

John Holland Group

Prince of Wales Hospital Acute Services Building Stage 2

Construction Traffic and Pedestrian Management Sub-Plan

Reference: RCR-ARP-TRA-00-RPT-70N-NLXX001

For Construction (Revision 01) | 8 May 2024



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Arup Australia Pty Ltd | ABN 76 625 912 665

Arup Australia Pty Ltd

Level 5 151 Clarence Street Sydney NSW, 2000 Australia arup.com

ARUP

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			Prepared by	Checked by	Approved by
		Name	Henry Zheng	James Edwards	James Edwards
		Signature			
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1. Introduction

1.1 Overview

The Randwick Campus Redevelopment (RCR) comprises the construction of a number of new hospital facilities within the Randwick Health Campus (RHC). The subject site at Level 01 of the Operating Theatres at the Acute Services Building (ASB) lies within one of these buildings within the RCR.

The new Operating Theatre building section is subject to the State Significant Development (SSD)-9113 planning approval. The site is adjacent to the Sydney Children's Hospital Stage 1 and Minderoo Children's Comprehensive Cancer Centre (SCH1/MCCCC) to the north and the Health Translation Hub (HTH) by the University of New South Wales (UNSW) to the west.

John Holland (JH) engaged Arup to prepare this Construction Traffic and Pedestrian Management Sub-Plan (CTPMP) for the ASB Stage 2.

The objective of this plan is to ensure that the construction activities associated with the ASB Stage 2 project are safely delivered using a **robust set of methodologies and zero unplanned disruption to hospital services**.

The JH construction management processes will provide:

- Seamless performance and accountability from a single responsible entity.
- Reduced risk of delivery by ensuring compliance, providing certainty to partners, and demonstrating operational capability.

The CTPMP defines the impacts of the proposed construction activities on areas within the RCR site and Randwick Health Campus and the surrounding road network. This plan will outline the proposed mitigation strategies to be implemented during the relevant construction activities and outlines contingency measures that will be enacted to eradicate any potential risk to stakeholders. The following sections set out how it is intended to manage the construction activities associated with the project.

The proactive and collaborative approach is underpinned by the following overriding and non-negotiable objectives:

- Maintain business continuity of the hospital and adjoining facilities and properties
- To deliver a world class facility on time to the highest safety and quality standards
- Safe and timely delivery of construction works enabling construction of the ASB Stage 2
- Communicate in a timely fashion with all relevant stakeholders what, when and how we are planning to undertake interface works
- Maintain an effective local road network and minimising negative impacts to on-street parking conditions
- Present a positive public perception of the project during the construction works
- Use experienced and competent subcontractors with appropriate resources to deliver their works in the manner we prescribe
- Hands on control of subcontractors from experienced JH site supervision

John Holland intends that this CTPMP meet a number of key outcomes in addition to consent requirements for the plan:



Figure 1 Key outcomes

1.2 Consent Conditions

The Department of Planning has issued the approved Development Consent conditions for the SSD-9113. The relevant construction conditions which have been addressed in this CTPMP include:

Table 1 Consent condition reference	table
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Code	Development Consen	nt Condition	Report sections
B33	Construction Environment Management Plan	The Applicant must prepare a Construction Environmental Management Plan (CEMP) and it must include, but not be limited to, the following:	
	b)	Construction Traffic and Pedestrian Management Sub- Plan (see condition B35);	This document
B35	Construction Traffic and Pedestrian Management Sub- Plan (CTPMSP)	The Construction Traffic and Pedestrian Management Sub- Plan (CTPMSP) must be prepared in consultation with the Sydney Coordination Office and Sydney Light Rail team within TfNSW and RMS. The CTPMSP must address, but not be limited to, the following:	This document
	a)	be prepared by a suitably qualified and experienced person(s);	
	b) specify:	i) location of the proposed work zone/s	2.4
		ii) location of any crane	3.2.2
		iii) details of any lane or road closures	This project does not require or propose any road closures
		iv) construction hours	2.3

Code	Development C	Consent Condition	Report sections
		v) construction program	3.1
	c)	detail size and type of construction vehicles including a swept path analysis demonstrating no encroachment into oncoming traffic lanes;	Appendix A.5
	d)	haulage and heavy vehicle routes including marshalling area/s and operations to ensure no heavy vehicle queuing prior to site entry;	1.1, 5.4, 5.5
	e)	estimated number of construction vehicle movements including measures to significantly minimise the number of movements during the defined peak traffic periods;	5.1
	f)	construction vehicle access arrangements noting that construction vehicles shall not use High Street without prior approval of the Sydney Coordination Office within TfNSW and RMS;	3.2.1, 5.2, 5.7
	g)	measures to avoid construction worker vehicle movements within the vicinity of the precinct, including any off-site construction worker parking location/s away from the precinct and operation; CONSOLIDATED CONSENT	4.1, 4.3, 5.3
	h)	location and operation of a pick-up/drop-off zone of adequate length on Hospital Road for the Sydney Children's Hospital. Pedestrian access to the zone should be maintained at all times;	This project does not interfere with High Street and will not impact operation of the High Street drop- off zone
	i)	identify cumulative construction impacts of projects including the Sydney Light Rail Project, University of New South Wales, Inglis Stables and surrounding new residential developments;	3.5
	j)	identify and reference existing Construction Pedestrian and Traffic Management Plans (CPTMPs) for developments within or around the site to ensure that coordination of work activities are managed to minimise the impacts on the road network;	3.5
	k)	consideration of potential impacts on general traffic, cyclists, pedestrians, bus services and light rail construction and operation within the vicinity of the site;	3.4, 4.1, 4.2, 4.3, 5.7, 5.8
	1)	detail the duration of impacts and identify mitigation measures that are to be implemented to mitigate impacts on general traffic, Sydney Light Rail construction and operation, bus operations, pedestrians and cyclists, and ensure road safety and network efficiency during construction;	3.1, 5.1, 5.7, 5.8
	m)	include a Driver Code of Conduct to:	Appendix A.1

Code	Development Consen	t Condition	Report sections
		i) minimise the impacts of earthworks and construction on the local and regional road network	
		ii) minimise conflicts with other road users	
		iii) minimise road traffic noise	
		iv) ensure truck drivers use specified routes	
	n)	include a program to monitor the effectiveness of these measures;	Appendix A.1
	0)	consultation strategy for liaison with surrounding stakeholders; and	3.5
	p)	if necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes.	5
B36	Construction Access Arrangements	A copy of the final CTPMSP is to be submitted to the Coordinator General, Transport Coordination for endorsement, prior to the commencement of any work.	
B42	Construction Worker Transportation Strategy	The Applicant shall prepare a Construction Worker Transportation Strategy (CWTS) in consultation with the Sydney Coordination Office within TfNSW and Roads and Maritime Services. The Applicant shall submit a copy of the final plan to the Coordinator General, Transport Coordination for endorsement, prior to the commencement of any work on site. The Plan needs to specify, but not limited to, the following:	6, Appendix A.6, CWTS previously prepared for John Holland's activities at SCH1/MCCCC. The same measures and conditions apply to this project.
	a)	Initiatives that would help discourage construction workers driving to the precinct and parking;	
	b)	Provision of secure storage areas for construction worker tools and equipment on site;	
	c)	Measures to encourage the use of the ample public and active transport available within the vicinity of the site; and	
	d)	Details of the operation of off-site construction worker parking location/s, including how workers would be shuttled to the development site.	4.3
B43	Construction Parking	Prior to the commencement of construction, the Applicant must provide sufficient parking facilities on-site, including for heavy vehicles but excluding construction worker vehicles, to ensure that construction traffic associated with the development does not utilise public and residential streets or public parking facilities.	4.3

Code	Development Consen	t Condition	Report sections
B58	Construction and Demolition Waste Management	The Applicant must notify the RMS Traffic Management Centre of the truck route(s) to be followed by trucks transporting waste material from the site, prior to the commencement of the removal of any waste material from the site.	5.4.2
С9	Construction Traffic	All construction vehicles (excluding worker vehicles) are to be contained wholly within the site, except if located in an approved on-street work zone, and vehicles must enter the site before stopping.	5.3
C10	Construction Vehicle Access	Construction vehicles shall not use High Street without prior approval of the Sydney Coordination Office within TfNSW and Roads and Maritime Services.	3.2.1, 5.7
C14	No Obstruction of Public Way	The public way (outside of any approved construction works zone) must not be obstructed by any materials, vehicles, refuse, skips or the like, under any circumstances. Non- compliance with this requirement will result in the issue of a notice by the relevant Authority to stop all works on site.	1.1, 5.7

2. Business Continuity

2.1 Continuity of Health Services across the Randwick Health Campus

The proposed methodology was developed to allow working within an operational hospital environment and maintaining pedestrian traffic and vehicular traffic to entries.

The JH project team understands the challenging nature of the RCR and the constraint of managing major construction works adjacent to and within an operational hospital environment and the non-negotiable requirement of no disruptions to hospital 'business continuity'.

Works areas

The first strategic approach from the site team in addressing live environment works is elimination. This means isolating work areas from operational hospital areas prior to any works being commenced and eliminating a works/hospital operations interface.

The construction activities will be enclosed by A-Class hoarding and will be secured to ensure no unauthorised access. The A-Class hoarding will be maintained for the construction of the site. Hoardings are not expected to impact vehicle or worker access to Site.

When elimination is not feasible, the second approach is to fully isolate the work area through secure hoardings prior to commencing any works and to provide controlled work access through the operational environment. This will be applicable to services connections to existing infrastructure that are required.

Along with significant works interfaces noted above there will also be planned investigative works, access to plant rooms, minor temporary works and installation of protective measures which will require process and controls to ensure full visibility of all subcontractors for these types of activities. JH will impose a strict regime of consultation on all works outside the site perimeters, regardless of the nature of the intended works.

A Hospital Campus Disruption Works Notice process will be followed. This includes all workers to complete the required hospital worker induction. The Disruptive Works Notice process has been detailed in the Community and Stakeholder Management Plan.

JH have identified a process that will ensure that the design and construction methodology mitigates the construction risks inherent in conducting site works within or adjacent to a live Health Campus. The planning for health service continuity and risk management process will underpin all stages of the ASB Stage 2 out project and will be used as the guiding principle for how construction will be undertaken around the campus.

Identification of critical health service continuity elements was undertaken during the planning phase and has informed initial construction methodology planning. Examples include but not limited to the following:

Program and staging:

• Analysis of disruptive works staging in the most efficient manner to minimise disruption.

Site establishment:

- Efficient use of existing redundant facilities and space available for site establishment to minimise space taken by the construction site,
- Planning for construction access in controlled zones.

Construction interfaces:

- Strictly controlling where construction will interface with existing hospital operations, nearby residential dwellings or public,
- Ensuring sight lines from the construction site are managed so that patient and residential privacy in adjacent buildings are maintained,

- Developing a Disruptive Works Notice system to identify, document and communicate disruptions to stakeholders in a timely, interactive, and transparent manner,
- Separation of the construction workers from staff, public and patients by providing discrete site accommodation and amenities within the construction boundaries,
- Using low impact construction methods to ensure noise and vibration doesn't impact the daily operations of the Hospital and nearby residential properties.

During the construction phase, JH will implement ongoing risk assessment, mitigation and controls identified in the planning phases. Continual monitoring of changing conditions will be taken into account when assessing and implementing our design and construction methodology. Strategies to support Randwick business continuity include but are not limited to:

- Regular construction risk assessment using the Interface Strategy principles to identify areas of and manage potential interface risks that may affect the Randwick Hospitals Campus business continuity,
- Utilising the Disruptive Works Notification process to identify, manage, communicate and collaborate on works that affect the existing Hospital facility in a clear and transparent way,
- Undertake a holistic integrated system testing and commissioning process,
- Undertaking an efficient, transparent Completion and Validation processes in collaboration with stakeholders and principal representatives to ensure that the completed product is seamlessly transitioned into a live hospital environment.

2.2 General Principles

As a general principle, construction of the proposed works will be staged to minimise impacts to traffic and other modes of transport. The overall principles for traffic management during construction of the proposed works will include:

- Maintain access to properties located in the vicinity of the site at all times
- Maintain access to all health services within the RHC at all times to facilitate operational continuity throughout the construction process
- Maintain Ambulance access, entry and parking throughout the construction process
- Maintain access and egress for the existing SCH drop off area on High Street
- Manage and control construction traffic movements on the adjacent road networks and vehicle movements to and from the construction site
- Maintaining existing RHC carpark operations
- Always ensure adherence of the Construction Worker's Driver's Code of Conduct through the construction period
- Limit the interaction of construction traffic with hospital traffic, especially heavy vehicle and light vehicle conflicts
- Trucks to enter and exit the site in a forward direction
- Maintain traffic capacity at intersections and mid-block in the vicinity of the site
- Restrict construction vehicle activity to designated truck routes in the area
- Construction access driveways and on-street work zones to be managed and controlled by site personnel
- Provide an appropriate environment for pedestrians at all times
- Maintain convenient access and circulation for public transport

- Pedestrian movements adjacent to construction activity, across construction access driveways and to/from public transport facilities, will be managed and controlled by an authorised and qualified traffic controller
- Pedestrian warning signs and construction safety signs/devices to be utilised in the vicinity of the site and to be provided in accordance with SafeWork and any applicable legislative requirements
- Throughout all activities, disabled pedestrian access will be adjusted/maintained as required for entry and exit to existing hospital buildings and surrounding footpaths
- Construction activity is to be carried out in accordance with approved hours of work

Traffic management and control will be established at all site entrances across the project. Traffic control will ensure that materials and deliveries will not block off roadways and will streamline the truck movements in and out of the project site.

2.3 Hours of work

SSDA approved working hours are shown below, however the project will prioritise a 5-day working week. Specific activities may require work outside standard hours, including on Saturdays and evenings which will be in accordance with SSDA conditions and Health Infrastructure out of hours work protocol.

	SSDA approved working hours
Monday – Friday	7:00am to 6:00pm
Saturday	8:00am to 5:00pm
Sunday/ Public Holiday	No work

2.4 Proposed site plan

The site for Stage 2 of ASB is located within the existing ASB building, on the southern half of the RHC expansion, as outlined in blue in the image below.



Figure 2 Basic site plan showing the ASB, SCH1/MCCCC building and surrounding sites, including the future HTH building (John Holland)

3. Construction Programme and Activities

3.1 Key milestones

The key milestones for the project are outlined below, with a number of overlapping schedules.

Table 2 Key Milestones

Program Activities	Key dates
Establishment/ Preparation Works	May-24 to Jun-24
Preparation Works/ Fitout	Jun-24 to July-24
Fitout	July-24 to Nov-24
Commissioning & Completion	Nov-24 to Jan-25

3.2 Site overview

3.2.1 Site establishment

During the site establishment phase of the project the following activities will be undertaken. Current A-Class plywood hoarding will be retained; this hoarding ensures there is no unauthorised access to the site.

The JH site office will be located at the north-eastern corner of the ASB site, with access only from Botany Street as shown in Figure 2.

The site will have one gate installed on Botany Street, located between the HTH and ASB sites, allowing delivery into the SCH1/MCCCC site and making use of the loading platform allocated for ASB Stage 2 works. This gate will be steel and chain link mesh with large identification and statutory Workplace Health and Safety signage installed.

Delivery lay down and material handling will be performed by Tower Crane 2 (TC2) which will load materials onto ASB Loading Platform. The area designated for truck queuing, lay down, and material handling is shown in Figure 3.



Figure 3 Site plan showing site access points for delivery and material handling area (John Holland)

Botany Street gate

This gate will be the primary construction access gate during the construction works, it will facilitate all major deliveries on and off site. All vehicles will enter and exit the site in the forward direction. Detailed swept path analysis has been provided in Appendix A.5.

Ongoing construction at SCH1 and works on the Botany Street underground parking access ramp will determine when the Botany Street access point becomes unavailable for ASB Stage 2 use.

Hospital Road access

When this initial access point at Botany Street becomes unavailable, vehicles will use ASB Loading Dock, accessed from Hospital Road. Delivery materials will be transported to Level 1 Operating Theatre via lift. Utes and vans can enter Hospital Road entrance via Magill Street between 7am and 10pm. Heavy vehicles must access and egress the Hospital Road entrance to the Loading Dock from Barker Road.

High Street access

High Street will not be used for site access or any construction work during development of the site.

3.2.2 Cranes and Materials Handling

The proposed tower crane locations provide overall coverage to this site, capacity for heaviest lifts, and minimal disruption to internal fitout. Tower Crane No 2 is positioned on the southern podium shown in Figure 4. This crane features a 65m boom.



Figure 4 Tower Crane Locations (John Holland)



Figure 5 Tower Crane 1 is shown in the centre of the image and Tower Crane 2 is shown at the bottom left (John Holland)

3.3 Construction workforce

At its peak, the project will engage a workforce of approximately 40 individuals with an average workforce of approximately 26. It is anticipated that the peak workforce will be reached October 2024. Figure 6 shows estimated labour resources throughout the program and general construction activities on site. All workers

will undergo mandatory inductions to understand their responsibilities when working on the project site and in close proximity to a live hospital environment. This is inclusive of parking restrictions, transportation options and available on-site storage facilities.

Due to the constrained site and surrounding construction, no on-site parking will be provided for workers. JH discourage the use of private vehicles to access the site (see section 5 for more information about alternative travel options). The project site is well serviced by public transport providing site workers with alternative travel options. Workers will be encouraged use public transport or active transport and employ other methods to reduce the number of private vehicles used to access the site. JH will actively promote public transport services and will provide information to all site workers. On site secure tool storage will be provided to facilitate alternative transport options. See section 6 for detail of the Construction Worker Transport Strategy.



Figure 6 Labour histogram and indicative construction programme (Source: John Holland)

3.4 Fencing and Hoarding for Site Segregation and Security

JH understand the critical importance of maintaining a secure and safe perimeter hoarding line to protect the public and staff from construction activities and prevent unauthorised access into the construction site 24 hours a day. Segregation of the site accommodation compound from the main site is equally important for worker safety.

JH understands that one of the keys to the successful delivery of ASB Stage 2 will be the flow of materials and equipment into and out of the construction site. It is imperative that planning considers and successfully manages:

- The maintenance of pedestrian, bicycle and traffic flows to the surrounding roads and paths
- The unimpeded continued use of existing vehicular and pedestrian entry and exit points to the Campus
- 24-hour access to the ambulance drop off area for Prince of Wales Hospital and Sydney Children's Hospital

To achieve these goals, this CTPMP has been developed to meet the conditions stated in Section 2.2 General Principles.

3.5 Coordination with Other Construction Sites

JH has and will continue to engage and meet on a regular basis with these key stakeholders of surrounding developments, including other development within the RCR to understand upcoming work activities to minimise impact on the coordination of truck movements on the road network. CTPMPs prepared for the ASB (v6, LendLease, September 2021) and for the SCH1/MCCCC project (v4, Arup, July 2023 for John Holland) have been consulted through the development of this CTPMP and will be instructive in the ongoing coordination between projects. Mitigation steps include:

- Regular meetings with Construction Management personnel from surrounding sites during peak construction activities to coordinate day to day activities.
- Utilising truck haulage movements as per the JH construction traffic management plan.

There is limited impact on other construction developments within the local network such as the HTH developments. JH will have regular meetings with HTH Contractor to understand and minimise any impacts to the network.

3.6 Online Materials Booking System

In an effort to reduce and minimise impact of construction traffic within an operational RHC and ASB environment, JH will utilise Veyor online materials booking system throughout the project as an internal management tool. This system allows the external supply chain to book in a delivery to the project through an online portal which can be live streamed to the Site Manager's computer or field device. This system facilitates an efficient just in time delivery of construction materials, alleviating further traffic congestion onsite.

This daily information can then be sent electronically to the team, TfNSW, Randwick City Council as required to ensure that effective just in time deliveries occur on-site and traffic congestion around construction loading zones are avoided.

4. Existing Transport Conditions

Much of the existing traffic conditions refer to surveys and traffic counts taken before 2020 as responses to the COVID-19 pandemic had significant impacts to traffic volumes and travel behaviours more broadly. The City South East Light Rail (CSELR) project has been completed and works on the RCR has progressed during this time. Surrounding land use, living and working populations, and local transport options have changed since these traffic surveys were taken. Nevertheless, the data presented here still represents the best available information and the advice herein is informed by the experience and professional judgement of Traffic Planners and Engineers.

4.1 Base Transport Context

Review of baseline transport conditions investigated travel behaviours relative to mode for RHC staff, visitors and patients. Data indicated that over 40% of staff live within 5km of the RHC and 12% live within the suburb of Randwick itself. The majority of those accessing the RHC use private vehicles as a primary mode of transport, however staff public transport use is high relative to other hospitals.

The RHC is bound to the east by Avoca Street, a state owned arterial road. Barker Street, which sits along the south of the RHC and primarily functions as a collector road linking the main hospital access roads (Hospital Road and Easy Street) to the arterial road network. High Street (northern boundary of the site) plays a similar role. However, with the opening of the CSELR, its function has transitioned to a more transit-focused corridor.

The majority of intersections are performing within practical capacity. However, the key intersections along Avoca Street, mainly with Barker Street and Alison Road, are currently operating at capacity during peak periods.

Randwick is a district hub for buses in Sydney's eastern suburbs. A number of bus routes frequent the area. The majority of these buses provide all-day services to the CBD, while others provide access to surrounding areas including Green Square, Mascot, Bondi Junction and Maroubra Junction.

4.2 Traffic Volumes

Traffic surveys were conducted to provide an understanding of the existing performance at the intersections surrounding and in the vicinity of the site. Intersections considered as part of the analysis include the following:

- Alison Road / Belmore Road / Cook Street (signalised)
- Alison Road / Avoca Street (signalised)
- Belmore Road / Arthur Street (signalised)
- Avoca Street / High Street / Belmore Road (signalised)
- High Street / Botany Street (signalised)
- High Street / Hospital Road (signalised)
- Avoca Street / Nurses Drive
- Avoca Street / Barker Street (signalised)
- Barker Street / Easy Street
- Barker Street / Hospital Road
- Barker Street / Botany Street (signalised)
- Botany Street / University of NSW (UNSW) Gate 11 access

The surveys were collected on a typical weekday – Thursday 20 July and Thursday 26 October in 2017 – outside of school and university holiday periods. The network peak across all intersections was identified as:

- AM peak hour: 7:30 8:30am
- PM peak hour: 4:45 5:45pm

A summary of the peak hour traffic volumes across the key mid-block road links and intersections are shown in Figure 7 to Figure 10.

A high proportion of traffic is identified through the intersections along Avoca Street. As discussed in Section 2.2, Avoca Street is a State Road providing a major north-south traffic movement through the area. Total intersection volumes are identified as exceeding 2,000 vehicular movements per hour at the intersections with Alison Road, High Street and Barker Street in both peak periods.

Barker Street is a key collector road through the study area, carrying a high volume of vehicular traffic to local roads from the state roads such as Alison Road and Avoca Street. Intersection volumes along Barker Street have also been shown to account for a range between 1,300 and 2,600 vehicles in both peak periods.

Many of the intersections in the region are shown to have been operating at or above design capacity at the time these surveys were taken.



Figure 7 AM peak mid-block traffic volumes



Figure 8 PM peak mid-block traffic volumes



Figure 9 AM peak hour total intersection vehicle volumes (7:30-8.30am)



Figure 10 PM peak hour total intersection vehicle volumes (4:45-5:45pm)

4.3 Car Parking

4.3.1 Existing parking supply

At last count, there were 2,302 on-site parking spaces which serve the RHC, comprised of the following:

- Staff: 1,483 spaces
- Visitors: 819 spaces

Since this count was taken, there have been changes to on-site parking such as the removal of parking on Hospital Road, conversion of some spaces within a multi-storey facility to Bicycle Parking and End of Trip Facilities. The following commentary on parking supply and demand remains relevant.

This provision of on-site parking corresponded to a rate of 1.56 spaces / 100m2 GFA or 2.16 spaces / bed. This amount is low when benchmarked against other health campuses, as shown in Figure 11.



Figure 11 Parking rates at NSW hospital campuses (Source: Arup projects, 2012 - 2017)

An on-street parking review conducted by TTW (2013) on the surrounding road network indicated a total of 207 spaces. Further counts were conducted by Arup (October and November 2017) to update the on-street parking supply in light of construction along High Street and Botany Street relating to the CSELR and redevelopment of UNSW. On-street parking numbers on Magill Street have been updated to reflect the condition at completion of the ASB construction. As a result, there is an estimated total of 214 on-street parking spaces (Table 3).

On Street Parking Spaces				
Street	Location	Parking		
High Street	Between Avoca Street and Botany Street	0*		
Botany Street	Between High Street and Barker Street	45**		
Barker Street	Between Botany Street and Avoca Street	60		
Avoca Street	Between High Street and Barker Street	50		
Magill Street	Between Botany Street and Hospital Road	8***		
Eurimbla Avenue	South of High Street	51		
Hospital Road ^	Between High Street and Magill Road	-		
High Street	Between Avoca Street and Botany Street	0*		
Total		214		

Table 3 On-stree	t parking	spaces	(TTW,	2013;	Arup,	2017).
------------------	-----------	--------	-------	-------	-------	--------

* The CSELR removed all parking from this section of High Street

** The construction works at the ASB resulted in the removal of approximately 8 on-street spaces on the western side of Botany Street

*** Magill Street on-street parking capacity updated using aerial imagery from March 2024

^ Parking along Hospital Road was included within the on-campus parking supply but has since been removed due to the Hospital Road Lowering project work. Parking provision on Hospital Road south of Magill Street is unaffected by construction works.

Heavy vehicles and other inbound delivery vehicles will be parked within lay down areas and loading docks shown in Figure 3. Vehicles visiting site, excluding construction worker vehicles, will not diminish the capacity of parking facilities on-site. John Holland will be managing material demand and vehicle arrival schedules between the two sites and loading areas. While conditions will be changing throughout the project, communication between the two sites through John Holland's management systems will allow effective booking of arrivals and parking space allocations so that the available lay down and loading areas are sufficient.

4.3.2 Existing parking demand

Parking demand surveys previously undertaken (PTC, 2014) for the campus indicate peak occupancies for staff and visitor parking of over 90% during the middle of a typical weekday. It is typically considered that parking occupancy of 90% represents the practical capacity of a car park where drivers have significant difficulty in locating parking spaces. Therefore, the existing car parking areas on-site are considered to be operating at maximum capacity on weekdays.

Previous surveys estimated that existing on-site parking supply within the RHC is insufficient to meet demand, resulting in approximately 550 vehicles accommodated in parking areas off-campus, predominantly in surrounding streets, as summarised in Table 4 below. Staff and visitors are forced to find parking off-campus due to car parks being at or above the 90% utilisation threshold and incoming staff are forced to park off-campus at times because staff they are replacing are still occupying on-campus parking spaces. This would be most likely to occur at the interchange between day and afternoon/evening shifts, the two most populous shift periods.

Given the existing parking shortfall, management of construction worker travel behaviour and discouragement of private vehicle usage becomes even more vital to limit impacts across the local area.

Existing Parking Supply & Demand							
User	J	Parking demand Parking supply					
	On-campus	Off-campus	Total	On-Campus			
Staff	1,395	205	1,600	1,483	-117		
Visitors	710	345	1,055	819*	-236		
Total	2,105	550	2,655	2,302	-353		

 Table 4 Existing parking supply and demand (PTC, 2014).

* The number of visitor parking spaces was updated following a parking inventory audit conducted by Arup (October and November 2017).

The parking demand can also be expressed as a ratio of total gross floor area (GFA) and beds, as follows:

- 1.90 spaces / 100 square metres GFA
- 60 spaces / bed

The campus has a low hospital staff car driver mode share compared to other health campuses, as illustrated in Figure 12.



Figure 12 Staff driver mode share to NSW Hospitals (Source: Arup projects, 2012 - 2017)

5. Construction Traffic Management

5.1 **Construction Vehicles and Volumes**

Vehicles up Heavy Rigid Vehicles (HRV) including truck and trailer combinations will be used for delivery of building materials for construction of the ASB Stage 2 Level 1 Operating Theatre fitout.

Swept paths have been developed for the gates on Botany Street indicating that both Articulated Vehicles (AV) for machinery delivery and Heavy Rigid Vehicles (HRV) including truck and trailer combinations can turn left into and right out of each driveway. 11.0m wide gates are provided to facilitate these movements as shown in Appendix A.5. Swept paths also show the 19m articulated vehicle can turn around within the site with a minimum turning circle of 25m diameter. After Botany Street access point transfers to Hospital Road access point, HRV vehicles can only access Hospital Road and its loading dock via Barker Street.

Communication between site managers will be used to manage daily construction vehicle traffic, using site booking systems and scheduling site activities to minimise coincident deliveries.

Estimated construction vehicle delivery and movement volumes for the ASB Stage 2 site are provided below:

- Establishment and Preparation Works 6 deliveries/week. Estimated to take place during May 2024
- Preparation Works and Fitout 15 deliveries/week. Estimated to take place during June 2024
- Fitout -15 to 35 deliveries/week. Estimated to take place between July and November 2024
- **Commissioning & Completion 5 deliveries/week.** Estimated to take place during December 2024 and January 2025

Heavy vehicle movements and material deliveries are to be scheduled to avoid movements during peak traffic periods, to both minimise impacts to other road users and to provide more efficient access to and from the site.

Visitor access to the ASB will be via the new signalised intersection on Botany Street improving access and safety for vehicles and pedestrians with the Randwick Health & Innovation Precinct. Ambulance access to the ASB is from Magill Street and logistics access is from Hospital Road. Public access to the ASB site, along with all other public traffic, will be given priority at all times over construction vehicles moving in and out of the SCH1/MCCCC site.

The ASB Stage 2 site will be accessed from gates located on Botany Street until SCH1 and Botany Street parking ramp construction restrict this access point for ASB Stage 2 material delivery. Coordination between site management on the various projects in the RCR precinct will be critical to maintaining access at Botany Street for ASB staff, patients and visitors and to manage construction vehicle traffic entering and leaving the sites. Management principles include regular coordination meetings and sharing of booking calendars.

5.2 Site Access Points

Materials Handling Plans indicate one gate located on Botany Street to be used at various phases of construction on the SCH1/MCCCC site. During the early part of ASB Stage 2 fitout, the driveway south of the HTH and southern end of the SCH1/MCCCC are available for truck queuing, lay down, materials handling, and turnaround. Access to the area is through a gate located around the midpoint of the site on Botany Street, as shown in Figure 3. This area will be utilised for site access with all vehicles entering and exiting in the forward directions.

A truck turntable is located at the end of the path, towards the south-eastern end of the SCH site. This truck turntable allows all vehicle movements in and out of the site to be made in the forward direction.

In the final steps of construction for SCH1 and HTH sites, construction of the drop off zone and ramp to B1 parking level, will restrict vehicle access to the SCH1/MCCCC site from the Botany Street entrance. A work zone will be established on Botany Street. The proposed Botany Street work zone is shown in Figure 13. No semi-trailers are to be accepted during this phase to manage road space and due to limitations to turning movements. At this stage, vehicle access for deliveries to the ASB Stage 2 site will shift to the ASB Loading Dock, accessed from Hospital Road. See Figure 3 and Section 3.2.1.



Figure 13 Botany Street work zone (John Holland)

5.3 Construction Parking

Based on experience on neighbouring construction sites, and the space available within the RCR site, it is not anticipated that there will be a need for an external truck marshalling area. Site management tools will be used to book and schedule deliveries to enable site managers to control traffic loads within the site.

5.4 Construction Haulage Routes

The access points on Botany Street will be predominantly utilised as left turn entry for trucks with vehicles approaching from Alison Road onto Botany Street and using the kerbside lane for turning into the driveway. This arrangement was approved for construction works during phases 1 to 5 of the SCH1/MCCCC site construction and was not shown to be disrupting to traffic flows. This arrangement will minimise impacts on through traffic. Trucks will exit turning right onto Botany Street to travel north towards Alison Road.

To keep construction related traffic to a minimum on the surrounding roads, it is necessary to define routes for construction traffic to and from the work site. These access routes are to predominantly utilise arterial roads and minimise the use of local roads including Magill Street, Arthur Street and Clara Street where possible. The key arterial roads surrounding the site are Avoca Street, Anzac Parade and Alison Road.

Access to the site will be via Botany Street and Hospital Road when the Botany Street access becomes restricted due to B1 parking ramp construction. The CTPMP currently allows for one construction access gate along Botany Street. Proposed access routes are shown to and from the site, and these access and egress routes takes into account TfNSW, TMC and SCO considerations which have previously been raised on neighbouring construction projects.

These routes will be communicated to the workforce via startup meetings, toolbox talks and issuing this CTPMP.



5.4.1 Vehicle Routes to site;

Figure 14 Travelling from Southwest M5/M1 to Randwick

Delivery vehicles travelling from the West of Sydney will follow a direction as outlined in Figure 14. When utilising the M5/M1, vehicles take the following route to the site:

- Exit from the M5/M1 onto Dowling Street
- Turn right onto Dacey Avenue
- Veer right onto Alison Road
- Turn right onto Botany Street
- Enter site via Botany Street gate

Construction delivery vehicles will follow a similar route leaving site, turning right out of the Botany Street gate in accordance with the TCP.



Figure 15 Travelling from North M1 to Randwick

Delivery vehicles travelling from the north of Sydney will follow a direction as outlined in Figure 15. Utilising the M1 tunnel, vehicles take the following route to the site:

- Exit from the M1 onto Anzac Parade
- Turn left into Alison Road
- Turn right into Botany Street
- Enter site via Botany Street gate

5.4.2 Vehicle Routes leaving site

The majority of construction delivery vehicles will leave the site heading north (reverse of the delivery route):

- Exit the site and turn right onto Botany Street
- Left onto Alison Road
- Continue North or South Bound as required

Small rigid vehicles (including concrete trucks) will be permitted to leave site in a South bound direction for the duration of works. Refer to Figure 16 below which details the vehicle travel path.

- Travel south on Botany Street
- Turn left onto Barker Street
- Turn left onto Avoca Street
- Turn left onto Alison Road



Figure 16 Route for vehicles leaving site heading South on Botany St

All vehicles transporting waste material from the site will have travel route plans communicated to the RMS Traffic Management Centre. John Holland's management process will determine if any waste material requires transportation off the site prior to project commencement and inform the Traffic Management Centre with the vehicle travel route.

5.5 Truck Diversion Route

In the instance that a driver misses the entrance gate they will follow the approved diversion route to loop around the local area in an anti-clockwise direction and re-enter the site from the north. This travel path is shown in Figure 17 and is described as:

- Travel south on Botany Street
- Turn left onto Barker Street
- Turn left onto Avoca Street

- Turn left onto Alison Road
- Turn left onto Botany Street
- Arrive back to site and turn left into the gate



Figure 17 Truck diversion route

5.6 Impacts to Public Transport

The proposed works will interface with a number of existing public transport routes on Botany Street and High Street. JH will ensure that trucks do not queue along these roads and instead, directly enter and be wholly accommodated within the site. The introduction of the Light Rail has led to removal of Bus Stops on High Street, east of Wansey Road.

The 358 route currently operates on Botany Street, though there are no current stops in operation in this location. JH will have the following mitigation measures in place to ensure no impact on the bus operations network:

- Construction deliveries are not to operate on High Street except for a small period where works over the northern end of Hospital Road necessitate it. Approvals have been granted for this activity and it is being programmed to minimise impacts to public transport, including light rail, and other road users.
- Botany Street buses will always be provided priority access over construction vehicles to minimise impacts to Public Transport services.
- Deliveries to site are to be pre-booked and are not to occur during peak traffic periods.
- Promotion of public transport use by workers which reduces vehicular movements around the precinct.

5.7 Impacts to Active Transport

Cycle traffic on Botany Street is to be given the same level of priority as pedestrians and general traffic when managing construction traffic entering and leaving the site. During construction activities, JH will provide cyclists with priority as per all other road users, and control heavy vehicles with TfNSW certified traffic controllers as required. A separated cycle path has been established on the eastern side of Botany Street alongside the RCR site as part of the site development. JH traffic controllers will ensure this pathway will be kept clear for cycle traffic at all times throughout the project with temporary closures to allow vehicular site access kept to a minimum. During all phases of construction, construction, vehicles entering, exiting and driving around the site will be required to give way to cyclists on the cycleway at all times.

Pedestrians on High Street and Botany Street may be impacted from walking past the site during construction. Traffic controllers will manage all construction vehicle and pedestrian interactions. During all

phases of construction, construction, vehicles entering, exiting and driving around the site will be required to give way to pedestrians at all times, as required under the NSW Road Rules. Where footpaths are required to be closed temporarily on the frontage of the site, safe alternative detours will be put in place.

6. Construction Worker Transport Strategy

A Construction Worker Transportation Strategy (CWTS) has been prepared in response to development consent for State Significant Development Application (SSDA) number SSD10339. Specifically, the CWTS demonstrates compliance with Condition B42. The CWTS as prepared for SCH1 is relevant to the Acute Services Building Stage 2 project and was previously provided to and considered satisfactory by the Transport Coordinator General as part of SCH1 works.

The CWTS document is a separate report to this CTPMP and is shown in Appendix A.6.

Appendix A

A.1 Driver Code of Conduct



Purpose and Objectives

The purpose of the Heavy Vehicle Driver Code of Conduct is to ensure that the impacts of construction traffic on transport networks and adjoining properties is minimised. This Code clearly defines and details acceptable behaviour for all heavy vehicle drivers operating in connection with the Sydney Children's Hospital Stage 1 / Minderoo Children's Comprehensive Cancer Centre (SCH1/MCCCC) suppliers and subcontractors.

Responsibilities of Drivers

- Driver must record a Plant Pre-start inspection prior to arrival at site
- Drivers must follow ALL road rules and regulations required by law. Drivers must:
- Hold a current and appropriate licence for the class of vehicle they are operating
- Comply with speed limits on all roads
- Comply with all road works speed limits
- Obey construction traffic signs and devices
- Obey sign posted (road) load limits
- Ensure the vehicle does not exceed mass or dimension limits
- Ensure loads are distributed to remain within the capacity of the vehicle and axles
- Restrain loads appropriately in accordance with the NTC Load Restraint Guide.
- Make sure that your vehicle is roadworthy and well maintained
- Drivers must drive safely which includes, but is not limited to:
- Making sure you are medically fit to drive, have no alcohol in your system and you are not under the influence of drugs
- Driving in a calm, courteous manner that is appropriate with existing road, traffic and weather conditions
- Not operating any vehicles or machinery while suffering from fatigue
- Implementing fatigue management and rest laws and procedures
- Responding to changes in circumstances (such as delays), reporting these to your base (if possible) to implement short-term fatigue management measures
- Making sure that your rest breaks are taken at the prescribed intervals and are effective
- If you are concerned about the placement of a load or mass of loaded materials raise the issue with the SCH1/MCCCC Supervisor and do not leave site.
- Drivers must always behave in a professional manner.
- Drivers must adhere to routes nominated by SCH1/MCCCC for each specific worksite and they must not use any roads if their weight is over the posted load limit.
- In the instance a driver misses a site entry point, maintain contact via radio with traffic control and circulate the site back to entry from a Northern approach.
- Drivers should only park or wait in approved areas as directed by SCH1/MCCCC. DO NOT queue at worksite gates.



- Drivers are to arrive and depart from worksites as required by SCH1/MCCCC. Drivers
 will be turned away if they arrive outside of the approved hours and the truck operating
 company will be notified.
- Turn vehicles off when not in use or required to idle for long periods of time. (Note: This requirement does not apply to concrete agitators)
- Drivers must not leave their vehicle unless it is correctly parked, has been turned off, hand brake applied, and the keys removed. (Note: This requirement does not apply to concrete agitators)
- Drivers leaving their vehicle must wear appropriate PPE (safety boots, long pants, Hi-Vis long sleeve shirt, hard hat and safety glasses).
- Vehicles must not transfer dirt or debris onto public roads. You must use rumble grids/ wheel wash units where they are installed. If any materials are deposited on public roads you must immediately contact your Supervisor and the SCH1/MCCCC Supervisor to arrange for the road to be cleaned.
- Before leaving any site, it is mandatory to cover truck loads and tailgates and draw bars must be free of loose material.
- If approached by people with enquiries about the Project Works, drivers should remain polite and provide them with the Site Managers number. Do not provide any other information about the project.
- Drivers must comply with the SCH1/MCCCC 'GMR's, which have been communicated via Inductions.
- As a courtesy to people who may be impacted by driver behaviour, drivers will:
- Use horns only in an emergency or for safety reasons
- Not tailgate (drive too close to other vehicles)
- Not use compression braking if possible where noise is likely to adversely impact on residents
- Ensure that there is no littering
- Not block residential driveways or any other access points.

Declaration

I have read and understand the above conditions and will ensure that I abide by this Code of Conduct.

Signed:

Date: / /

Print Name:

Company:

A.2 Hoarding Plan









A.3 Tower Crane Locations

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A.4 Materials Handling Plan

A.5 Swept Paths

Swept Path analysis assessed all access and egress routes, and all these paths are shown in the following pages. However, for operational reasons including minimising impacts to local streets and traffic, heavy vehicles will be instructed to enter and exit the site utilising turning movements to and from the north as detailed in section 5.4 Construction Haulage Routes.

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Legend

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Issue

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Job No
257913-00

Drawing No **SKT004**

Draft

Discipline Transport Drawing Status

Scale at A3 1:330

Drawing Title

Turning Paths HRV access (exit)

Job Title SCH1/CCCC and UNSW HTH Construction Interface

Client HI

Arup, Level 5, 151 Clarence St Sydney, NSW, 2000 Tel +61(02)9320 9320 Fax +61(02)9320 9321 www.arup.com.au

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HRV - Heavy Rigid Vehicle Overall Length Overall Body Height Min Body Ground Clearance Track Width Lock to Lock Time Curb to Curb Turning Radius

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12.500m 2.500m 4.300m 0.417m 2.500m 6.00 sec 12.500m

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Issue

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Job No	
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Drawing No 00 SKT005

Draft

Drawing Status

Discipline Transport

Scale at A3 1:330

Turning Paths Mobile crane access (entry)

Drawing Title

Job Title SCH1/CCCC and UNSW HTH Construction Interface

Client HI

Arup, Level 5, 151 Clarence St Sydney, NSW, 2000 Tel +61(02)9320 9320 Fax +61(02)9320 9321 www.arup.com.au

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Liebherr LTM 1070-4.1 Mobile Crane

Overall Length Overall Width Overall Body Height Min Body Ground Clearance Track Width

Lock-to-lock time Curb to Curb Turning Radius

Design Vehicle(s)

Legend

Body Envelope 300mm Envelope 600mm Envelope

Wheel Envelope

ARUP

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Issue

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Drawing No

Draft

Drawing Title

Discipline Transport Drawing Status

Scale at A3 1:330

Turning Paths Mobile crane access (exit)

Job Title SCH1/CCCC and UNSW HTH Construction Interface

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Arup, Level 5, 151 Clarence St Sydney, NSW, 2000 Tel +61(02)9320 9320 Fax +61(02)9320 9321 www.arup.com.au

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Liebherr LTM 1070-4.1 Mobile Crane Overall Length Overall Body Height Min Body Ground Clearance Track Width Lock-to-lock time Curb to Curb Turning Radius

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Body Envelope 300mm Envelope 600mm Envelope Wheel Envelope

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A.6 Construction Worker Transport Strategy

John Holland Group

Sydney Children's Hospital Stage 1 and Minderoo Children's Comprehensive Cancer Centre

Construction Worker Transport Strategy

Reference: REP002

E | 17 August 2022

© View 3 Proposed SCH1-AR-DG-SSD062 (BLP Apr 2021)

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 257913

Arup Australia Pty Ltd | ABN 76 625 912 665

Arup Australia Pty Ltd

Level 5 151 Clarence Street Sydney NSW 2000 Australia arup.com

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Document Verification

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		Name	James Edwards	James Turner	James Edwards
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1. Introduction

The Randwick Campus Redevelopment (RCR) comprises the construction of a number of new hospital facilities within the Randwick Health Campus (RHC). The subject site at Sydney Children's Hospital Stage 1 and Minderoo Children's Comprehensive Cancer Centre (SCH1/MCCCC) forms one of these buildings within the RCR, being a highly complex project with critical early milestone components.

The new SCH1/MCCCC building is subject to the State Significant Development (SSD)-10831778 planning approval. It is adjacent to the newly built Acute Services Building (ASB) to the south and to the proposed Health Translation Hub (HTH) by the University of New South Wales (UNSW).

John Holland (JH) engaged Arup to prepare this Construction Worker Transport Strategy for the SCH1/MCCCC. It has been prepared to operate in conjunction with the Construction Traffic and Pedestrian Management Plan prepared for the same development.

Due to the constricted nature of the Sydney Children's Hospital Stage 1 and Minderoo Children's Comprehensive Cancer Centre (SCH1/MCCCC) construction site there is no opportunity to provide carparking within the site boundary. John Holland (JH) acknowledges the restricted parking around the site so will undertake various measures in order to ensure the construction of SCH1/MCCCC does not adversely affect Randwick residential and hospital streets.

1.1 Proposed site plan

The site for the future SCH1/MCCCC is located immediately west of the existing Sydney Children's Hospital, with the Prince of Wales Hospital Acute Services Building (ASB) to the south and future UNSW Health Translation Hub (HTH) building to the west, as shown in Figure 1. The ASB is in final stages of construction. Construction of the HTH will commence while construction on the SCH1/MCCCC is ongoing.

Figure 1 Site plan showing the SCH1/MCCCC building and surrounding sites, including the future HTH building.

1.2 Development consent requirements

The Construction Worker Transportation Strategy (CWTS) has been prepared in response to approved development consent for State Significant Development Application (SSDA) number SSD-10831778. Specifically, the CWTS demonstrates compliance with Condition B27:

B27 Prior to the commencement of construction, the Applicant must submit a Construction Worker Transportation Strategy to the satisfaction of the Certifier. The Strategy must detail the provision of sufficient parking facilities and secure storage facilities for tools on site or other travel arrangements for construction workers in order to minimise private vehicle travel and demand for parking in nearby public and residential streets, or public parking facilities. A copy of the strategy must be submitted to the Planning Secretary for information.

The objective of the CWTS is to set out the initiatives and actions of John Holland to effectively manage the workforce influx and associated transportation and parking demands. Through the implementation of this strategy, JH intends to ensure that minimal impact is had on parking availability for the local Randwick community inclusive of UNSW, the Randwick Health Campus (RHC), local businesses and their respective stakeholders.

The CWTS will:

- Outline management of construction worker transportation to and from the worksite
- Allow continued availability of in-demand parking spaces and facilities in the Randwick precinct
- Consider continued operation of and public access to public transport services in the Randwick precinct
- Enhance positive public perception of the project's workforce management

The success of this strategy will be monitored and revised as the project progresses.

1.3 Construction workforce

The construction workforce on the SCH1/MCCCC site will average around 150, with a short peak, workforce of approximately 320 individuals for a three month period in late-2023 to early 2024. Figure 2 shows estimated labour resources throughout the program and general construction activities on site. All workers will undergo mandatory inductions to understand their responsibilities when working on the project site and in close proximity to a live hospital environment. This is inclusive of parking restrictions, transportation options and available on-site storage facilities.

Figure 2 Labour histogram and indicative construction programme (Source: John Holland)

Due to the constrained site and surrounding construction, there will no on-site construction worker parking provided. JH discourage the use of private vehicles to access the site (see section 2 for more information about alternative travel options). The project site is well serviced by public transport providing site workers with alternative travel options. Workers will be encouraged use public transport or active transport and employ other methods to reduce the number of private vehicles used to access the site. JH will actively promote public transport services and will provide information to all site workers, including real-time services data on site. On site secure tool storage will be provided to facilitate alternative transport options.

2. Public Transport

The site is very well served by multiple forms of public transport. Bus services stopping within a short walking distance from the site service the eastern suburbs and Sydney City. This image also shows the CBD and South East Light Rail (CSELR) routes on Anzac Parade and High Street, via Wansey Road, both within walking distance of the construction site. Both Bus and Light Rail services provide connection to the CBD and Central Station, providing connectivity throughout the wider rail and bus networks across metropolitan Sydney.

In order to maximise public transport usage by the on-site workforce, JH will:

- Encourage the use of public transport to all subcontractors, employees and workforce,
- Provide information on available public transport routes during inductions such as timetables and locations of bus and tram stops in close proximity to the site,
- Provide real time display information on incoming public transport for key routes, such as Light Rail UNSW High St to Central.

Figure 3 Example visual display with live updates on incoming public transport

2.1 Bus

The southern end of Belmore Road, located to the north-east of the Randwick Hospitals Campus (RHC) site, is a district hub for buses in Sydney's eastern suburbs. Several bus routes, shown in Figure 4 and listed below, service the area.

- All-day services connecting the south-eastern suburbs with the Sydney CBD via Moore Park routes 373, 374, 375 and 377. A range of express service variants operate during peak hours.
- North-south services that connect centres in the Eastern Suburbs, including Bondi Junction and Maroubra Beach routes 356, 275 and 390
- East-west services that connect Randwick with Green Square and various locations in the inner western and southern suburbs routes 348 and 370
- A number of bus services access Anzac Parade to the west of the site

The majority of bus routes travel along Belmore Road, with some services also using High Street, Barker Road and Avoca Street. Recent changes associated with the operation of the CSELR have resulted in buses using Arthur Street instead of High Street.

Figure 4 Existing bus and light rail routes servicing the RHC precinct

2.2 Light Rail Terminus

The eastern end of High Street, which forms the northern boundary of the RHC site, now features the terminus for the CSELR Randwick line immediately west of the Belmore Road and Avoca Street intersection, as shown on Figure 4. The closest stop to the SCH1/MCCCC construction site is the *UNSW High Street* stop, a two-minute walk from site to the west of Botany Street. Light rail services travel from High Street towards the CBD every eight minutes between 7am and 7pm on weekdays. The second CSELR service to Kingsford accesses the *UNSW Anzac Parade* stop which is less than a 15-minute walk from the site, through the UNSW campus.

Figure 5 shows 5-, 10-, 15- and 20-minute walking isochrones from the Avoca Street frontage of the Randwick Health Campus to demonstrate the high walkability of the local area, supporting site access using local public transport services. Note that the program used to generate these isochrones did not recognise the UNSW campus as permeable to public on foot, so while Anzac Parade is functionally within a 20-minute walking distance from Avoca Street, it does not appear to be in this image. At the time these isochrones were created, the Newmarket development was identified as a non-walkable area, hence the large impermeable area south of the site in the image.

These isochrones, with the previous bus route map, highlight the large number of bus and light rail services that stop within a walkable distance of the SCH1/MCCCC construction site.

Figure 5 Walking isochrones to/from RHC (Source: Arup, 2017)

3. Cycling

Cycling routes in the immediate area are largely east-west to link to radial routes to the city along Anzac Parade and Alison Road. High Street is a nominated cycle route, though cyclists must use the roadway between Avoca Street and Wansey Road. Online resources to plan a cycle journey include Google Maps and Transport for NSW's Cycleway Finder, which includes detailed information on cycle way design, surface conditions, and difficulty.

JH will undertake a number of initiatives to encourage the use of cycling, this includes:

- Provide bike storage racks inside the site boundary so they are secure from public areas,
- Provide change facilities with showers onsite. Facilities will be regularly cleaned and maintained to ensure they are appealing to users,
- Provide lockers for changes of clothing,
- Display posters at bike rack locations which show information on cycle routes to key areas such as central station.

Figure 6 Randwick Local bicycle network

Randwick and surrounding councils have established networks of cycling routes, using a variety of facility types and standards. Together, these provide a local route grid with connectivity to major radial routes and mass transport access, as shown in Figure 6 above. JH will display routes such as this on noticeboard adjacent to bike racks.

High Street has been identified as a local cycling route by Randwick City Council, though cyclists must use the roadway between Avoca Street and Wansey Road, where low traffic volumes support mixed traffic despite the presence of buses. West of Wansey Road, a short section of shared path leads to a bi-directional on-road cycle path that runs to Anzac Parade.

4. Onsite tool storage

Secure storage on site will be provided for workers' tools and equipment, thereby minimising the need for vehicle transport to carry heavy and bulky goods to site on a regular basis. Tool and equipment storage shall be within site boundaries, with no public access.

5. Worker parking

Where public and active transport are not viable options, there are number of paid carparking options surrounding the SCH1/MCCCC construction site. JH will support local carpark businesses by recommending drivers utilise the locations shown in the below figure and also listed with their proximity to site and basic parking cost details;

Figure 7 Local paid carparking facilities

- 1. The Royal Randwick Shopping Centre is 0.4km to the North-East of the site and provides undercover parking bays charged as casual rates (approx. \$35 per day).
- 2. The Spot Wilson Carpark is 0.6km East of the site and provides undercover parking charged at casual rates (early bird pricing at \$14 per day).

Workers will be given information on surrounding metered carparks in advance of arriving to site and further information will be provided during inductions. Inductions will further remind workers that there is no parking in the surrounding residential streets, and they are to utilise the paid parking infrastructure.

6. Ongoing management of on street parking

John Holland will ensure that the restricted parking in surrounding suburbs is continually managed with the site team. To do this John Holland will continually assess and implement the following strategies:

- Subcontractors and suppliers will be made aware of restricted parking requirements early in the procurement process. Subsequently all Subcontracts will include a relevant clause detailing the requirements such that all parties are committed
- Continually reinforce parking requirements and restrictions at weekly sub-contractor meetings and prestart meetings
- Undertake parking audit walks
- Implementation of warning and enforcement systems for workers demonstrating noncompliance with transport and parking requirements. Site access cards will be revoked for repeat offenders
- Consideration of incentive or reward programs for workers using public transport to travel to site.