.46	0.47	44.2
9u	U	33	0.0	33	0.0	0.143	10.8	LOS B	0.9	6.2	0.47	0.46	0.47	44.2
Approach		366	1.7	366	1.7	0.143	4.2	LOS A	0.9	6.4	0.46	0.46	0.46	46.3
All Vehicles		1222	2.3	1222	2.3	0.324	5.7	LOS A	1.8	12.8	0.41	0.53	0.41	44.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 301 [3B. Darling Dr / Iron Wharf Pl (Site Folder: 3B Future Base PM 2027 + Dev)]

Network: N101 [3B Future Base PM 2027 + Dev (Network Folder: General)]

Existing PM Peak
5-6pm
22nd March 2022
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Darling Dr (S)														
2	T1	371	4.5	371	4.5	0.249	3.8	LOS A	1.6	11.8	0.06	0.44	0.06	45.7
3b	R3	9	0.0	9	0.0	0.249	7.5	LOS A	1.6	11.8	0.06	0.44	0.06	45.3
3u	U	18	0.0	18	0.0	0.249	8.2	LOS A	1.6	11.8	0.06	0.44	0.06	45.7
Approach		398	4.2	398	4.2	0.249	4.1	LOS A	1.6	11.8	0.06	0.44	0.06	45.6
SouthEast: Iron Wharf Pl (E)														
21b	L3	1	0.0	1	0.0	0.004	4.9	LOS A	0.0	0.2	0.43	0.51	0.43	29.1
23a	R1	2	0.0	2	0.0	0.004	6.4	LOS A	0.0	0.2	0.43	0.51	0.43	29.1
23u	U	1	0.0	1	0.0	0.004	8.2	LOS A	0.0	0.2	0.43	0.51	0.43	35.1
Approach		4	0.0	4	0.0	0.004	6.5	LOS A	0.0	0.2	0.43	0.51	0.43	31.2
North: Darling Dr (N)														
7a	L1	17	12.5	17	12.5	0.205	2.4	LOS A	1.0	6.9	0.10	0.34	0.10	37.8
8	T1	272	2.3	272	2.3	0.205	2.6	LOS A	1.0	6.9	0.10	0.34	0.10	35.7
9u	U	4	0.0	4	0.0	0.205	6.8	LOS A	1.0	6.9	0.10	0.34	0.10	35.7
Approach		293	2.9	293	2.9	0.205	2.7	LOS A	1.0	6.9	0.10	0.34	0.10	35.9
All Vehicles		695	3.6	695	3.6	0.249	3.5	LOS A	1.6	11.8	0.08	0.40	0.08	42.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 401 [4B. Pyrmont Bridge Rd / Murray St / Darling Dr (Site Folder: 3B Future Base PM 2027 + Dev)]

Network: N101 [3B Future Base PM 2027 + Dev (Network Folder: General)]

Existing PM Peak
5-6pm
22nd March 2022
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Murray St (S)														
1	L2	58	0.0	58	0.0	* 0.229	24.3	LOS C	2.0	14.4	0.87	0.72	0.87	32.0
2	T1	46	4.5	46	4.5	* 0.229	32.9	LOS C	3.0	21.4	0.90	0.72	0.90	28.9
3	R2	39	2.7	39	2.7	0.229	49.1	LOS D	3.0	21.4	0.92	0.73	0.92	19.7
Approach		143	2.2	143	2.2	0.229	33.8	LOS C	3.0	21.4	0.89	0.72	0.89	28.1
East: Darling Dr (E)														
4	L2	98	3.2	98	3.2	0.069	5.9	LOS A	0.6	4.6	0.19	0.55	0.19	40.3
5	T1	179	3.5	179	3.5	* 0.469	43.7	LOS D	8.6	62.1	0.93	0.78	0.93	25.5
6	R2	97	6.5	97	6.5	0.212	33.7	LOS C	3.7	27.6	0.84	0.75	0.84	28.1
Approach		374	4.2	374	4.2	0.469	31.2	LOS C	8.6	62.1	0.71	0.71	0.71	29.0
North: Murray St (N)														
7	L2	64	1.6	64	1.6	0.089	15.6	LOS B	1.3	9.1	0.66	0.66	0.66	30.1
8	T1	104	2.0	104	2.0	* 0.473	40.9	LOS D	9.2	65.5	0.92	0.78	0.92	27.4
9	R2	91	1.2	91	1.2	0.473	44.2	LOS D	9.2	65.5	0.92	0.78	0.92	27.5
Approach		259	1.6	259	1.6	0.473	35.8	LOS D	9.2	65.5	0.86	0.75	0.86	27.8
West: Pyrmont Bridge Rd (W)														
10	L2	82	11.5	82	11.5	0.401	44.6	LOS D	6.5	48.9	0.91	0.77	0.91	27.3
11	T1	221	3.8	221	3.8	0.434	42.2	LOS D	7.9	56.9	0.92	0.76	0.92	21.0
12	R2	61	1.7	61	1.7	* 0.125	24.0	LOS C	1.9	13.5	0.78	0.70	0.78	31.7
Approach		364	5.2	364	5.2	0.434	39.7	LOS D	7.9	56.9	0.90	0.75	0.90	24.8
All Vehicles		1140	3.7	1140	3.7	0.473	35.3	LOS D	9.2	65.5	0.83	0.73	0.83	27.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Murray St (S)											
P1	Full	142	49.5	LOS E	0.4	0.4	0.95	0.95	212.5	211.9	1.00
East: Darling Dr (E)											
P2	Full	347	49.9	LOS E	1.0	1.0	0.96	0.96	215.8	215.7	1.00
North: Murray St (N)											

P3 Full	1381	52.2	LOS E	4.3	4.3	1.00	1.00	217.7	215.2	0.99
West: Pyrmont Bridge Rd (W)										
P4 Full	171	49.5	LOS E	0.5	0.5	0.95	0.95	215.1	215.2	1.00
All Pedestrians	2041	51.4	LOS E	4.3	4.3	0.99	0.99	216.8	215.1	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [1A. Darling Dr / Ultimo Rd (Site Folder: 4A Future Base AM 2037)]

Network: N101 [4A Futue Base AM 2027 (Network Folder: General)]

Existing AM Peak
8-9am
22nd March 2022
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: 29B Ultimo Rd Driveway														
1	L2	1	0.0	1	0.0	0.012	23.0	LOS C	0.1	0.6	0.85	0.54	0.85	17.7
2	T1	1	0.0	1	0.0	0.012	23.5	LOS C	0.1	0.6	0.85	0.54	0.85	16.0
3	R2	1	0.0	1	0.0	0.012	23.0	LOS C	0.1	0.6	0.85	0.54	0.85	17.3
Approach		3	0.0	3	0.0	0.012	23.1	LOS C	0.1	0.6	0.85	0.54	0.85	17.0
East: Ultimo Rd (E)														
4	L2	2	0.0	2	0.0	0.064	9.2	LOS A	0.9	6.2	0.40	0.33	0.40	48.0
5	T1	153	4.1	153	4.1	0.064	4.5	LOS A	0.9	6.2	0.40	0.32	0.40	31.2
6	R2	278	2.3	278	2.3	* 0.349	11.9	LOS B	4.7	33.5	0.69	0.72	0.69	15.6
Approach		433	2.9	433	2.9	0.349	9.3	LOS A	4.7	33.5	0.59	0.58	0.59	21.5
North: Darling Dr (N)														
7	L2	137	3.8	137	3.8	0.134	11.1	LOS B	1.9	13.6	0.49	0.67	0.49	36.9
8	T1	5	0.0	5	0.0	* 0.513	26.1	LOS C	4.1	30.1	0.96	0.79	0.96	36.4
9	R2	141	4.5	141	4.5	0.513	30.7	LOS C	4.1	30.1	0.96	0.79	0.96	26.5
Approach		283	4.1	283	4.1	0.513	21.1	LOS C	4.1	30.1	0.73	0.73	0.73	30.8
West: Ultimo Rd (W)														
10	L2	78	0.0	78	0.0	0.265	26.7	LOS C	2.4	17.0	0.88	0.74	0.88	10.9
11	T1	136	1.6	136	1.6	* 0.265	21.1	LOS C	3.0	20.9	0.86	0.69	0.86	17.0
Approach		214	1.0	214	1.0	0.265	23.1	LOS C	3.0	20.9	0.87	0.70	0.87	14.9
All Vehicles		933	2.8	933	2.8	0.513	16.1	LOS B	4.7	33.5	0.70	0.65	0.70	24.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: 29B Ultimo Rd Driveway											
P1	Full	206	24.5	LOS C	0.3	0.3	0.91	0.91	186.5	210.6	1.13
East: Ultimo Rd (E)											
P2	Full	32	24.3	LOS C	0.0	0.0	0.90	0.90	192.8	219.0	1.14
North: Darling Dr (N)											
P3	Full	141	24.4	LOS C	0.2	0.2	0.91	0.91	190.0	215.2	1.13

All Pedestrians	379	24.5	LOS C	0.3	0.3	0.91	0.91	188.3	213.0	1.13

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 201 [2A. Darling Drive / Pier St (Site Folder: 4A Future Base AM 2037)]

Network: N101 [4A Futue Base AM 2027 (Network Folder: General)]

Existing AM Peak
8-9am
22nd March 2022
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Darling Dr (S)														
2	T1	125	1.7	125	1.7	0.378	4.4	LOS A	2.2	15.5	0.56	0.69	0.56	39.7
3a	R1	85	0.0	85	0.0	0.378	9.3	LOS A	2.2	15.5	0.56	0.69	0.56	28.2
3	R2	165	3.2	165	3.2	0.378	10.4	LOS B	2.2	15.5	0.56	0.69	0.56	46.9
3u	U	5	0.0	5	0.0	0.378	12.3	LOS B	2.2	15.5	0.56	0.69	0.56	39.7
Approach		381	1.9	381	1.9	0.378	8.2	LOS A	2.2	15.5	0.56	0.69	0.56	40.4
SouthEast: Pier St (SE)														
21b	L3	189	3.3	189	3.3	0.111	2.6	LOS A	0.6	4.6	0.19	0.38	0.19	46.1
23a	R1	379	2.5	379	2.5	0.267	6.8	LOS A	1.8	12.7	0.27	0.54	0.27	41.8
23	R2	60	3.5	60	3.5	0.267	7.8	LOS A	1.8	12.7	0.27	0.54	0.27	29.0
23b	R3	9	0.0	9	0.0	0.267	8.8	LOS A	1.8	12.7	0.27	0.54	0.27	48.2
Approach		638	2.8	638	2.8	0.267	5.7	LOS A	1.8	12.7	0.25	0.49	0.25	41.0
North: Darling Dr (N)														
7b	L3	32	3.3	32	3.3	0.084	4.0	LOS A	0.5	3.8	0.47	0.48	0.47	45.3
7	L2	80	9.2	80	9.2	0.084	3.8	LOS A	0.5	3.8	0.47	0.48	0.47	47.5
8	T1	56	0.0	56	0.0	0.077	3.5	LOS A	0.4	3.1	0.48	0.52	0.48	43.4
9u	U	32	0.0	32	0.0	0.077	10.9	LOS B	0.4	3.1	0.48	0.52	0.48	43.4
Approach		199	4.2	199	4.2	0.084	4.9	LOS A	0.5	3.8	0.47	0.50	0.47	45.7
All Vehicles		1218	2.8	1218	2.8	0.378	6.3	LOS A	2.2	15.5	0.38	0.55	0.38	41.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 301 [3A. Darling Dr / Iron Wharf Pl (Site Folder: 4A Future Base AM 2037)]

Network: N101 [4A Futue Base AM 2027 (Network Folder: General)]

Existing AM Peak
8-9am
22nd March 2022
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Darling Dr (S)														
2	T1	395	2.4	395	2.4	0.285	3.8	LOS A	1.9	13.5	0.08	0.46	0.08	45.3
3b	R3	11	10.0	11	10.0	0.285	7.6	LOS A	1.9	13.5	0.08	0.46	0.08	45.0
3u	U	49	2.1	49	2.1	0.285	8.2	LOS A	1.9	13.5	0.08	0.46	0.08	45.3
Approach		455	2.5	455	2.5	0.285	4.3	LOS A	1.9	13.5	0.08	0.46	0.08	45.3
SouthEast: Iron Wharf Pl (E)														
21b	L3	1	0.0	1	0.0	0.010	4.3	LOS A	0.0	0.4	0.35	0.52	0.35	29.5
23a	R1	7	14.3	7	14.3	0.010	6.0	LOS A	0.0	0.4	0.35	0.52	0.35	29.5
23u	U	1	0.0	1	0.0	0.010	7.6	LOS A	0.0	0.4	0.35	0.52	0.35	35.5
Approach		9	11.1	9	11.1	0.010	6.0	LOS A	0.0	0.4	0.35	0.52	0.35	30.5
North: Darling Dr (N)														
7a	L1	72	4.4	72	4.4	0.168	2.6	LOS A	0.7	5.4	0.16	0.35	0.16	37.6
8	T1	142	3.7	142	3.7	0.168	2.8	LOS A	0.7	5.4	0.16	0.35	0.16	35.3
9u	U	1	0.0	1	0.0	0.168	7.0	LOS A	0.7	5.4	0.16	0.35	0.16	35.3
Approach		215	3.9	215	3.9	0.168	2.7	LOS A	0.7	5.4	0.16	0.35	0.16	36.3
All Vehicles		679	3.1	679	3.1	0.285	3.9	LOS A	1.9	13.5	0.11	0.43	0.11	43.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 401 [4A. Pyrmont Bridge Rd / Murray St / Darling Dr (Site Folder: 4A Future Base AM 2037)]

Network: N101 [4A Futue Base AM 2027 (Network Folder: General)]

Existing AM Peak
8-9am
22nd March 2022
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Murray St (S)														
1	L2	24	4.3	24	4.3	* 0.212	30.4	LOS C	1.6	12.1	0.91	0.70	0.91	30.6
2	T1	51	10.4	51	10.4	* 0.212	36.8	LOS D	2.4	20.9	0.92	0.71	0.92	28.2
3	R2	24	43.5	24	43.5	0.212	54.9	LOS D	2.4	20.9	0.93	0.72	0.93	18.8
Approach		99	17.0	99	17.0	0.212	39.7	LOS D	2.4	20.9	0.92	0.71	0.92	26.9
East: Darling Dr (E)														
4	L2	128	2.5	128	2.5	0.090	5.6	LOS A	0.7	4.8	0.16	0.55	0.16	40.5
5	T1	141	2.2	141	2.2	* 0.440	50.5	LOS D	7.6	53.9	0.95	0.78	0.95	23.9
6	R2	136	4.7	136	4.7	0.299	37.9	LOS D	5.9	43.2	0.86	0.77	0.86	26.9
Approach		405	3.1	405	3.1	0.440	32.1	LOS C	7.6	53.9	0.67	0.70	0.67	28.7
North: Murray St (N)														
7	L2	32	16.7	32	16.7	0.060	21.2	LOS C	0.9	7.0	0.72	0.66	0.72	27.6
8	T1	25	8.3	25	8.3	* 0.282	50.7	LOS D	3.7	28.7	0.93	0.74	0.93	25.7
9	R2	44	14.3	44	14.3	0.282	54.5	LOS D	3.7	28.7	0.93	0.74	0.93	26.0
Approach		101	13.5	101	13.5	0.282	43.1	LOS D	3.7	28.7	0.87	0.72	0.87	26.2
West: Pyrmont Bridge Rd (W)														
10	L2	127	11.6	127	11.6	0.247	32.5	LOS C	6.2	47.0	0.74	0.71	0.74	29.7
11	T1	178	5.3	178	5.3	0.267	33.0	LOS C	6.8	49.8	0.79	0.66	0.79	23.3
12	R2	103	0.0	103	0.0	* 0.138	18.2	LOS B	2.8	19.8	0.66	0.68	0.66	33.3
Approach		408	5.9	408	5.9	0.267	29.1	LOS C	6.8	49.8	0.74	0.68	0.74	28.5
All Vehicles		1014	6.6	1014	6.6	0.440	32.7	LOS C	7.6	53.9	0.74	0.70	0.74	28.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Murray St (S)											
P1	Full	81	54.3	LOS E	0.3	0.3	0.95	0.95	217.3	211.9	0.97
East: Darling Dr (E)											
P2	Full	269	54.8	LOS E	0.9	0.9	0.96	0.96	220.7	215.7	0.98
North: Murray St (N)											

P3 Full	1149	56.9	LOS E	3.9	3.9	1.00	1.00	222.4	215.2	0.97
West: Pyrmont Bridge Rd (W)										
P4 Full	137	54.5	LOS E	0.4	0.4	0.96	0.96	220.0	215.2	0.98
All Pedestrians	1637	56.2	LOS E	3.9	3.9	0.99	0.99	221.7	215.1	0.97

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [1B. Darling Dr / Ultimo Rd (Site Folder: 4B Future Base PM 2037)]

Network: N101 [4B Future Base PM 2037 (Network Folder: General)]

Existing PM Peak
5-6pm
22nd March 2022
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 65 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: 29B Ultimo Rd Driveway														
1	L2	2	0.0	2	0.0	0.011	20.0	LOS C	0.1	0.7	0.78	0.51	0.78	18.1
2	T1	1	0.0	1	0.0	0.011	20.6	LOS C	0.1	0.7	0.78	0.51	0.78	16.5
3	R2	1	0.0	1	0.0	0.011	20.0	LOS C	0.1	0.7	0.78	0.51	0.78	17.8
Approach		4	0.0	4	0.0	0.011	20.2	LOS C	0.1	0.7	0.78	0.51	0.78	17.6
East: Ultimo Rd (E)														
4	L2	1	0.0	1	0.0	0.144	11.8	LOS B	2.3	16.6	0.50	0.41	0.50	45.4
5	T1	316	1.7	316	1.7	0.144	7.0	LOS A	2.3	16.7	0.50	0.41	0.50	27.7
6	R2	318	2.3	318	2.3	* 0.461	15.5	LOS B	6.8	48.7	0.79	0.76	0.79	13.2
Approach		635	2.0	635	2.0	0.461	11.3	LOS B	6.8	48.7	0.64	0.59	0.64	20.5
North: Darling Dr (N)														
7	L2	108	1.0	108	1.0	0.103	11.4	LOS B	1.6	11.0	0.48	0.66	0.48	36.7
8	T1	1	0.0	1	0.0	* 0.751	28.1	LOS C	9.7	68.9	0.98	0.92	1.14	35.5
9	R2	294	2.2	294	2.2	0.751	32.7	LOS C	9.7	68.9	0.98	0.92	1.14	25.6
Approach		403	1.8	403	1.8	0.751	27.0	LOS C	9.7	68.9	0.85	0.85	0.96	27.9
West: Ultimo Rd (W)														
10	L2	48	0.0	48	0.0	0.179	28.0	LOS C	1.8	12.5	0.87	0.71	0.87	10.6
11	T1	103	0.0	103	0.0	* 0.179	21.7	LOS C	2.2	15.4	0.83	0.65	0.83	16.7
Approach		152	0.0	152	0.0	0.179	23.7	LOS C	2.2	15.4	0.84	0.67	0.84	14.8
All Vehicles		1194	1.7	1194	1.7	0.751	18.2	LOS B	9.7	68.9	0.74	0.69	0.78	23.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: 29B Ultimo Rd Driveway											
P1	Full	295	27.1	LOS C	0.5	0.5	0.92	0.92	189.1	210.6	1.11
East: Ultimo Rd (E)											
P2	Full	83	26.9	LOS C	0.1	0.1	0.91	0.91	195.3	219.0	1.12
North: Darling Dr (N)											
P3	Full	198	27.0	LOS C	0.3	0.3	0.92	0.92	192.5	215.2	1.12

All Pedestrians	576	27.0	LOS C	0.5	0.5	0.92	0.92	191.2	213.4	1.12

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 201 [2B. Darling Drive / Pier St (Site Folder: 4B Future Base PM 2037)]

Network: N101 [4B Future Base PM 2037 (Network Folder: General)]

Existing PM Peak
5-6pm
22nd March 2022
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Darling Dr (S)														
2	T1	124	5.1	124	5.1	0.362	3.7	LOS A	2.1	14.6	0.49	0.64	0.49	40.1
3a	R1	14	0.0	14	0.0	0.362	8.6	LOS A	2.1	14.6	0.49	0.64	0.49	28.4
3	R2	252	0.8	252	0.8	0.362	9.6	LOS A	2.1	14.6	0.49	0.64	0.49	47.1
3u	U	5	0.0	5	0.0	0.362	11.6	LOS B	2.1	14.6	0.49	0.64	0.49	40.1
Approach		395	2.1	395	2.1	0.362	7.7	LOS A	2.1	14.6	0.49	0.64	0.49	44.9
SouthEast: Pier St (SE)														
21b	L3	209	2.5	209	2.5	0.128	2.7	LOS A	0.7	5.3	0.26	0.40	0.26	45.8
23a	R1	285	2.6	285	2.6	0.206	6.9	LOS A	1.3	9.2	0.33	0.55	0.33	41.6
23	R2	36	0.0	36	0.0	0.206	7.9	LOS A	1.3	9.2	0.33	0.55	0.33	28.9
23b	R3	9	0.0	9	0.0	0.206	8.9	LOS A	1.3	9.2	0.33	0.55	0.33	48.0
Approach		540	2.3	540	2.3	0.206	5.4	LOS A	1.3	9.2	0.30	0.49	0.30	41.7
North: Darling Dr (N)														
7b	L3	15	14.3	15	14.3	0.125	4.2	LOS A	0.8	5.7	0.47	0.47	0.47	44.9
7	L2	161	0.0	161	0.0	0.125	3.7	LOS A	0.8	5.7	0.47	0.47	0.47	47.5
8	T1	101	0.0	101	0.0	0.119	3.5	LOS A	0.7	5.1	0.48	0.50	0.48	43.8
9u	U	36	0.0	36	0.0	0.119	10.9	LOS B	0.7	5.1	0.48	0.50	0.48	43.8
Approach		313	0.7	313	0.7	0.125	4.5	LOS A	0.8	5.7	0.48	0.48	0.48	46.1
All Vehicles		1247	1.9	1247	1.9	0.362	5.9	LOS A	2.1	14.6	0.40	0.54	0.40	44.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 301 [3B. Darling Dr / Iron Wharf Pl (Site Folder: 4B Future Base PM 2037)]

Network: N101 [4B Future Base PM 2037 (Network Folder: General)]

Existing PM Peak
5-6pm
22nd March 2022
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Darling Dr (S)														
2	T1	398	3.4	398	3.4	0.267	3.8	LOS A	1.8	12.7	0.07	0.44	0.07	45.5
3b	R3	11	0.0	11	0.0	0.267	7.5	LOS A	1.8	12.7	0.07	0.44	0.07	45.3
3u	U	20	0.0	20	0.0	0.267	8.2	LOS A	1.8	12.7	0.07	0.44	0.07	45.5
Approach		428	3.2	428	3.2	0.267	4.1	LOS A	1.8	12.7	0.07	0.44	0.07	45.5
SouthEast: Iron Wharf Pl (E)														
21b	L3	1	0.0	1	0.0	0.004	4.5	LOS A	0.0	0.2	0.38	0.51	0.38	29.4
23a	R1	2	0.0	2	0.0	0.004	6.0	LOS A	0.0	0.2	0.38	0.51	0.38	29.4
23u	U	1	0.0	1	0.0	0.004	7.8	LOS A	0.0	0.2	0.38	0.51	0.38	35.3
Approach		4	0.0	4	0.0	0.004	6.1	LOS A	0.0	0.2	0.38	0.51	0.38	31.4
North: Darling Dr (N)														
7a	L1	18	11.8	18	11.8	0.166	2.4	LOS A	0.7	5.2	0.10	0.34	0.10	37.7
8	T1	208	1.0	208	1.0	0.166	2.6	LOS A	0.7	5.2	0.10	0.34	0.10	35.4
9u	U	5	0.0	5	0.0	0.166	6.8	LOS A	0.7	5.2	0.10	0.34	0.10	35.4
Approach		232	1.8	232	1.8	0.166	2.7	LOS A	0.7	5.2	0.10	0.34	0.10	35.7
All Vehicles		664	2.7	664	2.7	0.267	3.6	LOS A	1.8	12.7	0.08	0.41	0.08	43.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 401 [4B. Pyrmont Bridge Rd / Murray St / Darling Dr (Site Folder: 4B Future Base PM 2037)]

Network: N101 [4B Future Base PM 2037 (Network Folder: General)]

Existing PM Peak
5-6pm
22nd March 2022
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Murray St (S)														
1	L2	63	0.0	63	0.0	* 0.251	24.7	LOS C	2.2	15.6	0.88	0.72	0.88	31.8
2	T1	51	4.2	51	4.2	* 0.251	33.2	LOS C	3.3	23.6	0.90	0.73	0.90	28.8
3	R2	43	2.4	43	2.4	0.251	49.3	LOS D	3.3	23.6	0.93	0.73	0.93	19.7
Approach		157	2.0	157	2.0	0.251	34.2	LOS C	3.3	23.6	0.90	0.73	0.90	28.0
East: Darling Dr (E)														
4	L2	107	2.9	107	2.9	0.077	5.9	LOS A	0.7	5.1	0.19	0.56	0.19	40.3
5	T1	193	1.1	193	1.1	* 0.497	44.0	LOS D	9.3	65.9	0.94	0.79	0.94	25.3
6	R2	107	6.9	107	6.9	0.235	33.9	LOS C	4.2	30.9	0.84	0.75	0.84	28.0
Approach		407	3.1	407	3.1	0.497	31.3	LOS C	9.3	65.9	0.72	0.72	0.72	28.9
North: Murray St (N)														
7	L2	69	1.5	69	1.5	0.095	15.1	LOS B	1.4	9.6	0.65	0.66	0.65	30.3
8	T1	115	1.8	115	1.8	* 0.501	40.4	LOS D	10.2	72.1	0.92	0.78	0.92	27.5
9	R2	100	1.1	100	1.1	0.501	43.7	LOS D	10.2	72.1	0.92	0.78	0.92	27.6
Approach		284	1.5	284	1.5	0.501	35.4	LOS D	10.2	72.1	0.86	0.75	0.86	27.9
West: Pyrmont Bridge Rd (W)														
10	L2	91	11.6	91	11.6	0.284	40.9	LOS D	5.0	37.8	0.86	0.74	0.86	27.9
11	T1	133	4.0	133	4.0	0.307	41.1	LOS D	5.2	37.7	0.90	0.72	0.90	21.1
12	R2	67	1.6	67	1.6	* 0.142	24.7	LOS C	2.1	15.2	0.80	0.70	0.80	31.5
Approach		291	5.8	291	5.8	0.307	37.2	LOS D	5.2	37.8	0.86	0.73	0.86	26.3
All Vehicles		1139	3.2	1139	3.2	0.501	34.2	LOS C	10.2	72.1	0.81	0.73	0.81	27.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Murray St (S)											
P1	Full	142	49.5	LOS E	0.4	0.4	0.95	0.95	212.5	211.9	1.00
East: Darling Dr (E)											
P2	Full	347	49.9	LOS E	1.0	1.0	0.96	0.96	215.8	215.7	1.00
North: Murray St (N)											

P3 Full	1381	52.2	LOS E	4.3	4.3	1.00	1.00	217.7	215.2	0.99
West: Pyrmont Bridge Rd (W)										
P4 Full	171	49.5	LOS E	0.5	0.5	0.95	0.95	215.1	215.2	1.00
All Pedestrians	2041	51.4	LOS E	4.3	4.3	0.99	0.99	216.8	215.1	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [1A. Darling Dr / Ultimo Rd (Site Folder: 5A Future Base AM 2037 + Dev)]

Network: N101 [5A Future Base AM 2037 + Dev (Network Folder: General)]

Existing AM Peak
8-9am
22nd March 2022
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: 29B Ultimo Rd Driveway														
1	L2	1	0.0	1	0.0	0.009	20.1	LOS C	0.1	0.5	0.80	0.52	0.80	18.1
2	T1	1	0.0	1	0.0	0.009	20.6	LOS C	0.1	0.5	0.80	0.52	0.80	16.5
3	R2	1	0.0	1	0.0	0.009	20.1	LOS C	0.1	0.5	0.80	0.52	0.80	17.8
Approach		3	0.0	3	0.0	0.009	20.2	LOS C	0.1	0.5	0.80	0.52	0.80	17.4
East: Ultimo Rd (E)														
4	L2	2	0.0	2	0.0	0.070	10.5	LOS B	1.0	7.0	0.46	0.37	0.46	46.6
5	T1	153	4.1	153	4.1	0.070	5.8	LOS A	1.0	7.1	0.46	0.36	0.46	29.3
6	R2	279	2.6	279	2.6	* 0.396	13.9	LOS B	5.3	37.7	0.75	0.74	0.75	14.2
Approach		434	3.2	434	3.2	0.396	11.0	LOS B	5.3	37.7	0.65	0.61	0.65	19.8
North: Darling Dr (N)														
7	L2	137	3.8	137	3.8	0.134	11.1	LOS B	1.9	13.6	0.49	0.67	0.49	36.9
8	T1	5	0.0	5	0.0	* 0.604	24.3	LOS C	6.0	43.4	0.95	0.82	0.98	37.1
9	R2	209	3.5	209	3.5	0.604	28.9	LOS C	6.0	43.4	0.95	0.82	0.98	27.1
Approach		352	3.6	352	3.6	0.604	21.9	LOS C	6.0	43.4	0.77	0.76	0.79	30.4
West: Ultimo Rd (W)														
10	L2	78	0.0	78	0.0	0.265	26.7	LOS C	2.4	17.0	0.88	0.74	0.88	10.9
11	T1	136	1.6	136	1.6	* 0.265	21.1	LOS C	3.0	20.9	0.86	0.69	0.86	17.0
Approach		214	1.0	214	1.0	0.265	23.1	LOS C	3.0	20.9	0.87	0.70	0.87	14.9
All Vehicles		1002	2.8	1002	2.8	0.604	17.5	LOS B	6.0	43.4	0.74	0.68	0.75	24.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: 29B Ultimo Rd Driveway											
P1	Full	206	24.5	LOS C	0.3	0.3	0.91	0.91	186.5	210.6	1.13
East: Ultimo Rd (E)											
P2	Full	32	24.3	LOS C	0.0	0.0	0.90	0.90	192.8	219.0	1.14
North: Darling Dr (N)											
P3	Full	141	24.4	LOS C	0.2	0.2	0.91	0.91	190.0	215.2	1.13

All Pedestrians	379	24.5	LOS C	0.3	0.3	0.91	0.91	188.3	213.0	1.13

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 201 [2A. Darling Drive / Pier St (Site Folder: 5A Future Base AM 2037 + Dev)]

Network: N101 [5A Future Base AM 2037 + Dev (Network Folder: General)]

Existing AM Peak
8-9am
22nd March 2022
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Darling Dr (S)														
2	T1	126	2.5	126	2.5	0.389	4.6	LOS A	2.3	16.4	0.57	0.70	0.57	39.6
3a	R1	85	0.0	85	0.0	0.389	9.5	LOS A	2.3	16.4	0.57	0.70	0.57	28.2
3	R2	165	3.2	165	3.2	0.389	10.6	LOS B	2.3	16.4	0.57	0.70	0.57	46.8
3u	U	5	0.0	5	0.0	0.389	12.5	LOS B	2.3	16.4	0.57	0.70	0.57	39.6
Approach		382	2.2	382	2.2	0.389	8.4	LOS A	2.3	16.4	0.57	0.70	0.57	40.4
SouthEast: Pier St (SE)														
21b	L3	189	3.3	189	3.3	0.119	2.8	LOS A	0.7	4.9	0.29	0.41	0.29	45.7
23a	R1	394	3.2	394	3.2	0.293	7.1	LOS A	2.0	14.3	0.37	0.56	0.37	41.4
23	R2	60	3.5	60	3.5	0.293	8.1	LOS A	2.0	14.3	0.37	0.56	0.37	28.8
23b	R3	9	0.0	9	0.0	0.293	9.0	LOS A	2.0	14.3	0.37	0.56	0.37	47.9
Approach		653	3.2	653	3.2	0.293	6.0	LOS A	2.0	14.3	0.35	0.52	0.35	40.6
North: Darling Dr (N)														
7b	L3	32	3.3	32	3.3	0.126	4.4	LOS A	0.8	5.7	0.50	0.52	0.50	45.3
7	L2	106	9.9	106	9.9	0.126	4.3	LOS A	0.8	5.7	0.50	0.52	0.50	47.6
8	T1	124	0.8	124	0.8	0.112	3.3	LOS A	0.7	5.0	0.48	0.45	0.48	44.1
9u	U	32	0.0	32	0.0	0.112	10.6	LOS B	0.7	5.0	0.48	0.45	0.48	44.1
Approach		294	4.3	294	4.3	0.126	4.5	LOS A	0.8	5.7	0.49	0.48	0.49	45.8
All Vehicles		1328	3.2	1328	3.2	0.389	6.3	LOS A	2.3	16.4	0.44	0.56	0.44	41.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 301 [3A. Darling Dr / Iron Wharf Pl (Site Folder: 5A Future Base AM 2037 + Dev)]

Network: N101 [5A Future Base AM 2037 + Dev (Network Folder: General)]

Existing AM Peak
8-9am
22nd March 2022
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Darling Dr (S)														
2	T1	411	3.3	411	3.3	0.296	3.8	LOS A	2.0	14.7	0.08	0.46	0.08	45.3
3b	R3	11	10.0	11	10.0	0.296	7.6	LOS A	2.0	14.7	0.08	0.46	0.08	45.0
3u	U	49	2.1	49	2.1	0.296	8.2	LOS A	2.0	14.7	0.08	0.46	0.08	45.3
Approach		471	3.4	471	3.4	0.296	4.3	LOS A	2.0	14.7	0.08	0.46	0.08	45.3
SouthEast: Iron Wharf Pl (E)														
21b	L3	1	0.0	1	0.0	0.010	4.9	LOS A	0.1	0.4	0.44	0.53	0.44	29.0
23a	R1	7	14.3	7	14.3	0.010	6.6	LOS A	0.1	0.4	0.44	0.53	0.44	29.0
23u	U	1	0.0	1	0.0	0.010	8.2	LOS A	0.1	0.4	0.44	0.53	0.44	35.1
Approach		9	11.1	9	11.1	0.010	6.6	LOS A	0.1	0.4	0.44	0.53	0.44	30.0
North: Darling Dr (N)														
7a	L1	72	4.4	72	4.4	0.236	2.6	LOS A	1.1	8.3	0.16	0.35	0.16	37.6
8	T1	237	4.0	237	4.0	0.236	2.9	LOS A	1.1	8.3	0.16	0.35	0.16	35.3
9u	U	1	0.0	1	0.0	0.236	7.0	LOS A	1.1	8.3	0.16	0.35	0.16	35.3
Approach		309	4.1	309	4.1	0.236	2.8	LOS A	1.1	8.3	0.16	0.35	0.16	36.1
All Vehicles		789	3.7	789	3.7	0.296	3.8	LOS A	2.0	14.7	0.12	0.42	0.12	42.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 401 [4A. Pyrmont Bridge Rd / Murray St / Darling Dr (Site Folder: 5A Future Base AM 2037 + Dev)]

Network: N101 [5A Future Base AM 2037 + Dev (Network Folder: General)]

Existing AM Peak
8-9am
22nd March 2022
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Murray St (S)														
1	L2	24	4.3	24	4.3	* 0.212	30.5	LOS C	1.7	12.3	0.91	0.70	0.91	30.6
2	T1	51	10.4	51	10.4	* 0.212	36.9	LOS D	2.4	20.9	0.92	0.71	0.92	28.2
3	R2	24	43.5	24	43.5	0.212	54.9	LOS D	2.4	20.9	0.93	0.72	0.93	18.8
Approach		99	17.0	99	17.0	0.212	39.7	LOS D	2.4	20.9	0.92	0.71	0.92	26.9
East: Darling Dr (E)														
4	L2	128	2.5	128	2.5	0.090	5.6	LOS A	0.7	4.8	0.16	0.55	0.16	40.5
5	T1	145	5.1	145	5.1	* 0.440	49.6	LOS D	7.7	56.4	0.94	0.77	0.94	24.2
6	R2	136	4.7	136	4.7	0.289	37.1	LOS D	5.8	42.6	0.85	0.77	0.85	27.2
Approach		409	4.1	409	4.1	0.440	31.7	LOS C	7.7	56.4	0.67	0.70	0.67	28.9
North: Murray St (N)														
7	L2	32	16.7	32	16.7	0.059	20.8	LOS C	0.9	6.9	0.71	0.66	0.71	27.8
8	T1	25	8.3	25	8.3	* 0.282	50.7	LOS D	3.7	28.7	0.93	0.74	0.93	25.7
9	R2	44	14.3	44	14.3	0.282	54.5	LOS D	3.7	28.7	0.93	0.74	0.93	26.0
Approach		101	13.5	101	13.5	0.282	43.0	LOS D	3.7	28.7	0.87	0.72	0.87	26.2
West: Pyrmont Bridge Rd (W)														
10	L2	127	11.6	127	11.6	0.351	38.1	LOS D	8.5	64.3	0.82	0.74	0.82	28.6
11	T1	273	5.0	273	5.0	0.380	35.6	LOS D	9.8	71.6	0.83	0.71	0.83	22.6
12	R2	103	0.0	103	0.0	* 0.141	18.4	LOS B	2.8	19.8	0.67	0.68	0.67	33.3
Approach		503	5.6	503	5.6	0.380	32.7	LOS C	9.8	71.6	0.80	0.71	0.80	27.0
All Vehicles		1113	6.8	1113	6.8	0.440	33.9	LOS C	9.8	71.6	0.77	0.71	0.77	27.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Murray St (S)											
P1	Full	81	54.3	LOS E	0.3	0.3	0.95	0.95	217.3	211.9	0.97
East: Darling Dr (E)											
P2	Full	269	54.8	LOS E	0.9	0.9	0.96	0.96	220.7	215.7	0.98
North: Murray St (N)											

P3 Full	1149	56.9	LOS E	3.9	3.9	1.00	1.00	222.4	215.2	0.97
West: Pyrmont Bridge Rd (W)										
P4 Full	137	54.5	LOS E	0.4	0.4	0.96	0.96	220.0	215.2	0.98
All Pedestrians	1637	56.2	LOS E	3.9	3.9	0.99	0.99	221.7	215.1	0.97

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 101 [1B. Darling Dr / Ultimo Rd (Site Folder: 5B Future Base PM 2037 + Dev)]

Network: N101 [5B Future Base PM 2037 + Dev (Network Folder: General)]

Existing PM Peak
5-6pm
22nd March 2022
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 65 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: 29B Ultimo Rd Driveway														
1	L2	2	0.0	2	0.0	0.010	19.2	LOS B	0.1	0.7	0.76	0.50	0.76	18.2
2	T1	1	0.0	1	0.0	0.010	19.7	LOS B	0.1	0.7	0.76	0.50	0.76	16.6
3	R2	1	0.0	1	0.0	0.010	19.2	LOS B	0.1	0.7	0.76	0.50	0.76	17.9
Approach		4	0.0	4	0.0	0.010	19.3	LOS B	0.1	0.7	0.76	0.50	0.76	17.7
East: Ultimo Rd (E)														
4	L2	1	0.0	1	0.0	0.148	12.3	LOS B	2.4	17.2	0.51	0.42	0.51	44.9
5	T1	316	1.7	316	1.7	0.148	7.5	LOS A	2.4	17.3	0.51	0.42	0.51	27.1
6	R2	319	2.6	319	2.6	* 0.483	16.2	LOS B	7.1	50.6	0.81	0.77	0.81	12.8
Approach		636	2.2	636	2.2	0.483	11.9	LOS B	7.1	50.6	0.66	0.60	0.66	19.9
North: Darling Dr (N)														
7	L2	108	1.0	108	1.0	0.103	11.4	LOS B	1.6	11.0	0.48	0.66	0.48	36.7
8	T1	1	0.0	1	0.0	* 0.822	31.1	LOS C	12.0	85.8	1.00	0.99	1.28	34.4
9	R2	339	2.2	339	2.2	0.822	35.7	LOS D	12.0	85.8	1.00	0.99	1.28	24.5
Approach		448	1.9	448	1.9	0.822	29.8	LOS C	12.0	85.8	0.87	0.91	1.09	26.6
West: Ultimo Rd (W)														
10	L2	48	0.0	48	0.0	0.179	28.0	LOS C	1.8	12.5	0.87	0.71	0.87	10.6
11	T1	103	0.0	103	0.0	* 0.179	21.7	LOS C	2.2	15.4	0.83	0.65	0.83	16.7
Approach		152	0.0	152	0.0	0.179	23.7	LOS C	2.2	15.4	0.84	0.67	0.84	14.8
All Vehicles		1240	1.8	1240	1.8	0.822	19.8	LOS B	12.0	85.8	0.76	0.72	0.84	23.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: 29B Ultimo Rd Driveway											
P1	Full	295	27.1	LOS C	0.5	0.5	0.92	0.92	189.1	210.6	1.11
East: Ultimo Rd (E)											
P2	Full	83	26.9	LOS C	0.1	0.1	0.91	0.91	195.3	219.0	1.12
North: Darling Dr (N)											
P3	Full	198	27.0	LOS C	0.3	0.3	0.92	0.92	192.5	215.2	1.12

All Pedestrians	576	27.0	LOS C	0.5	0.5	0.92	0.92	191.2	213.4	1.12

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 201 [2B. Darling Drive / Pier St (Site Folder: 5B Future Base PM 2037 + Dev)]

Network: N101 [5B Future Base PM 2037 + Dev (Network Folder: General)]

Existing PM Peak
5-6pm
22nd March 2022
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Darling Dr (S)														
2	T1	125	5.9	125	5.9	0.368	3.8	LOS A	2.1	15.2	0.50	0.64	0.50	40.0
3a	R1	14	0.0	14	0.0	0.368	8.6	LOS A	2.1	15.2	0.50	0.64	0.50	28.4
3	R2	252	0.8	252	0.8	0.368	9.6	LOS A	2.1	15.2	0.50	0.64	0.50	47.1
3u	U	5	0.0	5	0.0	0.368	11.6	LOS B	2.1	15.2	0.50	0.64	0.50	40.0
Approach		396	2.4	396	2.4	0.368	7.8	LOS A	2.1	15.2	0.50	0.64	0.50	44.9
SouthEast: Pier St (SE)														
21b	L3	209	2.5	209	2.5	0.133	2.9	LOS A	0.8	5.6	0.32	0.42	0.32	45.6
23a	R1	294	3.6	294	3.6	0.220	7.1	LOS A	1.4	10.1	0.38	0.57	0.38	41.4
23	R2	36	0.0	36	0.0	0.220	8.1	LOS A	1.4	10.1	0.38	0.57	0.38	28.8
23b	R3	9	0.0	9	0.0	0.220	9.1	LOS A	1.4	10.1	0.38	0.57	0.38	47.9
Approach		548	2.9	548	2.9	0.220	5.6	LOS A	1.4	10.1	0.36	0.51	0.36	41.5
North: Darling Dr (N)														
7b	L3	15	14.3	15	14.3	0.153	4.2	LOS A	1.0	7.2	0.48	0.48	0.48	44.9
7	L2	198	1.6	198	1.6	0.153	3.8	LOS A	1.0	7.2	0.48	0.48	0.48	47.6
8	T1	146	0.7	146	0.7	0.157	3.6	LOS A	1.0	7.0	0.50	0.48	0.50	44.0
9u	U	36	0.0	36	0.0	0.157	10.9	LOS B	1.0	7.0	0.50	0.48	0.50	44.0
Approach		395	1.6	395	1.6	0.157	4.4	LOS A	1.0	7.2	0.49	0.48	0.49	46.2
All Vehicles		1339	2.4	1339	2.4	0.368	5.9	LOS A	2.1	15.2	0.44	0.54	0.44	44.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 301 [3B. Darling Dr / Iron Wharf Pl (Site Folder: 5B Future Base PM 2037 + Dev)]

Network: N101 [5B Future Base PM 2037 + Dev (Network Folder: General)]

Existing PM Peak
5-6pm
22nd March 2022
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Darling Dr (S)														
2	T1	407	4.4	407	4.4	0.274	3.8	LOS A	1.9	13.5	0.07	0.44	0.07	45.6
3b	R3	11	0.0	11	0.0	0.274	7.5	LOS A	1.9	13.5	0.07	0.44	0.07	45.3
3u	U	20	0.0	20	0.0	0.274	8.2	LOS A	1.9	13.5	0.07	0.44	0.07	45.6
Approach		438	4.1	438	4.1	0.274	4.1	LOS A	1.9	13.5	0.07	0.44	0.07	45.6
SouthEast: Iron Wharf Pl (E)														
21b	L3	1	0.0	1	0.0	0.004	5.1	LOS A	0.0	0.2	0.45	0.51	0.45	28.9
23a	R1	2	0.0	2	0.0	0.004	6.5	LOS A	0.0	0.2	0.45	0.51	0.45	28.9
23u	U	1	0.0	1	0.0	0.004	8.4	LOS A	0.0	0.2	0.45	0.51	0.45	35.0
Approach		4	0.0	4	0.0	0.004	6.6	LOS A	0.0	0.2	0.45	0.51	0.45	31.0
North: Darling Dr (N)														
7a	L1	18	11.8	18	11.8	0.221	2.4	LOS A	1.1	7.5	0.10	0.34	0.10	37.8
8	T1	291	2.2	291	2.2	0.221	2.7	LOS A	1.1	7.5	0.10	0.34	0.10	35.6
9u	U	5	0.0	5	0.0	0.221	6.8	LOS A	1.1	7.5	0.10	0.34	0.10	35.6
Approach		314	2.7	314	2.7	0.221	2.7	LOS A	1.1	7.5	0.10	0.34	0.10	35.8
All Vehicles		756	3.5	756	3.5	0.274	3.5	LOS A	1.9	13.5	0.09	0.40	0.09	42.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 401 [4B. Pyrmont Bridge Rd / Murray St / Darling Dr (Site Folder: 5B Future Base PM 2037 + Dev)]

Network: N101 [5B Future Base PM 2037 + Dev (Network Folder: General)]

Existing PM Peak
5-6pm
22nd March 2022
Site Category: Existing Design
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Murray St (S)														
1	L2	63	0.0	63	0.0	* 0.251	24.4	LOS C	2.2	15.9	0.88	0.72	0.88	31.9
2	T1	51	4.2	51	4.2	* 0.251	33.0	LOS C	3.3	23.6	0.90	0.73	0.90	28.9
3	R2	43	2.4	43	2.4	0.251	49.3	LOS D	3.3	23.6	0.93	0.73	0.93	19.7
Approach		157	2.0	157	2.0	0.251	34.0	LOS C	3.3	23.6	0.90	0.73	0.90	28.0
East: Darling Dr (E)														
4	L2	107	2.9	107	2.9	0.077	5.9	LOS A	0.7	5.1	0.19	0.56	0.19	40.3
5	T1	197	3.2	197	3.2	* 0.515	44.2	LOS D	9.6	68.8	0.94	0.79	0.94	25.4
6	R2	107	6.9	107	6.9	0.235	33.9	LOS C	4.2	30.9	0.84	0.75	0.84	28.0
Approach		412	4.1	412	4.1	0.515	31.5	LOS C	9.6	68.8	0.72	0.72	0.72	28.9
North: Murray St (N)														
7	L2	69	1.5	69	1.5	0.097	15.7	LOS B	1.4	9.9	0.66	0.67	0.66	30.1
8	T1	115	1.8	115	1.8	* 0.522	41.4	LOS D	10.3	73.0	0.93	0.79	0.93	27.3
9	R2	100	1.1	100	1.1	0.522	44.7	LOS D	10.3	73.0	0.93	0.79	0.93	27.4
Approach		284	1.5	284	1.5	0.522	36.3	LOS D	10.3	73.0	0.87	0.76	0.87	27.7
West: Pyrmont Bridge Rd (W)														
10	L2	91	11.6	91	11.6	0.428	44.9	LOS D	7.0	52.9	0.92	0.77	0.92	27.2
11	T1	234	4.1	234	4.1	0.463	42.4	LOS D	8.5	61.3	0.93	0.77	0.93	20.9
12	R2	67	1.6	67	1.6	* 0.138	24.1	LOS C	2.1	14.9	0.79	0.70	0.79	31.6
Approach		392	5.4	392	5.4	0.463	39.9	LOS D	8.5	61.3	0.90	0.76	0.90	24.8
All Vehicles		1244	3.6	1244	3.6	0.522	35.5	LOS D	10.3	73.0	0.83	0.74	0.83	27.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Murray St (S)											
P1	Full	142	49.5	LOS E	0.4	0.4	0.95	0.95	212.5	211.9	1.00
East: Darling Dr (E)											
P2	Full	347	49.9	LOS E	1.0	1.0	0.96	0.96	215.8	215.7	1.00
North: Murray St (N)											

P3 Full	1381	52.2	LOS E	4.3	4.3	1.00	1.00	217.7	215.2	0.99
West: Pyrmont Bridge Rd (W)										
P4 Full	171	49.5	LOS E	0.5	0.5	0.95	0.95	215.1	215.2	1.00
All Pedestrians	2041	51.4	LOS E	4.3	4.3	0.99	0.99	216.8	215.1	0.99

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Attachment 3. Road Safety Audit – ptc Responses

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Response to Road Safety Audit;

Harbourside

For Mirvac

19 September 2022

parking;
traffic;
civil design;
wayfinding;

ptc.

Item Ref 1

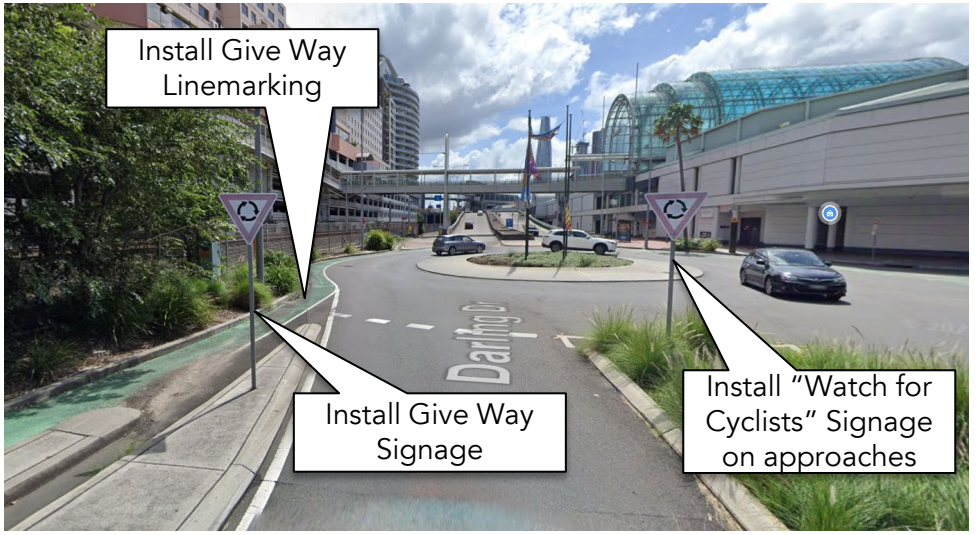
ptc. Recommendations

- Replace existing Give Way signage

Item Ref 2

ptc. Recommendations

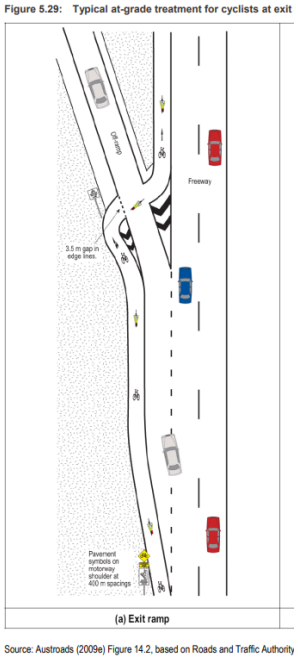
- Install Give Way signage on northbound cycle lane to advise cyclists to give way to trucks entering roundabout as heavy vehicles may encroach onto cycle lane when turning.
- Install Give Way linemarking to support signage.
- “WATCH FOR CYCLISTS” warning signage or similar to be provided at roundabout approaches to advise drivers of the presence of cyclists.



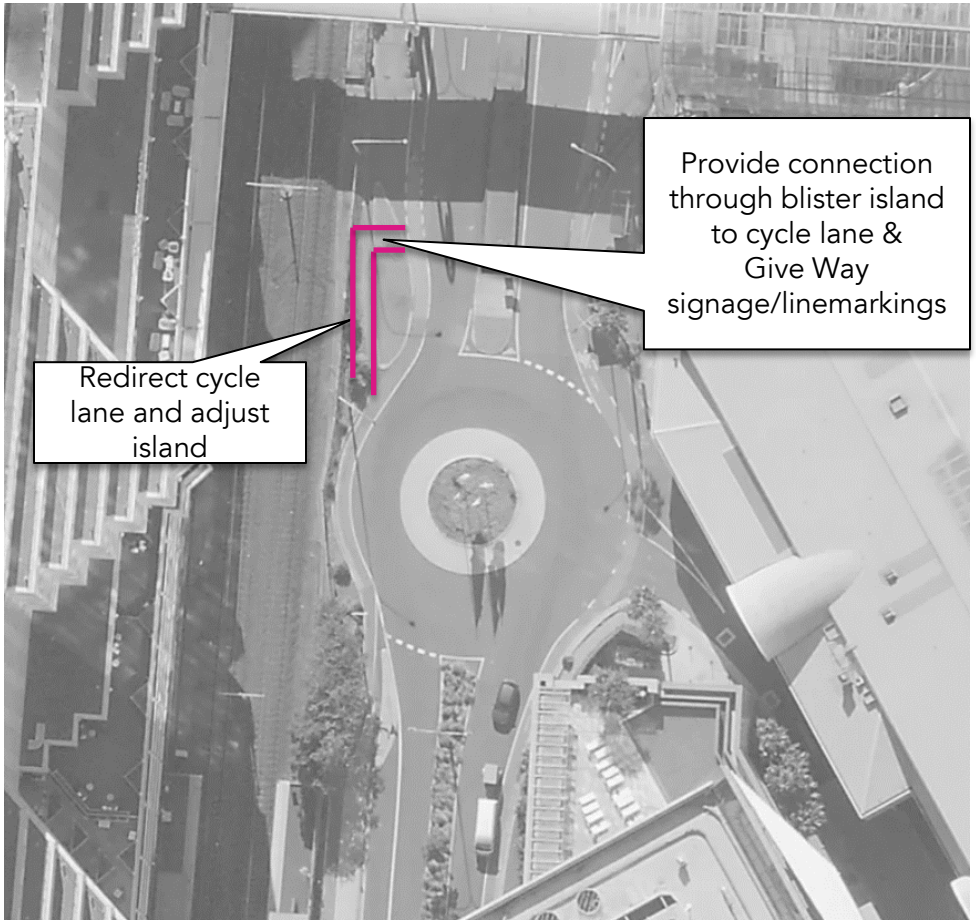
Item Ref 3

ptc. Recommendations

- Reconfigure blister island to direct cycle lane along fence line.
- Provide cyclist connection through blister and Give Way signage/linemarkings to rejoin cycle lane. Subject to swept path assessment for heavy vehicles accessing slip lane into site
- Refer to Fig 5.29 in "Cycling Aspects of Austroads Guides"



Source: Austroads (2009e) Figure 14.2, based on Roads and Traffic Authority



Item Ref 4

ptc. Recommendations

- Civil works required to re-grade to soften transition between on-road and off-road cycleway treatments
- Landscaping maintenance required to prune any landscaping overhanging cycleway.

Item Ref 5

ptc. Recommendations

- Consult with TfNSW/Council to investigate relocating some of the existing traffic signage to improve visibility of exit driveway for cyclists travelling northbound on Darling Drive.
- Install Give Way signage and linemarking at exit driveway to prioritise cyclists.

Item Ref 6

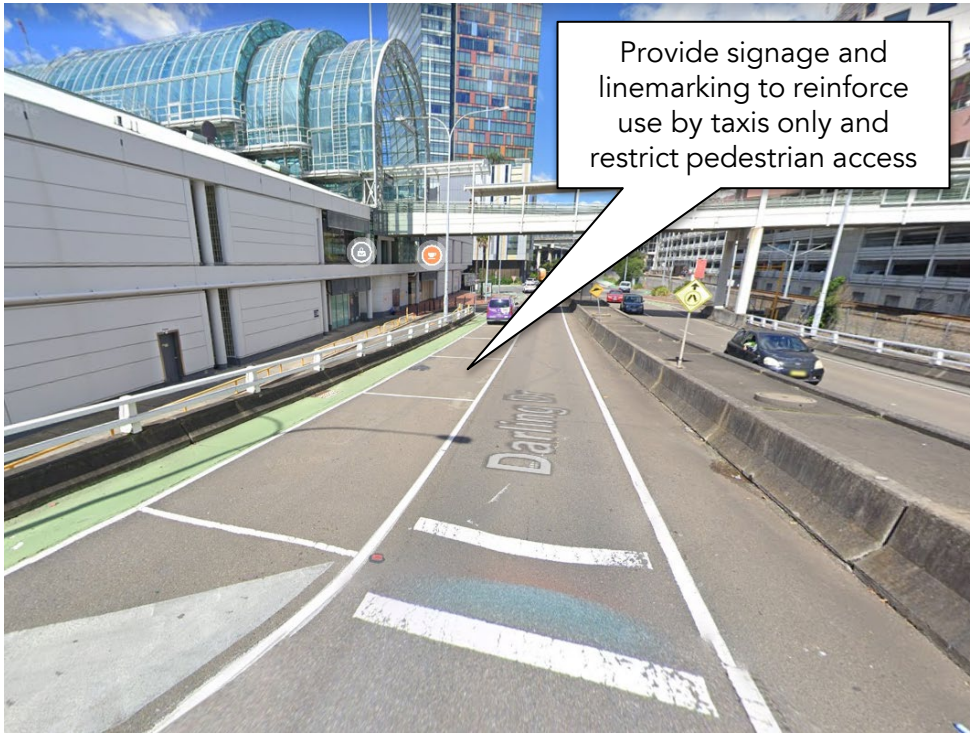
ptc. Recommendations

- Consult with TfNSW/Council to have speed limit made consistent with the surrounding Local Area Traffic speed limit of 40km/h in this section of Darling Drive.

Item Ref 7

ptc. Recommendations

- It is understood the existing Taxi Zone is utilised as overflow parking area for taxis waiting to access Iron Wharf Place for Sofitel. No pedestrians access or utilise this area.
- Install signage to indicate “No Pedestrian Access”
- Install linemarking to clearly indicate “TAXI ONLY” or similar within bays. Subject to consultation with PMNSW.



Item Ref 8

ptc. Recommendations

- Review southbound traffic lane widths and feasibility of shifting traffic lanes west towards the centre island to allow for increased cycle lane width or reduce width of taxi overflow / PMNSW bay widths
- All cycleway pavement markings to be refreshed.
- Review feasibility of implementing a single traffic lane northbound from roundabout (subject to further traffic analysis of volumes and potential impacts on intersections). Potential to widen cycleway if this arrangement found to be feasible.

Item Ref 9

ptc. Recommendations

- Refer to Item Ref 3

Item Ref 10

ptc. Recommendations

- Mirvac has advised that the existing pedestrian bridge to existing Harbourside building will be removed as part of the demolition works. Therefore, existing pedestrian bridge columns will be removed.
- Existing jersey kerb to be removed. Existing guard rails to be extended to where jersey kerb is currently. The guard rail would occupy less width than existing concrete jersey kerb and would enable widening of the northbound cycle lane.

Item Ref 11

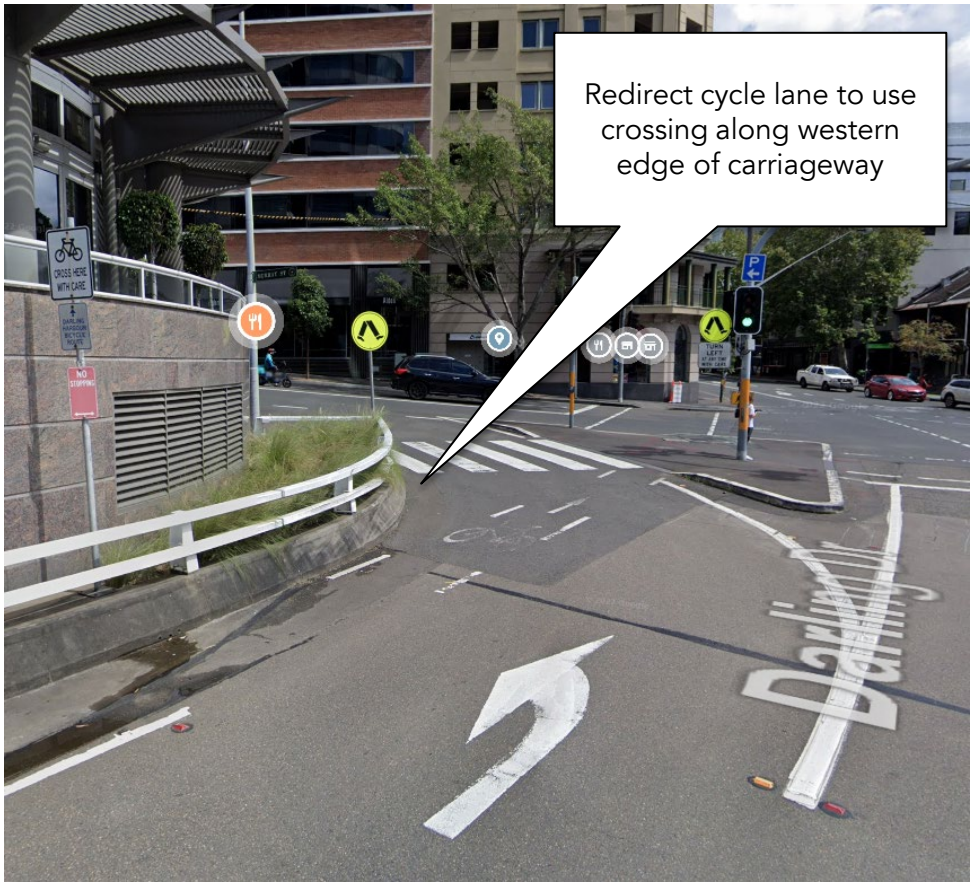
ptc. Recommendations

- Install Give Way signage to reinforce priority to cyclists travelling southbound. All vehicles exiting slip lane are to give way to all cyclists and vehicles on Darling Drive before proceeding.
- Install “WATCH FOR CYCLISTS” signage for warning exiting vehicles
- Install convex mirror to allow visibility between vehicles exiting slip lane and vehicles travelling southbound on Darling Drive.

Item Ref 12

ptc. Recommendations

- Redirect cycle lane to use crossing along western edge of carriageway rather than directly across left-turn lane.
- Existing pedestrian crossing may need to be widened to accommodate a dedicated bike crossing lane.



Item Ref 13

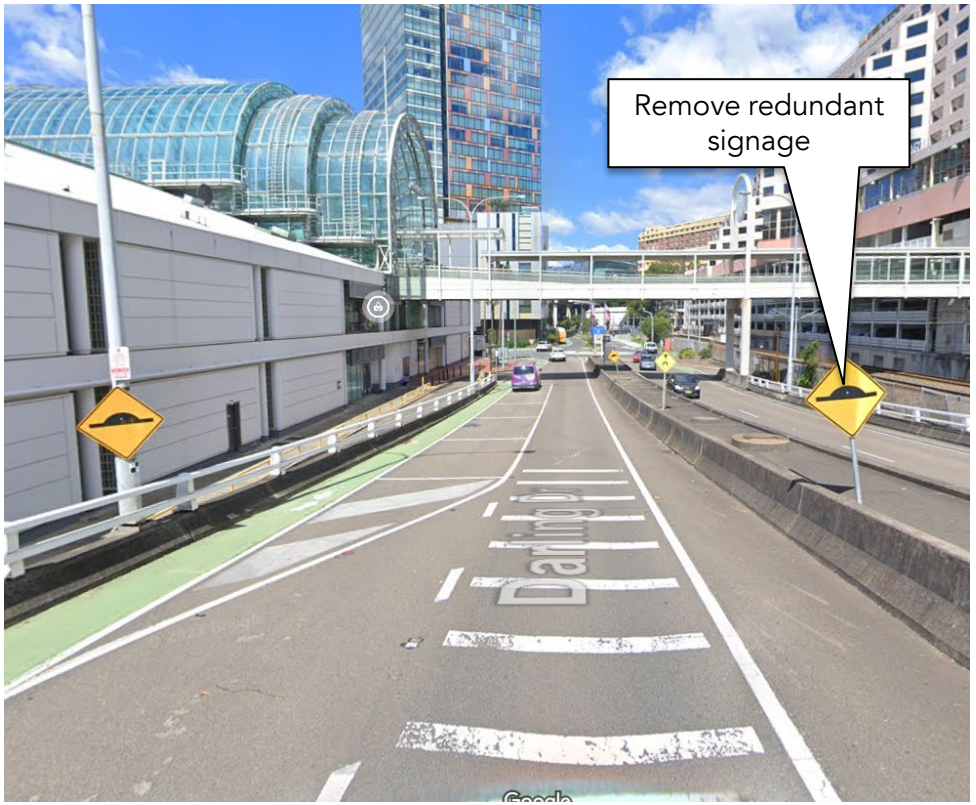
ptc. Recommendations

- Relocate “Bicycle only” signage or landscaping to be pruned and maintained to ensure visibility of signage.

Item Ref 14

ptc. Recommendations

- Remove redundant speed hump and pedestrian (zebra) crossing ahead signage.



Item Ref 15

ptc. Recommendations

- No action proposed.

Item Ref 16

ptc. Recommendations

- Refresh cycleway treatments (paving markings) and recommend appropriate authority to maintain regularly

Item Ref 17

ptc. Recommendations

- No actions proposed. Whilst it is acknowledged these are obstructions, the existing street furniture act as a deterrent for cyclists to travel at high speeds through this highly trafficked area by pedestrians and reinforce the ‘shared zone’

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thank you;

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