

Sydney Modern Project

Art Gallery of NSW Expansion

Construction Pedestrian and Traffic Management Plan

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1.0 Introduction

A Development Application has been approved by Department of Planning and Environment for the construction of a new separate building over five levels (known as the 'Sydney Modern') to the north-east of the existing gallery incorporating the adaptive re-use of the former navy fuel bunker adjacent to Lincoln Crescent. The project also includes further works include landscaping, a new public plaza, upgrade road works and installation of an ancillary seawater heat exchange system. The site located to the north of the existing Art Gallery of NSW building with frontage to Art Gallery Road in Sydney (Figure 1).

The construction will be broken down into four major stages:

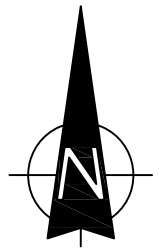
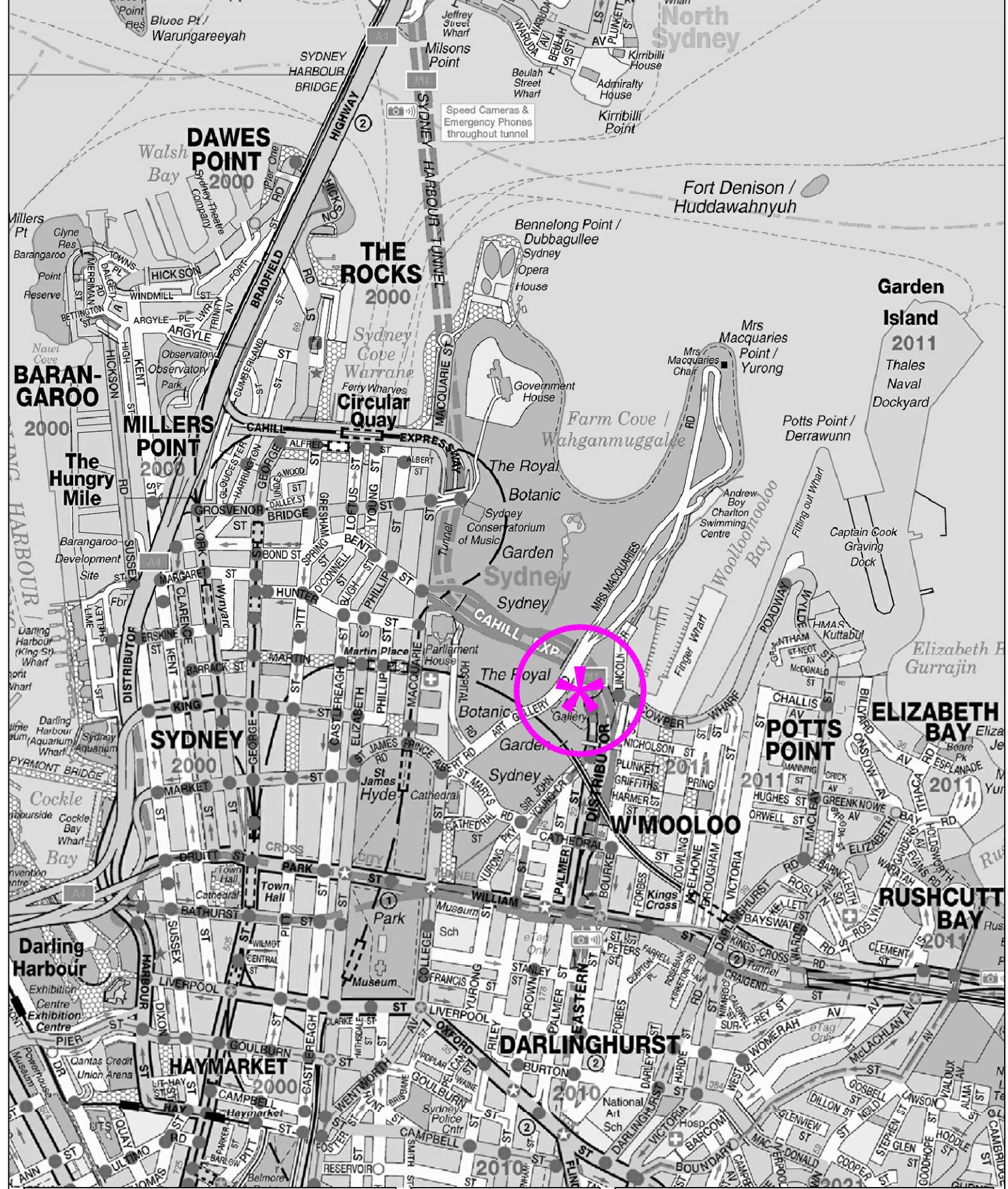
- ❖ Early Works: Initial Demolition, High Voltage Relocation, Lincoln Crescent Enabling Works
- ❖ Main Works: Demolition and Earthworks
- ❖ Main Works: Structure
- ❖ Main Works: Fit-out, Façade and External Works

This report has been prepared L Q V D W L V I D F W L R Q R I & B 6 2 (H S S W & R Q G L 6471) for submission of a Construction Pedestrian and Traffic Management Plan as part of the Construction Certificate documentation as follows:

B62 - Construction Pedestrian Traffic Management Plan

Prior to the commencement of works, a Construction Pedestrian Traffic Management Plan (CPTMP) prepared by a suitably qualified person shall be endorsed by TFNSW (Sydney Coordination and Metro Delivery Offices) and submitted to the satisfaction of the Certifying Authority. The CPTMP must be prepared in consultation with Council, TFNSW (Sydney Coordination and Metro Delivery Offices) and RMS. The CPTMP shall address (but not be limited to):

- a) location of the proposed work zone;



LOCATION

FIG 1

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- b) haulage routes;*
- c) construction vehicle access and traffic control arrangements;*
- d) proposed construction hours;*
- e) the estimated number of construction vehicle movements;*
- f) any changes required to on-street parking;*
- g) restriction on vehicles over 6 m in length turning right from Lincoln Crescent into Cowper Wharf Road;*
- h) construction program;*
- i) any potential impacts to general traffic, cyclists, pedestrians and bus services within the vicinity of the site from construction vehicles during the construction;*
- j) cumulative construction impacts of projects including Sydney Light Rail Project and Sydney Metro City and South West considering any traffic and pedestrian management plans prepare for these projects to ensure that work activities are coordinated and managed to minimise impacts on the road network;*
- k) measures to ensure construction vehicles do not arrive at the site or surrounding areas outside approved hours;*
- l) measures proposed to mitigate any associated general traffic, public transport, pedestrian access and cyclist impacts/conflicts; and*
- m) measures to encourage public transport use and other non-car travel options by construction workers.*

Prior to the commencement of works, a copy of the CPTMP must be submitted to Council and the Planning Secretary.

This CPTMP has been prepared in accordance with CoS Standard Requirements for Construction Traffic Management Plans, as attached in Appendix A.

2.0 Proposed Development

2.1 Site, Context, and Existing Use

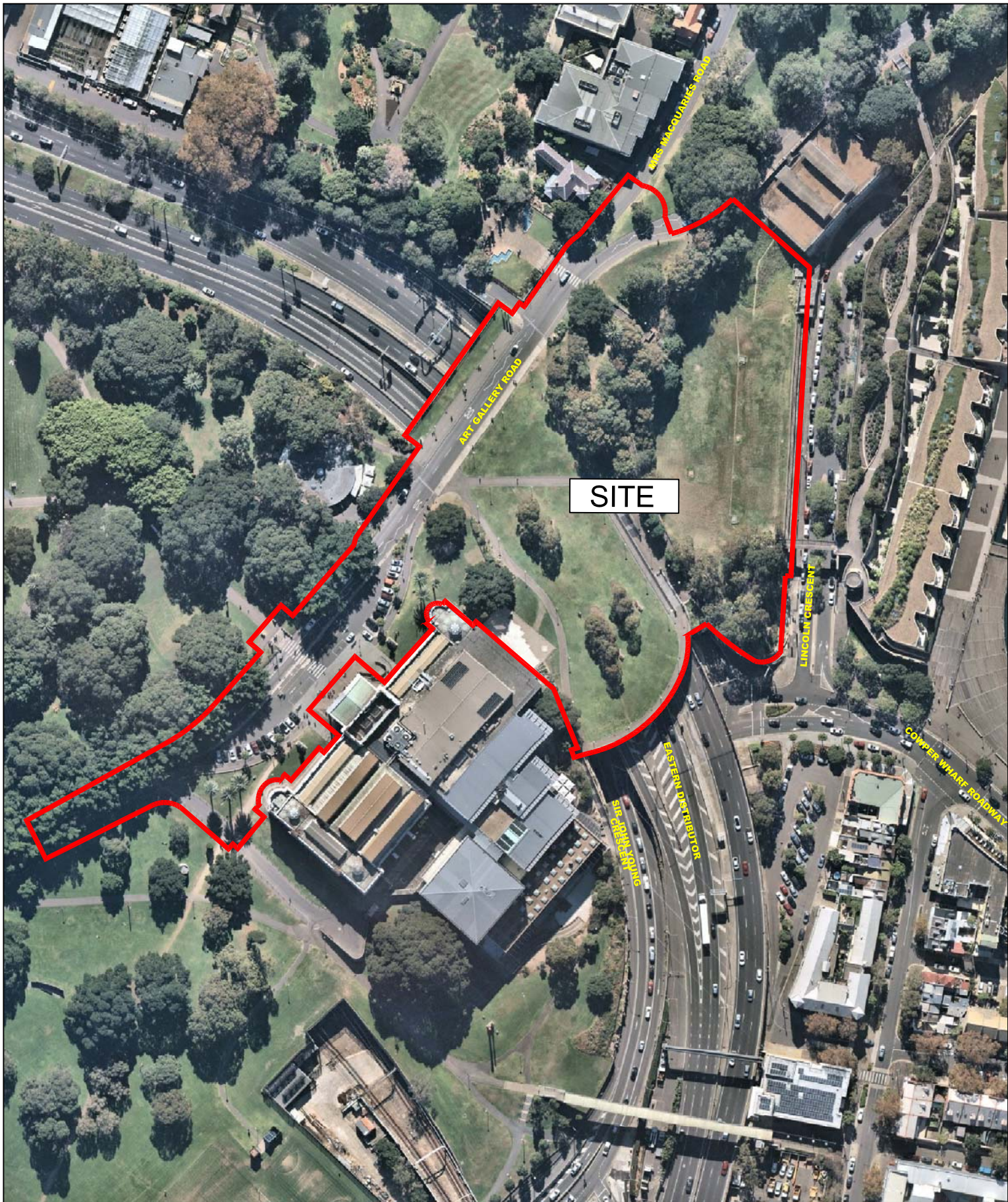
The site (Figure 2) is located to the north of the existing Art Gallery of NSW building. There are also off-site works proposed partial road upgrades. The Domain Car Park is located to the south of the existing Gallery.



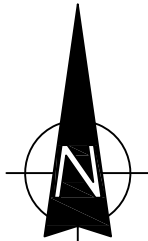
Source: Arup

2.2 Proposed Development

It is proposed to undertake a major expansion of the existing art gallery adjacent to the Phillip Precinct of the Domain. The expansion, proposed as a separate, stand-alone building, is located north of the existing gallery, partly extending over the Eastern Distributor land bridge and includes a disused Navy fuel bunker located to the north east of this land bridge. The new building comprises a new entry plaza, new exhibition spaces, shop, food and beverage facilities, visitor amenities, art research and education spaces, new roof terraces and landscaping and associated site works and infrastructure, including loading and service areas as well as services infrastructure.



SITE



SITE

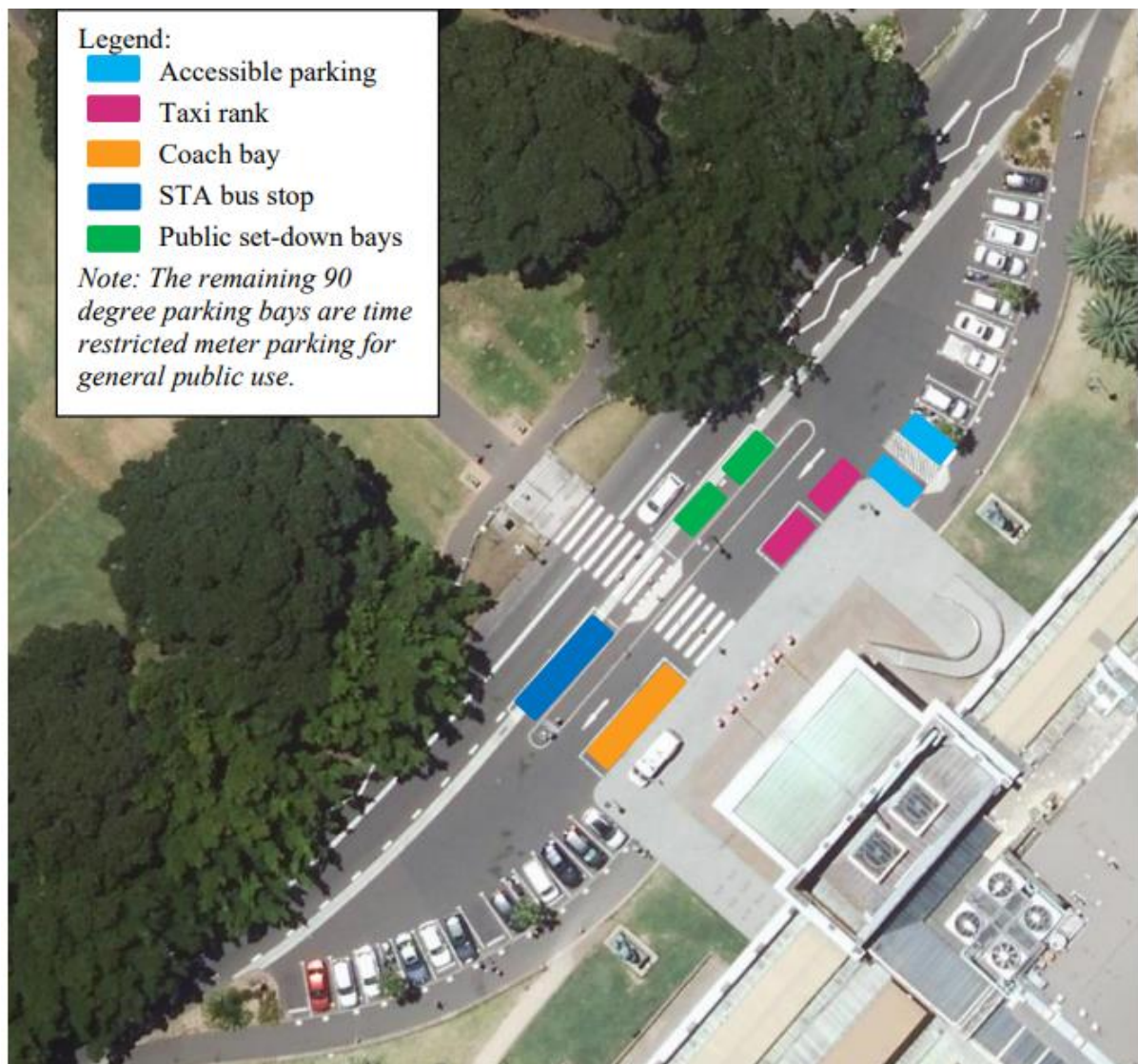
FIG 2

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No on-site car parking spaces will be provided.

All vehicles associated with the development shall be parked wholly within the site. All site staff related with the works are to park in a designated off-street area (i.e., Domain Car Park which provides approximately 1,100 spaces) or be encouraged to use public transport and not park on the public road.

The existing loading dock provides parking 13 spaces for operational and staff vehicles. The 22-spaces car parking (see the following image) currently available on Art Gallery Road in the main entry area will be removed as part of Stage 2 External Works.



Source: Arup

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The two accessible parking spaces will be replaced as indented parking in this location. An additional 5 vehicle spaces are proposed in the new loading dock off Lincoln Crescent, to be utilised predominantly for service vehicle parking.

Vehicle access to the Gallery is provided via Art Gallery Road.

Details of the approved development scheme are provided on the drawings prepared by Kazuyo Sejima + Ryue Nishizawa / SANAA and Architectus which accompany the Development Application SSD 6471 which are available on the NSW Department of Planning, Industry and Environment website:

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_jobandjob_id=6471

3.0 Existing Road Network and Traffic Conditions

3.1 Road Network

The existing road network (Figure 3) serving the site comprises:

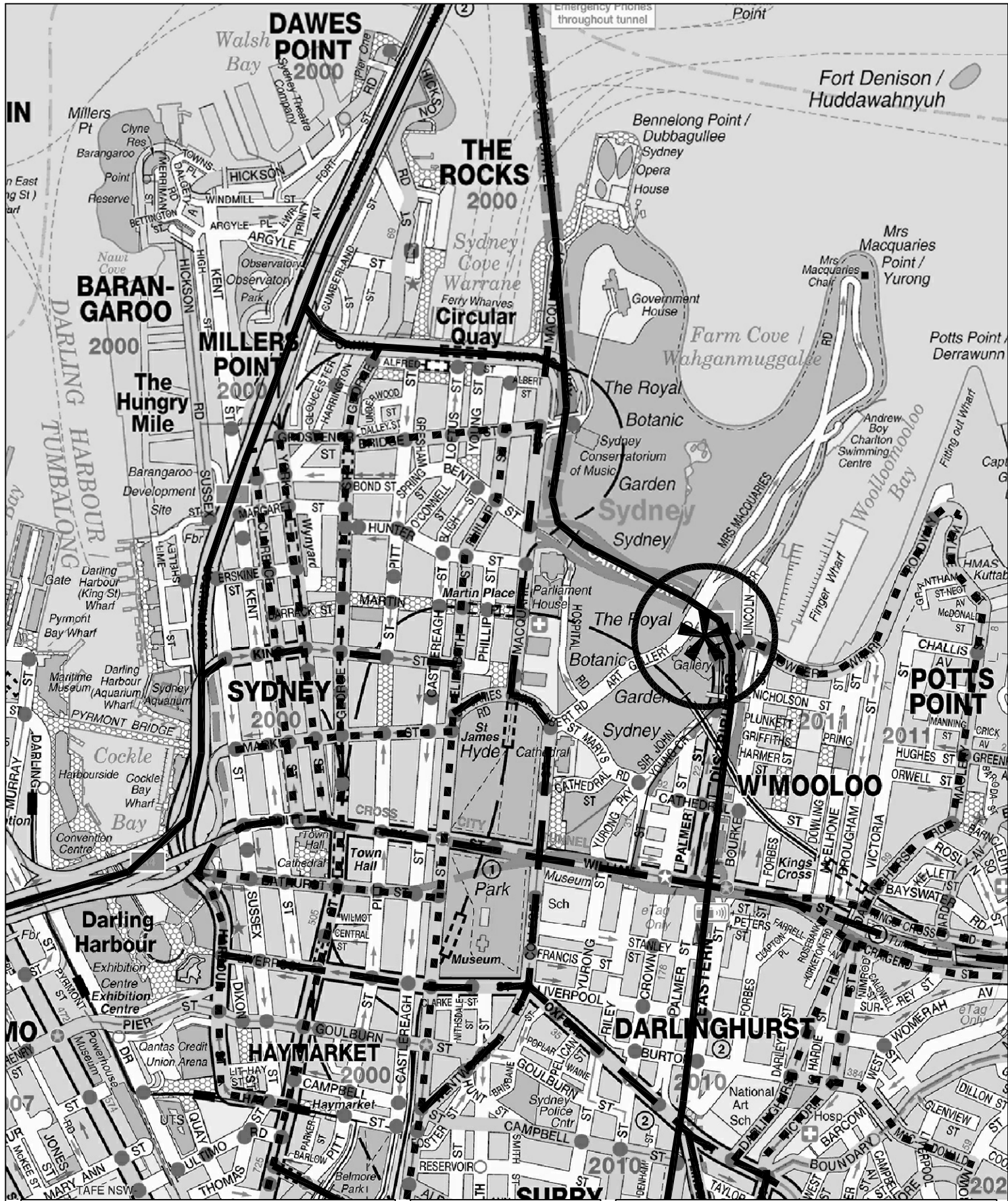
- ❖ *College Street* ±an important CBD street providing a primary connection between the site and Eastern Distributor via William Street
- ❖ *Macquaries Street* ±a major city street which connects from New South Head Road at Darlinghurst as well as College Street and Park Street in the CBD
- ❖ *St Marys Road* - a minor city street providing a primary connection between the site and William Street
- ❖ *Eastern Distributor* ±a State Road and arterial route which connects between the Cahill Expressway in Woolloomooloo and Southern Cross Drive in Kensington with connections to William Street, Anzac Parade and Cross City Tunnel in between the northern and southern ends
- ❖ *Cahill Expressway/Bradfield Highway/Sydney Harbour Tunnel* ±a State Road and arterial route which connects between Bradfield Highway at the Rocks, Sydney Harbour Tunnel and Eastern Distributor

Art Gallery Road near the site is generally an 8m-wide carriageway road with one lane in each direction. Lincoln Crescent is a dual carriageway road with a central median and 1 travelled lane in each direction. There are parking lanes on either side of a single traffic lane. Lincoln Crescent has a minimum of 5.45m wide carriageway in each direction.




3.2 Traffic Controls

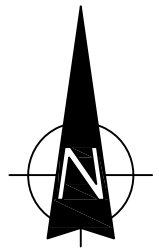
The existing traffic controls which have been applied to the roads in the vicinity of the site (Figure 4) include:

- ❖ the traffic control signals at the intersections of:



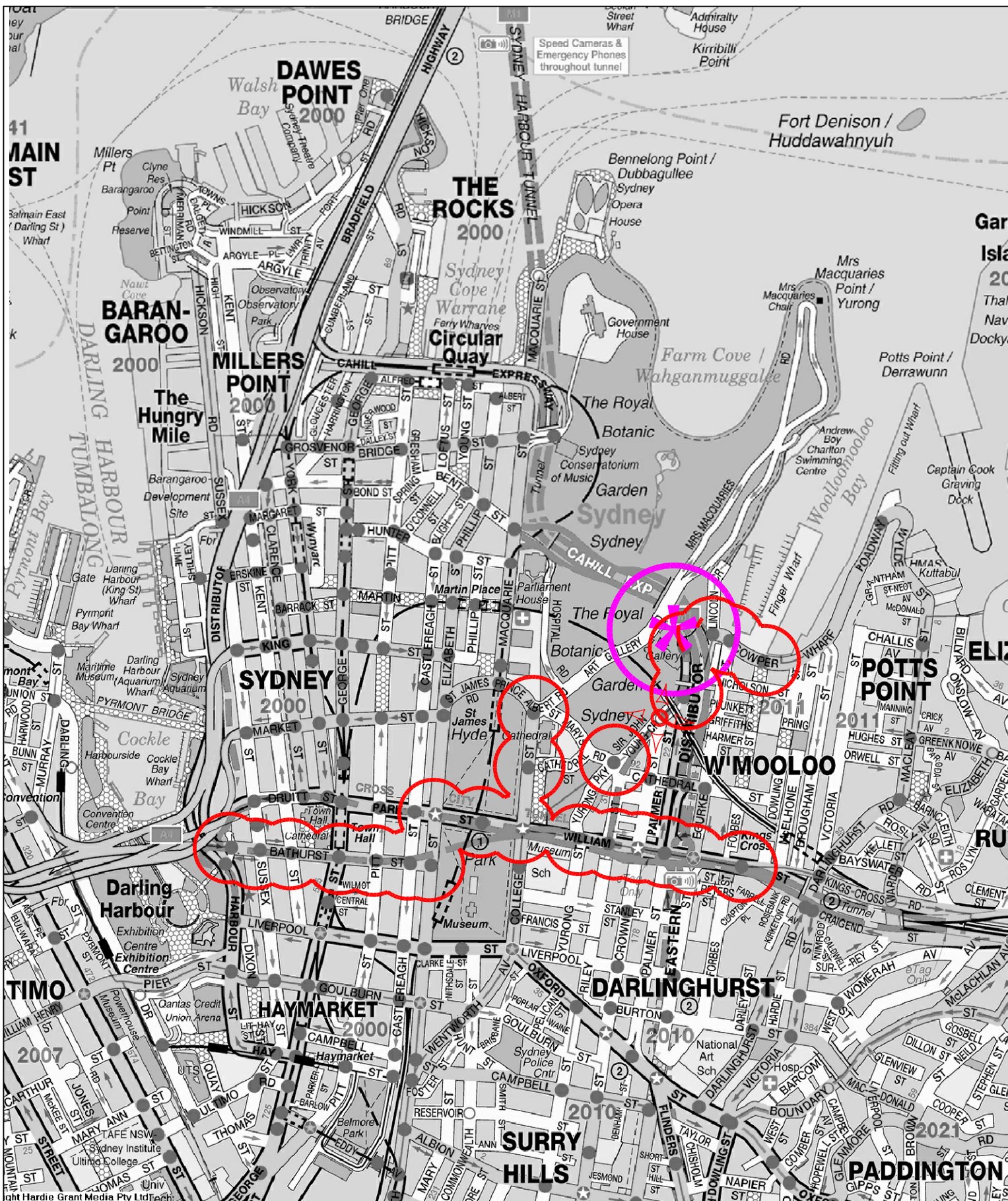
LEGEND

-  ARTERIAL
-  SUB-ARTERIAL
-  COLLECTOR





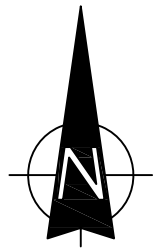
ROAD NETWORK

FIG 3



LEGEND

-  TRAFFIC SIGNAL CONTROL
-  ROUNDABOUT



TRAFFIC CONTROLS

FIG 4

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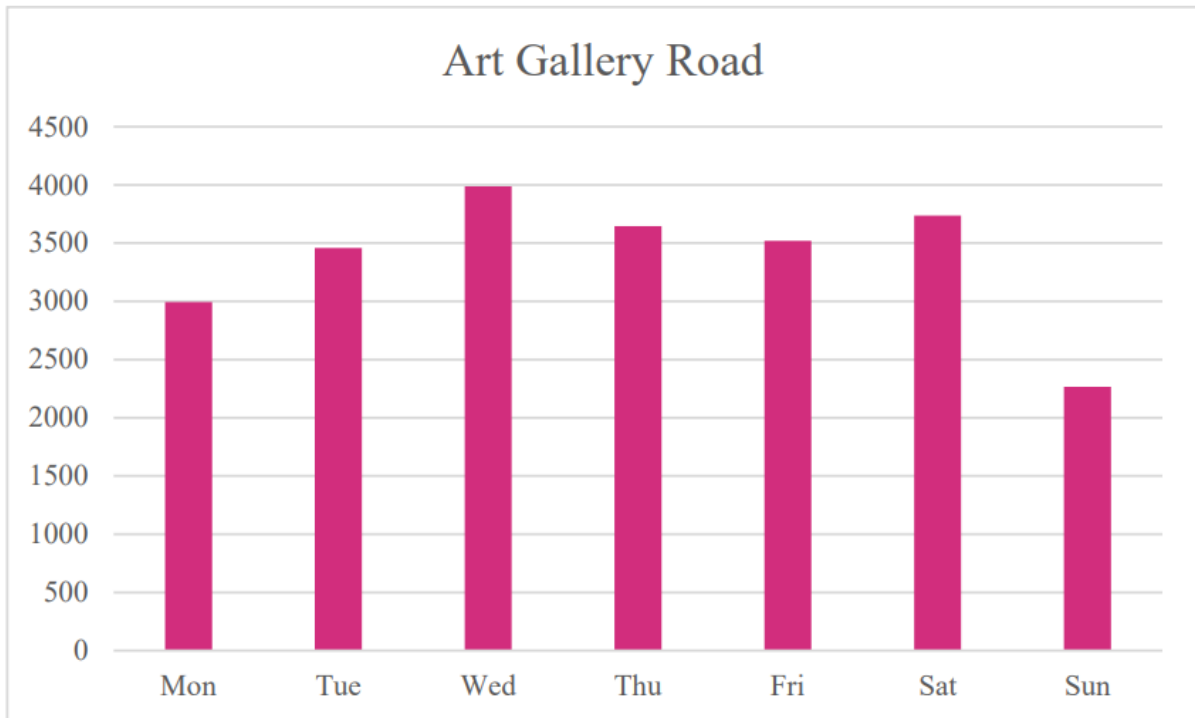
- Sir John Young Crescent/Cowper Wharf Roadway
 - Eastern Distributor Off-Ramp/Cowper Wharf Roadway
 - Bourke Street/Cowper Wharf Roadway
 - College Street/Prince Albert Road
 - William Street/Bourke Street
 - William Street/Park Street/College Street
- ❖ the priority-controlled intersections of:
- St Marys Road/Prince Albert Road
 - Lincoln Crescent/Cowper Wharf Roadway
- ❖ the 30kmph speed restriction on Art Gallery Road and Mrs Macquaries Road
- ❖ the 40kmph speed restriction on Lincoln Crescent

3.3 Traffic Conditions

Arup carried out traffic movement surveys on a weekday (Tuesday 30 April 2016) and weekend (Saturday 3 May 2016) on Art Gallery Road and Lincoln Crescent.

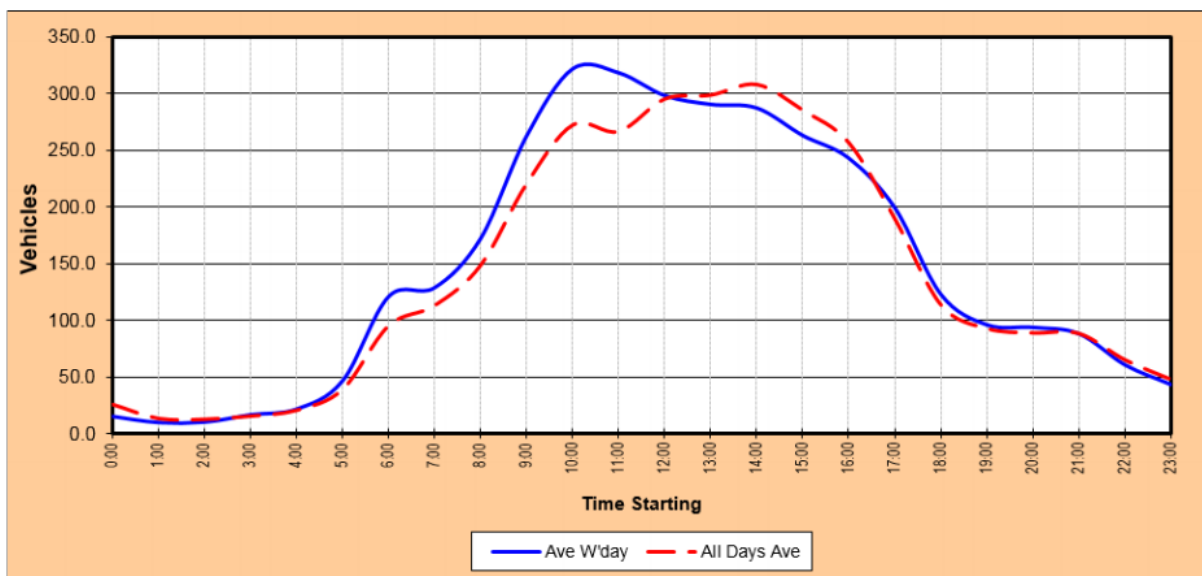
The surveyed traffic volumes along Art Gallery Road indicate that traffic volumes varied between 2,300 to 4,000 daily vehicles (see the following figures). Highest daily traffic volumes were found to occur on Wednesday (due to the later closing hours). This is followed by the daily traffic volumes recorded on a Saturday. The peak hour was also found to be 10 am to 11 am.

Weekly traffic profile on Art Gallery Road



Source: Arup

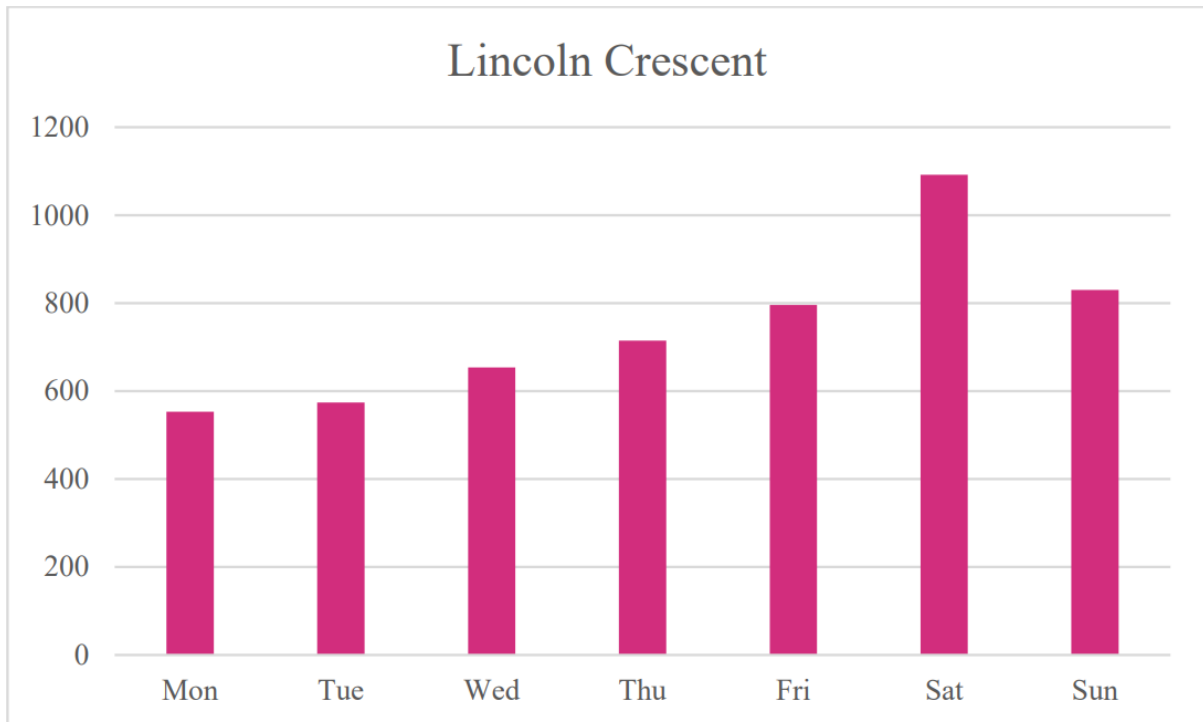
Daily traffic profile on Art Gallery Road



Source: Arup

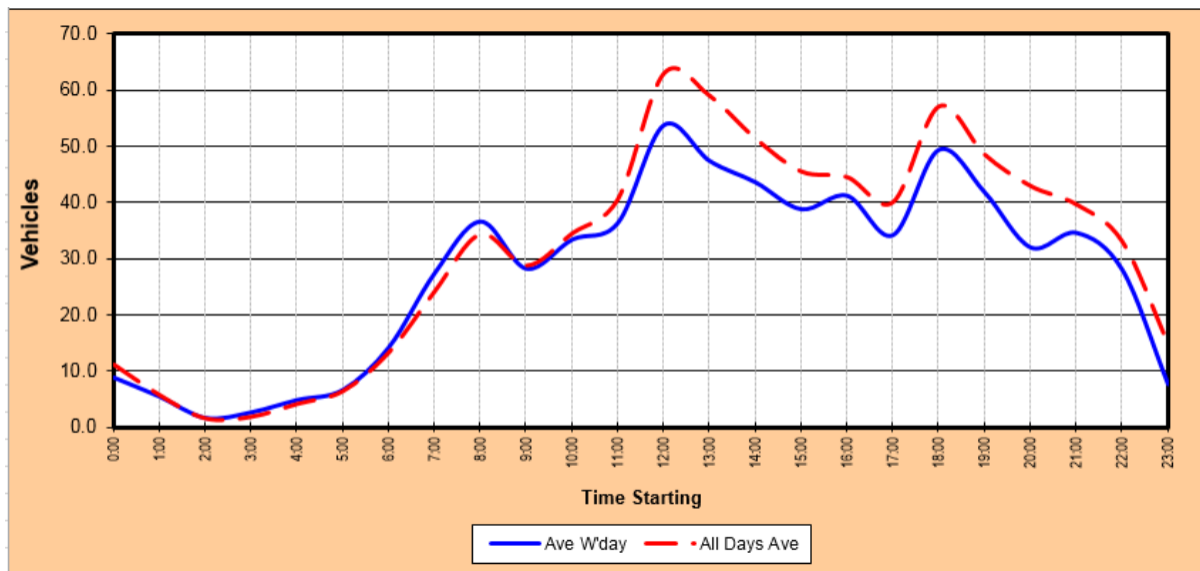
The surveys indicate that traffic volumes varied in the order of 500-1,100 vehicles during the week on Lincoln Crescent (see the following figures). The peak hour was found to be 10 am to 11 am, with a secondary peak at 6pm-7pm.

Weekly traffic profile on Lincoln Crescent



Source: Arup

Daily traffic profile on Lincoln Crescent



Source: Arup

Saturday had the highest daily traffic volume and weekdays were relatively low compared to the weekend volumes.

The operational performance of the following intersections in the vicinity of the site during

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the weekday morning and afternoon peak, as well as Saturday midday periods, have been assessed by Arup as part of the SSDA traffic report:

- ❖ College Street / Prince Albert Road
- ❖ Prince Albert Road / St Marys Road
- ❖ Sir John Young Crescent / Cowper Wharf Roadway
- ❖ Cowper Wharf Roadway / Lincoln Crescent

The traffic modelling indicates all nearby intersections to the proposed development will continue to operate satisfactorily (level of service C or better) during the assessed peak hours. The road network impacts arising from the future development of the site, considering the cumulative impacts of adjacent development, is considered to be acceptable and will not cause any undue queuing or congestion.

3.4 Transport Services

Train

The closest railway stations to the Gallery are St James and Martin Place stations, which are both approximately 10-minute walk.

Bus

The existing Gallery is within close walking distance of the Elizabeth Street bus stops near Martin Place Station. These bus stops serve bus routes from the Eastern Suburbs, Inner West (Parramatta Road) and Victoria Road. Bus 441 (City Art Gallery to Birchgrove via QVB (Loop Service)) operates every 30 minutes between 10 am and 5 pm every day.

On nights when the Gallery is open, a courtesy bus departs from the Gallery entrance every 15 minutes from 7 pm until closing. Stops include various locations in the city with proximity to Martin Place (Macquaries St), Wynyard (Castlereagh St and Hunter St) and Town Hall (Castlereagh St and Park St).

Ferry

Circular Quay Ferry Wharf is located approximately 15-minute walk away from the Gallery and provides access for some patrons arriving from the Eastern Suburbs, Manly and Lower North Shore.

Taxi

There is a two-car dedicated taxi rank at the Gallery in the drop-off/pick-up area at the main Gallery entrance. Taxis also generally circulate through the area picking up and setting down passengers.

Details of the existing transport services are provided in Appendix B.

3.5 Walking Facilities

Pedestrians in the vicinity of the site are afforded with excellent provisions with wide footpaths linking between Macquaries Street, across the Domain, or from Hyde Park as well as the pedestrian crossing along Art Gallery Road at the back of the coach spaces to provide access to the plaza.

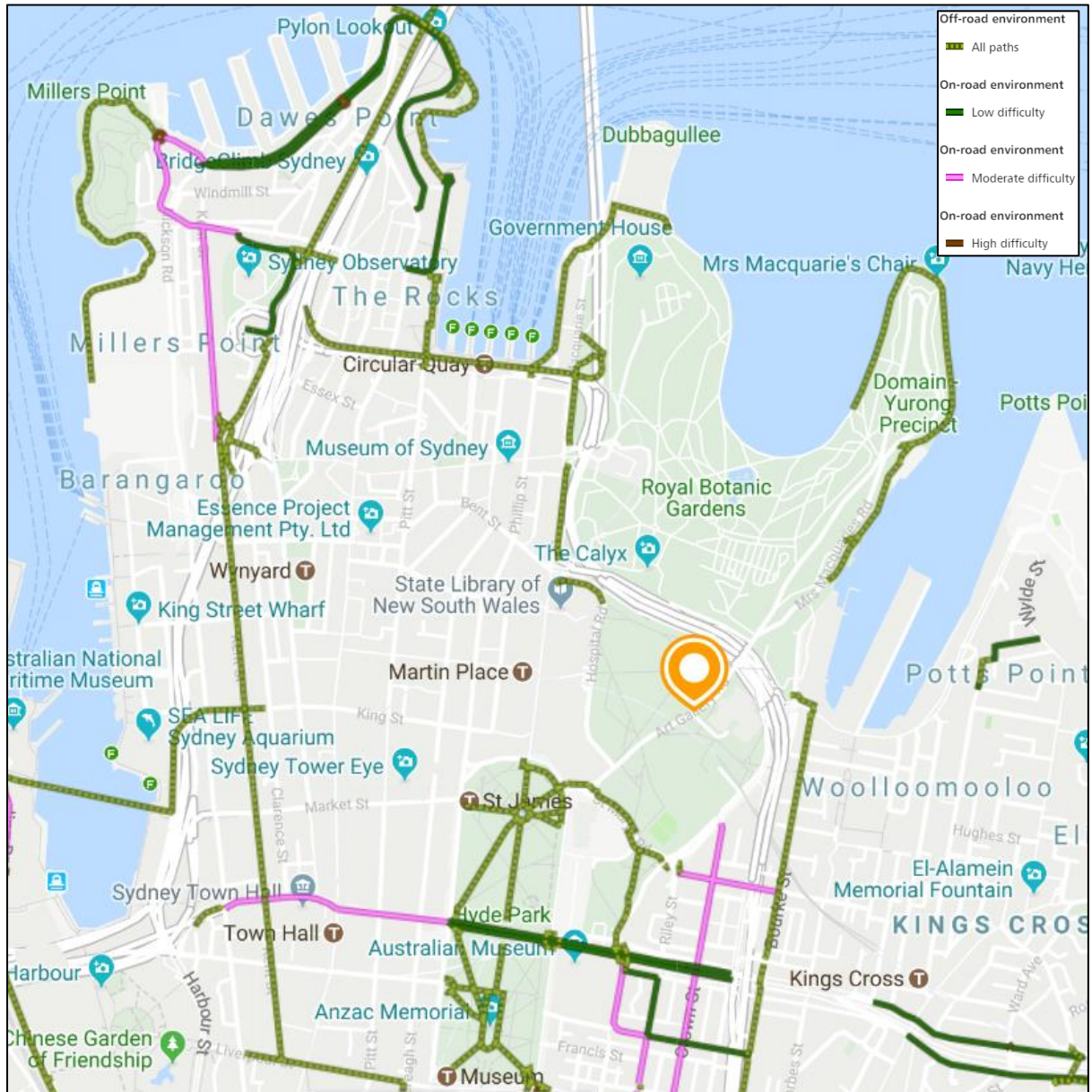
The primary pedestrian access point to the existing Gallery is via Art Gallery Road. The secondary pedestrian access is provided at the rear of the building for deliveries and as alternative access for visitors with a disability. At times, visitors will be directed to enter through the Yiribana Gallery at the rear of the building, following the path along the southern side of the Gallery.

3.6 Cycling Facilities

While there is no dedicated cycling infrastructure (e.g., bicycle lanes) in the immediate vicinity of the site, Art Galley Road and Mrs Macquaries Road carry low volumes of traffic and are suitable for the use of cyclists.

There are off-road cycleways along Bourke Street and St Marys Road through to Hyde Park as shown in the following figure.

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Source: https://www.rms.nsw.gov.au/maps/cycleway_finder

4.0 Proposed Construction Scheme

4.1 Construction Program

This project is to be carried out in 4 stages over the course of 19 months between October 2019 and March 2022.

- ❖ Early Works ±Initial Demolition, High Voltage Relocation, Lincoln Crescent Enabling Works: 2 months (nett)
- ❖ Main Works ±Demolition and Earthworks: 9 months (nett)
- ❖ Main Works ±Structure: 8 months (nett)
- ❖ Main Works ±Fit-out, Façade and External Works: 8 months (nett)

The construction site comprises:

- ❖ 2 construction zones:
 - Zone 1: Lincoln Crescent
 - Zone 2: Art Gallery Road/Mrs Macquarie Road
- ❖ 3 sliding gates:
 - 1 on Lincoln Crescent
 - 2 on Art Gallery Road/Mrs Macquarie Road
- ❖ Storage Area
- ❖ Class A and B Hoardings
- ❖ Materials handling area on Lincoln Crescent
- ❖ Workers site access to the eastern side of the existing Art Gallery of NSW building

4.2 Construction Workers

It is anticipated that there will be an average of 31-330 workers on-site during the various construction stages, with a maximum of 430 workers expected during the peak construction period, with the following breakdown:

Construction Stages	No. of Workers	
	Average	Peak
Early Works: Initial Demolition, High Voltage Relocation, Lincoln Crescent Enabling Works	31	38
Main Works: Demolition and Earthworks	51	61
Main Works: Structure ±average 35, peak day (concrete pour) 55	123	210
Main Works: Fit-out, Façade and External Works	330	430

* LYHQ WKH VLWH V-frequence, Public Transport Services, all workers will be encouraged to use public transport to access the site.

A tool drop-off and storage facility would be provided within the site boundary near the site accesses along Art Gallery Road and Lincoln Crescent. This would allow tradespeople to drop off and store their tools and machinery, allowing them to use public transport to travel to/ from the site on a daily basis.

This will be incorporated into the site induction program. Workers will be directed not to use on-street parking in the vicinity of the site (including works zone). RCC would take appropriate action if informed of this activity occurring.

4.3 Construction Hours

The approved hours of construction activity will be:

7.00am ±6.00pm	Monday to Friday
8.00am ±3.30pm	Saturday
No work	Sunday and public holidays

The principal contractor shall ensure that all sub-contractors are aware of the permitted hours of operation and shall ensure that all vehicle activity occurs strictly

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within the hours stipulated by the Conditions of Consent. Should any works be required to take place within public roads (in the vicinity of the site), outside these hours, this would be subject to prior approval from Department of Planning and Environment, Council and other relevant authorities (RMS, etc.).

Precinct Special Events

To ensure there are sufficient pedestrian pathway capacity and their safety, works will be reviewed and adjusted where possible for special events in the domain and surrounding precinct (i.e., the Sydney Festival in January, major paid exhibition or 'summer show').

The Royal Botanic Gardens informs the Gallery what it is doing and usually puts in place lots of temporary fencing around the Domain to assist with pedestrian control. Nearly all 'special events' in the Domain occur on weekends, either during the day or on Saturday night when the Gallery is closed. When special events are held within the site such as the Domain or Mrs Macquaries Point, roads including Art Gallery Road are sometimes closed. Road closures occur on weekends only and generally in the morning.

Consultation would be required with Roads and Maritime Services Transport Management Centre, Royal Botanic Gardens, Art Gallery of NSW, Council and the CBD Coordination Office to ensure appropriate coordination with other works and events in the area and appropriate planning is put in place.

4.4 Site Access

Site accesses to the construction site is proposed via temporary crossovers:

- Mrs Macquaries Road (left-in only): 20m wide
- Art Gallery Road (left-out only): 20m wide
- Prior to trees removal: Lincoln Crescent (left-in and left-out only): 9m wide
- After trees removal: Lincoln Crescent (left-in and right-out only): 9m wide

It is noted that the trees on Lincoln Crescent will be removed in accordance to CoS

guidelines.

The temporary crossover will have 2m wings on either side. A Temporary Works Application will be submitted to the CoS Construction Regulation Unit. Approval will be sought from CoS prior to the construction of the temporary laybacks and crossover. The largest vehicle that will use the access points along Mrs Macquaries Road and Art Gallery Road will be a 19-metre truck while the largest vehicle to use the access point along Lincoln Crescent will be a 12.5m truck.

A sufficient manoeuvring area will be provided on-site to ensure construction vehicles can enter and exit in a forward direction.

It is noted that during the initial demolition stage, the trucks may be required to reverse into the site for a short period under the management of a traffic controller, to ensure the safety for pedestrian and construction personnel. If the above arrangement is required, appropriate permit and approval will be sought from CoS.

In addition, prior to the trees removal on Lincoln Crescent, a traffic controller will be in place at the northern end of Lincoln Crescent to manage pedestrian movements during truck reversing to depart from the site.

Swept path analysis was completed for the largest vehicle expected to access the site, which is provided in Appendix C of this report.

4.5 On-Street Works Zones

Construction vehicle activities will involve the removal of waste material from the site and the delivery of plant, equipment, scaffolding and other construction consumables. This works zone would accommodate trucks for the delivery of construction materials/equipment, as well as any construction related works that cannot be undertaken on-site. The on-site 51m works zone would be located on the western side of Lincoln Crescent, along the site frontage. The works zone should not be used for private kerbside parking by builders, tradesmen and visitors associated with the site.

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8 time-restricted (2P 8am-6pm Monday ±Friday, 4P 6pm-10pm Monday ±Friday, 8am-10pm Saturday ± Sunday) and ticketed on-street parking spaces would be occupied by the works zone.

The works zone is proposed to be in operation during the following times:

- ❖ Monday to Friday: 7am - 6pm
- ❖ Saturday: 8am - 3.30pm.

Outside works zone periods, the time-restricted parking would be maintained. A works zone application would be submitted to CoS for approval prior to requiring the works zone.

Lincoln Crescent has a minimum of 5.4-metre wide carriageway, which would permit a 2.9-metre wide continuous traffic lane to operate in addition to a 2.5-metre wide works zone on the western side while maintaining a passing opportunity for a 12.5m

A separate application will be made to the CoS Traffic Works Coordinator to organise appropriate approvals for the proposed works zone, as well as the parking and traffic changes.

4.6 Cranage and Materials Handling

A material hoist and 2 tower cranes will be erected within the site, and specific areas will be available for loading/unloading, materials handling and storage, and worker sheds, etc.

The demolition and earthworks will be completed out of Gate 1 at Lincoln Crescent. The tower cranes will be utilised for materials handling between Construction Zone 1 and a major portion of the site and Construction Zone 2.

The waste management zone will be located in Construction Zone 2 along Art Gallery Road. Material will be delivered gradually and loaded to the work fronts within a small storage area near Gate 3 via Art Gallery Road/Mrs Macquarie Road site accesses.

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A crawler (mobile) crane and telehandler will be used to transport materials between Construction Zone 2 and works areas not accessible by the tower crane and the land bridge.