RANDWICK CAMPUS REDEVELOPMENT

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Acute Services Building

April 2020

DOCUMENT HISTORY

Version	Date	Issue by	Status
1	May 2019	Lendlease	For CC1
2	March 2020	Lendlease	For CC3 incorporating project updates
3	April 2020	Lendlease	For extended working hours

DOCUMENT CONTROL

To ensure the Construction Environmental Management Plan remains relevant and accurate, this document will be continuously reviewed and evaluated throughout the planning and delivery of the ASB.

Any revisions made will be communicated to the project team accordingly.

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Acute Services Building

Contents

1.0 INTRODUCTION

1.1 OVERVIEW

The Prince of Wales Hospital Expansion Stage 1 of the Randwick Campus Redevelopment comprises the construction of an Acute Service Building for NSW Health, in partnership with the University of NSW (UNSW).

The Randwick Campus Redevelopment Acute Service Building (ASB) is a highly complex project with critical early milestone components that must be delivered on time.

The new ASB building is subject to two separate planning approvals:

- SSD9113 - Acute Service Building (ASB) - Bulk earthworks, construction and fit out of a new Acute Services Building to existing hospital buildings, and road works to surrounding streets and landscape works;
- SSD10339 – The integrated Eastern addition to the ASB (the IASB) - Lowering of Hospital Road, construction of the UNSW Eastern Extension (Base Building only, not fit out) and overhead pedestrian links to existing hospital facilities. It is noted that some scope of the SSD9113-ASB development has been superseded by the integrated Eastern addition approved under this DA.

The construction of both approved developments is scheduled concurrently due to their inherently integrated scope.

The objective of this Construction Environmental Management Plan (CEMP) is to ensure that the ASB (the Project) is safely delivered using a robust set of methodologies and zero unplanned disruption to hospital services, and to comply with the regulatory requirements as outlined by the Department of Planning and other Authorities.

This plan has been developed from the approved Development Consent Conditions as outlined in SSD 9113 approved on the 27th February 2019. There are several sub plans which will form the basis of this management plan. During the construction programme, these plans will be reviewed and updated as required.

This plan and its sub-plans operate in conjunction with the plans for the IASB under SSD10339.

The Lendlease construction management processes will provide:

- Seamless performance and accountability from a single responsible entity;
- The works will be managed by a single proven responsible entity; and
- a mechanism to reduce risks during project delivery.

Lendlease has produced this CEMP as the contractor responsible for the delivery of the project. It is envisaged that this CEMP will evolve during the course of the Project as the design develops in conjunction with the design consultant team, project stakeholders, Health Infrastructure (HI), South East Sydney Local Health District (SESLHD) and Price Waterhouse Coopers (PwC).

In the following sections, we have set out how we intend on managing the Project and activities associated with the RCR.

The CEMP also defines the impacts of the proposed construction activities on areas within the RCR site and hospital campus the Prince of Wales (POW) Hospital Campus (Campus). 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 minimise any potential risk to HI, SESLHD, its community partners and stakeholders.

Our proactive and collaborative approach to our client NSW Health Infrastructure is underpinned by the following overriding and non-negotiable objectives:

- Maintain business continuity of the campus and adjoining facilities and properties;
- To deliver a world class facility for our client on time to the highest safety and quality standards;

- Safe and timely delivery of the ASB, enabling construction of the RCR;
- Communicate in a timely fashion with all relevant stakeholders what, when and how we are planning to undertake interface works;
- Present a positive public perception of the project during the construction works;
- Use experienced and qualified subcontractors with appropriate resources to deliver their works in the manner we prescribe; and
- Hands on control of subcontractors from experienced Lendlease site supervision.

HI will have four key outcomes from the Lendlease CEMP:

Figure 1: Key outcomes

1.2 CONSENT CONDITIONS

The Department of Planning has issued the approved Development Consent conditions for the SSD-9113.

The Conditions relevant to the CEMP which have been addressed in the CEMP are included in the Compliance Matrix. The CEMP has been developed to include the requirements outlined in Consent Condition B32.

The Applicant is to submit a copy of the CEMP to the Certifier and the Planning Secretary prior to commencing works.

Lendlease will be seeking four Construction Certificates under this SSD-9113. They are as follows:

- CC1 – Services diversions & Piling
- CC2 – Bulk Excavation, Inground Services and Structure up to and including Level 1
- CC3 – Remaining Structure, Façade, Services and Fitout
- CC4 – Remaining Fit Out Works, External Works and Landscaping

The CEMP is requested to be approved for all these components of works.

1.3 COMPLIANCE MATRIX

For ease of reference the following compliance matrix has been prepared to identify relevant sections of the CEMP as outlined in condition B33.

Condition	Requirement	Document Reference
B33	(a) (i) Hours of Work	Section 3.3
	(a) (ii) 24 Hour Contact details	Section 3.5
	(a) (iii) Management of dust and odour to protect the amenity of the neighborhood	Section 11
	(a) (iv) stormwater control and discharge	Section 11
	(a) (v) measures to ensure that sediment and other materials are not tracked onto the roadway by vehicles leaving the site;	Section 11
	(a) (vi) groundwater management plan including measures to prevent groundwater contamination;	Section 11
	(a) (vii) external temporary lighting in compliance with AS 4282-2019 Control of the obtrusive effects of outdoor lighting;	Section 15
	(a) (viii) community consultation and complaints handling;	Section 7
	(a) (ix) measures to ensure the ongoing safe operation of the existing helipad on the site identified in the review undertaken in accordance with Condition B49	Section 16
	(B) Construction Traffic and Pedestrian Management Sub-Plan (see condition B35)	Section 7.1
	© Construction Noise and Vibration Management Sub-Plan (see condition B37)	Section 9
	(D) Construction Waste Management Sub-Plan (see condition B38)	Section 10
	(E) Construction Soil and Water Management Sub-Plan (see condition B39);	Section 11
	(F) Aboriginal Cultural Heritage Management Sub-Plan (see condition B40);	Section 12
	(G) Flood Emergency Response (see condition B41)	Section 13
	(H) an unexpected finds protocol for contamination and associated communications procedure	Section 14
	(I) an unexpected finds protocol for Aboriginal and non-Aboriginal heritage and associated communications procedure;	Section 14

	(J) waste classification (for materials to be removed) and validation (for materials to remain) be undertaken to confirm the contamination status in these areas of the site;	Section 14

2.0 BUSINESS CONTINUITY

2.1 WORKING WITHIN THE OPERATIONAL HOSPITAL ENVIRONMENT

The Lendlease project team understands the challenging nature of the RCR and the constraints of managing major construction works adjacent 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.

This will be the case for the major works to the following areas:

- The identified excavation zones 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 new ASB building

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. Lendlease will impose a strict regime of consultation on all works outside the site perimeters, regardless of the nature of the intended works.

The Disruption Works Notice process will be followed here. This includes all workers to firstly complete the required hospital worker induction and secondly, Lendlease will institute a 'Permit to Work' process for all works outside of the secured site areas.

The permit system puts hold-points in place, which have to be signed-off prior to permit issue. If workers are found to be working without permits, they will be removed from the Project. The hold points for the 'Permit to Work in the Hospital Area' will be the same as those for the Disruption Works Notice, to ensure a consistent level of compliance from the subcontractors.

Lendlease have identified a 4 step process that we will undertake to ensure that the design and construction methodology mitigates the construction risks inherent in conducting site works within a live Health Campus (refer Figure 2). The planning for health service continuity and risk management 4 step process will underpin all stages of the RCR-ASB project and will be used as the guiding principle for how construction will be undertaken around the campus.

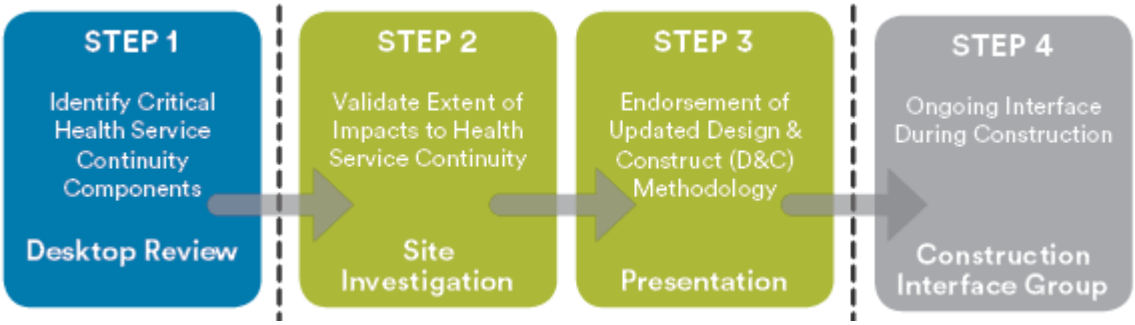


Figure 2: Four step business continuity process

Step 1 has been undertaken during the planning phase by Lendlease and will heavily influence 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 to the Campus stakeholders; and
- Sequencing construction to ensure handover of completed spaces to the RCR at the best and earliest opportunity.

Site establishment:

- Efficient use of existing redundant facilities and space available for site establishment to minimise space taken by the construction site;
- Off Campus solutions to construction car parking to ensure no disruption to car parking within the precinct; and
- Planning for construction access in controlled zones.

Construction interfaces:

- Strictly controlling where construction will interface with the Hospital nearby residential dwellings or public;
- Implementing airtight, acoustically treated hoardings for all existing building connections to minimise Infection Control risks and reduce construction noise impacts to nearby existing buildings;
- Ensuring sight lines from the construction site are managed so that patient and residential privacy in adjacent buildings are maintained;
- Developing a web based Disruptive Works Notice (LiveOps) 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; and
- Using low impact construction methods to ensure noise and vibration doesn't impact the daily operations of the Hospital and nearby residential properties.

Lendlease will follow steps 2 and 3 to validate these assumptions and further develop them ready for the construction phase.

Step 4 implements ongoing risk assessment, mitigations and controls that have been established through Steps 1-3 and the continual monitoring of changing conditions that may affect our design and construction methodology. Strategies to support Randwick business continuity include but 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 Campus business continuity;
- Utilising the Disruptive Works Notification (LiveOps) 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 process in collaboration with the SESLHD and principal representatives to ensure that the completed product is seamlessly transitioned into a live hospital environment; and
- Community notices / updates.

2.3 IDENTIFICATION AND MANAGEMENT OF KEY PROJECT RISKS

The Randwick Campus Redevelopment presents a number of challenges that need to be delivered through a planned and structured approach. Prior to commencing with construction activities an extensive analysis of the project documents will be undertaken including multiple site inspections to thoroughly understand and plan the project based on our awareness of the key risks. Within this section an initial assessment of such risks and the proven construction delivery techniques adopted for the project. The key objective is to cause “zero unplanned disruptions” during delivery of the works.

To achieve this objective Lendlease propose using a risk identification strategy built around the key interface points between the construction and the operational Health Precinct. This Interface Strategy will be critical in risk identification and will be used to influence design decisions and dictate construction methodology. The following provides an initial assessment of the key interface risks and mitigations associated with the demolition and site clearance activities associated with the Randwick Campus Redevelopment. These will be developed in meticulous detail during the planning phase to inform the design and construction methodology, eliminate or manage risks appropriately and to ensure a smooth interface with the existing Randwick Health Precinct.

Approach to Risk Management			
Risk, Major Issues and Interface Type	Details	Mitigation	Benefit
Maintain the public’s perception of ‘business as usual’ for the Randwick Hospitals’ Campus	Understand the implications of construction staging on the hospital’s operational drivers and the potential impacts.	Review the construction staging with the hospital to ensure the full understanding and acceptance of the proposals: timing/duration, construction impacts, power tools, noise, temporary partitions and access routes etc. All workers will be made aware of their responsibilities towards understanding what constitutes disruptive works and to understand the time frames associated with preparing to carry out any such works.	Minimise impacts of disruption to the hospital’s daily activities wherever possible. Separation of construction and Hospital/public. Workers to be constantly reminded of the importance of patients and users of the Hospital.

Approach to Risk Management			
Risk, Major Issues and Interface Type	Details	Mitigation	Benefit
Working adjacent Royal Hospital for Women (RHW)	Construction works will take place adjacent to existing RHW facilities with potential disruption to services.	Privacy screens will be erected to remove direct sightlines from the RHW into the site. Workers will be made aware of patient privacy within the RHW bedrooms. No unauthorised removal of privacy screens erected on scaffold to prevent direct sightline within wards from the site. Where there are potential disruptions, extensive planning and consultation will be undertaken prior to commencement of disruptive works.	Increased patient privacy to improve wellbeing. Separation of staff and patients from construction. Workers to be constantly reminded of the importance of patients and users of the Hospital.
Construction Workers access and egress affecting daily Hospital operations.	Construction works should cause the least amount of disruption possible for staff and patients.	Access to and from site will be defined and out of bounds areas clarified for workers. The induction will focus on the amenities planned for within the construction site boundary which include lunch facilities with a selection of food outlets designed to offer choices to workers to limit their need to exit site at meal times.	Reduced congestion of public areas through separate access routes and social areas. Workers to be constantly reminded of the importance of patients and users of the Hospital.
Working around children	With construction in close proximity to the existing Children's Hospital, workers will need to be aware of working around children.	All workers will be made aware of their responsibilities towards working adjacent to facilities with children. Any workers involved with direct works inside identified areas will be required to undergo a 'working with children check'.	Children, their parents, and the staff in the children's hospital are reassured that the increased activity will not have negative impacts on young patients, and that workers are sensitive to their responsibilities around children. Separation of staff and patients from construction. Workers to be constantly reminded of the importance of patients and users of the Hospital.
Disruption to critical life services	Disruption to critical life services for tie-in's between new and existing	Clear identification of critical building services. Any construction works which could impact these services only to proceed once full work plans and contingency plans are in place and signed off by all parties.	Zero unplanned disruptions to existing facility and critical services.
Disruption to Light Rail Operations	Work in close proximity to energised wires nand adjacent work zones	Clear communication and planing protocols to be set-up and managed to ensure a successful project outcome.	Nil disruption to Light Rail external operations and the demolition phase can stay on program.

Approach to Risk Management			
Risk, Major Issues and Interface Type	Details	Mitigation	Benefit
Disruption of the existing hospital pedestrian and vehicle access	Entry/exit to site will be manned and managed by Lendlease Traffic controllers to mitigate disruption to pedestrian and vehicle access.	The project works will be programmed with a full temporary traffic management system to be established and coordinated with the hospital stakeholders prior to the commencement of construction. Traffic controller management of the entry and exit to existing Hospital Loading Dock. Traffic flow will be assisted and priority given to key hospital deliveries. In consultation with the Principal and Local Council, identify proposed construction vehicular traffic movements and routes. Prepare and agree a detailed traffic management plan that will be implemented on the project.	Pedestrian safety with logical wayfinding routes Controlled traffic management Minimises interface between construction and the Health precinct.
Vehicle parking	The commencement of the construction works for the early and main works contracts will see an influx of subcontractor workforce to the Precinct.	We will actively encourage the construction workers to use public transport to commute to and from the site, we do expect that some additional vehicles will be attempting to park near site. We will review opportunity for supplementary offsite parking to alleviate existing parking pressures onsite.	Minimises interface between construction and the Health precinct. Maintains existing carpark numbers for staff, patients and public
Impact on hospital operations	Minimising loss of amenity for patients and staff during construction, in particular the interface works at the existing facades and refurbishment works adjacent to occupied areas.	Throughout the interface works we expect there will be a need for impact drilling for structural connections and the like. Lendlease will plan and sequence these works to occur at specific agreed times to allow as much respite time as possible, in addition the utilisation of low frequency low impact tools and equipment will be implemented where possible. Core drilling will be utilised as an alternative where practical.	Continuation of regular hospital activities with minimal disruption to staff and patients. Minimises noise, dust and vibration effect on the operational Hospital.
Disruption to nearby residential and business properties	Minimising loss of amenity for nearby residential and business properties during construction, in particular the interface works at the existing facades and refurbishment works adjacent to occupied areas.	Noise, dust and vibration monitoring proactive notification of disruptive works selection of low impact equipment where possible maintenance of public safety.	Minimise noise, dust and vibration impacts on nearby dwellings.

Approach to Risk Management			
Risk, Major Issues and Interface Type	Details	Mitigation	Benefit
Infection control	A major issue whilst undertaking construction work on an operational campus.	Provision of acoustic and dust proof hoardings providing construction containment, the provision of localised dust monitoring, maintenance of negative pressure areas plus the use of air pressure sampling to ensure our construction containment regimes are working. The project specific Infection Control Plan is developed prior to commencing the construction works. In preparing this plan Lendlease will make reference to the 'Infection Control Principles for the Management of Construction, Renovation, Repairs and Maintenance within Healthcare Facilities. The plan will identify the different types and locations of works planned on the Randwick Campus Redevelopment and specify the level of infection control required for each type of activity. Identification of existing hospital air intakes and review to determine if additional filtration is required.	Elimination of negative impacts on staff and patients' health and wellbeing. Preventing dust from entering a clean Hospital environment with ongoing monitoring to ensure adherence to this policy. Minimises noise and vibration effect on the operational Hospital
Environmental Conditions	The site area will require careful management of site run-off.	Early Works Perimeter protections to be investigated during the ECI Planning period.	Minimises negative impact of construction to surrounding precinct and green zones.
Removal of potentially hazardous materials	Removal and disposal of potentially hazardous or contaminated materials and substances	Clearly communicate our methodologies to the hospital and liaise with all stakeholders to ensure visibility and understanding of the processes.	Containment of potentially hazardous materials in a controlled manner.
Damage to existing building facades	During construction of link bridges there is potential for damage to the existing building façade.	Temporary hoarding of glazed facades will be installed to enable continued operation of spaces adjacent to the affected areas.	Limit potential impact of construction to the existing facilities. Continuation of regular hospital activities with minimal disruption to staff and patients.
Continued compliance of existing fire zones	Fire zones and egress paths are to be maintained.	Maintain all required egress paths in coordination with the authorities. Maintain smoke extraction and relief air supply through the main entry doors. Undertake works in consultation with the Fire Engineer, Principal Certifying Authority and HI NSW.	Clear communication of emergency egress for public and Hospital users.
Unauthorised access to the Construction Site	Prevent public/patients from climbing the perimeter fence.	A solid 2.4m "A" class hoarding wall to be installed.	Provision of a safe site environment

2.3 MANAGING RISKS WITHIN AN OPERATIONAL HOSPITAL ENVIRONMENT

Lendlease is aware of the challenging nature of the RCR works being located in close proximity to the existing Hospital buildings. The project has critical construction and services interfaces and non-negotiable stakeholder requirements to ensure operational continuity is maintained. During the design stage Lendlease will work in a collaborative manner with PWC to develop our stakeholder communication structure and to address all stakeholder requirements and concerns. Through this open partnership collaboration process we will develop solutions that have stakeholder buy-in and document an agreed plan to manage construction delivery through to the completion of the works. The activities below have the potential to significantly impact on the operation of the hospital, the wider Precinct and neighbour, if not managed effectively and communicated proactively with stakeholders:

- Access and traffic management;
- Planning and management of any major shutdowns;
- Minimising and controlling disruptions;
- Protection of existing hospital assets;
- Maintenance of existing patient and staff privacy and security;
- Emergency after-hours call-out;
- Hazardous material identification and removal;
- Noise, dust and vibration control; and
- Out of hours work.

Lendlease will prepare the following Management Plans to develop clear and concise communication channels for each area of interface works and support the ongoing operation of the hospital:

- Stakeholder Management Plan;
- Risk Management Plan;
- Helicopter Management Plan;
- Disruptive Works Notification Procedure; and
- Environmental, Health and Safety (EH&S) Management Plan.

Our integrated Environmental, Health and Safety Management Plan will identify all EH&S risks associated with stakeholders including and not limited to members of the public, hospital staff, hospital clients, and workers on site. The sub plans below will be developed with the collaboration of the relevant stakeholders during the pre-construction phase:

- Traffic and Pedestrian Management Plan;
- Noise and Vibration Management Plan;
- Dust Management Plan;
- Stormwater Management Plan;
- Waste Management Plan;
- Incident Management Plan;
- Emergency Response Plan;

- Crisis Management Plan;
- Hazardous Materials Management Plan; and
- Workplace Relations Management Plan.

2.4 INDUCTIONS

The Lendlease induction will be specifically tailored to inform workers of their obligations working within a live health environment for the Randwick Campus Redevelopment. The content of the induction will be reviewed with the Health project team to ensure the strategies imposed by Lendlease are aligned with the requirements of the precinct. The project induction will train new workers on project specific safety and emergency procedures, however, the key focus will include interface controls, including:

- Working in a live environment: The construction methodology has been designed around maintaining business continuity for the Hospital. This is key to a successful project and will be the underlying theme of the induction procedure for every worker on site;
- Infection control: Content within the induction will focus on the importance of infection control and the risk to the existing Hospital from construction works. It will also focus on work methodologies and quality procedures to ensure the end product delivered to the client has been constructed in accordance with the documentation and without risk of infection to end users;
- Access within Existing Hospital: We will provide clarity regarding no access into existing Hospital
- areas. There will be clear 'no-go' zones identified including the travel path for all emergency vehicles to and from the Hospital;
- Separation of Construction Works from Hospital Operations: Access to and from site will be defined and out of bounds areas clarified for workers. The induction will focus on the amenities planned for within the construction site boundary which include lunch facilities with a selection of food outlets designed to offer choices to workers to limit their need to exit site at meal times;
- Disruptive Works Procedure: All workers will be made aware of their responsibilities towards
- understanding what constitutes disruptive works and understand the time frames associated with
- preparing to carry out any such works; and
- Working around Children: All workers will be made aware of their responsibilities towards working adjacent facilities with children particularly the interface with the Sydney Children's Hospital.

We will also focus on the unique requirements of each stakeholder within the campus to ensure that the information in the induction is up to date and relevant to the specific work areas on site. An example of the specific requirements and locations are:

- Working Adjacent to the Existing Clinical spaces: All workers will be made aware of the need to ensure patient privacy within the facility. No unauthorized removal of privacy screens erected on scaffold to prevent direct sightline into wards will be permitted.
- Working Adjacent to Local Residential and Business Properties: All workers will be made aware of the need to ensure positive contractor behavior at the approach and on site, including minimizing disruptions to local parking and access.

3.0 OPERATIONS & SITE MANAGEMENT

3.1 OVERVIEW

The table identifies the key milestones of the scope of the IASB addition works.

The Randwick Campus Redevelopment project will require precise site establishment, staging and operation, to ensure both safety, appropriate security, interface management and productivity are achieved. Lendlease's nominated delivery team has developed this detailed plan, which is integral to program and construction methodology. Close attention to detail and the quality of the finished product are paramount, particularly on

this multifaceted Healthcare Project. Lendlease believes this focus on quality must be promoted and fostered amongst the workforce on the project. This begins with an efficient site establishment strategy, and clean amenities which will set the standard for a high-quality outcome.The planning and methodology assessment for the project has identified a number of key stages in the general configuration of the site during construction. This section provides an overview of the overall approach adopted with detail description of these stages provided below.

3.2 DILAPIDATION SURVEYS & MONITORING

Prior to commencing works Lendlease will complete an extensive dilapidation survey of existing infrastructure covering roads, footpaths, external and internal areas of the existing buildings adjacent and interfacing with the construction site. Coordinated access to internal hospital areas will be arranged through the Principal. The resulting report will be provided to the Principal as a pre-commencement record of the existing built works on the precinct adjacent to the construction areas. Our team also propose to inspect existing plant and equipment conditions in the initial periods of the ECI to determine the capacity of any plant and equipment that the new works interface with. This is critical to inform design scope and establish key opportunities and risks for consideration during interface planning. Considering the above, we carry out the following works:

- Lendlease has allowed to engage an acoustic consultant during the course of the construction works to provide detailed advice and practical methodologies in the form of a Construction Noise and Vibration Management Plan in order to manage the potential noise issues with the adjacent sensitive receivers. Lendlease has extensive experience in managing these issues on similar health projects and will look to introduce the following measures on this project such as:
- Adopt and modify the protection strategy for any heritage or significant buildings located on the site.
- The necessary vibration monitoring and back to base alarm monitoring to ensure the nominated accepted level stipulated by the SESLHD and associated buildings is not breached.
- Positioning major plant away from sensitive receiver boundaries where possible concrete pumping zones, cranage, and loading zones have been positioned away from operational existing facilities. Where applicable treating plant with mufflers and noise mitigating filters.
- The Construction Noise and Vibration Management Plan mentioned previously, will detail the criteria and protocols for vibration and noise protocols to the surrounding properties. This report details a number of sensitive receivers above ground in relation to vibration being:
- Children's Hospital;
- Existing "Core" Facilities; and

- University of New South Wales.

3.3 HOURS OF WORK

The construction hours approved for the development include the current approved ASB General construction hours:

General Construction hours	
Monday – Friday	7:00am to 6:00pm
Saturday	8:00am to 5:00pm
Sunday	No work

In addition to regular working hours, there will be occasional short periods when out of hours works are required. In accordance with the Integrated Acute Services Building, SSD-10339, there are extended weekend working hours for that development. These are detailed in the CEMP for this development project.

Lendlease will agree the process with HI, LHD, TMC, TfNSW, SCO and Randwick City Council to address the approvals and additional measures required prior to scheduling any out of hour's works. The nature of these works would typically include erection of hoardings, works to footpaths, services connections and other works that interface with the surrounding operational hospital.

With the impact of Covid-19 and the Government legislation introduced with requirements to comply with social segregation, construction works, and productivity could be impacted. Hence Lendlease is preparing for extended working hours. The nominated extended working hours include the following:

General Construction hours	
Monday – Friday	6:00am to 1:00am
Saturday	8:00am to 5:00pm
Sunday	No work

These extended working hours during Monday to Friday is to allow for a second shift of works. These activities anticipated in these evening hours include:

- Steel reinforcement
- Formwork related activities
- Post-tensioning
- Materials handling
- Concrete pour
- Cores (but jump height is limited to suspended structure access)
- General deliveries for structure trades
- Block workers
- Primary Services installation
- Hospital road civil works

- Bulk Oxygen storage upgrade works

Based on these activities construction deliveries will be required in the evening. Deliveries in the evening will be in addition to the scheduled day time deliveries. However delivering of an evening will benefit the project as there is less volume of traffic in the evening. This is detailed in the CTPMP.

3.4 PROPOSED SITE PLAN

During the course of Randwick Campus Redevelopment Demolition and Site Clearance Works, see below proposed site establishment to be completed in the following stages:

- Stage 2 - Piling & Bulk Excavation
- Stage 3 - Main Works

This plan highlights the location of the site accommodation, project office inclusive of clients office, this plan also demonstrates how the site will be accessed by delivery drivers and couriers on a day by day.

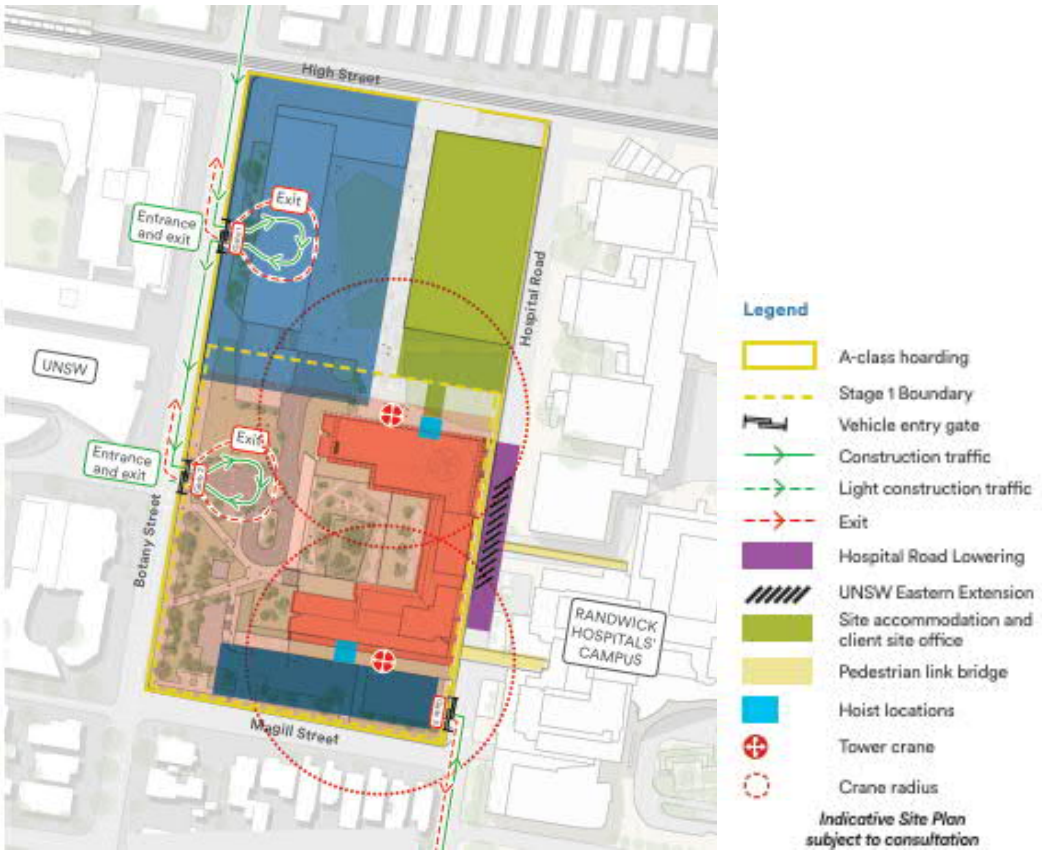


Figure 3 –Lowering of hospital road and UNSW Extension

3.5 CONSTRUCTION WORKFORCE

Figure 5 Labour Histogram identifies the workforce numbers. At its peak the project will engage a workforce of approximately 500 individuals. It is anticipated that this peak will be reached in late 2020. All workers will undergo mandatory inductions to understand their responsibilities when working on the RCR project site and in close proximity to a live Hospital environment. This is inclusive of parking restrictions, dedicated parking facilities, transportation options and available on site storage facilities. Planning for construction workforce transportation and parking management will be aligned with projected workforce counts and associated parking demands. It is understood that a portion of the site worker population will elect to travel to site using private vehicles. Construction workers driving to sites in constrained parking environments, similar to the
RCR, typically carpool reducing traffic impacts on the local road network. The project site is well serviced by public transport providing site workers with alternative travel options.

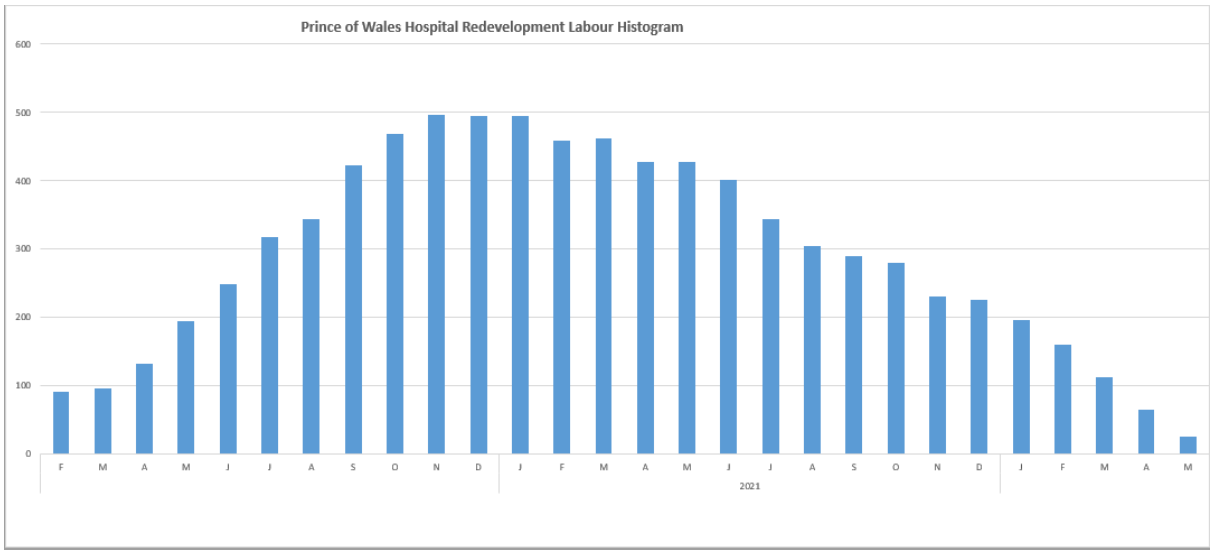


Figure 5 –Labour histogram

3.6 SITE CONTACTS

A list of key contacts, phone (business and after hours) will be maintained and available on site.

Organisation	Contact Name	Contact Number
Lend Lease – RCR Project	[redacted] - Senior Site Manager	[redacted]
	[redacted] - Senior Construction Manager	
	[redacted] - EHS Coordinator	
	L[redacted] Hosking - Stakeholders & Communications Manager	
	RCR Site 24 Hour Project Contact/Complaints	
CBD South East Light Rail	[redacted], Community Relations Manager Randwick, Kensington and Kingsford Sydney Light Rail Projects	
Prince of Wales Hospital	[redacted] Manager RCR, General Managers Unit	[redacted]
	[redacted] – Corporate Services Manager, Finance and Corporate Services	[redacted]
The Royal Hospital for Women	[redacted] – General Manager	[redacted]
	[redacted] – Executive Assistance to General Manager	
Prince of Wales Private Hospital	[redacted] Acting General Manager, Prince of Wales Private Hospital	
Fire and Rescue NSW	[redacted]	[redacted]
	[redacted]	
NSW Ambulance	[redacted] - Randwick Hospitals Campus Interface Manager	
Eastern Beaches Local Area Command	[redacted] – Traffic Office	[redacted]
	[redacted] Traffic Office	
Bicycle NSW	[redacted]	[redacted]
La Perouse Local Aboriginal Land Council	[redacted] CEO La Perouse LALC	

Randwick City Council	[redacted]	[redacted]
[redacted]		9995 5555 (if calling from outside NSW).
Ministry of Health		(02) 9391 9000
SafeWork NSW		13 10 50
City of Sydney Council		(02) 9265 9333
South Eastern Sydney Local Health District	[redacted] & SSEH General Manager	[redacted]

The Lendlease project team organizational chart is located in Appendix 1. This shows the key roles on the project and those responsible.

3.7 SITE CONSIDERATIONS

Lendlease has carefully planned and considered the staging requirements for the demolition and site clearance works. These established strategies are to best manage logistics of the project within a live hospital campus. In doing so we have identified the following key considerations for management of the site:

- Site establishment schedule;
- Worker transport and parking;
- Pedestrian access and circulation routes;
- Site evacuation / major incident response;
- Site compound and amenities;
- Temporary services;
- Site temporary services;
- Fencing and hoarding for site segregation;
- Site access points, construction traffic and
- deliveries;
- Materials storage and handling;
- Working adjacent to residential and business
- properties;
- Site management controls;
- Business continuity of Randwick Hospital,
- Sydney Children's Hospital, and the University of
- New South Wales, Royal Hospital for Women;
- Risk management;
- Construction methodology; and
- Project completion.

3.8 SITE ACCESS POINTS, CONSTRUCTION TRAFFIC & DELIVERIES

Lendlease has carefully planned and considered the staging requirements for the demolition and site clearance works. These established
Lendlease understand that one of the keys to the successful delivery of the demolition and site Clearance works for the RCR will be the flow of materials and equipment into and out of the construction site. We believe it is imperative that our planning considers and successfully manages:

- The maintenance of pedestrian and traffic flows to the surrounding roads
- The unimpeded continued use of existing vehicular and pedestrian entry and exit points to the Randwick Precinct; and 24-hour access to the ambulance drop off area.

To achieve this, an extensive Traffic and Pedestrian Management Plan will be developed giving specific focus to:

- Carpark entry and egress: Carpark operations will be maintained at all times, including all car park services and emergency egress. Particular focus will be on peak flow access and egress during hospital shift change overs and strategies will be employed to ensure flows are maintained.
- Supplementary offsite parking: LendLease have identified supplementary parking for hospital staff, visitors, contractors, and consultants which could potentially alleviate Current parking pressures over the 3 year life of the redevelopment.
- Disabled pedestrian access and paths of travel: Throughout all activities, disabled pedestrian access will be maintained with details of alternate routes and distances of paths of travel.
- All swept paths to be updated through the design phase with our coordination with the TfNSW.
- Lendlease will consult with all suppliers to ensure the correct size and weight vehicles are allocated to the project and are cognisant of carriage weight constraints.
- Ambulance entry: No works or vehicle movements will be allowed to affect the access of ambulance entry and parking area.
- Construction Vehicles: Mitigating impact to the Hospital precinct and surrounding roads will be considered along with a detailed analysis of delivery frequency in conjunction with the program and access routes to the site from the various approaches. Procedures for timely delivery notification will be developed (e.g. call prior to arrival and also advise on aborted deliveries).

3.9 FENCING & HOARDING FOR SITE SEGREGATION & SAFETY

We 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.

Site security is paramount for public safety and we will implement security turnstiles on the entry to the site to prevent unauthorised access. Vehicle management will be managed by Traffic Controllers

and security guards will be utilised out of working hours during the later stages of the works. An "A Class" plywood hoarding and any sections of permanent chain wire fencing will be covered with Randwick Campus Redevelopment shadecloth and will be updated and maintained throughout the project in line with the project requirements.

3.10 SITE SECURITY AND GATES

The site perimeter will be secure at all times with no unauthorised access permitted. As detailed above the perimeter of the site will be secure with full height plywood A Class hoarding. Out of Hours security patrols will be utilised during the shutdown periods, Christmas and Easter will also be monitored by external security services. CCTV with active motion sensors will be used on the tower cranes to track any unauthorised access.

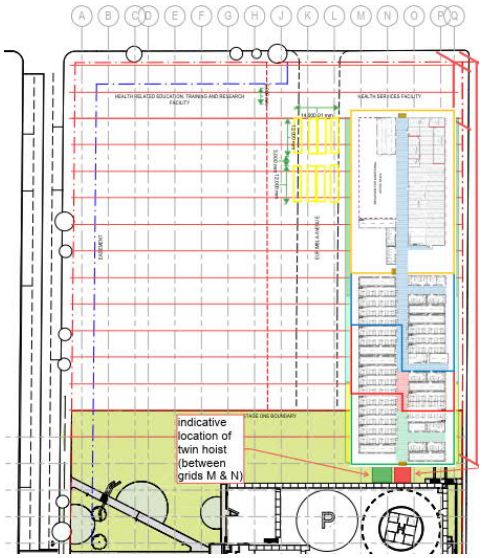
Construction worker access to the site will be strictly controlled through our secured gate system. Individuals will require a personalised identity swipe card to gain access to site. This also creates a live record of who is on site at any given time in order to provide check list if the site is ever evacuated in case of emergency.

The above and below ground areas will be further segregated by an additional secure line to ensure the appropriate time that only rail accredited staff can access the areas designated as such.

3.11 SITE COMPOUND AND AMENITIES

Lendlease places emphasis on the quality and amenity of the project and accommodation facilities. Quality facilities set a standard and a level of expectation that we expect our staff and subcontractors to take with them to the workface on site. Accommodation and amenities for the construction workforce will be provided in demountable site sheds. These site sheds will be erected in stages to cater for fluctuating workforce demand and moving work areas.

The location of the Site accommodation facilities for the ASB development is in accordance with the following layout.


A
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K
L
M
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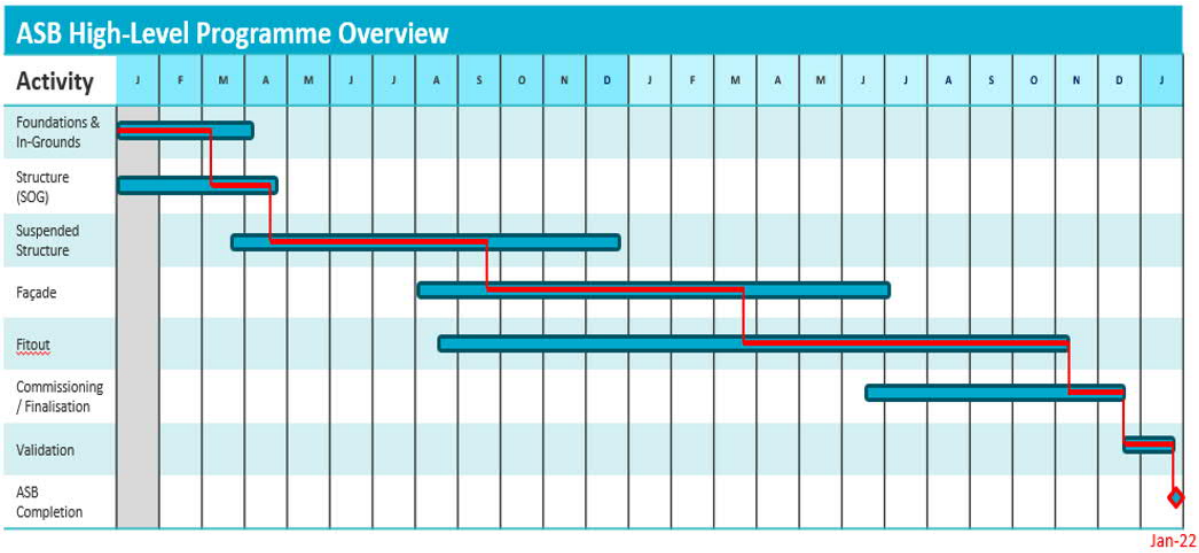
O
P
Q
HEALTH RELATED EDUCATION, TRAINING AND RESEARCH FACILITY
HEALTH SERVICES FACILITY
indicative location of twin hoist (between grids M & N)
P

4.0 CONSTRUCTION PROGRAMME

4.1 PROGRAMME OVERVIEW

The programme below identifies the key stages of the scope of the ASB works.



4.2 CONSTRUCTION STAGING OVERVIEW

The Lendlease project team fully appreciate the disruption and change the construction works will bring to hospital operations and understand the challenges the HI, SESLHD and Randwick Hospital Precinct management will have in communicating the staging sequences and the program of the works to the staff and public. The better hospital staff and public understand the timing and reasoning of the staging of the works, the more comfortable they will be with the temporary inconveniences.

We have completed a review of our construction program and methodology and documented a draft set of staging plans covering the works phases, these will provide the basis for a full set of staging control plans, which will be developed in conjunction with detailed design development during the Planning Phase in consultation with HI, SESLHD and Randwick Hospital Precinct Management.

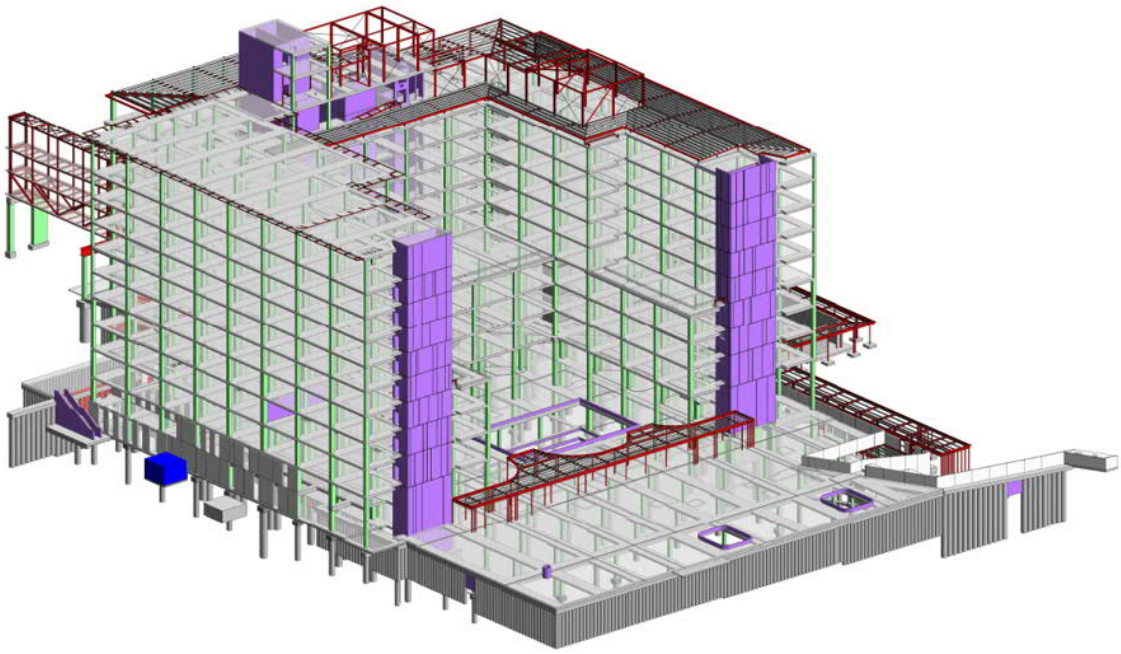
The staging plans will be developed to include:

- All site establishment items;
- Changed or modified egress paths;
- Pedestrian and vehicle circulation route changes;
- Temporary signage requirements; and
- Upcoming changes to works areas including approximated program dates.

4.3 CONSTRUCTION SEQUENCING

The bulk excavation and piling works are now complete. The next key stages of construction of the ASB include the following:

- Form, Reinforcement and concrete pouring of the suspended concrete structure;
- Erection of the steel roof and cladding;
- Installation of the prefabricated façade system and precast panels
- Fit out and services works to all levels of the building
- Energization of services and pre commissioning
- Cleaning and Validation
- Integrated testing and Commissioning



The above figure is an isometric view of the ASB structure indicating its structure configuration.

5.0 PURPOSE OF THE CEMP

5.1 OVERVIEW

This CEMP has been developed for the RCR IASB works and provides a management system and procedures to ensure that Lendlease establish and maintain best practice controls to manage potential environmental impacts and risks during the Project and are aligned with the Environmental performance outcomes. Lendlease is committed to providing its services in a manner that conforms to the contractual requirements and to all relevant regulatory and legislative requirements. To achieve this, Lendlease will plan, implement and control an integrated management system that facilitates the management of the environmental aspects of the Project.

The Construction Environmental Management Plan (including all sub plans) is compliant and consistent with:

- ISO 14001:2015;
- NSW Ministers Conditions of Approval SSD 10339
- Environmental Impact Statement (EIS) and Submissions and
- Department of Planning and Infrastructure (known now as the Department pf Planning and Environment, DPE) Guideline for the Preparation of Environmental Management Plans, 2004.

This CEMP has been prepared to specify the actions and environmental controls required during construction works associated with the Project. The primary purpose of the CEMP is to provide a framework reference document detailing how Lendlease will manage and control environmental aspects of the Project during the construction phase. The CEMP will be used as a working document to ensure that obligations and commitments provided in the MCoA, and EIS, and other licences, permits and approvals are made known to all staff (including sub-contractors) and implemented effectively as an integral part of project construction.

It also aims to detail processes to minimise impacts associated with the construction of the project on adjacent sensitive areas in particular Hospital operations.

The CEMP contains core Environmental Management System (EMS) elements and follows the principles of ISO 14001 – 2015. This CEMP has been developed to satisfy the requirements of the Guidelines for the Preparation of EMP's (Department of Planning and Infrastructure (DP&I) 2004). The CEMP will be reviewed when necessary to reflect new processes, controls and procedures.

The CEMP, including the environmental management sub plans and procedures will be applicable to all staff and sub-contractors during the construction phase.

5.2 OBJECTIVES AND TARGETS OF THE CEMP

The environmental objectives for the CEMP in the construction period are:

- To satisfy key requirements contained within the Planning Approval conditions;
- To satisfy key commitments contained in the EIS, SPIR and in other planning documents;
- To ensure compliance with relevant legislation and regulatory requirements;
- To develop, implement and maintain effective management systems for the environmental aspects of construction works;
- To monitor environmental impacts relating to the project as identified in this document and related sub plans; and
- To be consistent with the elements of the Australian / New Zealand Standard 14001: 2015 – Environmental Management Systems (referred to as AS/NZS ISO 14001).

Lendlease will adopt the following objectives and targets:

Objective	Target
To comply with applicable legal and other requirements (environmental laws, regulations, statutory requirements and instruments of approval)	Nil instances of non-compliance with environmental statutory requirements (e.g. infringement notices, clean-up notices, etc.)
To implement a rigorous and comprehensive CEMP that meets the requirements of AS/NZS ISO 14001, and continuously monitor and improve environmental performance	Weekly Environmental Inspections completed; All Environmental Audits completed as per the Lendlease EMS and Environmental Audit program required under MCoA A37; 6 monthly CEMP reviews completed; and All Non-Conformances closed out in specified timeframes.
To minimise waste to land fill, maximise the recycling of waste and ensure traceability	At least 95% of inert and non-hazardous construction and demolition waste, excluding spoil, and at least 60% of office waste is recycled or alternatively beneficially reused.
To provide training and information on environmental aspects/impacts and controls for the project to workers	All workers complete an environment induction prior to commencement of works on site and attend environmental training as per Section 7 of this CEMP
To minimise the impacts of noise and vibration from construction activities.	Maintain noise and vibration levels within project goals, human comfort and structural damage criteria.
To minimise the impacts of dust from construction activities.	Prevent fugitive dust emissions from the construction site.
To protect all heritage items that will be impacted by the Project.	Maintain vibration limits within structural damage criteria. No damage to known 'relics' or heritage items unless consent has been obtained. Protect and manage heritage sites as per the Construction Heritage Management Plan.

5.3 PREPARATION OF THIS CEMP AND SUB PLANS

All environmental management requirements specified as being the responsibility of Lendlease, including those stipulated in the environmental documents, have been considered and addressed in preparing this plan, as have requirements of Lendlease's EMS which is accredited to AS/NZS ISO14001. This plan draws on the extensive knowledge Lendlease has acquired from successful environmental management of multiple and varied projects in a range of locations.

This CEMP has been developed in consultation with the relevant Authorities including Department of Planning, TfNSW, Randwick City Council, UNSW, and the SELHD. The Sub plans have been prepared in consultation where required with the above departments and records have been kept and maintained. This CEMP will be reviewed and revised as per the requirements of CoA B33 and B34. This includes:

• In response to internal Environmental Audits as per the requirements of AS/NZS 19011:2014 Guidelines for Auditing Management Systems;

• Consultation with required agencies, authorities and relevant stakeholders;

• Any new or changed environmental risks identified during the project;

• Changes to regulatory requirements;

• Results of corrective or preventive actions;

• Opportunities for improvements identified; and

• Requests by the NSW Department of Planning and Environment (DPE).

The CEMP is the key management tool in relation to environmental performance during the design and construction phases. The CEMP describes the construction environmental management requirements for the Project and Lendlease's system for minimising and managing environmental risks associated with the construction phase of the Project. The CEMP is a dynamic document that will be reviewed and amended to incorporate additional requirements as required, changes to the project team, organisational structure and responsibilities or as improvements to procedures and methodologies develop.

The CEMP will be issued to the project Certifier and a copy provided to the Planning Secretary.

5.4 ENVIRONMENTAL POLICY

Lendlease's Environmental Policy is provided below. Lendlease will seek to ensure that this policy, environmental procedures and construction methods are understood, implemented and maintained by personnel at all levels involved with the Project.

Policy
Environment Health and Safety
Building, Australia

Lendlease Building is part of the Lendlease Corporation, an international property and infrastructure group with core expertise in shaping cities and creating strong and connected communities. Our national delivery capability and sector focused approach enables innovative and industry leading project management, design and construction services driven by detailed sector knowledge and experience.

We are committed to our vision 'to create the best places' through workplaces free of incident and injury wherever we have a presence. Our vision is supported by an uncompromising culture which holds the health and safety of people and the protection of the environment as first in all our business reviews and decisions.

To achieve our vision we are committed to:

- Setting objectives and measurable targets for continual improvement aimed at eliminating work related environment, health and safety (EHS) impacts and incidents associated with our operational construction activities, products and services.
- Complying with applicable legislation, codes of practice, compliance standards, obligations and guidelines.
- Defining roles, responsibilities and accountability for clarity, consistency and predictability across our workforce.
- Understanding the needs and expectations of workers and other parties; including suppliers, subcontractors, clients, the community and regulatory authorities; through partnerships and consultative forums.

Key strategies to achieve our vision include:

- Implementing and maintaining an EHS Management System.
- Integrating risk identification and risk management principles into core planning and delivery activities.
- Considering and taking action on risks, impacts or opportunities that may affect (positively or negatively) the ability of the management system to deliver its intended outcomes, including enhanced EHS management at our workplaces.
- Reviewing objectives and targets regularly to promote continual improvement in EHS performance.
- Promoting senior leadership engagement in assessing the effectiveness of the management system and its implementation.
- Undertaking strategic review of system procedures, policies and annual performance outcomes to reflect current business operations, legal and other requirements.
- Engaging with external stakeholders, including government and industry, to develop and promote leading practices and innovation.
- Developing planning, design and construction delivery solutions that reduce reliance on individual behaviours and the potential for injury and impact.
- Investigating incidents, reviewing the effectiveness of corrective and preventative actions and sharing outcomes to prevent recurrence.
- Planning and implementing timely and effective health and safety, and environmental management remediation strategies.
- Facilitating timely and effective injury management and return to work / rehabilitation for injured workers.
- Consulting regularly with our workforce and key internal and external stakeholders to improve, communicate and seek feedback on EHS initiatives, risks, impacts and outcomes.
- Communicating environment, health and safety information, policies, procedures, alerts and lessons learned to employees, workers and other interested parties.
- Implementing learning and development initiatives to increase EHS skills, awareness and competencies.
- Implementing initiatives to promote the health and wellbeing of employees and other workers.
- Reviewing resources and system documents regularly to ensure effective and pro-active management of EHS.
- Recognising, rewarding and sharing excellence in EHS with internal and external stakeholders.

I commit all of our project management, design and construction services across Australia to this policy and the achievement of our vision, to create the best places.

Dale Connor
Chief Executive Officer, Building

Other Languages

Current as at 03 Sept 2019 Uncontrolled when printed

5.5 COVID-19 MANAGEMENT AND CONSTRUCTION CHANGES

With the impact of Covid-19 and the Government legislation introduced with requirements to comply with social segregation, construction works, and productivity could be impacted. Hence Lendlease is preparing for extended working hours. The nominated extended working hours include the following:

General Construction hours	
Monday – Friday	6:00am to 1:00am
Saturday	8:00am to 5:00pm
Sunday	No work

These extended working hours during Monday to Friday is to allow for a second shift of works. These activities anticipated in these evening hours include:

- Steel reinforcement
- Formwork related activities
- Post-tensioning
- Materials handling
- Concrete pour
- Cores (but jump height is limited to suspended structure access)
- General deliveries for structure trades
- Block workers
- Primary Services installation
- Hospital road civil works
- Bulk Oxygen storage upgrade works

Lendlease is planning for a two-shift strategy to maximize these working hours. This shift pattern may look like:

- Day team: 6am till 3pm
- Night team: 4pm till 1am

The workforce is anticipated to be up to 100 workers. This will also require Lendlease Supervision and Construction workers to facilitate the construction activities. This would include:

- Night foreman
- Engineers
- Crane crew and second driver
- Occupational First Aider
- General labourers
- Gate crews/ Traffic Controllers
- Hoist drivers
- Nipper
- Forklift driver

Initial discussions with subcontractors have been undertaken to review resource availability, and the subcontractors own resource structure to effectively supervise their works through extended working hours. Most of the key subcontractors have the resource pool to provide secondary shifts for the tasks identified above. The Construction Award imposes penalty rates for ‘afternoon’ shifts. This is a key consideration into the strategy and to ensure adequate resources are made available to ensure evening works are productive.

Key Environmental factors that have been reviewed for these extended working hours include:

- Lighting strategy
- Noise and Vibration consideration
- Traffic Management consideration
- Construction Workers Transportation Strategy

These key environmental controls have been addressed in each detailed sub plan.

The key to success of the extended working hours is the Stakeholder engagement. Lendlease will utilize its existing Stakeholder Engagement Plan which identifies sensitive receivers and the engagement approach to ensure the community is consulted with these changes.

Lendlease's dedicated Stakeholder Engagement Manager will lead this communication.

Management of fatigue will be integral to the extended working hours to ensure safety is not compromised. Where there is a cross over of Lendlease Supervision, it will be necessary to ensure LL personnel work a standard shift and not extended hours with the risk of fatigue. Subcontractor rotation will be monitored to ensure workers are not exceeding 10-12-hour shifts.

6.0 INSPECTION, MONITORING, AUDITING AND REPORTING

6.1 ENVIRONMENTAL INSPECTIONS

A compliance monitoring tracking program must be developed and implemented during construction works in order to monitor compliance with the terms of the project approval. Compliance tracking will be undertaken in accordance with the Tracking Program.

A compliance matrix has been established for the works incorporating MCoA, licence conditions, permits and other approvals relevant to the ASB works to track issues and ensure compliance issues are addressed and closed out.

In addition to reporting required under the CTP, the Lendlease Environmental Manager will also prepare a summary report or supply relevant documentation on environmental matters to Sydney Metro on a monthly basis, with a detailed report on environmental performance prepared quarterly.

The Report will include details on:

• Summary of works undertaken for the relevant reporting period;

• All cases of non-compliance with environmental obligations and the CEMP;

• Inspections by agencies and actions resulting from the inspection;

• Actioning and reporting of all incidents;

• Frequency of environmental checklists and actioning of concerns;

• Any client issues not addressed after two months.

• Monitoring results;

• Environmental complaints;

• Audits conducted (internal and external); and

The effectiveness of environmental protection measures described in this CEMP and sub plans will be assessed on a weekly basis by the relevant team members. A checklist will be used to:

• Provide a surveillance tool to ensure that safeguards are being implemented;

• Identify where problems might be occurring;

• Identify where sound environmental practices are not being implemented; and

• Facilitate the identification and early resolution of problems.

Weekly environmental inspections will monitor aspects including;

• Review of relevant works approvals and permits

• Erosion and sediment controls and review of associated plans

• Drainage protection

• Air quality, dust emissions and mitigating controls

• Heritage impacts

• Noise and vibration management including approved working hours, required respites and safe working distances

• Hazardous substances and dangerous goods

• Waste management, recycling and recovery

Any non-conformances identified through the checklist process will be highlighted and an environmental inspection report (minor issues) or an environmental improvement notice/environmental incident report will be completed by the Environment Manager.

The checklist will remain 'open' until:

• The issue has been resolved;

• A new or revised procedure has been established and implemented; or

• Training has been provided to relevant personnel/ sub-contractors.

Site Activity/Description	Frequency	By Whom	Form
Site inspections to ensure site controls operating as required	Daily	Site Supervisor/Foreman	Visual
Lendlease environmental site inspection of activities	Weekly/Monthly	Site Supervisor, Site Foreman, Site Manager, EHS coordinator, Construction Manager, Client Authorised personnel	Environmental Inspection checklist

6.2 ENVIRONMENTAL MONITORING

Environmental monitoring will involve collecting and interpreting data to provide quantification of the effectiveness of the CEMP and sub plans. As required under approved conditions , Construction Monitoring Programs are required to be prepared in consultation with the relevant government agencies. The following monitoring programmes will be implemented;

• A Construction Noise and Vibration Monitoring Program is incorporated within the Construction Noise and Vibration Management Plan (CNVMP) and includes provision of 'realtime' noise and vibration monitoring. This program has been developed in compliance with MCoA B37 and associated conditions during construction with all 'realtime' noise and vibration monitoring data being made available to DPE, EPA, the construction team, and other parties.

• A Groundwater Monitoring Program is incorporated within the Groundwater Management Plan (GWMP) and includes provisions to undertake monitoring of groundwater levels and quality.

• Waste monitoring reporting is incorporated within the Construction Waste Management sub plan (CWMSP). in accordance with the

These aspects will be managed by the site environmental management, inspection and auditing procedures.

The timing, frequency, methodology, locations and responsibilities for the proposed environmental monitoring programs are specified in the respective Sub plans. The monitoring programs range from those involving formal sample collection, analysis and measurement, to those involving a more qualitative assessment.

Irrespective of the type of monitoring conducted, the results will be used to identify potential or actual problems arising from construction processes. Where monitoring methods permit, results will be obtained at the time of the assessment and analysed immediately by the Environmental Manager. This will allow a prompt response to be initiated should an exceedance of accepted levels/criteria be identified.

Where this cannot be achieved, preliminary results will be requested as soon as possible following the monitoring episode with a full report to follow.

Where a non-conformance is detected or monitoring results are outside of the expected range, the process described in Section 10.4 will be implemented, which would include:

• The results will be analysed by the Environmental Manager in more detail with the view of determining possible causes for the non-conformance;

• A site inspection will be undertaken by the relevant personnel;

• Relevant stakeholders will be contacted and advised of the problem.

• An agreed action will be identified; or

• Action will be implemented to rectify the problem.

A non-conformance Environmental Incident Report and/or Environmental Improvement Notice may be issued by the Environmental Manager in response to the problem if it is found to be construction related. The timing for any improvement will be agreed between the Construction Manager and Environmental Manager based on the level of risk e.g. a significant risk will require immediate action.

Monitoring Requirement	Frequency
Noise monitoring	Continuous 'realtime' monitoring and attended monitoring at the commencement of each work activity to confirm forecasts in the CNVIS
Vibration monitoring	Continuous 'realtime' monitoring and attended monitoring at the commencement of each work activity to confirm forecasts in the CNVIS
Dust monitoring	Visual monitoring completed throughout duration of works and during weekly environment inspections
Erosion and Sediment Control Monitoring	Weekly by environmental staff and as soon as practicable after any major rainfall event; i.e. 10mm in 24 hours

6.3 ENVIRONMENTAL AUDITS

6.3.1 INTERNAL LENDLEASE AUDITS

Internal environmental compliance audits will be conducted by the Environmental Manager. Elements to be audited include:

• Compliance with the conditions of approval;

• Compliance with the EIS;

• Compliance with the CEMP & associated sub plans;

• Compliance with approval, permit and licence obligations;

• Compliance with method statements;

• Complaint response;

• Sub-contractor activities;

• Training records;

• Non-conformances;

• Monitoring results; and

• System documentation such as checklist completion.

Regional environmental system compliance audits will be completed by the Lendlease Regional Environment and Sustainability Manager to monitor compliance with the Lendlease Environmental Management System. Frequencies are outlined in the table included in section 5.3.2.

6.3.2 EXTERNAL AUDITS

External audits may be conducted by Health Infrastructure and an Independent Environmental Auditor. The outcomes of any audit, if reported to Lendlease, will be documented. Corrective Action Requests (CAR) and

Observations of Concern (OOC) will be addressed through the same mechanisms as non-conformances. Resolution of CARs and OOCs will be documented and filed with the Audit Report.

As required by CoA A29 and C35-41, Independent Environmental Audits will be undertaken. A schedule for these audits is to be prepared and issued to the Planning Secretary and Certifier.

Audit Type	Auditor	Timing
Internal Environmental Compliance Audit	Site Construction/Environmental Manager	Pre construction and 3 monthly during construction
Lendlease Regional Environmental System compliance audit	Lendlease Regional Environment and Sustainability Manager	Initial audit within 3 months of construction commencement, then 6 monthly during construction
External Audits	Independent Environmental Auditor	Initial within 12 weeks of commencement, and subsequently 26 weeks.

6.4 COMPLIANCE REPORTING

Reports on compliance with the planning approval or any other statutory requirements will be submitted to DoP in the Compliance monitoring report (CoA B30). The Reports will include:

• a results summary and analysis of environmental monitoring;

• the number of any complaints received, including a summary of main areas of complaint, action taken, response given and proposed strategies for reducing the recurrence of such complaints;

• details of any review of, and minor amendments made to, the CEMP as a result of construction carried out during the reporting period;

• a register of any consistency assessments undertaken and their status;

• results of any independent environmental audits and details of any actions taken in response to the recommendations of an audit;

• a summary of all environmental incidents; and

• any other matter relating to compliance with the terms of this approval or as requested by the Secretary.

The Compliance Tracking Reports will be provided to the Environmental Representative for endorsement.

7.0 COMMUNITY CONSULTATION & COMPLAINT MANAGEMENT

7.1 PURPOSE

This Construction Communications Strategy has been prepared for the Acute Services Building (ASB) and defines the approach to stakeholder engagement for construction and delivery of the ASB.
This plan has been developed to align with the RCR Communications and Engagement Strategy (RCR CSES) and overarching RCR Construction Communications Strategy.

For the extended working hours, community Consultation & Complaint management will be administered in accordance with the following sections. When the extended hours are approved, consultation will occur with all relevant stakeholders in accordance with this strategy. Lendlease has a dedicated Stakeholder Engagement Manager who works closely with Health Infrastructure to ensure communications are aligned and in a timely manner.

7.2 STAKEHOLDER ENGAGEMENT

Guiding principles for ASB Stakeholder Engagement

Throughout all stages of ASB construction the project will remain committed to early, coordinated, proactive and transparent stakeholder engagement. Extensive planning and engagement has been undertaken to identify and develop collaborative and productive relationships with key stakeholders to support planning and delivery of the new Acute Services Building, and these have been and will continue to be leveraged throughout planning, design and delivery of the ASB.
Lendlease has a full time Stakeholder Engagement manager allocated to the project to be the direct point of contact for Stakeholder related issues.
The following principles underpin the project's approach to stakeholder engagement for the delivery of ASB:

- **Purposeful:** Engagement is meaningful to stakeholders and provided in a clear and consistent manner.
- **Timely:** Information is provided, and available, to stakeholders at the appropriate time and in the appropriate format.
- **Inclusive:** Engagement activities are accessible to all relevant interested and impacted stakeholders.
- **Respectful:** Stakeholders diverse, needs and perspectives are acknowledged and respected.
- **Transparent:** Engagement is open and honest with expectations clearly set.

Objectives

The success of this plan will be monitored as the project progresses. The successful implementation of this strategy can be articulated through the achievement of the objectives outlined below.

1. Deliver a high quality, consistent and integrated stakeholder engagement approach that supports and aligns with RCR planning and objectives.

2. Implement and maintain effective coordination and communication channels between the project and key stakeholders throughout planning and delivery of the project.
3. Effectively manage and mitigate potential impacts to Randwick Hospitals Campus business continuity and nearby residential and commercial neighbors.
4. Minimise construction impacts to ensure there is minimal impact on the staff, patient and visitor hospital service and experience.
5. Provide a transparent and pro-active consultation process that meets and exceeds best practice stakeholder engagement.
6. Build commitment to, and a shared understanding among project team and stakeholders on the benefits of the Project.

ASB engagement approach

In line with the Project's overarching communication and stakeholder engage plan and the Construction Communication Strategy, coordinated and transparent communications will be integral to the success of this plan.
The below table outlines key objectives that have been set for each main phase of ASB construction.

Project Phase	Objective	KPI
Planning	Identify and build collaborative relationships with impacted stakeholders.	Early identification of issues and modification to the construction methodology that responds to issues or concerns.
	Engage Campus and community stakeholders to analyse construction staging to ensure the methodology pro-actively responds to stakeholder needs.	Early identification of key construction impacts and development of mitigation strategies. Stakeholders are given the opportunity to provide input into the planning and design of the IASB Addition within communicated parameters Stakeholders are listened to and understand how their feedback has been used
	Anticipate and respond to potential issues or concerns transparently.	Provide quick and mutually agreeable resolutions to matters which may impact stakeholders.
Site establishment	Deliver accurate and timely information that address the needs of each stakeholder group.	Stakeholders understand key stages of construction and how impacts are managed

and construction		Build and maintain project awareness and support Early identification of issues and concerns Issues are managed promptly with transparency
	Deliver a comprehensive communications program that ensure stakeholders are pro-actively notified of and clearly understand changes to site conditions.	Stakeholders understand how the construction activities affects them. Stakeholders clearly understand how to provide feedback or lodge complaints regarding construction activities.
	Provide stakeholders with clear communication channels to raise issues and provide project feedback.	Stakeholders feel valued and confident their feedback is received. Stakeholders receive timely responses to complaints and enquiries.
	Utilise notification platforms to document and communicate potential disruptions for Hospital campus.	Disruptions are communicated in a timely, interactive and transparent manner Disruptive works are approved by key campus stakeholders Stakeholders are provided with advance notice of disruptions Disruption to Hospital campus operations are minimised and effectively coordinated
	Deliver site specific inductions to all workers engaged in the IASB project	All site workers conduct their business in a respectful manner and understand their responsibilities when working in a live Hospital environment and in close proximity to sensitive receivers.
Commissioning and opening of ASB & IASB Addition	Communicate information about the benefits to community, site changes.	Stakeholders understand the features of the project and how it benefits them

	Consistent enhanced reputation of all project partners across the life of the Precinct.	

Stakeholder Analysis

The Project's stakeholder environment is complex and extensive. The ongoing proactive identification of issues and sound analysis of stakeholders' needs have been critical factors in successfully managing the Project's interface with staff, health consumers and the community.
The Project team has developed a deep understanding of stakeholders and the engagement environment which has informed the timing, method and level of engagement across all stages of the redevelopment.
In communicating and engaging with stakeholders, the Randwick Campus Redevelopment project team aims to ensure:

- Stakeholders are aware of the ASB and its purpose within the broader redevelopment
- Stakeholders understand the impacts, benefits and drivers
- Stakeholders understand how they can find out more, ask questions and provide feedback about the works
- Stakeholders are listened to and understand how their feedback has been used

ASB Project Stakeholders

Figure 17 – Stakeholder wheel

Table of Stakeholders – Communication Objective – Method of Engagement

Stakeholder Group	Communication objectives	Typical methods of engagement
Hospital - Prince of Wales Hospital Executive, Board, staff, patients, suppliers, visitors, unions, volunteers	• Build awareness • Show staff they are valued partners • Ensure accurate and timely information to staff and other stakeholders, including regular updates, pop-up stalls and briefings where required • Highlight benefits and drivers for the IASB Addition, including future health, educational and employment opportunities	• Project Governance • Staff Forums, Ward updates, Pop-Up Stands • Communications materials – signage, newsletters, intranet, noticeboard, email •
Randwick Health and Education Precinct Executives (UNSW, HI, SESLHD, SCHN)	• Involved in project Governance • Actively participate in strategic development • Project and Precinct Champions - representing the vision and engaging other stakeholders to participate	• Project and Precinct Governance • Briefings – formal and informal • Collaboration workshops • Email
Randwick Hospitals Campus - Royal Hospital for Women, Sydney Children's Hospital, Randwick, Prince of Wales Hospital, Prince of Wales Private Hospital, Eastern Suburbs Mental Health Service, and other health and research institutions	• Build project awareness • Ensure accurate and timely information to staff and other stakeholders, including regular updates • Highlight benefits and drivers for the IASB Addition, including future health, educational and employment opportunities	• Briefings - Staff Forums, Ward Updates • Communications materials – newsletters, intranet, noticeboard, email • Pop-Up information stands

University of New South Wales – executives, other staff, students of UNSW	• Build project awareness • Ensure accurate and timely information, including regular updates and briefings • Highlight role of UNSW as key IASB Addition proponent and funding source • Highlight benefits and drivers for the IASB, including future health, educational and employment opportunities	• Precinct Governance • Briefings – formal and informal • UNSW Newsletter • Pop up information stands • Signage
Randwick City Council – General Manager, planning, traffic and engineering staff, Communication Manager, Councillors	• Build project awareness • Ensure accurate and timely information, especially around the planning process and potential impacts on Magill Street • Be available for briefings as required • Collaborate during planning to ensure feedback, technical requirements are adequately considered in building design and construction staging	• Formal and informal briefings • Written correspondence
Precinct (other) – Transport for NSW CBD and South East Light Rail, community, local schools, bicycle users	• Build project awareness • Collaborative approach to planning and vision • Regular meetings, focused on interface issues, traffic and access and construction management	• Briefings – formal and informal • Communications materials – newsletters, email, signage
NSW Government (Ministry of Health and Departments)	• Collaborative approach to planning and vision	• Project and Precinct Governance

	• Collaborate during planning to ensure feedback, technical requirements are adequately considered in building design and construction staging	• Regular briefings – formal and informal
Consumers – Members of the community, actively participating in planning for the Redevelopment	• Build project awareness • Keep informed •	• Website, phone and email • Briefings – formal and informal • Signage, factsheets, project website
Indigenous community – La Perouse Local Aboriginal Land Council	• Engaged in planning throughout project development for ASB.0	• Briefings – formal Engaged regarding Aboriginal Archaeology
Community – immediate neighbours	• Build project awareness, keep regularly informed about developments • Understand key impacts and mitigations proposed as part of the project • Regular contact to discuss project developments •	• Place Manager to perform regular consultation by door knock as project information becomes available with immediate neighbours • Construction impact notifications • Regular community updates • Website, phone and email • Community information drop in session •
Community – commercial, business	• Provide engaging and informative content that promotes accurate information and reiterates IASB Addition drivers and benefits	• Construction impact notifications • Regular community updates • Website, phone and email • Community information drop in session

Community – wider community	• Provide engaging and informative content that promotes accurate information and reiterates IASB Addition drivers and benefits	• Regular community updates • Website, phone and email • Community information drop in session

Communication tools

The following communication tools will be used to facilitate stakeholder engagement during delivery of the ASB.

TOOL	PURPOSE	FREQUENCY	TARGETED STAKEHOLDERS
24/7 community information phone	A key channel for stakeholders to raise issues, ask questions and speak directly to a member of the Lendlease project team.	Prior to commencement of works onsite	• All impacted stakeholders
Site signage	To inform the community about who is responsible for the construction activities and the contact details for further information about the work.	Prior to commencement of works onsite	• All impacted stakeholders
Disruptive Works Notice (Live Ops)	Our LiveOps system, a collaborative digital platform, will be utilised to effectively plan and program works which affect live operations	Issued for approval at least 10 days prior to works commencing	• RCR project team •
Construction Notices - Community	To inform the community about upcoming works on site and outline how to contact the project.	Generally issued monthly/ as required in advance of works	• Community stakeholders
Site Coordination Meetings	To provide information related to upcoming activities as well discuss onsite issues coordination of design and delivery	Weekly / Fortnightly (as directed)	• Prince of Wales Hospital
Construction Coordination Meetings	To help ensure works and materials handling on and around the Hospital campus are coordinated with all neighbouring	Fortnightly / monthly (as required)	• RCR project team • Site contractors

	contractors Opportunity to provide project status updates for the respective projects		
Subcontractor Induction	Educate staff and workers about the correct protocols and procedures when dealing with stakeholders.	Prior to commencing works onsite	• Onsite contractors and staff
Project Updates	To provide an update on the project's overall progress, key achievements and next stages. Updates to be distributed via email, phone or in person	Monthly As Required	• To be disseminated via RCR project team
Virtual Superintendent	A digital platform used to assist in the management of materials through the strategic routing of construction traffic, minimising disturbance to surrounding intersections and traffic flows. Efficient traffic flows will support Major Events within the surrounding Randwick community during construction periods.	As required	• RCR project team

7.3 COMMUNICATION AND ENGAGEMENT PROTOCOLS

Stakeholder and community notification periods

Stakeholder engagement and community notification will:

- outline the reason that the work is required
- outline the location, nature, and duration of the proposed works

- outline work hours
- be written in plain English
- include a diagram that clearly identifies the location of the proposed works, where required
- include 1800 community contact number, project email address and website details

The below table outlines minimum notification periods that will be targeted for stakeholder and community notification. Notification periods prescribed within development approvals or by approving bodies will be adhered to.

		Communication classification				
Construction activity classification	**Notification period**	A	B	C	D	E
Monthly project resident update (general work)	3 days	•	•			
Out of boundary works (low impact)	3 days	•	•			
Out of hours work (low impact)	3 days	•	•			
Out of hours work (high impact work that may cause sleep disturbance)	5 days	•	•	•	•	
Disruptions to public access (traffic and pedestrian diversions)	7 days	•	•	•	•	•
Significant disruptions (I.e. Road closure, disruption to services, closure of access)	7 – 14 days	•	•	•	•	•

A Community notice
B Project website
C Email to impacted stakeholders
D Door knock to impacted residents (including calling card)
E Stakeholder briefing

Stakeholder contact and complaints

Stakeholder contact is any communication with an external stakeholder or community member that results in a transfer of, or request for information. A contact may be a complaint, an enquiry, a comment or a compliment.

All stakeholder contact will be responded to in a professional and timely manner. All stakeholder contact will be documented and captured within the Project's record management system. A complaints register is maintained on the project's website to document complaints received and responses provided by the project team.

The following stakeholder contact categorisation matrix will be used to guide the approach to

stakeholder contact.

Classification	Description	Action
High Issue cannot be resolved by the project team.	• Involves media attention/coverage • Involves political and/or government agencies • Relates to safety or security incident.	• Immediate report to the HI Communications Director • No comment to be provided
Medium Issue cannot be immediately resolved	• Involves an individual or group expressing negative sentiments towards the project with risk of further action. • The stakeholder raising the issue is not satisfied with the response provided.	• Project Stakeholder Manager engages the broader project team to investigate further, determine a suitable outcome and respond appropriately • Issue is reported on following reporting protocols
Low Issue can be responded to immediately.	• Involve an individual or group expressing negative sentiments towards the project • Involves an individual or group expressing concern for project impacts and outcomes • There is no threat of further action.	• Project Stakeholder Manager provides the appropriate response and notifies the broader project team as required • Records of low-level issues to be tracked and reported on following reporting protocols

Response Times

The following response times will be targeted for any external stakeholder feedback received (excluding media).

ACTIVTY	RESPONSE TIMEFRAME
Email enquiry acknowledgment	1 business day
Email / onsite enquiry response	5 business days
Site phone line	30 minutes
Website contact form	3 business days

Incident Management

Health Infrastructure's Incident and Communications and Stakeholder Management Plan has been developed for the purposes of providing an incident-specific, proactive framework for the management of incidents and issues with the potential to arise in the construction of major capital works.

The project will comply with the Incident Management Framework as outlined within the Plan. All incidents will be managed by the Project.

7.4 KEY MESSAGES

Key messages form part of the core information provided to stakeholders to remember and respond to. Their inclusion within project communications and accurate reporting in external publications will be important to ensuring consistency and transparency in the delivery of all communications.

Planning

- Design of the ASB has occurred in close consultation and coordination with key project stakeholders.
- Planning and delivery of the ASB aims to minimise disruption to campus operations and prioritises the safety of staff, patients and the community, and the maintenance of business continuity.
- Careful and considered planning of construction activity and related road usage has occurred in ongoing consultation with Randwick City Council, Hospital campus and relevant road and transport authorities.

Construction

- The health and safety of patients, families, visitors, staff and the community is our top priority.
- We are working closely with Transport for NSW, CBD and South East Light Rail, UNSW and Randwick City Council to coordinate construction in the Randwick Precinct.
- All stages of the Randwick Campus Redevelopment, we will comply with strict environmental and planning controls. Mitigation measures are in place to manage noise, dust and vibration.
- With the exception of trucks moving in and out of site, machinery and equipment will be used and housed behind site hoarding.
- The site perimeter will be secured at all times with no unauthorised access permitted. Construction worker access to the site will be controlled through a secure gate system.
- A hording wall will be installed around the site perimeter. Hoarding is a temporary protective structure designed and installed to allow safe movement around the site vicinity.
- Changes to Hospital Road access will be required during construction. Affected stakeholders will be consulted on all access changes.
- Access to the Hospital car park and loading dock will be maintained.

Workforce management

- Site workers will undertake induction training to make sure they are highly aware and considerate of their presence within the local community and live hospital precinct.
- The IASB construction workforce is provided with dedicated onsite worker amenities and facilities. Construction worker parking will be provided off-site along with a shuttle bus service.

- Littering, idling vehicles, loud or offensive language will not be tolerated by site workers.
- Lendlease works with the entire supply chain to ensure a clean, clear and safe working environment.

Commitment to stakeholders

- Throughout all stages of ASB construction the project will remain committed to early, coordinated, proactive and transparent stakeholder engagement.
- Any impact to the operations and business continuity of Hospital Road stakeholders and Hospital campus will be communicated and coordinated in consultation with key campus representatives
- During ASB delivery the project team will continue to engage with residents, the wider community and associated stakeholders to ensure that an open, honest, clear and consistent messaging is delivered.
- Regular CIG (Construction Interface Meetings) will be established and held to ensure that any interface to the hospital or affected stakeholders is done is in a controlled and timely manner.

7.5 ISSUES ANALYSIS

Due to the high-profile nature of the Project, its location within a prominent precinct in Sydney's east, and the vast number of stakeholders involved, it is important to identify potential issues that could arise throughout any phase of the project and proactively develop and implement mitigation strategies wherever possible.

	THEME	DETAILS	MITIGATION STRATEGIES
PLANNING	Stakeholder requests have not been accommodated	During construction planning users request haven't been actioned or addressed.	• To hold open, engaging and collaborative working group sessions and outline the parameters so the users understand where, and why, changes can and cannot be accommodated.
CONSTRUCTION	Operational capacity of the Randwick Hospital Campus	Management of disruption to essential services and/or infrastructure disruption.	• Develop a detailed services disruption process that is approved and communicated to all relevant parties prior to works commencing • All services disruptions are planned, approved, carefully coordinated, and communicated in a timely manner • Disruption Works Notices are disseminated in a timely fashion to ensure works are planned in a considerate and timely manner.
		Vibration, noisy works and/or dust arising from site.	• Disruptive Works Notices are disseminated in a timely fashion to ensure works are planned in a considerate and timely manner • Noise, dust and vibration control measures are to be implemented inside and outside the Hospitals and Community Health Centres.

		Unapproved obstruction and use of Hospital Road.	• No unapproved obstruction or parking of plant and/or equipment within dedicated hospital parking zones or access ways • All onsite contractors to be advised of no parking areas within signage to be displayed in and around site office.
	Site Interface	Avoid or minimise any construction impacts (such as noise, dust, mud) to owners or surrounding building occupants.	• Employ reasonable methods of noise and dust suppression on all compressors, jack-hammers, and other high-noise impact machinery • Disruption Works Notices are disseminated in a timely fashion to ensure works are planned in a considerate and timely manner • Regularly clean public roads which the site sits on as required or when conditions call for it and/or at the request of local authorities.
		Security of Site.	• Employ proper and adequate precautions to prevent unauthorised access to the site.
	Project Communications	Impacted/interested stakeholders are communicated with in a timely and accurate manner	• Disruptive Works Notices and/or Community Construction Notices are disseminated in a timely fashion to ensure works are planned in a considerate and timely manner. • Project signage to link to a project information website which provides details on upcoming activities and project progress. • Project communication material is provided to stakeholders in advance of works occurring.
		Coordination impacts from adjacent construction sites	• Facilitate a monthly Precinct Construction Coordination Group with representatives of contractors from the adjacent building sites

			• Ensure there is clear delineation and timed communication between projects to minimise construction fatigue and accuracy of information.
	Transportation and Movement	Changes to pedestrian and/or vehicular access to Randwick campus and/or adjacent neighbouring properties	• Any changes are carefully planned in coordination with the project team, Authorities and Randwick Hospital Campus management. Changes are then clearly communicated via onsite signage, briefings, letterbox drops, and the Disruptive Works Notice.
		Wayfinding difficulties	• Display of temporary signage and wayfinding.

7.6 MONITORING & REPORTING

The project promotes a culture of continuous improvement, constantly striving for better outcomes for the project, our reputation, the community and our stakeholders. The following channels will be used to monitor and review the effectiveness of stakeholder engagement.

CHANNEL	OBJECTIVE	DETAILS
Governance	To provide a summary of the stakeholder engagement and communication performance for inclusion in Governance reports.	• Outline key engagement activities for the period • Highlight key stakeholder issues and strategies implemented to address them • Provide visual updates on status of project (i.e. progress photos) • Report on complaints and enquiries response rates
Construction interface meetings with impacted stakeholders	To provide key project stakeholders and Hospital campus representatives with a summary of stakeholder engagement and communications activities underway. This forum acts as a mechanism to ensure key project stakeholders receive timely and relevant communications.	• Outline key engagement activities for the period • Highlight key stakeholder issues and strategies implemented to address them • Provide an opportunity for stakeholders to provide feedback on effectiveness of engagement • Provide stakeholders with an opportunity to share their engagement and communication needs
Communications Working Group (CWG)	To provide a summary of stakeholder engagement activities and issues raised and addressed.	• Outline key engagement activities for the period • Highlight key stakeholder issues and strategies implemented to address them • Reporting on key stakeholder issues, complaints and actions taken

		• Seeking advice on the engagement and communication needs of key stakeholder groups

8.0 CONSTRUCTION TRAFFIC AND PEDESTRIAN MANAGEMENT SUB – PLAN

8.1 OVERVIEW

Lendlease has developed the Construction Traffic and Pedestrian Management Subplan (CTPMSP) in conjunction with a qualified expert company, Arup Pty Ltd.

The CTPMSP has been prepared in consultation with Sydney Coordination Office and Sydney Light rail team within TfNSW and RMS. The CTPMSP is in accordance with the approved SSD 9113 Conditions and has been endorsed by the applicable Authorities. The plan addressed all traffic and pedestrian details in accordance with the staging and construction of the Randwick Campus Redevelopment Acute Services Building.

This assessment has been conducted in accordance with the requirements below:

• Conditions B35, B42, B43, B44, B58, C9, C10, C11, C36 of the Development Consent from the Minister for planning and Public Spaces (SSD 9113).

8.2 MONITORING & CONSULTATION

During the construction works, Lendlease will continue to monitor the effectiveness of the CTPMSP and the controls in place and update the plan as required. In accordance with Condition C36 regular consultation is occurring with SCO, TfNSW, SLR, RMS and other construction developments to monitor cumulative impacts of the concurrent developments and any implications on the surrounding traffic network operations.

The Construction Worker Transportation Strategy (CWTS) has been prepared in accordance with conditions outlined in SSD 9113 and SSD 10339. This is a combined document which identifies the measures in place to safely and effectively manage workers transportation. This strategy has been updated to include the requirements for the Extended working hours application.

8.3 CTPMSP

The CTPMSP is located in the Appendix 2A
The CWTS is located in Appendix 2B.

9.0 CONSTRUCTION NOISE & VIBRATION MANAGEMENT SUB-PLAN

9.1 OVERVIEW

Lendlease has engaged a suitably qualified expert company, Acoustic Logic Pty Ltd to prepare the Construction Noise and Vibration Management sub plan (CNVMSP).

The CNVMSP has been prepared in accordance with the approved SSD 9113 Conditions to assess the potential noise and vibration impacts associated with the earthworks, excavation and construction components of the Randwick Campus Redevelopment Acute Services Building.

This assessment has been conducted in accordance with the requirements below:

• Conditions B37, C15, C16, C17, C18, C19, C20 and C21 of the Development Consent from the Minister for planning and Public Spaces (SSD 10339);

• NSW EPA Interim Construction Noise Guideline (ICNG);

• A consideration of the procedures and requirements set out Australian Standard 2436-2010 “Guide to Noise Control on Construction, Maintenance and Demolition Sites”;

• The requirements to control noise emissions from the construction site to levels which does not cause undue disturbance to the identified receiver locations;

• The noise mitigation measures available;

• German Standard DIN 4150-3 (1999-02) “Structural Vibration Effects of Vibration on Structures”;

• Environmental Noise Management Assessing Vibration, a technical guideline (DEC 2006)

• British Standard BS 6472 – ‘Guide to Evaluate Human Exposure to Vibration Buildings (1Hz to 80Hz)

The CNVMSP provides detailed baseline data and identifies measures to be implemented to comply with the requirements of the plan.

9.2 MONITORING & CONSULTATION

Condition B37 requires consultation and monitoring of the effectiveness of the CNVMSP.

Due to the sensitive receivers and adherence with the CNVMSP, the plan will be monitored for its effectiveness during the works and updated to suit changing methodology or site conditions. Any new versions of the plan will be submitted to the required Authorities. Residents, Stakeholders and other relevant parties were invited to the two Community forums held by Health Infrastructure NSW to provide consultation on the upcoming works. Lendlease representatives were present during this time to discuss construction

methodology of the works and associated impacts such as noise and vibration. No identified concerns or issues were raised at this time by those that attended impacting the development of the CNVMSP.
Following these forums, Lendlease identified that the key community consultation for developing the CNVMSP included the Hospital buildings adjacent to the proposed ASB works.

This included the:

- Royal Woman's Hospital (RHW)
- Sydney Children's Hospital (SCHN)
- Prince of Wales Private Hospital (PoWP)
- South East Sydney Local Health District (SESLHD)
- Healthshare

A dedicated Hospital Road Control Group (HRCG) has been formulated to bring together the key Community Stakeholders, along with Health Infrastructure, PwC and Lendlease to consult on the proposed works and impacts. Noise and vibration impacts and strategies have been identified and proposed as follows:

- Each individual Hospital operations identifying hazards and risks of the works
- Detailed presentations on the construction works and techniques at each stage of the programme and the proximity to the buildings
- Adopting construction techniques to suite access requirements for the works
- Describing predicted noise and vibration levels
- Implementation of hoardings to provide noise separation
- Advanced warning of noisy works
- Implementation of live monitoring
- Dedicated on site engineers during the works to provide consultation on exceedances.

For the Extended working hours application, Lendlease has engaged a qualified Consultant, Acoustic Logic to prepare a dedicated plan to provide assessment of the noise and vibration impacts associated with construction activities during the extended working hours. The plan is included in Appendix 3B

9.3 CNVMSP

The CNVMSP for the ASB is in Appendix 3A.
The CNVMSP for Extended working hours application is in Appendix 3B

10.0 CONSTRUCTION WASTE MANAGEMENT SUB-PLAN

10.1 OVERVIEW

Lendlease Building operates an integrated management system where the functions and requirements of environment management and work health and safety (WHS) /occupational health and safety (OHS)/occupational safety and health (OSH) management are integrated.

The LLB EHS MS Manual provides the overall framework for EHS management at LLB workplaces including construction projects. Within this manual there are specific sub plans. The Construction Waste Management Sub Plan (CWMSP) is a sub plan which is prepared in accordance with relevant Legislation and Guidelines. It is then adapted to the site specific requirements identifying waste streams and disposal locations and methodologies.

The CWMSP has been prepared in accordance with the approved SSD 9113 Condition B38. The plan has been prepared by the Construction Manager and reviewed by the Regional EHS Manager for Lendlease.

10.2 MONITORING & CONSULTATION

As part of the Lendlease Building EHS Manual, the plan is required to be updated 3-monthly. This will require a review of the scope, and the compliance with the plan. Monthly waste stream statistics will be received to monitor effectiveness of the methodologies, and streams of waste and volume generated. Consultation will occur with the relevant stakeholders if non conformances are identified.

The CWMSP will be issued to the subcontractors to ensure adherence and compliance throughout the project.

10.3 CWMSP

The CWMSP is located in the Appendix 4.

11.0 CONSTRUCTION SOIL AND WATER MANAGEMENT SUB-PLAN

11.1 OVERVIEW

Lendlease Building operates an integrated management system where the functions and requirements of environment management and work health and safety (WHS) /occupational health and safety (OHS)/occupational safety and health (OSH) management are integrated.

The LLB EHS MS Manual provides the overall framework for EHS management at LLB workplaces including construction projects. Within this manual there are specific sub plans. The Stormwater and Erosion Management Sub Plan (SEMSP) is a sub plan which is prepared in accordance with relevant Legislation and Guidelines. It is then adapted to the site-specific requirements identify strategies and mitigation measures to be implemented during construction activities and defines discharge protocols and treatment procedures to enable control of the impacts of the construction activities on potentially affected areas of adjacent water bodies.

The SEMSP has been prepared in accordance with the approved SSD 9113 Condition B11, B14, B18, C26 & C28. The plan has been prepared by the Construction Manager and reviewed by the Regional EHS Manager for Lendlease.

Lendlease has further engaged Douglas Partners, to develop a Dewatering Management plan to support the SEMSP and is included in the appendix of the SEMSP. This has been developed by site sampling of the strata and topography conditions.

11.2 MONITORING & CONSULTATION

As part of the Lendlease Building EHS Manual, the plan is required to be updated 3-monthly. This will require a review of the scope, and the compliance with the plan. Weekly and monthly environmental inspections will be carried out by Lendlease site personnel. After significant rain events inspections will take place. Following these inspections consultation will occur if any changes are required to the controls in place.

The SEMSP will be issued to the subcontractors to ensure adherence and compliance throughout the project.

The Dewatering Management Plan and SEMSP has been issued to Randwick City Council for consultation and commentary.

11.3 SEMSP

The SEMSP is located in the Appendix 5.

12.0 ABORIGINAL CULTURAL HERITAGE MANAGEMENT SUB-PLAN

12.1 OVERVIEW

The Aboriginal Cultural Heritage Management Sub Plan (ACHMSP) is a sub plan prepared by a qualified expert, Mary Dallas from MDCA. The sub plan has been prepared in consultation with the La Perouse Local Aboriginal Land Council.

The ACHMSP has been prepared in accordance with the approved SSD 9113 Condition B17, B40, C29 & C30.

12.2 MONITORING & CONSULTATION

Monitoring of this plan has been undertaken by MDCA and the team. Ongoing consultation with the La Perouse Local Aboriginal Land Council continues with site visits during the required stages of works.
As part of the construction phases, should excavation activities be undertaken, consultation occurs between Lendlease and MDCA.
The sub plan has adopted the recommendations as outlined in the Aboriginal Cultural Heritage Assessment Report, prepared by Mary Dallas Consulting Archaeologists, dated October 2018

The sub plan was submitted to the Planning Secretary prior to construction.

MDCA has carried out significant investigations of the ASB site since 2019 All areas under the ASB building footprint have been completed. The remaining area associated with the SSD9113 condition of investigation is identified in green. Due to the change in staging of site remediation activities advised by Health Infrastructure there is a section of the existing Eurimbla Avenue that has not been excavated. It is envisaged that these works will occur later in the project at which time MDCA will provide surveillance on site whilst continuation of the excavation of this remaining portion of Eurimbla avenue.

12.3 ACHMSP

The ACHMSP is located in the Appendix 6.

13.0 FLOOD EMERGENCY RESPONSE SUB PLAN

13.1 OVERVIEW

Lendlease has engaged a suitably qualified expert company, BMT to prepare a Flood Report to be read in conjunction with the Emergency Response Plan as part of the Lendlease EHS management system.

Lendlease Building operates an integrated management system where the functions and requirements of environment management and work health and safety (WHS) /occupational health and safety (OHS)/occupational safety and health (OSH) management are integrated.

The LLB EHS MS Manual provides the overall framework for EHS management at LLB workplaces including construction projects. Within this manual there are specific sub plans. The Emergency Response Sub Plan (ERMSP) is a sub plan which is prepared in accordance with relevant Legislation and Guidelines. It is then adapted to the site-specific requirements identify strategies and mitigation measures to be implemented during construction activities and defines discharge protocols and treatment procedures to enable control of the impacts of the construction activities on potentially affected areas of adjacent water bodies. The BMT report is appendix to this sub plan.

The ERMSP has been prepared in accordance with the approved SSD 9113 Condition B41, and address the provisions of the Floodplain Risk Management Guideline (OEH, 2007).

13.2 MONITORING & CONSULTATION

The ERMSP identifies measures in place for effective monitoring of flood management during construction and required Consultation. Monitoring rteh effectiveness of this plan will be after significant rain events and comparing against the modelled data from the report. BMT will remain engaged as an expert consultation throughout all stages of the project.

13.3 GMP

The ERMSP is located in the Appendix 7.

14.0 UNEXPECTED FINDS PROTOCOL

14.1 OVERVIEW

Lendlease Building operates an integrated management system where the functions and requirements of environment management and work health and safety (WHS) /occupational health and safety (OHS)/occupational safety and health (OSH) management are integrated.

The following protocol is developed from the EHS manual which can utilized for finds relating to contamination, Aboriginal, and non-Aboriginal heritage associated works.

14.2 MONITORING & CONSULTATION

From the known conditions of the Site, and from the EIS reports prepared the following monitoring will be taking place during excavation works:

- Aboriginal heritage monitoring provided by the Local Land Council as directed by the Heritage Consultation, Mary Dallas and Associates. This is in accordance with the Aboriginal Cultural Heritage Assessment Report dated October 2018.
- Possible Unexpected finds relating to asbestos in soils, as noted in the Douglas Partners DSI report. Within the Remediation Action Plan (RAP) a project specific detailed Unexpected Finds Protocol is outlined in section 10 of the RAP for compliance outlining the protocol and associated communications requirements.
- In accordance with Consent condition B33 and B34, the Douglas Partners Remediation Action Plan includes a detailed Asbestos management plan. This plan along with the RAP has been reviewed by the NSW EPA Accredited Site Auditor, Senversa for its completeness and compliance with legislation. This review is outlined in the Auditors statement included in the Appendix
- Waste classification of materials is carried out in accordance with the RAP prepared by Douglas Partners. A Geotechnical engineer will be present during excavation works to monitor the material excavated and provide classification as required.

14.3 Remediation Action Plan

The RAP is located in the Appendix 8.

15.0 EXTERNAL TEMPORARY LIGHTING

15.1 OVERVIEW

Throughout the construction planning of the ASB works there has been no identified requirement for external temporary lighting.

Upon construction, should there be a requirement to install external temporary lighting caused by a change in sequence, methodology or request by others, Lendlease will engage a suitable Electrical Consultant to ensure that the lighting is design in compliance with AS4282-2019. Ensuring control of obtrusive effects of outdoor lighting.

With the application for Extended working hours due to the Covid-19 pandemic, there will be a requirement to provide external temporary lighting. Lendlease has engaged a qualified Electrical consultant, Fredon Electrical, to prepare a lighting design for provision of construction lighting to facilitate the extended working hours.

15.2 MONITORING & CONSULTATION

Fredon Electrical have been engaged by Lendlease to provide design guidance advice for temporary construction lighting to facilitate the extended construction hours being sought for approval. Appendix 10 identifies the lighting design prepared to facilitate these works. The lighting design has been prepared in accordance with AS4282-1997.

16.0 EXISTING HELIPAD OPERATIONS

16.1 OVERVIEW

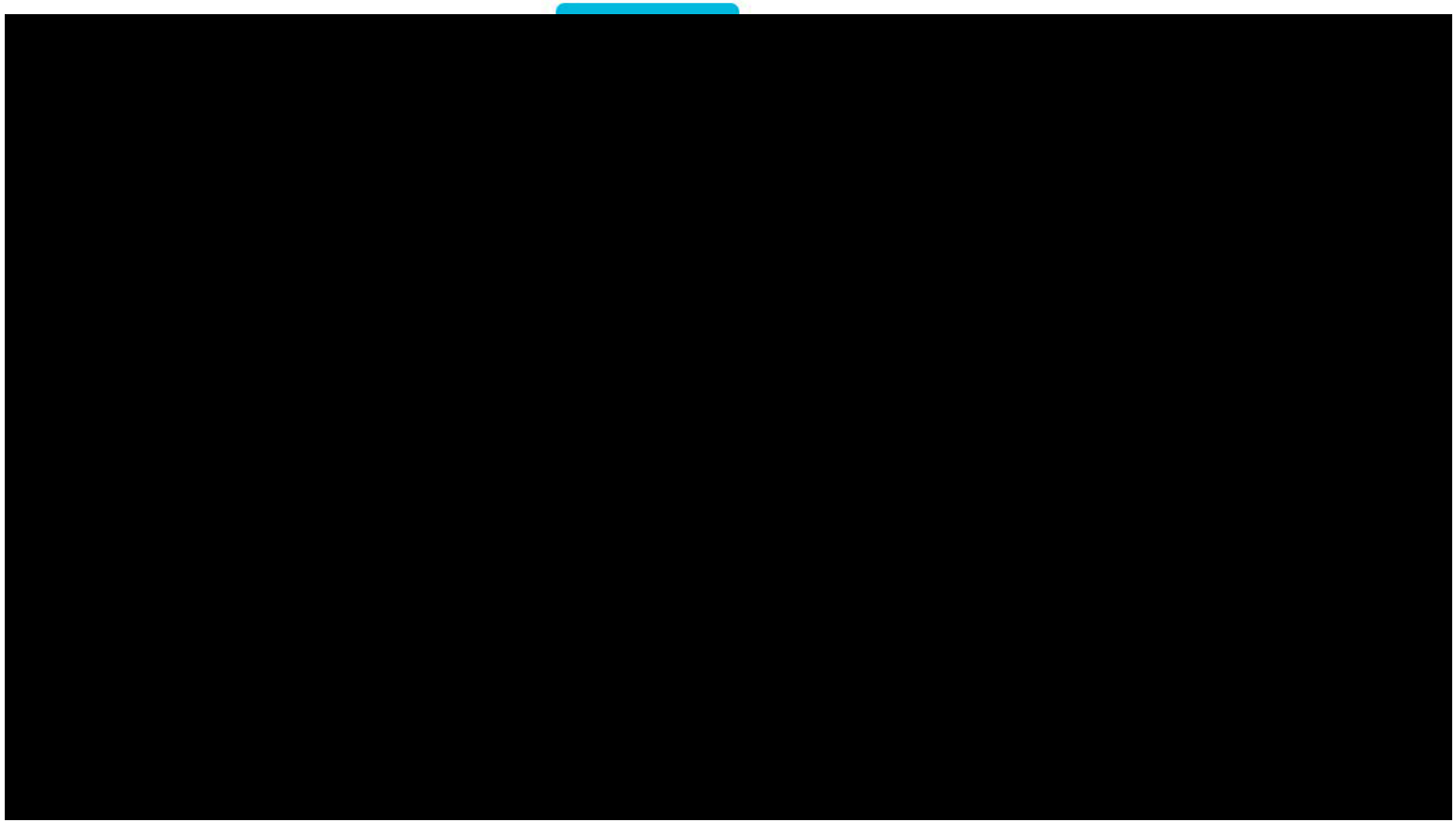
The existing Randwick Campus Redevelopment has a functioning Helipad used for patient transfer services and emergencies. Lendlease has engaged a suitably qualified and experienced aviation professional, Avipro Pty Ltd. To undertake an assessment of the Helipad operations and the construction impact requirements to be mitigated in accordance with SSD 9113 condition B49.

16.2 MONITORING & CONSULTATION

Avipro have been engaged by Lendlease to provide design guidance advice for the new Acute Service Building and to assist manage construction impacts during the build to not interfere with existing flight operations.
The Avipro report has been prepared in consultation with the LHD to ascertain frequency, travel path and other key requirements.
Avipro assist Lendlease with tower crane permits and other construction impacts.

17.0 APPENDICES

APPENDIX 1 – PROJECT ORGANISATIONAL CHART



APPENDIX 2A – CTPMSP

RANDWICK CAMPUS REDEVELOPMENT

CONSTRUCTION TRAFFIC & PEDESTRIAN MANAGEMENT PLAN

Acute Services Building

April 2020

NSW GOVERNMENT Transport for NSW

NSW GOVERNMENT Planning & Environment

NSW GOVERNMENT Health Infrastructure

Randwick City Council
a sense of community

lendlease

DOCUMENT HISTORY

Version	Date	Issue by	Status
3	July 2019	Lendlease	For CC2 and CC3 – Approved by TfNSW
4	April 2020	Lendlease	General update to include for Extended working hours

DOCUMENT CONTROL

To ensure the Construction Communication Plan remains relevant and accurate, this document will be continuously reviewed and evaluated throughout the planning and delivery of the Acute Services Building.

Any revisions made will be communicated to the project team accordingly.

CONSTRUCTION TRAFFIC & PEDESTRIAN MANAGEMENT PLAN

ACUTE SERVICES BUILDING

Contents

1.0 INTRODUCTION

1.1 Overview

The Prince of Wales Hospital Expansion Stage 1 of the Randwick Campus Redevelopment comprises the construction of an Acute Service Building for NSW Health, in partnership with the University of NSW (UNSW).

The Randwick Campus Redevelopment Acute Service Building (ASB) is a highly complex project with critical early milestone components that must be delivered on time.

The new ASB building is subject to two separate planning approvals:

- SSD9113 - Acute Service Building (ASB) - Bulk earthworks, construction and fit out of a new Acute Services Building to existing hospital buildings, and road works to surrounding streets and landscape works;
- SSD10339 – The integrated Eastern addition to the ASB (the IASB) - Lowering of Hospital Road, construction of the UNSW Eastern Extension (Base Building only, not fit out) and overhead pedestrian links to existing hospital facilities. It is noted that some scope of the SSD9113-ASB development has been superseded by the integrated Eastern addition approved under this DA.

The construction of both approved developments is scheduled concurrently due to their inherently integrated scope.

This Construction Traffic and Pedestrian Management Plan (CTPMP) relates to the scope of SSD9113 for the main ASB Building. It has been prepared to operate in conjunction with the CTPMP for the IASB under SSD10339 (refer to Appendix 6).

The objective of this plan is is to ensure that the CC2 and CC3 activities (Structure inground services and fitout) associated with the ASB project are safely delivered using a robust set of methodologies and zero unplanned disruption to hospital services.

- The Lendlease construction management processes will provide:
- Seamless performance and accountability from a single responsible entity.
- The works will be managed by a single proven responsible entity.
- Reduced risk of delivery.

Lendlease has produced this CTPMSP as the contractor responsible for delivery of CC2 and CC3 activities under the Main Works Package. It is envisaged that this CTPMSP will evolve during the course of the project as the design develops in conjunction with the design consultant team, project stakeholders; HI, SESLHD and PWC.

In the following sections, we have set out how we intend on managing the CC2 and CC3 activities associated with the RCR.

The CTPMSP also defines the impacts of the proposed construction activities on areas within the RCR site and hospital campus. 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 HI, SESLHD its community partners and stakeholders.

Our 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 for our client on time to the highest safety and quality standards
- Safe and timely delivery of CC2 and CC3 works enabling construction of the Randwick Campus Redevelopment
- Communicate in a timely fashion with all relevant stakeholders what, when and how we are planning to undertake interface works

- 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 Lendlease site supervision

Health Infrastructure will have four key outcomes from the Lendlease CTPMSP:

Figure 1: Key outcomes

1.2 Consent Conditions

The Department of Planning has issued the approved Development Consent conditions for the SSD-9113.

The Conditions relevant to the CTPMP which have been addressed in this CTPMP include:

B35 – CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN:

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:

- Be prepared by a suitably qualified and experienced person(s);
- Specify:
  - Location of the proposed work zone/s;
  - Location of any crane;
  - Details of any lane or road closures;
  - Construction hours; and
  - Construction program;
- Detail size and type of construction vehicles including a swept path analysis demonstrating no encroachment into oncoming traffic lanes;
- Haulage and heavy vehicle routes including marshalling area/s and operations to ensure no heavy vehicle queuing prior to site entry;
- Estimated number of construction vehicle movements including measures to significantly minimise the number of movements during the defined peak traffic periods;
- 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;
- 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;

- 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;
- Identify cumulative construction impacts of projects including the Sydney Light Rail Project, University of New South Wales, Inglis Stables and surrounding new residential developments;
- 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 is managed to minimise the impacts on the road network;
- Consideration of potential impacts on general traffic, cyclists, pedestrians, bus services and light rail construction and operation within the vicinity of the site;
- Detail the duration of impacts and identify mitigation measures that are to be implemented 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;
- Include a Driver Code of Conduct to:
- Minimise the impacts of earthworks and construction on the local and regional road network;
- Minimise conflicts with other road users;
- Minimise road traffic noise; and
- Ensure truck drivers use specified routes;
- Include a program to monitor the effectiveness of these measures;
- Consultation strategy for liaison with surrounding stakeholders; and
- If necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes.

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:

- Initiatives that would help discourage construction workers driving to the precinct and parking;
- Provision of secure storage areas for construction worker tools and equipment on site;
- Measures to encourage the use of the ample public and active transport available within the vicinity of the site; and
- Details of the operation of off-site construction worker parking location/s, including how workers would be shuttled to the development site.

C9: CONSTRUCTION TRAFFIC

All construction vehicles (excluding worker vehicles) are to be contained wholly within the site, excerpt if located in an approved on-street work zone, and vehicles must enter the site before stopping.

C10 CONSTRUCTION VEHICLE ACCESS:

Construction vehicles shall not use High Street without prior approval of the Sydney Coordination Office (SCO) within TfNSW and Roads and Maritime Services)

C11: ROAD OCCUPANCY LICENCE

A road Occupancy License must be obtained from the relevant road authority for any works that impact on traffic flows during construction activities.

The Applicant is to consult with the TfNSW and its internal stakeholders including Roads and Maritime Services, Council and the Light Rail Operator at the Traffic and Transport Construction Coordination meetings during construction.

Lendlease can confirm that consultation has been carried out with TfNSW, Transdev, SLR, and SCO. To seek endorsement of this plan consultation occurred in July 2019 and subsequent emails to gain approval in August 2019. Ongoing consultation in December 2019 along with presentation in December 2019 at TfNSW offices.

This plan is currently endorsed for CC2 and CC3 works, Lendlease will be CC4 later in 2020 which will require an update to this plan.

2.0 BUSINESS CONTINUITY

2.1 RANDWICK HOSPITALS' CAMPUS HEALTH SERVICE CONTINUITY

Proposed methodology for working within an operational hospital environment and maintaining pedestrian traffic and vehicular traffic to entries.

The Lendlease project team understands the challenging nature of the RCR and the constraints of managing major construction works adjacent 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.

This will be the case for the major works to the following areas:

- The CC2 and CC3 activities under the Main Works Package 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 new ASB.

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. Lendlease will impose a strict regime of consultation on all works outside the site perimeters, regardless of the nature of the intended works.

The Disruption Works Notice process will be followed here. This includes all workers to firstly complete the required hospital worker induction and secondly, Lendlease will institute a 'Permit to Work' process for all works outside of the secured site areas.

The permit system puts hold-points in place, which have to be signed-off prior to permit issue. If workers are found to be working without permits, they will be removed from the project. The hold points for the 'Permit to Work in the Hospital Area' will be the same as those for the Disruption Works Notice, to ensure a consistent level of compliance from the subcontractors.

Lendlease have identified a 4-step process that we will undertake to ensure that the design and construction methodology mitigates the construction risks inherent in conducting site works within a live Health Campus (refer Figure 1). The planning for health service continuity and risk management 4 step process will underpin all stages of the RCR-ASB project and will be used as the guiding principal for how construction will be undertaken around the campus.

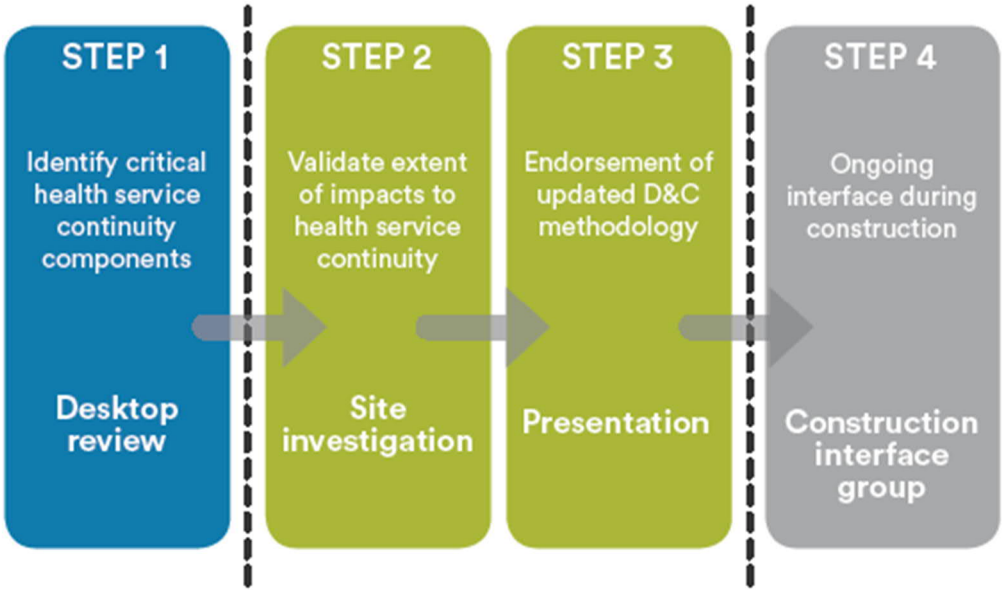


Figure 1: Four step business continuity process

Step 1 has been undertaken during the planning phase by Lendlease and will heavily influence 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 to the Campus stakeholders
- Sequencing construction to ensure handover of completed spaces to the Randwick Campus Redevelopment at the best and earliest opportunity

Site establishment:

- Efficient use of existing redundant facilities and space available for site establishment to minimise space taken by the construction site
- Off Campus solutions to construction car parking to ensure no disruption to car parking within the precinct
- Planning for construction access in controlled zones

Construction interfaces:

- Strictly controlling where construction will interface with the Hospital nearby residential dwellings or public
- Implementing airtight, acoustically treated hoardings for all existing building connections to minimise Infection Control risks and reduce construction noise impacts to nearby existing buildings
- Ensuring sight lines from the construction site are managed so that patient and residential privacy in adjacent buildings are maintained
- Developing a web based Disruptive Works Notice (LiveOps) 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

Lendlease will follow steps 2 and 3 to validate these assumptions and further develop them ready for the construction phase.

Step 4 implements ongoing risk assessment, mitigations and controls that have been established through Steps 1-3 and the continual monitoring of changing conditions that may affect our design and construction methodology. Strategies to support Randwick business continuity include but 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 Hospital Campus business continuity
- Utilising the Disruptive Works Notification (LiveOps) 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 the South East Sydney Local Health District and principal representatives to ensure that the completed product is seamlessly transitioned into a live hospital environment
- Community notices / updates

2.2 Hours of work

The construction hours approved for the development include the current approved ASB General construction hours.

General Construction hours	
Monday – Friday	7:00am to 6:00pm
Saturday	8:00am to 5:00pm
Sunday	No work

With the impact of Covid-19 and the Government legislation introduced with requirements to comply with social segregation, construction works, and productivity could be impacted. Hence Lendlease is preparing for extended working hours. The nominated extended working hours include the following:

General Construction hours	
Monday – Friday	6:00am to 1:00am
Saturday	8:00am to 5:00pm
Sunday	No work

These extended working hours during Monday to Friday is to allow for a second shift of works. These activities anticipated in these evening hours include:

- Steel reinforcement
- Formwork related activities
- Post-tensioning
- Materials handling
- Concrete pour
- Cores (but jump height is limited to suspended structure access)
- General deliveries for structure trades
- Block workers
- Primary Services installation
- Hospital road civil works
- Bulk Oxygen storage upgrade works

Based on these activities' construction deliveries will be required in the evening. Deliveries in the evening will be in addition to the scheduled day time deliveries. However, delivering of an evening will benefit the project as there is less volume of traffic in the evening. The estimated volumes are low and are addressed in section 4 of this report.

2.3 Proposed site plan

During the course of Randwick Campus Redevelopment, the CC2 and CC3 activities and see below proposed site establishment to be completed in the following stages:

Stage 2 - Structure, inground services and fitout.

This plan highlights the location of the site accommodation, project office inclusive of client's office, this plan also demonstrates how the site will be accessed by delivery drivers and couriers on a day by day.

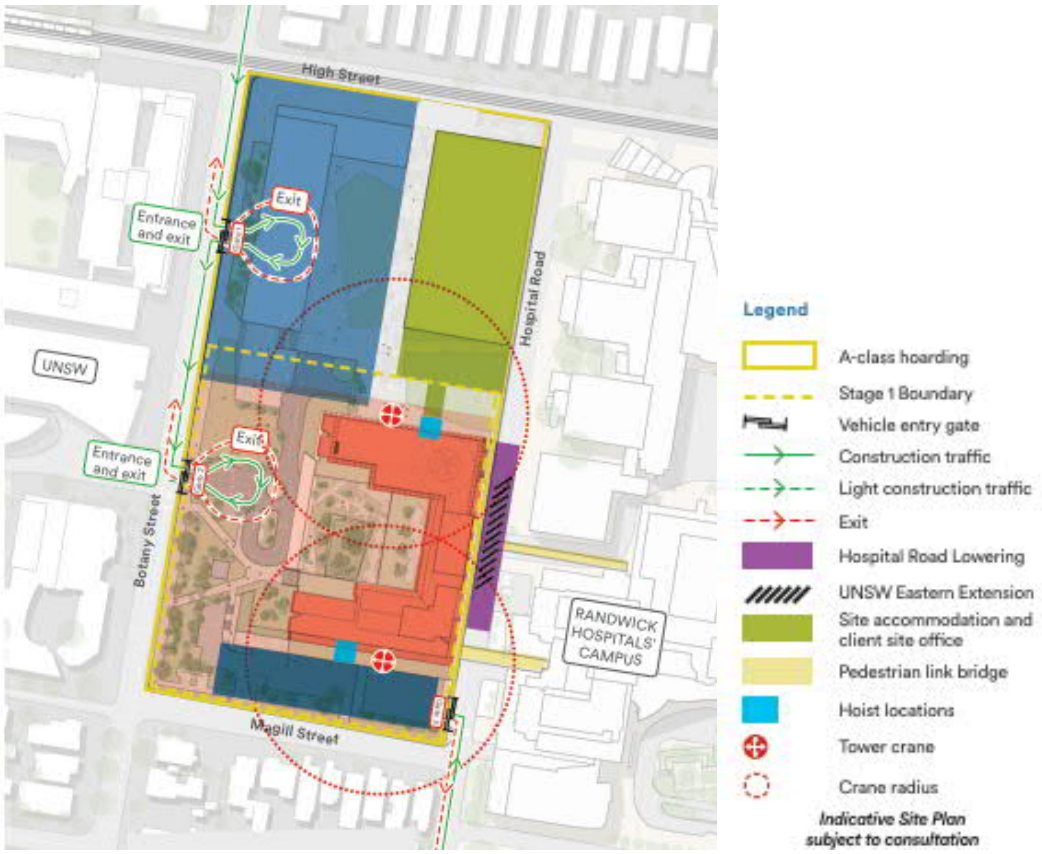


Figure 3 –Lowering of hospital road and UNSW Extension

2.3 Construction Workforce

At its peak the project will engage a workforce of approximately 500 individuals. It is anticipated that this peak will be reached in late-2020. All workers will undergo mandatory inductions to understand their responsibilities when working on the RCR project site and in close proximity to a live Hospital environment. This is inclusive of parking restrictions, dedicated parking facilities, transportation options and available on-site storage facilities.

Planning for construction workforce transportation and parking management will be aligned with projected workforce counts and associated parking demands.

It is understood that a portion of the site worker population will elect to travel to site using private vehicles. Construction workers driving to sites in constrained parking environments, similar to the RCR, typically carpool reducing traffic impacts on the local road network.

The project site is well serviced by public transport providing site workers with alternative travel options.

Figure 5 Labour Histogram identifies the workforce numbers.

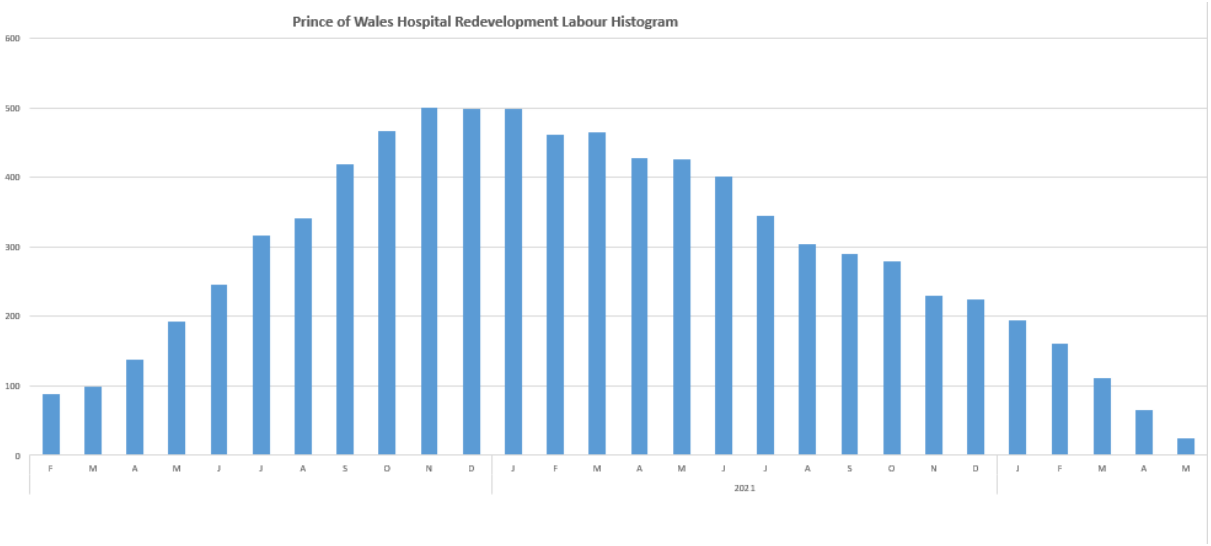


Figure 5 –Labour histogram

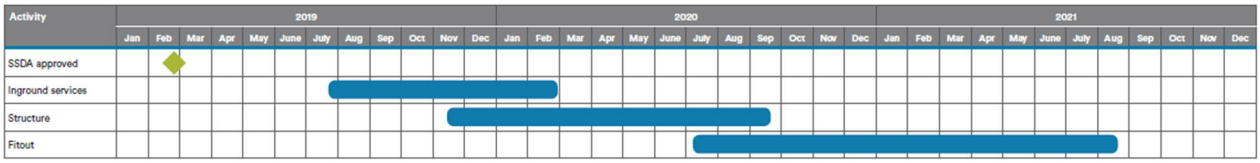
3.0 CONSTRUCTION PROGRAMME & STAGING

3.1 Key Milestones

The table identifies the key milestones of the scope of the ASB and Integrated ASB (IASB) addition works.

	Lendlease Program	
	Start Date	**Finish Date**
Construction of Acute Services Building (SSD 9113 - ASB)	July 2019	March 2022
Lowering of Hospital Road (SSD 10339 - IASB)	23rd March 2020	25 June 2021
UNSW Eastern Extension (Base Building only) (SSD 10339 - IASB)	16 April 2021	25 May 2022

For CC2 and CC3 the construction programme is summarized on this bar chart.



3.2 Construction staging overview

The Lendlease project team fully appreciate the disruption and change the construction works will bring to hospital operations and understand the challenges the HI, SESLHD and Randwick Hospital Precinct management will have in communicating the staging sequences and the program of the works to the staff and public. The better hospital staff and public understand the timing and reasoning of the staging of the works, the more comfortable they will be with the temporary inconveniences.

We have completed a review of our construction program and methodology and documented a draft set of staging plans covering the works phases, these will provide the basis for a full set of staging control plans, which will be developed in conjunction with detailed design development during the Planning Phase in consultation with HI, SESLHD and Randwick Hospital Precinct Management.

The staging plans will be developed to include:

- All site establishment items;
- Changed or modified egress paths;
- Pedestrian and vehicle circulation route changes;
- Temporary signage requirements; and
- Upcoming changes to works areas including approximated program dates.

3.2.1 Site Establishment

During the site establishment phase of the project the following activities will be undertaken. An "A" Class plywood hoarding will be installed to the perimeter of the site; this hoarding will ensure that there is no unauthorised access to the site. The duration in time for this is shown on the indicative program on previous page.

The Lendlease site office at this time will be located within a dwelling or complex located on High Street as shown on the CC2 and CC3 staging plan.

The site will have three (3) gates installed during the site establishment phase, two on Botany Street and one on Hospital Road. These gates will be steel and chain link mesh with large identification numbers and statutory Workplace Health and Safety signage installed on them.

The figure 9 below shows what the site established will look like.

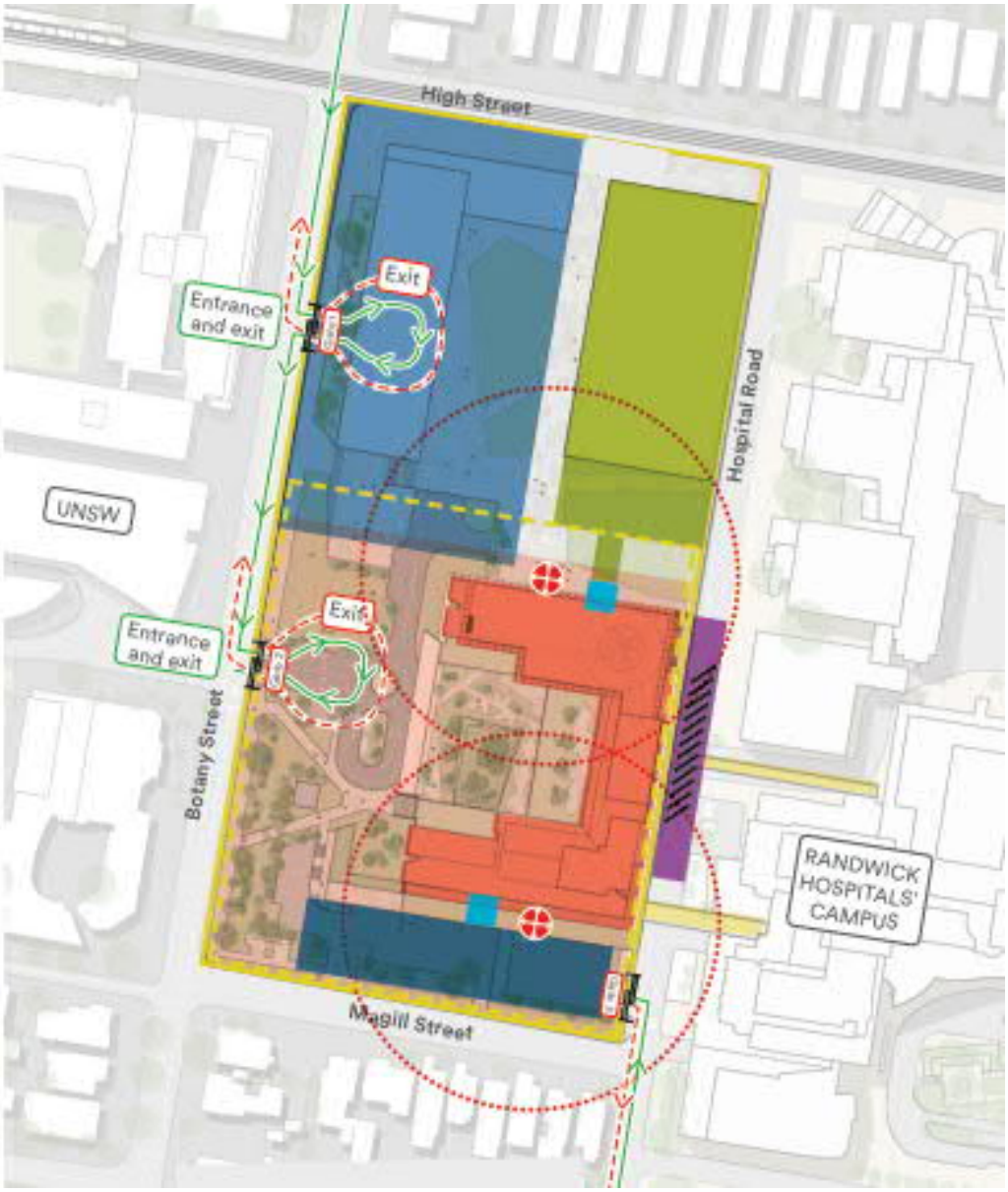


Figure 9 denotes the overall site plan, CC2 and CC3 sequence site plans.

Gate 1 and Gate 2

These gates will be the primary construction access gates during the Construction Certificate two and three works, these gates will facilitate all heavy haulage, articulated vehicles and all major deliveries on and off site. Detailed swept path analysis has been provided earlier in this document.

Gate 3

Gate 3 will be used intermittently for construction vehicle access during the project. Gate 1 & 2 remain the primary access points during all stages of the project. The below timeline indicates proposed usage of Gate 3. This will be further refined as construction progresses. During Structure phase, concrete/steel deliveries vehicle movements will be approximately 10-15 per occasion. This is planned to occur 1-2 days a week. Typical size vehicles are 12.5m rigid trucks. This will be for small concrete pours from level 1 where access is required from the southern boundary of the site. During Fitout stage, usage of this gate will be approx 75 movements / week. This will be predominately for deliveries of fitout and services materials to B2 and lower levels of the building. Pantek size vehicles which are most common for this stage of construction will be used. At the time of Commissioning, the permanent state loading dock to ASB at B2 level is accessible via Gate 3. Vehicle movements will continue at this stage to facilitate end use operations.

Further consultation is required on the activation of Gate 3 with key stakeholders, including Randwick City Council, TFNSW and LHD.

GATE 3 Frequency	2019	2020				2021				2022
	Nov	Feb	May	Aug	Nov	Feb	May	Aug	Nov	Feb
Structure										
Fitout										
Commissioning										

3.2.2 Cranes & Materials Handling

Proposed methodology for cranage and establishing a Helicopter Management Plan.

The proposed tower crane locations provide overall coverage to this site, capacity for heaviest lifts, minimal disruption to internal fitout and providing flexibility and redundancy between cranes. Lendlease has identified a preferred option below however we will investigate this positioning and selection with the SESLHD and HI.

Tower Crane No 1 will be positioned on Northern Elevation and will be founded on an external footing. This crane is proposed to be a Jaso 560 or similar hammerhead tower crane with a 85m boom and a lifting capacity of 6.5t at the tip of the boom. It will be equipped with an external climbing frame and tied into the concrete structure. The central position provides crane hook coverage to the core area and the floor plate, with the loading zone on the northern elevation. This crane has been sized for major lifts such as generators, and cooling towers.

Tower Crane Number two will be positioned on the Southern Elevation and will also be founded on an external footing. This crane is proposed to be a Jaso J560 or similar tower crane with a 65m boom and lifting capacity of 8.8t at the tip of the boom.

Figure 9: Crane and materials handling

It will be equipped with an external climbing frame and tied into the concrete structure. This position provides crane hook coverage to the south and eastern side. This crane has been sized for major lifts such as generators, and cooling towers.

Moving materials and workers up and down the structure will be by means of a number of person and material hoists.

Two time sets of twin hoists will be installed as the tower reaches low rise levels, this ensures that the workforce can traverse between floors efficiently and safely.

Careful consideration has been given to the quantity and location of the hoists to provide adequate vertical transportation to each level of the tower. We note the hoist locations nominated along the northern and southern elevation of the ASB has taken into consideration detailed floor layouts; plantrooms, wet areas, room layouts and circulation areas to minimise any unnecessary delays to plantroom, wet areas and clinical fitout works. The hoists will be progressively removed once the temporary fitout and commissioning of the internal builder's lifts are completed.

The figure shown on the previous page shows the cranes and material hoist.

Figure 10: Crane and materials hoist

3.2.3 Environmental Protection

Proposed methodology for environment protection, including noise, dust, vibration & visual.

The site area will require careful management of site run-off. Perimeter protections installed during the CC2 and CC3 works. Lendlease will carry out daily site inspections in response to changes in environmental conditions. These inspections will focus on protective measures for all site boundaries, access roads and stormwater pits.

These daily inspections will enable any issues to be identified and corrected immediately, resulting in no impact on the environment, local community and public ways.

- The primary areas requiring specific environmental controls will be:
- Inspection of remediation capping layer for uncontrolled breaches
- Managing site surface water run-off
- Disposal of any retained stormwater
- Protective measures during removal of hazardous materials
- Monitoring and mitigation of dust, vibration and noise
- Managed storage of hazardous construction materials
- Dedicated wash down facilities
- Monitoring water table during groundworks

Noise and vibration

Monitoring for noise emissions, vibration and air quality during the redevelopment works is necessary to maintain the health and well-being of people who are involved in the works and of those within the existing hospital buildings

During the CC2 and CC3 activities under the Main Works, there will be some noise and vibration. To manage the impact on the community, these activities will predominantly be carried out during the day. The proposed equipment for CC2 and CC3 stages of works will include but not limited to: concrete pumps, tower cranes, man and materials hoists, excavator 30t, skid steer loaders/bobcats, trucks and trailers and other tools/machinery such as cement mixers, angle grinders, concrete saws, chainsaws, mulchers, drills and hammers. Lendlease will

implement a CNVMP outlining the controls to be implemented on site. The CNVMP will confirm strategies that will be implemented to minimise disturbance to sensitive receivers in accordance with regulatory requirements.

In addition to the above any vibration sensitive equipment will be reviewed during the planning stages to advise if the works will have any impact of those pieces of equipment or hospital services.

Lendlease have identified particular noisy works, in particular those which directly interface with existing buildings where strategies will be implemented to minimise disturbance to sensitive receivers within the hospital.

Generally, the following controls will be implemented to ensure that noise and vibration related issues are controlled, addressed and resolved in accordance with regulatory requirements:

- Employees will receive training which will enable them to recognise areas where noise levels are likely to exceed 75dBA.
- Additional noise assessment of the site will be undertaken prior to or at the commencement of works on site with ongoing monitoring in strategic locations determined through consultation with HI during the construction period.
- As the work environment changes, additional assessments may be conducted, the timing of which will be determined in consultation between the site management, Site Safety Committee and the Principal.
- In conjunction with HI NSW, developing acceptable periods when specific “noisy works” can occur.
- Managing works within the approved site working hours.
- Planning and notification of noisy works via the Disruptive Works Notice procedure and in general consultation with HI.
- Warning signs shall be erected in areas where 85dBA is exceeded.
- Where additional personnel protection equipment is required, the areas shall be identified by signage. The appropriate noise protection devices are to be issued to the effected personnel.

Noise emissions will be managed in accordance with the regulatory requirements and Lendlease management procedures, complying with the following:

- National code of practice for noise
- Management and Protection of Hearing at Work [NOHSC:2009]
- AS/NZS 1269.0:2005: Occupational noise management – Series of several Standards
- AS 2012.2: Acoustics – Measurement of airborne noise emitted by earth-moving machinery and agricultural tractors – Stationary test condition - Operator’s position
- AS 2436: Guide to noise control on construction, maintenance and demolition sites
- AS 2221.1: Methods for measurements of airborne sound emitted by compressor units including prime movers and by pneumatic tools and machines
- AS 3781: Acoustics – noise labelling of machinery and equipment

Air quality management

Objectives for the project are to implement appropriate controls to suppress dust and other suspended particles in accordance with legislation and risk management requirements minimising the generation of dust on the site and potential emission issues relating to plant and equipment.

The AQM Plan is included within the project EH&S Plan and our strategy for air quality management would include:

- Clear definition of trafficable and material storage areas to prevent unnecessary vehicle movement into other areas
- Use of water cart to dampen work areas and exposed soils to prevent the emission of excessive dust

- Installation of a wheel shaker grid and/or wash down facilities at the vehicle egress point
- Ensuring trucks transporting materials to and from the site use covers to prevent windblown dust or spillage
- Ensuring truck tailgate locking mechanisms are operational and in use
- Periodic inspection of surrounding roads to ensure no construction contamination and initiation of road sweeping if required
- Careful selection of materials for temporary road surfacing
- Aspergillus control during construction works within existing buildings
- Subcontractors to maintain equipment / machinery to ensure exhaust emissions comply with relevant legislation and guidelines
- All waste material to be sorted, collected and removed from site (for recycling where possible)
- Air quality monitoring
- Dust screens and airlocks to be utilised with interior works
- Provide construction filters to air intake vents
- Use of temporary exhaust fans and filters to circulate construction zone air to exterior of building

3.2.3 Waste Management

The applicant must notify 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 site

Lendlease will ensure our supply chain is responsible and accountable for maintaining a clean, clear and safe working environment. Rubbish bins will be provided to all work areas and will be regularly removed to the central skip bin location by the subcontractors for collection and transport from site to the waste recycle facility.

Bins will be moved via the person and materials hoists or by the crane, dependent on the where they are being loaded from and the waste material that is being removed from site. Crane lifted steel bins will be used to service the top floors where structure trades are working, and large Otto bins will service the lower levels where fitout and service trades are working. The site skips will be centrally located at Ground Level to ensure an easier pick up from our bin contractor.

Waste will be separated at the approved waste management Centre. Auditable records will be kept of quantities of all materials both recycled and disposed landfill. Records will be monitored to ensure Lendlease internal recycling targets are achieved or exceeded. This information will be collected and reported in compliance with our Environmental Management Plan and its Waste Management and Recycling Sub-Plan over the duration of the project.

To ensure the Randwick Campus Redevelopment project meets its sustainability targets, waste management reports will show monthly and cumulative performance.

3.3 Construction sequencing

The CC2 and CC3 works is identified below.

Main structure – below ground

Following the piling and bulk excavation activities, inground services will be installed to below the Basement B2 level. Once these services are progressively installed and completed the ground slabs will be formed and poured.

The structure below ground will be constructed using a twelve (12) pour sequence, the advantage of this approach is that this site will into develop into a repeatable form, reinforcement, pour rhythm quicker which will gain momentum as the and allow the towers to be constructed in a systematic and methodical manner.

The image below is a snapshot from the Lendlease animation of the Randwick Campus Redevelopment, this show cases the construction sequencing and methodology talked to above.

Figure 11: Below ground construction sequence

Main structure – above Ground

The structure above ground will be constructed using a five (5) pour sequence, the advantage of this approach is that this site will into develop into a repeatable form, reinforcement, pour rhythm quicker which will gain momentum as the towers are constructed.

The structure and concrete pours will be constructed using tower cranes, concrete pumps, hand tools and mixes. The noise and vibration impacts will be minimal during this time and further detail can be obtained in the Acoustic report.

The structural slabs will be designed to encompass band beams and two-way slabs formed using table formwork system.

These formwork systems have been optimised and improved over numerous Lendlease developments and will be further enhanced for the Randwick Campus Redevelopment. Columns will be formed using prefabricated column tubes and will be installed and poured prior to the slab being poured.

The image below is a snapshot from the Lendlease animation of the Randwick Campus Redevelopment, this show cases the construction sequencing and methodology talked to above.

The main cores will be established with self-climbing jump form systems. Once these are assembled on site they will lead the structure being 2 floors ahead of the main structure levels.

Figure 12: Main tower structure sequence

Internal works – fit out and finishes

Lendlease's current construction program considers just the base build fitout for the tower floors, acknowledging the integrated fitout is currently contemplated as a separate contract.

The base build fitout sequence will be undertaken as follows:

- High level services rough-in and riser rough-in
- Façade completion and ceiling margin installation
- Full height wall framing / blockwork
- Rough-in of services in wall
- Hold Point inspection and sign offs prior to second side wall sheeting
- Wall sheeting (post façade completion)
- Wet area fitout inclusive of all vanities, and FFE and items
- Specialist finishes to core wall where applicable
- Access floor installation
- Services fit-off and part commissioning
- Painting
- Install ceiling tiles
- Builders clean
- Final commissioning

The image below is a snapshot from the Lendlease animation of the Randwick Campus Redevelopment, this show cases the construction sequencing and methodology talked to above.

Figure 13: Internal finishes sequence

The CTPMP for the SSD 10339 Lowering of Hospital Road and UNSW Extension has now bene endorsed. This plan identifies the construction sequence for these works. The assessment for construction vehicle access for Hospital road works is minimal and sporadic due to the nature of the construction.

As these plans are developed, Lendlease will consult with all relevant stakeholders and Authorities.

4.0 CONSTRUCTION TRAFFIC & PEDESTRIAN MANAGEMENT

4.1 Traffic Management & Control

Lendlease has engaged Arup to provide professional advise on traffic management plans and controls for the Acute Services building. This has been incorporated into the CTPMP throughout these next sections. The report accompanies the development application for the proposed CC2 and CC3 works associated with the redevelopment of the Randwick Health Campus (Campus). This report has considered the traffic and transport implications for following works:

CC2 and CC3 works phase of the Randwick Campus Development.

Proposed methodology for traffic management

Lendlease understand one of the keys to the successful delivery of the Randwick Campus Redevelopment project will be managing the flow of materials and equipment into and out of the construction site whilst maintaining a continuity of business for an operational Randwick Hospital. We also understand existing parking operation agreements are in place and the importance of maintaining currently parking numbers throughout the redevelopment works.

We believe it is imperative that our planning considers and successfully manages the maintenance of pedestrian, traffic flow and parking to the surrounding buildings and roads.

To do this Lendlease will be adopting a number of key traffic management strategies to minimise and mitigate Randwick Campus Redevelopment project's effects on the operational hospital:

- Engagement of Traffic Management Consultant to compile an overall Traffic Management Plan, specific Traffic Control Plans detailing each management of pedestrian, vehicular construction and operational traffic at each stage of works.
- Understanding existing parking provision, demand currently onsite, identifying temporary hospital and construction parking replacement options on and offsite to mitigate potential parking shortfalls during the redevelopment.
- Adopting an online materials booking system called the virtual superintendent to facilitate efficient just in time delivery of construction materials, alleviating traffic congestion.
- Encouraging staff, consultants and Subcontractors to adopt a Green Travel Plan for this project with use of public transport to and from site – in particular bus services proximity to the site.
- The delivery Driver Code is appended to this plan, this Driver Code is how supply chain partners will be consulted and will outline how they will conduct themselves while on site and within the Randwick Town Centre facility.

Traffic management and control will be established across all major roads and interfaces across the project. Traffic control will ensure that materials and deliveries will not block off roadways and will streamline the truck movements in and off the project site.

4.2 Base Transport Context

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

The Campus is bound to the east by Avoca Street, a state owned arterial road. Barker Street, which sits along the south of the Campus 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 development of the CBD and South East Light Rail, its function will likely transition 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.

There is approximately 2,300 on-campus car parking bays available to staff and the public. Parking demand peaks during the middle of the day (11am to 2pm) and is effectively at capacity, however sufficient parking is available outside of this peak period.

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. Some buses also provide access to surrounding areas, including Green Square, Mascot, Bondi Junction and Maroubra Junction.

4.3 Transport Assessment

This report incorporates a high-level review of construction traffic impacts associated with the CC2 and CC3 works. The proposed works will include structure, inground services and fitout. A review of the RMS Guide to Traffic Generating Developments (RMS, 2002) indicates that the structure, inground services and fitou activities would correlate to the reduction of between 400 and 700 vehicle trips per day from the surrounding road network. In comparison, daily construction volumes are assumed to be in the order of 50 truck and trailer vehicles per day during phase of works. Construction traffic generation of this magnitude is significantly less than the amount of vehicle trips currently generated by dwellings within the site area. As a result, the potential traffic impacts on the surrounding road network are anticipated to be minimal.

Construction traffic access routes are to be clearly defined and are to predominantly utilise arterial roads and minimise the use of local roads including Magill Street, Arthur Street, Belmore Road and Clara Street where possible.

Any loss in on-street parking as a result of work zones will be managed in consultation with RCC. The Construction Management Plan (Lendlease, 2018) proposes to develop a green travel plan to promote non-car modes of transport for construction workers. This will aim to minimise the impact of on construction site parking during this phase of construction.

4.4 Construction Traffic Management Principles

As a general principle, construction works will be staged to minimise impacts to traffic and other modes of transport. Some key principles for traffic management will likely include, maintaining access to properties, limiting interaction of construction traffic with hospital traffic (especially ambulance routes), maintaining capacity on the surrounding road network, provision for pedestrian movements, minimising impact on local streets (e.g. Magill Street) and managing interactions with CBD and South East Light Rail construction traffic.

4.5 Existing Transport Conditions

4.5.1 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
- 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 9 to Figure 12.

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.

Further analysis of the intersection capacity and operations at all intersections around the study area are detailed in section 2.5.

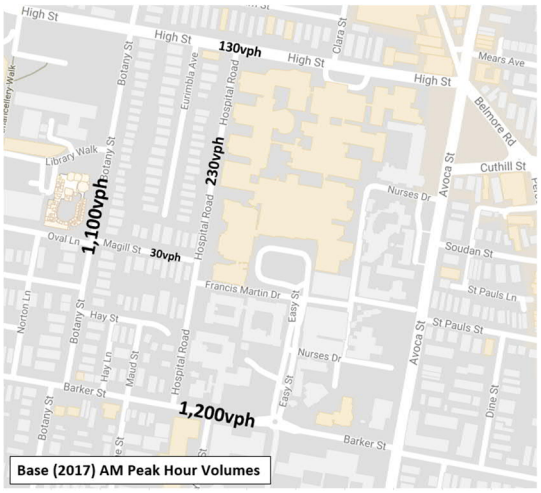


Figure 3: AM peak mid-block traffic volumes

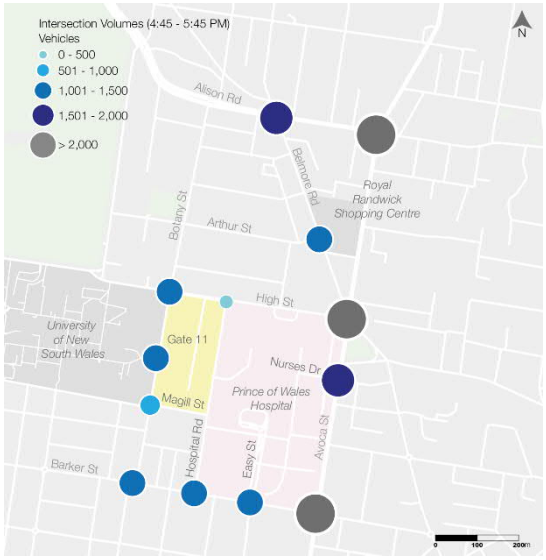


Figure 4: PM peak mid-block traffic volumes
(7:30-8.30am)
(4:45-5:45pm)

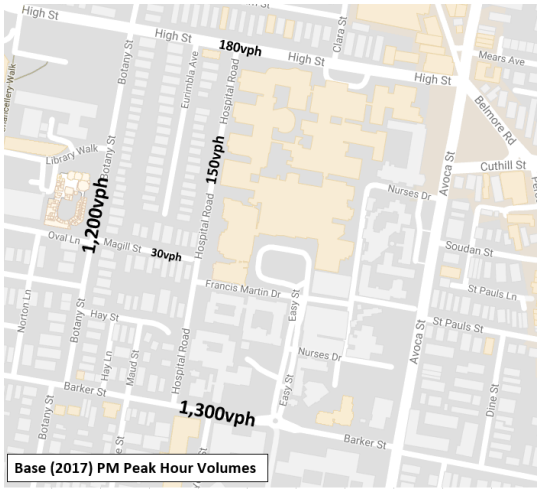


Figure 5: AM peak hour total intersection

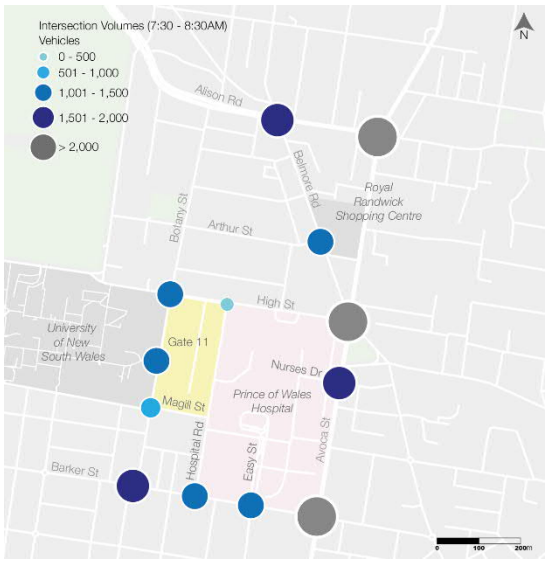


Figure 6: PM peak hour total intersection volumes
Vehicular volumes (7:30-8.30am)
Vehicular volumes (4:45-5:45pm)

4.5.2 Car Parking

Existing parking supply

There are currently 2,302 on-site parking spaces which serve the Randwick Health Campus, comprised of the following:

- Staff: 1,483 spaces
- Visitors: 819 spaces
- Total: 2,302

This provision of on-site parking corresponds 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 13.

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 works along High Street and Botany Street in relation to the CSELR and redevelopment of UNSW. As a result, there is likely to be a total of 222 on-street parking spaces (Table 1).

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 have also estimated that demand generated by approximately 550 vehicles are accommodated in parking areas off-campus – predominantly on surrounding streets. The surveys indicate there is a difference between on-site supply and total demand of approximately 440 parking spaces at peak times, as summarised in the table opposite.

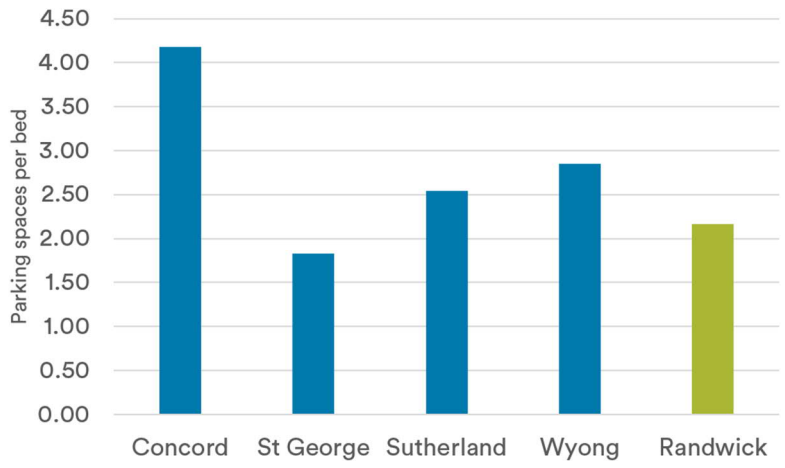


Figure 7: Parking rates at NSW Hospital campuses (Source: Various previous Arup projects, 2012 – 2017)

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	22
Eurimbla Avenue	South of High Street	51
Hospital Road^	Between Barker Street and High Street	-
High Street	Between Avoca Street and Botany Street	0*
Total		228

Table 1: On-street parking spaces (TTW, 2013; Arup, 2017).

* The current construction works along High Street for the CSELR project has removed all parking from this section of High Street

** The construction works currently carried out by UNSW has resulted in the removal of approximately 8 on-street spaces on the western side of Botany Street

^Parking along Hospital Road has been included within the on-campus parking supply

On-street Parking Spaces										
Staff	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
Monday	71%	85%	89%	90%	91%	90%	89%	83%	69%	45%
Tuesday	72%	88%	91%	92%	93%	94%	89%	83%	69%	45%
Wednesday	69%	84%	91%	92%	92%	93%	92%	86%	72%	53%
Thursday	71%	86%	92%	91%	92%	93%	94%	88%	73%	52%
Friday	66%	79%	83%	82%	83%	85%	84%	78%	64%	45%

Staff	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00
Monday	46%	65%	81%	86%	78%	72%	76%	68%	59%	49%
Tuesday	46%	68%	85%	93%	91%	81%	79%	73%	62%	44%
Wednesday	49%	78%	96%	96%	94%	86%	87%	76%	60%	46%
Thursday	43%	67%	85%	89%	81%	78%	76%	68%	57%	46%
Friday	45%	73%	89%	91%	88%	82%	77%	64%	52%	42%

Existing Parking Supply & Demand					
User	Parking Demand		Parking Supply		Difference
	On-Campus	Off-Campus	Total	On-Campus	
Staff	1,395	205	1,600	1483	-117
Visitors	710	345	1,055	819*	-236
Total	2,105	550	2,655	2,302	-353

Table 2: Existing parking supply and demand (PTC, 2014).

*The number of visitor parking spaces was updated following a parking inventory audit was 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 staff car driver mode share compared to other health campus, as illustrated in Figure 7.

STAFF CAR MODE SHARE

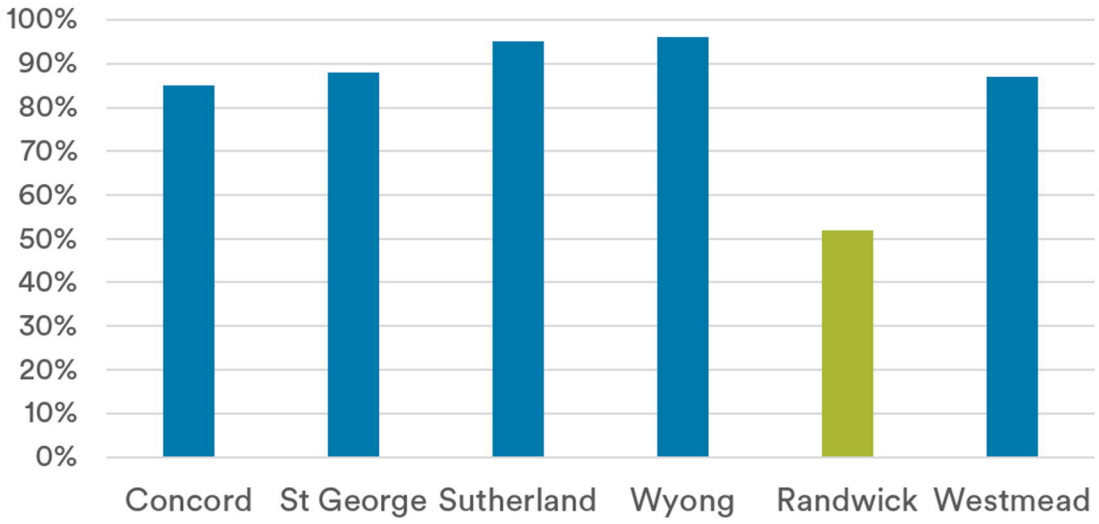


Figure 7: Existing staff driver mode share to NSW Hospital's (Source: Various previous Arup projects, 2012 – 2017)

4.5.3 Public Transport

Bus

The southern end of Belmore Road, which is located at the north-eastern boundary of the Randwick Health Campus site, is a district hub for buses in Sydney's eastern suburbs. A number of bus routes, shown in Figure 18, frequent the area, including:

All-day services connecting the south-eastern suburbs with the Sydney CBD via Moore Park – routes 372, 373, 374, 376, 377 and M50

A range of express service variants of these routes that operate during peak hours

North-south services that connect centres in the Eastern Suburbs, including Bondi Junction and Maroubra Junction – routes 314, 316, 317

East-west services that connect Randwick with Bondi Junction, Green Square, Mascot and various locations in the inner western and southern suburbs – routes 348, 400, 410 and 418

Leichhardt to Coogee – route 370

UNSW express bus services – routes 891, 893 and 898

The majority of bus routes travel along Belmore Road, with some services also using High Street, Alison Road and Avoca Street. Recent changes associated with the construction and operation of the CBD and South East Light Rail have resulted in buses using Arthur Street instead of High Street.

Lendlease understands that buses currently operate on Botany Street and are also planned to be reintroduced on

High Street in the near future. Lendlease 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 unless approved for use at the concrete truck marshalling area. The timing of this workzone is from 9.30am -3:00pm to mitigate impact on peak transport movements.

Promotion of public transport use by workers which will reduce vehicular movements around the precinct.

Lendlease construction delivery vehicles to access from Alison Street/Botany Street which is reducing construction vehicles from the Barker Street end of Botany Street.

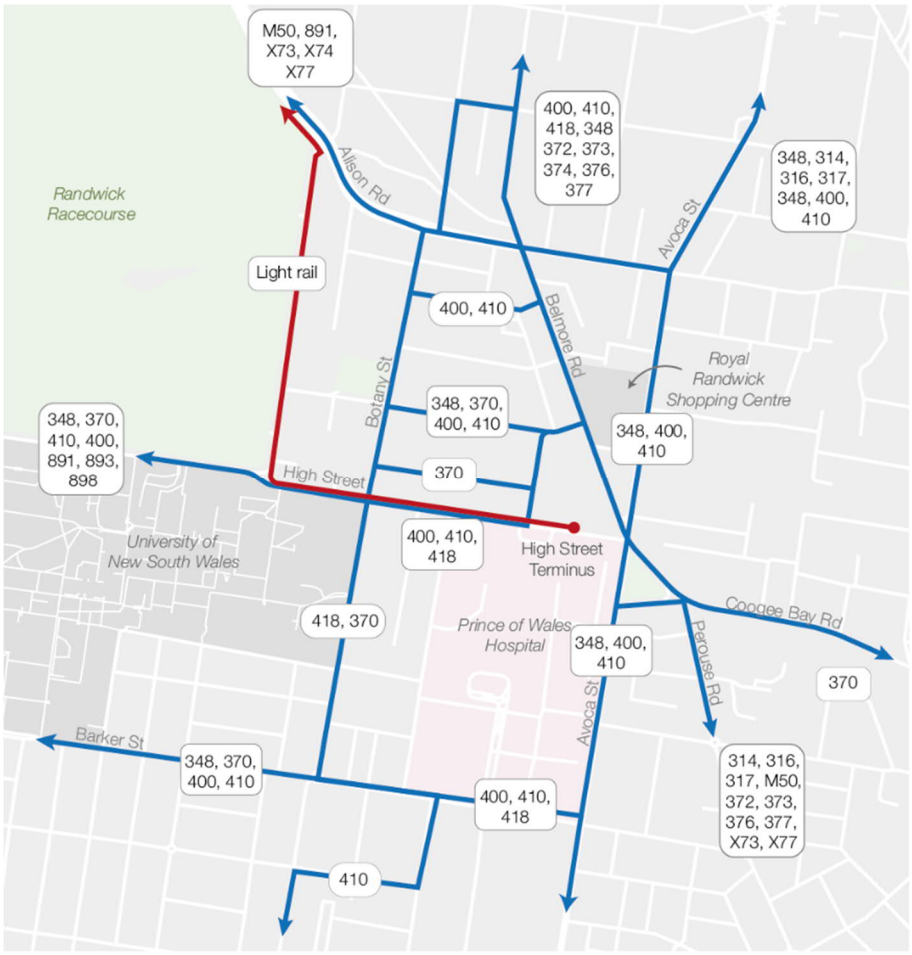


Figure 8: Existing bus services and future Light Rail servicing the Randwick Health Campus

Light Rail Terminus

The eastern end of High Street, which forms the northern boundary of the Randwick Health Campus site, now features the terminus for the CSELR Randwick line. Light rail services will terminate at a stop on High Street, immediately west of the Belmore Road and Avoca Street intersection.

Light rail services will travel from High Street towards the CBD every eight minutes between 7am and 7pm on weekdays. There will be a number of bus operational changes associated with the introduction of light rail. These operational changes will also result in amendments to a number of city-bound bus routes.

4.5.4 Active Transport

Active transport modes, including walking and cycling, currently accounts for approximately 17% of staff travel modes to and from the Campus. The majority of active transport accounted for by walking (14%) rather than cycling. As highlighted in Section 2.1, over 40% of staff currently reside in the eastern suburbs, with 14% living in the suburb of Randwick. This proximity, in conjunction with limited availability of parking on the Campus, has initiated a shift towards more active modes. 5, 10, 15 and 20 minute walking isochrones from the Randwick Health Campus shown in Figure 19.

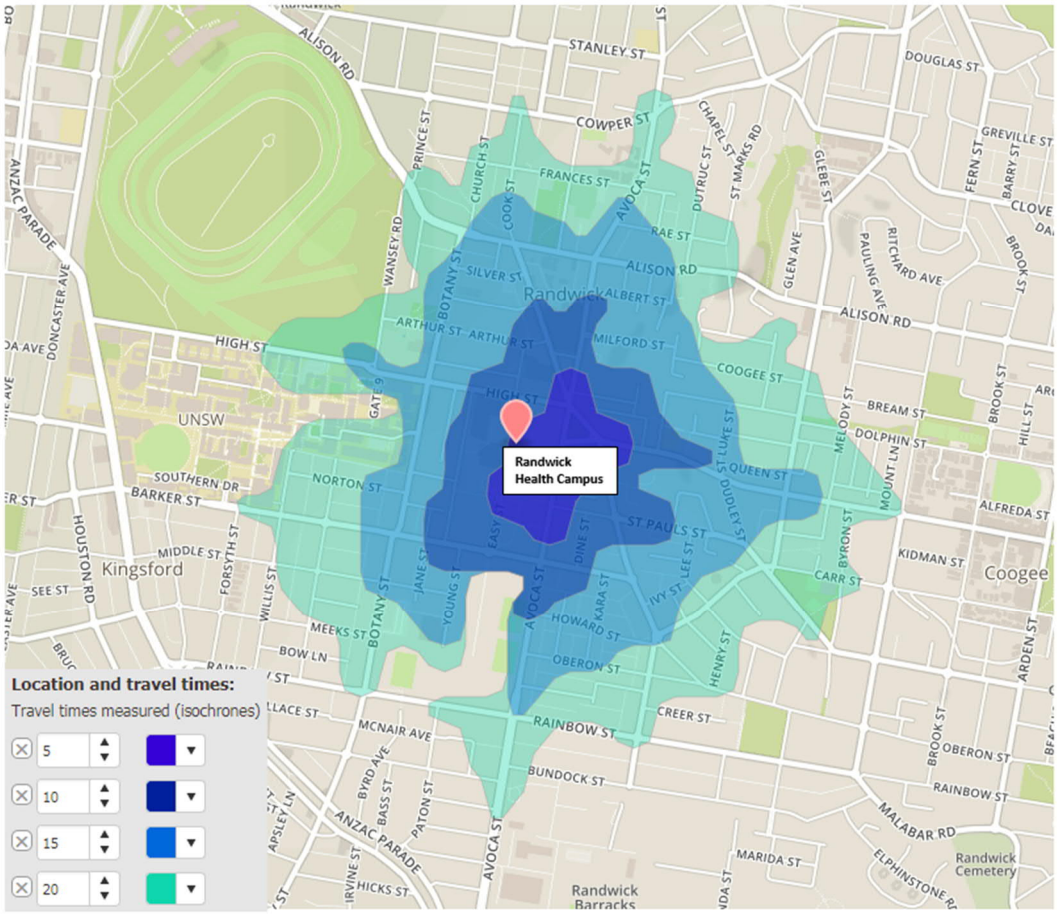


Figure 9: Walking isochrones to/from Randwick Health Campus (Source: Arup, 2017)

4.6 Construction Vehicles & Volumes

Heavy vehicles including Articulated Vehicles (AV) for machinery delivery and Heavy Rigid Vehicles (HRV) including truck and trailer combinations will be used for removal of excavation spoil and delivery of building materials for construction of the structure and fitout

Truck turning paths have been developed for the two driveways 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. It is proposed to provide 11.0m wide gates to facilitate these movements as shown in Appendix A.

At the northern driveway, trucks will generally be able to turn out. Gaps in the southbound traffic will occur due to the High Street traffic lights to assist with these turns.

The following vehicle access to Gates is planned as follows:

- Truck and Trailer vehicles - Gate 1 and 2 only
- Articulated Vehicles - Gate 1 and 2 only
- 12.5m Pantek vehicles - Gate 3 only

The cumulative impact on the road network during the CC2 and CC2 scope of works is minimal as the deliveries will be more sporadic and less in quantum than the concrete structure works. The timeline below identifies the Crown Certificate stages.

Estimated construction delivery volumes is provided below:

- **Concrete pours** – 60-80 concrete trucks/day. Large pours expected every 6 days during the structure cycle
- **Structure Deliveries** – 10-12 deliveries / day of formwork, reinforcement and PT
- **Fitout Deliveries** – 10-15 deliveries/day of ductwork, pipework, plasterboard and associated items.

Due to Covid-19 extended working hours are being sought for approval. The key construction activities after hours are identified as per below;

- Steel reinforcement
- Post-tensioning
- Materials handling
- Concrete pour
- Cores (but jump height is limited to suspended structure access)
- General deliveries for structure trades
- Block workers
- Primary Services installation
- Hospital road civil works

Whilst there are deliveries scheduled during the day as per above, additional deliveries in the evening will be required to maintain construction productivity. Volumes of deliveries during CC 3 activities would be an additional 8-12 deliveries after the standard working hours. This will be deliveries such as steel reinforcement, post tensioning and fitout materials. On some occasions there will be concrete pours. Dependent on the concrete volume, there could be up to 80 concrete truck deliveries. However, the latest delivery would be by 10pm to allow finishing time to the concrete.

4.7 Construction Circulation Routes

The access points on Botany Street will be predominantly utilised as left turn entry for trucks with vehicles approaching from Alison Road on Botany Street and using the kerbside lane for turning into the driveway. This will minimise impacts on through traffic. Trucks will then exit turning right onto Botany Street to travel north towards Alison Road.

Deliveries to Gate 3 will be periodically to facilitate construction of the structure. Proposed delivery vehicle routes are indicated in the below figure. This is to be confirmed in consultation with TFNSW.

Magill Street has been opened to public traffic now that Hospital Road is closed to facilitate carpark entry and exit to the main hospital carpark. Construction vehicles are not permitted to use Magill street. Temporary bollards are currently installed at the Eastern end of the street which are opened at 7am and closed at 6pm to facilitate the carpark traffic. A boom gate is being procured to be utilized. At the completion of the project, the boom gate will be open from 7am – 10pm, and under control of security after hours to facilitate emergency vehicles. This is in accordance with SSD10339 Consent conditions.

The following marked up street overlays shows the various ways delivery drivers will be accessing the Randwick

Campus Redevelopment. Careful consideration has been given to all these options to ensure there are no impacts to the daily Hospital Operations, and the surrounding businesses and residents.

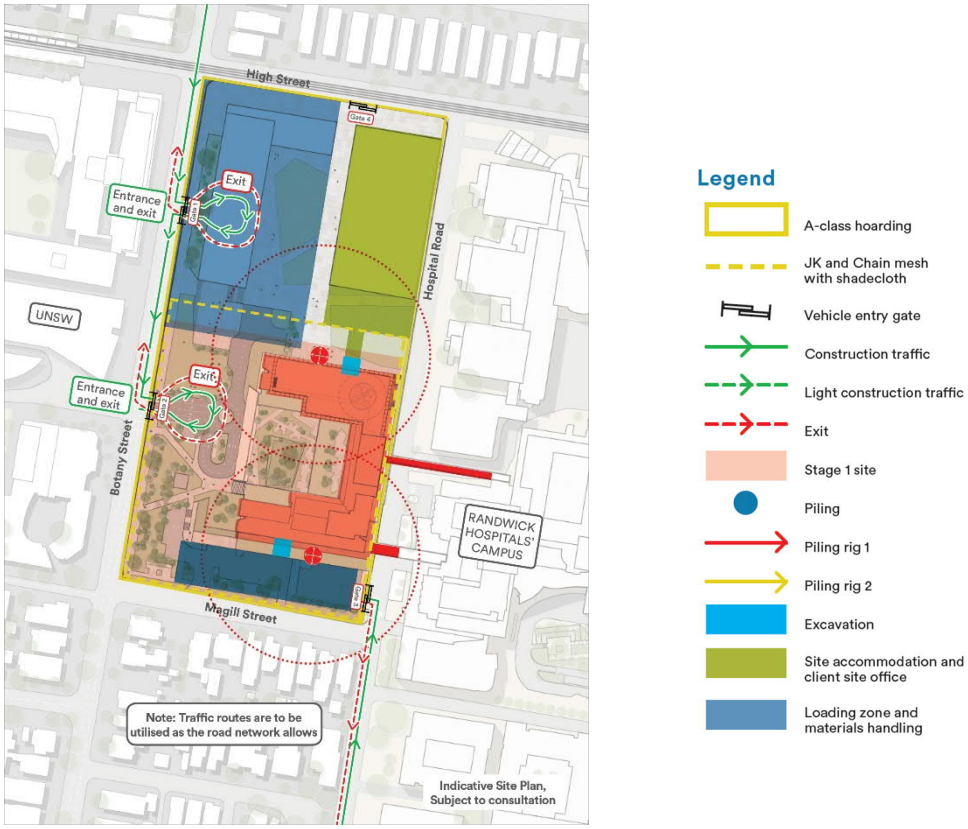


Figure 14: Site establishment plan CC2 and CC3, left in, right out

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. Construction traffic through the Randwick Junction Town Centre (i.e. Belmore Road) is to also be avoided. The key arterial roads surrounding the site are Avoca Street, Anzac Parade and Alison Road.

Access to the site will primarily be via Botany Street. The CTPMP currently allows for two construction access gates along Botany Street. Access via Hospital Road is to be coordinated to minimise impact on Hospital operations.

Construction access to the site via the High Street/ Eurimbla Avenue intersection is understood to be necessary for light vehicles construction management vehicles only.

Proposed access routes are shown to and from the site, and this access and egress routes takes in the TfNSW, TMC and SCO considerations which were talked about during the CC1 engagement phase of the project.

Concrete deliveries

Lendlease are working with our trade partners and supply chain to effectively manage and control the concrete truck deliveries on concrete pour days.

Lendlease has worked over the past few months in minimising the size of our concrete pours to a manageable size under 500m^3 to ensure we don't extend past our approved work hours and that we can maintain traffic flows, current and projected around the Randwick town Centre. For major concrete pours we expect to pour up to 80m^3 / hour. This equates to 12-13 concrete trucks per hour to maintain efficiency for a 6-8 hour concrete pour. With this volume of concrete on a given day we will not exceed 120 overall truck movements per day.

Lendlease will continue to work proactively with our supply chain to ensure minimal disruption to the local traffic network and the wider community as a whole.

Lendlease has proposed a construction delivery marshalling area in the event where there is a back log of concrete trucks caused by weather conditions, or other conditions outside the control of our workers. Due to the main site having a large material handling zone, there will be a large marshalling area within the site which should adequately allow for up to 8 trucks on site. Hence the marshalling area is purely a redundancy for worst case scenarios. The site will be the primary location for concrete trucks. Several locations have been investigated with the most viable noted in this plan utilising High Street opposite the Roundhouse/ Sport complex.

Construction concrete delivery vehicles will be held in this location then continue up High Street, left into Wansey Road, right into Arthur Street, then right onto Botany Street. Consultation has been undertaken with RCC and UNSW on this location. RCC has advised that the existing 'No Stopping' signs would be replaced with "Loading Zone" signage. There will be two-way active communication between the truck marshaller and the marshallers located on site.

Other key criteria for the marshalling area which as been noted during consultation includes:

- Hours of operation between 9:30am -3pm Monday to Friday. Note that the marshalling area will not be utilised on Saturdays as large pours wont proceed on these days. The marshalling area will also not be used during extended working hours as there will be sufficient capacity to hold concrete deliveries within the ASB site.
- Marshalling area only applicable for concrete trucks. Note there is a 9m restriction to vehicles accessing High street eastbound from Anzac Parade, and northbound onto Wansey Road. Articulated vehicles or truck and trailer vehicles will not use any part of High Street (between Anzac Parade and Avoca Street, except for articulated concrete trucks.
- Truck marshaller is to ensure no queuing of trucks towards Anzac Parade due to bus swept paths. Figure 15a identifies the TCP for High Street marshalling zone.
- Delivery trucks are to not park elsewhere on High Street, Wansey Road or Arthur Street. Strictly no trucks should be in the High Street truck waiting area before 9:30am and after 3pm. This time restriction will be subject to monitoring by the Sydney Coordination Office which may alter the time restriction or cancel the use of the marshalling are, based on the impacts of the road network, including buses.
- ATC advise not to be utilised on Autumn or Spring Carnival days which are Saturdays and one Tuesday in November. This can be complied with.
- The marshalling zone will be set back from identified driveways 3 metres to facilitate safe turning in and out of the driveways. The dedicated traffic marshallers will monitor this.
- Truck widths are 2.5m and the lane width is 3m. It is confirmed that with the traffic cone set up the cones and concrete trucks will be within the kerbside lane and won't extend into the second lane. Trucks will be managed to ensure they do not queue into the second lane from the northern kerb of High Street.
- The marshalling area will be able to accommodate up to nine trucks simultaneously in the zones nominated. Approximately 90m of marshalling area is indicated on the TCP.

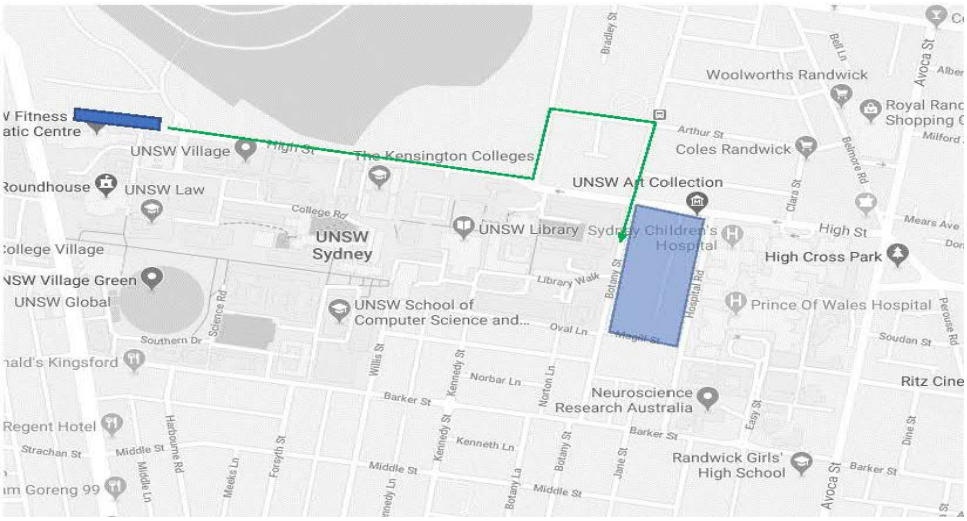


Figure 15: Marshalling area and truck routes

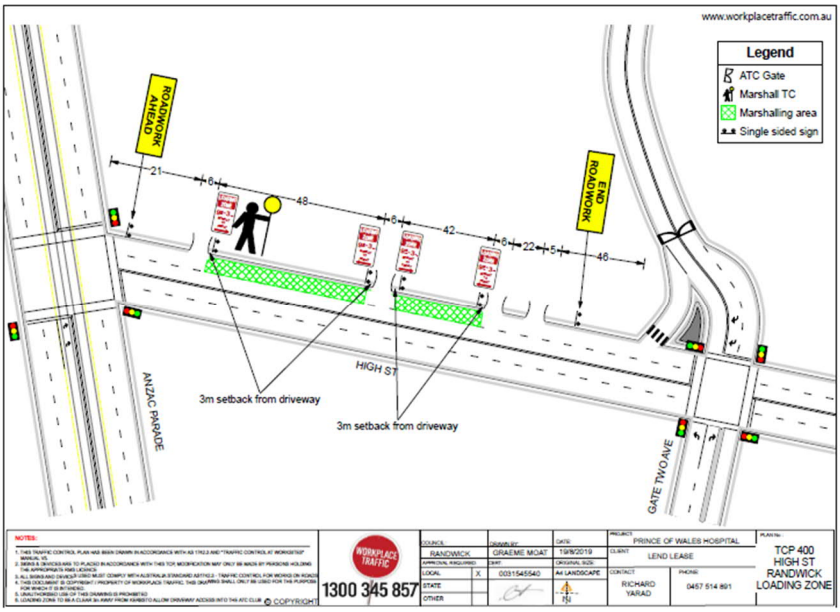


Figure 15A: High Street Randwick, TCP

The following truck haulage routes have been identified to minimise impact on surround roads to the precinct. These routes will be communicated to the workforce via startup meetings, toolbox talks and issuing the CTPMSP. Articulated vehicles (excluding concrete trucks) and truck and trailer vehicles will not use High Street.

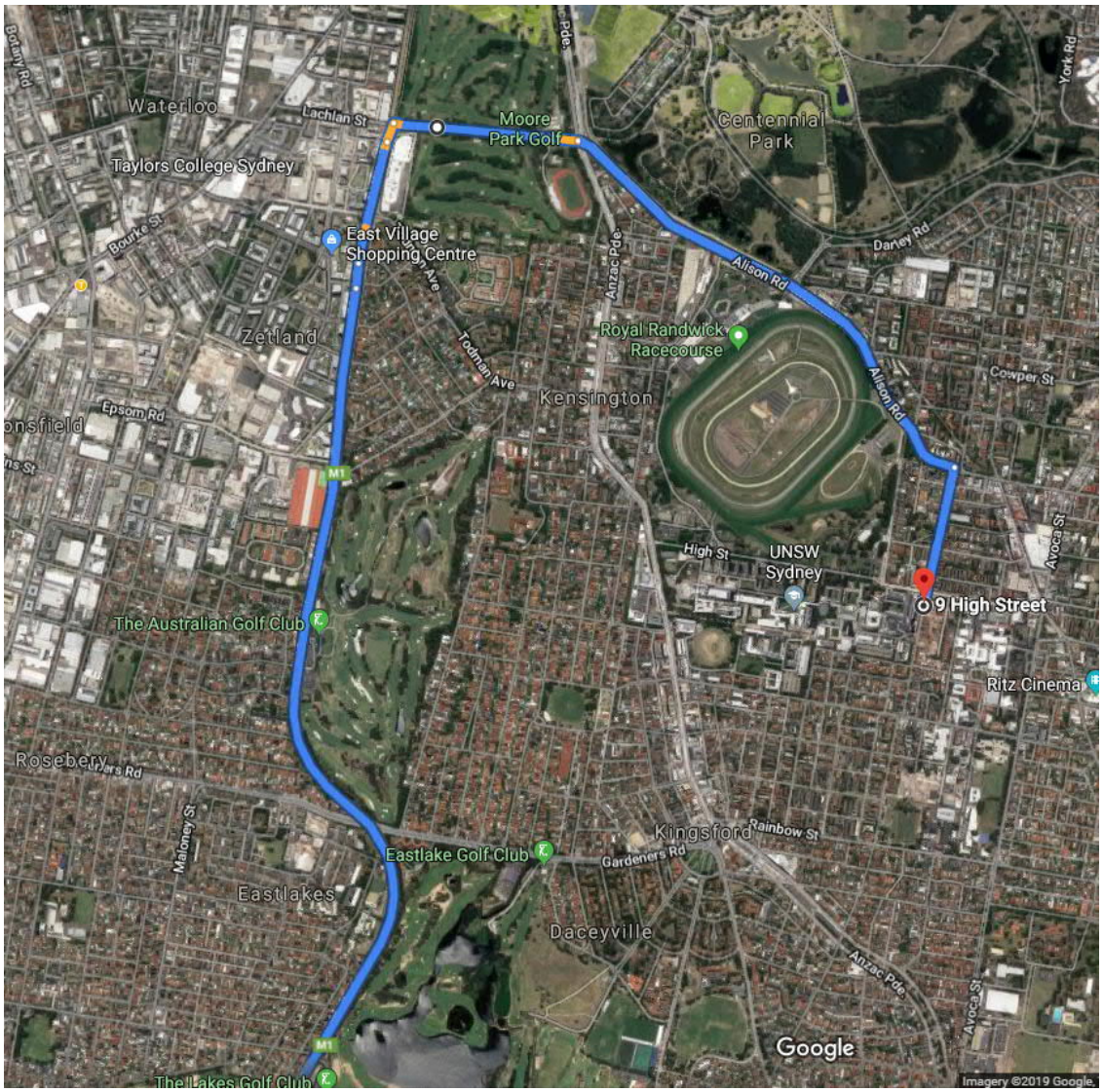


Figure 15b: Travelling from Southwest M5/M1 to Randwick

Delivery vehicles travelling from the West of Sydney will follow a direction as outlined in the above figure. Utilising the M5/M1 vehicles follow the following route to the site:

- Exit from the M5/M1 onto Dowling street
- Turn right onto Dacey Avenue
- Via right onto Alison Road
- Turn right onto Botany Street
- Enter Gate 1 of the site

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

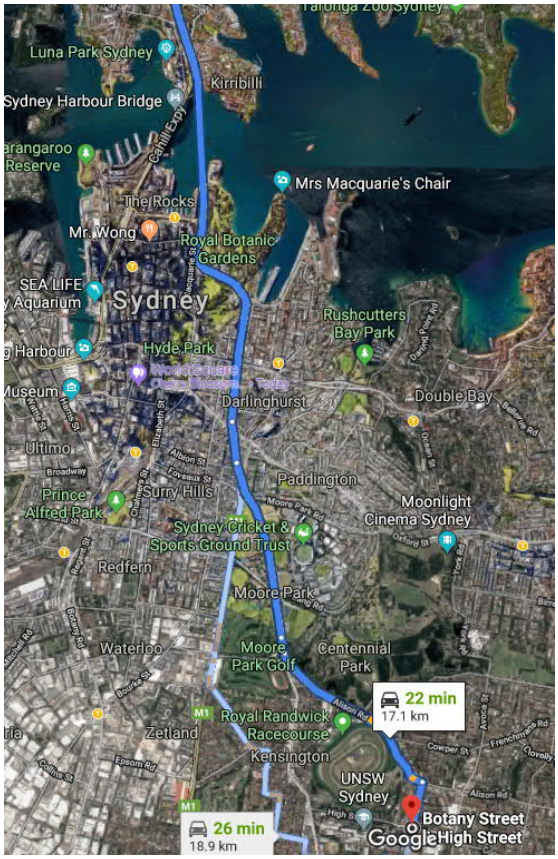
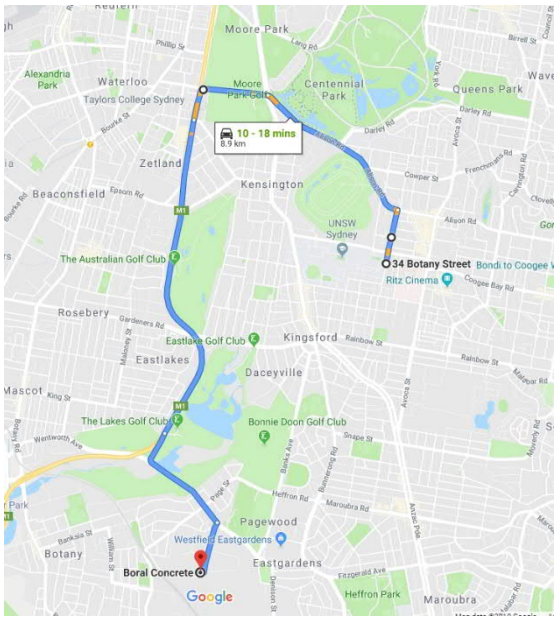


Figure 15c: Travelling from North M1 to Randwick

Delivery vehicles travelling from the North of Sydney will follow a direction as outlined in the above figure. Utilising the M1 tunnel vehicles follow the following route to the site:

- Exit from the M1 onto Anzac Parade
- Turn left into Alison Road
- Turn right into Botany Street
- Enter Gate 1 of the site

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



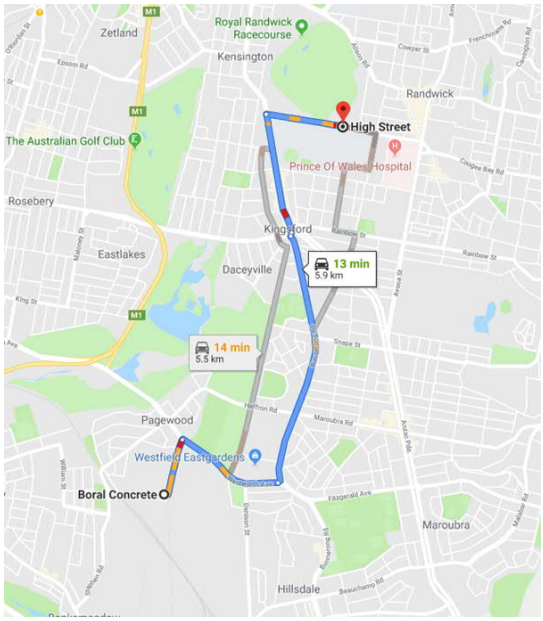


Figure 15d: Concrete delivery vehicle route. Figure 15e: Concrete delivery vehicles route, if advised to utilize the marshalling zone on High Street

Concrete delivery vehicles travelling from the Boral plant yard at East gardens will follow a direction as outlined in the above figure. Utilising the M1 vehicles follow the following route to the site:

- Exit from the M1 onto South Dowling Street
- Turn right onto Dacey Avenue
- Turn left onto Alison Road
- Turn right into Botany Street
- Enter Gate 1 of the site

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

If the concrete trucks are advised to utilise the marshalling zone on High Street they will follow the route indicated on the following page.

4.3 Fencing and hoarding for site segregation and safety

Lendlease 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.

Lendlease understands that one of the keys to the successful delivery of the Integrated ASB Addition will be the flow of materials and equipment into and out of the construction site. We believe it is imperative that our planning considers and successfully manages:

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

To achieve this, an extensive Traffic and Pedestrian Management Plan has been developed with specific focus to:

- Carpark entry and egress: Existing Carpark operations will be maintained at all times, including all car park services and emergency egress. Particular focus will be on peak flow access and egress during hospital shift change overs and strategies will be employed to ensure flows are maintained by reducing the number of deliveries during these peak periods (7.00am – 9:30am, and 4:00pm – 6:30pm);
- Maintaining business continuity operations for the Hospital by relocating service vehicles and existing car spaces to alternate locations of the Hospital easing the traffic flow on Hospital Road;
- Disabled pedestrian access and paths of travel: Throughout all activities, disabled pedestrian access will be adjusted/maintained as required for entry and exit to Hospital buildings;
- All swept paths are being designed by ARUP to ensure coordination with the TfNSW;
- Lendlease will consult with all suppliers to ensure the correct size and weight vehicles are allocated to the project and are cognisant of carriage weight constraints;
- Ambulance entry: No works or vehicle movements will be allowed to affect the access of ambulance entry and parking area other than noted with the closure of Hospital Road. Ambulance NSW has been consulted of the closure of Hospital Road; and
- Construction Vehicles: Mitigating impact to the Hospital precinct and surrounding roads will be considered along with a detailed analysis of delivery frequency in conjunction with the program and access routes to the site from the various approaches. Procedures for timely delivery notification will be developed (e.g. call prior to arrival and also advise on aborted deliveries).

4.4 Coordination with Other Construction sites

Lendlease has identified two other key construction sites within the near vicinity of the Randwick Campus Redevelopment. This includes the Inglis Newmarket Stables site, and UNSW construction sites.

Lendlease has and will continue to engage and meet on a regular basis with these key stakeholders to understand upcoming work activities to minimise impact on the coordination of truck movements on the road network. Mitigation steps include:

Regular meetings with Construction Management personnel from these sites during peak construction activities such as concrete structure works to coordinate day to day activities.

Issuing 3 week look ahead programmes which will identify nominated days of large concrete pours and coordinate with the other sites to programme these works around other higher volume vehicle activities.

Utilising truck haulage movements as per the Lendlease construction traffic management plan.

The construction vehicle requirements for the Lowering of Hospital road works will have negligible impact on the Main ASB construction works and usage of Gate 3. This is due to the sporadic requirement of deliveries for services diversion, trenching, piling and excavation works. The time motion chart indicates construction traffic volumes for the Hospital road works. Access will alternate from High and Barker street depending on the stages of these works, with volumes of construction traffic generally from 3-6 vehicles per day.

Further to this, there is limited impact on other construction developments within the local network such as the Newmarket Green Development, current UNSW developments and the Sydney Light Rail project. Lendlease is having regular meetings with Ganellan, Randwick City Council and UNSW to understand any impacts on the network. Lendlease has been consulting with Acciona for access to finalise stormwater and footpath works along High Street.

4.5 Existing Parking Provision

Lendlease have completed a preliminary investigation of existing parking provision, demand and proposed supplementary parking opportunities' on and offsite.

The traffic and parking impact assessment report produced by Arup provides detailed information regarding the existing parking provision on campus, the allocation of spaces among users and the occupancy throughout the day.

4.6 Virtual Superintendent

In an effort to reduce and minimise impact of construction traffic within operational Randwick Hospital, Lendlease propose to adopt an online materials booking system called the virtual superintendent on the project during the bulk excavation phase. 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 Managers 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 printed out or sent electronically to the team, RMS, 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.

Lendlease has used this system at Barangaroo and at the North Connex projects with great success and will adopt it on this project given the operational hospitals logistical constraints.

During Concrete phase, our Concrete supplier will have an online app tracking tool of all concrete trucks to monitor delivery route and timing of deliveries. This will be able to be viewed in real time on site by Lendlease Site Management.

4.7 Traffic Impacts

Workers will generate additional traffic to the site although with minimal parking opportunities the numbers are expected to be low. Road network impacts will be mitigated by the fact that construction workers generally start earlier and finish earlier than the commuter peak periods and would likely not coincide with the peak traffic period of the surrounding road network. A comparison of indicative hours of operations with current road network peaks is shown in Table 5.

Construction workers driving to sites in constrained parking environments, such as this site, typically carpool – further reducing the impact on the road network. There is ample public transport available that will encourage workers to minimise private vehicle use which will further reduce the impacts on the local road network. Furthermore, the CMP proposes to prepare and adopt a green travel plan in order to encourage construction workers to minimise private car trips, promoting carpooling and the use of public and active transport modes.

4.8 Cumulative Impacts

There will be a number of other developments surrounding the subject development site which could overlap with the suite works. These include the Inglis Stables site to the south of Barker Street and developments on the UNSW campus. The UNSW Bioscience Project Stage 2 is nearing completion on Botany Street and consultation with UNSW will identify any new upcoming projects that need coordination.

There is also the Lowering of Hospital Road and UNSW Extension part of the ASB scope under SSD-10339. These cumulative impacts are analyzed in the CTPMP within the appendix.

Through regular consultation with the project stakeholders, mitigation plans and assessments will be made on traffic management plans. This will be in consultation with TfNSW.

4.9 Parking

4.9.1 On-street Parking

The establishment of on-street work zones will impact the supply of on-street parking. The current CMP highlights potential work zones along Botany Street; either side of the proposed access gates. The existing on-street car parking along the eastern side of Botany Street is time restricted with resident permit holders excepted. Given that the properties fronting Botany Street are being removed, there will no longer be a need for these resident parking spaces.

The location of any on-street work zones and their impact on parking supply is to be discussed and agreed with RCC. It is envisaged that the impacts on kerbside uses will be as shown in Figure 23:

- Bus stops maintained on Botany Street
- No kerbside parking on Botany Street east kerb
- CSELR works continue on High Street
- No change to parking in Magill Street

Figure 13: Impacts to kerbside parking

4.9.2 Staff Parking

Construction worker parking is generally proposed to be off-site and also not in the streets surrounding the site. Any parking on site would be subject to discussion and agreement with PwC (representing LHD and HI) and TfNSW.

An offsite location away from the precinct could be considered with a traffic assessment required to be undertaken on the potential traffic generations impact. The requirement for this parking facility is to be reviewed during the development the CTPMP. Other construction activity in the area (e.g. UNSW) has made no additional allowance for on-site parking. Furthermore, given the ample availability of public transport, construction staff will be encouraged to either car-pool or arrive to the site via public transport.

4.10 Pedestrians

Pedestrians on High Street and Botany Street may be impacted from walking past the site during construction. Traffic controllers will manage all construction vehicles and pedestrians 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. The footpaths will be closed temporarily on the frontage of the site with safe alternative detours in place.

4.11 Public Transport

The proposed works will interface with a number of existing bus routes on Botany Street and High Street. The Contractor is to ensure that trucks do not queue along these roads and instead, directly enter and be wholly accommodated within the site. Any changes to bus stop locations to facilitate loading/works zones will be undertaken in consultation with TfNSW and RCC. Bus stops have been relocated outside the works area as required.

4.12 Construction Traffic Management Principles

The Contractor will be required to prepare a CTPMP for approval by RCC and HI in consultation with the SCO prior to the commencement of works.

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
- Manage and control construction traffic movements on the adjacent road networks and vehicles movements to and from the construction site
- 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 WorkCover and any applicable legislative requirements

- Construction activity is to be carried out in accordance with RCC's approved hours of work
- Minimise vehicle usage of Magill Street

4.13 Consultation

Initial consultation has occurred with the Sydney Coordination Office, Randwick City Council, and Roads and Maritime.

- RCC Traffic and Construction Update Meeting 3/7/18
- TfNSW Monthly Meeting 4/7/18
- Traffic Coordination Meeting (RCC) – 10/7/18
- SCO / RMS / LLB /HI Meeting – 12/7/18
- SCO / RMS / LLB /HI Meeting – 15/07/19

Discussions with relevant stakeholders including the Sydney Coordination Office, TfNSW, Roads and Maritime Services and Randwick City Council are ongoing.

Description	Hours of operation / peak periods
Site working hours	Monday - Friday: 7am - 6pm Saturday: 8am - 5pm Sunday: No works
Truck minimisation periods	AM Peak: 7:30am - 9:00am PM Peak: 3:00pm - 4:30pm

Due to Covid-19 and the extended working hours being sought by Health Infrastructure as identified in Section 2.2, deliveries in the evening will be required to facilitate construction progress. Currently peak period traffic has reduced to 20% of normal levels (based on TomTom data). Based on the 8-12 estimated standard deliveries in the evening, and periodic concrete pours, this increased construction volume traffic would not have significant impact on the road network.

4.14 Summary

Arup has prepared this report to accompany the development application for the site CC2 and CC3 works associated with the redevelopment of the Randwick Health Campus. This report has considered the traffic and transport implications for the CC2 and CC3 works.

5.0 DRIVER CODE OF CONDUCT

All construction delivery drivers to and from the site are to strictly comply with the Driver code of Conduct. This code is outlined in this section of the report.

Delivery drivers will be provided with the CTPMP which reference the following items:

- Drivers must comply with the haulage routes identified in the CTPMP. This ensures vehicles adhere to main roads to minimise impact on suburban streets.
- Drivers are to comply with all regulatory speed limits and road rules when approaching and leaving the site.
- All drivers are to ensure they hold the relevant licenses for the vehicles they are driving in accordance with Statutory requirements.
- Hospital Road speed limits are to be complied with at all times.
- Noise minimization techniques are encouraged when approaching and leaving the site to reduce the impact on residents, the University and occupants of the Hospital buildings.
- Any truck loads are to be covered prior to leaving the site to minimise dust.
- There is to be no parking up trucks outside the construction site.
- All trucks leaving and entering the site are to do so in a forward motion.
- Additional care is to be taken by drivers in wet weather to ensure the safety of other vehicles, pedestrians and themselves.
- There is zero tolerance to drug and alcohol on site, and drivers may be subject to random testing which is carried out by the site.
- All deliveries will be booked in with the Site Manager/Foreman for a dedicated time slot agreed 24 hours in advance. Any deliveries not booked with will not be accepted and instructed to return to their respective yard.
- Delivery drivers are encouraged that a 10minute rest break is taken if driving more than two hours continuous.
- Any special deliveries such as steel bridges for link bridge will be wide loads and require special escort. Prior approval with TMC will be sought and dedicated transport routes agreed.
- Community updates on any delivery changes from the agreed CTPMP will be communicated by the Lendlease Stakeholder Community Manager. This is through letter drop and email notification.
- Any complaints received by residents or other drivers must be forwarded to Lendlease to ensure reporting to Authorities and required actions implemented.
- Delivery drivers are to be cautious of SLR and minimise any interaction. In particular when turning at intersections and proximity to tracks.

This code of conduct will be communicated to the delivery drivers via the subcontractors engaged for the works, and also provided to drivers as they enter the construction gate.

Monitoring of Driver conduct will be by the following:

- Positive or negative feedback received by the residents, and other key stakeholders.
- Analyses during subcontractor audits for EHS performance.

6.0 CONSTRUCTION WORKER TRANSPORTATION STRATEGY

6.1 INTRODUCTION

The Construction Worker Transportation Strategy (CWPS) has been prepared in response to development consent for State Significant Development Application (SSDA) number SSD 9113. Specifically, the CWPS demonstrates compliance with Condition B42 & 44.

The document is a separate report to the CTPMP.

7.0 STAKEHOLDER MANAGEMENT

7.1 CONSULTING AND COMMUNICATING

Lendlease's approach to managing enquiries for the Randwick Campus Redevelopment (RCR) project is to create a strategic framework which enables a consistent and transparent guide to engaging stakeholders throughout both the initial project engagement and Delivery Phase. The key principles which underpin our proposed approach are:

- Establish and maintain transparent and consistent communication channels which enable geographically dispersed and diverse stakeholders to engage which the project as required;
- Respect, involve and engage stakeholders to ensure their needs are recognised and considered throughout all phases of the project;
- Ensure a proactive, rather than reactive approach to all potential stakeholder related issues and engagement;
- Tailor communications to provide the right information, to the right people at the right time; and
- Should Lendlease receive any inquires or complaints through the RCR project hotline or email address these will be actioned in a timely fashion with the response to be circulated to the RCR project team.

The Lendlease Stakeholder Engagement Strategy supports the implementation of this CTPMP during the works. The Strategy outlines key groups and their respective levels of interest in the project:

- End Users;
- Authorities / Service Providers / Utilities;
- Invested Parties;
- Impacted Parties (Primary);
- Impacted Parties (Secondary); and
- Interested Parties.

Figure 31 – Stakeholder engagement wheel

Lendlease will continue to work proactively with TfNSW, PwC, HI and all other relevant stakeholders.

In accordance with Condition C36, Traffic and Transport Construction Coordination meetings are to be undertaken by the applicant during construction. The meetings shall include HI, the subject building contractor, TfSNW, Council, Sydney Light Rail operator, UNSW, Inglis Newmarket development main contractor and main contractors of other developments within the vicinity of the subject development site. The meetings shall be chaired by the applicant, be it HI or the subject building contractor.

Bi-monthly coordination meetings have been proposed to re commence to ensure ongoing communication amongst the key stakeholders. This more formal approach will supplement the regular communication already occurring with Lendlease and other stakeholders. This engagement with the other contractors in the Randwick area is to ensure works and haulage routes are coordinated to minimise cumulative disruptions to the community.

Lendlease will monitor the effectiveness of this CTPMP monthly internally with reviews of any complaints raised to the project team. Ensuring open communication with TfNSW and other key stakeholders will provide effective monitoring of this plan. The above mentioned bi-monthly meetings will be a good mechanism for this communication.

8.0 AUTHORITIES

8.1 LEGISLATIVE REQUIREMENTS

- The works will be undertaken is accordance with Legislative Requirements including but not limited to:
- National Construction Code 2011 comprising the Building Code of Australia;
- Protection of the Environment Operations Act 1997 and Regulations;
- Environmentally Hazardous Materials Act 1985;
- Protection of the Environment Administration Act 1991and Regulations;
- Work, Health & Safety Act 2011 and relevant codes of practice and standards;
- Australian Standard 2601-2001: Demolition of Structures;
- Code of Practice for Safe Removal of Asbestos (NOHSC: 2002 (2005));
- Guide to the Control of Asbestos Hazards in Buildings & Structures (NOHSC: 3002 (1988));
- Resource & Recovery Act 2001;
- Environmental Planning & Assessment Act 1979;
- Heritage Act 1977;
- Local Government Act 1993; and
- National Parks and Wildlife Act 1974.

8.2 PLANNING APPROVAL AND CONSTRUCTION CERTIFICATE

In addition to the methodology outlined in Section 2.2 of the Planning Services Plan, for the Delivery Phase we note the following process:

- Development consent will be obtained through a State Significant Development Application (SSDA) under Division 4.7 of the Environmental Planning and Assessment Act 1979; and
- This will allow the earliest start on site date possible and assist with providing delivery certainty to HI, SESLHD and PWC.

Our Design Manager - Building and Authorities will lead this process working closely with the PCA (Principal Certifier) and with the HI NSW Team. The SSDA approval will identify generic and specific deliverables required from HI NSW. These will include payment of development and administration fees. Our Design Manager will coordinate this process to ensure there is a clear and coordinated program to submit all SSDA requirements to the PCA so that no program delays arise.

The Principal is responsible for obtaining all other planning approvals required to deliver the RCR.

8.3 UTILITY PROVIDER AND ASSOCIATED EXTERNAL APPROVALS

At various stages external approvals of components of the works will be required. This will include:

- Randwick City Council (traffic);
- Ausgrid (or local electrical utility provider);
- NSW Fire and Rescue;
- Jemena (gas);
- Sydney Water (water, sewer and storm water);

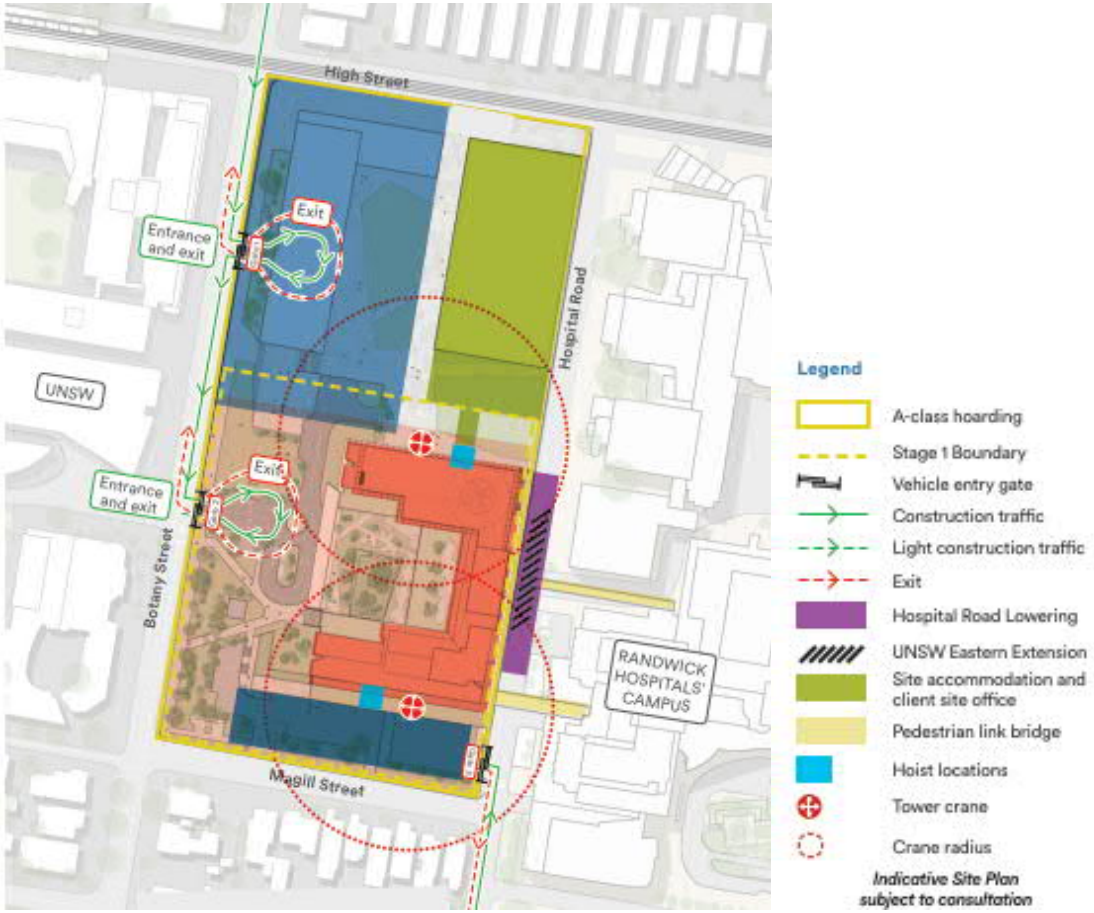
- Roads and Maritime Services;
- NETS, Adult A&E, Children's A&E, Careflight Helicopters (helipad);
- Communication providers; and
- Other relevant utility providers.

Our approach with these authorities will differ dependent on the respective requirements, however fundamentally we will seek:

- Prior coordination with HI NSW to ensure all approaches are aligned and coordinated;
- Early contact to mitigate potential delays and identify potential issues; and
- Establish common contacts that can provide continuity of service on the project.

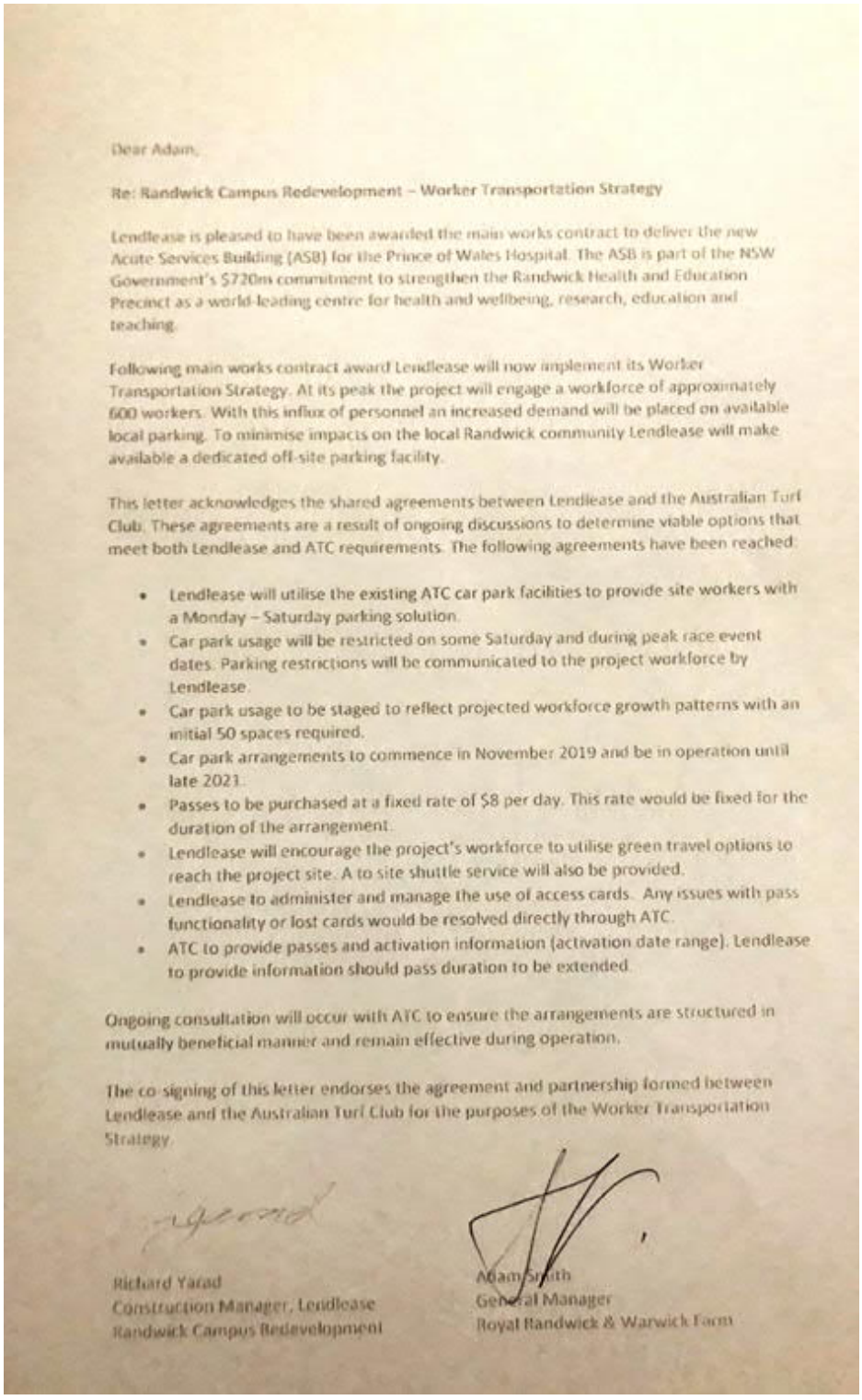
13.0 APPENDICES

APPENDIX 1 – SITE ESTABLISHMENT PLAN



APPENDIX 2 – PROJECT ORGANISATIONAL CHART

APPENDIX 3 – ATC Letter of Support



Dear Adam,

Re: Randwick Campus Redevelopment – Worker Transportation Strategy

Lendlease is pleased to have been awarded the main works contract to deliver the new Acute Services Building (ASB) for the Prince of Wales Hospital. The ASB is part of the NSW Government's $720m commitment to strengthen the Randwick Health and Education Precinct as a world-leading centre for health and wellbeing, research, education and teaching.

Following main works contract award Lendlease will now implement its Worker Transportation Strategy. At its peak the project will engage a workforce of approximately 600 workers. With this influx of personnel an increased demand will be placed on available local parking. To minimise impacts on the local Randwick community Lendlease will make available a dedicated off-site parking facility.

This letter acknowledges the shared agreements between Lendlease and the Australian Turf Club. These agreements are a result of ongoing discussions to determine viable options that meet both Lendlease and ATC requirements. The following agreements have been reached:

- Lendlease will utilise the existing ATC car park facilities to provide site workers with a Monday – Saturday parking solution.
- Car park usage will be restricted on some Saturday and during peak race event dates. Parking restrictions will be communicated to the project workforce by Lendlease.
- Car park usage to be staged to reflect projected workforce growth patterns with an initial 50 spaces required.
- Car park arrangements to commence in November 2019 and be in operation until late 2021.
- Passes to be purchased at a fixed rate of $8 per day. This rate would be fixed for the duration of the arrangement.
- Lendlease will encourage the project's workforce to utilise green travel options to reach the project site. A to site shuttle service will also be provided.
- Lendlease to administer and manage the use of access cards. Any issues with pass functionality or lost cards would be resolved directly through ATC.
- ATC to provide passes and activation information (activation date range). Lendlease to provide information should pass duration to be extended.

Ongoing consultation will occur with ATC to ensure the arrangements are structured in mutually beneficial manner and remain effective during operation.

The co-signing of this letter endorses the agreement and partnership formed between Lendlease and the Australian Turf Club for the purposes of the Worker Transportation Strategy.

Richard Yarad
Construction Manager, Lendlease
Randwick Campus Redevelopment

Adam Smith
General Manager
Royal Randwick & Warwick Farm

APPENDIX 4 – Driver Code of Conduct

B35 – CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

- Include a Driver Code of Conduct to:
- Minimise the impacts of earthworks and construction on the local and regional road network;
- Minimise conflicts with other road users;
- Minimise road traffic noise; and
- Ensure truck drivers use specified routes.

ALL DELIVERIES (IRRESPECTIVE OF SIZE) MUST BE BOOKED IN AND APPROVED WITH LENDLEASE REPRESENTATIVES WITH A MINIMUM OF 24 HOURS NOTICE

YOUR DELIVERY MUST MARSHALL NEAR ROWLAND PARK AND THEN YOU MUST ADVISE YOUR SITE BASED POINT OF CONTACT (E.G. SUBCONTRACTOR FOREMAN) AND WAIT UNTIL THE CONTRACTOR HAS TRAFFIC & PEDESTRIAN MANAGEMENT IN PLACE

A SUBCONTRACTOR REPRESENTATIVE MUST MEET YOU DELIVERY AT THE GATE. PLEASE INSIST ON A PHONE CALL 20min – 30min PRIOR TO ARRIVAL TO SITE. LENDLEASE SITE TEAM WILL NOT BE MEETING OR ACCEPTING DELIVERIES ON BEHALF OF ANY TRADE CONTRACTORS

DELIVERIES TO SITE ARE TO USE THE FOLLOWING GATES:
MAIN GATES ARE ALONG BOTANY ROAD – NOSE IN & NOSE OFF SITE. NO REVERSING OUT ON TO BOTANY ROAD UNDER ANY CIRCUMSTANCES. ALL SEMI-TRAILERS, LOW LOADERS, LARGE FLAT BEDS, TILT TRAYS ARE TO ACCESS VIA BOTANY ROAD GATES ONLY

DURING ANY PERIOD IN WHICH THE BOTANY ROAD GATES ARE CLOSED, THERE MAY BE ALTERATIVE ACCESS THROUGH GATE 3 ALONG HOSPITAL ROAD. PLEASE CONFIRM WITH YOUR SITE REPRESENTATIVE AS TO WHICH GATE YOU MUST USE

UNLESS NOTED OTHERWISE OR BOOKED IN WITH LENDLEASE, NO GATE IS TO BE OPENED PRIOR TO 6am OR BEYOND 6pm, MONDAY AND THROUGH TO FRIDAY. ON SATURDAY NO GATE IS TO BE OPENED PRIOR TO 8am OR BEYOND 5pm, . IF THE DELIVERY IS REQUIRED BY RMS RULES TO BE OFF THE ROAD BY A CERTAIN TIME PLEASE ENSURE YOU ADVISE LENDLEASE OF ANY SPECIAL REQUIREMENTS

PLEASE BE AWARE THAT SCHOOL ZONES ARE IN PLACE AND ENFORCED ALONG BUNNERONG ROAD

ALL DELIVERIES TO THE RANDWICK CAMPUS REDEVELOPMENT (RCR) ARE TO ACCESS AND LEAVE SITE FROM THE ROUTES SHOWN IN THE FOLLOWING SLIDES

DRIVERS ARE TO KEEP A COPY OF THIS INDUCTION IN THEIR VEHICLES AT ALL TIMES

WORKPLACE SPECIFIC 4

Driver Behaviour

Drivers are expected to conduct themselves in a courteous and professional manner at all times, including:

- Being mindful of their presence within a live Hospital environment
- Refraining from playing radios or music with windows down
- Refraining from using language or remarks that may be considered offensive
- Hospital and private property access is to be strictly maintained at all times
- Use only approved haulage routes and designated marshalling areas

Behave in accordance with all road rules, including speed limits, school zones and traffic signage

Strictly no parking in Hospital parking zones including emergency and disabled parking bays

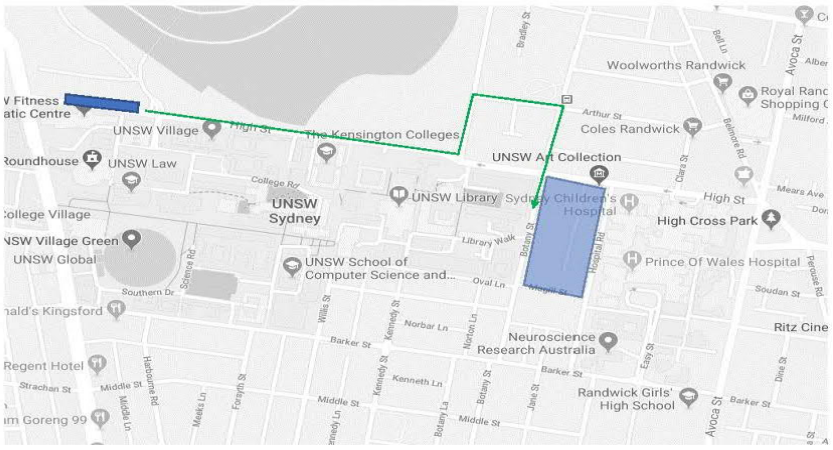
Any community contact should be directed to the RCR community contact number 1800 571 866

WORKPLACE SPECIFIC 5

Approved Marshalling Plan

Site Notes:

1. Site Speed Limit is **5km/h**
2. Pedestrians have right of way at all times
3. All vehicles must have operating flashing lights, reversing beepers/squawkers
4. All vehicle operators must wear Lendlease Building minimum PPE when exiting the vehicle cab – Hard Hat, High Vis clothing, Gloves, Safety Glasses, Safety Boot, Long Sleeve Shirt



Marshalling area and truck routes

Lendlease has a zero tolerance to drugs and alcohol in the workplace

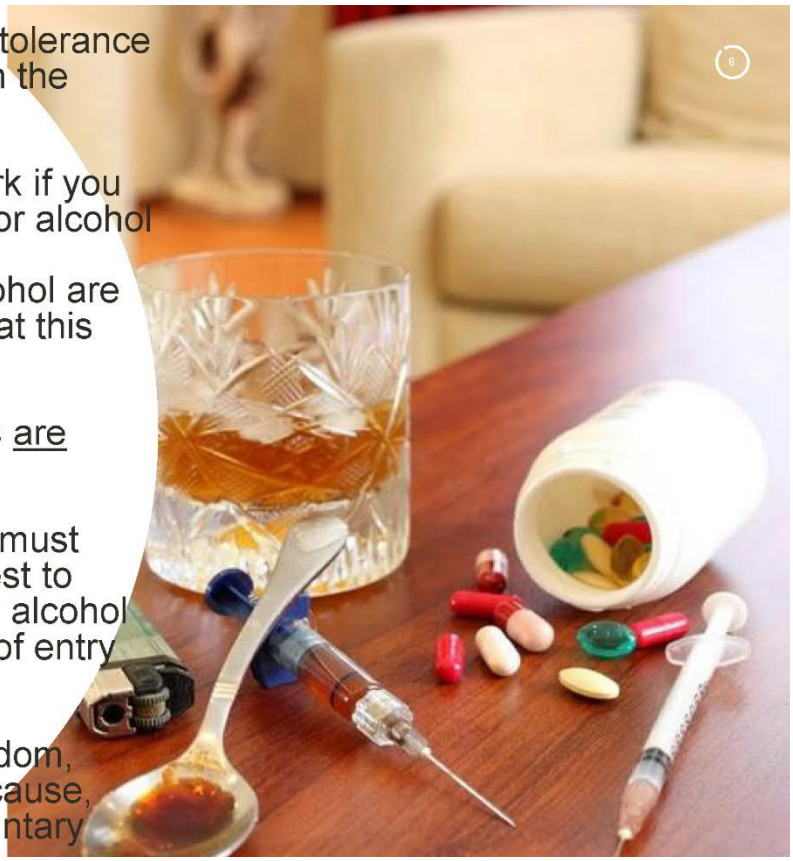
Do not commence work if you are affected by drugs or alcohol

Illicit drugs and all alcohol are prohibited at all times at this workplace

Drug and alcohol tests are conducted here

All Workers & Visitors must comply with any request to participate in drug and alcohol testing as a condition of entry to this workplace

Testing includes – random, targeted, reasonable cause, post incident, and voluntary



PART B – WORKPLACE SPECIFIC 7

What is Tested?

- Alcohol
  - Breath alcohol concentration (BAC) with a zero level tolerance of 0.000
- Drugs
  - All drug testing shall be conducted via a sample of oral fluid (saliva)*

Substance	Initial Site Test Limits
Cannabinoids: (THC, Marijuana)	20 ng/ml
Cocaine and metabolites	50 ng/ml
Amphetamine / methamphetamine	50 ng/ml
Opiates	50 ng/ml
Benzodiazepines	10 ng/ml

Substance	NATA Lab Test Limits
Morphine Codeine 6-Acetyl morphine	25 ng/ml 25 ng/ml 10 ng/ml
Amphetamine Methylamphetamine Methylenedioxymethylamphetamine Methylenedioxyamphetamine	25 ng/ml 25 ng/ml 25 ng/ml 25 ng/ml
Δ^9 terahydrocannabinol (THC)	10 ng/ml
Cocaine Benzoylecgonine Ecgonine methyl ester	25 ng/ml 10 ng/ml 25 ng/ml
Benzodiazepines	10 ng/ml

- A positive result at the initial site test triggers a requirement for a second NATA approved lab test

* Except where Client requirements or Legislation requires otherwise e.g. rail corridor works

What Happens If?

- A Worker refuses to be tested? Will be deemed a positive test result and disciplinary consequences will follow
- A Worker is selected but can't be found and the absence is unexplained? Will be deemed a positive test result and disciplinary consequences will follow
- A Worker is taking prescription or pharmacy medication that may test positive e.g. Panadeine Forte etc? Workers will be given the opportunity to declare the medication prior to testing.
- A Workers tests Non-negative at the test conducted at the workplace? **Alcohol** – If a BAC greater than 0.000% is recorded in the first test, a second test will be conducted after 60 minutes. If the BAC remains greater than 0.000%, the Worker will be removed from the workplace. If the BAC is 0.000%, a negative result is recorded and the worker may return to work
Drugs – If the initial test is greater than the prescribed limits, a second saliva sample is taken and sent to a NATA approved Lab for confirmatory testing. The samples are protected by a chain of custody process .The worker will be excluded from the workplace until the results of the confirmatory test is known (normally 48 hours). If the Confirmatory test results are negative, a negative result is recorded and the Worker is allowed to return to work. If the Confirmatory test results are positive, the worker remains excluded from the workplace

Smoke Free Workplace

Smoking including the use of electronic cigarettes is prohibited at this workplace except in designated smoking areas

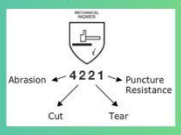
There is to be no smoking, including electronic cigarettes, anywhere within the site – this is both a Lendlease Building and NSW Health requirement

PART B - WORKPLACE SPECIFIC 10

Personal Protective Equipment

Workplace PPE Requirements

- Correct type full fingered protective gloves
- Safety Helmet
- Protective eyewear
- High visibility shirt/vest
- Protective footwear
- Double eye protection required for all grinding/cutting works
- **NO** singlets
- Work shorts to the knee - **NO** footy shorts



Time for a PPE Audit

- Safety Helmet <3 years old
- Boots free of damage
- No holes in gloves
- Clothing not torn or worn
- Safety glasses unscratched and free from damage

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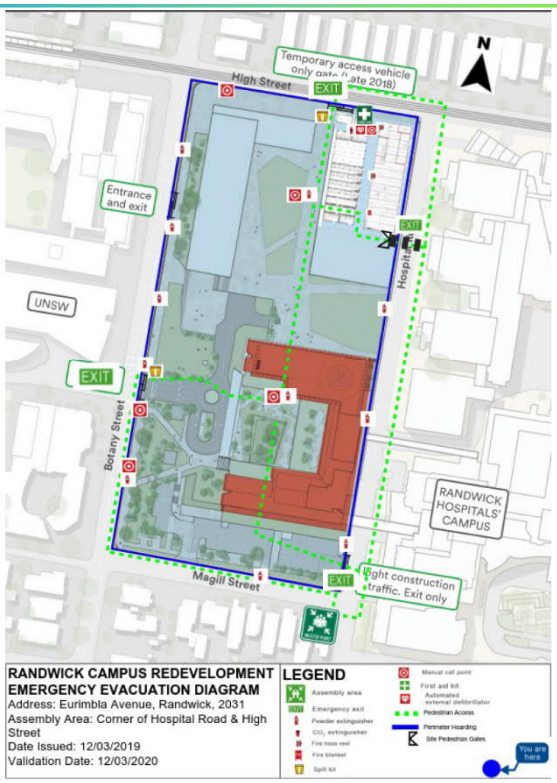
PART B - WORKPLACE SPECIFIC 11



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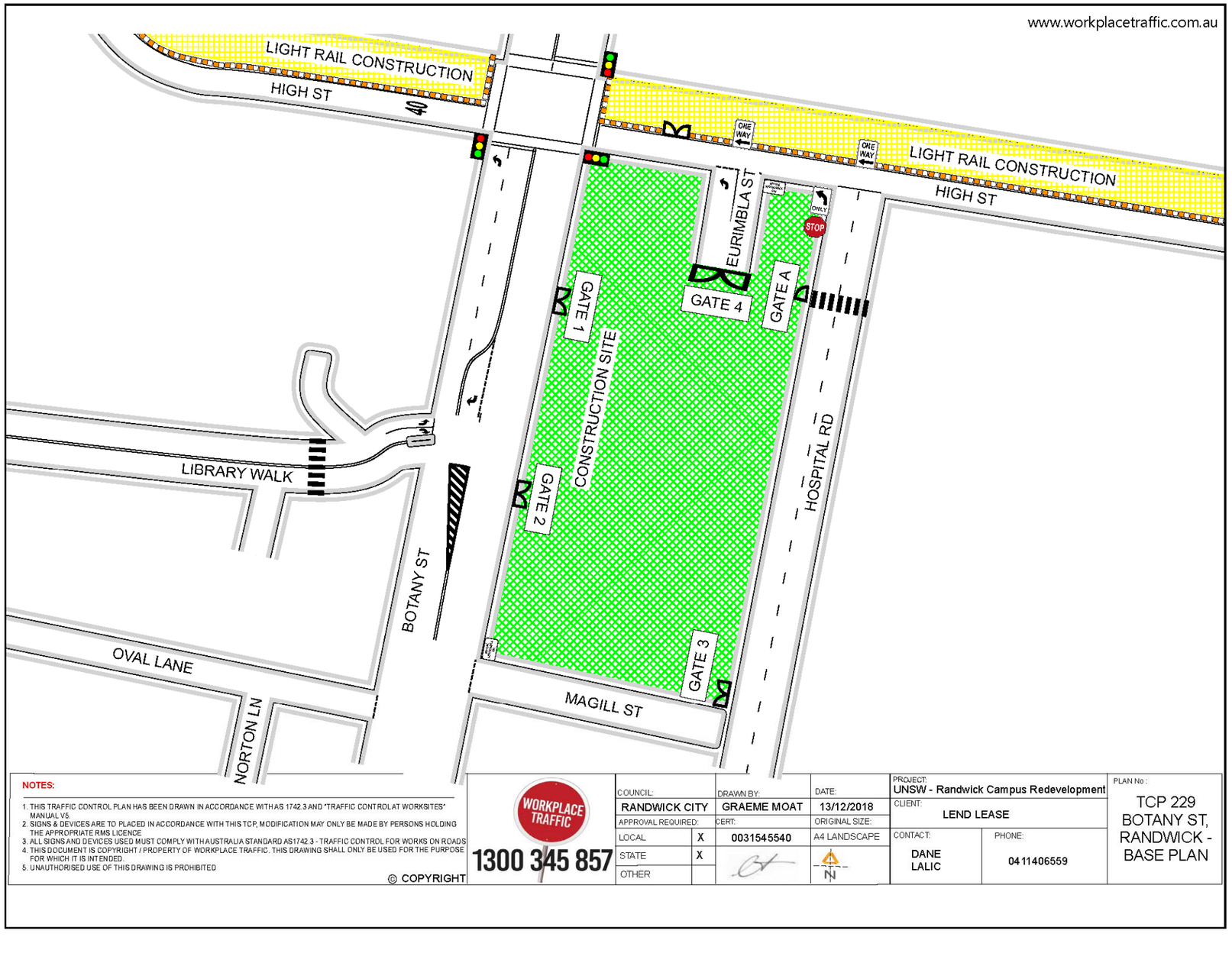
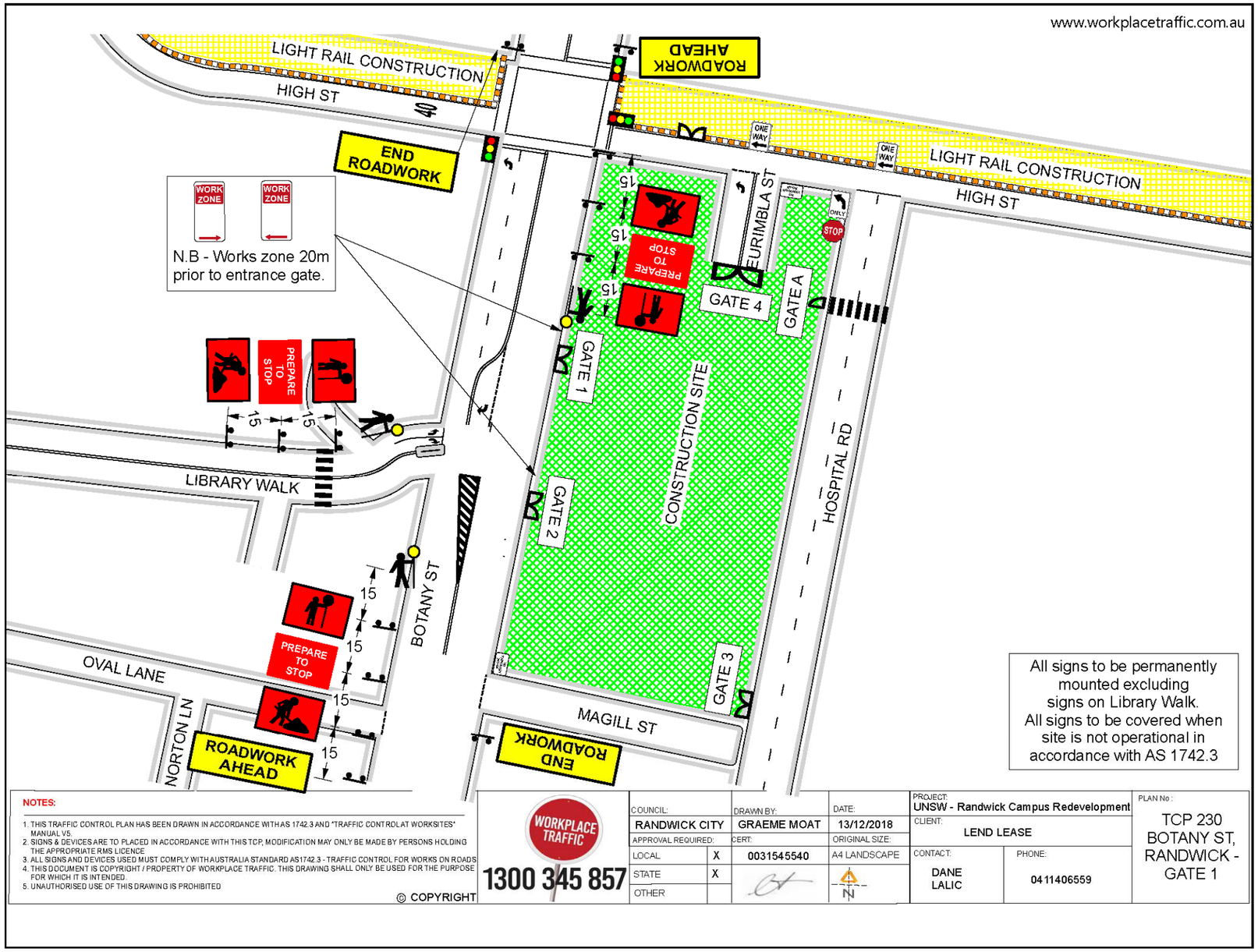
APPENDIX 5 – Traffic Management Plans




www.workplacetraffic.com.au
LIGHT RAIL CONSTRUCTION
HIGH ST
ROADWORK AHEAD
END ROADWORK
ONE WAY
LIGHT RAIL CONSTRUCTION
HIGH ST
WORK ZONE
WORK ZONE
N.B - Works zone 20m prior to entrance gate.
15
15
15
PREPARE TO STOP
EURIMBLA ST
ONLY
STOP
GATE 4
GATE A
GATE 1
CONSTRUCTION SITE
HOSPITAL RD
GATE 2
GATE 3
PREPARE TO STOP
LIBRARY WALK
BOTANY ST
OVAL LANE
NORTON LN
ROADWORK AHEAD
MAGILL ST
END ROADWORK
All signs to be permanently mounted excluding signs on Library Walk.
All signs to be covered when site is not operational in accordance with AS 1742.3
NOTES:
1. THIS TRAFFIC CONTROL PLAN HAS BEEN DRAWN IN ACCORDANCE WITH AS 1742.3 AND "TRAFFIC CONTROL AT WORKSITES" MANUAL V5.
2. SIGNS & DEVICES ARE TO PLACED IN ACCORDANCE WITH THIS TCP, MODIFICATION MAY ONLY BE MADE BY PERSONS HOLDING THE APPROPRIATE RMS LICENCE
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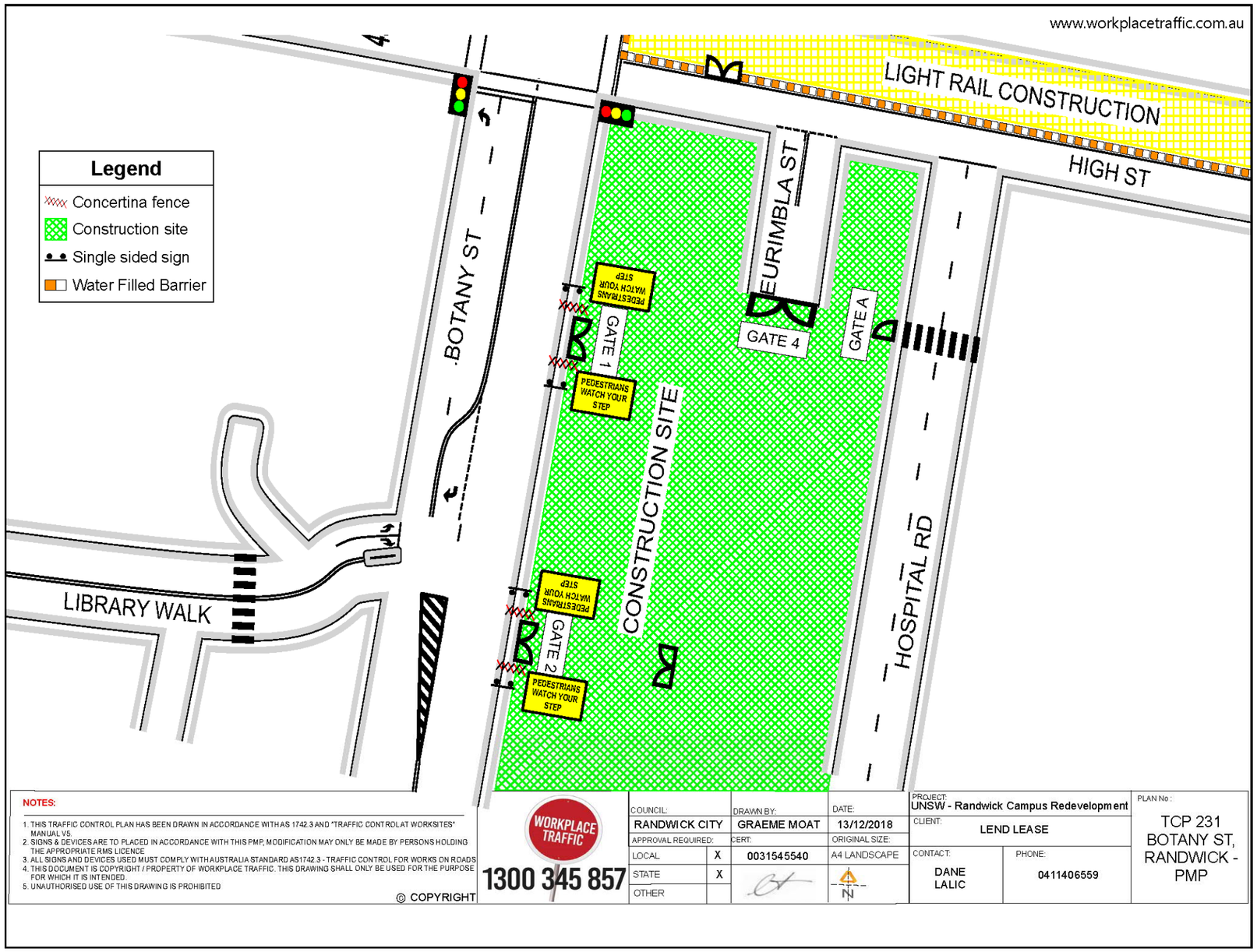
WORKPLACE TRAFFIC
1300 345 857
COUNCIL: RANDWICK CITY
DRAWN BY: GRAEME MOAT
DATE: 13/12/2018
APPROVAL REQUIRED:
CERT:
ORIGINAL SIZE: A4 LANDSCAPE
LOCAL X 0031545540
STATE X
OTHER
N
PROJECT: UNSW - Randwick Campus Redevelopment
CLIENT: LEND LEASE
CONTACT: DANE LALIC
PHONE: 0411406559
PLAN No : TCP 230 BOTANY ST, RANDWICK - GATE 1


www.workplacetraffic.com.au
Legend
Concertina fence
Construction site
Single sided sign
Water Filled Barrier
LIGHT RAIL CONSTRUCTION
HIGH ST
BOTANY ST
EURIMBLA ST
GATE 4
GATE A
GATE 1
GATE 2
PEDESTRIANS WATCH YOUR STEP
CONSTRUCTION SITE
HOSPITAL RD
LIBRARY WALK
NOTES:
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OTHER
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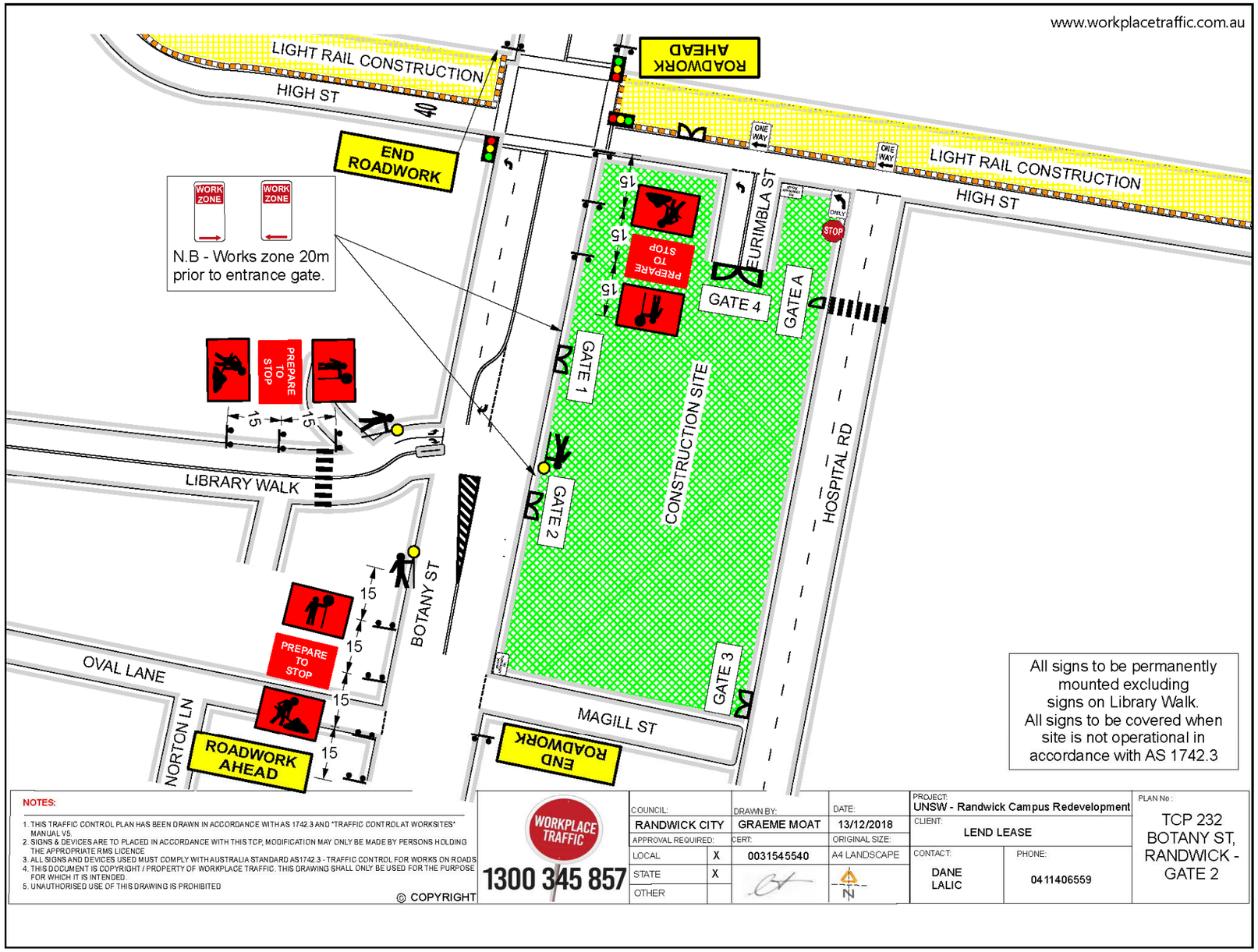
CONTACT: DANE LALIC
PHONE: 0411406559
PLAN No : TCP 231 BOTANY ST, RANDWICK - PMP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END ROADWORK
ROADWORK AHEAD
ONE WAY
LIGHT RAIL CONSTRUCTION
HIGH ST
WORK ZONE
WORK ZONE
N.B - Works zone 20m prior to entrance gate.
PREPARE TO STOP
15
15
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EURIMBLA ST
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GATE A
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DRAWN BY: GRAEME MOAT
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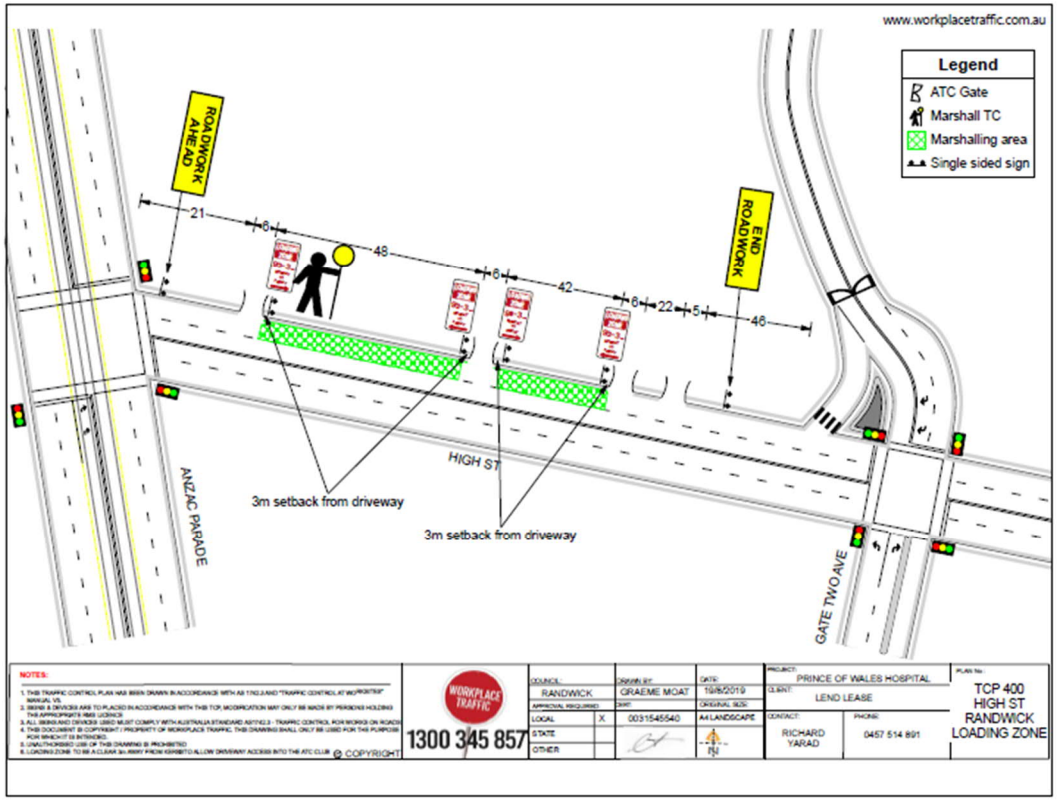
CERT:
ORIGINAL SIZE: A4 LANDSCAPE
LOCAL X 0031545540
STATE X
OTHER
N
PROJECT: UNSW - Randwick Campus Redevelopment
CLIENT: LEND LEASE
CONTACT: DANE LALIC
PHONE: 0411406559
PLAN No : TCP 232 BOTANY ST, RANDWICK - GATE 2


www.workplacetraffic.com.au
Legend
ATC Gate
Marshall TC
Marshalling area
Single sided sign
ROADWORK AHEAD
END ROADWORK
21
6
48
6
42
6
22
5
46
HIGH ST
ANZAC PARADE
GATE TWO AVE
3m setback from driveway
3m setback from driveway
NOTES:
1. THIS TRAFFIC CONTROL PLAN HAS BEEN DRAWN IN ACCORDANCE WITH AS 1742.3 AND "TRAFFIC CONTROLS AT WORKSITES" MANUAL VOL
2. SIGNS & DEVICES ARE TO PLACED IN ACCORDANCE WITH THIS TCP, MODIFICATION MAY ONLY BE MADE BY PERSONS HOLDING THE APPROPRIATE RMS LICENCE
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6. LOADING ZONE TO BE A CLEAR 3m AWAY FROM KERB/TO ALLOW DRIVEWAY ACCESS INTO THE ATC CLUB
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1300 345 857
COUNCIL: RANDWICK
LOCAL X
STATE
OTHER
DRAWN BY: GRAEME MOAT
DWG#: 0031545540
DATE: 15/8/2019
ORIGINAL SIZE: A4 LANDSCAPE
PROJECT: PRINCE OF WALES HOSPITAL
CLIENT: LEND LEASE
CONTACT: RICHARD YARAD
PHONE: 0457 514 891
PLAN No: TCP 400
HIGH ST
RANDWICK
LOADING ZONE

APPENDIX 6 – IASB CTPMP

RANDWICK CAMPUS REDEVELOPMENT

CONSTRUCTION TRAFFIC & PEDESTRIAN MANAGEMENT PLAN

Integrated ASB Addition

March 2020

NSW GOVERNMENT Transport for NSW

NSW GOVERNMENT Planning & Environment

NSW GOVERNMENT Health Infrastructure

Randwick City Council
a sense of community

lendlease

DOCUMENT HISTORY

Version	Date	Issue by	Status
1	August 2019	Lendlease	For SSDA Approval
2	December 2019	Lendlease	For Construction Certificate 1, 2, & 3
3	February 2020	Lendlease	For Construction Certificate 1, 2, & 3 incorporating TfNSW comments
4	March 2020	Lendlease	Incorporating TfNSW commentary following additional consultation

DOCUMENT CONTROL

To ensure the Construction Communication Plan remains relevant and accurate, this document will be continuously reviewed and evaluated throughout the planning and delivery of the IASB.

Any revisions made will be communicated to the project team accordingly.

CONSTRUCTION TRAFFIC & PEDESTRIAN MANAGEMENT PLAN

INTEGRATED ASB ADDITION

Contents

1.0 INTRODUCTION

1.1 Overview

The Randwick Campus Redevelopment Acute Service Building (RCR-ASB) is a highly complex project with critical early milestone components that must be delivered on time. The objective of this Construction Traffic & Pedestrian Management Plan (CTPMP) is to ensure that the IASB Addition (the Project) is safely delivered using a robust set of methodologies and zero unplanned disruption to hospital services.

This plan has been developed from the already approved CTPMP for the Main Acute Services Building approved under SSD 9113 by TfNSW.

The IASB Addition includes the lowering of Hospital Road, and construction of the UNSW Eastern Extension (Base Building only) and associated Link bridges. These works will occur concurrently to the ASB construction.

The Lendlease construction management processes will provide:

- Seamless performance and accountability from a single responsible entity;
- The works will be managed by a single proven responsible entity; and
- a mechanism to reduce risks during project delivery.

Lendlease has produced this CTPMP as the contractor responsible for the delivery of the project. It is envisaged that this CTPMP will evolve during the course of the Project as the design develops in conjunction with the design consultant team, project stakeholders, Health Infrastructure (HI), South East Sydney Local Health District (SESLHD) and Price Waterhouse Coopers (PwC).

In the following sections, we have set out how we intend on managing the Project and activities associated with the RCR.

The CTPMP also defines the impacts of the proposed construction activities on areas within the RCR site and hospital campus the Prince of Wales (POW) Hospital Campus (Campus). 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 minimise any potential risk to HI, SESLHD, its community partners and stakeholders.

Our proactive and collaborative approach to our client NSW Health Infrastructure is underpinned by the following overriding and non-negotiable objectives:

- Maintain business continuity of the campus and adjoining facilities and properties;
- To deliver a world class facility for our client on time to the highest safety and quality standards;
- Safe and timely delivery of the Integrated ASB Addition, enabling construction of the RCR;
- Communicate in a timely fashion with all relevant stakeholders what, when and how we are planning to undertake interface works;
- Present a positive public perception of the project during the construction works;
- Use experienced and qualified subcontractors with appropriate resources to deliver their works in the manner we prescribe; and
- Hands on control of subcontractors from experienced Lendlease site supervision.

HI will have four key outcomes from the Lendlease CTPMP:

Figure 1: Key outcomes

1.2 Consent Conditions

The Department of Planning has issued the approved Development Consent conditions for the SSD-10339.

The Conditions relevant to the CTPMP which have been addressed in the CTPMP include:

.

- **A31 – Transport Network Operation** - The Applicant must consult with TfNSW, including its Sydney Coordination Office and TfNSW (RMS), to identify measures to mitigate impacts on the surrounding road network associated with the closure of Hospital Road at High Street.
- **B7 – CBD & South East Light Rail** - Prior to commencement of construction, the Applicant must consult with and obtain written approval from TfNSW, including its Sydney Co-ordination Office and Sydney Light Rail team, in relation to the proposed construction management measures to mitigate any impacts to the operation of the CBD South East Light Rail arising from:
    - (a) the closure of Hospital Road at High Street; and
    - (b) excavation works and any potential flooding impacts due to the proposed development.
- **B15 – Construction Traffic & Pedestrian Management Plan** - A Construction Traffic and Pedestrian Management Plan (CTPMP) must be prepared to achieve the objective of ensuring safety and efficiency of the road network and address, but not be limited to, the following:
    - (a) be prepared by a suitably qualified and experienced person(s);
    - (b) be prepared in consultation with the TfNSW, including its Sydney Coordination Office, Sydney Light Rail Operator team, TfNSW (RMS), and Council;
    - (c) detail the measures that are to be implemented to ensure road safety and network efficiency during construction in consideration of potential impacts on the CBD and South East Light Rail project and general traffic, cyclists and pedestrians and bus services;
    - (d) location of all proposed work zones;
    - (e) proposed construction hours;
    - (f) estimated number and type of construction vehicle movements including volume, time of day, vehicle routes, access and parking arrangements. All construction vehicles are to enter and exit

site in a forward direction. No reversing into site should be allowed for pedestrian safety reasons. Construction vehicle movements should be limited during peak periods, AM (7am-9.30am) and PM (4pm-6.30pm) to reduce impacts on any bus operations and traffic flow.

- (g) construction program including details of peak construction activities and proposed construction staging;
- (h) measures to reduce the likelihood of construction workers driving to the Randwick Hospital Campus site to park, placing further demand on kerbside parking and the road network during construction.
- (i) include a Driver Code of Conduct to:
  - (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; and
  - (iv) ensure truck drivers use specified routes;
  - (v) include a program to monitor the effectiveness of these measures; and
  - (vi) if necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes.
- (j) include a program to monitor the effectiveness of these measures, and
- (k) if necessary detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes

- **B16 –** A copy of the final CTPMP is to be submitted to the Coordinator General, Transport Coordination at TfNSW for endorsement prior to the commencement of any work.
- **B17 – Construction Worker Transportation Strategy -** Prior to the commencement of construction, the Applicant must submit a Construction Worker Transportation Strategy in consultation with the Sydney Coordination Office within Transport for New South Wales to the satisfaction of the Certifier. The Strategy must detail the provision of sufficient parking facilities or other travel arrangements for construction workers in order to minimise demand for parking in nearby public and residential streets or public parking facilities.
- **B24 – Construction and Demolition Waste Management -** Prior to the commencement of the removal of any waste material from the site, the Applicant must notify the TfNSW (RMS) Traffic Management Centre of the truck route(s) to be followed by trucks transporting waste material from the site.
- **C15 & C16 – 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. A construction zone is not permitted on High Street.

The Applicant is to consult with the TfNSW and its internal stakeholders including Roads and Maritime Services, Council and the Light Rail Operator at the Traffic and Transport Construction Coordination meetings during construction.

Lendlease can confirm that consultation has been carried out with TfNSW, Transdev, SLR, and SCO on the 12th December 2019 to discuss the response letters prepared by TfNSW & RMS issued on the 23RD September 2019, including Transdev and SCO comments. This meeting was a productive meeting to consult on traffic and pedestrian management solutions for the approved development. Consultation will continue with TfNSW during the approval period of the CTPMP.

Lendlease will be seeking three Construction Certificates under this SSD-10339. They are as follows:

- CC1 – Services diversions
- CC2 – Piling, retaining structure, pavements, slabs, UNSW structure and bridges
- CC3 – UNSW integrated fitout

The CTPMP is requested to be approved for all these components of works. It is noted in section 3.3.5 that specific transport routes are to be consulted and agreed with TfNSW for the delivery of prefabricated bridges. This consultation will occur in mid-2020 once specialized subcontractors are engaged for this component of the work, which is programmed to occur early 2021.

2.0 BUSINESS CONTINUITY

2.1 Working within the operational hospital environment

The Lendlease project team understands the challenging nature of the RCR and the constraints of managing major construction works adjacent 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.

This will be the case for the major works to the following areas:

- The identified excavation zones 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 civil works stages
- During the UNSW Extension construction works overhead protection will be installed to facilitate loading dock access for business continuity.

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. Lendlease will impose a strict regime of consultation on all works outside the site perimeters, regardless of the nature of the intended works.

The Disruption Works Notice process will be followed here. This includes all workers to firstly complete the required hospital worker induction and secondly, Lendlease will institute a 'Permit to Work' process for all works outside of the secured site areas.

The permit system puts hold-points in place, which have to be signed-off prior to permit issue. If workers are found to be working without permits, they will be removed from the Project. The hold points for the 'Permit to Work in the Hospital Area' will be the same as those for the Disruption Works Notice, to ensure a consistent level of compliance from the subcontractors.

Lendlease have identified a 4 step process that we will undertake to ensure that the design and construction methodology mitigates the construction risks inherent in conducting site works within a live Health Campus (refer Figure 2). The planning for health service continuity and risk management 4 step process will underpin all stages of the RCR-IASB project and will be used as the guiding principle for how construction will be undertaken around the campus.

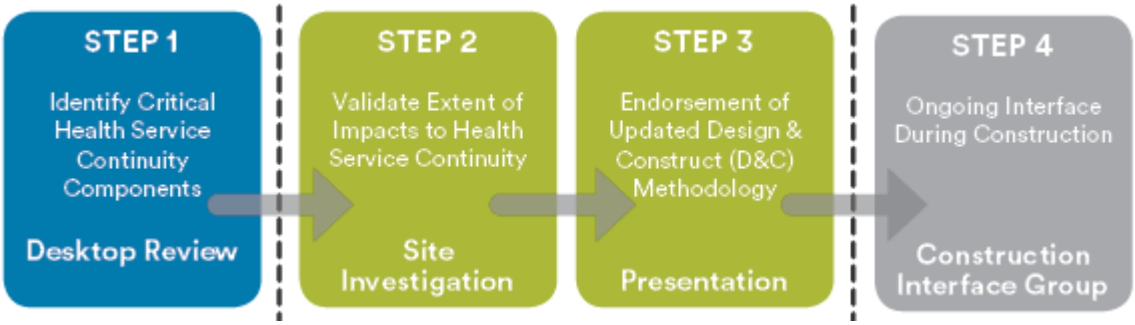


Figure 2: Four step business continuity process

Step 1 has been undertaken during the planning phase by Lendlease and will heavily influence 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 to the Campus stakeholders; and
- Sequencing construction to ensure handover of completed spaces to the RCR at the best and earliest opportunity.

Site establishment:

- Efficient use of existing redundant facilities and space available for site establishment to minimise space taken by the construction site;
- Off Campus solutions to construction car parking to ensure no disruption to car parking within the precinct; and
- Planning for construction access in controlled zones.

Construction interfaces:

- Strictly controlling where construction will interface with the Hospital nearby residential dwellings or public;
- Implementing airtight, acoustically treated hoardings for all existing building connections to minimise Infection Control risks and reduce construction noise impacts to nearby existing buildings;
- Ensuring sight lines from the construction site are managed so that patient and residential privacy in adjacent buildings are maintained;
- Developing a web based Disruptive Works Notice (LiveOps) 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; and
- Using low impact construction methods to ensure noise and vibration doesn't impact the daily operations of the Hospital and nearby residential properties.

Lendlease will follow steps 2 and 3 to validate these assumptions and further develop them ready for the construction phase.

Step 4 implements ongoing risk assessment, mitigations and controls that have been established through Steps 1-3 and the continual monitoring of changing conditions that may affect our design and construction methodology. Strategies to support Randwick business continuity include but 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 Campus business continuity;
- Utilising the Disruptive Works Notification (LiveOps) 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 process in collaboration with the SESLHD and principal representatives to ensure that the completed product is seamlessly transitioned into a live hospital environment; and
- Community notices / updates.

2.2 Hours of work

The construction hours approved for the development include the current approved ASB General construction hours and the Special construction hours for selected weekends;

General Construction hours	
Monday – Friday	7:00am to 6:00pm
Saturday	8:00am to 5:00pm
Sunday	No work

Special Construction Hours required on select weekends* to maintain operation of Hospital loading dock		
		Respite periods
Friday	6:00pm to 10:00pm (limited to site establishment activities in preparation for weekend works)	10:00pm to 7:00am = 9 hours
Saturday	5:00pm to 10:00pm (general construction activities excluding excavation, sawing of rock, jack hammers, pile drivers, vibratory rollers/compactors of the like)	10:00pm to 7:00am = 9 hours
Sunday	8:00am to 5:00pm (general construction activities including excavation, sawing of rock, jack hammers, pile drivers, vibratory rollers/compactors of the like)	N/a
Sunday	5:00pm to 10:00pm (general construction activities excluding excavation, sawing of rock, jack hammers, pile drivers, vibratory rollers/compactors of the like)	10:00pm to 7.00am = 9 hours
*Required for a total of 29 weekends plus 11 reserve/contingent weekends (total project duration of 130 weekends).		

In addition to regular working hours, there will be occasional extended periods (Weekend closures) when out of hours works are required. These out of hours works will be necessary to conduct the following activities:

- Site establishment and periodic changes to suit staging of works;
- Piling;
- Jump steel installation;
- Essential services, relocations and cutovers;
- Excavation; and
- Key deliveries.

Lendlease will agree the process with HI, LHD, TMC, TfNSW, SCO and Randwick City Council to address the approvals and additional measures required prior to scheduling any out of hour's works. The nature of these works would typically include erection of hoardings, works to footpaths, services connections and other works that interface with the surrounding operational hospital.

With the weekend hours proposed above, sufficient 'respite periods' are provided to the neighboring residents. A minimum of 9 hours is provided as respite even when a weekend closure is underway.

Weekend closures have been indicatively scheduled in accordance with the below time motion chart. These weekend dates will vary. Lendlease will provide sufficient notification to the stakeholders of upcoming weekend closures to ensure all stakeholders are aware. Approximately 29 weekend closures are anticipated between February 2019 to March 2022, with 11 reserve/contingent weekends.

Throughout the duration of these works, Lendlease will ensure compliance with the approved hours. However certain construction activities on a given day may require additional time to complete to ensure the safety of the workers or neighbors. These high-risk scenarios will be identified, and approval sought from the relevant Authorities.

Through consultation with HI and LHD, loading dock closures on a weekday may be sought to facilitate the weekend works schedule. A Friday or Monday shutdown of the loading dock will facilitate high risk works such as mobilisation of cranes, steelwork and other construction materials.

2.3 Proposed site plan

During the course of RCR the Lowering of Hospital Road and UNSW Eastern Extension, see below proposed site establishment to be completed in the following stages:

- Stage 1 – Integrated ASB Addition which includes the Hospital Road Lowering Southern Portion and Construction of the UNSW Eastern Expansion structure and fitout

This plan highlights the location of the site accommodation and project office and how the IASB site is integrated with the Acute Services Building site.

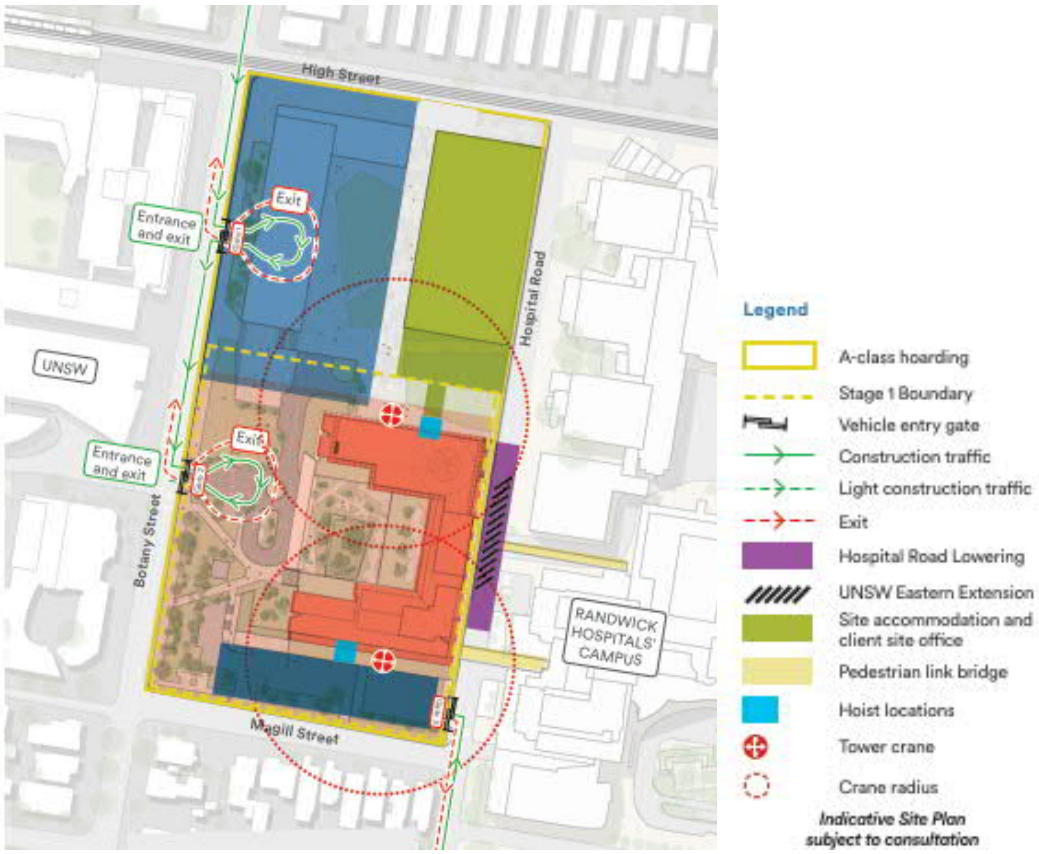


Figure 3 –Lowering of hospital road and UNSW Extension

2.3 Construction Workforce

The construction works for the Lowering of Hospital road works is predominantly civil works. This means the workforce is limited in numbers due to the use of plant and small crews. It is not until the construction of the USNW Extension building commences until the workforce numbers increase. Figure 5 Labour Histogram identifies the workforce numbers. For the first 15 months, the workforce peaks at approximately 40 workers. The peak crew expected for the Structure and fitout phase of the building is 135 workers.

2019											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
									12	16	16
2020											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
20	25	25	30	30	30	35	35	35	35	35	40
2021											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
50	50	78	90	100	110	120	138	138	138	125	120
2020											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug				
103	92	75	61	50	40	30	10				

igure 4 –Workforce peaks

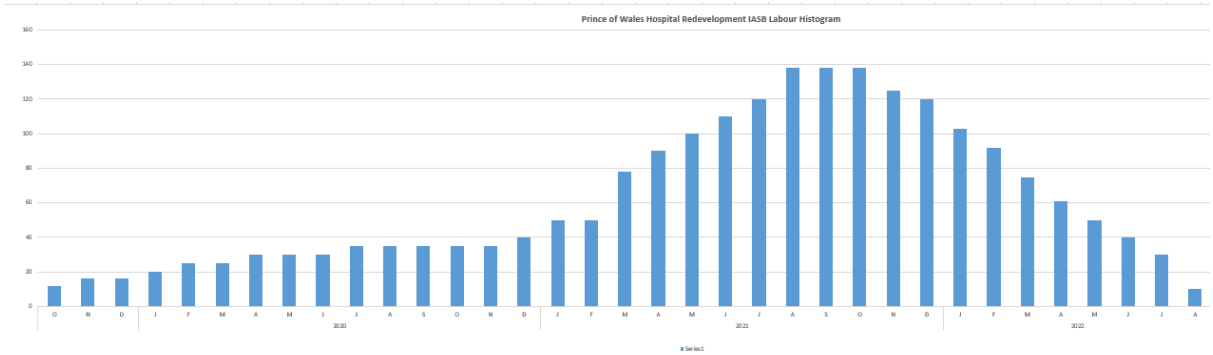


Figure 5 –Labour histogram

3.0 CONSTRUCTION PROGRAMME & STAGING

3.1 Key Milestones

The table identifies the key milestones of the scope of the IASB addition works.

	Lendlease Program	
	Start Date	Finish Date
Lowering of Hospital Road	23rd March 2020	25 June 2021
UNSW Eastern Extension (Base Building only)	16 April 2021	25 May 2022

3.2 Construction staging overview

The Lendlease project team fully appreciate the disruption and change the construction works will bring to hospital operations and understand the challenges the HI, SESLHD and Randwick Hospital Precinct management will have in communicating the staging sequences and the program of the works to the staff and public. The better hospital staff and public understand the timing and reasoning of the staging of the works, the more comfortable they will be with the temporary inconveniences.

We have completed an initial review of our construction program and methodology and documented a draft set of staging plans covering the works phases, these will provide the basis for a full set of staging control plans, which will be developed in conjunction with detailed design development during the Planning Phase in consultation with HI, SESLHD and Randwick Hospital Precinct Management.

The staging plans will be developed to include:

- All site establishment items;
- Changed or modified egress paths;
- Pedestrian and vehicle circulation route changes;
- Temporary signage requirements; and
- Upcoming changes to works areas including approximated program dates.

3.3 Construction sequencing

The lowering of Hospital Road is a critical piece of construction that requires highly developed sequence and methodology. Over the course of the design phase Lendlease will continue to develop our construction sequence to ensure safety of all workers and the public, zero unplanned disruptions, and sequence works to ensure Hospital and Dock continuity. A number of small, planned isolated shutdowns are proposed to facilitate the integration works to existing buildings and carry out high risk construction activities.

Some of the major construction sequencing that is being planned in detail include:

- Existing hospital loading dock temporary closures;

- Retention piles installed;
- Install capping beams and progressively adjust sheet piles on the ASB side of the site;
- Bulk excavation;
- Progressively lay new stormwater and sewer pipework to enable a revised connection;
- Install pit and conduit system for new HV;
- FRP ground slab;
- Install permanent piles for UNSW Eastern Extension (Base Building only) and link bridge;
- Undertake "jump steel" construction for the Level 01 slab; and
- Install the new hospital connection link bridge.

Due to the staging requirements to lower Hospital road, construction vehicles are required to use High Street as a means of access to facilitate these works. Lendlease has reviewed options to utilize the existing ASB site, however due to cross levels difference and the existing site accommodation locations, there is no direct access to Hospital Road. A staged approach will mean that the construction vehicles on High street are for limited periods which is captured in the Time Motion study. The following consultation with TfNSW and Transdev has identified the key restrictions:

- Construction vehicles limited 9m in length when approaching from High Street
- Swept path analysis undertaken to identify turning paths at signal intersections at High St/Botany St and Hospital Rd/High st
- Cumulative impacts on the surrounding road network minimised by restricting deliveries to outside peak times (7:00am -9.30am, and 4:00pm-6.30pm)
- Construction vehicles will only use High street during stages 3 and 5 of 6 of the identified construction staging works below.
- The same above restrictions applied to Loading dock Freight and service deliveries

3.3.1 Stage 1 of 6 – New High Voltage Feeds for Existing Substation 134 & 1087

During this stage of the project new incoming High Voltage feeds will be installed in Hospital road south of the loading dock and reticulate into both existing substations.

Construction works will be carried out under traffic control. Light construction vehicles will access from Barker street into Hospital road. Vehicles will be sporadic for this type of trench and conduit installation works. Vehicle movements are indicated in the time motion chart below. Access to the Loading dock and Carpark will be maintained during this work. Some weekend closures of the loading dock will be required to facilitate trench and conduit works within the loading dock area. Fleet and SCHN parking is not proposed to be disturbed during these works.

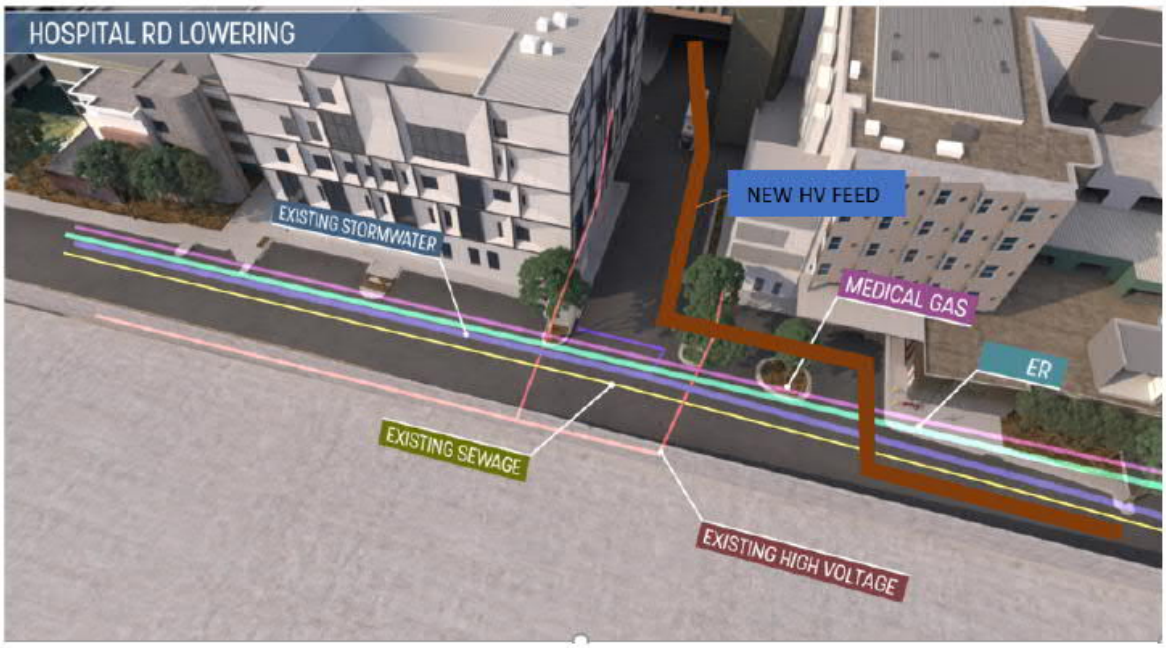


Figure 6 – High voltage install - stage 1 of 6

3.3.2 Stage 2 of 6 – Services diversion South side:

During this stage of the project the southern side of Hospital Road will be occupied by a large 30t excavator to dig down and install the new sewer and stormwater pipe using a shoring box down to the middle of delivery drive.

Construction vehicles will enter and exit the secure compound from Barker Street. Medium Rigid Vehicles (MRV) 9m long are proposed for these works. Vehicles will be sporadic due to the trenching methodology required and depth of services trench. 3-5 tip trucks / day removing spoil from the trench is expected. With the installation of the perimeter hoarding, no through access to public vehicles and pedestrians are possible along Hospital road. Deliveries to the Hospital Loading Dock will approach from High street & Hospital Road intersection. The current intersection is restricted to vehicles of up to 9m only to turn right. After consultation with Transdev and TfNSW, it is requested that no larger vehicles are proposed through High Street due to limitations with swept paths at the intersection. Arup have carried out swept path analysis identifying the turning circles which are included in the Appendix. The Hospital has an existing arrangement where Freight and service vehicles are minimised during commute peak periods (7:00am – 9.30am and 4pm – 6.30pm). This restriction will be maintained as requested by TfNSW to minimise cumulative impacts on the traffic network. Freight and Service vehicles are limited to 9m. Swept path analysis has been carried out to demonstrate MRV and HRV vehicles at the intersection of High St and Belmore Rd, and High St and Avocat St. This will be the exit route for the Freight and Service vehicles. These swept paths identify the vehicles can make these turns safely.

Pedestrians will be diverted along High Street to Botany street and /or Avoca street.

Emergency access / egress arrangements to the main loading dock will be retained. There will be no impact on fire access to the SCHN.

SCHN parking will be retained in its current location. The 8 carspaces opposite Ainsworth building will be removed to facilitate these works from this time. Some minor modifications to existing kerbs and soft landscape will be

carried out to provide a turning circle for these vehicles.

Traffic management details are identified in Traffic management plans located in section 4.6.

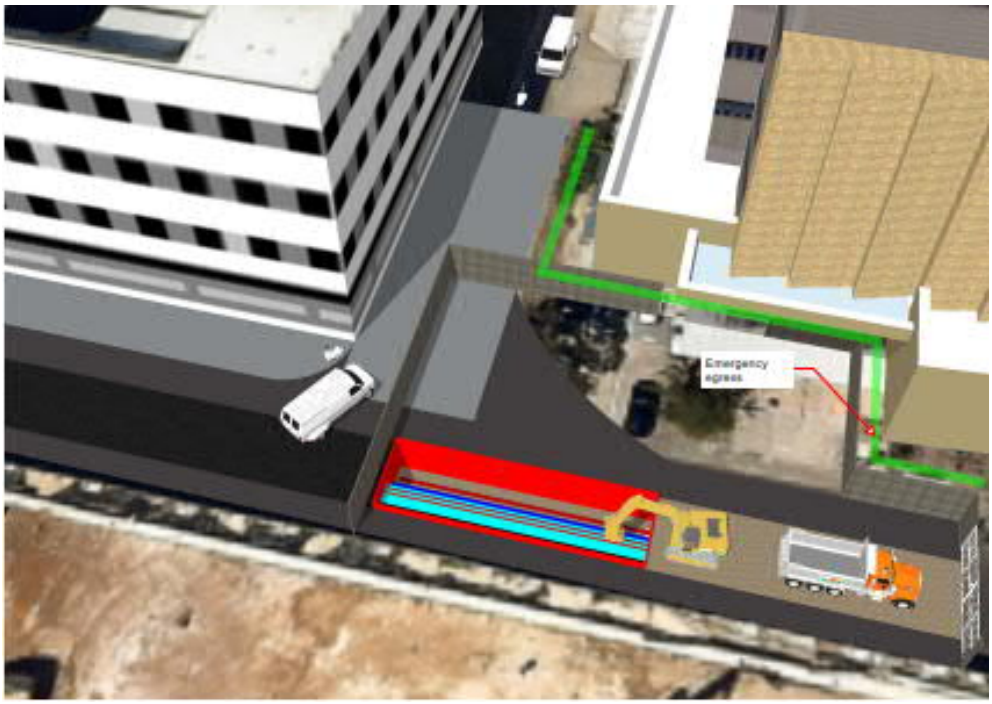


Figure 7 – South stage – services diversion – stage 2 of 6

3.3.3 Stage 3 of 6 – Services Diversion & Retention Piling North Side

During this stage of the project the northern side of Hospital Road will be occupied by a large 30t excavator to dig down and install the new sewer and stormwater pipe using a shoring box down to the middle of delivery drive. Final connection will be made to "liven" up the sewer and stormwater works once trenching is complete. The retention piles and new integration building piles will be installed to enable the bulk excavation to commence.

A similar amount of construction vehicle movements are estimated during these works. This is indicated in the time motion chart. Construction Vehicles will approach Hospital road from High street . Due to the minimal volume of construction vehicles per day, there will be negligible impact on the Hospital carpark entry & exit points. Loading dock access will be from Hospital road north off Barker street. Intermittent weekend closures of the loading dock will be required to facilitate hoarding movements, piling and bulk excavation activities.

Construction vehicles will enter and exit the secure compound from High Street. Construction vehicles will be restricted to Medium Rigid Vehicles (MRV) 9m long as requested by TfNSW. Vehicles will be sporadic due to the trenching methodology required and depth of services trench. 3-5 tip trucks / day removing spoil from the trench is expected. With the installation of the perimeter hoarding, no through access to public vehicles and pedestrians are possible along Hospital road. The current intersection is restricted to vehicles of up to 9m only to turn right. After consultation with Transdev and TfNSW, it is requested that no larger vehicles are proposed through High Street due to limitations with swept paths at the intersection. Arup have carried out swept path analysis identifying the turning circles which are included in the Appendix.

Construction vehicles will be minimised during commuter peak periods (7.00am-9.30am and 4.00pm -6.30pm) to minimise cumulative impacts on the traffic network.

Construction vehicles leaving the site will turn left onto High street, and travel west down High street to Anzac Parade where they can then turn left or right. TfNSW have confirmed that this needs to be monitored.

Pedestrians will be diverted along High Street to Botany street and /or Avoca street.

Emergency access / egress arrangements to the main loading dock will be retained. There will be no impact on fire access to the SCHN.

SCHN parking will be retained in its current location. The 8 carspaces opposite Ainsworth building will be removed to facilitate these works from this time. Some minor modifications to existing kerbs and soft landscape will be carried out to provide a turning circle for these vehicles.

Traffic management details are identified in Traffic management plans located in section 4.6.

Figure 8 – North stage – services diversion – stage 3 of 6

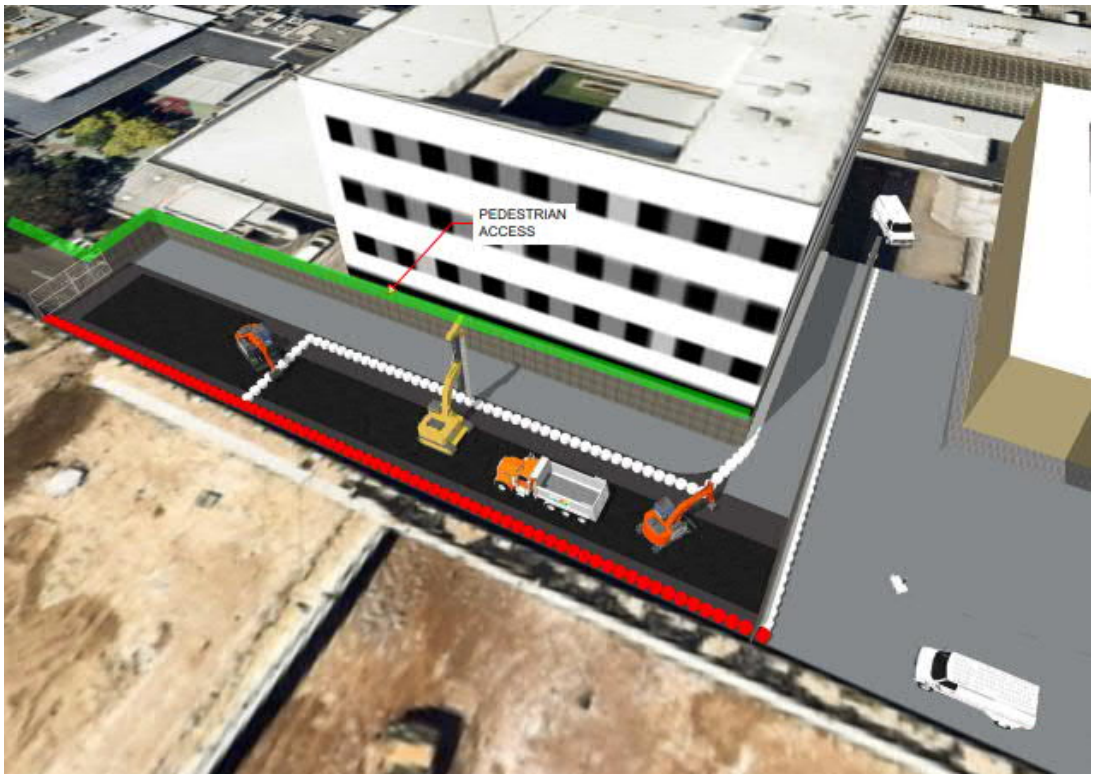


Figure 9 –North stage – retention piling – stage 3 of 6

3.3.4 Stage 4 of 6 – Lowering of Hospital Road – south side

During this stage bulk excavation will be undertaken

Pedestrians will be diverted along High Street to Botany street and /or Avoca street.

Emergency access / egress arrangements to the main loading dock will be retained. There will be no impact on fire access to the SCHN.

Construction vehicles will enter and exit the secure compound from Barker Street. Medium Rigid Vehicles (MRV) 9m long are proposed for these works. Deliveries to the Hospital Loading Dock will approach from High street & Hospital Road intersection. The current intersection is restricted to vehicles of up to 9m only to turn right. After consultation with Transdev and TfNSW, TfNSW will review removing the restricted turning limitation to allow HRV vehicles to turn right off High street into Hospital Road. This will greatly assist with the loading dock functioning as the larger vehicles will reduce the frequency. This is to be finalized prior to Stage 4 commencing.

Arup have carried out swept path analysis identifying the turning circles which are included in the Appendix. The Hospital has an existing arrangement where Freight and service vehicles are minimised during commute peak periods (7:00am – 9.30am and 4pm – 6.30pm). This restriction will be maintained as requested by TfNSW to minimise cumulative impacts on the traffic network.

A slightly increased volume of construction vehicle movements are estimated during these works. This is indicated in the time motion chart. Construction vehicles will approach Hospital road from Barker street in order to excavate the existing road to new lower level. Intermittent weekend closures of the loading dock will be required to facilitate hoarding movements, piling and bulk excavation activities.

Traffic management details are identified in Traffic management plans located in section 4.7.

Figure 10 – South stage – Bulk excavation– stage 4 of 6

3.3.4 Stage 5 of 6 – Lowering of Hospital Road – North side

During this stage the remainder of the bulk excavation will be undertaken. Emergency access / egress arrangements to the main loading dock will be retained. There will be no impact on fire access to the SCHN.

Construction vehicles will enter and exit the secure compound from High Street. Construction vehicles will be restricted to Medium Rigid Vehicles (MRV) 9m long as requested by TfNSW. The current intersection is restricted to vehicles of up to 9m only to turn right. After consultation with Transdev and TfNSW, it is requested that no larger vehicles are proposed through High Street due to limitations with swept paths at the intersection. Arup have carried out swept path analysis identifying the turning circles which are included in the Appendix.

Construction vehicles will be minimised during commuter peak periods (7.00am-9.30am and 4.00pm -6.30pm) to minimise cumulative impacts on the traffic network.

Construction vehicles leaving the site will turn left onto High street, and travel west down High street to Anzac Parade where they can then turn left or right. TfNSW have confirmed that this needs to be monitored.

Pedestrians will be diverted along High Street to Botany street and /or Avoca street.

A slightly increased volume of construction vehicle movements are estimated during these works. This is indicated in the time motion chart. Construction vehicles will approach Hospital road from High street in order to excavate the existing road to new lower level. Intermittent weekend closures of the loading dock will be required to facilitate hoarding movements, piling and bulk excavation activities.

Loading dock deliveries will be operating from Barker street. This will be in its final arrangement as per end state design.

Traffic management details are identified in Traffic management plans located in section 4.7.

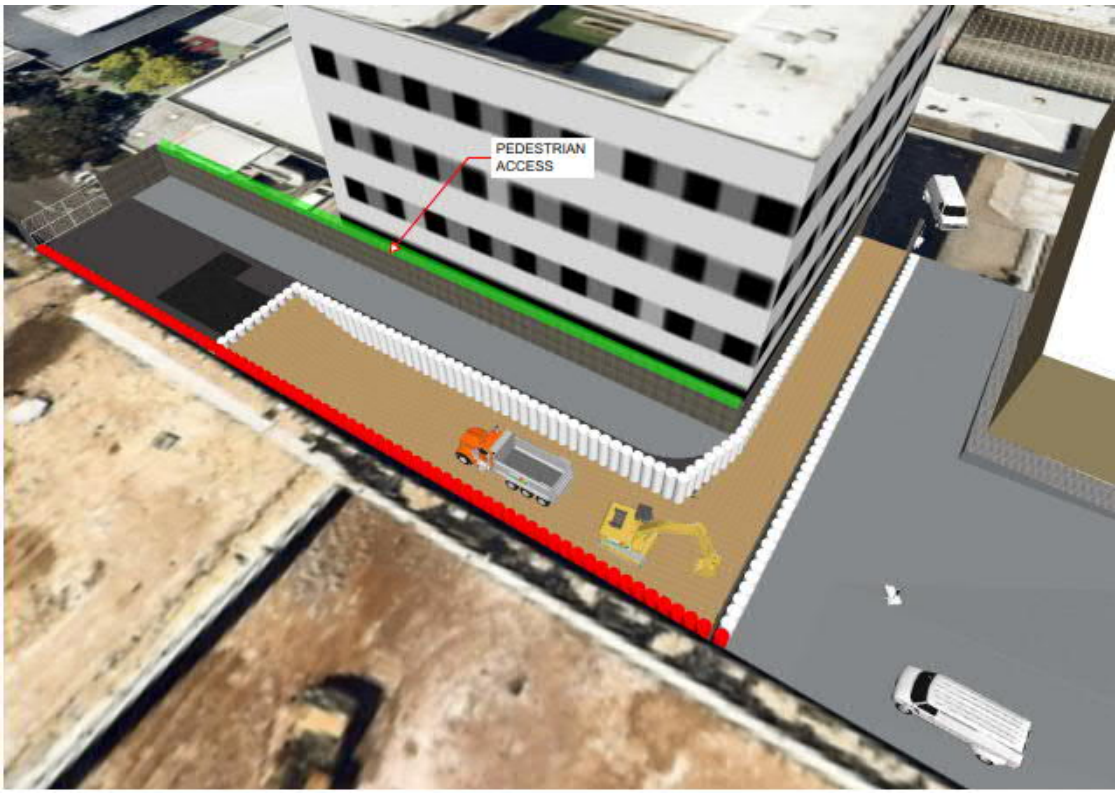


Figure 11 – North stage bulk excavation – Stage 5 of 6

3.3.5 Stage 6 of 6 – Construction UNSW Eastern Extension (Base Building only) and Link bridges

The IASB Addition construction critical path runs through the structural work packages being structural steel, formwork, reinforcement and concrete placement. To ensure the critical path is achieved Lendlease will be utilising "jumpsteel" to effectively and simply support the Level 01 slab over the lowered hospital road. This technique of fast tracking structural works will be utilised on other Lendlease projects such as Sydney Metro Martin Place.

The structural steel elements of the jump steel will be coordinated with the structural steel for the link bridge which is being constructed from the existing hospital out to meet the new façade line. A 3D image of that is also provided below.

The tower cranes for the ASB have been selected to provide lifting coverage for the UNSW Eastern Extension (Base Building only) structural works. This allows the delivery of jump steel and associated building elements to be delivered through Gate 1 or 2 off Botany street. The delivery vehicles will be unloaded on the north/west side of the ASB and lifted across to Hospital road. This will significantly reduce construction vehicles on Hospital road during the construction of the structure.

The below Tower crane Radius chart (figure 12) indicates the reach from the ASB site and coverage of the UNSW Extension building.

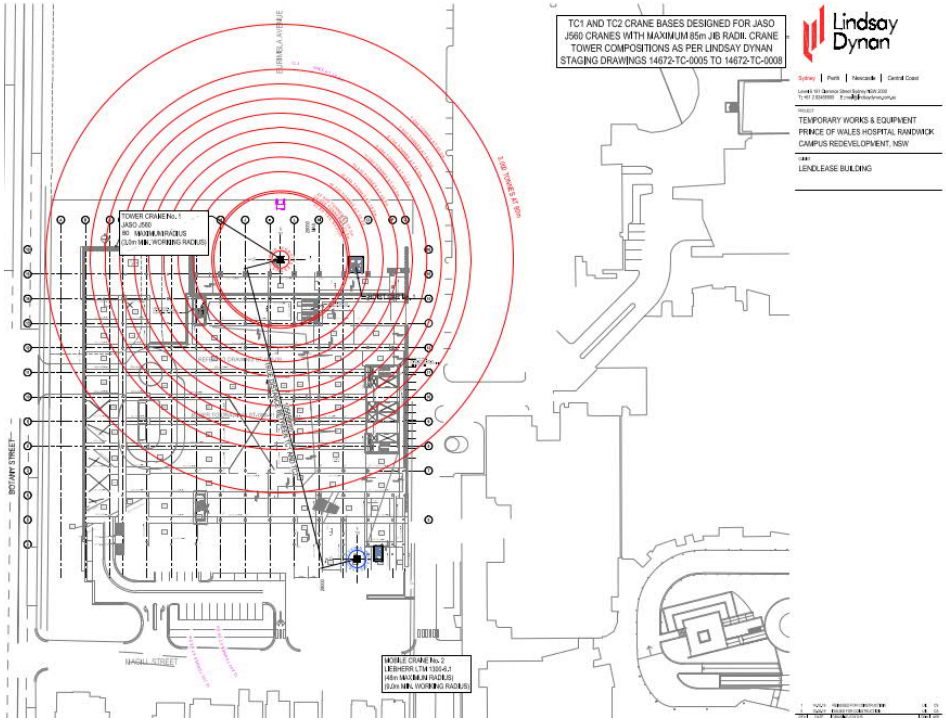


Figure 12 – Tower crane radius chart

At times there will be planned heavy lifts of prefabricated elements such as the bridges and facade components which will require large mobile cranes positioned in Hospital road. Weekend loading dock closures will be required to facilitate these works. These vehicles will approach off Barker road into Hospital road. Construction vehicle volumes on Hospital road are identified in the time motion chart (Figure 15).

Specific transport routes for the steel bridge deliveries will be agreed with TfNSW once a steel contractor is secured for the works.

The path of all mobile cranes will be from Barker street to avoid crossing and Light track tracks and overhead wiring.

Figure 13 – Structural Steel elements supported above Hospital Road

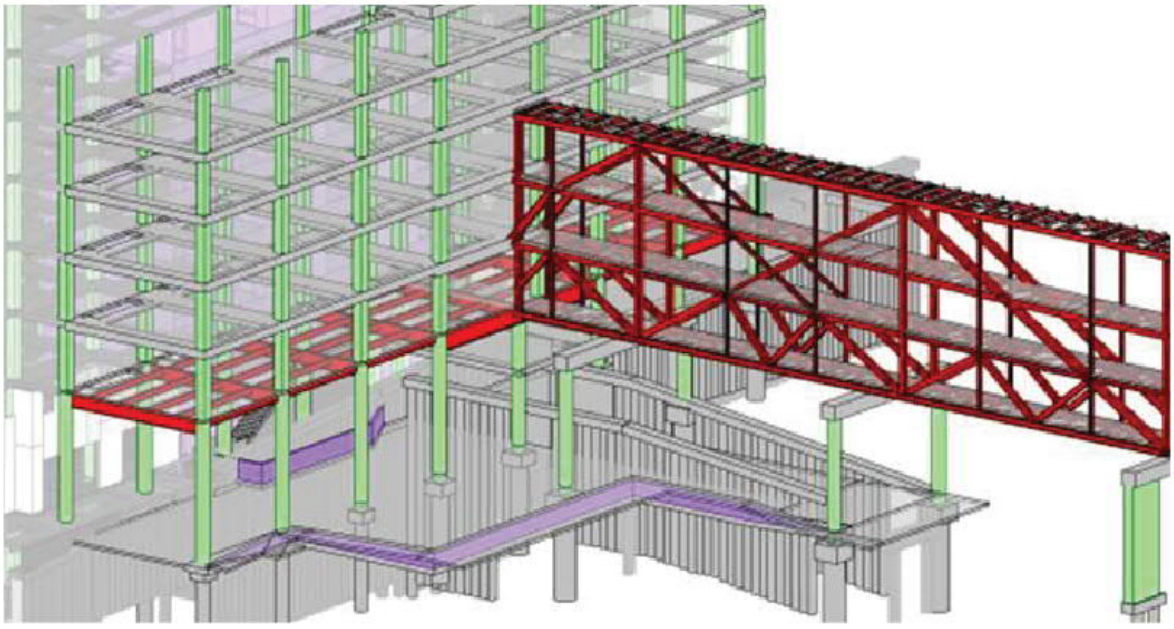


Figure 14 – Patient link bridge and jumpsteel integration

3.4 Construction Programme

The Construction programme for the UNSW extension works and Lowering of hospital road is identified in the below time motion study.
The time motion study below summaries the construction programme into the stages of works providing detailed information on construction vehicle projections associated with each stage of the works. Peak construction activities are identified when Stage 4 and 5 occur. This is the completion of the bulk excavation of the northern section of Hospital Road and the installation of the Link Bridges to the existing hospital.

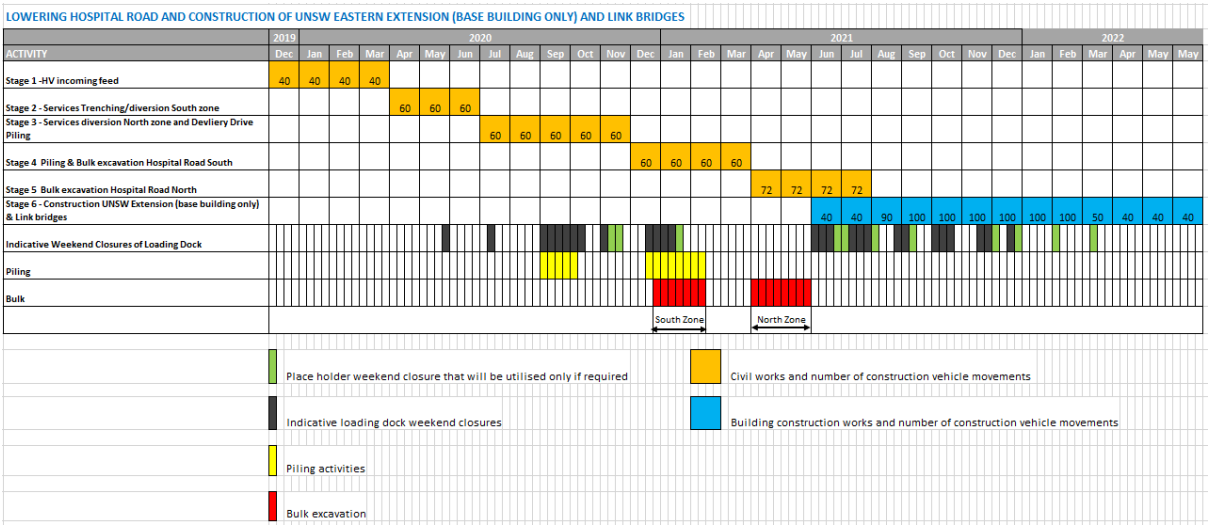


Figure 15 – Time Motion chart study

The cumulative impacts associated with the approved Acute Services Building is very low. The Structure for the ASB has commenced and peak construction activities for ASB are from September 2020 to March 2021. From which resources and delivery frequency reduce. The below resources chart (figure 16) indicates the peak period of the ASB for comparison to identify low cumulative impact of both projects.

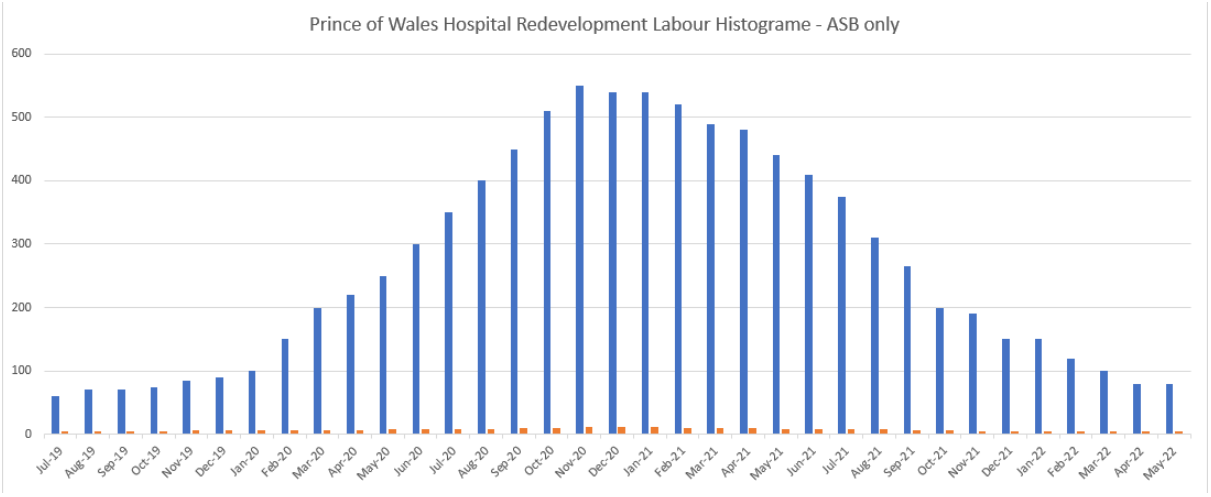


Figure 16 – Acute Services Building Peak workforce

4.0 CONSTRUCTION TRAFFIC & PEDESTRIAN MANAGEMENT

4.1 Site considerations

Lendlease has carefully planned and considered the staging requirements for the Integrated ASB Addition. These established strategies are to best manage logistics of the project within a live hospital campus. In doing so we have identified the following key considerations for management of the site:

- Site establishment schedule;
- Worker transport and parking;
- Pedestrian access and circulation routes;
- Site evacuation / major incident response;
- Site compound and amenities;
- Temporary services;
- Site temporary services;
- Fencing and hoarding for site segregation;
- Site access points, construction traffic and deliveries;
- Materials storage and handling;
- Working adjacent to residential and business properties;
- Site management controls;
- Business continuity of Randwick Health Campus, Sydney Children's Hospital, and the University of New South Wales, Royal Hospital for Women;
- Risk management;
- Construction methodology; and
- Project completion.

4.2 Site access points, construction traffic and Deliveries

Lendlease understands that one of the keys to the successful delivery of the Integrated ASB Addition will be the flow of materials and equipment into and out of the construction site. We believe it is imperative that our planning considers and successfully manages:

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

To achieve this, an extensive Traffic and Pedestrian Management Plan has been developed with specific focus to:

- Carpark entry and egress: Existing Carpark operations will be maintained at all times, including all car park services and emergency egress. Particular focus will be on peak flow access and

egress during hospital shift change overs and strategies will be employed to ensure flows are maintained by reducing the number of deliveries during these peak periods (7.00am – 9:30am, and 4:00pm – 6:30pm);

- Maintaining business continuity operations for the Hospital by relocating service vehicles and existing car spaces to alternate locations of the Hospital easing the traffic flow on Hospital Road;
- Disabled pedestrian access and paths of travel: Throughout all activities, disabled pedestrian access will be adjusted/maintained as required for entry and exit to Hospital buildings;
- All swept paths are being designed by ARUP to ensure coordination with the TfNSW;
- Lendlease will consult with all suppliers to ensure the correct size and weight vehicles are allocated to the project and are cognisant of carriage weight constraints;
- Ambulance entry: No works or vehicle movements will be allowed to affect the access of ambulance entry and parking area other than noted with the closure of Hospital Road. Ambulance NSW has been consulted of the closure of Hospital Road; and
- Construction Vehicles: Mitigating impact to the Hospital precinct and surrounding roads will be considered along with a detailed analysis of delivery frequency in conjunction with the program and access routes to the site from the various approaches. Procedures for timely delivery notification will be developed (e.g. call prior to arrival and also advise on aborted deliveries).

4.3 Fencing and hoarding for site segregation and safety

Lendlease 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.

4.4 Lowering Hospital road impact on ASB & Other Development works

The construction vehicle requirements for the Lowering of Hospital road works will have negligible impact on the Main ASB construction works and usage of Gate 3. This is due to the sporadic requirement of deliveries for services diversion, trenching, piling and excavation works. The time motion chart indicates construction traffic volumes for the Hospital road works. Access will alternate from High and Barker street depending on the stages of these works, with volumes of construction traffic generally from 3-6 vehicles per day.

Further to this, there is limited impact on other construction developments within the local network such as the Newmarket Green Development, current UNSW developments and the Sydney Light Rail project. Lendlease is having regular meetings with Ganellan, Randwick City Council and UNSW to understand any impacts on the network. Lendlease has been consulting with Acciona for access to finalise stormwater and footpath works along High Street.

4.5 Construction vehicles study

Lendlease has prepared a time motion chart for the proposed stages of construction to lower Hospital road and construct the UNSW Eastern Extension (Base Building only) building and associated link bridges.

This study considers the key stages of construction, the works, and construction vehicle requirements to facilitate activities such as trenching, building materials, excavation and piling. Working in and around live services requires a very considered and controlled speed of construction. The duration of these works extends over a 30-month period which is indicative of the complex nature of construction required to successfully complete these works. The volume of construction vehicles is very low compared to normal construction projects such as the ASB. This is due to the complexity and type of works being undertaken.

Please see the figure on the following page.

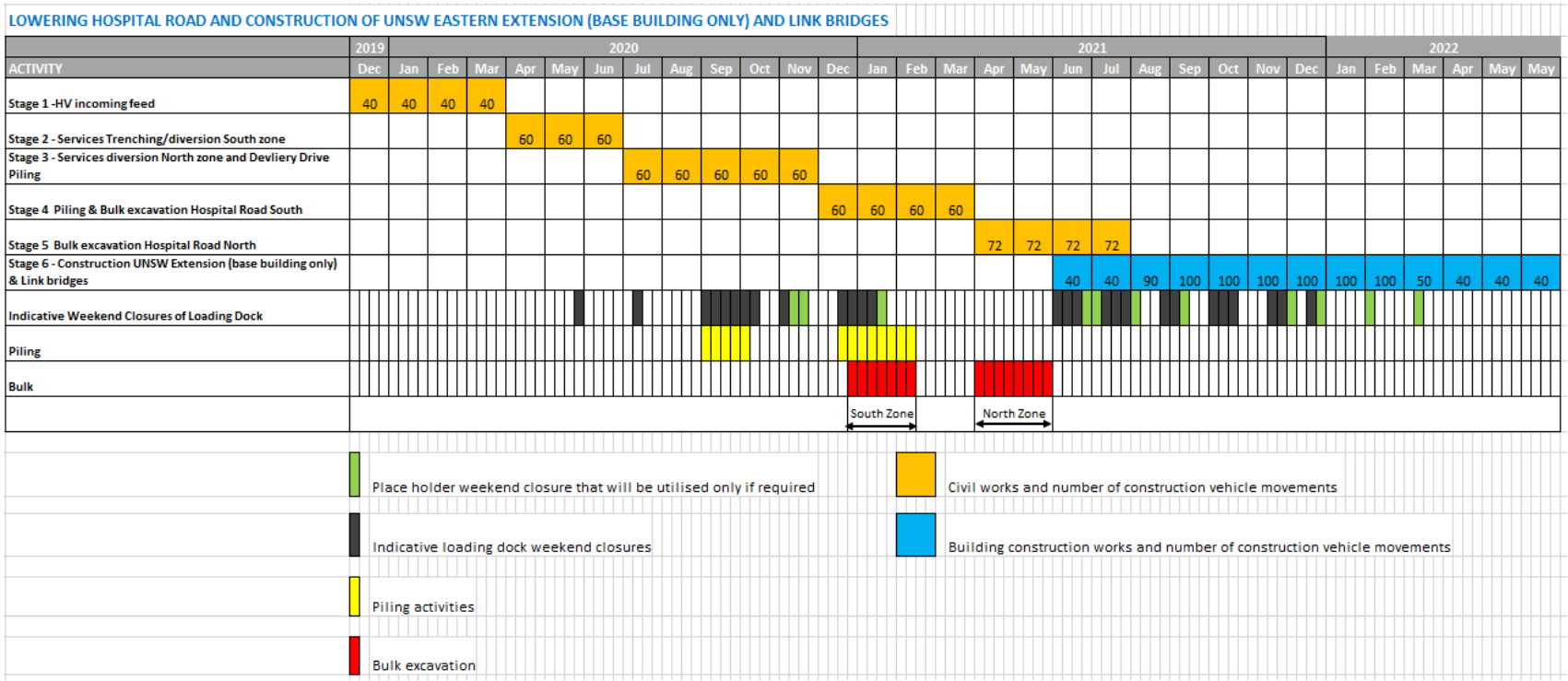


Figure 17 – Lowering Hospital Road and UNSW Eastern Extension time motion chart

Figure 17 identifies the anticipated number of vehicle movements each month for the proposed stages of construction. Indicative weekend closures are identified which may shift according to construction programming and sequencing. Piling and bulk excavation activities have been identified separately on this chart to show indicative duration of these works. The vehicle types expected for the civil works include:

- Bogie & tip trucks for spoil removal and bedding materials
- Concrete truck deliveries for piles and foundations
- Pantek & rigid trucks with conduits, pipes, shore boxes, and reinforcement

4.6 Hospital Road Traffic Management Plans

The construction staging identified in this section of the plan for the Lowering of Hospital road is indicated on the following Staged Traffic management diagrams.

In developing these staging diagrams consideration has been provided for vehicle entry and exit points off Barker and High street, impacts on existing parking on Hospital road and access/egress of the existing Hospital campus carpark.

The three key stages of Traffic management are explained below:

Stage 1 – Hospital Road Contra Flow Traffic for High Voltage Works (already under way)

- Traffic management operations to the surrounding road, rail and bus network remain unchanged with this operation of works.
- Contra flow traffic conditions are introduced along Hospital Road to facilitate High Voltage trenching of these works adjacent to the RHW building.
- Light construction vehicles required for the works utilize Hospital Road from Barker street and exit onto High Street. Vehicles are limited to 9m.
- Minor parking arrangements on Hospital Road are adjusted to facilitate these works and relocated to spaces within the Hospital campus.
- Construction vehicles limited during peak periods in the AM and PM hours identified.
- No change to the SCHN drop off zone on the corner of High st/Hospital Road as requested by TFNSW.
- Pedestrian access along Hospital road remains on the eastern side footpath where currently nominated.

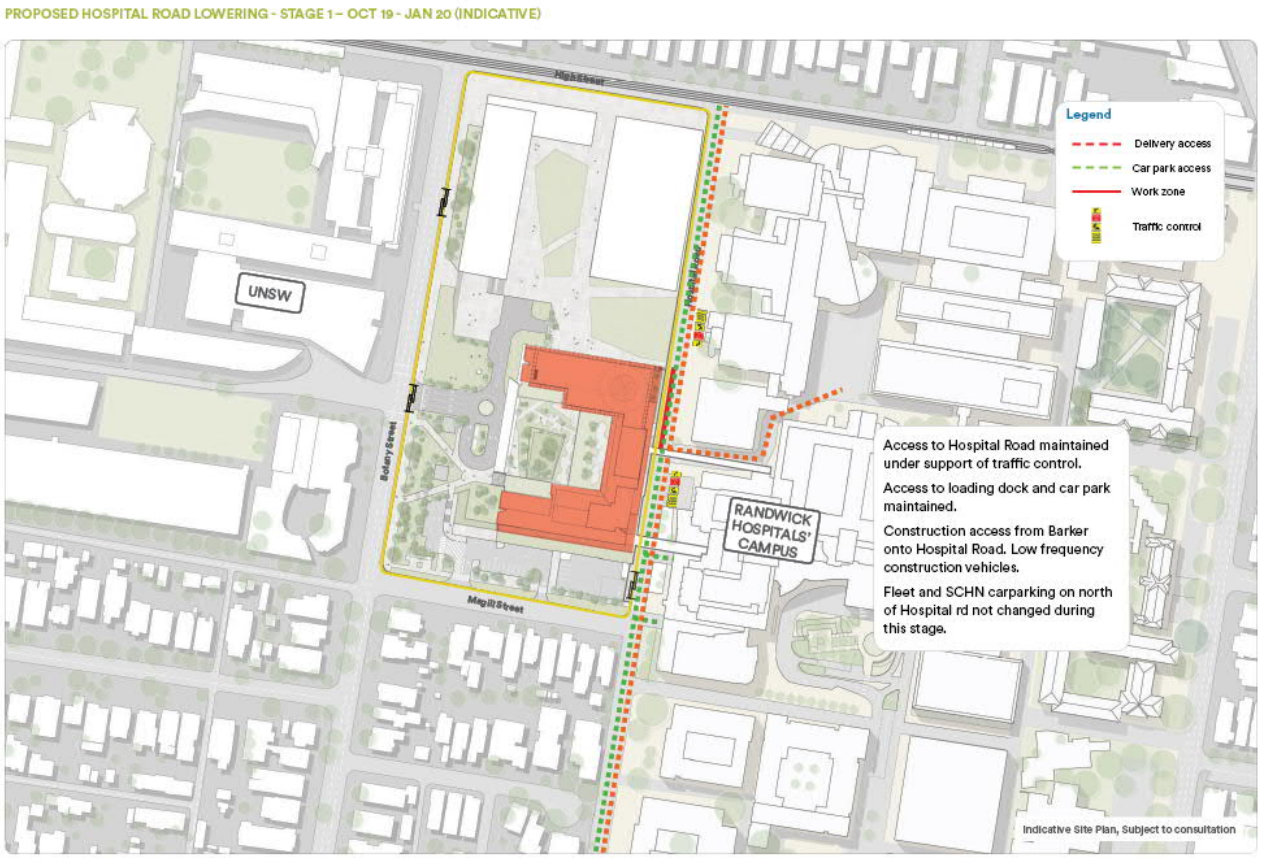


Figure 18 – Hospital Rd lowering – Traffic management diagram – stage 1

Stages 3 & 5 – Civil Works to north section Loading Dock

- Construction compound is established adjacent to the Ainsworth building to facilitate the civil works construction.
- Hospital Road is closed to existing traffic north to south.
- All Hospital loading dock deliveries are required to enter and exit Hospital Road from Barker Street. The quantum of loading dock deliveries have been studied by Arup with swept path analysis studied by Arup. This is located in the appendix.
- Hospital Carpark entry and exit from Hospital Road is by Barker Street. Impact on Barker street will be reduced by the re-opening of Magill street during business hours.
- Construction vehicles for the civil works to enter the compound turning right off High street into Hospital Road at the signalized intersection. This right turn is limited to 9m vehicles.
- Construction vehicles will enter and exit the site compound in a forward direction.
- Construction vehicles limited during peak periods in the AM and PM hours identified.
- No change to the SCHN drop off zone on the corner of High St/Hospital Road as requested by TfNSW.
- Pedestrian access along Hospital Road north to south from High Street to Botany Street is closed.

Pedestrians requiring through access to Sydney Light Rail will be required to use Botany Street or Avoca Street. Variable message signs will be displayed advising of road closure

- Construction vehicles leaving the site will turn left onto High street from Hospital Road and travel west on High Street to Anzac Parade. This has been agreed with TfNSW through consultation. Lendlease will monitor these vehicle movements.
- Construction Vehicle haulage routes for this stage of works is idenitfied in sectiion 4.8.

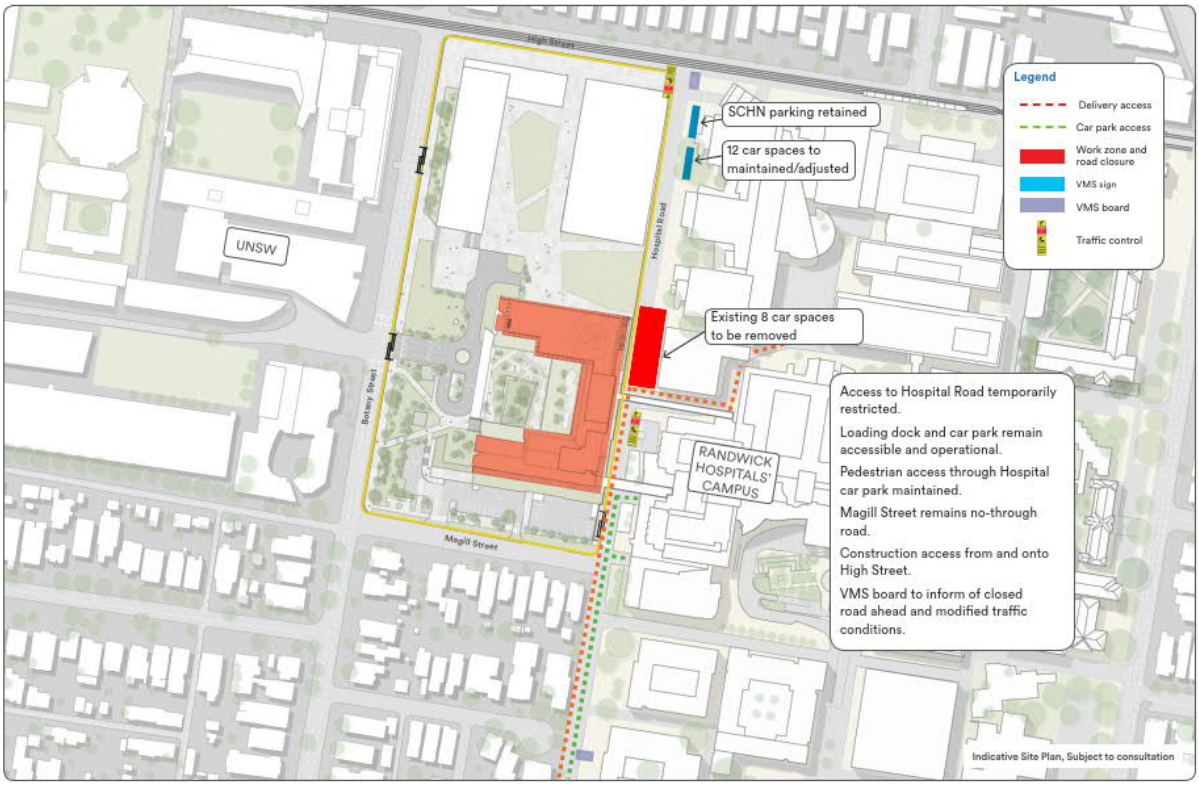


Figure 19 – Hospital Rd lowering – Traffic management diagram – stage 3 & 5

Stages 2 & 4 – Civil Works to south section Loading Dock

- Construction compound is established adjacent to the Royal Woman's Hospital (RHW) building to facilitate the civil works construction.
- Hospital Road is closed to existing traffic north to south.
- All Hospital loading dock deliveries are required to enter and exit Hospital Road from High Street. The quantum of loading dock deliveries has been studied by Arup with swept path analysis studied by Arup. This is located in the appendix.
- Hospital Carpark entry and exit from Hospital Road is by Barker Street. Impact on Barker Street will be reduced by the re-opening of Magill street during business hours.
- Construction vehicles for the civil works to enter the compound turning left off Barker Road into Hospital Road.

- Construction vehicles will enter and exit the site compound in a forward direction.
- Construction vehicles limited during peak periods in the AM and PM hours identified to minimise cumulative impacts with the Newmarket Green Development and associated school hours.
- No change to the SCHN drop off zone on the corner of High St/Hospital Road as requested by TFNSW.
- Pedestrian access along Hospital Road north to south from High Street to Botany Street is closed. Pedestrians requiring through access to Sydney Light Rail will be required to use Botany Street or Avoca Street. Variable message signs will be displayed advising of road closure.
- Construction Vehicle haulage routes for this stage of works is idenitfied in section 4.7.

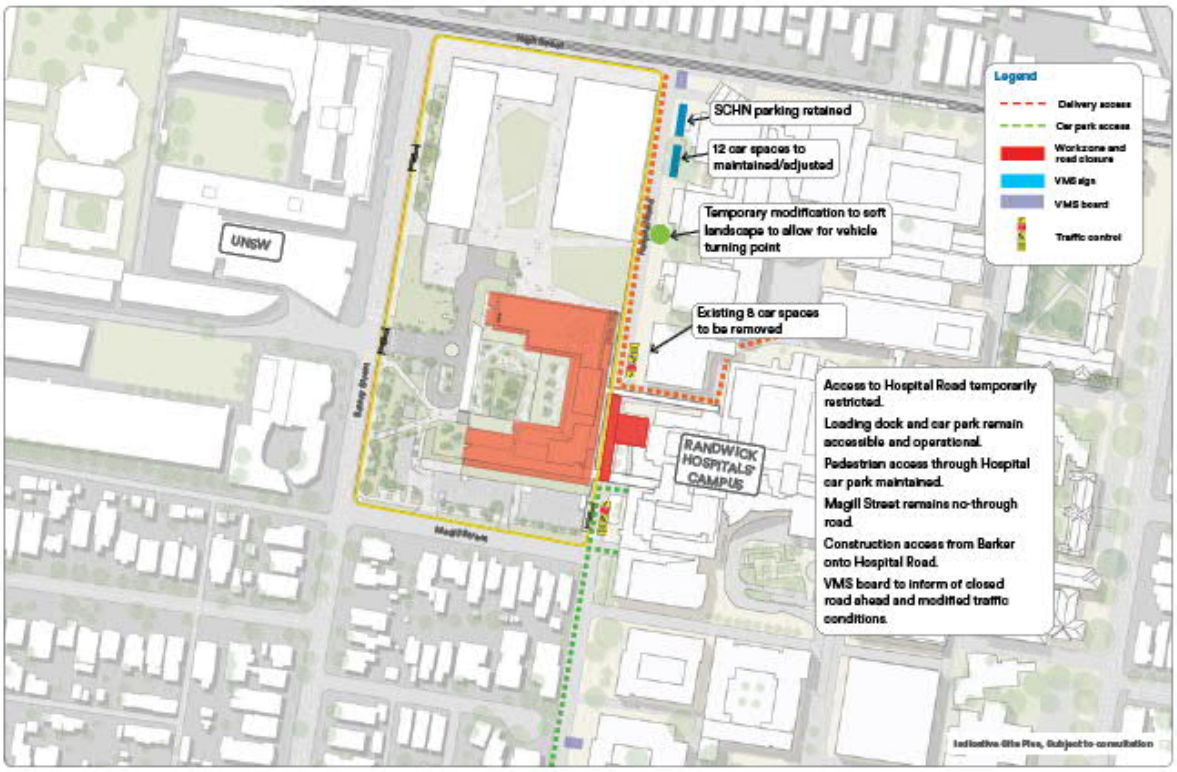


Figure 20 – Hospital Rd lowering – Traffic management diagram – stage 2 & 4

4.7 Construction Vehicle Haulage Routes

The following construction vehicle haulage routes have been identified to minimise impact on surround roads to the precinct during construction works. These routes will be communicated to the workforce via startup meetings, toolbox talks and issuing this CTPMP. Swept path analysis provided by Arup are located in the Appendix 4 for turning onto High Street and Hospital Road.

Construction traffic from North M1 to Randwick: Stages 3 and 5

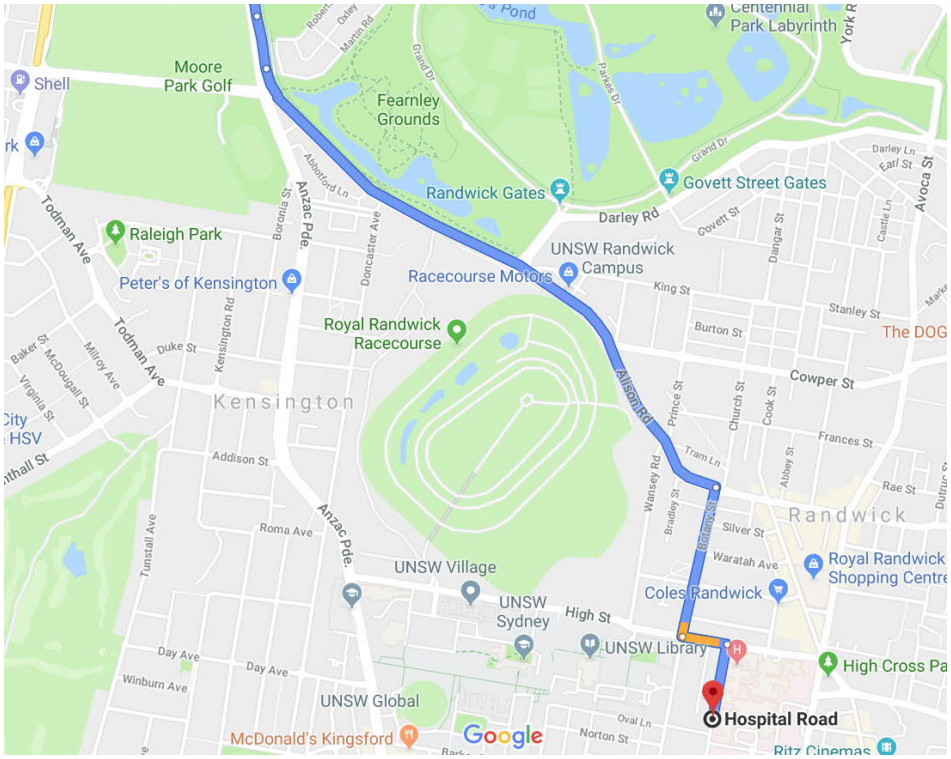


Figure 21 – Construction Traffic North M1 to Randwick: Stages 2, 4, and 5

Construction vehicles travelling from the North of Sydney will follow a direction as outlined in the above figure. Utilising the M1 tunnel vehicles use the following route to the site:

- Exit from the M1 onto Anzac Parade
- Turn left onto Alison Road
- Turn right into Botany St
- Turn left into High Street
- Turn right into Hospital Road and through to site gate (vehicles under 9m only)

Construction traffic from North M1 to Randwick: Stages 2, 4and 6

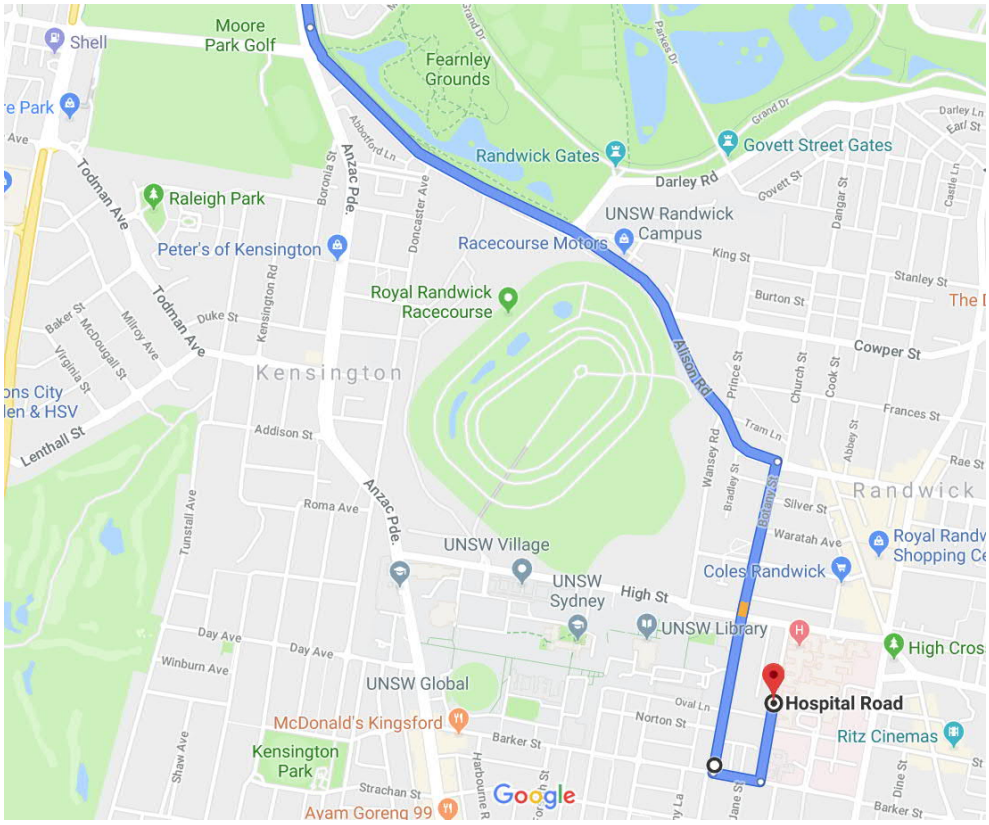


Figure 22 – Construction Traffic North M1 to Randwick: Stages 3 and 5

Construction vehicles travelling from the North of Sydney will follow a direction as outlined in the above figure. Utilising the M1 tunnel vehicles use the following route to the site:

- Exit from the M1 onto Anzac Parade
- Turn left onto Alison Road
- Turn right into Botany St
- Turn left onto Barker Street
- Turn left onto Hospital Road and through to site gate

Construction traffic from South or West M1/M5 to Randwick: Stages 3 and 5

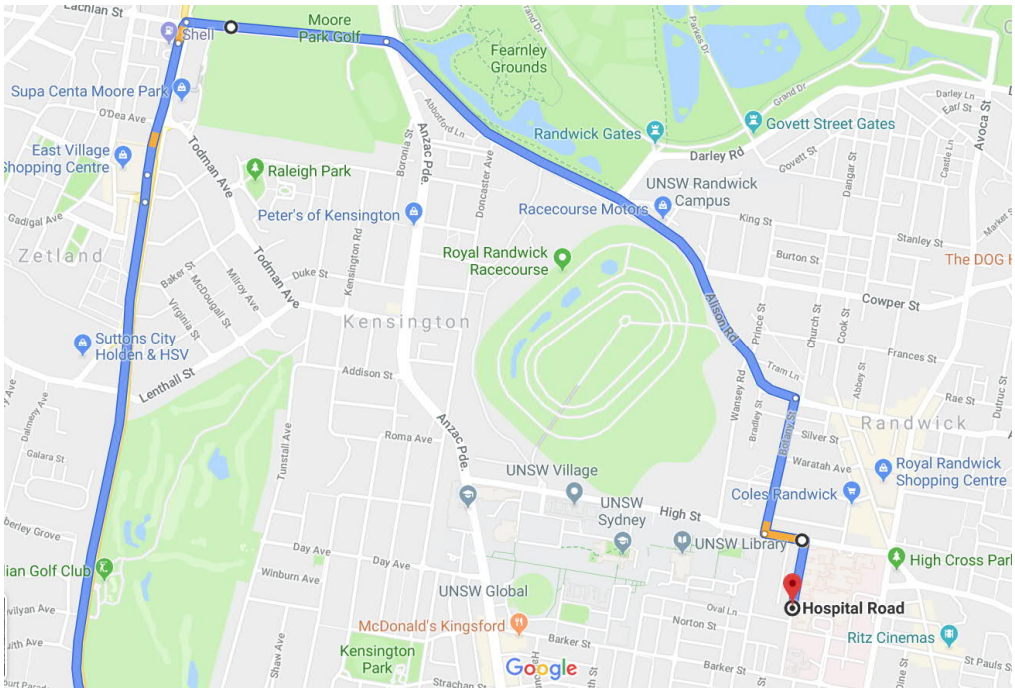


Figure 23 – Construction Traffic South or West M1/M5 to Randwick: Stages 2, 4, and 5

Delivery vehicles travelling from the South or West of Sydney will follow a direction as outlined in the above figure. Utilising the M5/M1 vehicles follow 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 Road
- Turn left onto High Street
- Turn right onto Hospital Road and through to site gate (vehicles under 9m only)

Construction traffic from South M1/M5 to Randwick: Stage 2, 4 and 6

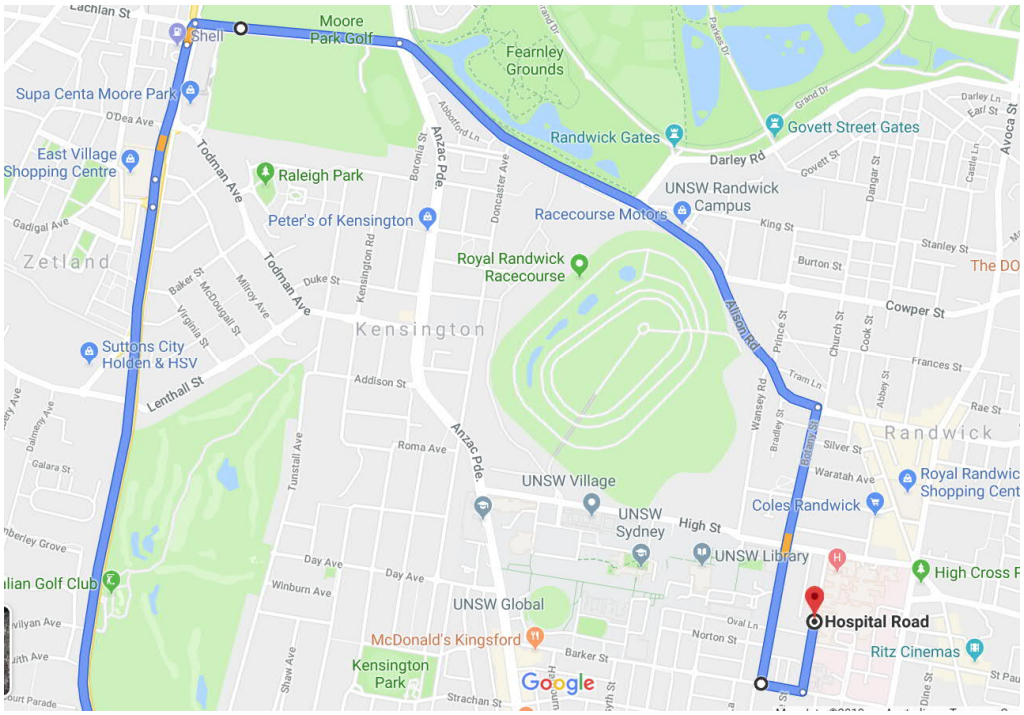


Figure 24 – Construction Traffic South M1/M5 to Randwick: Stages 3 and 5

Delivery vehicles travelling from the South or West of Sydney will follow a direction as outlined in the above figure. Utilising the M5/M1 vehicles follow 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 Road
- Turn left onto Barker Street
- Turn left onto Hospital Road and through to site gate

4.8 Pedestrian & Cyclist Access & Management

Pedestrian & cyclist access around the precinct will remain unchanged with the proposed construction works of this development. The High Street footpath remains unchanged and the signalized intersection at High Street and Hospital Road remains in its current operation. This provides safe access to the SLR interchange for pedestrians.

Pedestrians & cyclists who utilize Hospital Road as a north / south thoroughfare to access High street or Barker road will be required to chose alternate travel paths due to the closure of Hospital Road during construction and from an end state. VMS boards will be installed at High Street & Barker Road advising of the road closure and

alternate routes. Signage will divert pedestrian to use Avoca street or Botany/Magill street to travel north/south between High and Barker Road. This will allow commuters to access the UNSW Light Rail Station, or High Street Interchange station.

The Prince of Wales Hospital marketing and communications team are developing internal communications to be provided to Hospital staff and visitors of these changed conditions to assist with the change management process required.

4.9 Existing Parking provisions

Lendlease have completed investigations of the existing parking provision, demand and proposed supplementary parking opportunities' on and offsite in relation to the Hospital carparking.

The traffic and parking impact assessment report produced by Arup provides detailed information regarding the existing parking provision on campus, the allocation of spaces among users and the occupancy throughout the day.

Existing parking provisions along Hospital road will need to be modified to facilitate the lowering of the road and construction of the UNSW Eastern Extension (Base Building only) and associated link bridges.

SCHN parking will be retained. Ainsworth parking will be removed along with other parking spaces on Hospital road. 12 car spaces can be provided along the northern section of Hospital Road which can be used for Hospital authorities.

Refer to the satellite image below of the proposed modified parking to the north of Hospital Road.

No impact on the entry and exit of the Hospital Carpark is proposed. No impact on the motorcycle parking provisions to the south of hospital road will require location during stage 3 works. It is proposed to move these further south.

At the commencement of the Stage 2 works, VMS signs will be positioned at the corner of High Street and Hospital Road, warning public vehicles of no through access. The SCHN drop off (figure 25) will be retained and vehicles directed to merge back onto High street.

Figure 25 – SCHN drop off zone

A modified turning circle arrangement will be constructed to allow vehicles parking on the north of Hospital road to 'U' turn and exit Hospital road onto High street. This will require removal of soft landscape and modification to kerbs and footpath. This has been modelled by ARUP for sufficient turning circles and these works will be constructed at commencement of the works prior to Hospital Road closing. See the below photo of the proposed changes. View looking south along Hospital Road.

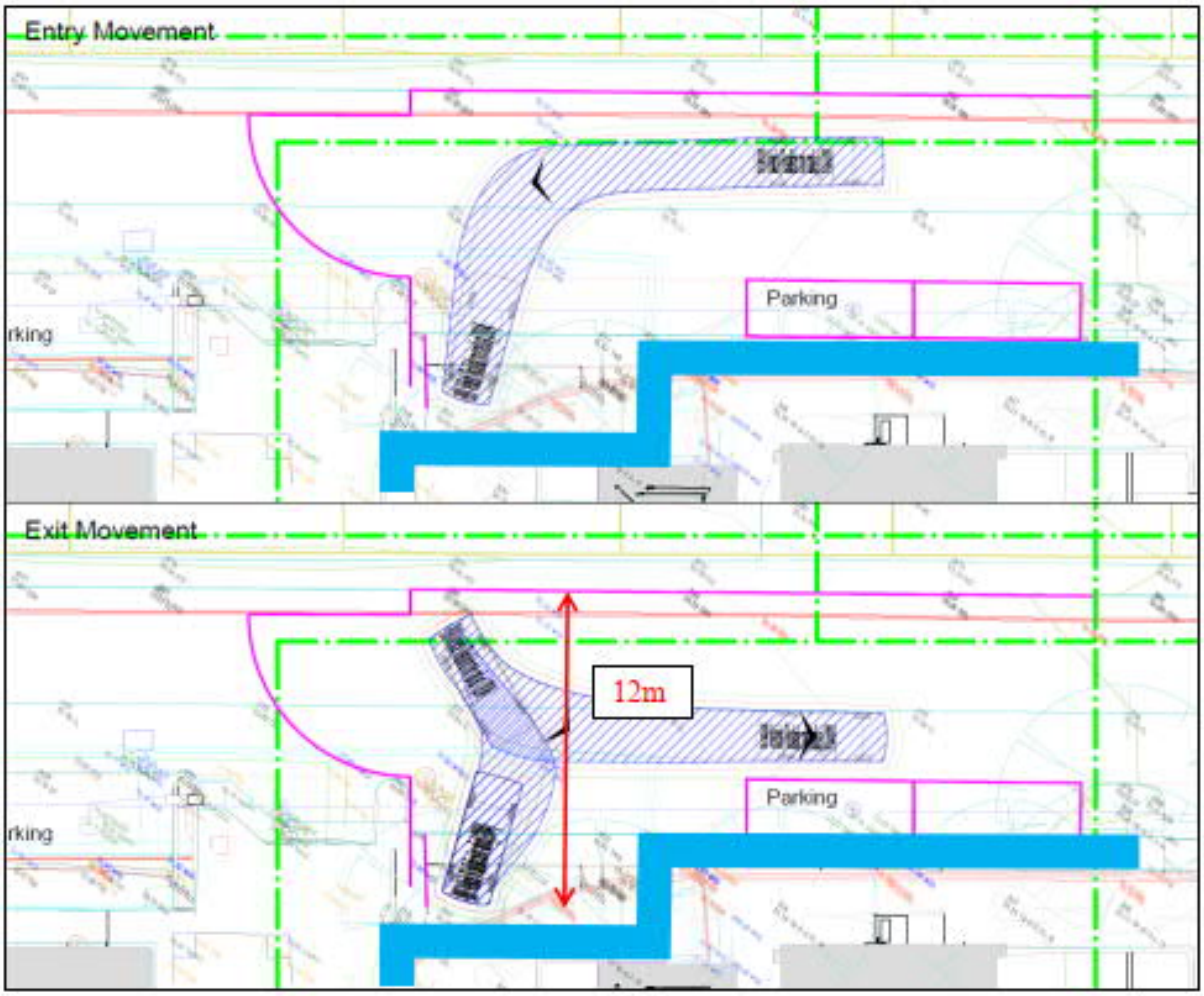


Figure 26 – modified turning circle for Hospital Rd

Figure 27 – Adjusted footpath

There will be no parking for construction workers on site. All workers are encouraged to utilize the public transport network to Randwick which is sufficiently supplied by Bus and the new Light Rail. In accordance with the Construction Worker Transportation Strategy an offsite parking facility has been arranged with the Australian Turf Club (ATC). This allows for workers to park at the ATC club in the public carpark and shuttle to site utilsing the SLR or the shuttle bus service provided by Lendlease.

4.10 Sydney Light Rail Interface

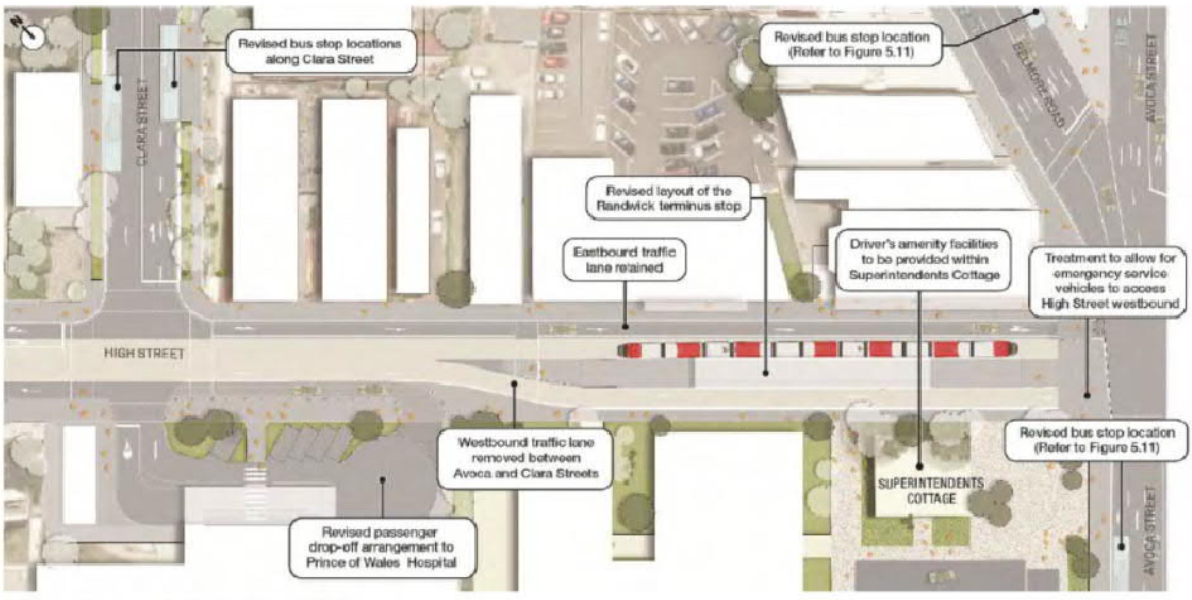
The Sydney Light Rail has now gone "live". It is expected that commuters will look to utilize the light Rail in lieu of driving to the Randwick area.

Lendlease understand through consultation with TfNSW (Transport for New South Wales), TMC (Transport Management Centre) and the light rail contractor the sensitivities around the High Street interchange.

Throughout construction of the Light Rail project, Lendlease has been coordinating any external works with Acciona to mitigate any impacts and ensure all works are timely managed. The construction of the IASB addition will not impact on the location of the SLR interchange and public pedestrian access to the interchange which is adjacent to the Hospital on High Street. Lendlease forecasts that construction workers will also utilize the SLR in order to commute to the construction site.

Lendlease will have construction vehicles entering off High street into Hospital road during stages of the construction as outlined in the CTPMP. This is required to facilitate the staging of the construction works and access due to level changes in Hospital Road. These vehicles will be required to adhere to the signalized intersection operation which does not require any adjusting with the proposed scope. Hence this will not impact on the Light rail train schedule or pedestrian movements.

Through consultation with Transdev, TfNSW, and SCO, it is understood that MRV vehicles are restricted to this intersection in order to mitigate impact on SLR tracks and crossing over into oncoming trams. Arup has carried out sept path analysis of the MRV and HRV to identify this, in support of using MRV's for the construction works.



Note: Indicative only. Subject to detailed design

Figure 28 – Finished state of The Light Rail Infrastructure Along High Street

Lendlease will continue to consult with Transdev, TfNSW and SCO to understand any impacts associated with the Kingsford opening of the SLR in early 2020.

4.11 Surrounding network considerations

In developing the CTPMP, Lendlease and Health Infrastructure has considered the surrounding network operations to understand any affects by the proposed development.
Arup has been commissioned to carry out a Traffic and Transport assessment of the surrounding network. The full report is attached as an appendix to the CTPMP. The key findings from the assessment are summarized;

- Most effective surrounding traffic measure is to re-open Magill Street to relieve traffic on Barker Street from the Hospital carpark. Proposed to close Magill Street at night to stop non-local traffic from entering with the use of a boom gate. The opening of Magill Street is anticipated for May/June 2020 to allow relief to carpark access provisions of the existing Hospital. Any re-opening of Magill street will be agreed with Council. This consultation is underway.
- The forecast daily traffic volumes along Magill Street of 2500 vehicles per day is expected to be less than the 3000 vehicles per day local street threshold.
- No new parking demand within the campus by the IASB addition, i.e. no new staff, and UNSW staff are already working on the UNSW campus.
- Public interest to redirect traffic from High Street due to CSELR, buses and pedestrians.
- Cumulative impacts of the Newmarket Greenland Development, ASB Development, SLR and UNSW are considered;
    - Civil works programme has low frequency of construction vehicles identified in the time motion study.
    - UNSW extension structure commences after the ASB structure works which minimises cumulative impacts. The UNSW extensions structure is facilitated by deliveries within the ASB site and utilisation of the existing Tower crane.
    - Newmarket development – key handover is early 2020 of the Barker street apartments. Through consultation with the Ganellen team, their respective Stage 2 works will commence mid-2020.
    - UNSW campus construction activity has diminished, with the possibility of the B22 development in 2021.
    - SLR operations are not expected to impact construction deliveries and vice versa as deliveries will be schedule outside peak service times of 7:00am-9:30am, and 4:00pm-6:30pm.
- Cumulative construction vehicle monitoring will be in place with the ASB and IASB works to ensure the volume predicted is adhered to. Restrictions to construction vehicles during peak periods will apply as identified above. This will be done by checking gate log entries and monitoring 2 weekly construction programmes. Consultative meetings with SLR, TfNSW, Newmarket, and other Authorities will provide opportunities for feedback.

4.12 Existing Hospital Loading Dock Facility

The Randwick Campus Loading Docks are accessible to vehicles from Hospital Road, via Delivery Drive. They are the central component of logistics operations for most facilities on the campus, including:

- Prince of Wales Hospital (POW), including heritage buildings;
- Prince of Wales Private Hospital (POWP);

- Sydney Children's Hospital (SCH);
- The Royal Hospital for Women (RHW);
- Eastern Suburbs Mental Health Service – KILOH, MHICU;
- Bright Alliance Building.

Health Infrastructure commissioned ARUP to carry out a study of the loading dock usage to determine frequency of vehicles and type of vehicles. This study is located in the Appendix 5.

As part of the proposed development the Hospital has been commissioned to review its logistics operation and streamline the delivery and collection of goods and services from the Hospital to facilitate future stages of construction. This is also investigating the avoidance of HRVs (5%) and introducing MRV's to assist with the High Street intersection restrictions. The percentage of vehicle type is identified in figure 29.

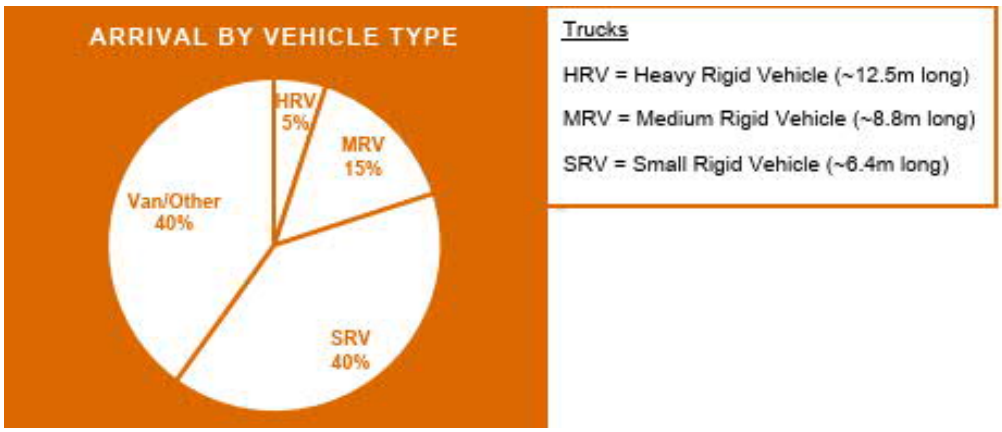


Figure 29 – Vehicle types

The quantum of vehicles observed from the study indicate totals of approximately 210 vehicles per day. This is summarized in the report included in the Appendix. During the various stages of construction identified for the Hospital Road lowering, this quantum of loading dock deliveries will alternate between Barker street entrance and High street entrance.

The cumulative impacts of construction vehicles and loading dock deliveries are very low due to the alternate staging of these access points.

4.13 Flooding Assessment

BMT has been engaged by Lendlease throughout the RCR development to provide studies of the Overland flow path through the site and from High Street. The ASB development has introduced a stormwater trap system designed to compensate for a 1:100 year rain event. The Hospital Road lowering works will have no impact on the overland flow path generated by High Street.

The current scope of the ISSDA is to lower the southern part of Hospital Road which has negligible effect at High Street as identified in the below peak water depth plan. The localised low point at on Northern section of Hospital Road will be addressed through the HRL Stormwater Management Plan.

The final solution once Hospital Road is lowered in its entirety to High Street (future development) is to install

drainage at the High Street intersection to drain the flow to the trunk drainage system that is existing in High Street / Botany Street.

Consequently, there will be no impacts on flood levels in High Street as a result of the lowering during construction of Stage 1 lowering or ultimately. BMT have provided confirmation of this in the attached letter in the Appendix 6.

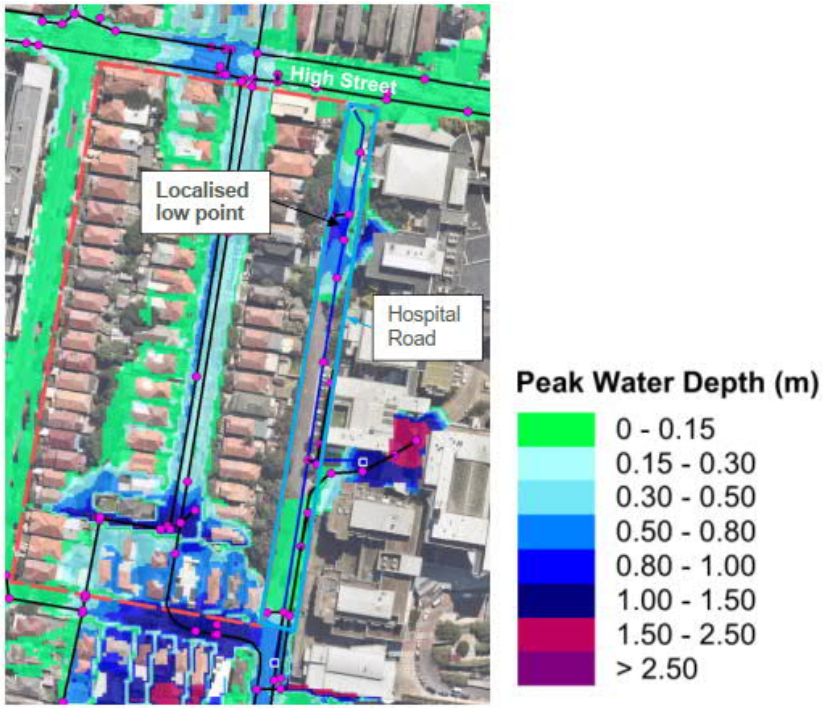


Figure 30 – Existing Case probable maximum flood event peak flood depths

5.0 DRIVER CODE OF CONDUCT

All construction delivery drivers to and from the site are to strictly comply with the Driver code of Conduct. This code is outlined in this section of the report.

Delivery drivers will be provided with the CTPMP which reference the following items:

- Drivers must comply with the haulage routes identified in the CTPMP. This ensures vehicles adhere to main roads to minimise impact on suburban streets.
- Drivers are to comply with all regulatory speed limits and road rules when approaching and leaving the site.
- All drivers are to ensure they hold the relevant licenses for the vehicles they are driving in accordance with Statutory requirements.
- Hospital Road speed limits are to be complied with at all times.
- Noise minimization techniques are encouraged when approaching and leaving the site to reduce the impact on residents, the University and occupants of the Hospital buildings.
- Any truck loads are to be covered prior to leaving the site to minimise dust.
- There is to be no parking up trucks outside the construction site.
- All trucks leaving and entering the site are to do so in a forward motion.
- Additional care is to be taken by drivers in wet weather to ensure the safety of other vehicles, pedestrians and themselves.
- There is zero tolerance to drug and alcohol on site, and drivers may be subject to random testing which is carried out by the site.
- All deliveries will be booked in with the Site Manager/Foreman for a dedicated time slot agreed 24 hours in advance. Any deliveries not booked with will not be accepted and instructed to return to their respective yard.
- Delivery drivers are encouraged that a 10minute rest break is taken if driving more than two hours continuous.
- Any special deliveries such as steel bridges for link bridge will be wide loads and require special escort. Prior approval with TMC will be sought and dedicated transport routes agreed.
- Community updates on any delivery changes from the agreed CTPMP will be communicated by the Lendlease Stakeholder Community Manager. This is through letter drop and email notification.
- Any complaints received by residents or other drivers must be forwarded to Lendlease to ensure reporting to Authorities and required actions implemented.
- Delivery drivers are to be cautious of SLR and minimise any interaction. In particular when turning at intersections and proximity to tracks.

This code of conduct will be communicated to the delivery drivers via the subcontractors engaged for the works, and also provided to drivers as they enter the construction gate.

Monitoring of Driver conduct will be by the following:

- Positive or negative feedback received by the residents, and other key stakeholders.
- Analyses during subcontractor audits for EHS performance.

6.0 CONSTRUCTION WORKER TRANSPORTATION STRATEGY

6.1 INTRODUCTION

The Construction Worker Transportation Strategy (CWPS) has been prepared in response to development consent for State Significant Development Application (SSDA) number SSD 10339. Specifically, the CWPS demonstrates compliance with Condition B17.

The document is a separate report to the CTPMP.

7.0 STAKEHOLDER MANAGEMENT

7.1 CONSULTING AND COMMUNICATING

Lendlease's approach to managing enquiries for the Randwick Campus Redevelopment (RCR) project is to create a strategic framework which enables a consistent and transparent guide to engaging stakeholders throughout both the initial project engagement and Delivery Phase. The key principles which underpin our proposed approach are:

- Establish and maintain transparent and consistent communication channels which enable geographically dispersed and diverse stakeholders to engage which the project as required;
- Respect, involve and engage stakeholders to ensure their needs are recognised and considered throughout all phases of the project;
- Ensure a proactive, rather than reactive approach to all potential stakeholder related issues and engagement;
- Tailor communications to provide the right information, to the right people at the right time; and
- Should Lendlease receive any inquires or complaints through the RCR project hotline or email address these will be actioned in a timely fashion with the response to be circulated to the RCR project team.

The Lendlease Stakeholder Engagement Strategy supports the implementation of this CTPMP during the works. The Strategy outlines key groups and their respective levels of interest in the project:

- End Users;
- Authorities / Service Providers / Utilities;
- Invested Parties;
- Impacted Parties (Primary);
- Impacted Parties (Secondary); and
- Interested Parties.

Figure 31 – Stakeholder engagement wheel

Lendlease will continue to work proactively with TfNSW, PwC, HI and all other relevant stakeholders.

In accordance with Condition C16, Traffic and Transport Construction Coordination meetings are to be undertaken by the applicant during construction. The meetings shall include HI, the subject building contractor, TfSNW, Council, Sydney Light Rail operator, UNSW, Inglis Newmarket development main contractor and main contractors of other developments within the vicinity of the subject development site. The meetings shall be chaired by the applicant, be it HI or the subject building contractor.

Bi-monthly coordination meetings have been proposed to re commence to ensure ongoing communication amongst the key stakeholders. This more formal approach will supplement the regular communication already occurring with Lendlease and other stakeholders. This engagement with the other contractors in the Randwick area is to ensure works and haulage routes are coordinated to minimise cumulative disruptions to the community.

Lendlease will monitor the effectiveness of this CTPMP monthly internally with reviews of any complaints raised to the project team. Ensuring open communication with TfNSW and other key stakeholders will provide effective monitoring of this plan. The above mentioned bi-monthly meetings will be a good mechanism for this communication.

8.0 AUTHORITIES

8.1 LEGISLATIVE REQUIREMENTS

- The works will be undertaken is accordance with Legislative Requirements including but not limited to:
- National Construction Code 2011 comprising the Building Code of Australia;
- Protection of the Environment Operations Act 1997 and Regulations;
- Environmentally Hazardous Materials Act 1985;
- Protection of the Environment Administration Act 1991and Regulations;
- Work, Health & Safety Act 2011 and relevant codes of practice and standards;
- Australian Standard 2601-2001: Demolition of Structures;
- Code of Practice for Safe Removal of Asbestos (NOHSC: 2002 (2005));
- Guide to the Control of Asbestos Hazards in Buildings & Structures (NOHSC: 3002 (1988));
- Resource & Recovery Act 2001;
- Environmental Planning & Assessment Act 1979;
- Heritage Act 1977;
- Local Government Act 1993; and
- National Parks and Wildlife Act 1974.

8.2 PLANNING APPROVAL AND CONSTRUCTION CERTIFICATE

In addition to the methodology outlined in Section 2.2 of the Planning Services Plan, for the Delivery Phase we note the following process:

- Development consent will be obtained through a State Significant Development Application (SSDA) under Division 4.7 of the Environmental Planning and Assessment Act 1979; and
- This will allow the earliest start on site date possible and assist with providing delivery certainty to HI, SESLHD and PWC.

Our Design Manager - Building and Authorities will lead this process working closely with the PCA (Principal Certifier) and with the HI NSW Team. The SSDA approval will identify generic and specific deliverables required from HI NSW. These will include payment of development and administration fees. Our Design Manager will coordinate this process to ensure there is a clear and coordinated program to submit all SSDA requirements to the PCA so that no program delays arise.

The Principal is responsible for obtaining all other planning approvals required to deliver the RCR.

8.3 UTILITY PROVIDER AND ASSOCIATED EXTERNAL APPROVALS

At various stages external approvals of components of the works will be required. This will include:

- Randwick City Council (traffic);
- Ausgrid (or local electrical utility provider);
- NSW Fire and Rescue;
- Jemena (gas);
- Sydney Water (water, sewer and storm water);

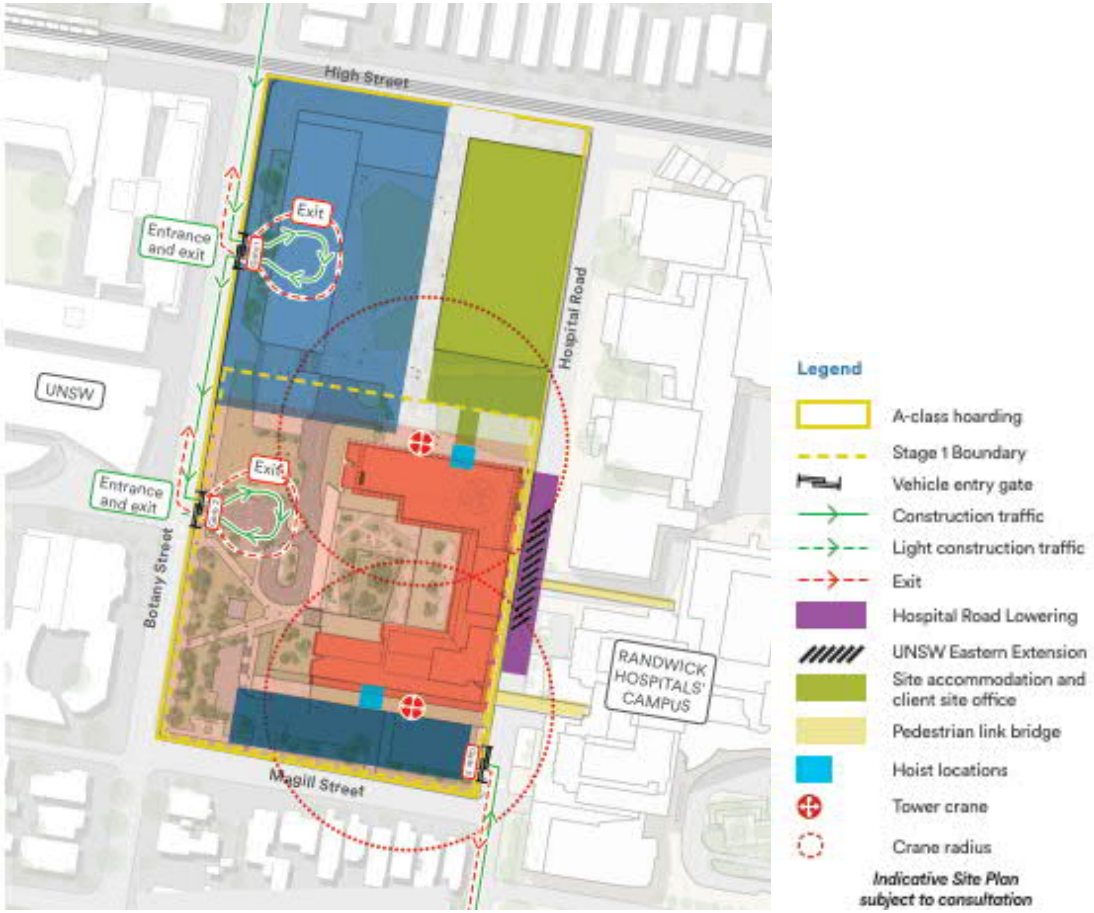
- Roads and Maritime Services;
- NETS, Adult A&E, Children's A&E, Careflight Helicopters (helipad);
- Communication providers; and
- Other relevant utility providers.

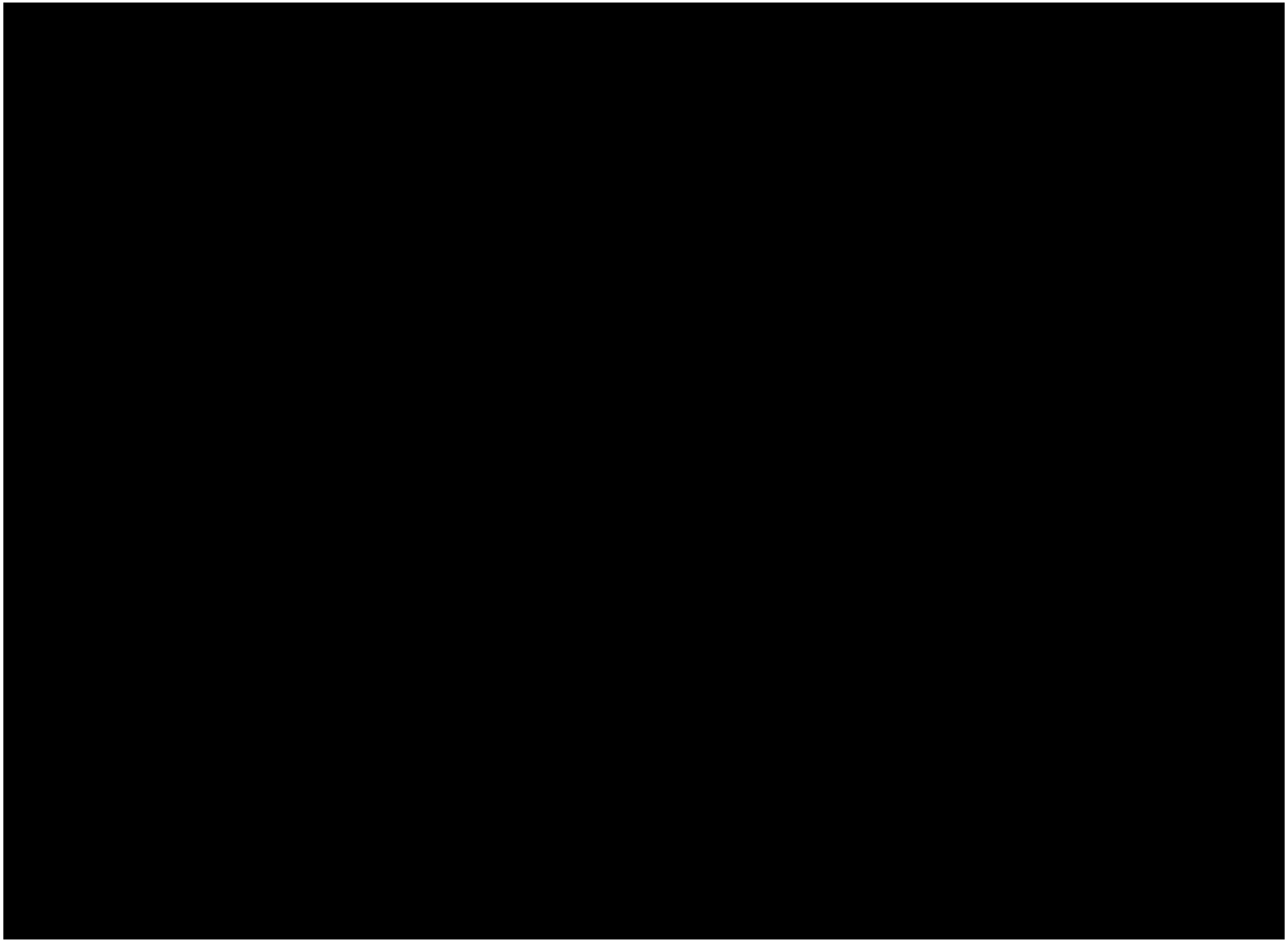
Our approach with these authorities will differ dependent on the respective requirements, however fundamentally we will seek:

- Prior coordination with HI NSW to ensure all approaches are aligned and coordinated;
- Early contact to mitigate potential delays and identify potential issues; and
- Establish common contacts that can provide continuity of service on the project.

13.0 APPENDICES

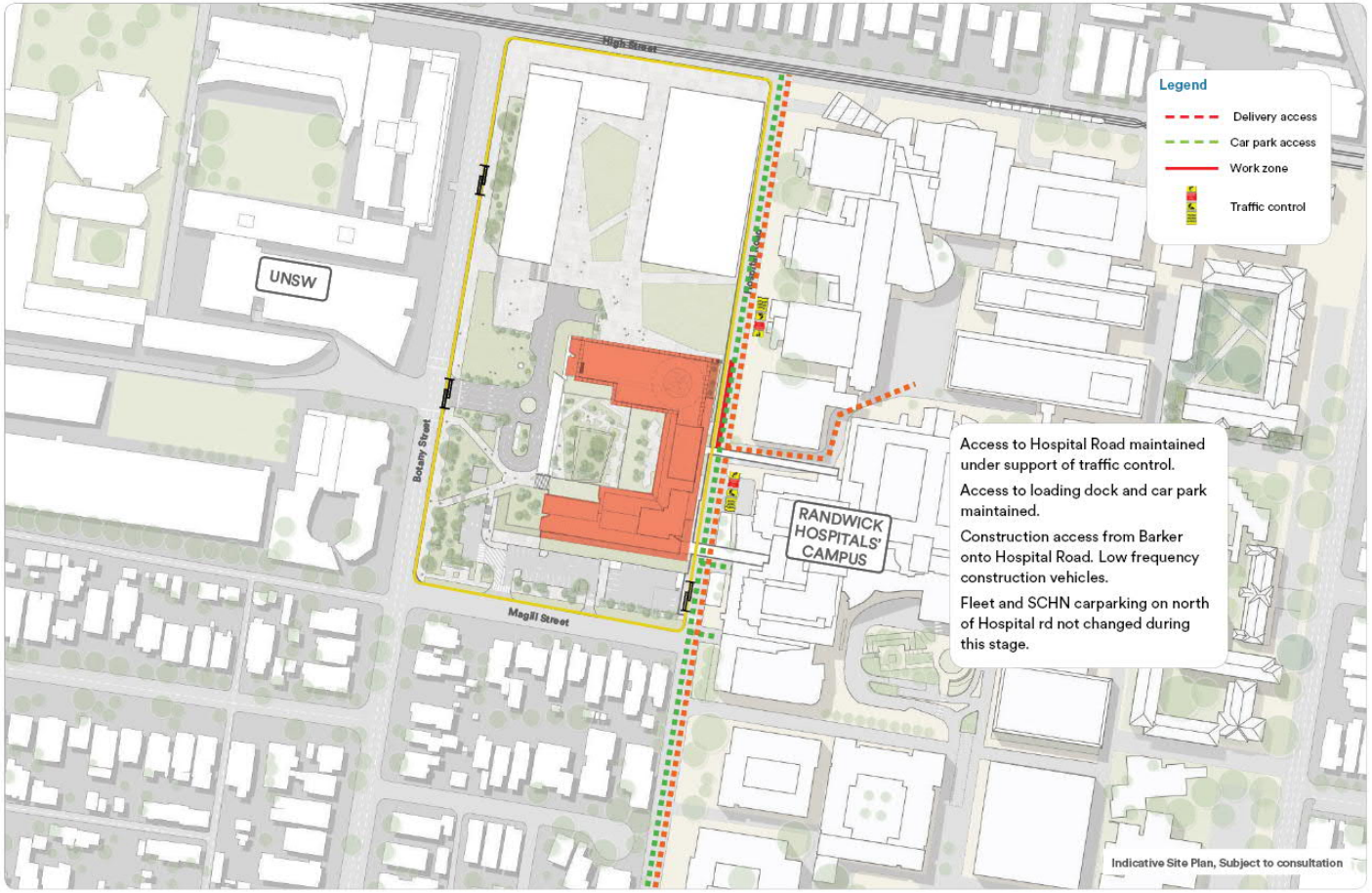
APPENDIX 1 – SITE ESTABLISHMENT PLAN



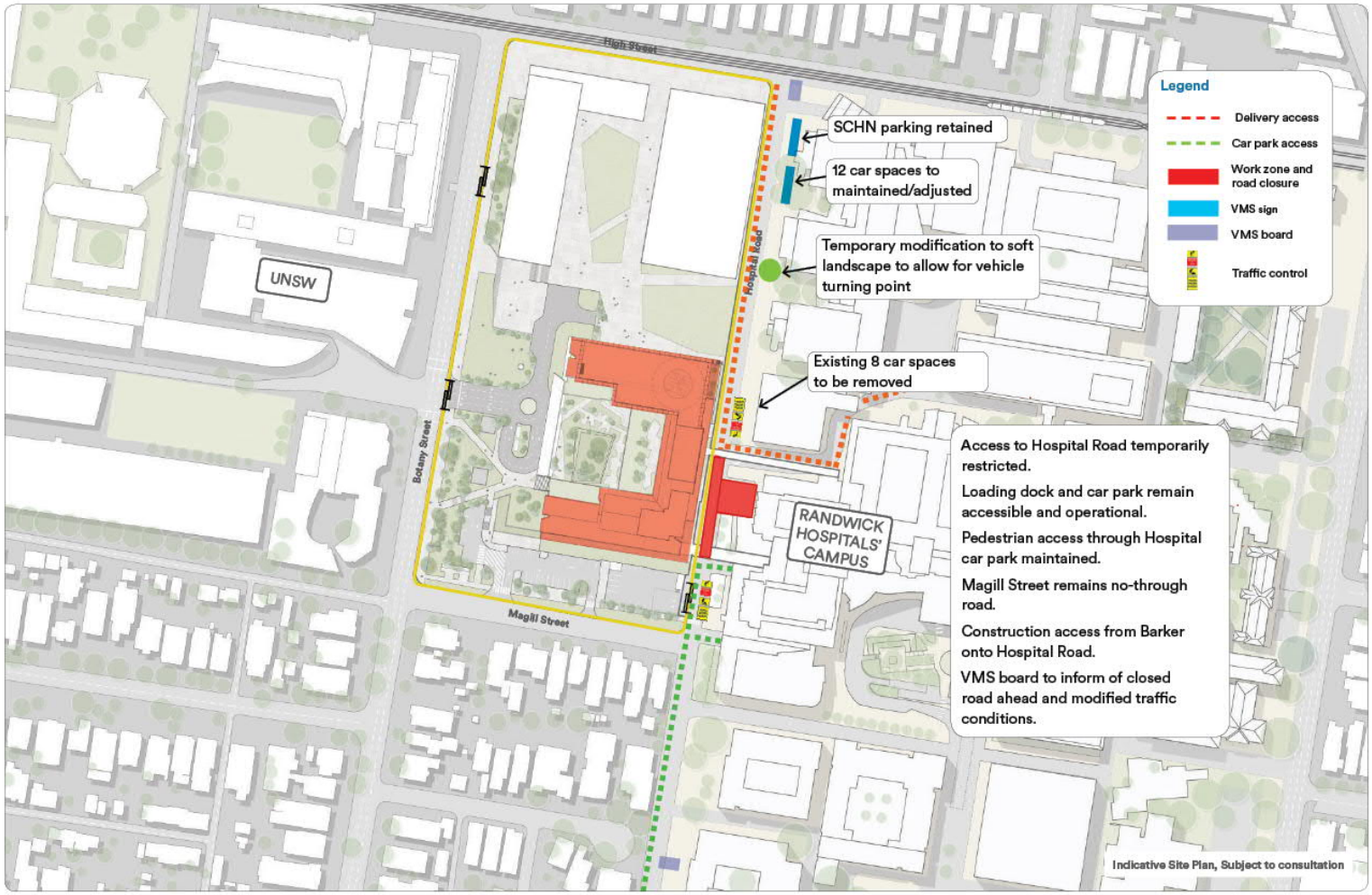


APPENDIX 3 – TRAFFIC MANAGEMENT PLANS

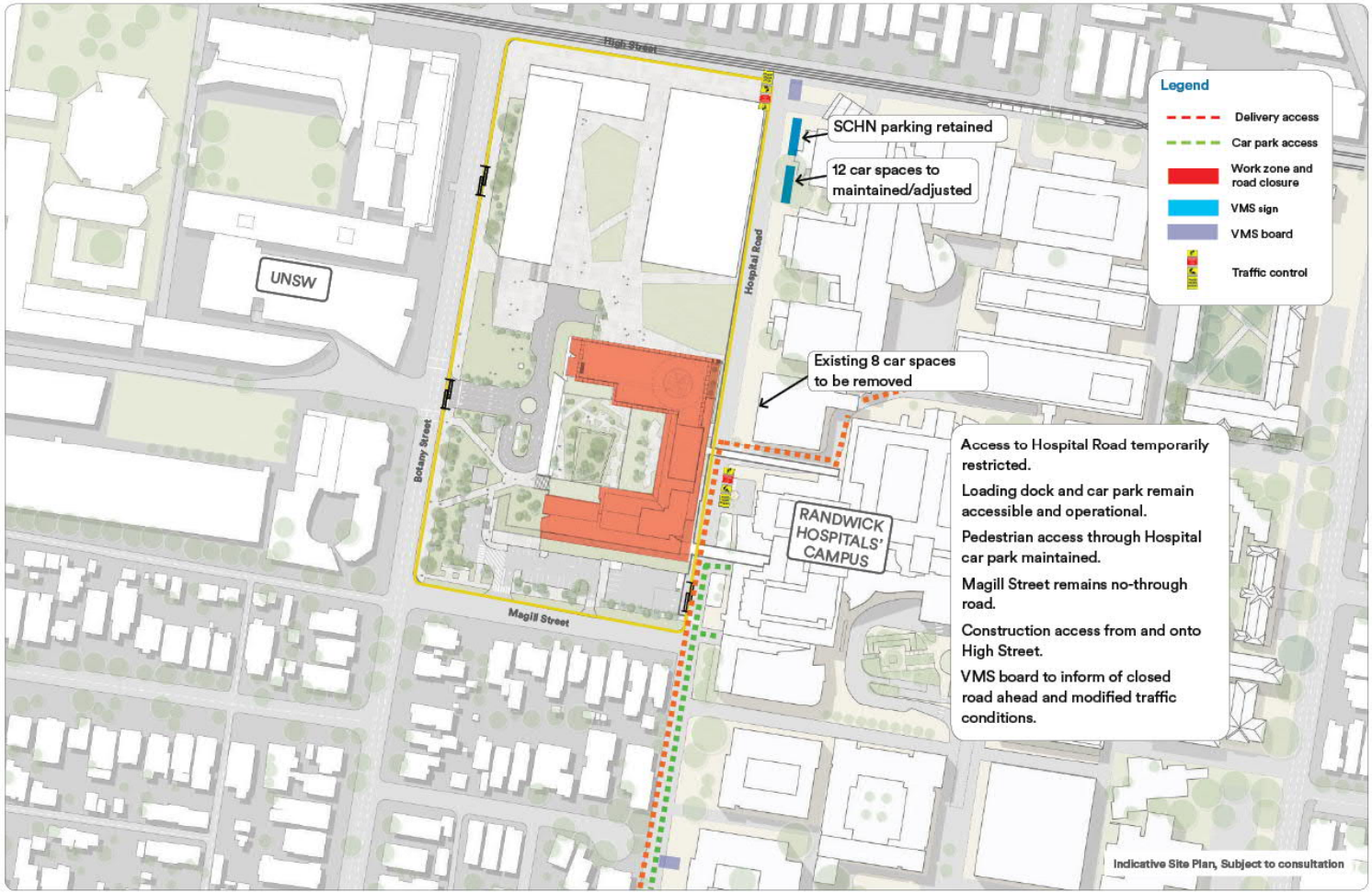
PROPOSED HOSPITAL ROAD LOWERING - STAGE 1 – OCT 19 - JAN 20 (INDICATIVE)



Stages 3 & 5 – construction vehcile access from High St

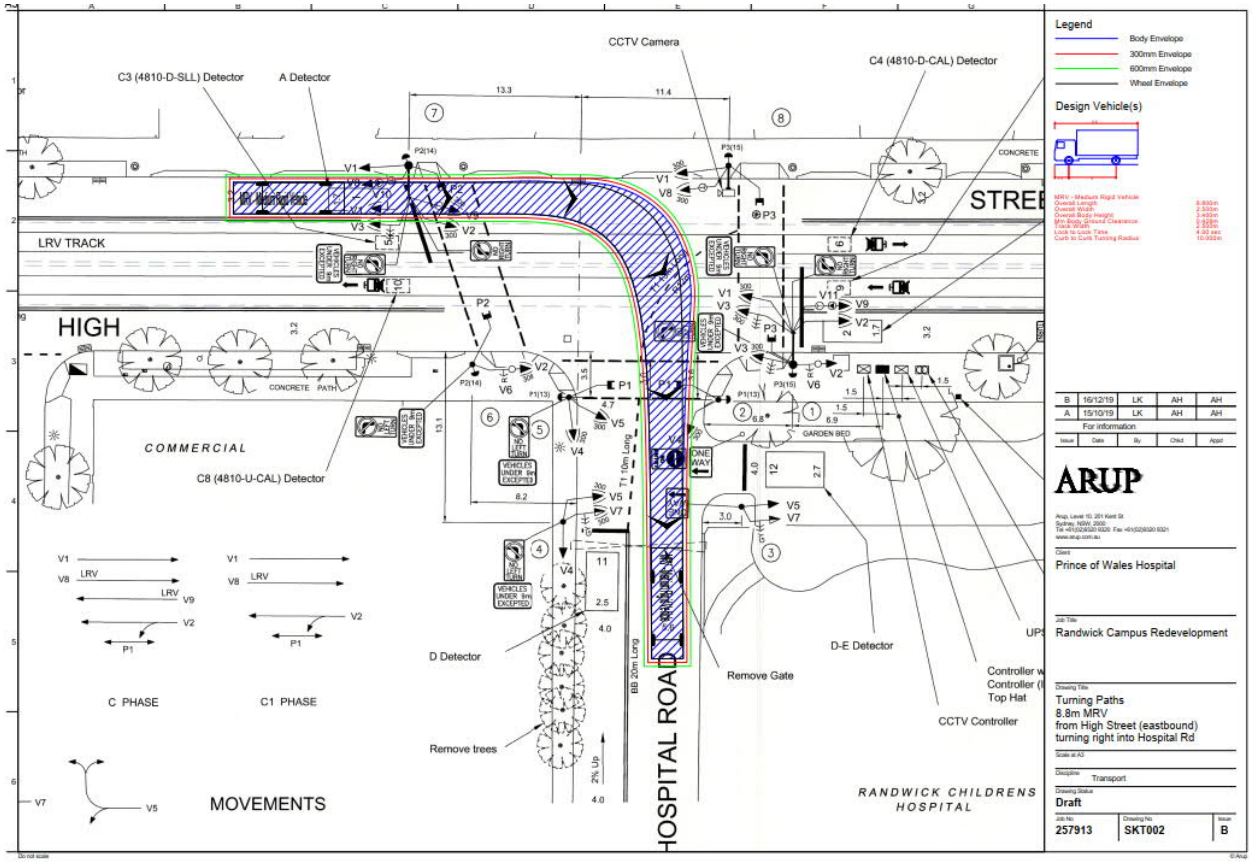


Stages 2, 4 & 6 – Construction vehcile access from Barker St

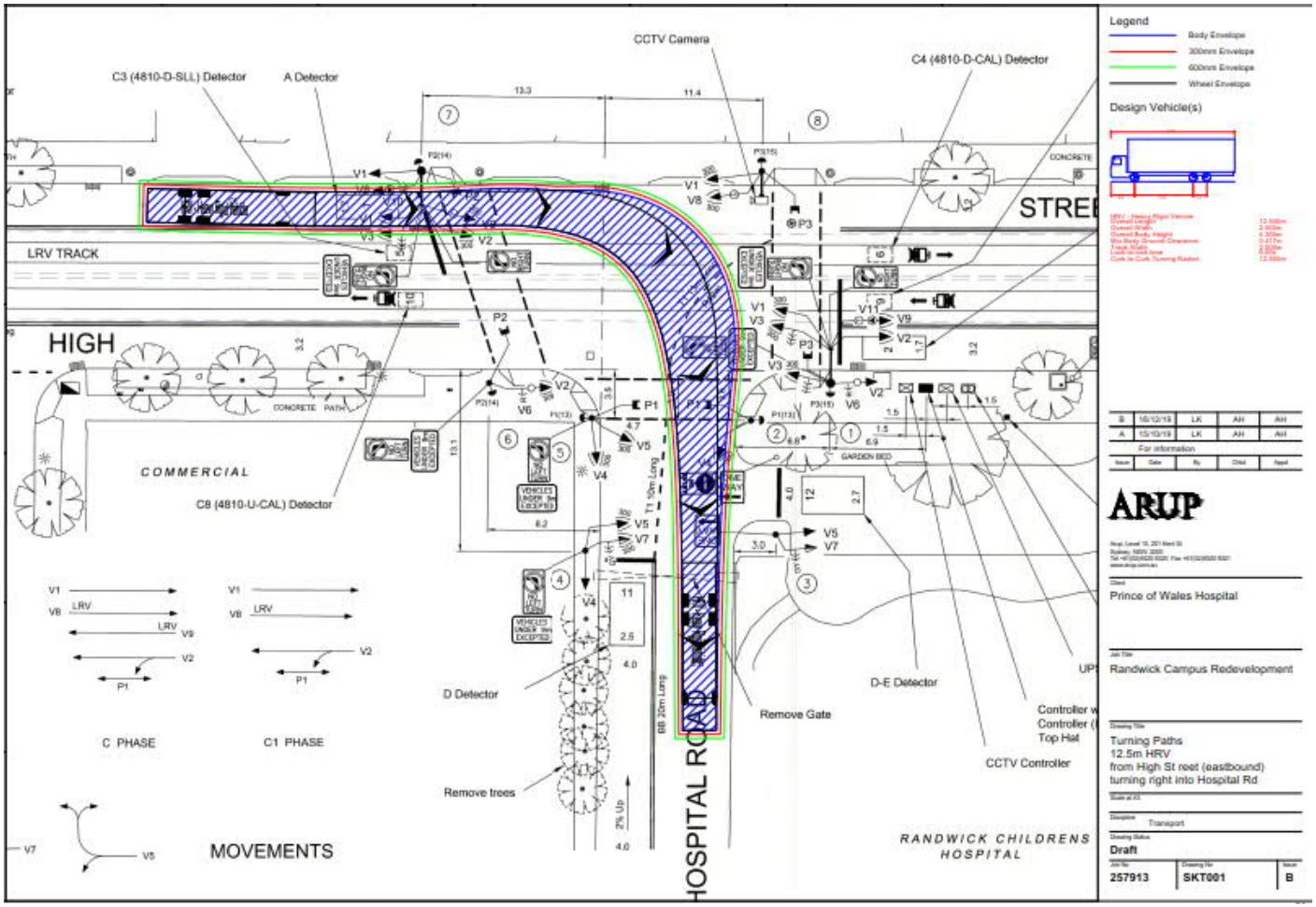


APPENDIX 4 – SWEPT PATH ANALYSIS

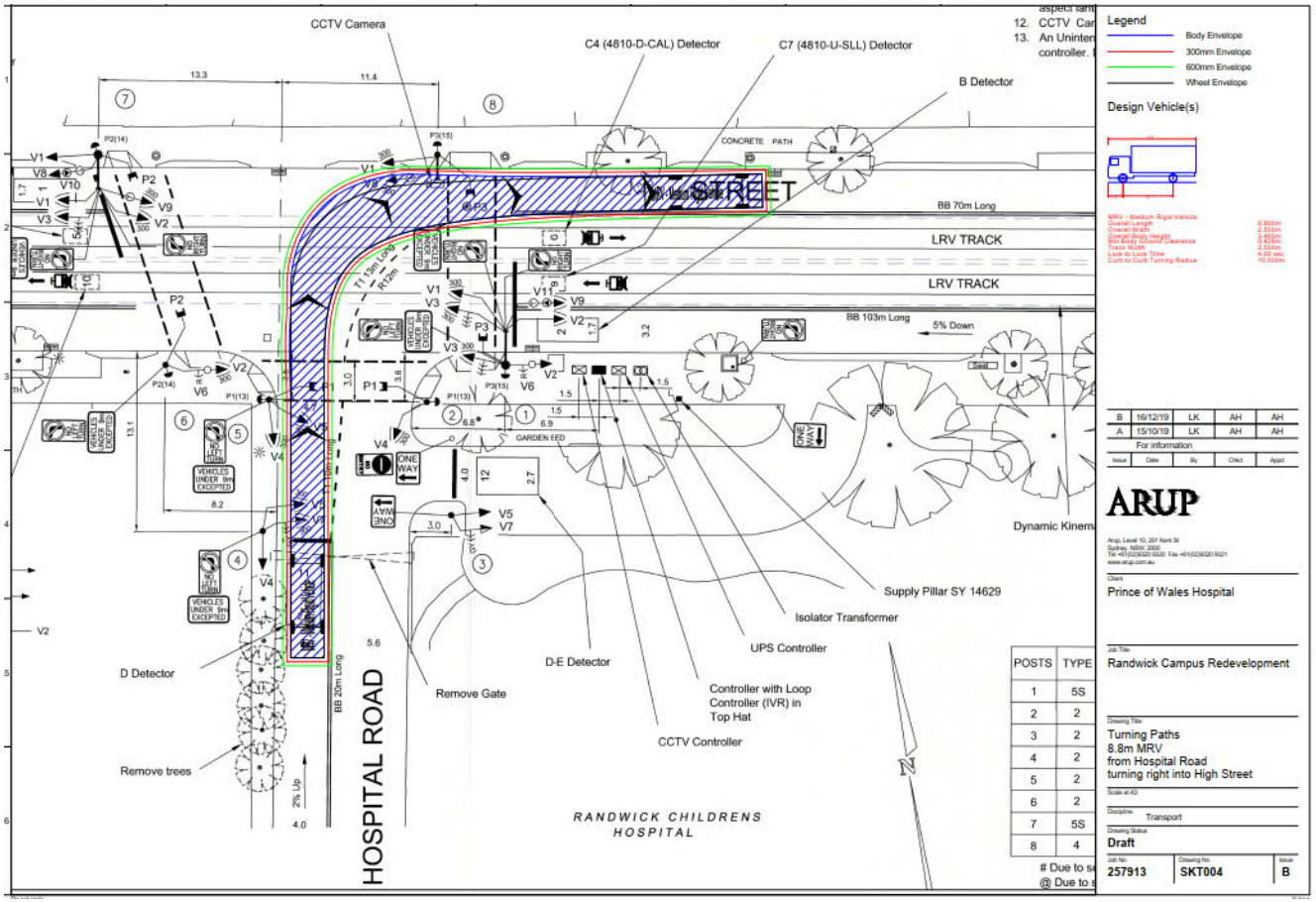
MRV Turn path Right into Hospital Rd from High st



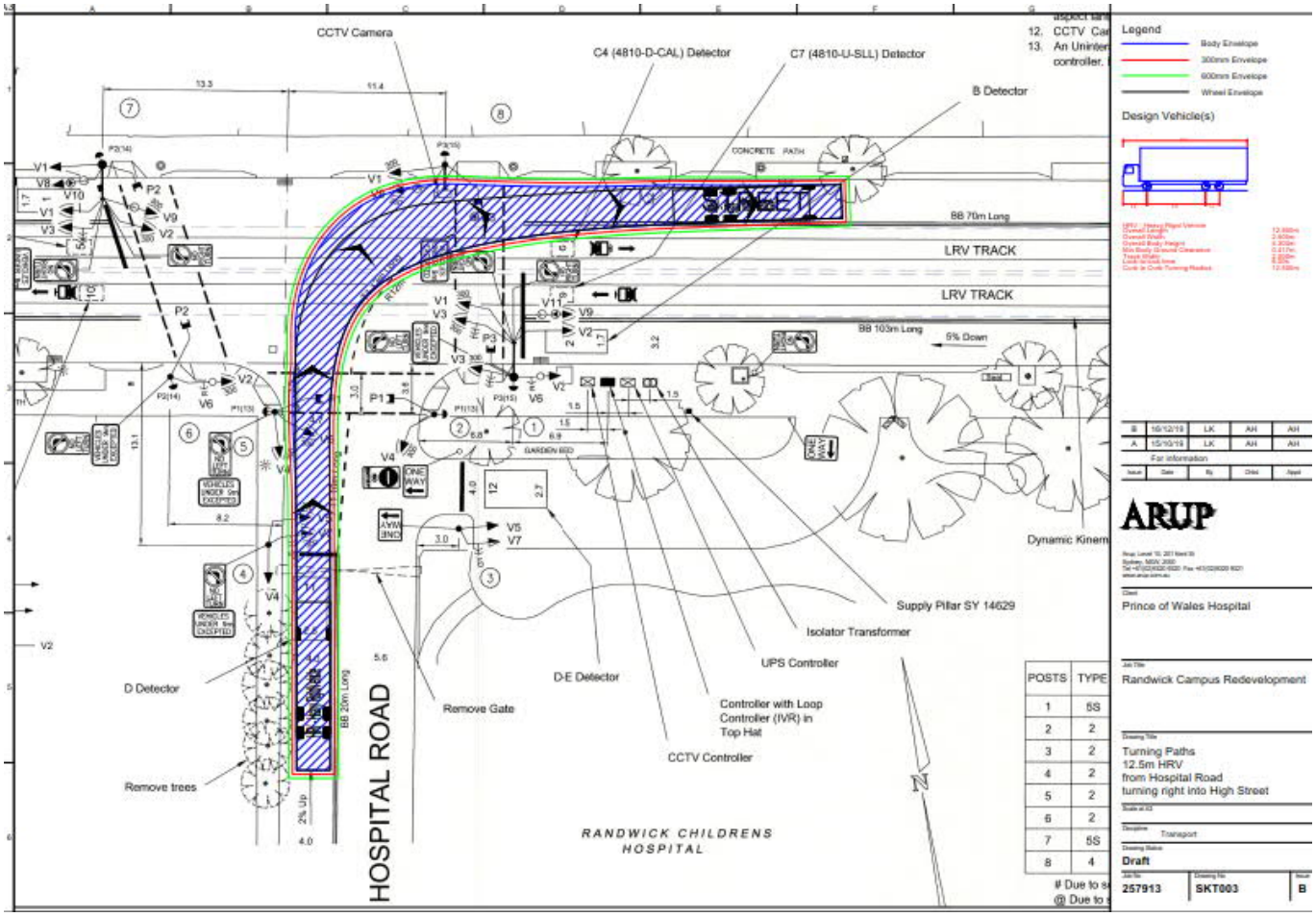
HRV Turn path Right into Hospital Rd from High st



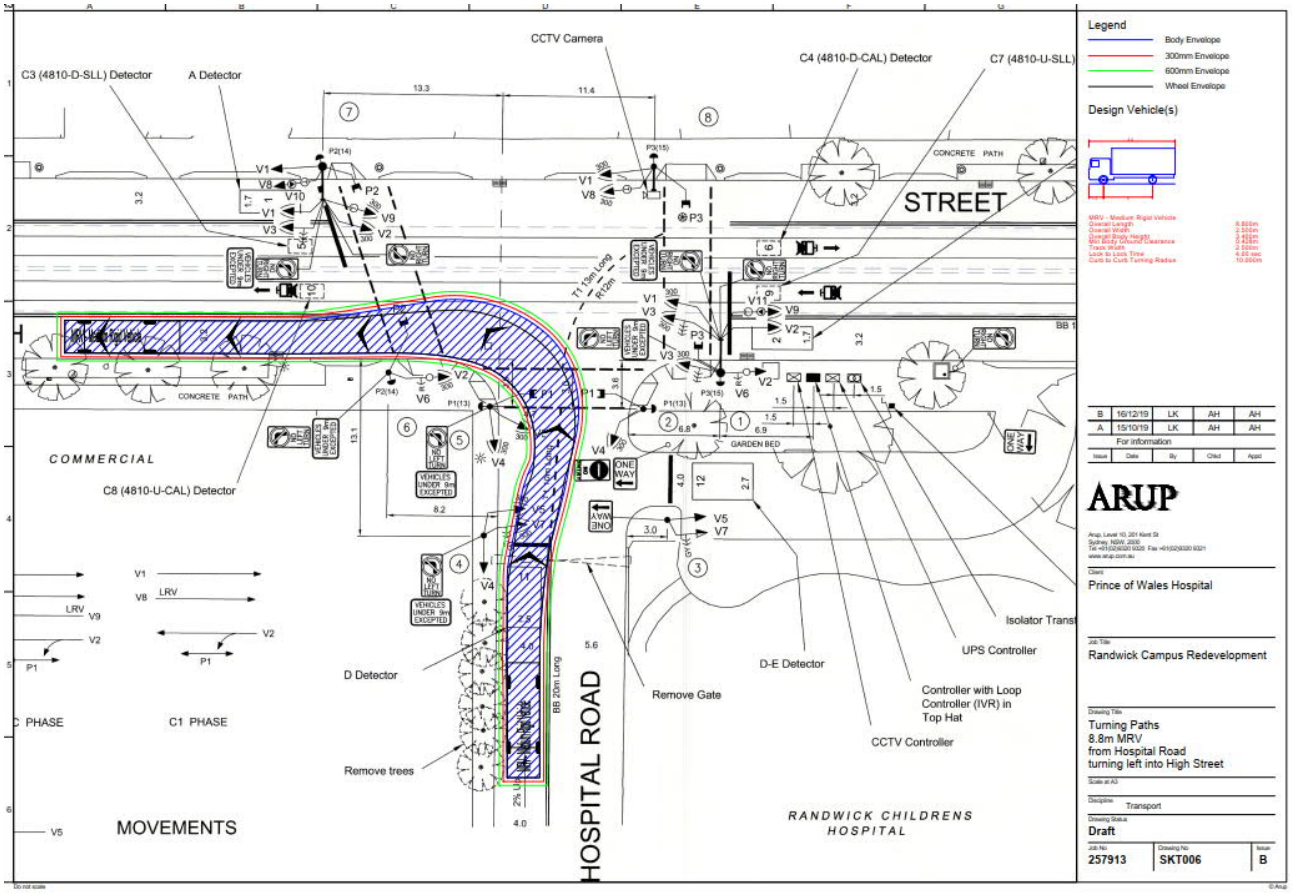
MRV Turn path Right into High St from Hospital Rd



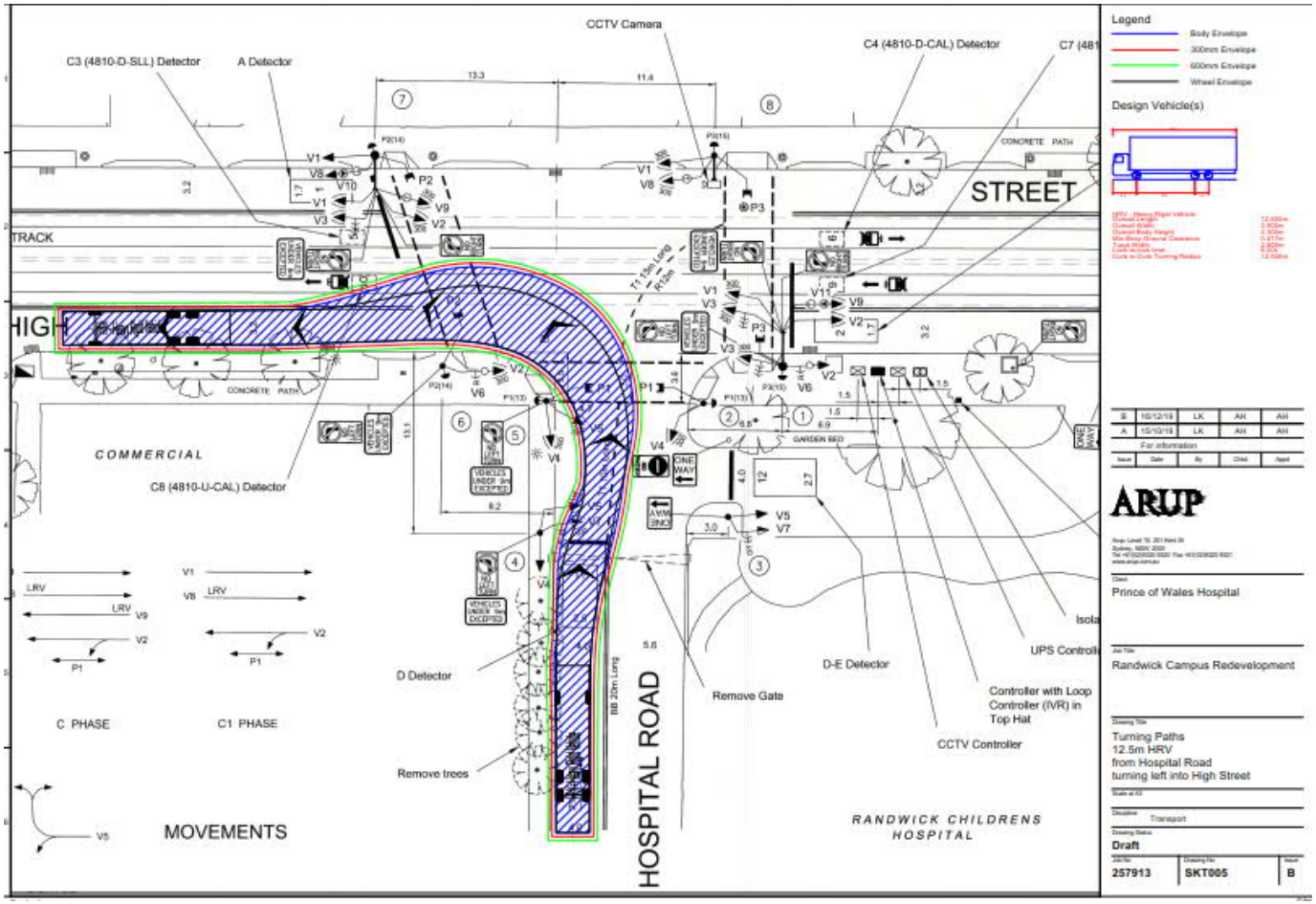
HRV Turn path Right into High St from Hospital Rd



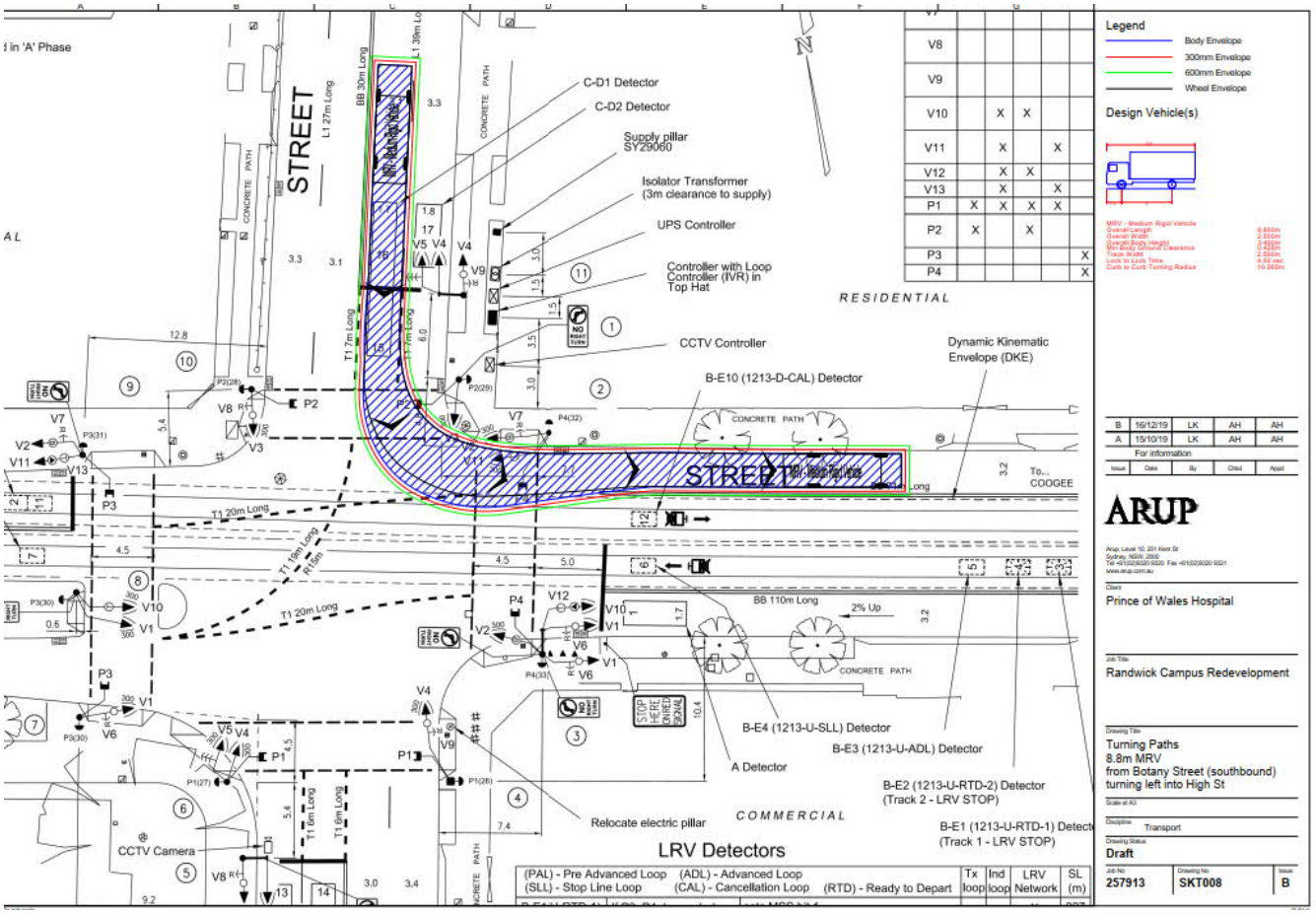
MRV Turn path Left into High St from Hospital Rd



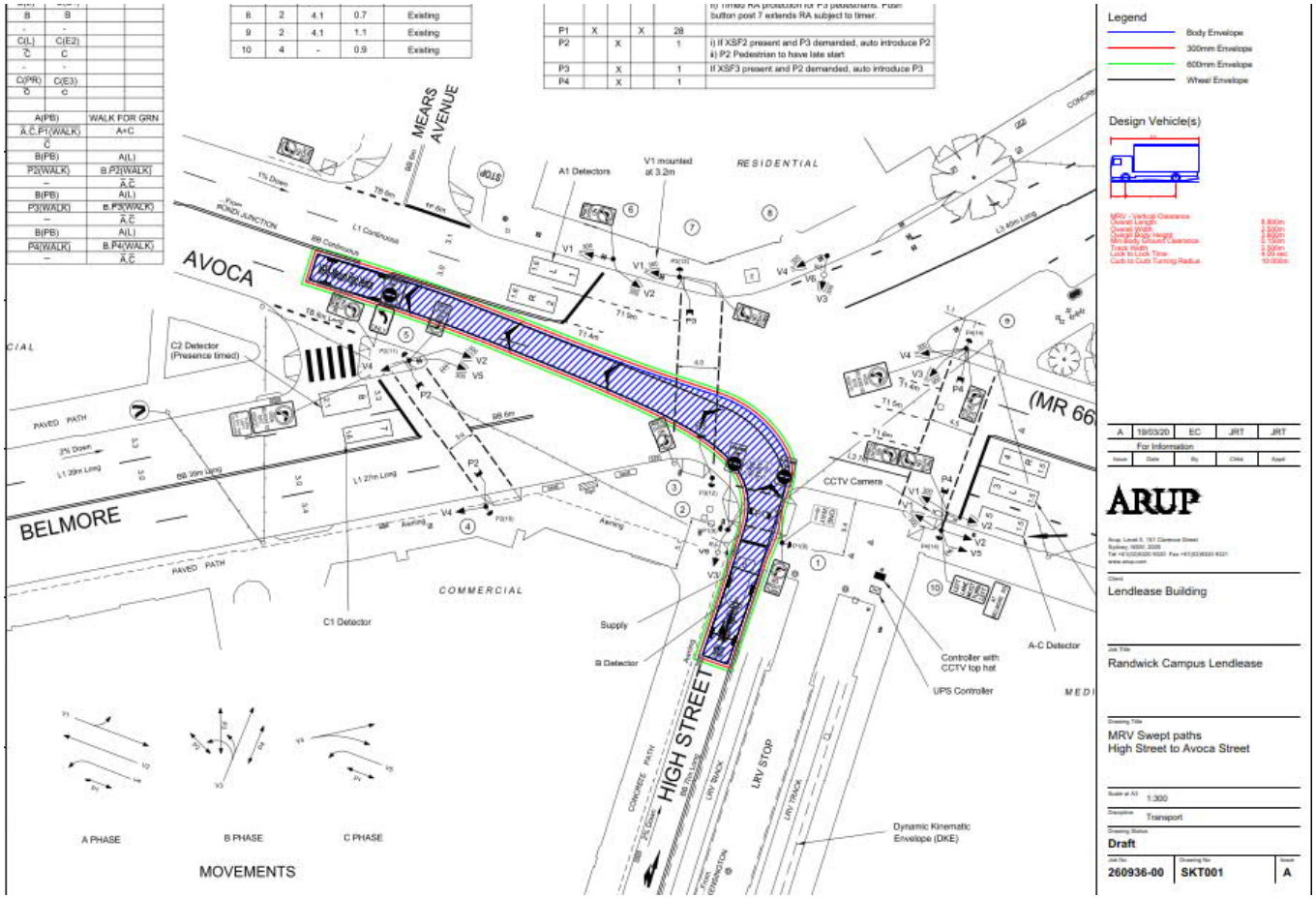
HRV Turn path Left into High St from Hospital Rd



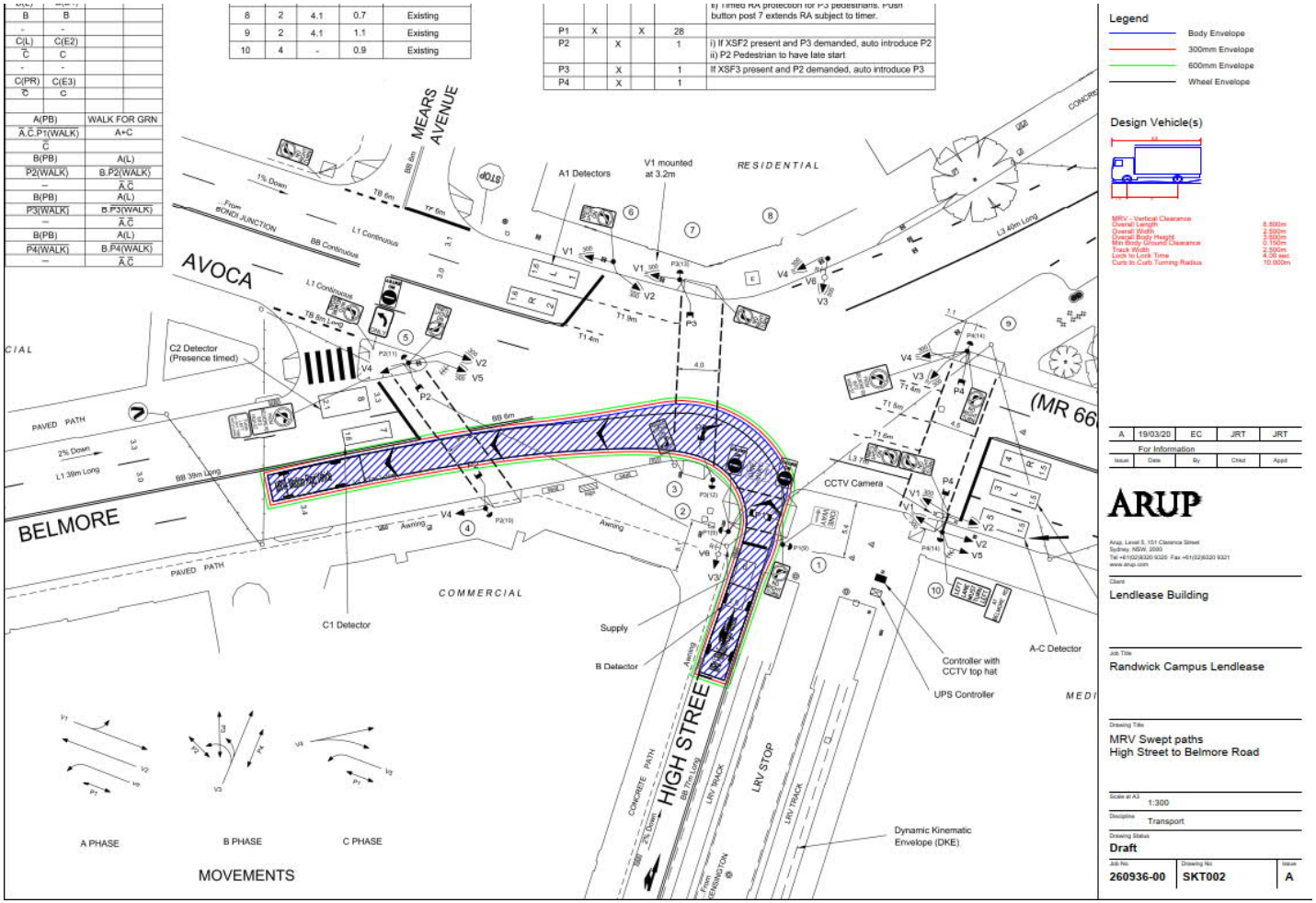
MRV Turn path Left into High St off Botany St



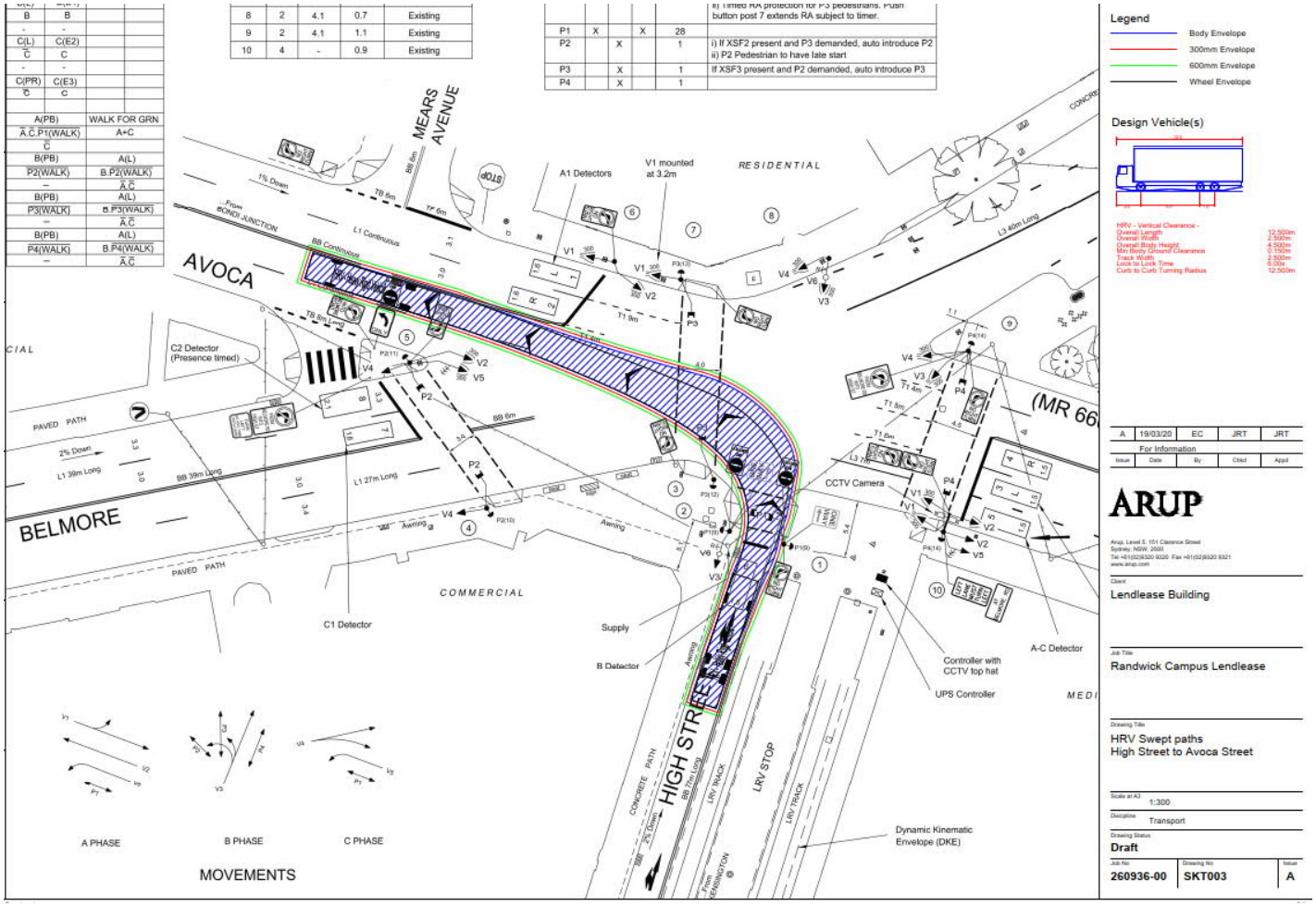
MRV Turn path Left into Avoca st off High St



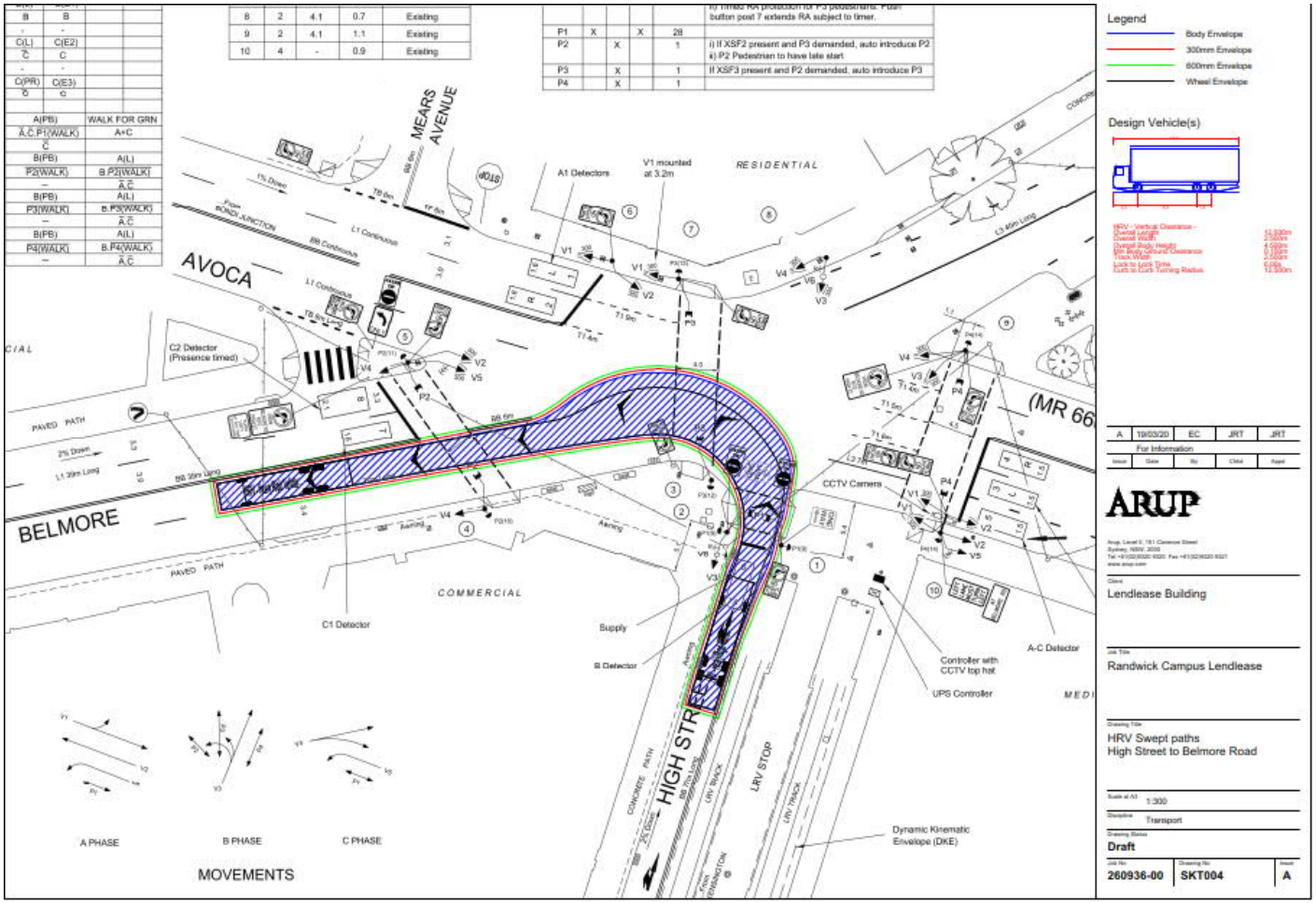
MRV Turn path Left into Belmore Rd off High St



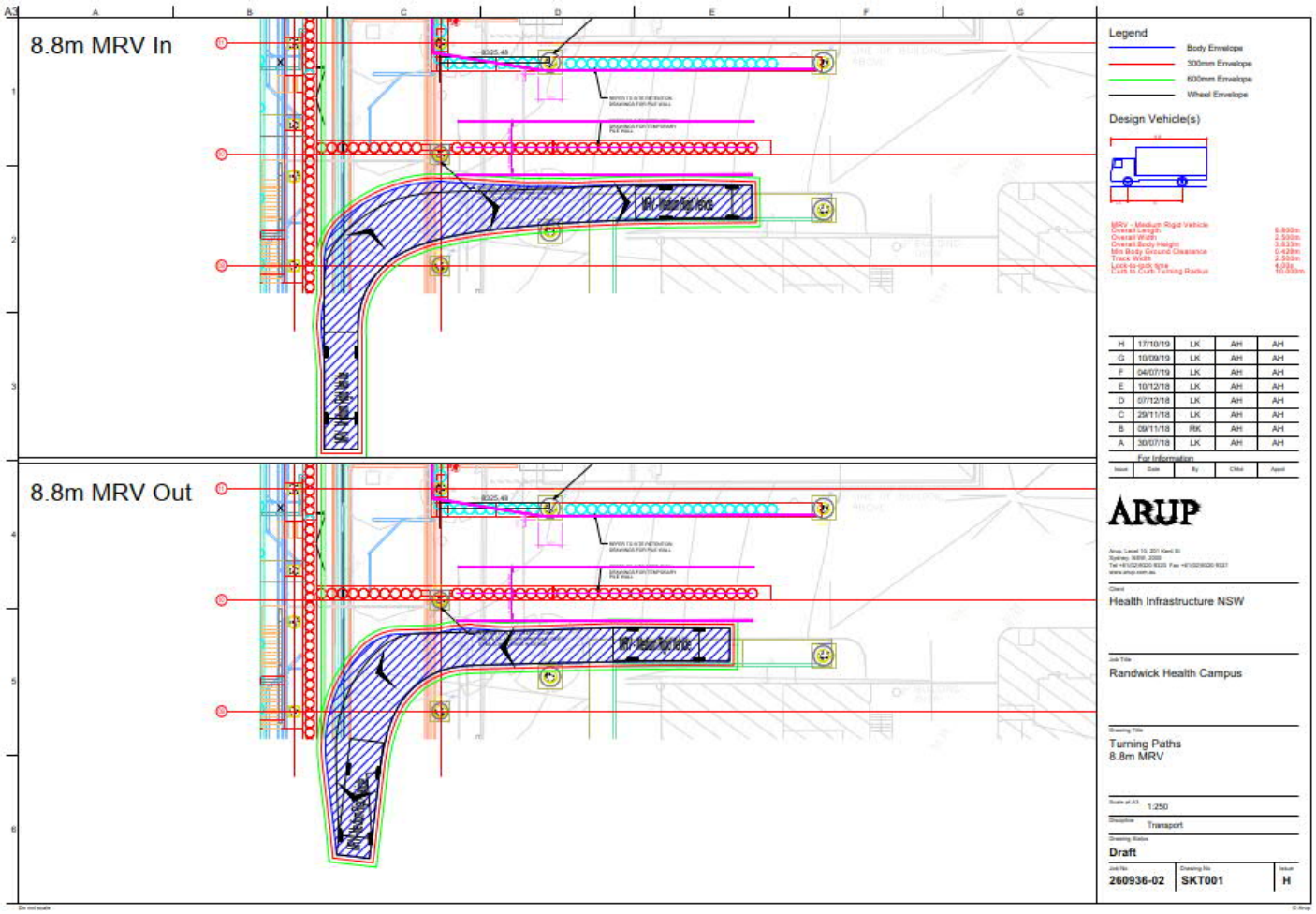
HRV Turn path Left into Avoca st off High St

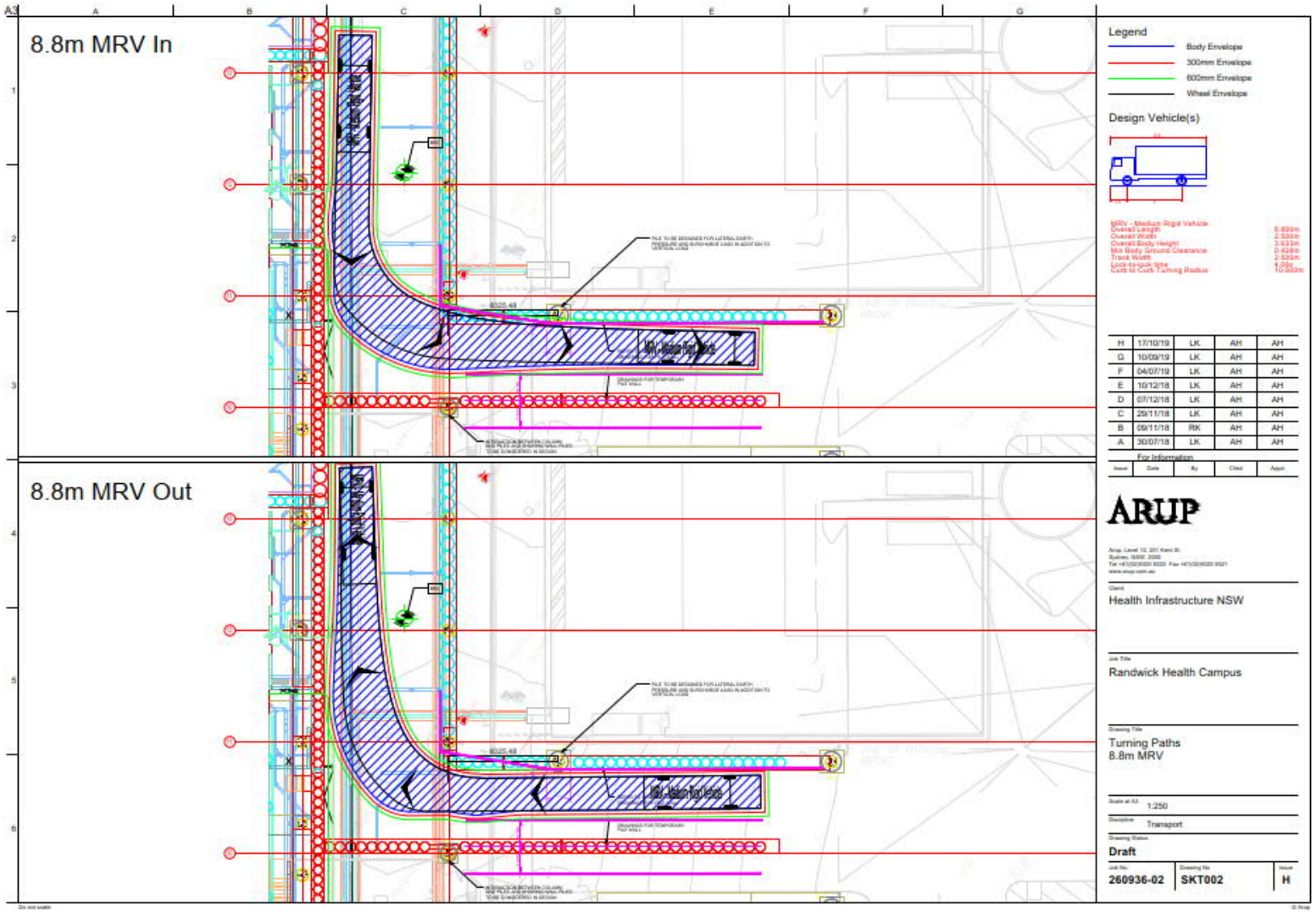


HRV Turn path Left into Belmore Rd off High St



Loading Dock Swept Path Analysis




8.8m MRV In
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F 04/07/19 LK AH AH
E 10/12/18 LK AH AH
D 07/12/18 LK AH AH
C 29/11/18 LK AH AH
B 09/11/18 RK AH AH
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Health Infrastructure NSW
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Turning Paths
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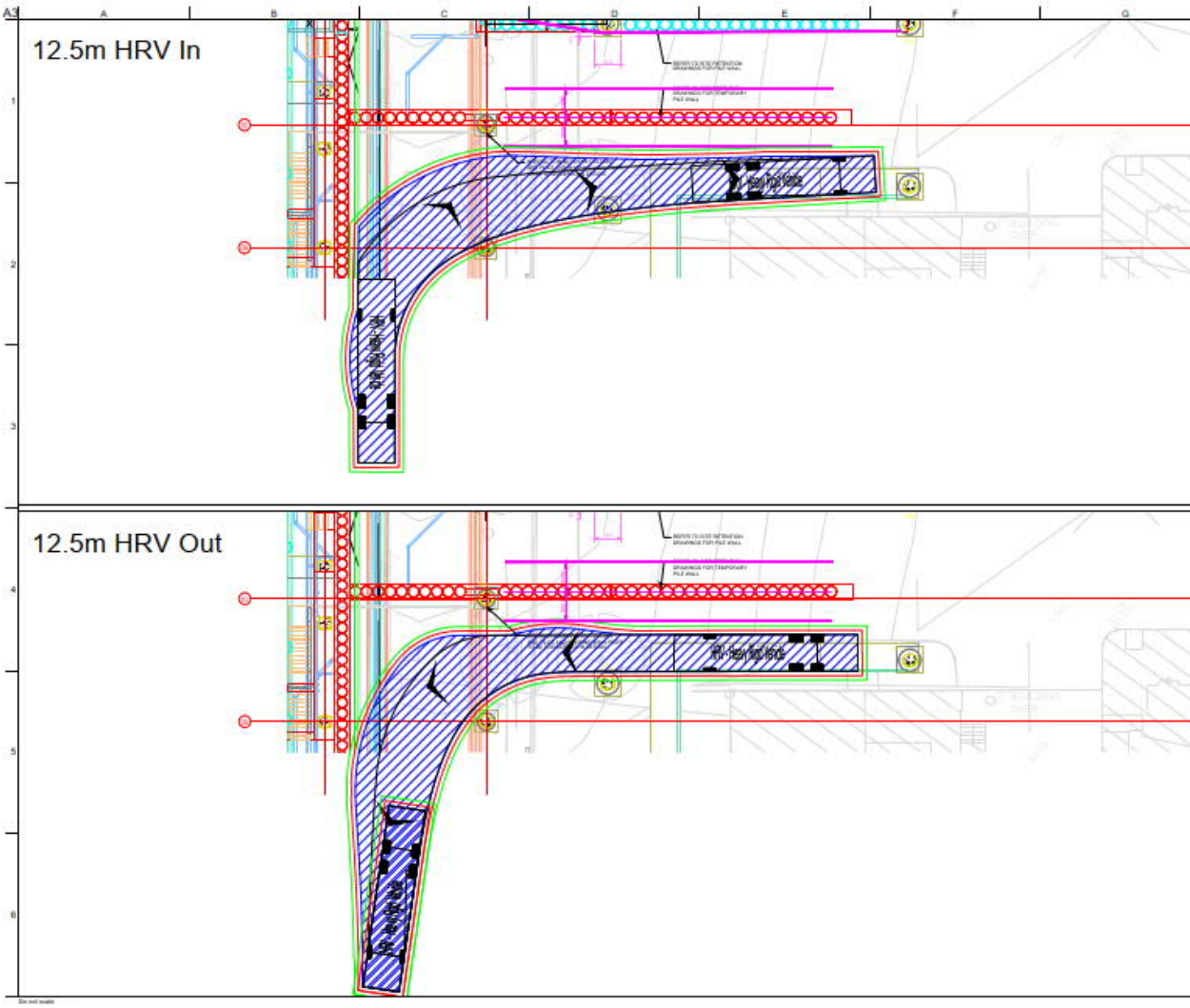

APPENDIX 5 – BMT LETTER OF FLODDING ASSESSMENT

BMT Eastern Australia Pty Ltd
Level 8, 200 Creek Street
Brisbane Qld 4000
Australia
PO Box 203, Spring Hill 4004

Tel: +61 7 3831 6744
Fax: + 61 7 3832 3627

ABN 54 010 830 421

www.bmt.org

Our Ref: mpg: L.B23176.017.Respnose to TfNSW Hospital Road.docx

18 December 2019

Lend Lease
Level 14, Tower Three
International Towers Sydney
Exchange Place
300 Barangaroo Avenue
Barangaroo NSW 2000

Attention: Richard Yarad

Dear Richard

RE: RANDWICK CAMPUS REDEVELOPMENT- HOPSITAL ROAD LOWERING RESPONSE TO TRANSPORT for NSW QUERY

We refer to the letter dated 24 September 2019 from TfNSW regarding the addition to the approved Acute Services Building, specifically the lowering of part of Hospital Road.

BMT has been responsible for the completion of detailed flood modelling in support of both the Acute Services Building and the lowering of Hospital Road. We can therefore respond to the query raised in relation to potential flooding impacts on the Light Rail system in High Street.

Query

Sydney Light Rail Operation and Infrastructure

Comment

The proposed development would have the potential to impact on the Sydney Light Rail operation, infrastructure and the completion of the Sydney Light Rail Project's program of works due to the following:

- *Flooding – The Environmental Impact Assessment prepared to support the development states that the development is affected by overland flooding. It is advised that the subject development has the potential to impact surrounding land/ activities, including the Sydney Light Rail Project, by contributing to additional flooding during construction and operation; and*
- *Closure of Hospital Road at High Street and the proposed excavation of Hospital Road – Excavation and construction activities would have the potential to impact on the operation of the light rail, or its assets and accessibility including the health and safety of passengers.*

Recommendation

It is requested that the applicant consults with the Sydney Light Rail operator and undertakes an assessment of the above issues and propose any required mitigation measures in consultation with the Sydney Light Rail operator as part of the response to submissions.

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Response

The addition to the approved Acute Services Building refers to the lowering of part of the southern section of Hospital Road in Randwick (refer Figure 1).

Figure 1 Location of Hospital Road works

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Hospital Road between High Street and Magill Street is a private road that currently services the existing Hospital. The works commence approximately 170 metres to the south of the Sydney Light Rail in High Street.

As noted in the TfNSW letter, catchment drains from the north to High Street and then through the Acute Services Building area before draining to the south. This flow path is shown on Figure 1.

The drainage works involved in the approved Acute Services Building provide for the collection of flow (both underground and overland) at High Street and the conveyance of this flow to Magill Street in the south.

The depth and extent of flooding associated with the Probable Maximum Flood (PMF) for the existing (i.e. prior to the construction of the Acute Services Building) is shown on Figure 2.

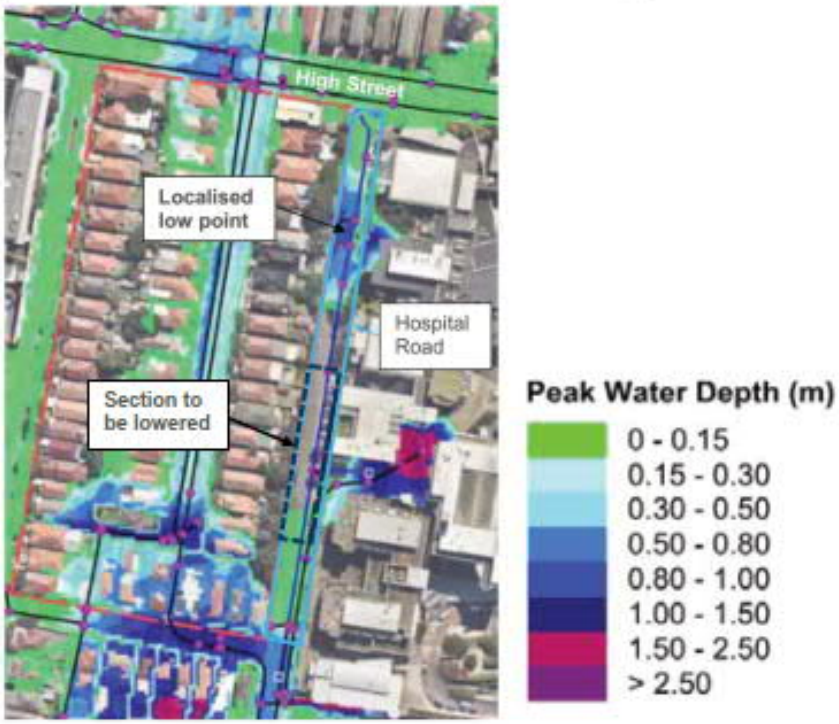

Figure 2 Depth of flooding, Existing Situation, Probable Maximum Flood

With reference to Figure 2, the flow arriving at the low point in High Street (approximately mid-way along the High Street frontage of the new hospital) is collected and drained via a separate drainage system to that provided for Hospital Road. This situation will be replicated with the construction of the Acute Services Building, with the approved dedicated trunk drainage system collecting water at the low point in High Street.

The drainage of Hospital Road will remain separate to that of the Acute Services Building.

At present, a small amount of flow drains from the surface of a local High Street catchment to Hospital Road (refer Figure 2). This runoff drains in a southerly direction down Hospital Road towards Magill Street. The

remainder of the flow draining to Hospital Road originates from the existing hospital to the east of Hospital Road.

Runoff from Hospital Road ultimately joins the runoff from the catchment draining to the low point in High Street and the Acute Services Building at Magill Street, some 300 metres south of High Street. Ground levels in Magill Street are of the order of ten metres lower than those in High Street (i.e. there is a significant fall to the south of High Street).

Runoff from High Street ponds in a low point in Hospital Road (refer Figure 2). Even in a PMF event, the depth of flooding is not sufficient to overtop the low point, and the low point drains via the underground drainage system in Hospital Road. If the inlets to the drainage system at the low point in Hospital Road were to fully block, then the low point would overtop and flow would drain to the south (i.e. away from High Street) as the level in Hospital Road at which overtopping would commence is well below the ground level at High Street.

The section of Hospital Road that is to be lowered under the present application is located to the south of the low point, and drains via the separate drainage system (noted above) away from High Street towards Magill Street.

The proposed road lowering and associated stormwater drainage relocation will not affect the low point in Hospital Road further to the north and therefore will not affect flood conditions in High Street.

Consequently, the works will not contribute to additional flooding during construction or operation and no mitigation measures will be required on High Street as part of the development. Therefore, liaison with the Sydney Light Rail operator is not necessary in this case.

If you have any queries in relation to this response, please do not hesitate to contact us.

Yours Faithfully
BMT

Martin Giles
Senior Principal

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APPENDIX 6 – TRANSPORT FOR NSW RESPONSE LETTERS

Transport
Roads & Maritime
Services

23 September 2019

Our Reference: SYD19/00717
DPI&E Ref: SSD 10339

Mr. David Gibson
Team Leader, Social Infrastructure Assessments
Department of Planning & Environment
320 Pitt Street
SYDNEY NSW 2000

Attention: Megan Fu

Dear Mr. Gibson,

PRINCE OF WALES HOSPITAL ACUTE SERVICES BUILDING
HOSPITAL ROAD, RANDWICK

Reference is made to the Department's correspondence dated 23 August 2019, requesting Roads and Maritime Services (Roads and Maritime) to provide comment.

Transport for New South Wales (TfNSW) will provide a separate submission.

Roads and Maritime has reviewed the submitted application and provides the following comments for the Departments consideration:

1. The lowering of Hospital Road and closure of Hospital Road from Barker Street to High Street will have an impact on existing traffic distribution on the surrounding transport network. Roads and Maritime has reviewed the submitted Transport Impact Assessment (TIA) and notes an increase in trip distribution to McGill Street and Botany Street.

   As such, Roads and Maritime requests that the applicant continues to engage with the transport cluster to identify measures to mitigate any impacts to the surrounding network.

2. TIA states within Section 3.4 that "*A new bicycle parking and end of trip facility is being planned for on campus which is part of approved SD9113. This will be available for IASB Addition staff*". To ensure that sufficient bicycle parking provision is across the campus, within the Response to Submissions, the proponent should detail the number of bicycle parking spaces and facilities to be provided across the campus, to ensure that the campus has sufficient facilities to support and encourage active transport.

3. The proposed development will generate additional pedestrian movements in the area. Pedestrian safety is to be considered in the vicinity.

Roads and Maritime Services

27-31 Argyle Street, Parramatta NSW 2150 |
PO Box 973 Parramatta NSW 2150 |

www.rms.nsw.gov.au | 13 22 13

4. A Road Occupancy Licence (ROL) should be obtained from Transport Management Centre for any works that may impact on traffic flows on High Street during construction activities. A ROL can be obtained through https://myrta.com/oplinc2/pages/security/oplincLogin.jsf

5. All demolition and construction vehicles are to be contained wholly within the site and vehicles must enter the site before stopping. A construction zone will not be permitted on High Street.

6. A Construction Pedestrian Traffic Management Plan (CPTMP) shall be submitted in consultation with the TfNSW Sydney Coordination Office (SCO), Roads and Maritime, and Randwick City Council, prior to the issue of a Construction Certificate. The CPTMP needs to include, but not be limited to, the following: construction vehicle routes, number of trucks, hours of operation, access arrangements and traffic control.

If you have any further inquiries in relation to the subject application, please contact Kerry Ryan, Development Assessment Officer, on 8849 2008 or by email at Development.Sydney@rms.nsw.gov.au.

Yours sincerely

Brendan Pegg
Senior Land Use Planner
South East Precinct, Greater Sydney Division

Transport for NSW

Mr David Gibson
Team Leader
Social Infrastructure Assessments
Department of Planning and Environment
GPO Box 39
Sydney NSW 2001

Attention: Megan Fu

Dear Mr Gibson

Prince of Wales Hospital - Addition to Approved Acute Services Building (SSD 10339)
Notice of Exhibition

Thank you for your letter dated 23 August 2019, requesting Transport for NSW (TfNSW) to review and comment on the above.

Roads and Maritime Services will provide a separate response letter.

Sydney Light Rail Operation and Infrastructure

Comment

The proposed development would have the potential to impact on the Sydney Light Rail operation, infrastructure and the completion of the Sydney Light Rail Project's program of works due to the following:

- Flooding - The Environmental Impact Assessment prepared to support the development states that the development site is affected by overland flooding. It is advised that the subject development has the potential to impact surrounding land/ activities, including the Sydney Light Rail Project, by contributing to additional flooding during construction and operation; and
- Closure of Hospital Road at High Street and the proposed excavation of Hospital Road – Excavation and construction activities would have the potential to impact on the operation of the light rail, or its assets and accessibility including the health and safety of passengers.

Recommendation

It is requested that the applicant consults with the Sydney Light Rail operator and undertakes an assessment of the above issues and propose any required mitigation measures in consultation with the Sydney Light Rail operator as part of the response to submissions.

Transport for NSW
18 Lee Street, Chippendale NSW 2008 | PO Box K659, Haymarket NSW 1240
T 02 8202 2200 | **F** 02 8202 2209 | **W** transport.nsw.gov.au | ABN 18 804 239 602

Impacts on Transport Network Operation

Comment

The development proposal includes the following:

- Hospital Road - Lowering of an 80 m section of the private service road known as Hospital Road by up to 4 m and closure of that private road from its intersection with Barker Street and High Street, save for maintaining vehicular access to the loading dock and staff car park off Barker Street; and
- Magill Street - Open Magill Street to improve traffic network flow around the construction site.

Recommendation

It is advised that the applicant continue to consult with Roads and Maritime Services and the Sydney Coordination Office within TfNSW to identify measures to mitigate any impacts to the surrounding network.

Construction Worker Transportation Strategy

Comment

The applicant's proposal to minimise construction workers driving to the precinct and parking is supported as the Construction Management Plan prepared to support the development states the following:

- The applicant recognises that a dedicated worker and transportation strategy needs to be implemented;
- Construction workers would be encouraged to adopt a Green Travel Plan for this project with use of public transport to reduce the amount of light vehicles on the road and to ease congestion around the Randwick Precinct; and
- The applicant will establish a "park and ride" and associated shuttle bus service.

Recommendation

It is advised that the applicant be conditioned to prepare a Construction Worker Transportation Strategy in consultation with the Sydney Coordination Office within TfNSW.

Construction Pedestrian and Traffic Management

Comment

Several construction projects, including the Sydney Light Rail Project, University of New South Wales, the Newmarket Green Development and surrounding new residential developments will likely occur at the same time as this development within the Randwick Precinct. The cumulative increase in construction vehicle movements from these projects could have the potential to impact on general traffic and bus operations within the Randwick Precinct, as well as the safety of pedestrians and cyclists particularly during commuter peak periods.

Further, TfNSW advises that the use of High Street by the development's construction vehicles should be avoided to ensure that the interface risk between construction vehicles and the Sydney Light Rail and buses is mitigated.

Recommendation

It is requested that the applicant be conditioned to:

- Prepare a Construction Pedestrian and Traffic Management Plan (CPTMP) in consultation with the Sydney Coordination Office within TfNSW, Roads & Maritime Services, the Sydney Light Rail operator; and
- Consult with TfNSW, Roads and Maritime Services and the light rail operator at Traffic and Transport Construction Coordination meetings during construction.

Travel Demand Management Strategy and Green Travel Plan

Comment

The Green Travel Plan prepared to support the development application includes potential travel mode share shifts for car (driver and passenger), public transport, walking and cycling.

It is advised that preliminary discussions have commenced with the health and education institutions within the Randwick Health and Education Precinct for the approved Acute Services Building (SSD 9113) to support their development of strategies to reduce the proportion of single-occupant car travel and increase the mode share of public transport and active transport within the precinct.

Recommendation

It is requested that the applicant be conditioned to revise the Travel Demand Management Strategy and Green Travel Plan in consultation with the Sydney Coordination Office within TfNSW and all stakeholders within the Randwick Health and Education Precinct.

Suggested draft Conditions of Consent

Suggested draft Conditions of Consent are included in **TAB A**.

TfNSW requests that the applicant consults with the Sydney Coordination Office within TfNSW in relation to the above issues. TfNSW would be pleased to consider any further material forwarded from the applicant

Thank you again for the opportunity of providing advice for the above development applications. If you require clarification of any issue raised, please don't hesitate to contact Mark Ozinga, Principal Manager Land Use Planning and Development on 0439 489 298.

Yours sincerely

24/9/2019

Mark Ozinga
Principal Manager Land Use Planning and Development
Customer Strategy and Technology

Objective Reference CD19/07021

TAB A - Suggested Draft Conditions of Consent

Prior to the Commencement of Construction

Construction Pedestrian and Traffic Management

The applicant shall prepare a Construction Pedestrian and Traffic Management Plan (CPTMP) in consultation with the Sydney Coordination Office and Sydney Light Rail team within TfNSW, Sydney Light Rail Operator 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 CPTMP needs to specify, but not limited to, the following:

- A description of the development;
- Location of proposed work zone(s);
- Location of the crane;
- Size and type of construction vehicles including swept path analysis showing no encroachment into oncoming traffic lanes;
- Haulage routes including marshalling area/s and operation to ensure no heavy vehicle queuing prior to site entry;
- Construction vehicle access arrangements. Construction vehicles shall not use High Street without prior approval of the Sydney Coordination Office within TfNSW and Roads and Maritime Services;
- Details of any lane or road closures;
- Loading dock operation during construction;
- Proposed construction hours;
- Estimated number of construction vehicle movements including measures to significantly minimise the number of movements during the defined peak traffic periods;
- Construction program;
- Consultation strategy for liaison with surrounding stakeholders;
- Any potential impacts to general traffic, cyclists, pedestrian, bus services and light rail services within the vicinity of the site from construction vehicles during the construction of the proposed works;
- Cumulative construction impacts of projects including the Sydney Light Rail Project, University of New South Wales, Newmarket Green Development and surrounding new residential developments. Existing CPTMPs for developments within or around the development site, including the approved Acute Services Building (SSD 9113), should be referenced in the CPTMP to ensure that coordination of work activities are managed to minimise impacts on the road network;
- 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;
- Pedestrian and traffic management measures;

- 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; and
- Proposed mitigation measures. Should any impacts be identified from the construction of the development, the duration of the impacts and measures proposed to mitigate any associated general traffic, Sydney Light Rail construction and operation, bus operation, pedestrian and cyclist impacts should be clearly identified and included in the CPTMP.

Construction Worker Transportation Strategy

The applicant shall prepare a Construction Worker Transportation Strategy in consultation with the Sydney Coordination Office within TfNSW. 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:

- Initiatives to discourage construction workers driving to the precinct and parking;
- Provision of secure storage areas for construction worker tools and equipment on site;
- Measures to encourage the use of the public and active transport available within the vicinity of the site; and
- Details of the operation of any off-site construction worker parking location(s), including how workers would be shuttled to the development site.

Sydney Light Rail Project

The applicant shall consult and agree with the Sydney Light Rail project team in relation to the development's construction activities to ensure that those activities do not adversely impact the completion of the Sydney Light Rail Project's program of works, including, but not limited to, footpaths, kerbs and gutters, driveways and road restoration works.

During Construction

Consultation during Construction

- The applicant shall provide the following information to TfNSW and its internal stakeholders Traffic and Transport Construction Coordination meetings during construction which will be set up and chaired by the Sydney Coordination Office:
    - Update of construction activities;
    - The details in relation to date and timing of construction activities such as concreting etc. that are likely to generate high volume of construction vehicles;
    - The details of full or part road closures that are likely to impact on traffic and bus movements in the vicinity of the site and the Sydney Light Rail Project;
    - Update of the CPTMP if any changes to the original CPTMP is required;
    - Safety incidents as a result of construction activities associated with pedestrian and public transport movements surrounding the site;
    - The details of the coordination of work activities to manage cumulative construction traffic from developments under construction within the precinct to minimise impacts on the road network; and
    - Actions by the applicant for safety and traffic management issues raised by TfNSW.

Representatives of other developments under construction within the precinct shall be invited to the meetings and other attendees as requested by the Sydney Coordination Office.

Minutes of meetings shall be taken by the applicant and a copy of the minutes of meetings is to be distributed to all attendees within a week of the meeting.

- The applicant shall provide the builder's direct contact number to surrounding stakeholders impacted by the construction work and the Transport Management Centre and Sydney Coordination Office within Transport for NSW to resolve issues relating to traffic, freight, servicing and pedestrian access during construction in real time. The applicant is responsible for ensuring the builder's direct contact number is current during any stage of construction.

Use of High Street as 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.

Prior to the issue of the Occupation Certificate

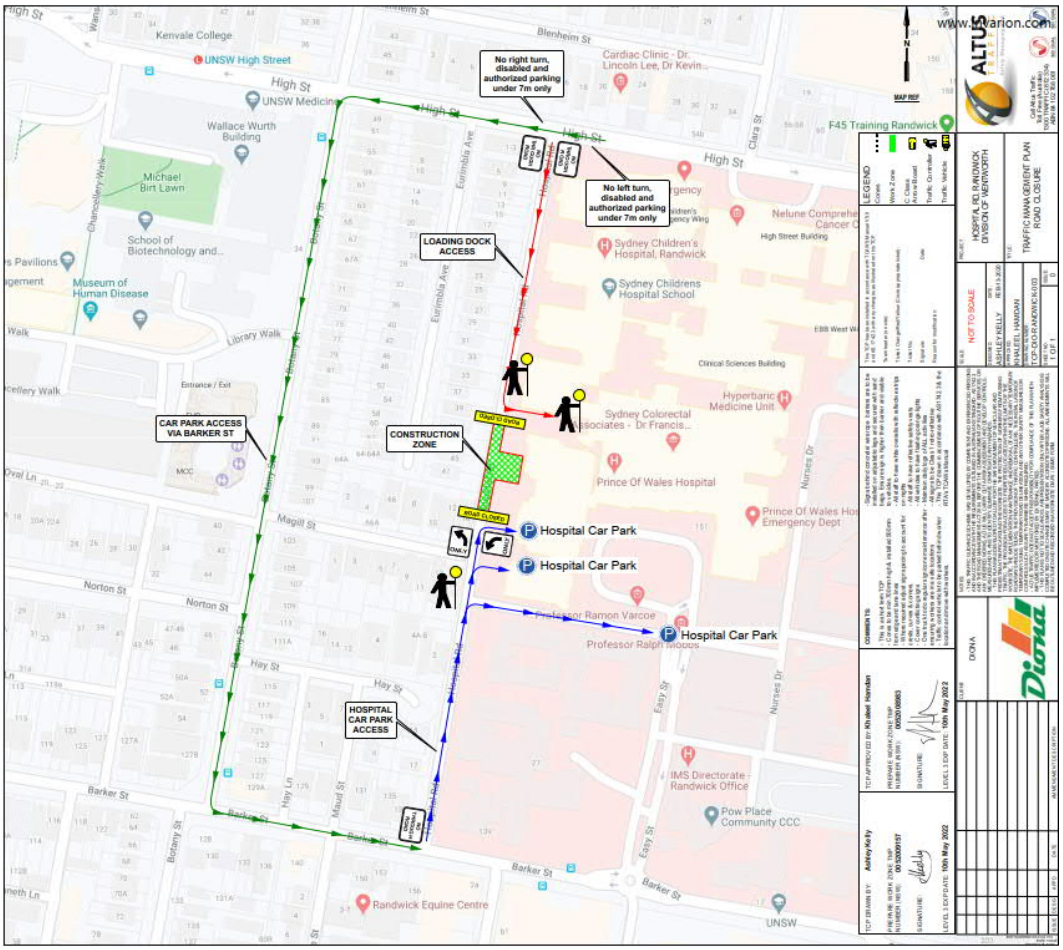
Travel Demand Management Strategy and Green Travel Plan

The applicant shall prepare a Travel Demand Management Strategy and Green Travel Plan to reduce the proportion of single-occupant car travel and increase the mode share of public transport and active transport for the development and the Randwick Health and Education Precinct. The strategy and plan shall be prepared in consultation with the Sydney Coordination Office within TfNSW and in conjunction with all stakeholders within the Randwick Health and Education Precinct. The applicant shall submit a copy of the final plan to the Coordinator General, Transport Coordination for endorsement, prior to the issue of the occupation certificate.

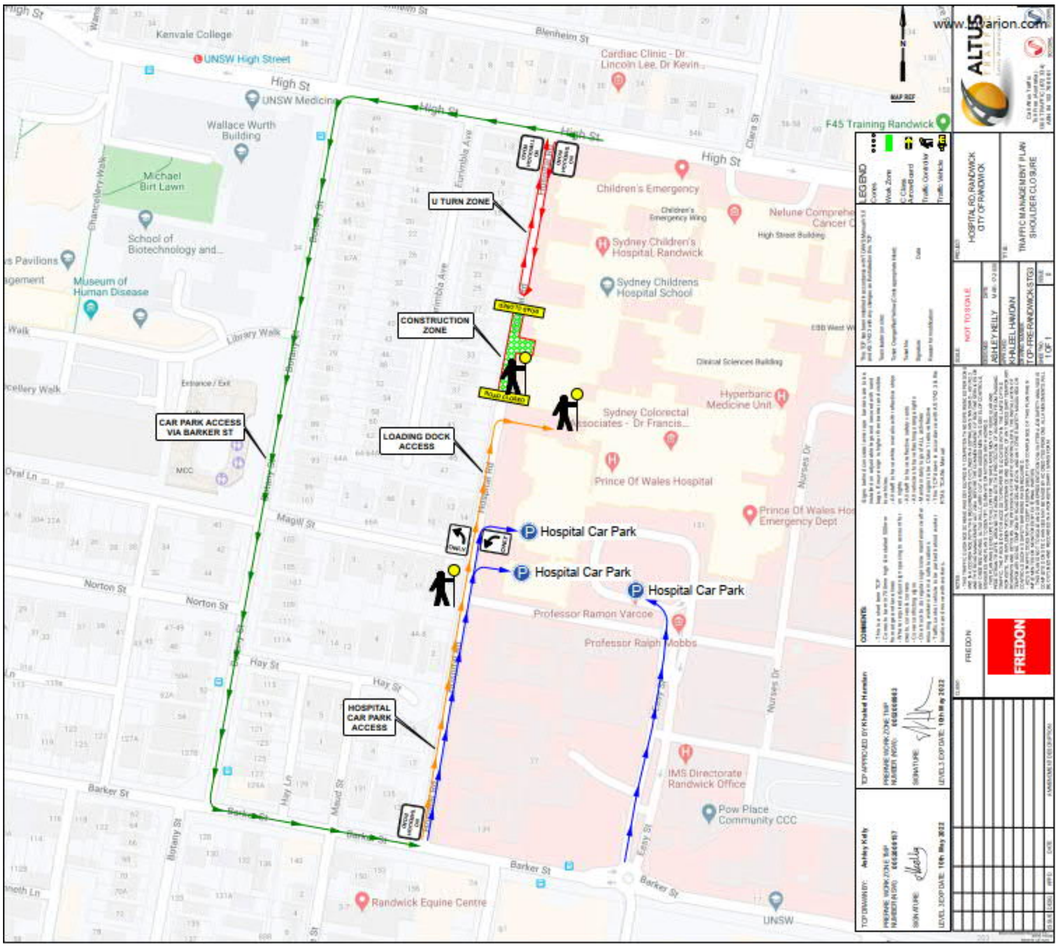
APPENDIX 7 – ARUP INTEGRATED ACUTE SERVICES BUILDING ADDITION TRAFFIC AND TRANSPORT ASSESSMENT

APPENDIX 8 – TRAFFIC CONTROL PLANS

Stage 2 & 4



Stage 3 & 5


U TURN ZONE
CONSTRUCTION ZONE
CAR PARK ACCESS VIA BARKER ST
LOADING DOCK ACCESS
HOSPITAL CAR PARK ACCESS
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Hospital Car Park
High St
Barker St
Hospital Rd
Botany St
Magill St
Norton St
Hay St
Prince Of Wales Hospital
Sydney Children's Hospital, Randwick
LEGEND
HOSPITAL RD, RANDWICK CITY OF RANDWICK
TRAFFIC MANAGEMENT PLAN SHOULDER CLOSURE
NOT TO SCALE
FREDON
www.altusvarion.com

APPENDIX 2B – CWTS

RANDWICK CAMPUS REDEVELOPMENT

CONSTRUCTION WORKER TRANSPORTATION STRATEGY

Acute Services Building & Integrated Acute Services Building

April 2020

NSW GOVERNMENT Transport for NSW

NSW GOVERNMENT Planning & Environment

NSW GOVERNMENT Health Infrastructure

Randwick City Council
a sense of community

lendlease

DOCUMENT HISTORY

Version	Date	Issue by	Status
1	August 2019	Lendlease	For SSDA Approval
2	December 2019	Lendlease	For Construction Certificate 1, 2, & 3
3	February 2020	Lendlease	For Construction Certificate 1, 2, & 3 including TfNSW comments
4	April 2020	Lendlease	Update for SSD 9113 CC3 and extended working hours

DOCUMENT CONTROL

To ensure the Construction Communication Plan remains relevant and accurate, this document will be continuously reviewed and evaluated throughout the planning and delivery of the ASB and IASB. This is a combined document for SSD 9113 & 10339.

Any revisions made will be communicated to the project team accordingly.

CONSTRUCTION WORKER TRANSPORTATION STRATEGY

CONTENTS PAGE

Contents

1.0 CONSTRUCTION WORKER TRANSPORTATION STRATEGY

1.1 INTRODUCTION

The Construction Worker Transportation Strategy (CWPS) has been prepared in response to approved development consent for State Significant Development Application (SSDA) number SSD 10339 and SSD 9113. Specifically, the CWPS demonstrates compliance with Condition B17 (SSD10339) and B42 (SSD9113). Condition B17 provides for the following:

- **B17 -** Prior to the commencement of construction, the Applicant must submit a Construction Worker Transportation Strategy in consultation with the Sydney Coordination Office within Transport for New South Wales to the satisfaction of the Certifier. The Strategy must detail the provision of sufficient parking facilities or other travel arrangements for construction workers in order to minimise demand for parking in nearby public and residential streets or public parking facilities.
- B42 - 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:

  (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.

The Randwick Campus Redevelopment Acute Service Building (RCR-ASB) is a highly complex project with critical early milestone components that must be delivered on time. The objective of this CWPS is to ensure that the IASB Addition (the Project) is safely delivered using a robust set of methodologies and zero unplanned disruption to hospital services.

This plan has been developed from the already approved CWPS for the Main Acute Services Building approved under SSD 9113 by TfNSW.

The IASB Addition includes the lowering of Hospital Road, and construction of the UNSW Eastern Extension (Base Building only) and associated Link bridges. These works will occur concurrently to the ASB construction.

The objective of the CWPS is to set out the initiatives and actions of Lendlease that will effectively manage the workforce influx and associated transportation and parking demands. Through the implementation of this strategy Lendlease intends to ensure that minimal impact is had on parking availability for the local Randwick community inclusive of UNSW, the Randwick Hospitals Campus, local businesses and their respective stakeholders.

The CWPS will provide:

- Management of construction worker transportation and parking
- Continued availability of in-demand parking spaces and facilities in the Randwick precinct
- Dedicated worker parking facilities and associated shuttle services
- Positive public perception of the project's workforce management

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

1.2 Traffic management and control

Lendlease understand one of the keys to the successful delivery of the project will be managing the flow of construction vehicles into and out of the project site whilst maintaining a continuity of business for an operational Hospital. We also understand the importance of maintaining currently parking numbers throughout the redevelopment works.

We believe it is imperative that our planning considers and successfully manages the maintenance of pedestrian, traffic flow and parking to the surrounding buildings and roads. To do this Lendlease will adopt a number of key traffic management strategies to minimise and mitigate Randwick Campus Hospital Redevelopment project's effects on the operational hospital:

- Lendlease along with Arup will detail a specific Traffic Control Plans which will detail the management of pedestrian, vehicular construction and operational traffic at each stage of works.
- Understanding existing parking provision, demand currently onsite, identifying temporary hospital and construction parking replacement options on and offsite to mitigate potential parking shortfalls during the Redevelopment.
- Adopting an online material booking system called the virtual superintendent to facilitate efficient just in time delivery of construction materials, alleviating traffic congestion.
- Encouraging staff, consultants and subcontractors to adopt a Green Travel Plan for this project with use of public transport to and from site.

1.3 CONSTRUCTION WORKFORCE

At its peak the project will engage a workforce of approximately 550 individuals. It is anticipated that this peak will be reached in late 2021. All workers will undergo mandatory inductions to understand their responsibilities when working on the RCR project site and in close proximity to a live Hospital environment. This is inclusive of parking restrictions, dedicated parking facilities, transportation options and available on-site storage facilities.

Planning for construction workforce transportation and parking management will be aligned with projected workforce counts and associated parking demands.

It is understood that a portion of the site worker population will elect to travel to site using private vehicles. Construction workers driving to sites in constrained parking environments, similar to the RCR, typically carpool reducing traffic impacts on the local road network.

The project site is well serviced by public transport providing site workers with alternative travel options.

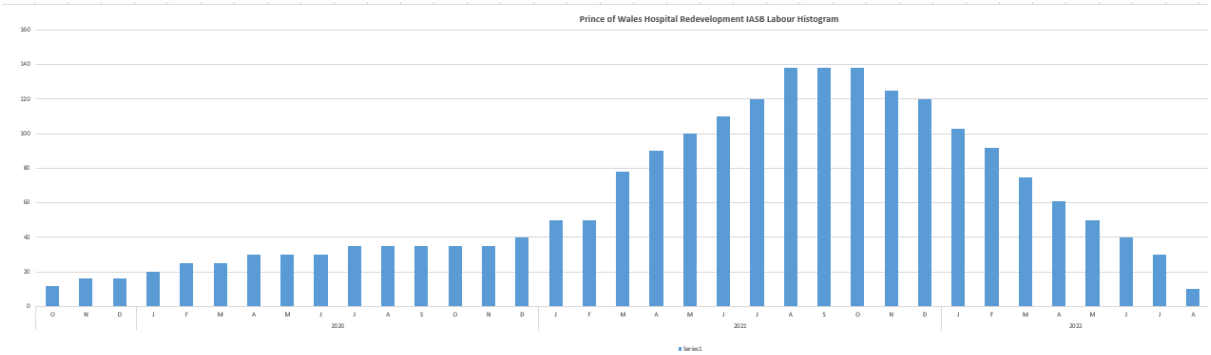


Figure 2 – IASB labour histogram

The cumulative impacts of the Acute Services Building and the Integrated ASB scope will not impact on the off-site carpark arrangements. This is demonstrated in figure 3 which identifies the peak workforce for the ASB works is from September 2020 through to February 2021. This workforce starts to drop off as the IASB peaks in August 2021. This is due to the civil works of the IASB scope which is staged and slow to allow for services diversion works for the first 12 months of the programme. ATC have capacity to provide off site car spaces for this projected workforce. It is anticipated that the ATC carpark strategy will extend to the end of 2021 to accommodate both the ASB and IASB developments. The ATC have agreed to provide ongoing support for aslong as required.

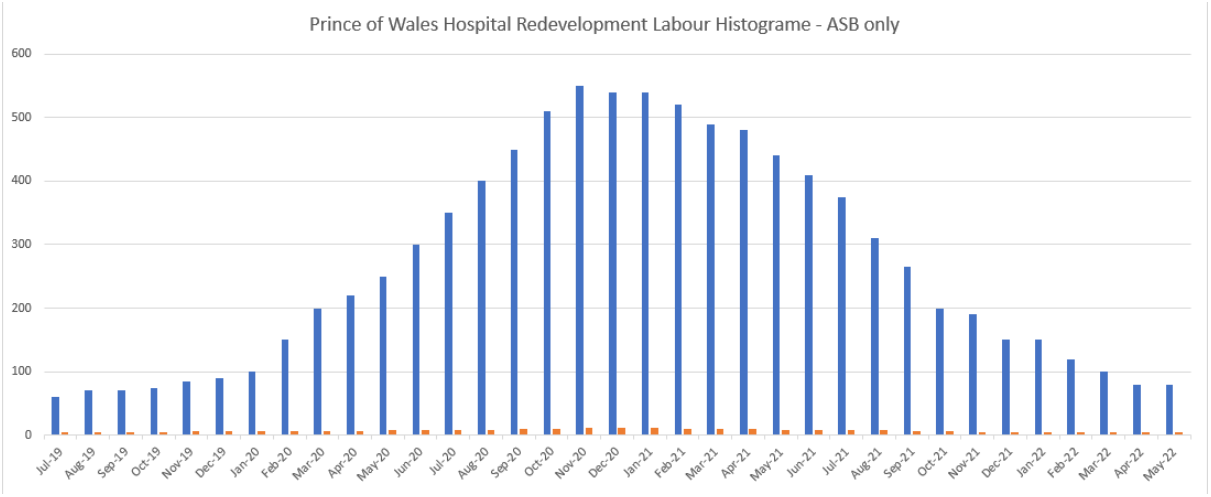


Figure 3 – ASB labour histogram

Due to Covid-19 and the impacts imposed by new Government regulations with respect to social segregation, there may be impacts on construction productivity. Lendlease in conjunction with Health Infrastructure are seeking

extended working hours to facilitate the segregation of the workforce. This will see construction workers travelling to the site in the afternoons and working into the evenings. The extended hours proposed are in the table below.

General Construction hours	
Monday – Friday	6:00am to 1:00am
Saturday	8:00am to 5:00pm
Sunday	No work

Carparking provisions will be required for these workers in accordance with the approved carparking strategy provided jointly by Lendlease and the ATC. It is anticipated that the evening workforce would be approximately up to 100 workers.

The ATC has provision for 400 carspaces. As parking is required for atleast 1/3 of the total workforce, there is ample capacity for the carpark to provide for both the ASB, IASB and extended hours.

1.4 EXISTING PARKING SUPPLY AND UTILISATION

Assessments have been undertaken to understand existing parking opportunities in proximity to the project site. The following existing parking facilities have been identified:

1. The UNSW directly to the West of the site provides metered parking spaces around campus. The Barker Street and Botany Street Carparks provide all day meter parking on upper floors. There are a number of 2P parking spaces around campus with 200 parking bays in the Western Campus Carpark and a number of parking bays in the University Terraces, International House and the Kensington Colleges.
2. The Royal Randwick Shopping Centre is 0.4km to the North-East of the site and provides 530 undercover parking bays charged as casual rates per entry.
3. The Spot Wilson Carpark is 0.6km East of the site and provides undercover parking charging casual rates per entry.
4. The Silver Street Carpark 0.6km North of the site provides parking charging at casual rates per entry.
5. The Royal Randwick Racecourse is 1.4km North-West of the site and provides around 300 metered parking spaces.
6. There is also 2P metered parking on all streets surrounding the area of the site.

Construction workers will be prohibited from parking within the Hospital Car Park and streets immediately surrounding the project site.

Whilst a number of localised parking options are available within the Randwick community Lendlease has determined that alternative and dedicated site worker parking is required to accommodate the projects workforce.

1.5 MANAGEMENT OF WORKER PARKING AND TRANSPORT

Lendlease will provide monitoring of the transportation and parking behaviours of the project workforce to minimise impacts on local roads and existing parking availability. Management of worker parking and transport will occur via:

- Ensuring site workers are encouraged to use a variety of transport methods to commute to and from the project site

- Making available information on modes of public transport, time tabling information and locations of public transport stations in proximity to the project site
- Encouraging ride sharing and car pooling
- Provision of bicycle storage and change facilities on site
- Continual reinforcement of parking requirements and restrictions at part of mandatory site inductions, weekly sub-contractor meetings and prestart meetings
- Implementation of warning and enforcement systems for workers demonstrating noncompliance with transport and parking requirements

1.6 WORKER TRANSPORTATION AND PARKING

First and foremost, Lendlease will encourage workers that are coming to site would be to use public transport to reduce the volume of light vehicles on the road and to ease congestion around the Randwick Precinct.

The following transport and parking options will be promoted to the project site workforce:

8.6.1 Public transport

Bus

- Due to existing heavy traffic flows in the area from UNSW, the Randwick Campus Redevelopment and other surrounding construction works, site workers will be encouraged to take public transport to and from site while on-site parking is not available.
- With the site in close proximity to UNSW and the existing Randwick Hospital, there are a number of bus lines which run from main stations in the Sydney city region to around the site.
- 891 – Central Station to High Street
- 339 – Central Station on Foveaux Street just East of Elizabeth Street
- 372 – Central Station to Belmore Road
- 373 – Museum Station to Belmore Road
- 37 – Central Station to Alison Road
- 376 – Museum Station to Belmore Road
- 377 – Museum Station
- 304 – Central Station to Barker Street
- Metrobus 10 (M10) – Leichhardt to Maroubra
- Junction via Anzac Parade
- Metrobus 50 (M50) – Drummoyne to Coogee via the City, Anzac Parade and High Street
- 370 – Leichardt to Coogee via Anzac Parade and High Street
- 400 – Burwood to Bondi Junction via High Street
- Light Rail (future)

Light Rail

The Sydney Light Rail has now gone “live”. It is expected that commuters will look to utilize the light Rail in lieu of driving to the Randwick area.

Light rail services will terminate at a stop on High Street, immediately west of the Belmore Road and Avoca Street intersection.

The light rail is operating between 5am and 1am. Between 7am and 7pm (light rail 12 hour 'peak period'), services are operating every eight minutes in each direction between the CBD and Randwick.

The Light Rail is deemed the primary transport shuttle service for the workers, due to the close proximity to the ATC carpark and the Construction site. During these peak construction hours, the Light Rail is not heavily utilized and this will provide added value to this transport means.

The operating times of the Light Rail will also aid construction workers working the evening shift.

Figure 4 - Existing bus services and future Light Rail servicing the Randwick Campus

1.7 DEDICATED PARKING FACILITY – 'PARK AND RIDE' INITIATIVE

Off-site parking will be made available to all project workers. This facility will be located within grounds of the Australia Turf Club's (ATC) Randwick Racecourse located under 2km from the project site. The ATC car park is an underutilised resource that will make available 300 spaces to the Randwick Campus Redevelopment project site.

Through this arrangement workers will have access to unrestricted all-day parking at a rate competitive with local paid parking facilities.

A to-site shuttle service will be made available to transport workers to and from the project site. Bus timetabling will reflect peak worker start and finish times with additional off-peak services operated throughout the course of the day.

Shuttle services will be monitored and revised to ensure timetabling remains reflective of demand. Peak shuttle services will include:

- 6:00am – 7:00am Monday – Friday
- 2:00pm – 5:00pm Monday – Friday

- 7:00am – 8:00am Saturday
- 12:00pm – 3:00pm Saturday

A dedicated bus stop will be established within the ATC boundary providing a coordinated approach to the operation of the to-site shuttle service. Lendlease will work with ATC operations to continually monitor the effectiveness of this operation.

In support of the extended construction hours more shuttle services will be required by the shuttle bus. The evening shifts will be dual purpose taking workers from the site to ATC, and then collecting new workers from the ATC and transporting to site (if not using Light Rail). Additional services will be required as follows:

- 5:00am – 8:00am Monday – Friday
- 11:00pm – 1:30am Monday – Friday

In addition special requirements are required in the bus to facilitate social segregation. The 22 seater will be limited to 10 persons to maintain segregation. This will require more workers to utilize Light rail services. Additional cleaning will also be required to protect the Health & Safety of the workers.

Consultation has occurred with the ATC to determine the most appropriate transport routes, collection points and drop off zones. Consideration will be given to ATC and UNSW event calendars to ensure arrangements do not impact the parking and transportation demands of major events. As per Appendix 1, the agreement between Lendlease is for the use of the ATC carpark for the utilisation by the construction workers.

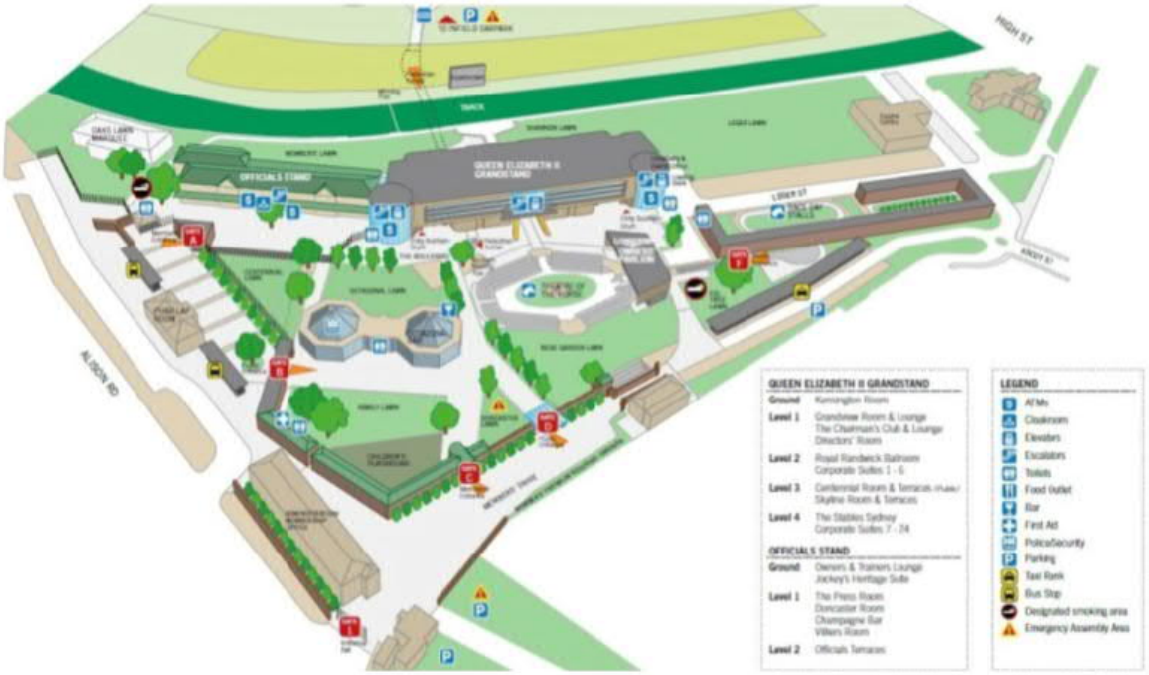


Figure 5 - Australian Turf Club – Royal Randwick Racecourse

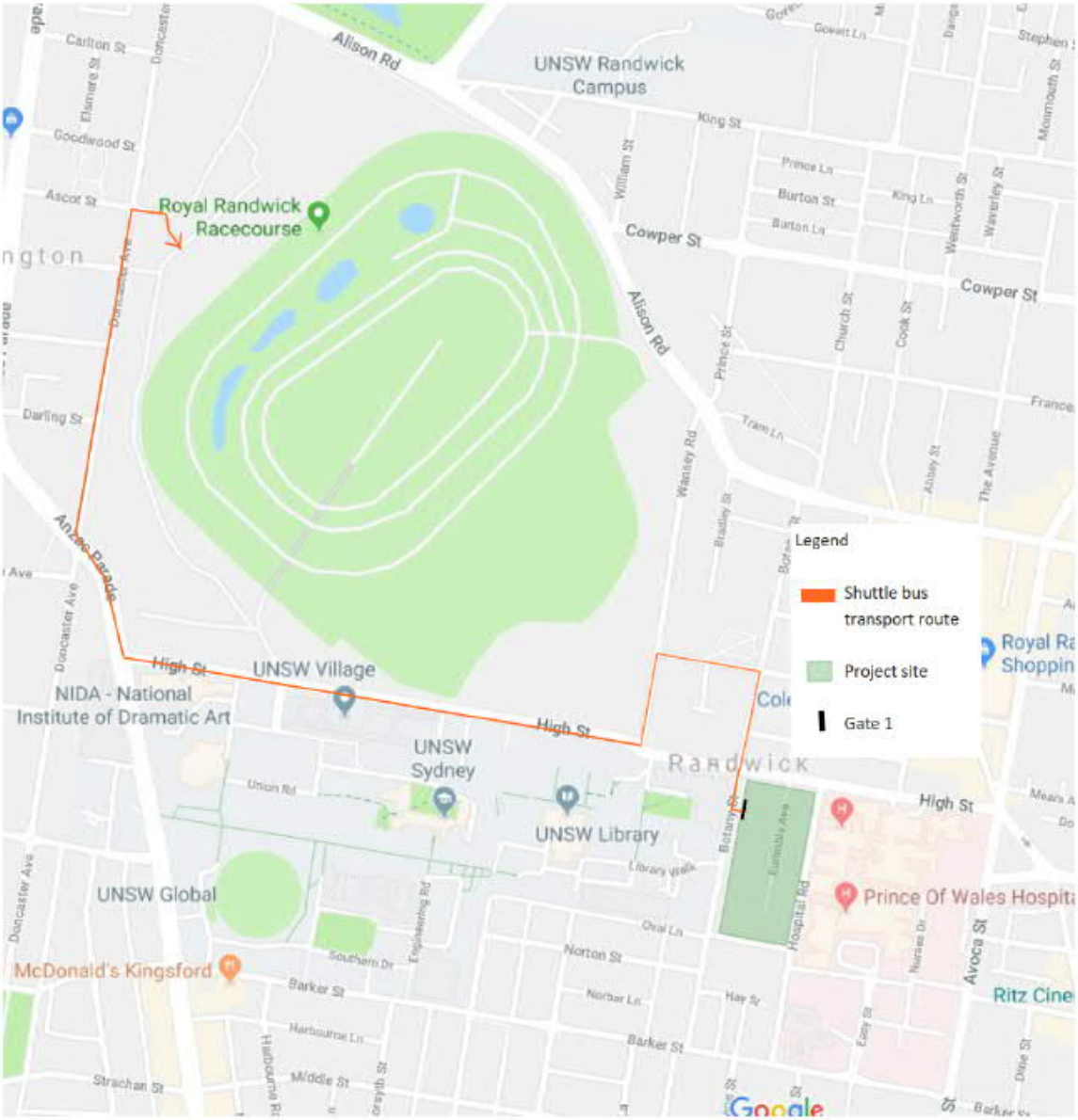


Figure 6 - Transportation Route – to site shuttle service

1.8 ATC AND UNIVERSITY OF NEW SOUTH WALES

The Randwick precinct is home to several major organisations including the University of New South Wales (UNSW), Royal Randwick Racecourse and Randwick Hospital's Campus. Annually these organisations host a diverse range of events attracting additional traffic and patronage to the Randwick community. Lendlease understands that it is essential these events can efficiently accommodate increased transportation and parking demands.

Lendlease will work with key event organisers to ensure the off-site car parking facility and shuttle services do not impact event organisation and operation. Where parking availability is impacted Lendlease will seek to make alternative parking arrangements to accommodate the project's workforce.

Consultation has occurred with both UNSW and the Royal Randwick Racecourse to understand key calendar dates and anticipated demand on the local road network and parking facility.

Key annual ATC calendar events include:

- Melbourne Cup
- Everest Carnival
- Sydney Carnival
- Spring Carnival
- Royal Randwick Race Day

These event dates are all on Saturday's and include one week day event, Melbourne cup which is the first Tuesday in November.

On Saturdays, the peak construction workforce will be approximately 200 workers. Due to double time rates for workers, the number of workers on site on Saturdays has decreased over the recent years. As the offsite parking arrangement with ATC is allowing for generally 1/3 of the total workforce, it is expected that there will be negligible impact on parking requirements for the site on these event days. For the one event day on Melbourne Cup which is the first Tuesday of November, generally workforce numbers are low.

Alternate parking arrangements will be by encouraging the workforce through Builders Brief of other available public carpark facilities such as Spot Parking located in Randwick. Construction activities such as large concrete pours will not proceed on Saturdays due to restricted working hours prohibiting large concrete pours and curing time required for a quality product.

Key annual UNSW calendar events are detailed in the below table. Of particular sensitivity are Exam and Graduation periods, Lendlease will ensure ongoing engagement occurs to effectively manage the project's workforce during these times. Lendlease will review its construction programme on key event days at UNSW to schedule large concrete pours around these dates. Lendlease will have access to the UNSW event schedule online and through stakeholders.

Lendlease has a dedicated Stakeholder engagement officer that will be liaising closely with UNSW. This will allow for careful planning and coordination of construction activities being mindful of large UNSW events. Lendlease has selected haulage routes which minimise impact on UNSW operations by utilising main arterial roads. With regular meetings we will be able to coordinate with UNSW at all times to have minimal impact on the road network.

Consultation has occurred with UNSW and ATC on the requirements of parking during Exam and O-week Periods.

ATC has advised that the ATC carpark is constructed with sound absorbing enhancements so as that cars parking in this space have no impact on the horse shelters adjacent. Hence ATC has advised there is no restrictions on carparking availability during these periods. UNSW utilisation of the carpark is negligible at these events.

	2019		2020	
	Start date	Finish date	Start date	Finish date
Term 1				
O-Week	11 February 2019	15 February 2019	10 February 2020	14 February 2020
Teaching Period	18 February 2019	1 May 2019	17 February 2020	29 April 2020
Study Period	2 May 2019	4 May 2019	30 April 2020	2 May 2020
Exams	6 May 2019	18 May 2019	4 May 2020	16 May 2020
Term break	19 May 2019	2 June 2019	17 May 2020	31 May 2020
Term 2				
Teaching Period	3 June 2019	12 August 2019	1-Jun-20	10 August 2020
Study Period	13 August 2019	15 August 2019	11 August 2020	13 August 2020
Exams	16 August 2019	31 August 2019	14 August 2020	29 August 2020
Term Break	1 September 2019	15 September 2019	30 August 2020	13 September 2020
Term 3				
O-Week	11 September 2019	13 September 2019	9 September 2020	11 September 2020
Teaching Period	16 September 2019	25 November 2019	14 September 2020	23 November 2020
Study Period	26 November 2019	28 November 2019	24 November 2020	26 November 2020
Exams	29 November 2019	14 December 2019	27 November 2020	12 December 2020
Graduation dates				
	5 November 2018	9 November 2018		
	6 May 2019	17 May 2019		
	19 August 2019	30 August 2019		
	2 December 2019	13 December 2019		

Consultation has occurred with UNSW and ATC on the requirements of parking during Exam and O-week Periods.

ATC has advised that the ATC carpark is constructed with sound absorbing enhancements so as that cars parking in this space have no impact on the horse shelters adjacent. Hence ATC has advised there is no restrictions on carparking availability during these periods. UNSW utilisation of the carpark is negligible at these events.

Lendlease will inform the construction workforce of the key event schedule where the ATC carpark will not be available due to the scheduled events nominated by means of site wide communication. This will be in the form of:

- Daily builders brief which is issued to the workforce daily
- At weekly subcontractor coordination meetings where information is provided and relayed to the subcontractor teams by their nominated supervisors

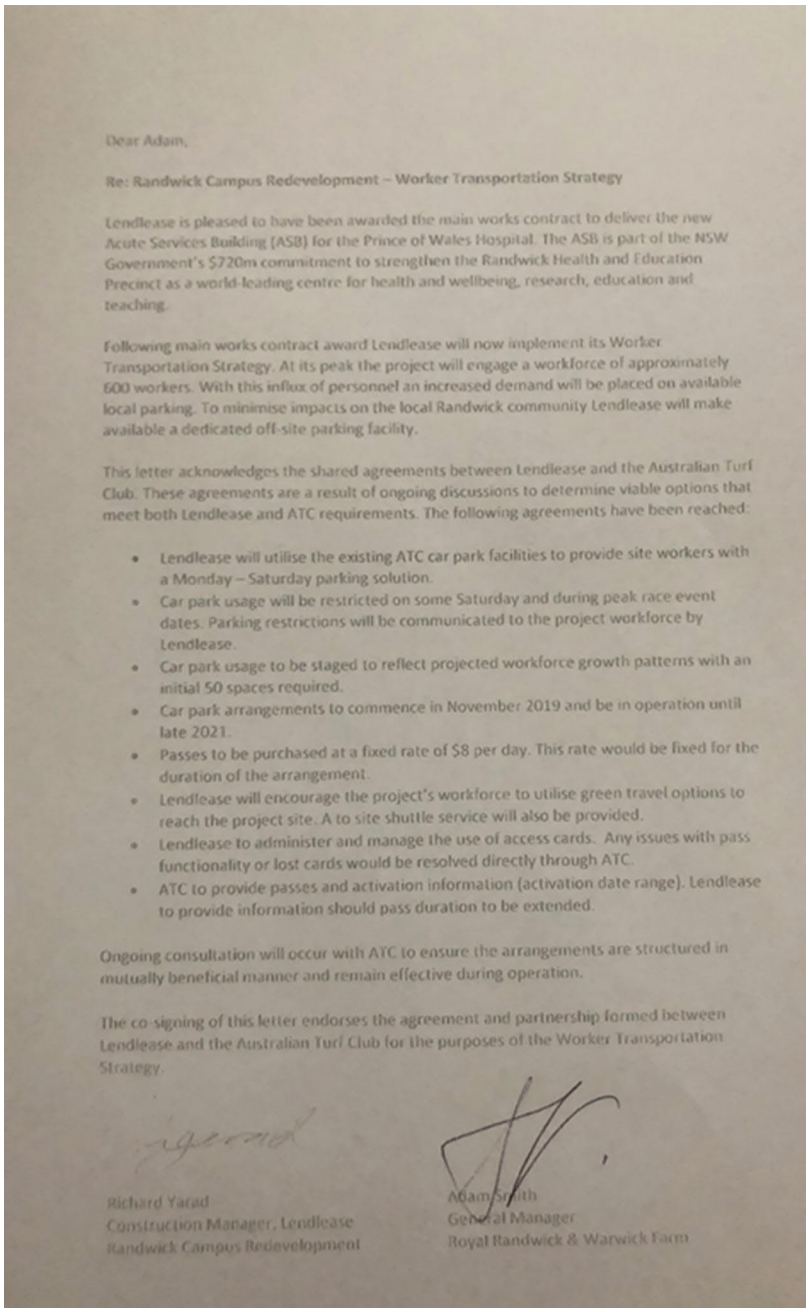
1.9 ON-SITE FACILITIES

Lendlease will make available facilities, within the site boundary, that enable and encourage site workers to utilise public transport and park and ride services. On-site facilities will include:

- Secure on-site storage for tools and equipment
- Site worker amenities – change facilities and showers
- Dedicated materials handling areas

2.0 APPENDICES

2.1 ATC & Lendlease Agreement



Dear Adam,

Re: Randwick Campus Redevelopment – Worker Transportation Strategy

Lendlease is pleased to have been awarded the main works contract to deliver the new Acute Services Building (ASB) for the Prince of Wales Hospital. The ASB is part of the NSW Government's $720m commitment to strengthen the Randwick Health and Education Precinct as a world-leading centre for health and wellbeing, research, education and teaching.

Following main works contract award Lendlease will now implement its Worker Transportation Strategy. At its peak the project will engage a workforce of approximately 600 workers. With this influx of personnel an increased demand will be placed on available local parking. To minimise impacts on the local Randwick community Lendlease will make available a dedicated off-site parking facility.

This letter acknowledges the shared agreements between Lendlease and the Australian Turf Club. These agreements are a result of ongoing discussions to determine viable options that meet both Lendlease and ATC requirements. The following agreements have been reached:

- Lendlease will utilise the existing ATC car park facilities to provide site workers with a Monday – Saturday parking solution.
- Car park usage will be restricted on some Saturday and during peak race event dates. Parking restrictions will be communicated to the project workforce by Lendlease.
- Car park usage to be staged to reflect projected workforce growth patterns with an initial 50 spaces required.
- Car park arrangements to commence in November 2019 and be in operation until late 2021.
- Passes to be purchased at a fixed rate of $8 per day. This rate would be fixed for the duration of the arrangement.
- Lendlease will encourage the project's workforce to utilise green travel options to reach the project site. A to site shuttle service will also be provided.
- Lendlease to administer and manage the use of access cards. Any issues with pass functionality or lost cards would be resolved directly through ATC.
- ATC to provide passes and activation information (activation date range). Lendlease to provide information should pass duration to be extended.

Ongoing consultation will occur with ATC to ensure the arrangements are structured in mutually beneficial manner and remain effective during operation.

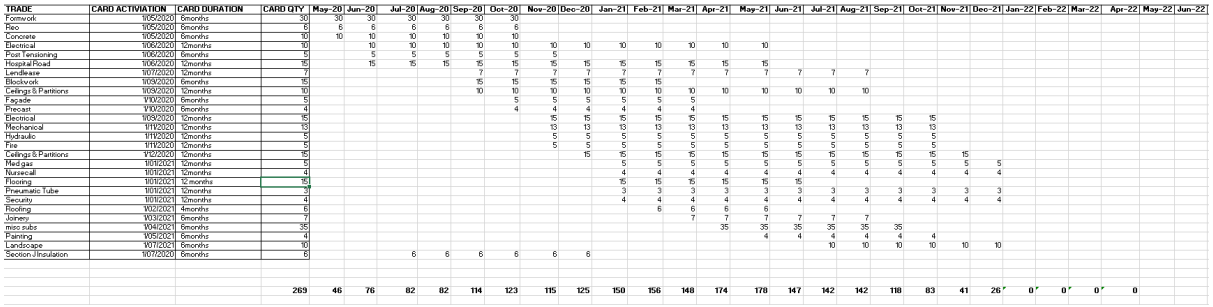
The co-signing of this letter endorses the agreement and partnership formed between Lendlease and the Australian Turf Club for the purposes of the Worker Transportation Strategy.

Richard Yarad
Construction Manager, Lendlease
Randwick Campus Redevelopment

Adam Smith
General Manager
Royal Randwick & Warwick Farm

2.2 Schedule of parking passes

Key Subcontractors Parking allocation	ATC Purchase Date	ATC purchase Duration	ATC Purchase Qty
Formwork	1/05/2020	6months	30
Reo	1/05/2020	6months	6
Concrete	1/05/2020	6months	10
Electrical	1/06/2020	12months	10
Post Tensioning	1/06/2020	6months	5
Hospital Road	1/06/2020	12months	15
Lendlease	1/07/2020	12months	7
Section J Insulation	1/07/2020	6months	6
Blockwork	1/09/2020	6months	15
Ceilings & Partitions	1/09/2020	12months	10
Electrical	1/09/2020	12months	15
Façade	1/10/2020	6months	5
Precast	1/10/2020	6months	4
Mechanical	1/11/2020	12months	13
Hydraulic	1/11/2020	12months	5
Fire	1/11/2020	12months	5
Ceilings & Partitions	1/12/2020	12months	15
Med gas	1/01/2021	12months	5
Nursecall	1/01/2021	12months	4
Flooring	1/01/2021	12 months	15
Pneumatic Tube	1/01/2021	12months	3
Security	1/01/2021	12months	4
Roofing	1/02/2021	4months	6
Joinery	1/03/2021	6months	7
misc subs	1/04/2021	6months	35
Painting	1/05/2021	6months	4
Landscape	1/07/2021	6months	10
			269



TRADE	CARD ACTIVIATION	CARD DURATION	CARD QTY	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22
Formwork	1/05/2020	6months	30	30	30	30	30	30	30																			
Reo	1/05/2020	6months	6	6	6	6	6	6	6																			
Concrete	1/05/2020	6months	10	10	10	10	10	10	10																			
Electrical	1/06/2020	12months	10		10	10	10	10	10	10	10	10	10	10	10	10												
Post Tensioning	1/06/2020	6months	5		5	5	5	5	5	5																		
Hospital Road	1/06/2020	12months	15		15	15	15	15	15	15	15	15	15	15	15	15												
Lendlease	1/07/2020	12months	7					7	7	7	7	7	7	7	7	7	7	7	7									
Blockwork	1/09/2020	6months	15					15	15	15	15	15	15															
Ceilings & Partitions	1/09/2020	12months	10					10	10	10	10	10	10	10	10	10	10	10	10									
Façade	1/10/2020	6months	5						5	5	5	5	5	5														
Precast	1/10/2020	6months	4						4	4	4	4	4	4														
Electrical	1/09/2020	12months	15							15	15	15	15	15	15	15	15	15	15	15	15							
Mechanical	1/11/2020	12months	13							13	13	13	13	13	13	13	13	13	13	13	13							
Hydraulic	1/11/2020	12months	5							5	5	5	5	5	5	5	5	5	5	5	5							
Fire	1/11/2020	12months	5							5	5	5	5	5	5	5	5	5	5	5	5							
Ceilings & Partitions	1/12/2020	12months	15								15	15	15	15	15	15	15	15	15	15	15	15						
Med gas	1/01/2021	12months	5									5	5	5	5	5	5	5	5	5	5	5	5					
Nursecall	1/01/2021	12months	4									4	4	4	4	4	4	4	4	4	4	4	4					
Flooring	1/01/2021	12 months	15									15	15	15	15	15	15											
Pneumatic Tube	1/01/2021	12months	3									3	3	3	3	3	3	3	3	3	3	3	3					
Security	1/01/2021	12months	4									4	4	4	4	4	4	4	4	4	4	4	4					
Roofing	1/02/2021	4months	6										6	6	6	6												
Joinery	1/03/2021	6months	7											7	7	7	7	7	7	7								
misc subs	1/04/2021	6months	35												35	35	35	35	35	35								
Painting	1/05/2021	6months	4													4	4	4	4	4	4							
Landscape	1/07/2021	6months	10															10	10	10	10	10	10					
Section J Insulation	1/07/2020	6months	6			6	6	6	6	6	6																	
			269	46	76	82	82	114	123	115	125	150	156	148	174	178	147	142	142	118	83	41	26	0	0	0	0	

APPENDIX 3A – ASB CNVMSP

APPENDIX 3B – EXTENDED WORKING HOURS CNVMSP

MATTHEW PALAVIDIS
VICTOR FATTORETTO
MATTHEW SHIELDS

Randwick Hospital Redevelopment

Construction Noise and Vibration Managment Plan - Proposed Extended Hours

SYDNEY
9 Sarah St
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www.acousticlogic.com.au

Project ID	20191464.21
Document Title	Construction Noise and Vibration Managment Plan
Attention To	Lend Lease Building Pty Ltd ABN: 97 000 098 162

Revision	Date	Document Reference	Prepared By	Checked By	Approved By
0	17/04/2020	20191464.21/1704A/R0/GK	GK		GW

TABLE OF CONTENTS

1 INTRODUCTION

This report presents our assessment for the noise emission from construction work during the proposed extended hours for the Prince of Wales Hospital Expansion Stage 1. The proposed extended hours are below:

Table 1 – Proposed Extended Hours

Week Day	Proposed Extended Hours
Monday to Friday	6am to 7am, 6pm to 1am (second day)

NSW Movement Minister for Planning and Public Spaces Media Release date 2 April 2020 states:

"The extended hours allow the industry to facilitate social distance on construction sites, while minimising the potential for lost productivity during the pandemic"

The current approved consent states that the conditions are required to:

- Prevent, minimise or offset adverse environmental impacts;
- Set standards and performance measures for acceptable environmental performance;
- Require regular monitoring and reporting; and
- Provide for the ongoing environmental management of the development. Condition B33 of the development consent requires NSW Health Infrastructure, on behalf of Health Administration Corporation, as the applicant, to prepare a Construction Environmental Management Plan (CEMP). The CEMP must include a Construction Noise and Vibration Management Sub-Plan (condition B33 (c)). Condition B37 specifies that the CNVM Sub-Plan must address, but not be limited to, the following:

a) be prepared by a suitably qualified and experienced noise expert;
b) describe procedures for achieving the noise management levels in EPA's Interim Construction Noise Guideline (DECC, 2009);
c) describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers;
d) include strategies that have been developed with the community for managing high noise generating works;
e) describe the community consultation undertaken to develop the strategies in condition B37(d); and
f) include a complaints management system that would be implemented for the duration of the construction.
g) Proposed extended hours of works.

This document is the Construction Noise and Vibration Management Sub Plan required by approval condition B33 (c). It addresses the requirements specified in approval condition B37.
Table 1 replicates the conditions above, with the corresponding section(s) of this CNVMP where each condition is addressed.

Approval Condition	Completed?	CNVMP Reference
Be prepared by a suitably qualified and experienced noise expert	Yes	Section 1.4
Describe procedures for achieving the noise management levels in EPA's Interim Construction Noise Guideline (DECC, 2009)	Yes	Section 9
Describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers	Yes	Section 10.2
Include strategies that have been developed with the community for managing high noise generating works	Yes	Section 10.6
Describe the community consultation undertaken to develop the strategies in condition B37(d)	Yes	Section 10.7
Include a complaints management system that would be implemented for the duration of the construction.	Yes	Section 10.7

2 REQUIREMENTS BY THE EXISTING CONSENT

Operation of Plant and Equipment

C3. All plant and equipment used on site, or to monitor the performance of the development must be:

a) maintained in a proper and efficient condition; and
b) operated in a proper and efficient manner.

C4: Construction, including the delivery of materials to and from the site, may only be carried out between the following hours:

a) between 7am and 6pm, Mondays to Fridays inclusive; and
b) between 8am and 5pm, Saturdays.
No work may be carried out on Sundays or public holidays.

C5: Activities may be undertaken outside of the hours in condition C4 if required:

a) by the Police or a public authority for the delivery of vehicles, plant or materials; or
b) in an emergency to avoid the loss of life, damage to property or to prevent environmental harm; or
c) where the works are inaudible at the nearest sensitive receivers; or
d) where a variation is approved in advance in writing by the Planning Secretary or her nominee if appropriate justification is provided for the works.

C6: Notification of such activities must be given to affected residents before undertaking the activities or as soon as is practical afterwards.

C7: Rock breaking, rock hammering, sheet piling, pile driving and similar activities may only be carried out between the following hours:

a) 9am to 12pm, Monday to Friday;
b) 2pm to 5pm Monday to Friday; and
c) 9am to 12pm, Saturday.

Construction Noise Limits

C15: The development must be constructed to achieve the construction noise management levels detailed in the Interim Construction Noise Guideline (DECC, 2009). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the management and mitigation measures identified in the approved Construction Noise and Vibration Management Plan.

C16: The Applicant must ensure construction vehicles (including concrete agitator trucks) do not arrive at the site or surrounding residential precincts outside of the construction hours of work outlined under condition C4.

C17: The Applicant must implement, where practicable and without compromising the safety of construction staff or members of the public, the use audible movement alarms of a type that would minimise noise impacts on surrounding noise sensitive receivers.

C18: Any noise generated during construction of the development must not be offensive noise within the meaning of the Protection of the Environment Operations Act 1997 or exceed approved noise limits for the site.

Vibration Criteria

C19: Vibration caused by construction at any residence or structure outside the site must be limited to:

a) for structural damage, the latest version of DIN 4150-3 (1992-02) Structural vibration - Effects of vibration on structures (German Institute for Standardisation, 1999); and
b) for human exposure, the acceptable vibration values set out in the Environmental Noise Management Assessing Vibration: a technical guideline (DEC, 2006) (as may be updated or replaced from time to time).

C20: Vibratory compactors must not be used closer than 30 metres from residential buildings unless vibration monitoring confirms compliance with the vibration criteria specified in condition C19.

C21: The limits in conditions C19 and C20 apply unless otherwise outlined in a Construction Noise and Vibration Management Plan, approved as part of the CEMP required by condition B37 of this consent.

3 NSW GOVERNMENT MEDIA RELEASE

NSW GOVERNMENT

Rob Stokes
Minister for Planning and Public Spaces

MEDIA RELEASE

Thursday, 2 April 2020

CONSTRUCTION HOURS EXTENDED TO SUPPORT INDUSTRY DURING COVID-19

Construction sites can now operate on weekends and public holidays under new rules introduced today by the NSW Government to support the industry during the COVID-19 pandemic.

Planning and Public Spaces Minister Rob Stokes said the move allows workers to abide by social distancing rules while keeping construction projects progressing by allowing building work to be spread across more days of the week.

"The construction and development sectors, which make up almost 10 per cent of NSW's economy, will be vital in keeping people in jobs and keeping investment flowing over the coming weeks and months," Mr Stokes said.

"We're doing what we can to support the industry in line with the current medical advice by extending weekday construction site operating hours to weekends and public holidays.

"The extended hours allow the industry to facilitate social distancing on contruction sites, while minimising the potential for lost productivity during the pandemic."

The *Environmental Planning and Assessment (COVID-19 Development – Construction Work Days) Order 2020* is now in place and will continue until the COVID-19 pandemic is over, or the advice of NSW Health changes.

"In NSW there are almost 400,000 people employed in the property and construction industry and we are committed to doing everything we can to keep each of them in work, but most importantly, to keep them safe and healthy," Mr Stokes said.

The *Environmental Planning and Assessment Act 1979* was amended on 24 March to enable Mr Stokes to issue orders that override normal planning controls during the COVID-19 pandemic to ensure the health, safety and welfare of communities.

Compliance with this Order will be monitored and reviewed if there any adverse impacts on the community or from a public health perspective.

3.1 RELEVANT CODES AND STANDARDS

In preparing this plan we have considering the following:

- [1] The Development Consent ref: SSD9113.
- [2] Randwick Campus Redevelopment, Noise and Vibration Impact Assessment for State Significant Development (SSD) – Acute Services Building, ref:20180808 AUR.0003. Rep, prepared by Acoustic Studio
- [3] Environmental Planning and Assessment (COVID-19 Development-Construction Work Days) Order 2020,
- [4] NSW Department of Environment and Climate Change (DECC) "Interim Construction Noise Guideline", 2009
- [5] NSW Department of Environment and Conservation (DEC) "Assessing Vibration: A Technical Guideline", 2006
- [6] Australian Standard "AS 2436: Guide to Noise Control on Construction, Maintenance & Demolition Sites", 1981
- [7] Australian Standard "AS 2670.2: Evaluation of human exposure to whole-body vibration – Part 2: Continuous and shock-induced vibration in buildings (1 to 80 Hz)", 1990
- [8] British Standards Institution "BS 6472 – Evaluation of human exposure to vibration in buildings (1 Hz to 80 Hz)", 1992
- [9] German Institution for Standardisation "DIN 4150.3: Structural vibration – Effects of vibration on structures", 1999

3.2 OTHER APPROVAL CONDITIONS RELATING TO CONSTRUCTION NOISE AND VIBRATION

The Approval also includes other conditions relating to construction noise and vibration, including plant condition, time restrictions and specific noise and vibration conditions:

Protection of Public and Private Property and Infrastructure

B6. Before the commencement of construction, the Applicant must:

a) consult with the relevant owner and provider of services that are likely to be affected by the development to make suitable arrangements for access to, diversion, protection and support of the affected infrastructure;
b) prepare a dilapidation report identifying the condition of all public infrastructure in the vicinity of the site (including roads, gutters and footpaths);
c) prepare a dilapidation report identifying the condition of all adjoining and nearby premises including the residences on the south side of Magill Street and the heritage item located at 4 Hay Street, Randwick;
d) prepare a report by a professional engineer detailing the proposed methods of excavation, shoring or pile construction, including details of potential vibration emissions, and demonstrating the suitability of the proposed methods of construction to overcome any potential damage to nearby premises including the residences on the south side of Magill Street and the heritage item at no.4 Hay Street, Randwick.
e) submit a copy of the dilapidation report and engineers report to the Certifying Authority and Council.

3.3 QUALIFIED PERSONS PREPARING THIS PLAN

Persons involved in preparation of this plan and their qualifications are in Table 2. Details of their experience is available on request.

Table 2 – Qualifications of Engineers

Person	Qualifications	Involvement in Plan
George Wei	Member of AAAS, BE Mech	Project Director
George Kinezos	BEng(Sound)	Project Engineer

3.4 RESPONSIBILITIES

Health Infrastructure and Lendlease are responsible for implementation of this plan:

- Working in accordance with the requirements of this CNVMP.
- Ensuring that any complaints regarding noise and vibration are investigated and appropriately responded to in accordance with the recommendations provided in this document.
- Ensuring project personnel and sub-contractors employed are aware of their responsibilities in regard to the management of noise and vibration during construction and assume the responsibilities assigned to them within this Plan.
- Monitoring and managing noise and vibration impacts on receivers, in accordance with the requirements of the relevant guidelines and standards listed in Section 4.

- Consulting with the occupants of neighbouring premises and buildings to inform them of the nature of the work, to determine any specific noise and vibration sensitivity they may have and to negotiate respite times during noisier works.

4 PROPOSED WORK DURING THE EXTENDED HOURS

It is proposed that the following works occur during the specified hours;

- 6am to 7am – The material handling zone will be utilised which includes formwork deliveries, concrete deliveries, steel reinforcement deliveries, façade panel deliveries, fit out material deliveries. All of these will be unloaded by northern tower crane or forklift.
- 6pm to 10pm - The material handling zone will be utilised which includes formwork deliveries, concrete deliveries, steel reinforcement deliveries, façade panel deliveries, fit out material deliveries. All of these will be unloaded by either tower crane or forklift.
- 10pm to 1am – During this time period the material handling zone will be utilized, however deliveries will not come after 10pm. Forklifts and northern tower crane and other plant items will be used during this time period only.

5 SUMMARY OF NOISE MANAGEMENT PROCEDURES

No blasting and no percussive (impact) piling

Construction for this project is typical of infrastructure building sites in the Sydney Urban area. There will be CFA piling but no percussive (impact) piling. There will be no unusual excavation works, such as blasting.

Limited equipment

- Only northern crane is allowed to be used before 7am and after 10pm of the proposed extended hours.
- No concrete helicopter is allowed before 7am.
- No high noise activities such as rock hammering or piling is allowed before 7am or after 10pm.

Proper and efficient operation and maintenance of plant and equipment

Plant and equipment used on site, or to monitor the performance of the development must be:

a) maintained in a proper and efficient condition; and
b) operated in a proper and efficient manner.

Non-tonal Movement Alarms ("Reversing Beepers")

Where practicable and without compromising the safety of construction staff or members of the public, audible movement alarms on dedicated site plant and equipment will be of a type that will minimise noise impacts on surrounding noise sensitive receivers This could be achieved through the use of broadband alarms, reversing cameras, a combination of these, or a system of work that excludes personnel from the active work area and allows audible reversing alarms to not be used on the site.

Construction vehicles not to arrive outside approved construction hours

Construction vehicles, including concrete agitator trucks, are not to arrive at the site or surrounding residential precincts outside of the approved construction hours. Trucks importing and removing materials from the site will be road-registered vehicles which will travel to and from the site via specific routes, avoiding local roads. They will enter and leave the site in a forward direction, minimising the need for reversing alarms. Trucks will be loaded and unloaded within the site, which will minimise noise from truck loading and unloading.

Noise and Vibration Monitoring

Noise levels and vibration will be monitored at two locations, and the results used to guide management and mitigation of noise and vibration.

Vibratory compactors not to be used within 30 metres of residences.

Vibratory compactors must not be used closer than 30 metres from residential buildings before 7am or after 10pm unless vibration monitoring confirms compliance with vibration criteria.

Community to be kept informed

Neighbours are notified and informed at intervals of the project hours, duration and site management contact details.

Workers and drivers to minimise noise

Contractors and visitors to site are required to complete an induction. This includes training and regular tool box talks. These talks include, as relevant, providing awareness of this plan; the approved project hours; specific noise mitigation measures; being respectful and considerate of neighbours and minimising noise. Minimising noise includes trucks avoiding using exhaust braking when approaching the site, not using vehicle horns for signalling, keeping radio volumes to a reasonable level, and not shouting.

Site to be surrounded by solid hoarding

The site is surrounded by solid (plywood) hoarding, to a height of approximately 2 metres, other than for access gates and adjacent to the site offices. This hoarding provides noise barrier attenuation for the ground floors of surrounding buildings and is to be retained and maintained in good condition for the duration of construction.

Vehicles to access the site only via site gates

Construction vehicles are to access the site only via the site gates, two of which is on Botany Street, and another on Hospital Road (Gate 3).

6 OVERVIEW OF MAIN WORKS

Main works, which are the subject of this CNVMP includes:

- Bulk earthworks;
- Construction and operation of a 13 level Acute Services Building, including the following facilities: an emergency department; operating theatres; central sterilising service department; intensive care unit; patient units; and ambulance bays;
- Overhead pedestrian links to existing hospital buildings;
- Magill Street road works, Botany Street signalised intersection, internal roads and drop-off/pick up areas; and
- Utility, site infrastructure and landscaping works.

7 ENVIRONMENT SURROUNDING THE SITE

7.1 SITE DESCRIPTION

The site is located within an urban environment in Randwick, characterised by medium to high levels of activity throughout the day / evening and low levels of activity in the night.

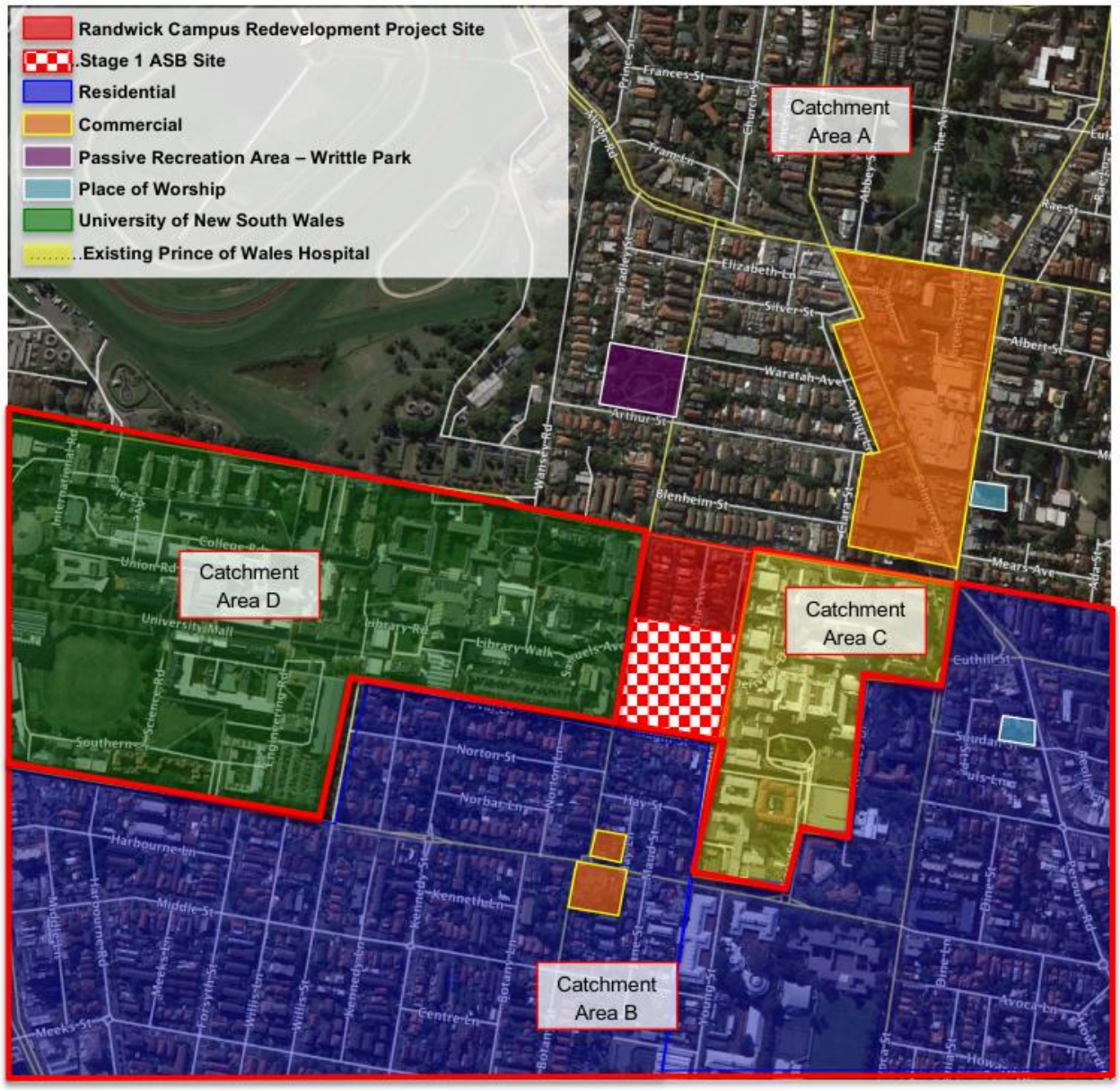


Figure 1: The Project site in relation to noise-sensitive receivers

The following land-uses surround the Project site:

- Catchment Area A
    - Residential dwellings to the north along High Street.
    - Commercial buildings to the northeast.
    - Writtle Park to the north.
    - Our Lady of the Sacred Heart Church to the northeast.
- Catchment Area B
    - Residential dwellings to the south and southwest.
    - Residential dwellings to the east and southeast adjacent to the POW Hospital.
    - Commercial buildings to the south.
    - Randwick Baptist Church to the east.
- Catchment Area C
    - POW Hospital to the east across Hospital Road. This receiver includes sensitive research laboratories and equipment as well as general hospital accommodation and administration activities.
- Catchment Area D
    - UNSW campus to the west. This receiver includes sensitive research laboratories and equipment as well as residential accommodation, learning, teaching and administration activities.

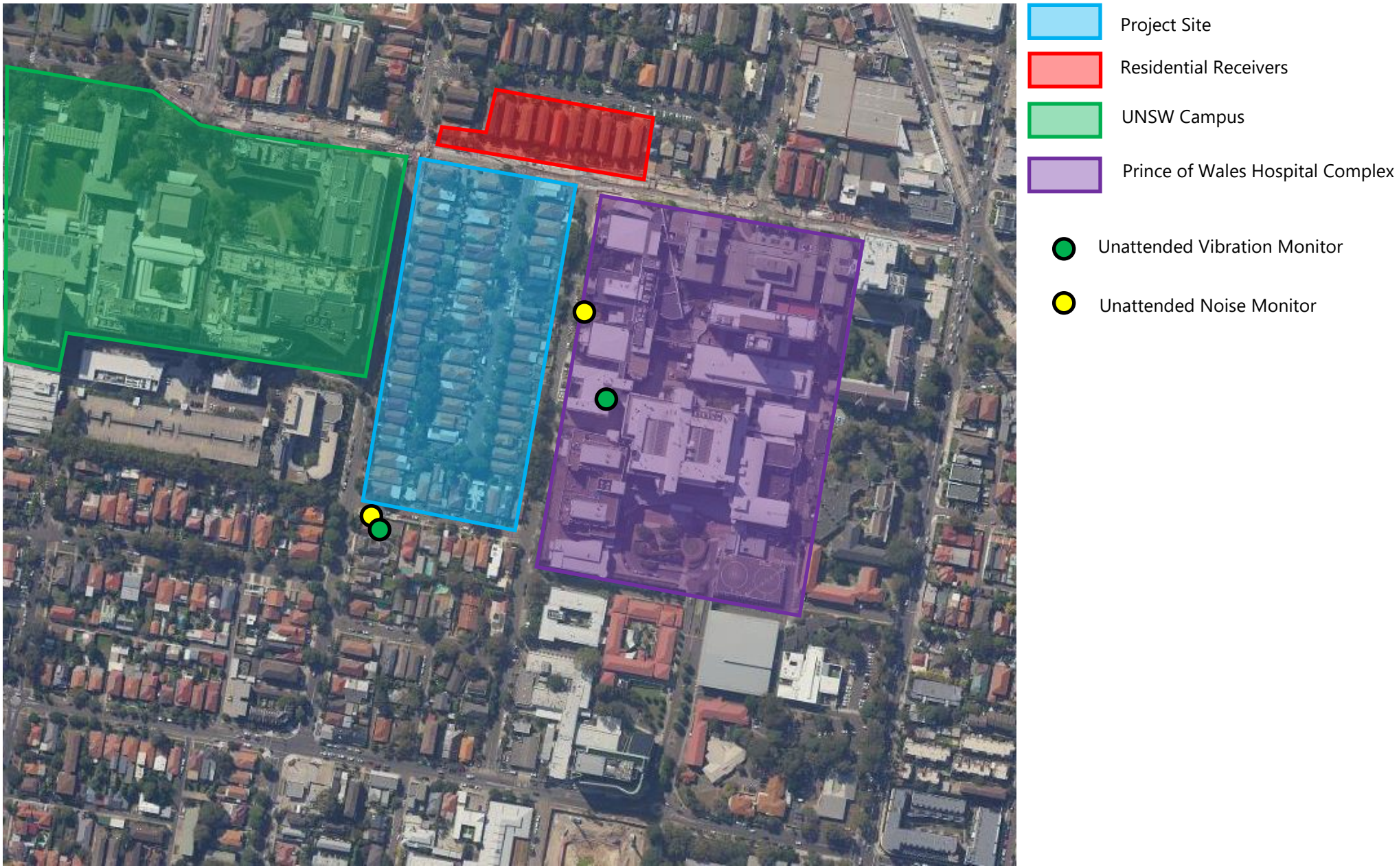
7.1.1 Nearest Noise and Vibration Sensitive Receivers

The nearest sensitive receivers to the Project site that will be potentially affected by noise and vibration are surrounding residential, educational, and hospital premises:

Site investigation indicates that the nearest noise/vibration receivers are below:

Receiver 1 – Randwick prince of Wales Hospital Complex located along the eastern boundary of the project site;
Receiver 2 – UNSW Building situated along the Western Boundary of the project site across Botany Street, Randwick.
Receiver 3 – Residential Dwellings situated along the Northern Boundary of the project site from 46 Botany Street to 18 High Street, Randwick.
Receiver 4 – Residential Dwellings situated along the Southern boundary of the project site from 103 Botany Street to 15 Magill Street, Randwick.

Buildings surrounding the site are set back various distances from their property boundaries but the distances above are from the receiver property boundary to the construction site property boundary.


Project Site
Residential Receivers
UNSW Campus
Prince of Wales Hospital Complex
Unattended Vibration Monitor
Unattended Noise Monitor

8 BACKGROUND NOISE LEVELS

Acoustic Logic Consultancies background noise logging has been used in conjunction with Acoustic Studio's background logging data to determine the rating background noise level for the project site and surrounding receivers.

Background Noise levels which will be used as a basis for this assessment are detailed below.

8.1 NOISE ENVIRONMENT

The pre-existing noise environment was measured during the SSD application stage and is documented in Section 4 of the EIS / SSD [2]. This has been used to establish the relevant construction noise criteria for the project.

8.2 MEASUREMENT EQUIPMENT

Unattended noise monitoring was conducting using one Acoustic Research Laboratories Pty Ltd noise logger. The logger was programmed to store 15-minute statistical noise levels throughout the monitoring period. The equipment was calibrated at the beginning and the end of each measurement using a Rion NC-73 calibrator; no significant drift was detected. All measurements were taken on A-weighted fast response mode.

8.3 MEASUREMENT LOCATION

An unattended noise monitor was installed on ground level along the southern boundary of the proposed project site at 103 Botany Street, Randwick.

8.4 MEASUREMENT PERIOD

Acoustic Logic Consultancy conducted unattended noise monitoring from Friday the 22nd of November to Friday the 4th of December 2019.

8.5 MEASURED BACKGROUND NOISE LEVELS

The background noise levels established from the unattended noise monitoring are detailed in the Table below.

NSW EPA's RBL assessment procedure requires determination of background noise level for each day (the ABL) then the median of the individual days as set out for the entire monitoring period.

This report provides detailed results of the unattended noise monitoring. Weather affected data was excluded from the assessment. The processed Rating Background Noise Levels (lowest 10th percentile noise levels during operation time period) are presented in Table below.

Unattended and attended noise measurements have been undertaken as per the procedures outlined in Fact Sheet A and B of the NSW EPA Noise Policy for Industry.

Weather affected data (rain fall and wind speeds above 5m/s) have been excluded from the assessment as per Fact Sheet A and B. Where interval periods (day, evening and night) have 18%, 13% and 11% respectively, these periods have been excluded from the assessment.

Table 3 – Unattended Noise Monitor – Logger Location 1 – Rating Background Noise Level

Date	dB(A)$L_{90(Period)}$ [1]			
	6am – 7am	**7am – 6pm**	**6pm – 10pm**	**10pm – 1am**
22nd November 2019	44	45	43	43
23rd November 2019	43	43	45	43
24th November 2019	46	52	48	44
25th November 2019	46	45	44	45
26th November 2019	43	46	42	43
27th November 2019	43	45	43	41
28th November 2019	43	46	44	42
29th November 2019	44	44	43	43
30th November 2019	45	44	47	43
1st December 2019	44	47	43	44
2nd December2019	45	46	44	42
3rd December 2019	55	50	48	43
4th December 2019	53	46	43	44
Median	**44**	**45**	**44**	**43**

Table Notes:

1. Periods marked "-" above did not collect the enough data to be considered valid as the monitor as either installed before, during or after the interval.

The following table provides a summary of the background noise data applicable for the subject site:

Table 4 – Summarised Background Noise Levels

Project Site	Monitor Location	Time Period	Acoustic Logic Measured Noise Data	Monitor Location	Acoustic Studio Measured Noise Data
Randwick Campus Redevelopment	103 Botany Street, Randwick	6am - 7am	44	7 Magill Street, Randwick	Day – 46
		7am – 6pm	45		Evening – 44
		6pm – 10pm	44		Night - 43
		10pm – 1am	43		

The lowest background noise level for each time period has been adopted in this report to setup noise emission management level, detailed adopted RBL have been summarised below:

Table 5 – RBL adopted for this assessment

Receiver	Time Period	Adopted RBL
Residential Boundary	6am – 7am	44
	6pm – 10pm	44
	10pm – 1am (second day)	43

9 NOISE MANAGEMENT TRIGGER LEVEL

Noise emissions from the bulk earthworks, excavation and construction of should satisfy the following:

- Requirements of the SSD 9113 from the minister of planning and public spaces;
- NSW EPA Interim Construction Noise Guideline (ICNG) 2009; and
- Australian Standard AS2436:2010.

9.1 REQUIRMENTS BY NSW INTERIM CONSTRUCTION NOISE GUIDELINE

The NSW EPA Interim Construction Noise Guideline (ICNG) 2009 details specific construction noise and vibration management levels applicable to construction sites within NSW.

Where feasible and practical measures may be applied to the construction site is to endeavour to comply with the noise management levels outlined in the guideline. A summary of the code is detailed below.

9.1.1 NSW EPA Interim Construction Noise Guideline (ICNG) 2009

NSW EPA INCG adopts different management levels depending on the applicable receiver type, each is discussed below.

9.1.2 Residential Receivers

EPA guidelines adopt differing strategies for noise control depending on the predicted noise level at the nearest residences:

- "Noise affected" level. Where construction noise is predicted to exceed the "noise effected" level at a nearby residence, the proponent should take reasonable/feasible work practices to ensure compliance with the "noise effected level". For residential properties, the "noise effected" level occurs when construction noise exceeds ambient levels by more than:
    - 10dB(A)Leq(15min) for work during standard construction; and
    - 5dB(A)Leq(15min) for work outside standard construction hours.
- "Highly noise affected level". Where noise emissions are such that nearby properties are "highly noise effected", noise controls such as respite periods should be considered. For residential properties, the "highly noise effected" level occurs when construction noise exceeds 75dB(A)Leq(15min) at nearby residences. Highly noise affected level only applies during standard construction hours.

Table 6 – Construction Noise Management Level

Time Period	"Noise Affected" Level dB(A)$L_{eq(15\ minutes)}$
6am to 7am	49
6pm to 10pm	49
10pm to 1am (Second Day)	48

9.1.3 Other Sensitive

Other sensitive land uses, such as schools and hospitals typically consider noise from construction to be disruptive when the properties are being used. The table below presents management levels for noise at other sensitive land uses based on the principle that the characteristic activities for each of these land uses should not be unduly disturbed.

External noise levels are to be assessed at the most affected point within 50m of the area boundary. Where internal noise levels cannot be measured, external noise levels may be used. A conservative estimate of the difference between internal and external noise levels is 10 dB for buildings other than residences. Some buildings may achieve greater performance, such as where windows are fixed (that is, cannot be opened)

Table 7 – Noise at Sensitive Land Uses

Land Uses	Management Trigger Level $L_{Aeq(15min)}$
Hospital Wards and Operating Theatres	Internal noise level 45dB(A)

9.2 AUSTRALIAN STANDARD AS 2436:2010 "GUIDE TO NOISE CONTROL ON CONSTRUCTION, MAINTENANCE AND DEMOLITION SITES"

Australian Standard AS 2436 provides guidance on noise and vibration control in respect to construction and demolition sites, the preparation of noise and vibration management plans, work method statements and impact studies.

The standard states that:

- "Some construction and demolition activities are by their very nature noisy. The authorities responsible for setting noise level criteria for essential works will take note of the constraints imposed by such activities, especially when they are of short duration."
- Construction, demolition and maintenance works pose different problems of noise and vibration control when compared with most other types of industrial activity, since (a) they are mainly carried on in the open; (b) they are often temporary in nature although they may cause considerable disturbance whilst they last; (c) the noise and vibration arise from many different activities and kinds of plant, and their intensity and character may vary greatly during different phases of the work; and (d) the sites cannot be separated by planning controls, from areas that are sensitive to noise and vibration.

The standard provides advice and guidelines for the prediction of impacts and the methods available to manage impacts. The guideline promulgates feasible and reasonable mitigation strategies and controls, and stakeholder liaison, in the effort to reach a realistic compromise between site activities and impacts on neighbouring properties.

9.3 CONSTRUCTION TRAFFIC NOISE

The RNP provides criteria for traffic noise from new roads or additional traffic generated on roads from land use development. The criteria apply to additional traffic generated on public roads from construction vehicles / traffic.

When considering land use redevelopment and the impact on sensitive land uses (residential / schools / hospitals / recreational) the RNP guideline states that ". In assessing feasible and reasonable mitigation measures, an increase of up to 2 dB" in relation to existing noise levels "represents a minor impact that is considered barely perceptible to the average person.

9.4 SUMMARISED CONSTRUCTION NOISE MANAGEMENT TRIGGER LEVELS

Construction noise management levels applicable to the development have been determined based on the minimum background noise level recorded and the construction noise guidelines detailed in 7of this report. Construction noise management levels of the site are detailed in Table 4 below.

Table 8 – External Construction Noise Management Levels

Receiver	Category	Time of Day	Background Noise Level dB(A) $L_{90(Period)}$	Construction Noise Management Trigger Levels dB(A) $L_{eq(15\ Minute)}$
Receiver 3 and 4 (Residential)	Monday to Friday	6am to 7am (BG + 5)	44	49
		6pm to 10pm (BG + 10)	44	54
		10:00pm to 1:00am (BG + 5)	43	48
	Saturday	6am to 10pm (BG + 10)	44	54
	Saturday	5:00pm to 10:00pm (BG + 5)	44	49
	Sunday	No works on Sunday	-	-
Receiver 1, 2 (Other Sensitive Land Uses)	Monday – Sunday	Applies when properties are being used (Internal)	-	45 (internal)

10 VIBRATION CRITERIA

10.1 CONSTRUCTION VIBRATION

Vibration caused by construction at any residence or structure outside the subject site must be limited to:

- For structural damage vibration, German Standard DIN 4150-3 Structural Vibration: Effects of Vibration on Structures; and
- For human exposure to vibration, British Standard BS 6472 – 'Guide to Evaluate Human Exposure to Vibration Buildings (1Hz to 80Hz).
- For sensitive equipment.

The criteria and the application of this standard are discussed in separate sections below.

10.2 STRUCTURE DAMAGE CRITERIA

German Standard DIN 4150-3 (1999-02) provides vibration velocity guideline levels for use in evaluating the effects of vibration on structures. The criteria presented in DIN 4150-3 (1999-02) are presented in Table 2.

It is noted that the peak velocity is the absolute value of the maximum of any of the three orthogonal component particle velocities as measured at the foundation, and the maximum levels measured in the x- and y-horizontal directions in the plane of the floor of the uppermost storey.

Table 9 – DIN 4150-3 (1999-02) Safe Limits for Building Vibration

Type of Structure		Peak Particle Velocity (mms^{-1})			
		At Foundation at a Frequency of			Plane of Floor of Uppermost Storey
		< 10Hz	10Hz to 50Hz	50Hz to 100Hz	All Frequencies
1	Buildings used in commercial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40
2	Dwellings and buildings of similar design and/or use	5	5 to 15	15 to 20	15
3	Structures that because of their particular sensitivity to vibration, do not correspond to those listed in Lines 1 or 2 and have intrinsic value (e.g. buildings that are under a preservation order)	3	3 to 8	8 to 10	8

10.3 HUMAN EXPOSURE TO VIBRATION

The British Standard BS 6472 – 'Guide to Evaluate Human Exposure to Vibration Buildings (1Hz to 80Hz) will be used to assess construction vibration for human comfort.

This guideline provides procedures for assessing tactile vibration and regenerated noise within potentially affected buildings. The recommendations of this guideline should be adopted to assess and manage vibration from the site. Where vibration exceeds, or is likely to exceed, the recommended levels then an assessment of reasonable and feasible methods for the management of vibration should be undertaken.

Table 10 – BS 6472 Vibration Criteria

		RMS acceleration (m/s^2)		RMS velocity (mm/s)		Peak velocity (mm/s)	
Place	**Time**	**Preferred**	**Maximum**	**Preferred**	**Maximum**	**Preferred**	**Maximum**
Continuous Vibration							
Residences	Daytime	0.01	0.02	0.2	0.4	0.28	0.56
Offices		0.02	0.04	0.4	0.8	0.56	1.1
Workshops		0.04	0.08	0.8	1.6	1.1	2.2
Impulsive Vibration							
Residences	Daytime	0.3	0.6	6.0	12.0	8.6	17.0
Offices		0.64	1.28	13.0	26.0	18.0	36.0
Workshops		0.64	1.28	13.0	26.0	18.0	36.0

Note 1: Continuous vibration relates to vibration that continues uninterrupted for a defined period (usually throughout the daytime or night-time), e.g. continuous construction or maintenance activity. (DECC, 2006)

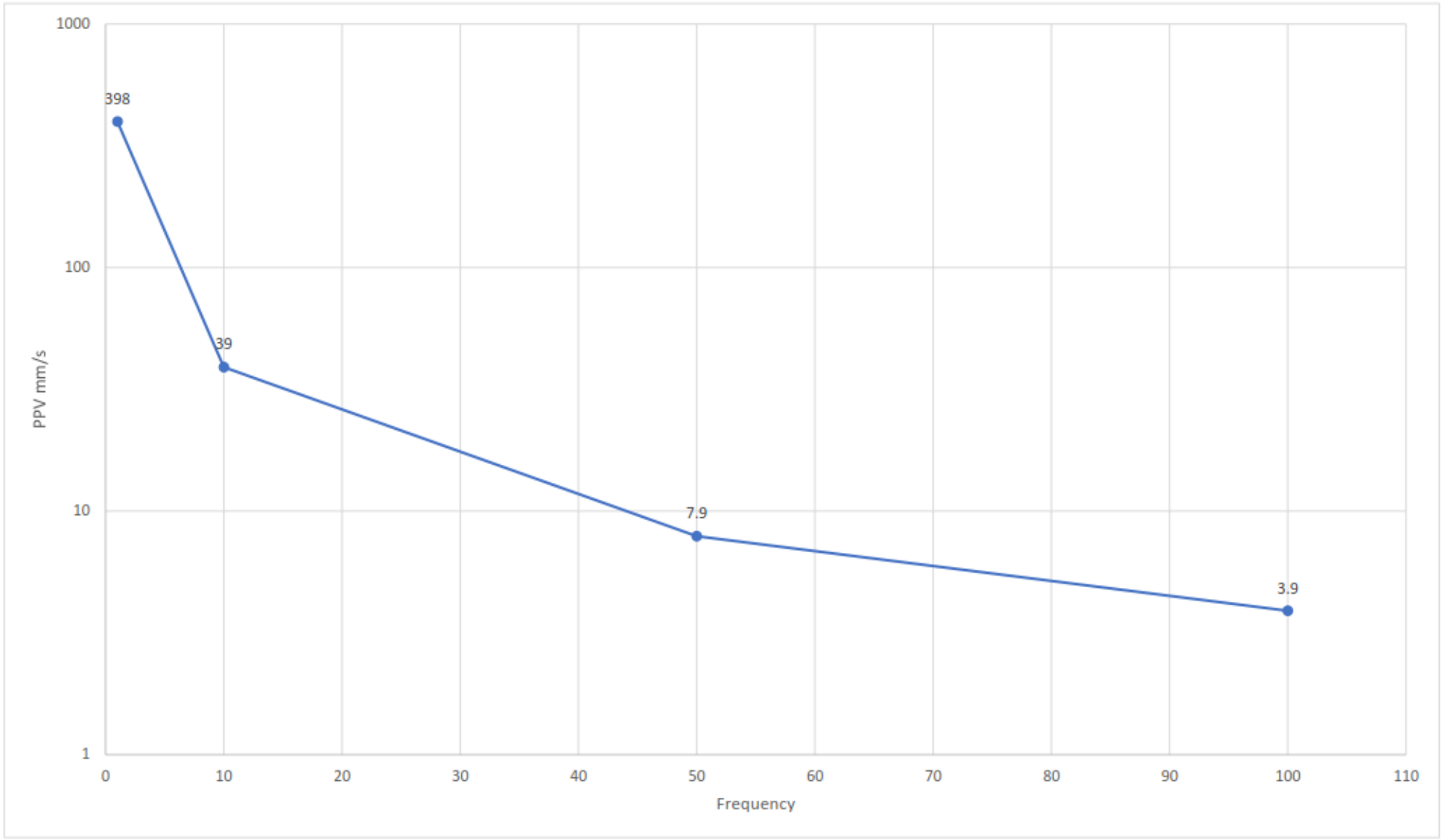
Note 2: Impulsive vibration relate to vibration that builds up rapidly to a peak followed by a damped decay and that may or may not involve several cycles of vibration (depending on frequency and damping), with up to three occurrences in an assessment period, e.g. occasional loading and unloading, or dropping of heavy equipment (DECC, 2006).

10.4 SENSITIVE EQUIPMENT VIBRATION CRITERIA

Acoustic Logic Consultancy have been advised that sensitive equipment is located within The Prince of Wales Hospital Foundation building with a nominated criterion of 2.5 m/s2. The corresponding Peak Particle Velocity has been calculated and is presented in the table and graph below.

Table 11 – Vibration Limit to Vibration Sensitive Machines

Sensitive Equipment	Peak Particle Velocity (mms-1)				
	At a Frequency of				Recommended Limit
	1Hz	10Hz	50Hz	100Hz	
	398	39	7.9	3.9	3.9


Sensitive Equipment Vibration Criteria PPV
1000
100
10
1
PPV mm/s
398
39
7.9
3.9
0
10
20
30
40
50
60
70
80
90
100
110
Frequency

11 MAIN WORKS NOISE AND VIBRATION ASSESSMENT

Potential sources of vibration and ground-borne noise during the Project works include:

- Construction and excavation plant including rock-breakers and jack hammers.
- Grinding, cutting and drilling of building structures.

Vibration and ground-borne noise impacts are likely to be highest during the excavation and piling work stages of the Project, when equipment such as rock breakers, jackhammers and piling rigs are used.

11.1 NOISE AND VIBRATION SOURCES

11.1.1 Construction Noise Assessment Methodology

A preliminary assessment of the likely noise impacts of the proposed works on the most-affected receivers surrounding the site was included in the project EIS <update for revised construction details>.

The assessment considered the following:

- Typical activities considered in the noise impact assessment are as detailed in Sections above.
- Noise management levels at sensitive receiver location as outlined in Section 11.
- Noise level predictions calculated using the noise data provided in section 11
- Noise level predictions considering distance attenuation only. This is appropriate because of the small distances between the site and surrounding receivers.
- The noise level predictions are based on assumptions that represent reasonable worst-case scenarios:
    - LAeq noise levels are predicted for the operations of the nearest works area on the site to each of the nearest sensitive receiver location.
    - The predictions consider a range from individual tasks and associated equipment up to the cumulative noise contribution from all key activities and corresponding equipment with plant running simultaneously for each phase and main task.
    - The predictions assume continuous operation of equipment / plant over the 15-minute assessment period, unless otherwise stated.

11.2 NOISE ASSESSMENT RESULTS

Noise from the worst-case construction works for each phase of the development have been predicted to the nearest most affected sensitive receivers. The predicted noise levels are presented in this section.

The following presents the predicted noise levels for each item of typically louder plant. Noise has been predicted to surrounding sensitive uses. The loudest typical appliances for each phase has been included and presented as a cumulative assessment.

The proposed construction works proposed for the site will include the following:

- Bulk Earthworks;
- Construction Phase.

The proposed works have been divided into a number of main work phase, along with the main noise producing equipment and activities likely to occur in each phase.

Table 12 – Excavation and Construction Activities

Construction Activity	Equipment	Sound Power Level dB(A)L_{max}
Bulk Excavation/Excavation Phase	Excavator Hydraulic Hammer	120
	Excavator Bucket	110
	Saw Rock Cutting	105
	CFA Piling	105
General Construction Works	Trucks	105
	Concrete Pumps	110
	Crane	105
	Concreting Helicopter	105
	Powered Hand Tools	94

The noise levels presented in the above table are derived from the following sources:

1. Table D2 of Australian Standard 2436-1981;
2. Data held by this office from other similar studies.
3. Noise from the worst-case construction works for each phase of the development predicted to the nearest most affected sensitive receiver.

11.3 SOUND PLAN MODELLING

Noise monitoring has been undertaken for the proposed construction work to the buildings surrounding the site.

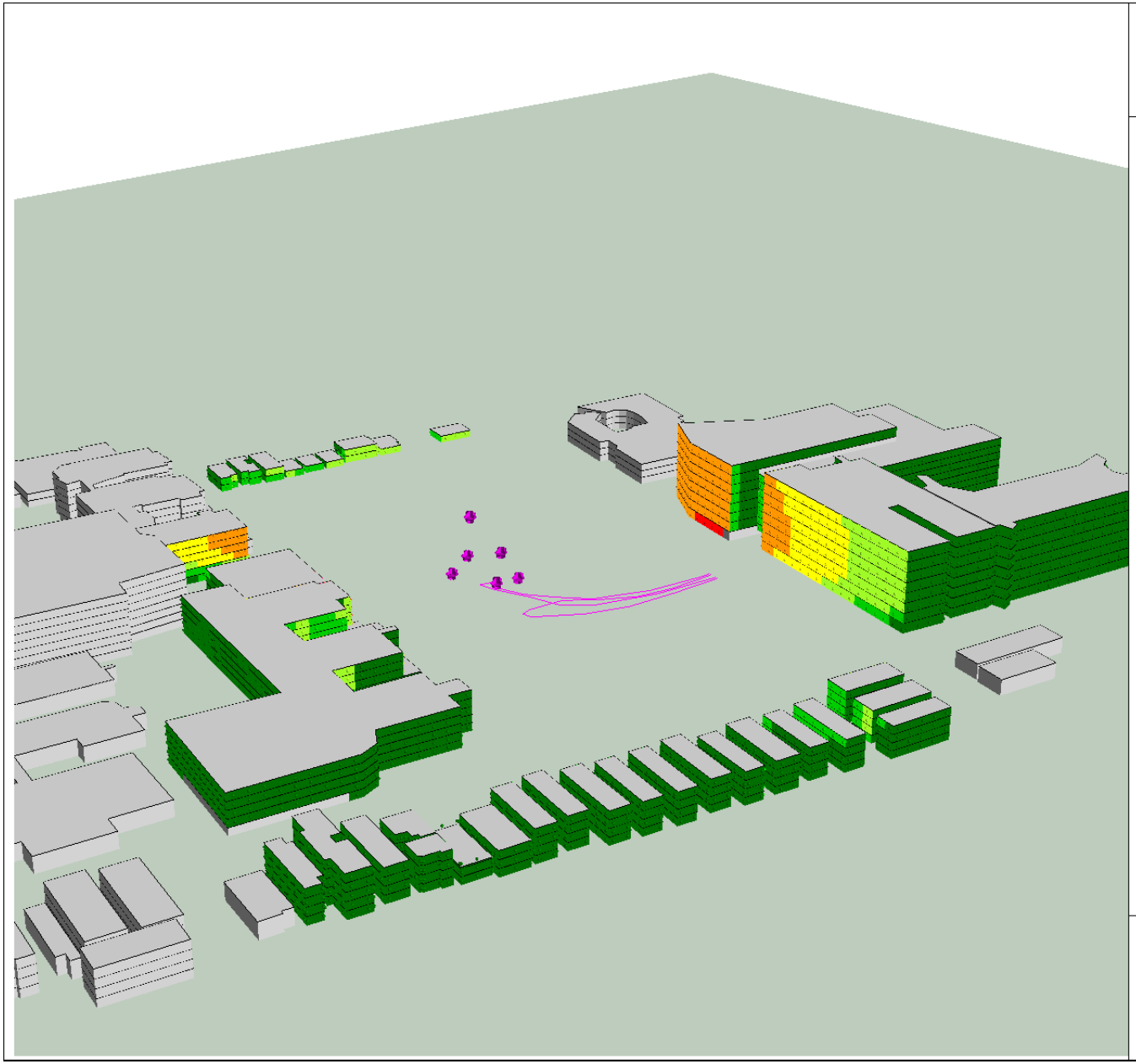
The noise sources are:

Table 13 – Noise Source Data

Time Period	Major Equipment	Sound Power Level dB(A)
6am to 7am	Concrete Pump	110
	North Crane	105
	2 Trucks	105 each
	4 Power Hand Tool	94 each
6pm to 10pm	1 Excavator with Hydraulic Hammer	120
	1 Excavator with Bucket	110
	1 Concrete pump	110
	2 Crane	105 each
	2 Concrete Helicopter	105 each
	1 Truck Engine	105
	1 Saw Rock Cutting	105
	1 CFA Piling	105
	4 Powered Hand Tools	94 each
10pm to 1am	Concrete Pump	110
	North Crane	105
	2 Concreting Helicopter	105 each
	Trucks	105 each
	4 Power Hand Tool	94 each

A noise map has been prepared using SoundPlan™ modelling software implementing the ISO 9613-2:1996 *"Acoustics – Attenuation of Sound During Propagation Outdoors – Part 2: General Method of Calculation"* noise propagation standard.

Please see the figures below for further detail.



Randwick Campus Redevelopment

6am - 7am Construction Noise Prediction

1xConcrete Pump - 110dB(A) SWL
1xCrane (North Only) - 105dB(A) SWL
2xConcreting Helicopter - 105dB(A) SWL
2xTruck Engine @ 10km/h - 105dB(A) SWL
4xPowered Hand Tools - 94dB(A) SWL

Prepared by: S. Giannikopoulos
Date: 16/04/2020

Noise Level L_{eq}
in dB(A)

< 57
57 - 59
59 - 61
61 - 63
63 - 65
65 - 67
67 - 69
69 - 71
71 - 73
73 - 75
75 - 77
>= 77

Signs and symbols

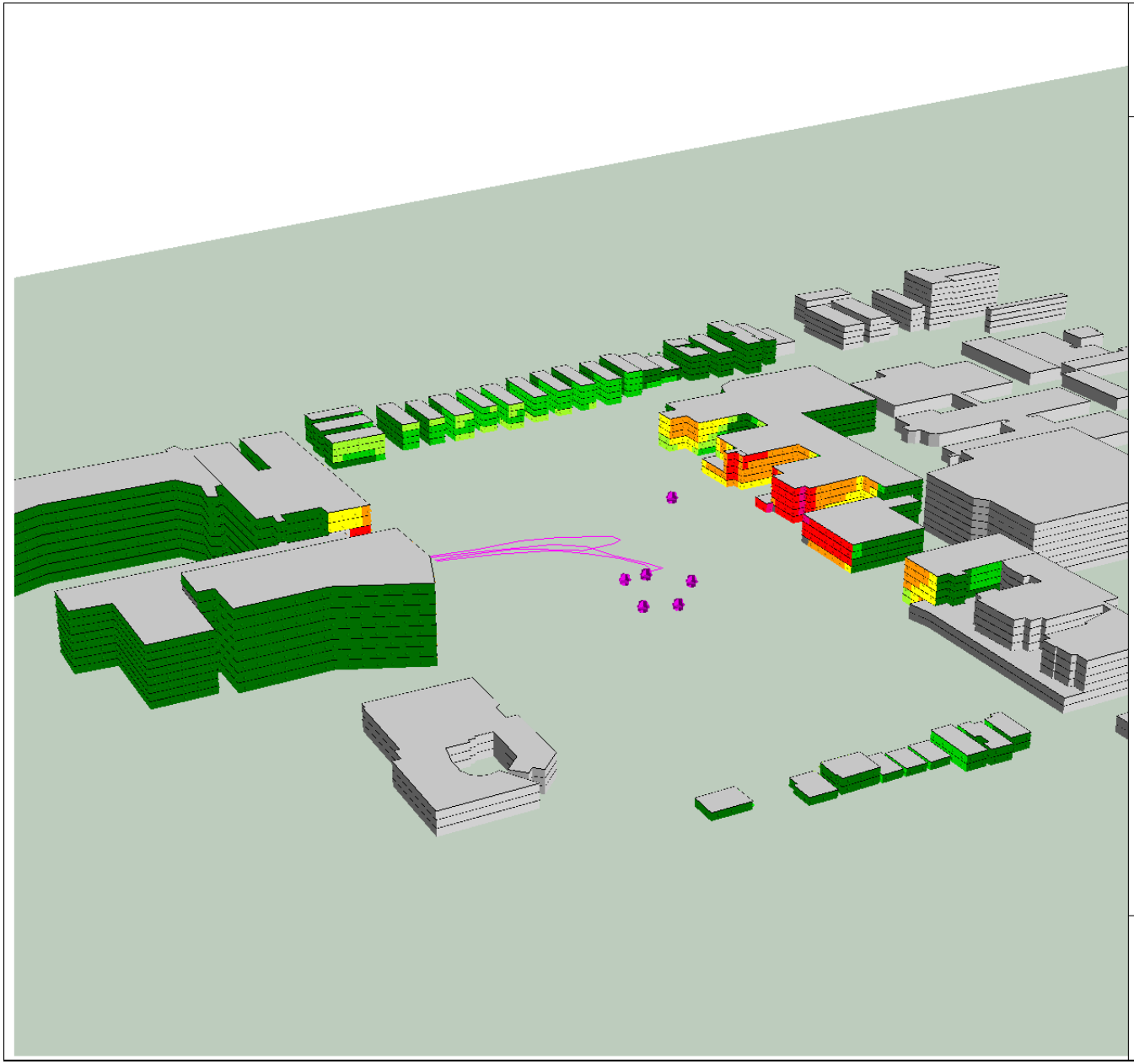
- Surface
- Receiver
- Point source

Facade Noise Map

- Facade point
- Line source

Length scale 1:5796
0 30 60 120 180 240 m

ACOUSTIC LOGIC



Randwick Campus Redevelopment

6am - 7am Construction Noise Prediction

1xConcrete Pump - 110dB(A) SWL
1xCrane (North Only) - 105dB(A) SWL
2xConcreting Helicopter - 105dB(A) SWL
2xTruck Engine @ 10km/h - 105dB(A) SWL
4xPowered Hand Tools - 94dB(A) SWL

Prepared by: S. Giannikopoulos
Date: 16/04/2020

Noise Level L_{eq}
in dB(A)

< 57
57 - 59
59 - 61
61 - 63
63 - 65
65 - 67
67 - 69
69 - 71
71 - 73
73 - 75
75 - 77
>= 77

Signs and symbols

- Surface
- Receiver
- Point source

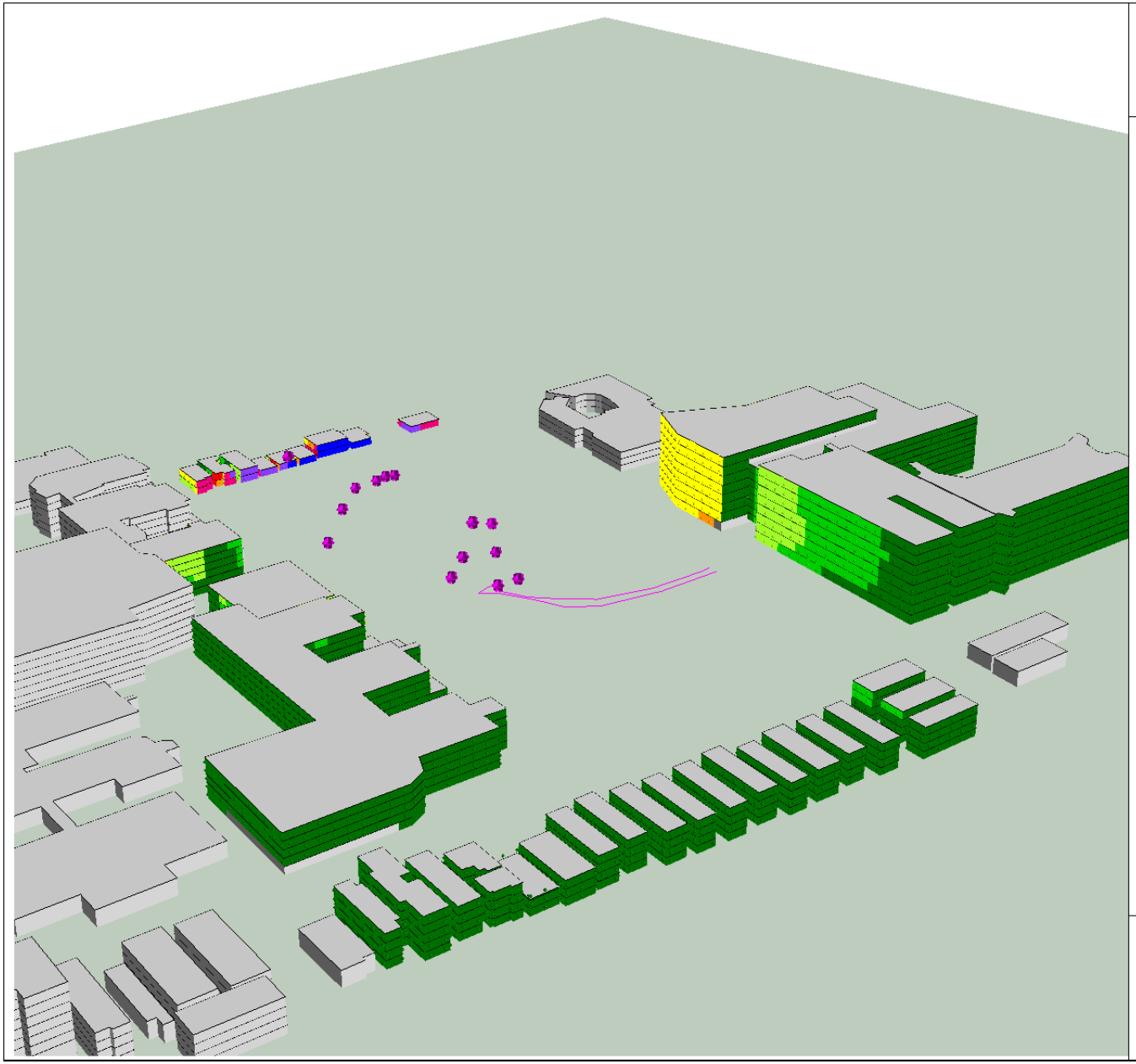
Facade Noise Map

- Facade point
- Line source

Length scale 1:5796

0 30 60 120 180 240 m

ACOUSTIC LOGIC



Randwick Campus Redevelopment

7am - 10pm Construction Noise Prediction

1xExcavator Hydraulic Hammer	- 120dB(A) SWL
1xExcavator Bucket	- 110dB(A) SWL
1xConcrete Pump	- 110dB(A) SWL
2xCrane (North & South)	- 105dB(A) SWL
2xConcreting Helicopter	- 105dB(A) SWL
1xTruck Engine @ 10km/h	- 105dB(A) SWL
1x Saw Rock Cutting	- 105dB(A) SWL
1xCFA Piling	- 105dB(A) SWL
4xPowered Hand Tools	- 94dB(A) SWL

Prepared by: S. Giannikopoulos
Date: 16/04/2020

Noise Level L_{eq}
in dB(A)

- < 65
- 65 - 67
- 67 - 69
- 69 - 71
- 71 - 73
- 73 - 75
- 75 - 77
- 77 - 79
- 79 - 81
- 81 - 83
- 83 - 85
- >= 85

Signs and symbols

- Surface
- Receiver
- Point source

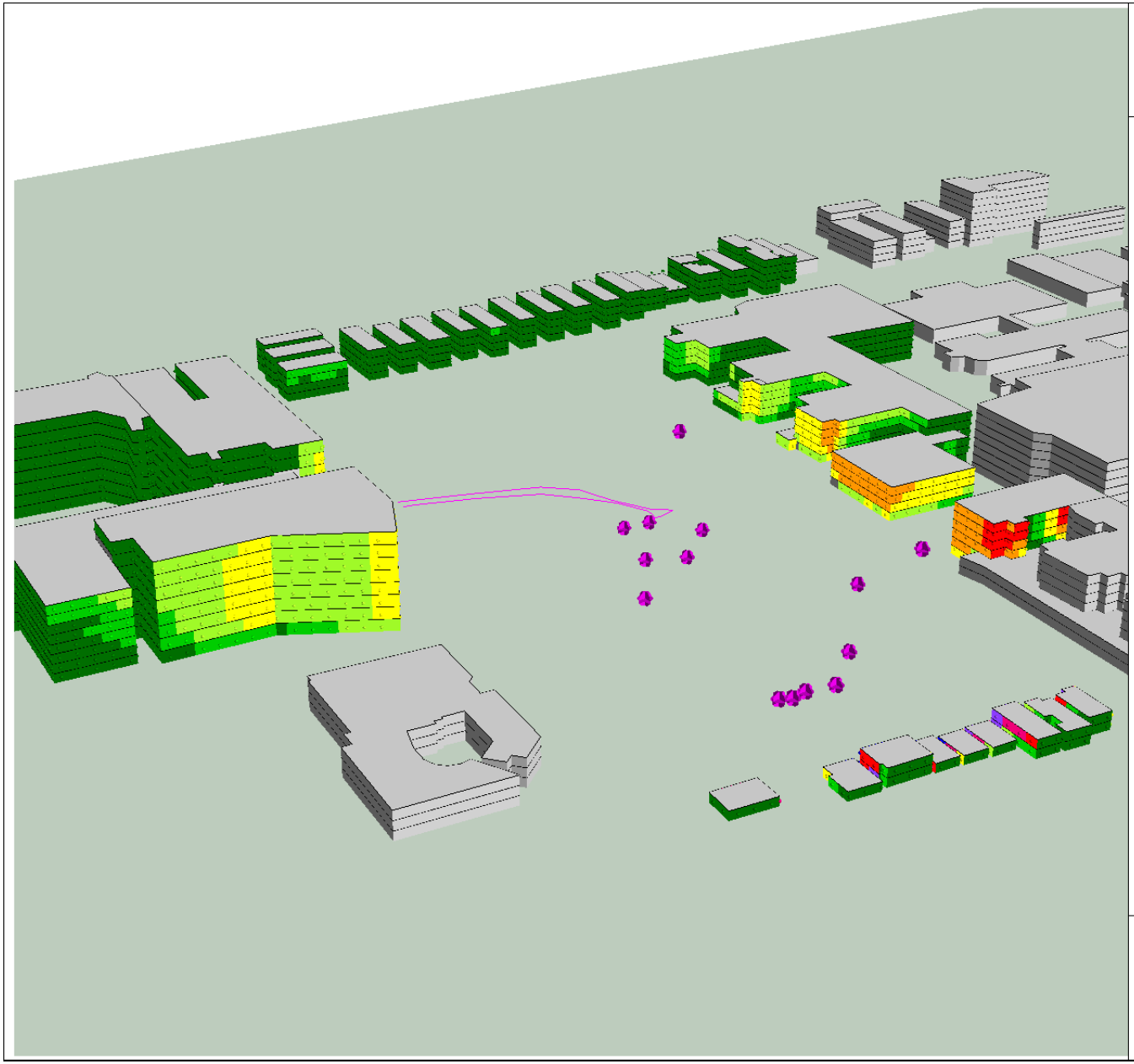
Facade Noise Map

- Facade point
- Line source

Length scale 1:5796

0 30 60 120 180 240 m

ACOUSTIC LOGIC



Randwick Campus Redevelopment

7am - 10pm Construction Noise Prediction

1xExcavator Hydraulic Hammer	- 120dB(A) SWL
1xExcavator Bucket	- 110dB(A) SWL
1xConcrete Pump	- 110dB(A) SWL
2xCrane (North & South)	- 105dB(A) SWL
2xConcreting Helicopter	- 105dB(A) SWL
1xTruck Engine @ 10km/h	- 105dB(A) SWL
1x Saw Rock Cutting	- 105dB(A) SWL
1xCFA Piling	- 105dB(A) SWL
4xPowered Hand Tools	- 94dB(A) SWL

Prepared by: S. Giannikopoulos
Date: 16/04/2020

Noise Level L_{eq} in dB(A)

- < 65
- 65 - 67
- 67 - 69
- 69 - 71
- 71 - 73
- 73 - 75
- 75 - 77
- 77 - 79
- 79 - 81
- 81 - 83
- 83 - 85
- >= 85

Signs and symbols

- Surface
- Receiver
- Point source

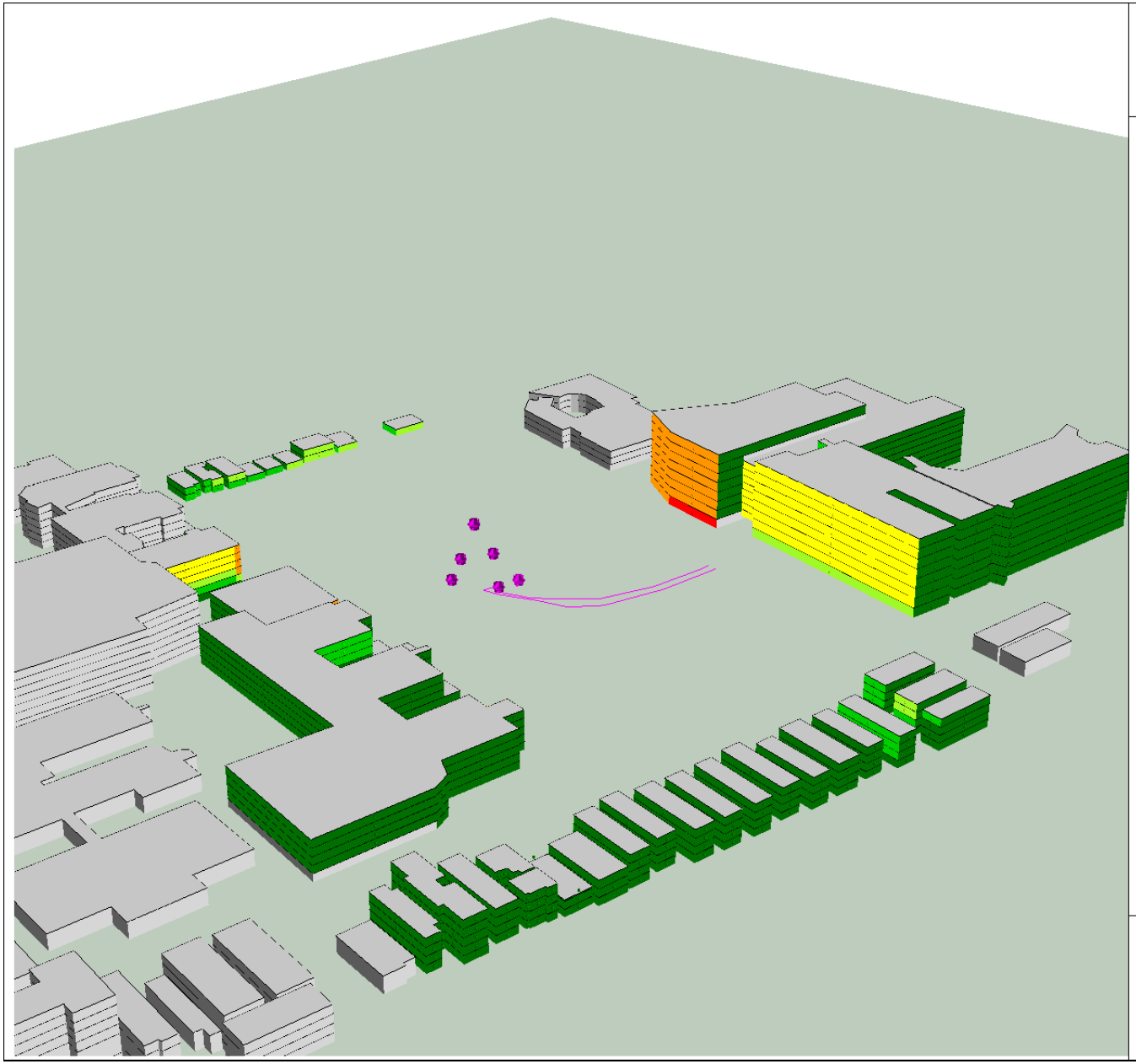
Facade Noise Map

- Facade point
- Line source

Length scale 1:5796

0 30 60 120 180 240 m

ACOUSTIC LOGIC



Randwick Campus Redevelopment

10pm - 1am Construction Noise Prediction

1xConcrete Pump - 110dB(A) SWL
1xCrane (North Only) - 105dB(A) SWL
2xConcreting Helicopter - 105dB(A) SWL
1xTruck Engine @ 10km/h - 105dB(A) SWL
4xPowered Hand Tools - 94dB(A) SWL

Prepared by: S. Giannikopoulos
Date: 16/04/2020

Noise Level L_{eq}
in dB(A)

< 57
57 - 59
59 - 61
61 - 63
63 - 65
65 - 67
67 - 69
69 - 71
71 - 73
73 - 75
75 - 77
>= 77

Signs and symbols

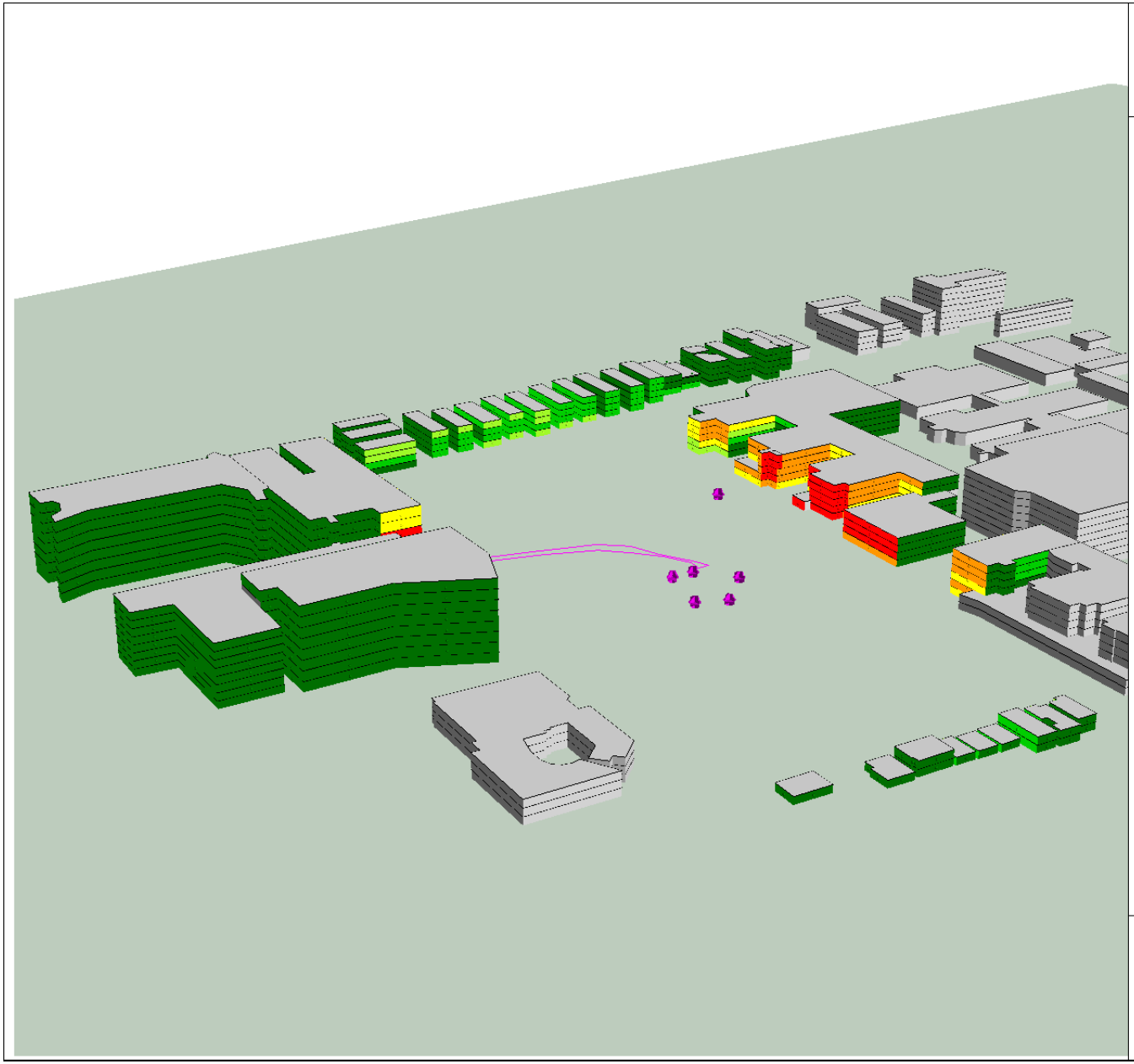
Surface
Receiver
Point source

Facade Noise Map

Facade point
Line source

Length scale 1:5796
0 30 60 120 180 240 m

ACOUSTIC LOGIC



Randwick Campus Redevelopment

10pm - 1am Construction Noise Prediction

1xConcrete Pump - 110dB(A) SWL
1xCrane (North Only) - 105dB(A) SWL
2xConcreting Helicopter - 105dB(A) SWL
1xTruck Engine @ 10km/h - 105dB(A) SWL
4xPowered Hand Tools - 94dB(A) SWL

Prepared by: S. Giannikopoulos
Date: 16/04/2020

Noise Level L_{eq}
in dB(A)

< 57
57 - 59
59 - 61
61 - 63
63 - 65
65 - 67
67 - 69
69 - 71
71 - 73
73 - 75
75 - 77
>= 77

Signs and symbols

- Surface
- Receiver
- Point source

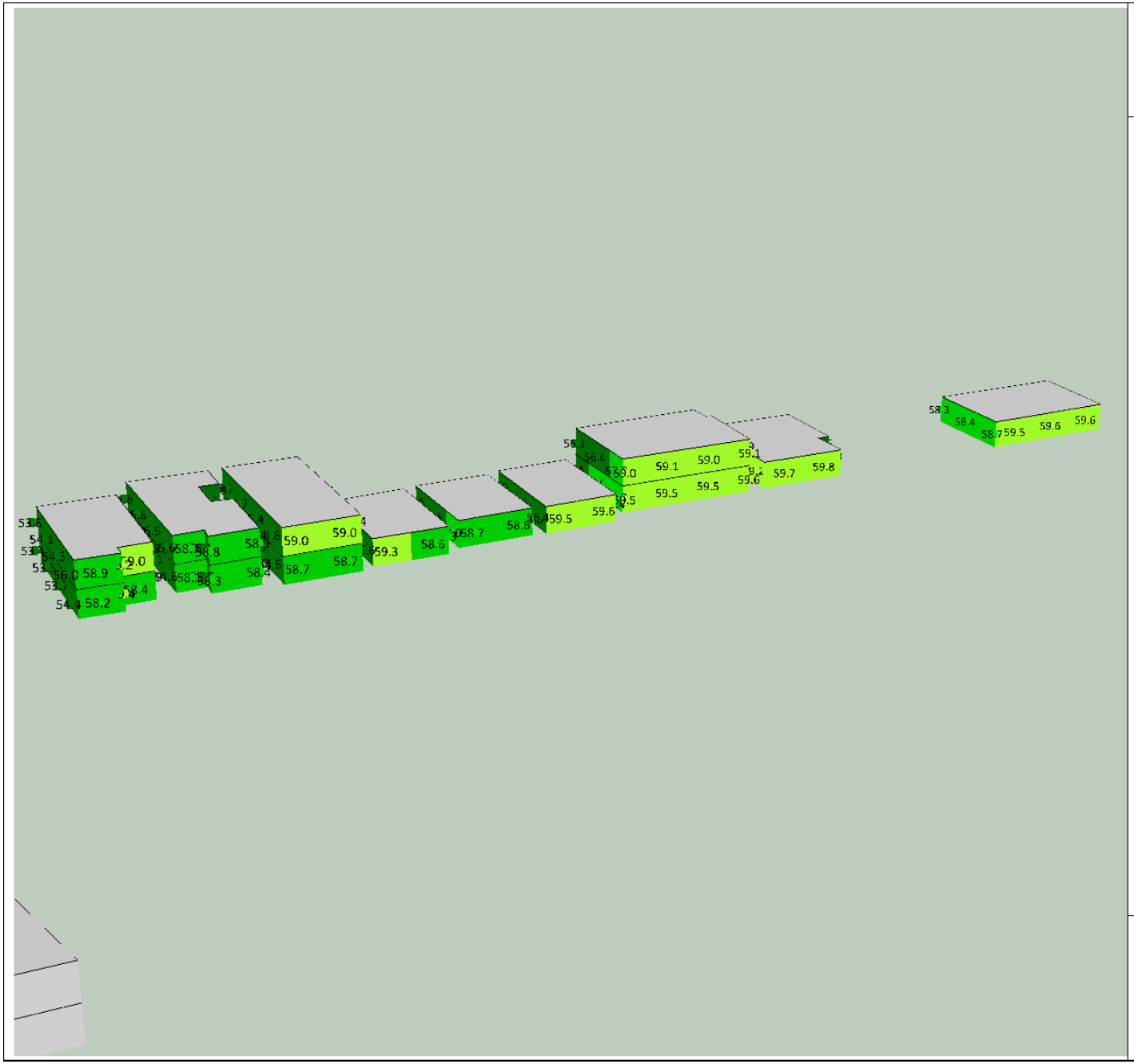
Facade Noise Map

- Facade point
- Line source

Length scale 1:5796

0 30 60 120 180 240 m

ACOUSTIC LOGIC



Randwick Campus Redevelopment

6am - 7am Construction Noise Prediction

1xConcrete Pump - 110dB(A) SWL
1xCrane (North Only) - 105dB(A) SWL
2xConcreting Helicopter - 105dB(A) SWL
2xTruck Engine @ 10km/h - 105dB(A) SWL
4xPowered Hand Tools - 94dB(A) SWL

Prepared by: S. Giannikopoulos
Date: 16/04/2020

Noise Level
L_{eq}
in dB(A)

< 57
57 - 59
59 - 61
61 - 63
63 - 65
65 - 67
67 - 69
69 - 71
71 - 73
73 - 75
75 - 77
>=77

Signs and symbols

- Surface
- Receiver
- Point source

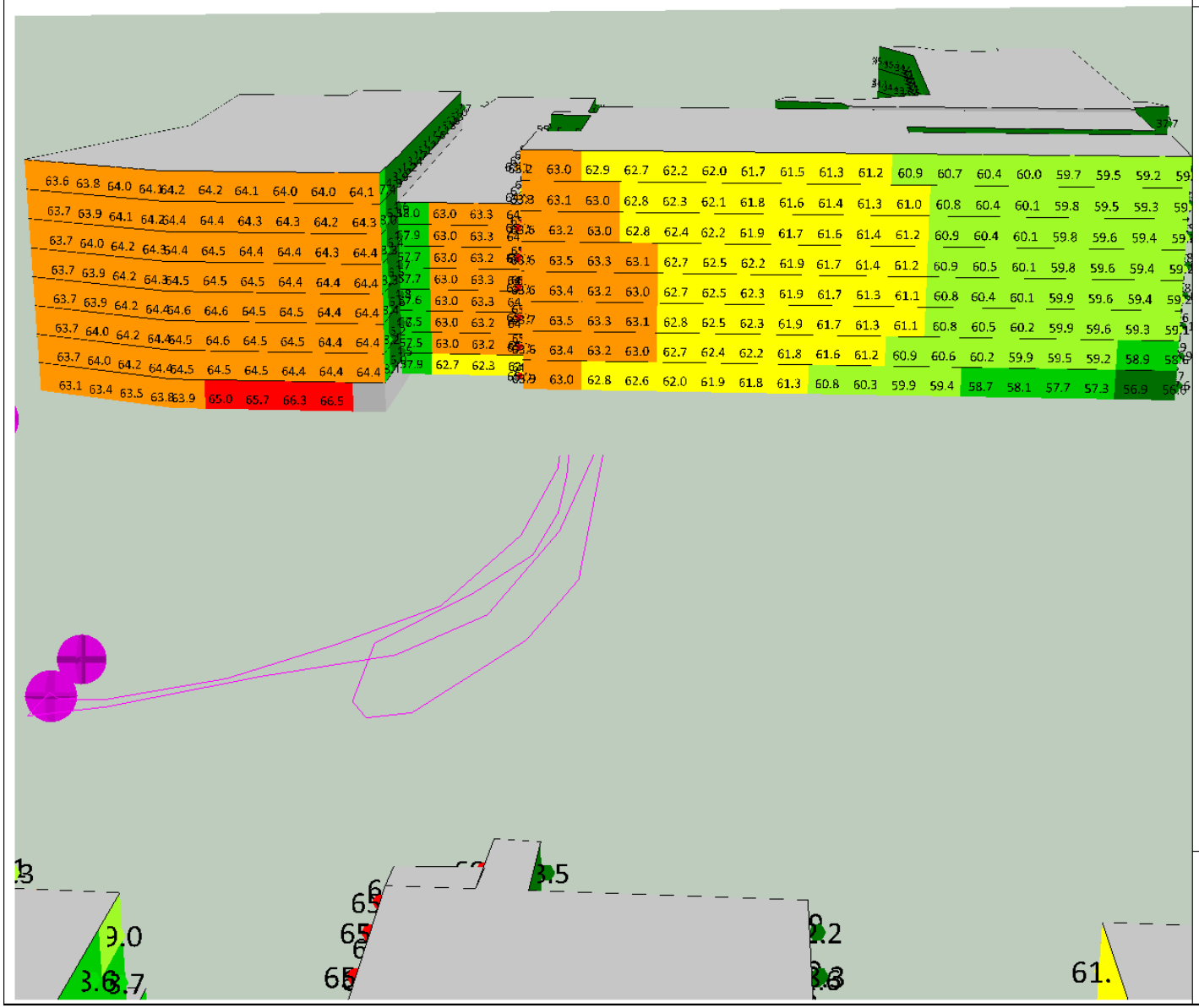
Facade Noise Map

- Facade point
- Line source

Length scale 1:5796
0 30 60 120 180 240 m

ACOUSTIC LOGIC

Randwick Campus Redevelopment



6am - 7am Construction Noise Prediction

1xConcrete Pump - 110dB(A) SWL
1xCrane (North Only) - 105dB(A) SWL
2xConcreting Helicopter - 105dB(A) SWL
2xTruck Engine @ 10km/h - 105dB(A) SWL
4xPowered Hand Tools - 94dB(A) SWL

Prepared by: S. Giannikopoulos
Date: 16/04/2020

Noise Level
L_{eq}
in dB(A)

< 57
57 - 59
59 - 61
61 - 63
63 - 65
65 - 67
67 - 69
69 - 71
71 - 73
73 - 75
75 - 77
>=77

Signs and symbols

- Surface
- Receiver
- Point source

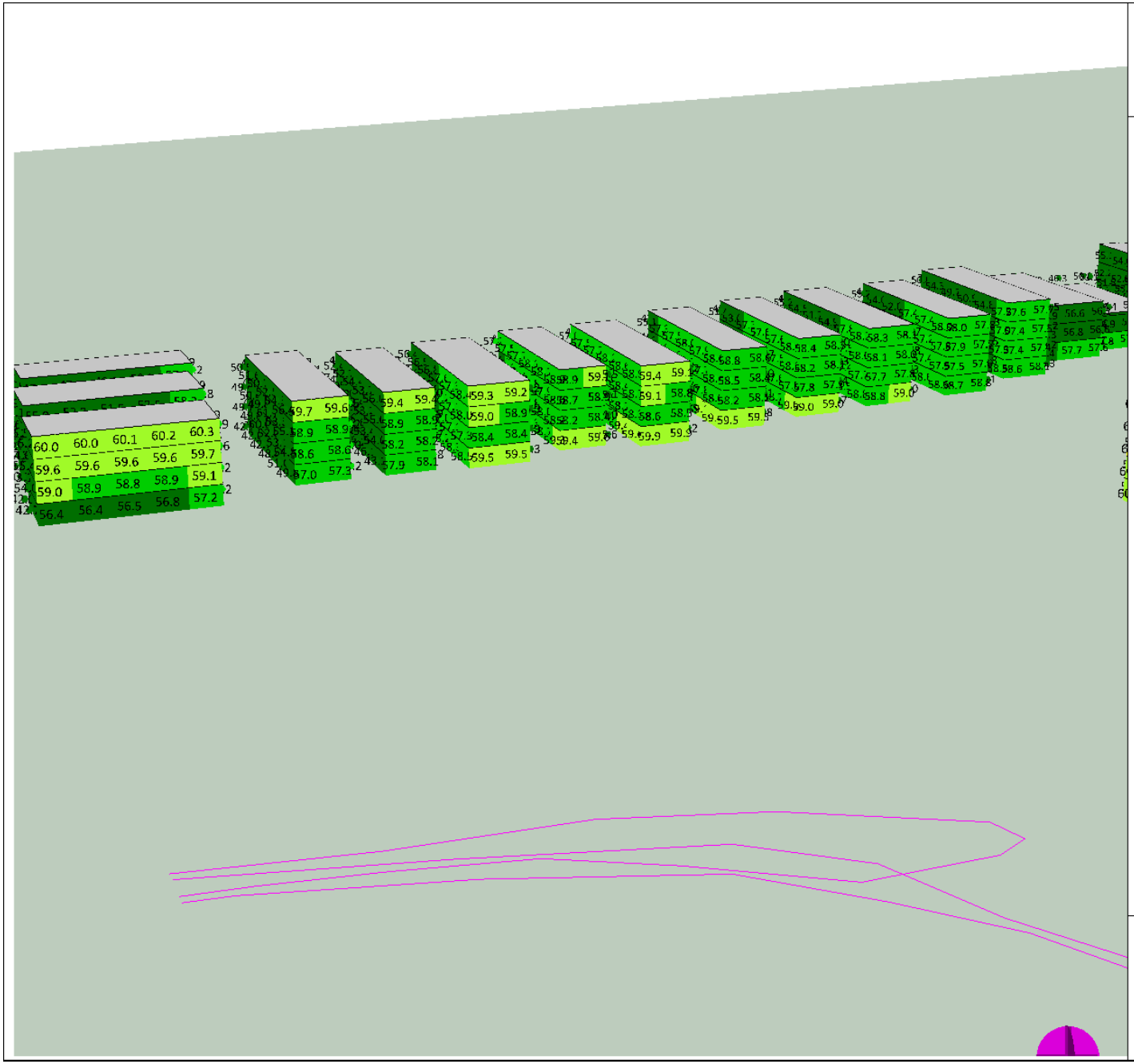
Facade Noise Map

- Facade point
- Line source

Length scale 1:5796

0 30 60 120 180 240 m

ACOUSTIC LOGIC



Randwick Campus Redevelopment

6am - 7am Construction Noise Prediction

1xConcrete Pump - 110dB(A) SWL
1xCrane (North Only) - 105dB(A) SWL
2xConcreting Helicopter - 105dB(A) SWL
2xTruck Engine @ 10km/h - 105dB(A) SWL
4xPowered Hand Tools - 94dB(A) SWL

Prepared by: S. Giannikopoulos
Date: 16/04/2020

Noise Level L_{eq}
in dB(A)

< 57
57 - 59
59 - 61
61 - 63
63 - 65
65 - 67
67 - 69
69 - 71
71 - 73
73 - 75
75 - 77
>=77

Signs and symbols

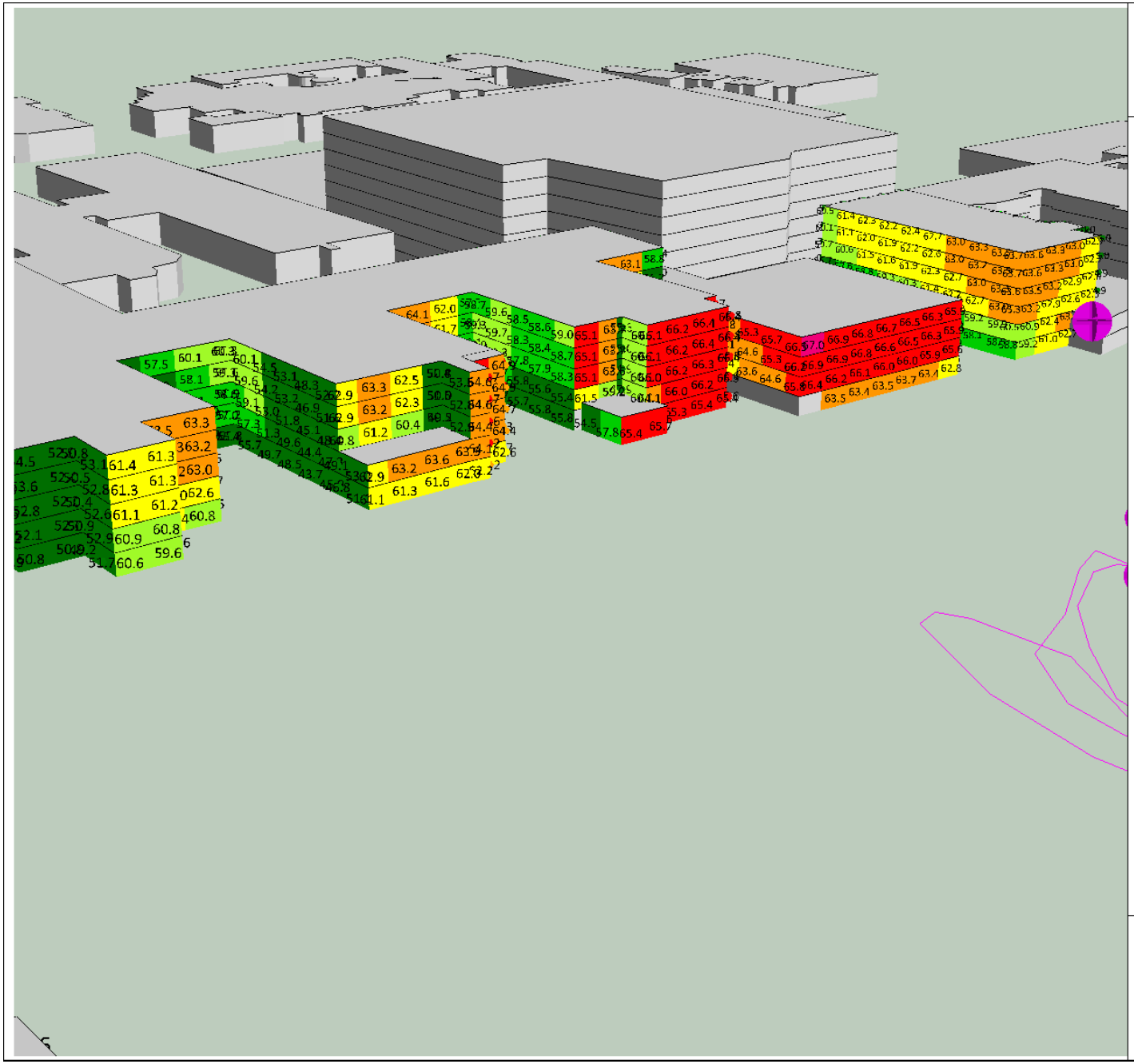
- Surface
- Receiver
- Point source

Facade Noise Map

- Facade point
- Line source

Length scale 1:5796
0 30 60 120 180 240 m

ACOUSTIC LOGIC



Randwick Campus Redevelopment

6am - 7am Construction Noise Prediction

1xConcrete Pump - 110dB(A) SWL
1xCrane (North Only) - 105dB(A) SWL
2xConcreting Helicopter - 105dB(A) SWL
2xTruck Engine @ 10km/h - 105dB(A) SWL
4xPowered Hand Tools - 94dB(A) SWL

Prepared by: S. Giannikopoulos
Date: 16/04/2020

Noise Level
L_{eq}
in dB(A)

< 57
57 - 59
59 - 61
61 - 63
63 - 65
65 - 67
67 - 69
69 - 71
71 - 73
73 - 75
75 - 77
>=77

Signs and symbols

- Surface
- Receiver
- Point source

Facade Noise Map

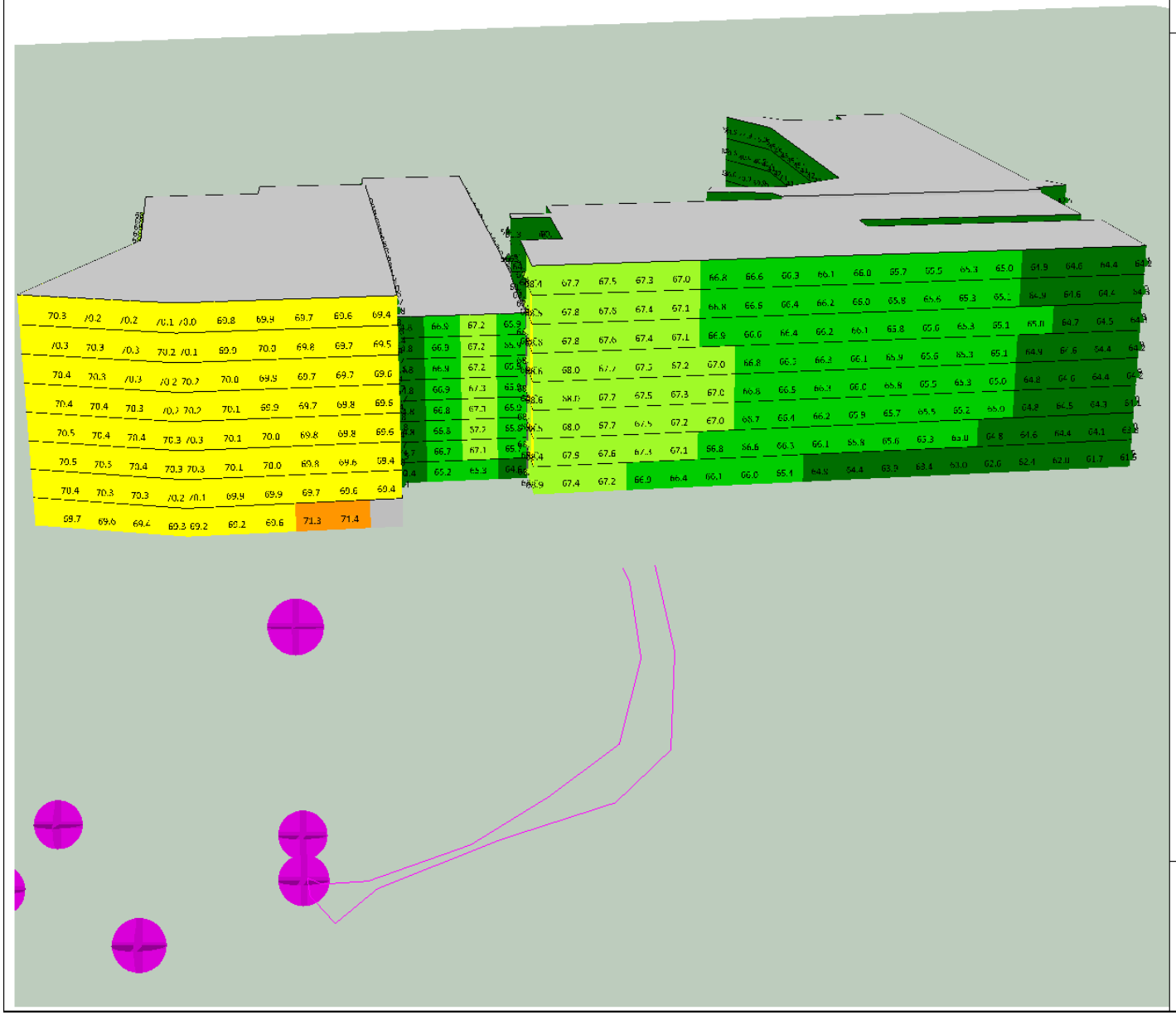
- Facade point
- Line source

Length scale 1:5796

0 30 60 120 180 240 m

ACOUSTIC LOGIC

Randwick Campus Redevelopment



7am - 10pm Construction Noise Prediction

1xExcavator Hydraulic Hammer	- 120dB(A) SWL
1xExcavator Bucket	- 110dB(A) SWL
1xConcrete Pump	- 110dB(A) SWL
2xCrane (North & South)	- 105dB(A) SWL
2xConcreting Helicopter	- 105dB(A) SWL
1xTruck Engine @ 10km/h	- 105dB(A) SWL
1x Saw Rock Cutting	- 105dB(A) SWL
1xCFA Piling	- 105dB(A) SWL
4xPowered Hand Tools	- 94dB(A) SWL

Prepared by: S. Giannikopoulos
Date: 16/04/2020

Noise Level
L_{eq}
in dB(A)

- < 65
- 65 - 67
- 67 - 69
- 69 - 71
- 71 - 73
- 73 - 75
- 75 - 77
- 77 - 79
- 79 - 81
- 81 - 83
- 83 - 85
- >= 85

Signs and symbols

- Surface
- Receiver
- Point source

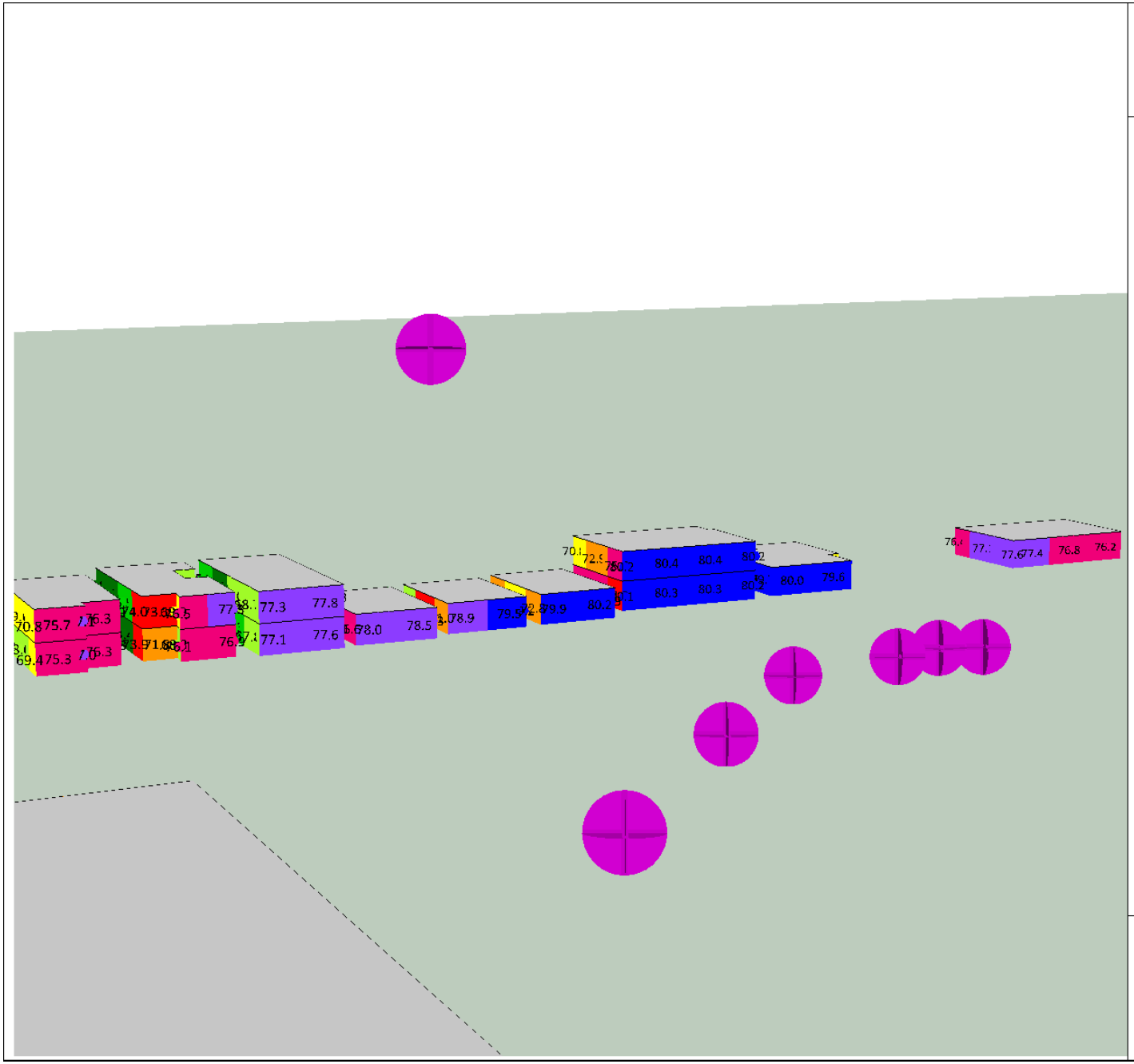
Facade Noise Map

- Facade point
- Line source

Length scale 1:5796

0 30 60 120 180 240 m

ACOUSTIC LOGIC



Randwick Campus Redevelopment

7am - 10pm Construction Noise Prediction

1xExcavator Hydraulic Hammer	- 120dB(A) SWL
1xExcavator Bucket	- 110dB(A) SWL
1xConcrete Pump	- 110dB(A) SWL
2xCrane (North & South)	- 105dB(A) SWL
2xConcreting Helicopter	- 105dB(A) SWL
1xTruck Engine @ 10km/h	- 105dB(A) SWL
1x Saw Rock Cutting	- 105dB(A) SWL
1xCFA Piling	- 105dB(A) SWL
4xPowered Hand Tools	- 94dB(A) SWL

Prepared by: S. Giannikopoulos
Date: 16/04/2020

Noise Level L_{eq} in dB(A)

- < 65
- 65 - 67
- 67 - 69
- 69 - 71
- 71 - 73
- 73 - 75
- 75 - 77
- 77 - 79
- 79 - 81
- 81 - 83
- 83 - 85
- >= 85

Signs and symbols

- Surface
- Receiver
- Point source

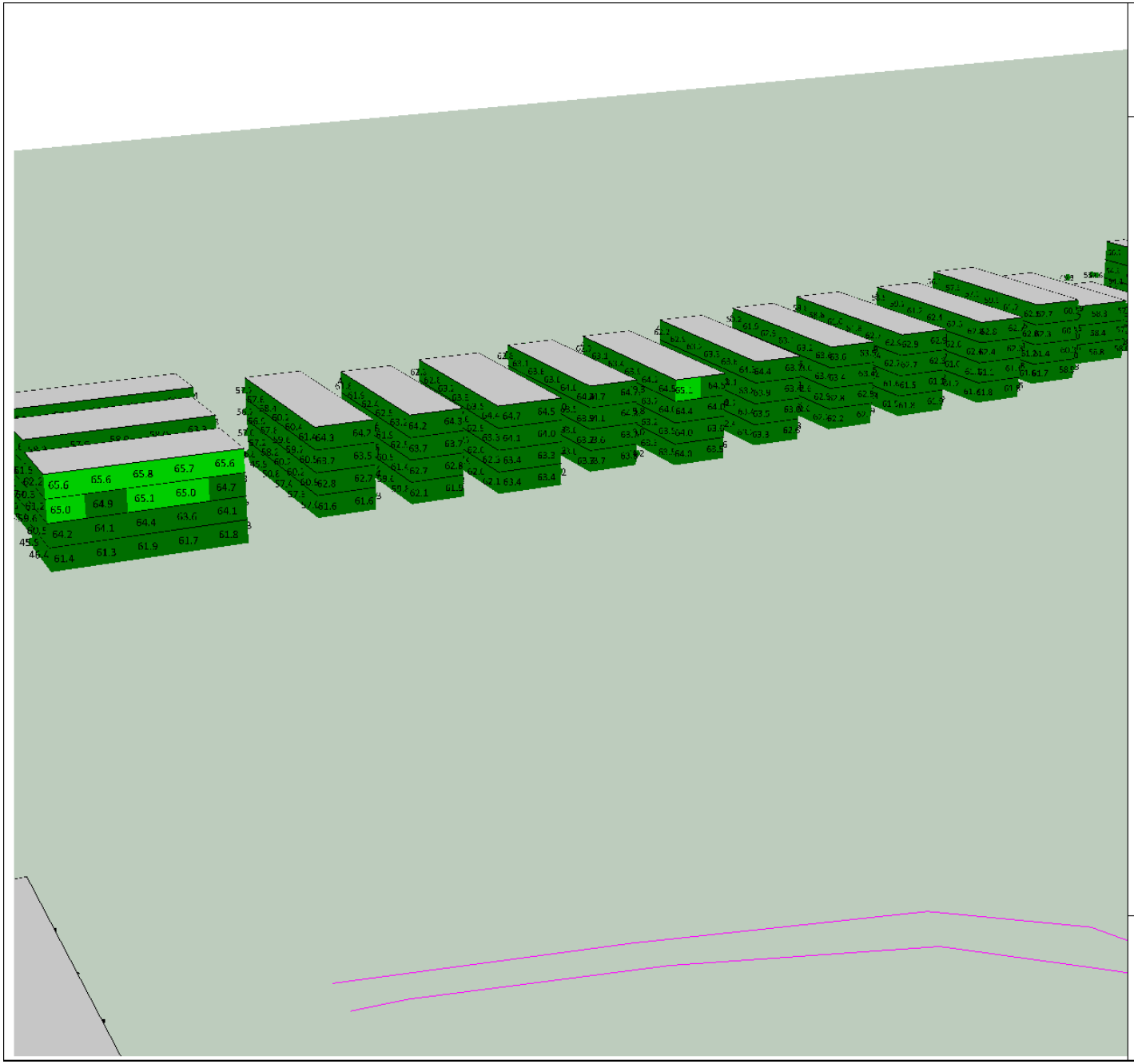
Facade Noise Map

- Facade point
- Line source

Length scale 1:5796

0 30 60 120 180 240 m

ACOUSTIC LOGIC



Randwick Campus Redevelopment

7am - 10pm Construction Noise Prediction

1xExcavator Hydraulic Hammer	- 120dB(A) SWL
1xExcavator Bucket	- 110dB(A) SWL
1xConcrete Pump	- 110dB(A) SWL
2xCrane (North & South)	- 105dB(A) SWL
2xConcreting Helicopter	- 105dB(A) SWL
1xTruck Engine @ 10km/h	- 105dB(A) SWL
1x Saw Rock Cutting	- 105dB(A) SWL
1xCFA Piling	- 105dB(A) SWL
4xPowered Hand Tools	- 94dB(A) SWL

Prepared by: S. Giannikopoulos
Date: 16/04/2020

Noise Level
L_{eq}
in dB(A)

- < 65
- 65 - 67
- 67 - 69
- 69 - 71
- 71 - 73
- 73 - 75
- 75 - 77
- 77 - 79
- 79 - 81
- 81 - 83
- 83 - 85
- >= 85

Signs and symbols

- Surface
- Receiver
- Point source

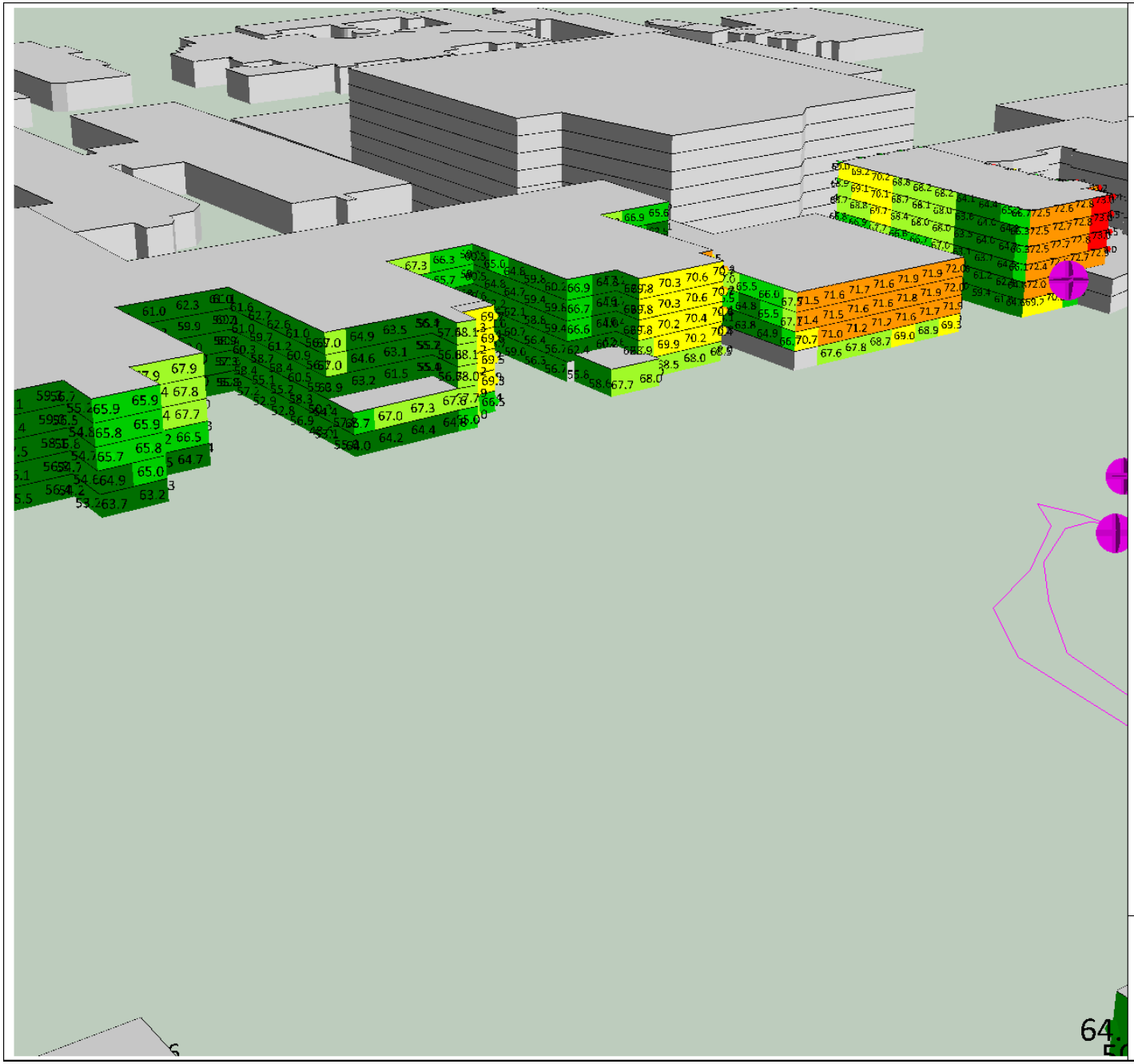
Facade Noise Map

- Facade point
- Line source

Length scale 1:5796

0 30 60 120 180 240 m

ACOUSTIC LOGIC



Randwick Campus Redevelopment

7am - 10pm Construction Noise Prediction

1xExcavator Hydraulic Hammer	- 120dB(A) SWL
1xExcavator Bucket	- 110dB(A) SWL
1xConcrete Pump	- 110dB(A) SWL
2xCrane (North & South)	- 105dB(A) SWL
2xConcreting Helicopter	- 105dB(A) SWL
1xTruck Engine @ 10km/h	- 105dB(A) SWL
1x Saw Rock Cutting	- 105dB(A) SWL
1xCFA Piling	- 105dB(A) SWL
4xPowered Hand Tools	- 94dB(A) SWL

Prepared by: S. Giannikopoulos
Date: 16/04/2020

Noise Level
L_{eq}
in dB(A)

- < 65
- 65 - 67
- 67 - 69
- 69 - 71
- 71 - 73
- 73 - 75
- 75 - 77
- 77 - 79
- 79 - 81
- 81 - 83
- 83 - 85
- >=85

Signs and symbols

- Surface
- Receiver
- Point source

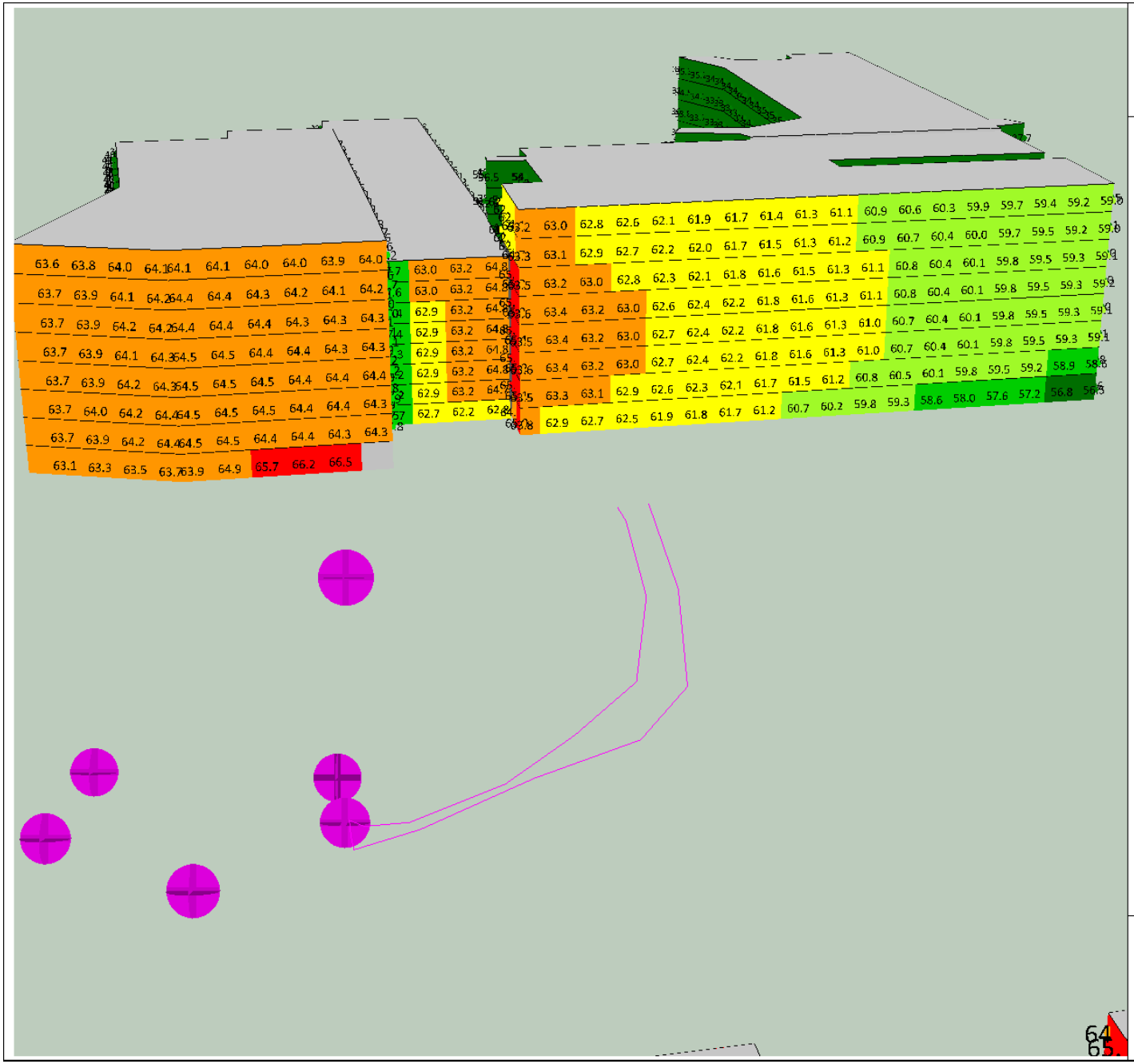
Facade Noise Map

- Facade point
- Line source

Length scale 1:5796

0 30 60 120 180 240 m

ACOUSTIC LOGIC



Randwick Campus Redevelopment

10pm - 1am Construction Noise Prediction

1xConcrete Pump - 110dB(A) SWL
1xCrane (North Only) - 105dB(A) SWL
2xConcreting Helicopter - 105dB(A) SWL
1xTruck Engine @ 10km/h - 105dB(A) SWL
4xPowered Hand Tools - 94dB(A) SWL

Prepared by: S. Giannikopoulos
Date: 16/04/2020

Noise Level L_{eq}
in dB(A)

- < 57
- 57 - 59
- 59 - 61
- 61 - 63
- 63 - 65
- 65 - 67
- 67 - 69
- 69 - 71
- 71 - 73
- 73 - 75
- 75 - 77
- >=77

Signs and symbols

- Surface
- Receiver
- Point source

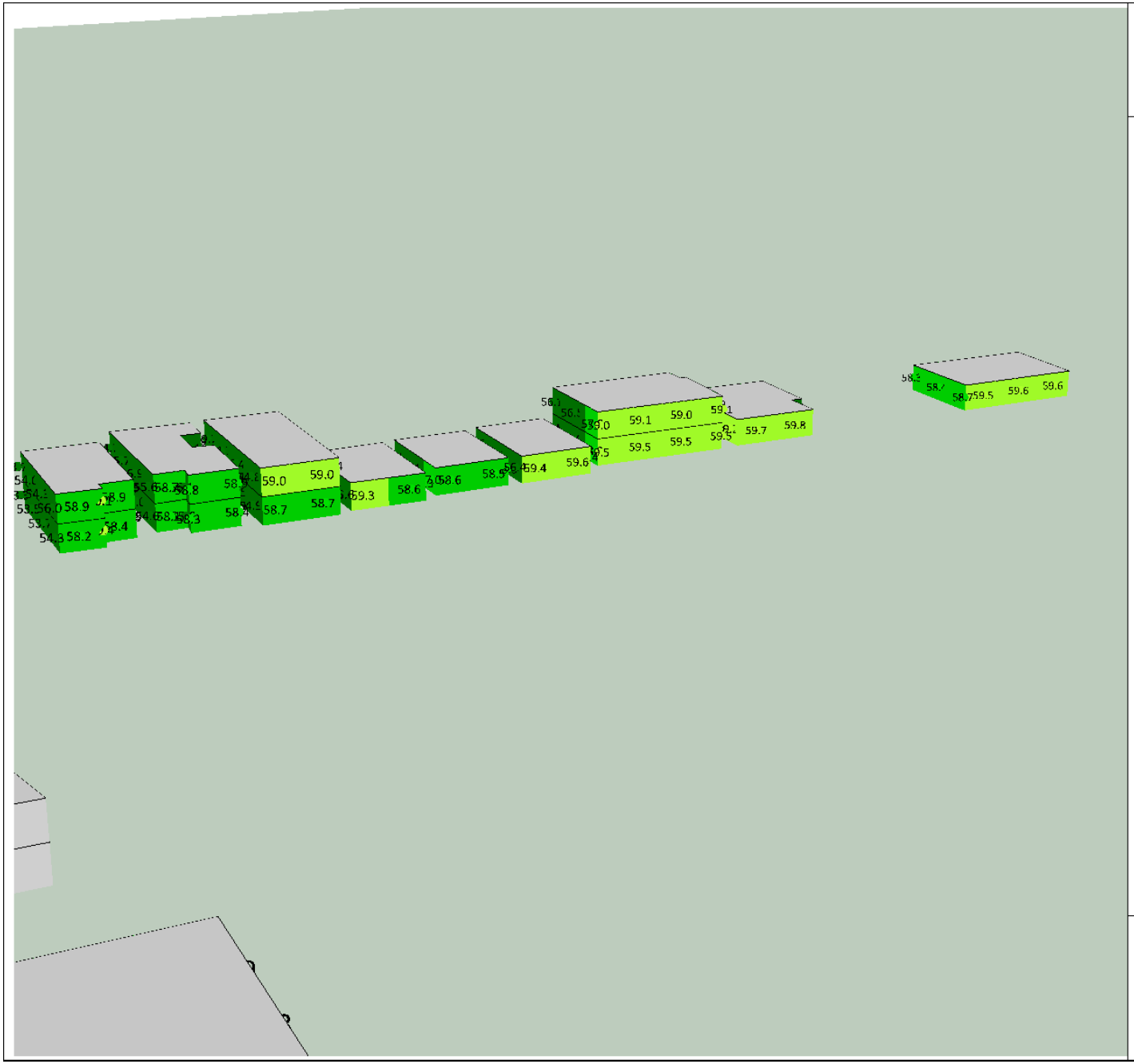
Facade Noise Map

- Facade point
- Line source

Length scale 1:5796

0 30 60 120 180 240 m

ACOUSTIC LOGIC



Randwick Campus Redevelopment

10pm - 1am Construction Noise Prediction

1xConcrete Pump - 110dB(A) SWL
1xCrane (North Only) - 105dB(A) SWL
2xConcreting Helicopter - 105dB(A) SWL
1xTruck Engine @ 10km/h - 105dB(A) SWL
4xPowered Hand Tools - 94dB(A) SWL

Prepared by: S. Giannikopoulos
Date: 16/04/2020

Noise Level
L_{eq}
in dB(A)

< 57
57 - 59
59 - 61
61 - 63
63 - 65
65 - 67
67 - 69
69 - 71
71 - 73
73 - 75
75 - 77
>=77

Signs and symbols

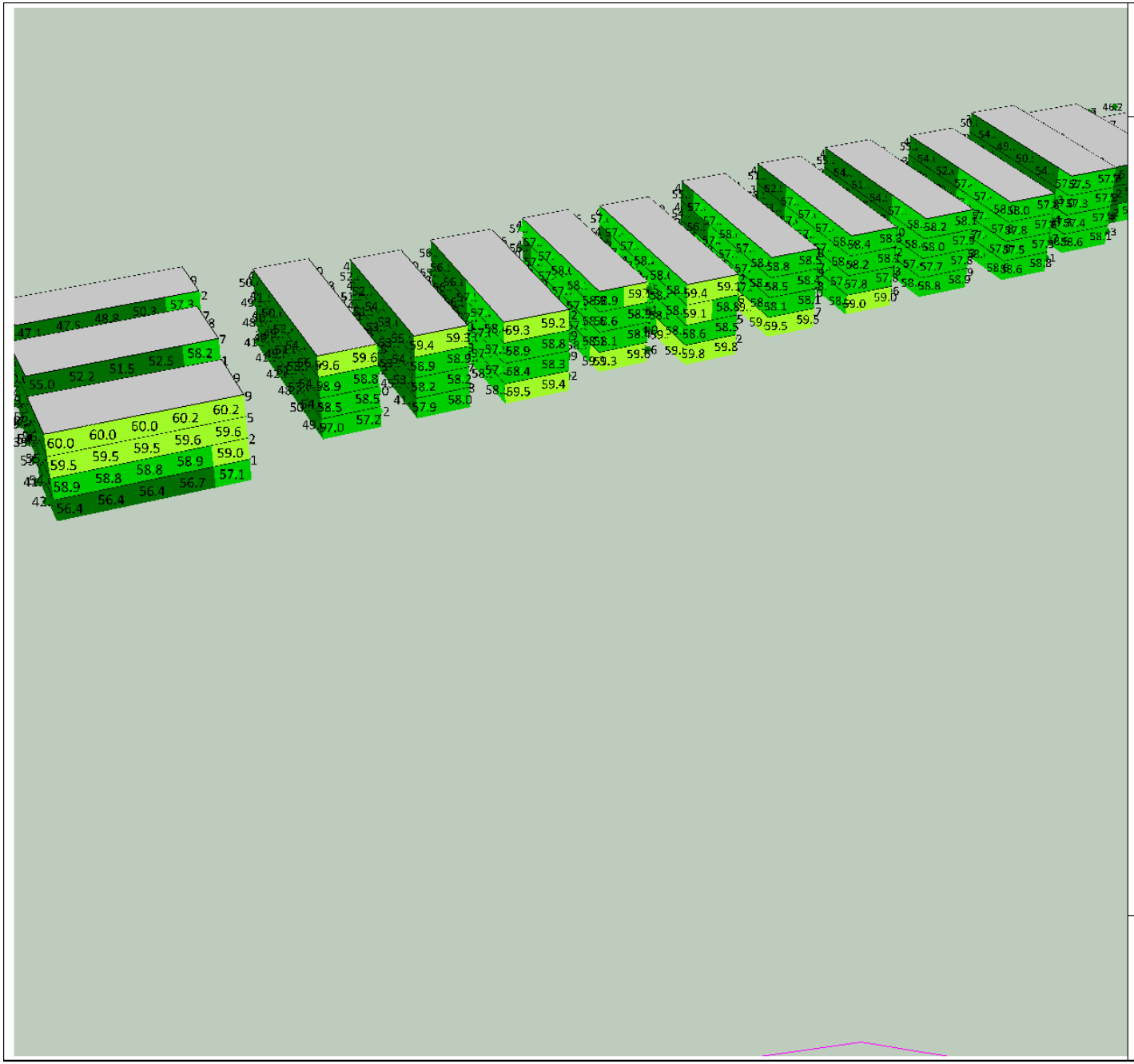
- Surface
- Receiver
- Point source

Facade Noise Map

- Facade point
- Line source

Length scale 1:5796
0 30 60 120 180 240 m

ACOUSTIC LOGIC



Randwick Campus Redevelopment

10pm - 1am Construction Noise Prediction

1xConcrete Pump - 110dB(A) SWL
1xCrane (North Only) - 105dB(A) SWL
2xConcreting Helicopter - 105dB(A) SWL
1xTruck Engine @ 10km/h - 105dB(A) SWL
4xPowered Hand Tools - 94dB(A) SWL

Prepared by: S. Giannikopoulos
Date: 16/04/2020

Noise Level L_{eq}
in dB(A)

< 57
57 - 59
59 - 61
61 - 63
63 - 65
65 - 67
67 - 69
69 - 71
71 - 73
73 - 75
75 - 77
>=77

Signs and symbols

- Surface
- Receiver
- Point source

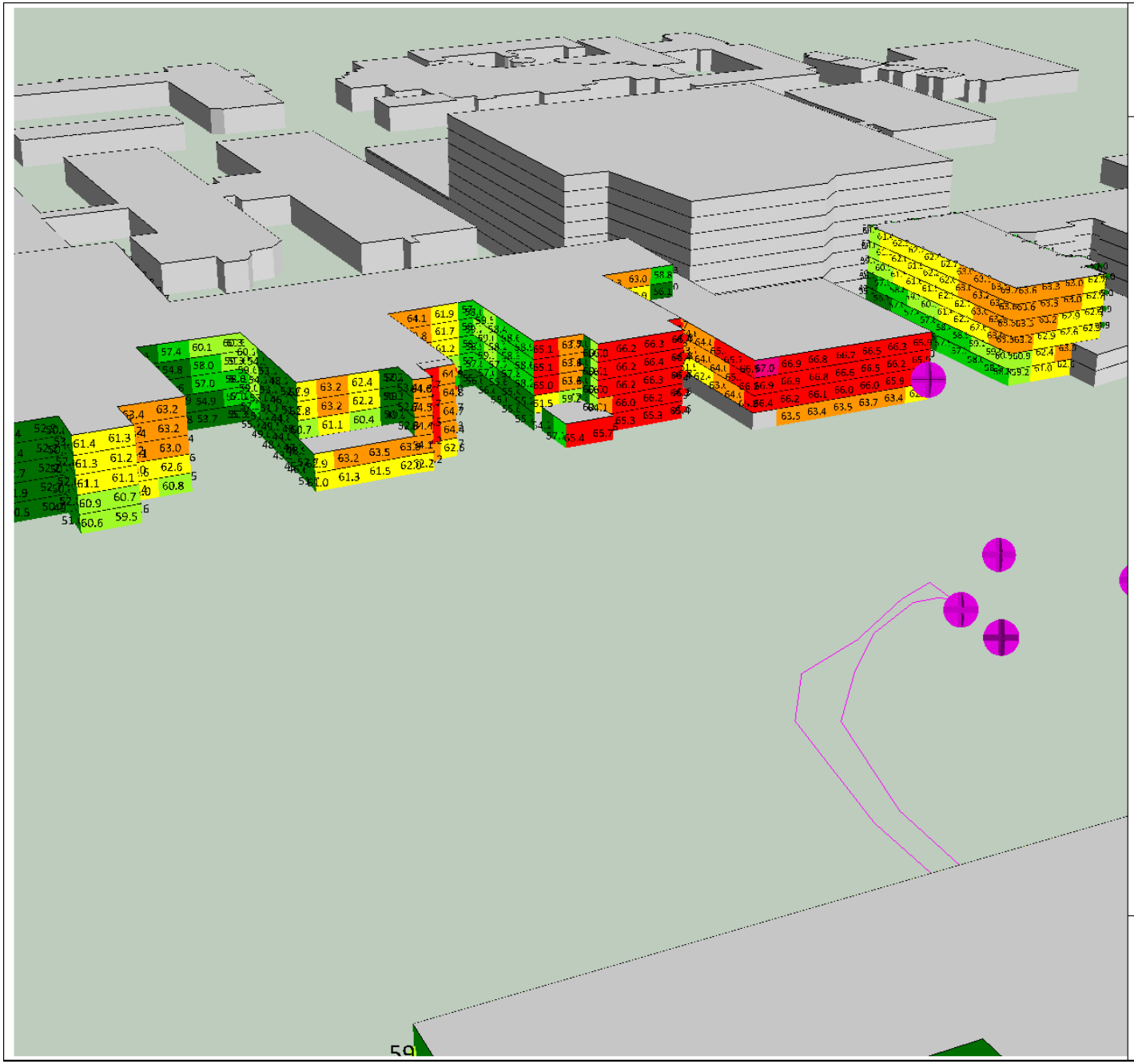
Facade Noise Map

- Facade point
- Line source

Length scale 1:5796

0 30 60 120 180 240 m

ACOUSTIC LOGIC



Randwick Campus Redevelopment

10pm - 1am Construction Noise Prediction

1xConcrete Pump - 110dB(A) SWL
1xCrane (North Only) - 105dB(A) SWL
2xConcreting Helicopter - 105dB(A) SWL
1xTruck Engine @ 10km/h - 105dB(A) SWL
4xPowered Hand Tools - 94dB(A) SWL

Prepared by: S. Giannikopoulos
Date: 16/04/2020

Noise Level
L_{eq}
in dB(A)

< 57
57 - 59
59 - 61
61 - 63
63 - 65
65 - 67
67 - 69
69 - 71
71 - 73
73 - 75
75 - 77
>=77

Signs and symbols

- Surface
- Receiver
- Point source

Facade Noise Map

- Facade point
- Line source

Length scale 1:5796

0 30 60 120 180 240 m

ACOUSTIC LOGIC

11.3.1 Summarised Noise Prediction

The following table summarises the sound plan modelling above, making comparison to the noise management trigger levels. Please see table below for further detail.

11.3.1.1 To Receiver 1- Randwick prince of Wales Hospital Complex

Receiver 1 – Prince of Wales Hospital Complex			
Time of Day	6am – 7am	6pm – 10pm	10pm – 1am
Predicted Highest Noise Level	41	47	40
Noise Management Trigger Level	45 (Internal Criteria)		
Management Required	No	Yes	No

11.3.1.2 To Receiver 2- University of New South Wales Building

Receiver 2 – University of New South Wales Building			
Time of Day	6am – 7am	6pm – 10pm	10pm – 1am
Predicted Highest Noise Level	40	45	40
Noise Management Trigger Level	45 (Internal Criteria)		
Management Required	No	No	No

11.3.1.3 To Receiver 3

Receiver 3 – High Street Residential Receivers			
Time of Day	6am – 7am	6pm – 10pm	10pm – 1am
Predicted Highest Noise Level	67	65	60
Noise Management Trigger Level	49	54	48
Management Required	Yes	Yes	Yes

11.3.1.4 To Receiver 4

Receiver 4 – Magill Street Residential Receivers			
Time of Day	6am – 7am	6pm – 10pm	10pm – 1am
Predicted Highest Noise Level	60	80	60
Noise Management Trigger Level	49	54	48
Management Required	Yes	Yes	Yes

11.4 VIBRATION ASSESSMENT RESULTS

The levels of vibration generated by the construction activities will be site-specific and will depend upon the type of activity, the particular equipment used, and the proximity of the construction activity to the nearest occupied spaces within the affected properties and heritage structures.

A detailed vibration assessment has not been carried out at this stage, as actual vibration levels experienced will be dependent upon;

- Site characteristics, and
- Specific construction equipment used.

Vibration monitoring will be carried out at surrounding vibration sensitive receivers, at the nearest affected locations (where practical and accessible).

In addition attended monitoring will be carried out as required for heavy construction activities / equipment determine whether the vibration levels justify a more detailed investigation, confirm monitoring locations or provide transfer functions, and the exact requirements for ongoing vibration monitoring.

The Contractor will carry out an ongoing review of vibration generated by the construction activities, and assess these against the criteria for human comfort, building damage and vibration-sensitive equipment provided in Section above.

Vibration will be monitored against trigger levels for damage at two locations. If vibration exceeds the trigger levels works will cease, the building inspected and appropriate action taken, such as changing the work method.

These locations will be relocated as required. At the commencement of works the monitoring locations include:

- 103 Botany Street.
- Ainsworth Building, POW Hospital.

12 NOISE AND VIBRATION MANAGEMENT PROCEDURES

Control measures will be implemented for any noise sources or equipment that is found to exceed the construction noise limits.

Noise and vibration monitoring will be carried out at or near the most affected receiver locations during the main works activities as described in Section above.

If any work activities are found to exceed the noise and/or vibration criteria, then the noise and/or vibration control measures detailed in sections the above and the following sections will be implemented wherever reasonable and feasible.

12.1 GENERAL CONTROLS FOR NOISE AND VIBRATION

As a general rule, minimising noise and vibration will be applied as universal work practice at any time of day, but especially for noise sources or equipment that is found to exceed the construction noise limits plus any construction works to be undertaken at critical times outside normal daytime/weekday periods.

The reduction of noise and vibration at the source and the control of the transmission path between the construction site and the receiver(s) will be the preferred options for noise minimisation. Providing treatments at the affected receivers will only be considered as a last resort.

When any plant/activity exceeds the noise emission limits the following strategies will be implemented, where reasonable and feasible, to manage construction noise and vibration impacts:

- Plant and equipment. In terms of both cost and results, controlling noise and vibration at the sources is one of the most effective methods of minimising the impacts from any work site activities. The following work practices will be implemented to reduce noise and vibration at the source:
- Employ quieter techniques for all high noise activities such as rock-breaking, concrete sawing, and using power and pneumatic tools.
- Use quieter plant and equipment based on the optimal power and size to most efficiently perform the required tasks.
- Where possible, select alternative construction equipment that are quieter in order to avoid the generation of excessive noise, particularly considering the dominant noise sources for the activities identified.
- Select plant and equipment with low vibration generation characteristics.
- Operate plant in the quietest and most effective manner.

Where appropriate, limit the operating noise of equipment.

- Regularly inspect and maintain plant and equipment to minimise noise and vibration level increases, to ensure that all noise and vibration reduction devices are operating effectively. The allowable LA avmax (equivalent to LA10) noise levels for construction appliances provided in Page 3 of the City of Sydney "Construction Hours / Noise within the Central Business District – Code of Practice" (1992) will be used as a reference for indicative acceptable noise levels from various construction equipment.
- Where appropriate, obtain acoustic test certificates for equipment.

- On site noise management. Practices that will be implemented to reduce noise from the site include:
    - Maximising the distance between noise activities and noise sensitive receivers. Strategically locating equipment and plant.
    - Undertaking noisy fabrication work off-site where possible.
    - Avoiding the use of reversing beeping alarms or providing for alternative systems, such as broadband reversing alarms, particularly during night or out-of-hours works.
    - Maintaining any pre-existing barriers or walls on the site as long as possible to provide optimum sound propagation control.
    - Constructing barriers that are part of the project design early in the project to afford mitigation against site noise.
    - Using existing and temporary site buildings plus material stockpiles as noise barriers.
    - Installing purpose built noise barriers, acoustic sheds and enclosures wherever possible and where required to ensure construction noise limits are met.
- Work scheduling. Scheduling work during periods when people are least affected will be an important way of reducing adverse impacts. The following scheduling aspects will be implemented to reduce impacts wherever construction activities or equipment are found to exceed the construction noise limits:
    - Provide respite periods - including restricting very noisy activities to daytime, restricting the number of nights that after-hours work (if required) is conducted near residences, and by determining any specific requirements needed for noise sensitive receivers such as sleeping / rest, teaching, study, etc.
    - Schedule activities to minimise impacts by undertaking all possible work during hours that will least adversely affect sensitive receivers and by avoiding conflicts with any other scheduled noise-sensitive events. Works will be scheduled to only occur during the approved hours in accordance with Development Consent Conditions C4 and C7.
    - Where possible schedule noisy activities to coincide with high levels of neighbourhood noise (such peak traffic hours or in the middle of the day) so that noise from the activities is partially masked and not as intrusive.
    - Plan deliveries and access to the site to occur quietly and efficiently and organise parking only within designated areas located away from sensitive receivers.
    - Optimise the number of deliveries to the site by amalgamating loads where possible and scheduling arrivals within designated hours.
    - Designate, design and maintain access routes to the site to minimise impacts.
    - Include contract conditions that include penalties for non-compliance with reasonable instructions by the principal to minimise noise or arrange suitable scheduling.
- Consultation, notification and complaints handling
    - Information will be provided to neighbours before and during construction.
    - Good communication will be maintained between the community and project staff.
    - A documented complaints process will be maintained, along with a register of complaints.
    - Complaints will be given a fair hearing, and a quick response provided.
    - All feasible and reasonable measures to address the source of complaint will be implemented.

As a general approach, when noise goals cannot be met due to safety or space constraints, all reasonable and feasible mitigation measures will be implemented for all works to ensure that any adverse noise impacts to surrounding receivers are minimised.

12.2 SPECIFIC CONTROLS FOR AIRBORNE NOISE

Based on the findings from the noise and vibration assessment, and following discussions with Lendlease and HI, some specific airborne noise controls have already been agreed to be implemented and are included in the CMP:

- Only northern crane is allowed to be used before 7am and after 10pm of the proposed extended hours.
- No concrete helicopter is allowed before 7am.
- No high noise activities such as rock hammering or piling is allowed before 7am or after 10pm.
- Where practical and available for equipment and without compromising the safety of staff or members of the public, audible movement alarms of the type that minimise noise impacts at surrounding receivers will be used (such as broadband or "quacker" alarms instead of beepers).
- Hoarding is provided around the site to provide screening however due to topography of site, some areas will have a direct line of site with residential receivers. For the majority of the intensive works (excavation and piling) the hoarding will provide shielding to the noise-sensitive receivers.
- The following works will be carried out in locations such that the existing hoarding will provide shielding to the nearest receivers:
    - Parking and loading of tipper trucks / skip trucks
    - Works that can easily be strategically located (including, carpentry areas, temporary works, etc)
- Employees will receive training which will enable them to recognise areas where noise levels are likely to exceed 85dBA;
- A noise assessment of the site will be undertaken prior to or at the commencement of works on site with ongoing monitoring in strategic locations determined through consultation with HI during the construction period;
- As the work environment changes, additional assessments may be conducted, the timing of which will be determined in consultation between the site management, Site Safety Committee and the Principal;
- Use of acoustic barriers during concrete pours, demolition works, in particular at façade break ins required for installation of new link bridges at the Women's Hospital and Randwick Hospital.
- Implementing acoustic mufflers to impact driven equipment;
- Use of core holing rather than impact hammer drilling into concrete structures of existing buildings, in particular at façade break ins
- Introduce engineering controls within the methodology, such as acoustic panels to surround concrete pumps for attenuation;
- In conjunction with HI NSW, developing acceptable periods when specific "noisy works" can occur;
- Managing works within the approved site working hours;
- Planning and notification of noisy works via the Disruptive Works Notice procedure and in general consultation with HI;
- Warning signs shall be erected in areas where 85dBA is exceeded; and
- Where additional personnel protection equipment is required, the areas shall be identified by signage. The appropriate noise protection devices are to be issued to the effected personnel.
- Noise emissions will be managed in accordance with the regulatory requirements and Lendlease management procedures, complying with the following:
    - National Code of Practice for Noise
    - Management and Protection of Hearing at Work [NOHSC:2009];
    - AS/NZS 1269.0:2005: Occupational noise management – Series of several Standards;
    - AS 2012.2: Acoustics - Measurement of airborne noise emitted by earth-moving machinery and agricultural tractors - Stationary test condition - Operator's position;
    - AS 2436: Guide to noise control on construction, maintenance and demolition sites;
    - AS 2221.1: Methods for measurements of airborne sound emitted by compressor units including prime movers and by pneumatic tools and machines;
    - AS 3781: Acoustics – Noise labelling of machinery and equipment.

12.3 SPECIFIC CONTROLS FOR VIBRATION

We do not consider that controls will be required to control vibration to surrounding off-site buildings. The need to control vibration to the heritage buildings on site (plus the associated mitigation measures) is expected to ensure that vibration to surrounding off-site buildings will meet the relevant limits / criteria.

Notwithstanding the above, the Contractor will carry out a preliminary attended vibration assessments at the commencement / during use of intensive vibration generating plant to determine whether the existence of significant vibration levels justifies a more detailed investigation or vibration measurements / monitoring in areas other than those identified in this plan (refer to Section 7.5 for monitoring program).

If a more detailed investigation is required, this will involve methods of constraining activities generating high vibration levels. A method of monitoring vibration levels will then be put in place. Vibration mitigation measures and a review of vibration criteria may then be necessary.

Notwithstanding the above, all practical means will be used to minimise impacts on the affected buildings and occupants from activities generating significant levels of vibration on site.

Where vibration levels are found to exceed the relevant criteria, one or more of the following measures will be taken:

- Modifications to demolition equipment used.
- Modifications to methods of demolition.

If the measures given above cannot be implemented or have no effect on vibration levels or impact generated, a review of the vibration criteria will be undertaken and the vibration management strategy amended.

The following considerations will be taken into account:

- The layout of the site, including the location of static sources of vibration.
- Modifications to construction equipment used.
- Techniques used in construction to minimise generated vibration levels, including saw cutting and removal of structure wherever possible – as an alternative to hammers and hydraulic crushers.

- Hours of work with regard to the nature of operations in the affected buildings and the duration of the works.

As per the Consent Conditions, the following will be adhered to:

- B6. Before the commencement of construction, the Applicant must:
  (a) consult with the relevant owner and provider of services that are likely to be affected by the development to make suitable arrangements for access to, diversion, protection and support of the affected infrastructure;
  (b) prepare a dilapidation report identifying the condition of all public infrastructure in the vicinity of the site (including roads, gutters and footpaths);
  (c) prepare a dilapidation report identifying the condition of all adjoining and nearby premises including the residences on the south side of Magill Street and the heritage item located at 4 Hay Street, Randwick;
  (d) prepare a report by a professional engineer detailing the proposed methods of excavation, shoring or pile construction, including details of potential vibration emissions, and demonstrating the suitability of the proposed methods of construction to overcome any potential damage to nearby premises including the residences on the south side of Magill Street and the heritage item at no.4 Hay Street, Randwick.
  (e) submit a copy of the dilapidation report and engineers report to the Certifying Authority and Council. This Consent Condition was addressed prior to demolition works.
- Consent Condition C30, vibratory compactors (if used) will not be used closer than 30 m from residential buildings – unless vibration monitoring confirms compliance with the vibration criteria in Section 5.5.

If the measures given above cannot be implemented or have no effect on vibration levels or impact generated, a review of vibration criteria will be undertaken, and the vibration management strategy amended.

12.4 PLANT AND EQUIPMENT MAINTENANCE PROGRAM

The Contractor will prepare and implement a regular plant and equipment inspection and maintenance program to ensure that "noisy" equipment or tools are not used. "Noisy" equipment or tools are those with defective mufflers or other fitted noise attenuation features or devices that are not working as intended.

12.5 MONITORING PROGRAM

12.5.1 Noise monitoring

The builder will monitor environmental noise and vibration at or near the most affected noise receivers at locations to assess noise levels against those predicted in this document.

Noise is to be monitored continuously at 2 locations, with access to be obtained by Health Infrastructure, as follows:

- 103 Botany Street; and
- Sydney Children's Hospital, Hospital Road Playground.

As works progress and work locations change, the noise monitors will need to be relocated close to the most affected noise sensitive receiver as appropriate. If the noise monitoring indicates noise levels exceeding the levels predicted in this document, mitigation measures will be reviewed. Also, if noise monitoring indicates noise levels are less than the levels predicted in this document then opportunities will be considered to increase activity and reduce the overall duration of the works.

12.5.2 Vibration Monitoring

Vibration monitoring is critical to the success of this plan. Monitoring of vibration at the nearest affected receivers should be carried out at the commencement of heavy main works.

The purpose of this monitoring is to assess the risk of potential structural damage to the buildings of concern.

This monitoring will be used for specific activities generating significant levels of vibration, in situations where there are changes in equipment and activities or work procedures that might affect existing vibration control measures.

Vibration is to be monitored continuously at 2 locations, with access to be obtained by Health Infrastructure, as follows:

- 103 Botany Street
- Ainsworth Building, POW Hospital

As works progress and work locations change, the vibration monitors will need to be relocated close to the most affected vibration sensitive receiver as appropriate. These locations will be supplemented with attended monitoring required for heavy construction activities / equipment to determine whether the vibration levels justify a more detailed investigation, confirm monitoring locations or provide transfer functions, and the exact requirements for ongoing vibration monitoring (including relocation with progression of works). Ongoing vibration monitoring requirements to be reviewed following each stage of works.

Measured levels will be compared to the trigger levels nominated in this plan to assess whether additional respite or mitigation measures should be considered.

If vibration levels generated by the works approach the trigger values, then Lendlease shall monitor the situation and carry out the following:

- Liaise with plant operators and advise that criteria is being approached. Try to understand the cause of the vibration level and mitigate where practical.

Where the trigger value is exceeded the following process will be applied:

- Work shall stop as soon as practicable.
- Values reviewed to confirm frequency content against relevant targets and standards.
- Nearby properties will be inspected for cracks or other signs of damage against dilapidation reports.
- If no damage is identified, then the criteria may be increased to be agreed with Acoustic Logic, Lendlease and the engaged structural engineer.
- If there are signs of damage then:
    - the work method will be reviewed for an alternative method generating less vibration; or
    - the work method will continue, and the situation monitored to ensure damage remains at a level that is repairable (minor cracks and other cosmetic effects).

12.5.3 Reporting

Lendlease will maintain records on site of:

- Noise and vibration monitoring;
- Remedial actions taken to minimise, reduce or eliminate noise and vibration;
- Daily and weekly inspections of plant and equipment, hoarding and other noise management measures;
- A monthly Construction Noise and Vibration report will be prepared by Acoustic Logic.

12.6 COMMUNITY CONSULTATION

The noise sensitive receivers listed and described in Section 5.1.1 and any other affected stakeholders have been notified of the project. They will be kept informed of the project status throughout the project duration.

Noise sensitive receivers and affected stakeholders will be kept informed through the following channels:

- Construction briefings – regular briefings and presentations to affected stakeholders to provide advance notice of noise generating works, work hours and construction impacts management strategies. Construction briefings are utilised to gain feedback and input into construction planning and minimise impacts to stakeholders.
- Community notification – notifications circulated via letter box drop, email and project website to communicate upcoming construction activity to the local community and affected stakeholders.
- Construction Interface Meetings – regular meetings with key project stakeholders to communicate upcoming works, impacts and mitigate strategies.

These channels will be used to inform residents and business owners, describing the construction hours, potential high noise works/hours, the noise management measures being implemented and providing contact details for further information or complaints.

Site hoarding or notices on the hoarding will also identify Health Infrastructure and Lendlease as the site operators.

12.7 COMPLAINTS AND NON-COMPLAINTS

The development of the CNVMP has been consulted with the project stake holders in accordance with the projects Community Communication strategy. This strategy outlines the key consultation that has been and continues to be undertaken

Complaints will be logged and response actions documented.

Upon receipt of a complaint the Contractor will decide whether the complaint is in relation to offensive noise. Offensive noise is described in legislation and discussed in the Noise Guide for Local Government. In the context of this proposal, offensive noise is noise from this proposal that is as a result of:

- Works outside the work hours in Section 6.1. Offensive noise includes noise outside of the work hours as a result of arrival or departure of trucks and any site personnel or contractors parking on the surrounding streets and not entering or leaving the hotel parking, dedicated to project vehicles.
- Works generating noise above 75dBA that extends for longer than 3 hours without a minimum one hour respite break.
- Works generating noise above the levels predicted in this document;
- plant or equipment not maintained or operated in a proper and efficient manner, for example with defective mufflers or other fitted noise attenuation devices;
- loud radios, shouting (particularly swearing), and other unnecessary noise;
- site gates left open other than for entry or exit of a vehicle.

On receipt of a complaint of offensive noise, or of becoming aware of offensive noise, the contractor will take immediate action to stop the offensive noise.

For complaints about noise from this proposal other than offensive noise, the contractor will;

- Direct consultation with any affected stakeholders where noise and vibration is a planned part of construction activity. Timely communication provides stakeholder awareness, opportunity for forward community and implementation of mitigations prior to works occurring. The project team remains cognisant of nearby sensitive receivers and vigilant in providing advanced notification.
- Ongoing consultation with key stakeholders to understand and document the location of any sensitive receivers including medical and research equipment.
- Consultation with key project stakeholders to determine suitable locations for loggers that provide effective readings and limit disruption to Hospital Campus.
- Regular doorknocking of neighbouring residents to notify of planned construction activity and associated impacts.
- Construction Community Notices distributed to local businesses and residents to notify of planned construction activity and potential impacts. Noise and vibration generating activities are communicated in a timely fashion through Construction Community Notices.
- Maintenance of 24/7 Community Contact phone number and project email address for stakeholder contact and complaints.
- Maintenance of project Complaints Register detailing complaints related to noise and vibration and project response. The Complaints register is updated monthly and remains accessible via the project's website.
- Circulation and approval of Disruptive Works Notification detailing planned construction activity, associated impacts and mitigations.
- Try to ascertain from the complainant which activity is causing the problem (i.e. inside or outside the site and in what position).
- If required, establish from the monitoring equipment and or attended noise monitoring if the predicted noise levels have been exceeded. Attended noise monitoring may be required to determine this.
- Check that the activity and equipment are being operated in a proper and efficient manner.

- Immediately rectify any faulty equipment.

12.8 TRAINING AND AWARENESS

The Contractor shall provide all project personnel and subcontractors with training on the environmental obligations through project inductions, toolbox talks and through Safety Works Methods (SWMS).

Project personnel and subcontractors shall undergo a general project induction prior to commencing work. This will include a noise component reinforcing that works should be done in a manner that minimises noise and is respectful of neighbours and mindful of their amenity.

13 CONCLUSION

This report presents an assessment of noise and vibration impacts associated with the bulk earthworks and construction activities to be undertaken for the potential noise and vibration impacts associated with the proposed extended hours for Randwick Hospital Redevelopment to satisfy the requirements of NSW EPA Interim Construction Noise Guideline and Environmental Planning.

We trust this information is satisfactory. Please contact us should you have any further queries.

Yours faithfully,

Acoustic Logic Consultancy Pty Ltd

[redacted]

APPENDIX 4 – CNWMSP

APPENDIX 5 – SEMSP

APPENDIX 6 – ACHMSP

APPENDIX 7 – ERMSP

APPENDIX 8 – RAP

APPENDIX 9 – CEMP FOR IASB

RANDWICK CAMPUS REDEVELOPMENT

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Integrated ASB Addition

March 2020

DOCUMENT HISTORY

Version	Date	Issue by	Status
1	January 2020	Lendlease	For CC1
2	February 2020	Lendlease	For CC1
3	March 2020	Lendlease	For CC1 with PwC comments

DOCUMENT CONTROL

To ensure the Construction Environmental Management Plan remains relevant and accurate, this document will be continuously reviewed and evaluated throughout the planning and delivery of the IASB.

Any revisions made will be communicated to the project team accordingly.

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

INTEGRATED ASB ADDITION

Contents

1.0 INTRODUCTION

1.1 OVERVIEW

The Randwick Campus Redevelopment Acute Service Building (RCR-ASB) is a highly complex project with critical early milestone components that must be delivered on time. The objective of this Construction Environmental Management Plan (CEMP) is to ensure that the IASB Addition (the Project) is safely delivered using a robust set of methodologies and zero unplanned disruption to hospital services, and to comply with the regulatory requirements as outlined by the Department of Planning and other Authorities.

This plan has been developed from the approved Development Consent Conditions as outlined in SSD 10339 approved on the 18th December 2019. There are several sub plans which will form the basis of this management plan. During the construction programme, these plans will be reviewed and updated as required.

The IASB Addition includes the lowering of Hospital Road, and construction of the UNSW Eastern Extension (Base Building only) and associated Link bridges. These works will occur concurrently to the ASB construction.

The Lendlease construction management processes will provide:

- Seamless performance and accountability from a single responsible entity;
- The works will be managed by a single proven responsible entity; and
- a mechanism to reduce risks during project delivery.

Lendlease has produced this CEMP as the contractor responsible for the delivery of the project. It is envisaged that this CEMP will evolve during the course of the Project as the design develops in conjunction with the design consultant team, project stakeholders, Health Infrastructure (HI), South East Sydney Local Health District (SESLHD) and Price Waterhouse Coopers (PwC).

In the following sections, we have set out how we intend on managing the Project and activities associated with the RCR.

The CEMP also defines the impacts of the proposed construction activities on areas within the RCR site and hospital campus the Prince of Wales (POW) Hospital Campus (Campus). 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 minimise any potential risk to HI, SESLHD, its community partners and stakeholders.

Our proactive and collaborative approach to our client NSW Health Infrastructure is underpinned by the following overriding and non-negotiable objectives:

- Maintain business continuity of the campus and adjoining facilities and properties;
- To deliver a world class facility for our client on time to the highest safety and quality standards;
- Safe and timely delivery of the Integrated ASB Addition, enabling construction of the RCR;
- Communicate in a timely fashion with all relevant stakeholders what, when and how we are planning to undertake interface works;
- Present a positive public perception of the project during the construction works;
- Use experienced and qualified subcontractors with appropriate resources to deliver their works in the manner we prescribe; and
- Hands on control of subcontractors from experienced Lendlease site supervision.

HI will have four key outcomes from the Lendlease CEMP:

Figure 1: Key outcomes

1.2 CONSENT CONDITIONS

The Department of Planning has issued the approved Development Consent conditions for the SSD-10339.

The Conditions relevant to the CEMP which have been addressed in the CEMP are incldlued in the Compliance Matrix. The CEMP has been developed to include the requirements outlined in Consent Condition B10.

The Applicant is to submit a copy of the CEMP to the Certifier and the Planning Secretary prior to commencing works.

Lendlease will be seeking three Construction Certificates under this SSD-10339. They are as follows:

- CC1 – Services diversions
- CC2 – Piling, retaining structure, pavements, slabs, UNSW structure and bridges
- CC3 – UNSW integrated fitout

The CEMP is requested to be approved for all these components of works.

1.3 COMPLIANCE MATRIX

For ease of reference the following compliance matrix has been prepared to identify relevant sections of the CEMP as outlined in condition B11.

Condition	Requirement	Document Reference
B11	(a) (i) Hours of Work	Section 2..2
	(a) (ii) 24 Hour Contact details	Section 2.5
	(a) (iii) Management of dust and odour to protect the amenity of the neighborhood	Section 10

	(a) (iv) stormwater control and discharge	Section 9
	(a) (v) measures to ensure that sediment and other materials are not tracked onto the roadway by vehicles leaving the site;	Section 9
	(a) (vi) groundwater management plan including measures to prevent groundwater contamination;	Section 11
	(a) (vii) external temporary lighting in compliance with AS 4282-2019 Control of the obtrusive effects of outdoor lighting;	Section 13.1
	(a) (viii) community consultation and complaints handling;	Section 6
B12	(a) be prepared by a suitably qualified and experienced noise expert	Section 7.1
	b) describe procedures for achieving the noise management levels in EPA's Interim Construction Noise Guideline (DECC, 2009);	Section 7.3
	(c) describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers;	Section 7.3
	(d) include strategies that have been developed with the community for managing high noise generating works;	Section 7.2
	(e) describe the community consultation undertaken to develop the strategies in condition B12(d);	Section 7.2
	(f) include a complaints management system that would be implemented for the duration of the construction;	Section 7.3, 6.2, 6.3
	(g) mitigation measures to minimise impacts of works undertaken outside standard hours	Section 7.3
	(h) adherence to the recommendations of the report titled Noise and Vibration Impact Assessment Issue 5 dated 5 August 2019 and prepared by Acoustic Studio, as modified by the conditions of this consent.	Section 7.3
B13	(a) detail the quantities of each waste type generated during construction and the proposed reuse, recycling and disposal locations; and	Section 8.3
	(b) removal of hazardous materials, particularly the method of containment and control of emission of fibres to the air, and disposal at an approved waste disposal facility in accordance with the requirements of the relevant legislation, codes, standards and guidelines, prior to the commencement of any building works.	Section 8.3
B14	(a) be prepared by a suitably qualified expert, in consultation with Council;	Section 9
	(b) describe all erosion and sediment controls to be implemented during construction;	Section 9
	(c) provide a plan of how all construction works will be managed in a wet-	Section 9

	weather events (i.e. storage of equipment, stabilisation of the Site);	
	(d) detail all off-Site flows from the Site; and	Section 9
	(e) describe the measures that must be implemented to manage stormwater and flood flows for small and large sized events, including, but not limited to 1 in 1-year ARI, 1 in 5-year ARI and 1 in 100-year ARI	Section 9
B33	Prior to commencement of remediation works, the Applicant must prepare an updated Remediation Action Plan to include an asbestos management plan, unexpected finds protocol and soil management strategy in accordance with the recommendations in the Contamination Report prepared by Douglas Partners dated 20 August 2019 to the satisfaction of the Certifier.	Section 12.3
B34	Prior to commencement of construction, the Applicant must prepare a Contamination Management Protocol to the satisfaction of a NSW EPA Accredited Site Auditor which identifies how concurrent remediation and construction activities will be managed on site which: (a) includes procedures to differentiate between the handling of contaminated soil/material and construction material to ensure clear separation of handling;	Section 12.4
	(b) includes procedures to differentiate between the handling and transport of contaminated soil and construction materials to and from the site ensure clear separation of handling; and	Section 12.3, 12.4
	(c) includes a procedure for recording the volume and type of contaminated material leaving the site and its destination.	Section 12.3
B35	Prior to the commencement of earthworks, the Applicant must prepare an unexpected contamination procedure to ensure that potentially contaminated material is appropriately managed. The procedure must form part of the of the CEMP in accordance with condition B11 and must ensure any material identified as contaminated must be disposed off-site, with the disposal location and results of testing submitted to the Planning Secretary, prior to its removal from the site.	Section 12.3, 12.4
B36	The EPA is to be notified under section 60 of the Contaminated Land Management Act 1997 for any contamination identified which meets the triggers in the Guidelines for the Duty to Report Contamination.	Section 12.3
B37	The Applicant is required to engage an EPA-accredited site auditor to review the adequacy of the investigations, unexpected finds protocol, any remedial works or management plan required and confirm that the land can be made suitable for the proposed use. The Applicant must adhere to the management measures accepted by the Auditor.	Section 12.2, 12.4
B11	(e) an unexpected finds protocol for contamination and associated communications procedure;	Section 12.1, 12.2, 12.3
B11	(f) an unexpected finds protocol for Aboriginal and non-Aboriginal heritage and associated communications procedure;	Section 12.1, 12.2

B11	(g) waste classification (for materials to be removed) and validation (for materials to remain) be undertaken to confirm the contamination status in these areas of the site;	Section 12.3
B38	A report must be obtained from a qualified, experienced hydrogeological engineer, which provides an assessment of the site and the potential impact of groundwater (including seepage flows) and the water table upon the development, and measures to be implemented to effectively manage groundwater where affected. The report is to be submitted to the satisfaction of the Certifier.	Section 11

2.0 BUSINESS CONTINUITY

2.1 WORKING WITHIN THE OPERATIONAL HOSPITAL ENVIRONMENT

The Lendlease project team understands the challenging nature of the RCR and the constraints of managing major construction works adjacent 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.

This will be the case for the major works to the following areas:

- The identified excavation zones 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 civil works stages
- During the UNSW Extension construction works overhead protection will be installed to facilitate loading dock access for business continuity.

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. Lendlease will impose a strict regime of consultation on all works outside the site perimeters, regardless of the nature of the intended works.

The Disruption Works Notice process will be followed here. This includes all workers to firstly complete the required hospital worker induction and secondly, Lendlease will institute a 'Permit to Work' process for all works outside of the secured site areas.

The permit system puts hold-points in place, which have to be signed-off prior to permit issue. If workers are found to be working without permits, they will be removed from the Project. The hold points for the 'Permit to Work in the Hospital Area' will be the same as those for the Disruption Works Notice, to ensure a consistent level of compliance from the subcontractors.

Lendlease have identified a 4 step process that we will undertake to ensure that the design and construction methodology mitigates the construction risks inherent in conducting site works within a live Health Campus (refer Figure 2). The planning for health service continuity and risk management 4 step process will underpin all stages of the RCR-IASB project and will be used as the guiding principle for how construction will be undertaken around the campus.

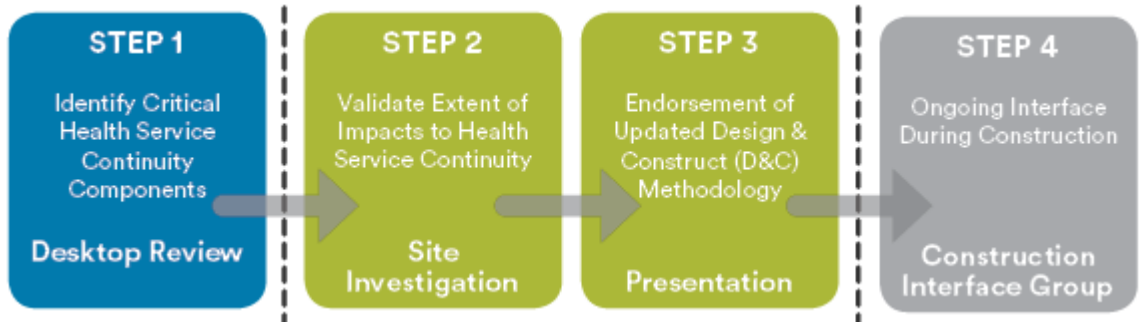


Figure 2: Four step business continuity process

Step 1 has been undertaken during the planning phase by Lendlease and will heavily influence 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 to the Campus stakeholders; and
- Sequencing construction to ensure handover of completed spaces to the RCR at the best and earliest opportunity.

Site establishment:

- Efficient use of existing redundant facilities and space available for site establishment to minimise space taken by the construction site;
- Off Campus solutions to construction car parking to ensure no disruption to car parking within the precinct; and
- Planning for construction access in controlled zones.

Construction interfaces:

- Strictly controlling where construction will interface with the Hospital nearby residential dwellings or public;
- Implementing airtight, acoustically treated hoardings for all existing building connections to minimise Infection Control risks and reduce construction noise impacts to nearby existing buildings;
- Ensuring sight lines from the construction site are managed so that patient and residential privacy in adjacent buildings are maintained;
- Developing a web based Disruptive Works Notice (LiveOps) 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; and
- Using low impact construction methods to ensure noise and vibration doesn't impact the daily operations of the Hospital and nearby residential properties.

Lendlease will follow steps 2 and 3 to validate these assumptions and further develop them ready for the construction phase.

Step 4 implements ongoing risk assessment, mitigations and controls that have been established through Steps 1-3 and the continual monitoring of changing conditions that may affect our design and construction methodology. Strategies to support Randwick business continuity include but 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 Campus business continuity;

- Utilising the Disruptive Works Notification (LiveOps) 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 process in collaboration with the SESLHD and principal representatives to ensure that the completed product is seamlessly transitioned into a live hospital environment; and
- Community notices / updates.

2.2 HOURS OF WORK

The construction hours approved for the development include the current approved ASB General construction hours and the Special construction hours for selected weekends;

General Construction hours	
Monday – Friday	7:00am to 6:00pm
Saturday	8:00am to 5:00pm
Sunday	No work

Special Construction Hours required on select weekends* to maintain operation of Hospital loading dock		
		Respite periods
Friday	6:00pm to 10:00pm (limited to site establishment activities in preparation for weekend works)	10:00pm to 7:00am = 9 hours
Saturday	5:00pm to 10:00pm (general construction activities excluding excavation, sawing of rock, jack hammers, pile drivers, vibratory rollers/compactors of the like)	10:00pm to 7:00am = 9 hours
Sunday	8:00am to 5:00pm (general construction activities including excavation, sawing of rock, jack hammers, pile drivers, vibratory rollers/compactors of the like)	N/a
Sunday	5:00pm to 10:00pm (general construction activities excluding excavation, sawing of rock, jack hammers, pile drivers, vibratory rollers/compactors of the like)	10:00pm to 7.00am = 9 hours
*Required for a total of 29 weekends plus 11 reserve/contingent weekends (total project duration of 130 weekends).		

In addition to regular working hours, there will be occasional extended periods (Weekend closures) when out of hours works are required. These out of hours works will be necessary to conduct the following activities:

- Site establishment and periodic changes to suit staging of works;
- Piling;

- Jump steel installation;
- Essential services, relocations and cutovers;
- Excavation; and
- Key deliveries.

Lendlease will agree the process with HI, LHD, TMC, TfNSW, SCO and Randwick City Council to address the approvals and additional measures required prior to scheduling any out of hour's works. The nature of these works would typically include erection of hoardings, works to footpaths, services connections and other works that interface with the surrounding operational hospital.

With the weekend hours proposed above, sufficient 'respite periods' are provided to the neighboring residents. A minimum of 9 hours is provided as respite even when a weekend closure is underway.

Weekend closures have been indicatively scheduled in accordance with the time motion chart (figure 15). These weekend dates will vary. Lendlease will provide sufficient notification to the stakeholders of upcoming weekend closures to ensure all stakeholders are aware. Approximately 29 weekend closures are anticipated between April 2020 to March 2022, with 11 reserve/contingent weekends. Disruptive works will be carried out in accordance with the CNVMSP located in Appendix 2.

Throughout the duration of these works, Lendlease will ensure compliance with the approved hours. However certain construction activities on a given day may require additional time to complete to ensure the safety of the workers or neighbors. These high-risk scenarios will be identified, and approval sought from the relevant Authorities.

Through consultation with HI and LHD, loading dock closures on a weekday may be sought to facilitate the weekend works schedule. A Friday or Monday shutdown of the loading dock will facilitate high risk works such as mobilisation of cranes, steelwork and other construction materials.

2.3 PROPOSED SITE PLAN

During the course of RCR the Lowering of Hospital Road and UNSW Eastern Extension, see below proposed site establishment to be completed in the following stages:

- Stage 1 – Integrated ASB Addition which includes the Hospital Road Lowering Southern Portion and Construction of the UNSW Eastern Expansion structure and fitout

This plan highlights the location of the site accommodation and project office and how the IASB site is integrated with the Acute Services Building site.

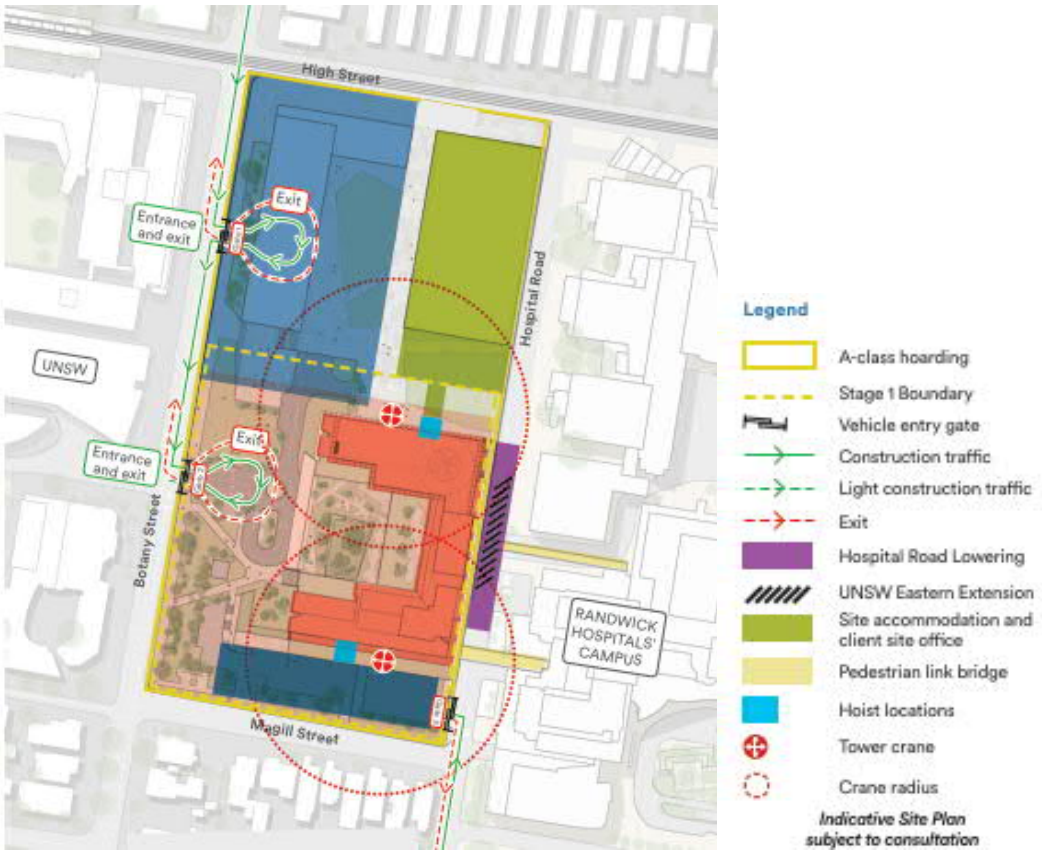


Figure 3 –Lowering of hospital road and UNSW Extension

2.4 CONSTRUCTION WORKFORCE

The construction works for the Lowering of Hospital road works is predominantly civil works. This means the workforce is limited in numbers due to the use of plant and small crews. It is not until the construction of the USNW Extension building commences until the workforce numbers increase. Figure 5 Labour Histogram identifies the workforce numbers. For the first 15 months, the workforce peaks at approximately 40 workers. The peak crew expected for the Structure and fitout phase of the building is 135 workers.

2019											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
									12	16	16
2020											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
20	25	25	30	30	30	35	35	35	35	35	40
2021											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
50	50	78	90	100	110	120	138	138	138	125	120
2020											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug				
103	92	75	61	50	40	30	10				

Figure 4 –Workforce peaks

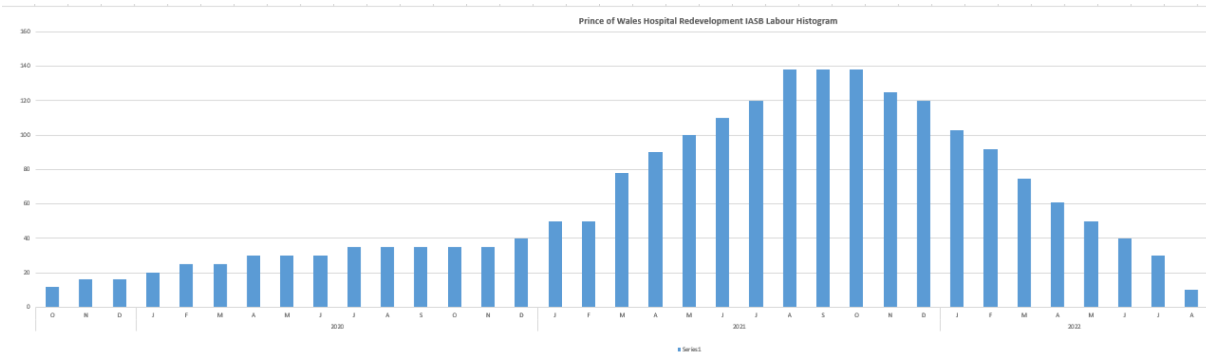


Figure 5 –Labour histogram

2.5 SITE CONTACTS

A list of key contacts, phone (business and after hours) will be maintained and available on site.

Organisation	Contact Name	Contact Number
Lend Lease – RCR Project	[redacted]	[redacted]
[redacted]		
[redacted]	[redacted]	[redacted]
	[redacted]	[redacted]
[redacted]		[redacted]
		[redacted]
[redacted]		[redacted]
		[redacted]
[redacted]	[redacted]	[redacted]
[redacted]		

SafeWork NSW		13 10 50
City of Sydney Council		(02) 9265 9333
South Eastern Sydney Local Health District	[redacted]	9382-2012

The Lendlease project team organizational chart is located in Appendix 1. This shows the key roles on the project and those responsible.

3.0 CONSTRUCTION PROGRAMME & STAGING

3.1 KEY MILESTONES

The table identifies the key milestones of the scope of the IASB addition works.

	Lendlease Program	
	Start Date	Finish Date
Lowering of Hospital Road	23rd March 2020	25 June 2021
UNSW Eastern Extension (Base Building only)	16 April 2021	25 May 2022

3.2 CONSTRUCTION STAGING OVERVIEW

The Lendlease project team fully appreciate the disruption and change the construction works will bring to hospital operations and understand the challenges the HI, SESLHD and Randwick Hospital Precinct management will have in communicating the staging sequences and the program of the works to the staff and public. The better hospital staff and public understand the timing and reasoning of the staging of the works, the more comfortable they will be with the temporary inconveniences.

We have completed an initial review of our construction program and methodology and documented a draft set of staging plans covering the works phases, these will provide the basis for a full set of staging control plans, which will be developed in conjunction with detailed design development during the Planning Phase in consultation with HI, SESLHD and Randwick Hospital Precinct Management.

The staging plans will be developed to include:

- All site establishment items;
- Changed or modified egress paths;
- Pedestrian and vehicle circulation route changes;
- Temporary signage requirements; and
- Upcoming changes to works areas including approximated program dates.

3.3 CONSTRUCTION SEQUENCING

The lowering of Hospital Road is a critical piece of construction that requires highly developed sequence and methodology. Over the course of the design phase Lendlease will continue to develop our construction sequence to ensure safety of all workers and the public, zero unplanned disruptions, and sequence works to ensure Hospital and Dock continuity. A number of small, planned isolated shutdowns are proposed to facilitate the integration works to existing buildings and carry out high risk construction activities.

Some of the major construction sequencing that is being planned in detail include:

- Existing hospital loading dock temporary closures;
- Retention piles installed;

- Install capping beams and progressively adjust sheet piles on the ASB side of the site;
- Bulk excavation;
- Progressively lay new stormwater and sewer pipework to enable a revised connection;
- Install pit and conduit system for new HV;
- FRP ground slab;
- Install permanent piles for UNSW Eastern Extension (Base Building only) and link bridge;
- Undertake "jump steel" construction for the Level 01 slab; and
- Install the new hospital connection link bridge.

3.3.1 Stage 1 of 6 – New High Voltage Feeds for Existing Substation 134 & 1087

During this stage of the project new incoming High Voltage feeds will be installed in Hospital road south of the loading dock and reticulate into both existing substations.

Construction works will be carried out under traffic control. Light construction vehicles will access from Barker street into Hospital road. Vehicles will be sporadic for this type of trench and conduit installation works. Vehicle movements are indicated in the time motion chart below. Access to the Loading dock and Carpark will be maintained during this work. Some weekend closures of the loading dock will be required to facilitate trench and conduit works within the loading dock area. Fleet and SCHN parking is not proposed to be disturbed during these works.

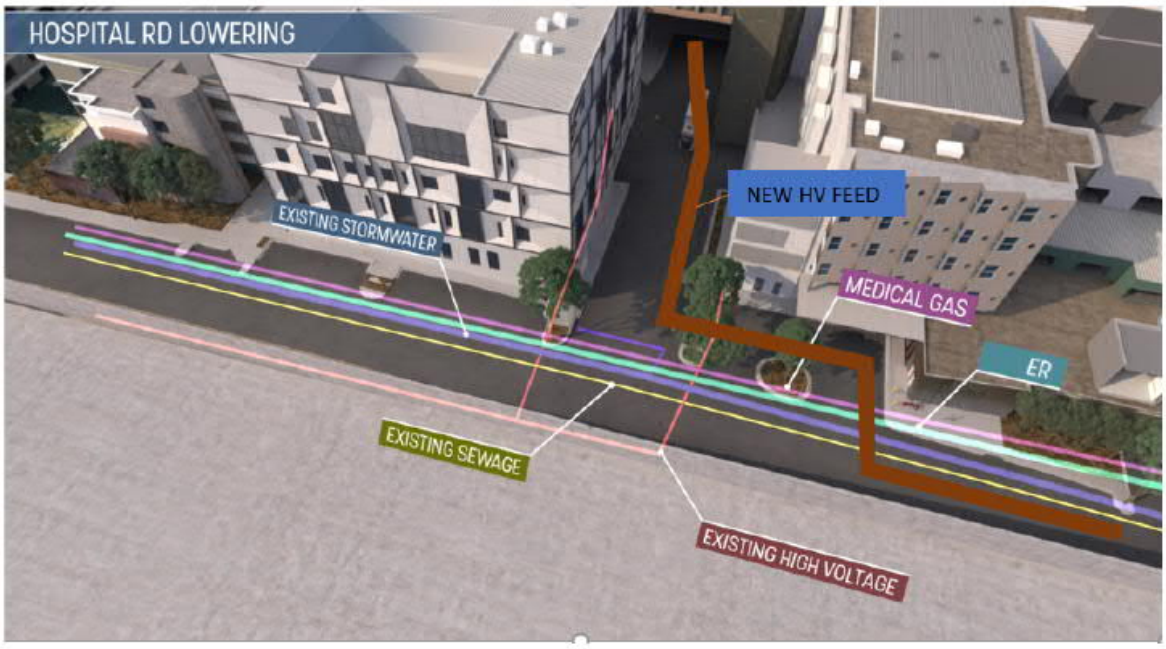


Figure 6 – High voltage install - stage 1 of 6

3.3.2 Stage 2 of 6 – Services diversion South side:

During this stage of the project the southern side of Hospital Road will be occupied by a large 30t excavator to dig down and install the new sewer and stormwater pipe using a shoring box down to the middle of delivery drive.

Construction vehicles will enter and exit the secure compound from Barker Street. Medium Rigid Vehicles (MRV)

9m long are proposed for these works. Vehicles will be sporadic due to the trenching methodology required and depth of services trench. 3-5 tip trucks / day removing spoil from the trench is expected. With the installation of the perimeter hoarding, no through access to public vehicles and pedestrians are possible along Hospital road. Deliveries to the Hospital Loading Dock will approach from High street & Hospital Road intersection. The current intersection is restricted to vehicles of up to 9m only to turn right. After consultation with Transdev and TfNSW, it is requested that no larger vehicles are proposed through High Street due to limitations with swept paths at the intersection. Arup have carried out swept path analysis identifying the turning circles which are included in the Appendix. The Hospital has an existing arrangement where Freight and service vehicles are minimised during commute peak periods (7:00am – 9.30am and 4pm – 6.30pm). This restriction will be maintained as requested by TfNSW to minimise cumulative impacts on the traffic network.

Pedestrians will be diverted along High Street to Botany street and /or Avoca street.

Emergency access / egress arrangements to the main loading dock will be retained. There will be no impact on fire access to the SCHN.

SCHN parking will be retained in its current location. The 8 carspaces opposite Ainsworth building will be removed to facilitate these works from this time. Some minor modifications to existing kerbs and soft landscape will be carried out to provide a turning circle for these vehicles.

Traffic management details are identified in Traffic management plans located in section 4.6.

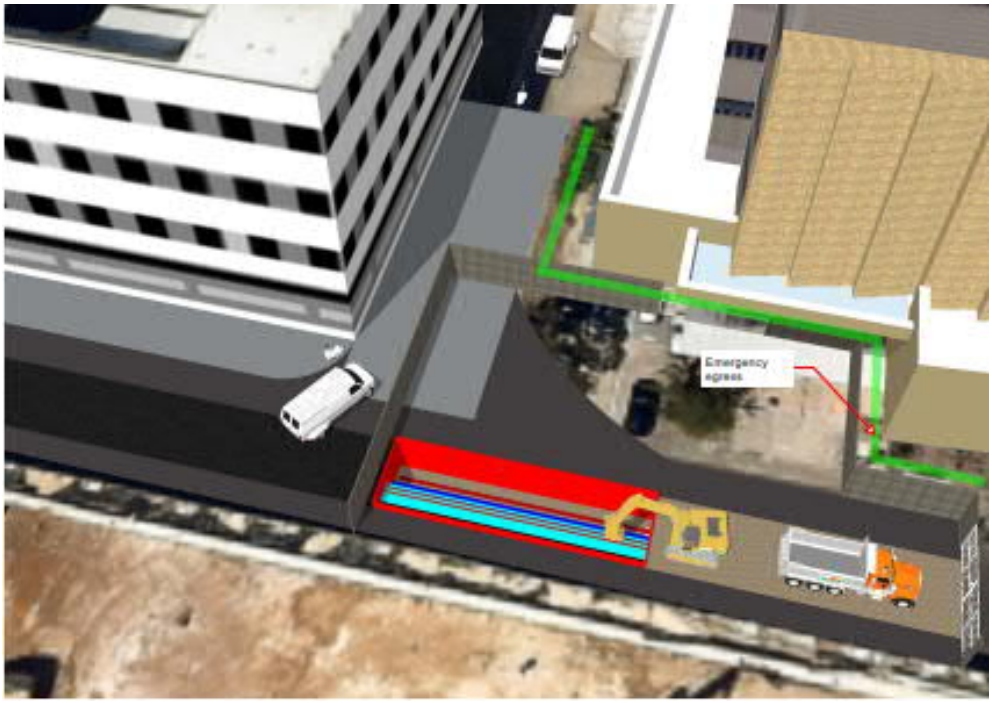


Figure 7 – South stage – services diversion – stage 2 of 6

3.3.3 Stage 3 of 6 – Services Diversion & Retention PilingNorth Side

During this stage of the project the northern side of Hospital Road will be occupied by a large 30t excavator to dig down and install the new sewer and stormwater pipe using a shoring box down to the middle of delivery drive. Final connection will be made to “liven” up the sewer and stormwater works once trenching is complete. The retention piles and new integration building piles will be installed to enable the bulk excavation to commence.

A similar amount of construction vehicle movements are estimated during these works. This is indicated in the time motion chart. Construction Vehicles will approach Hospital road from High street . Due to the minimal volume of construction vehicles per day, there will be negligible impact on the Hospital carpark entry & exit points.
Loading dock access will be from Hospital road north off Barker street. Intermittent weekend closures of the loading dock will be required to facilitate hoarding movements, piling and bulk excavation activities.

Construction vehicles will enter and exit the secure compound from High Street. Construction vehicles will be restricted to Medium Rigid Vehicles (MRV) 9m long as requested by TfNSW. Vehicles will be sporadic due to the trenching methodology required and depth of services trench. 3-5 tip trucks / day removing spoil from the trench is expected. With the installation of the perimeter hoarding, no through access to public vehicles and pedestrians are possible along Hospital road. The current intersection is restricted to vehicles of up to 9m only to turn right. After consultation with Transdev and TfNSW, it is requested that no larger vehicles are proposed through High Street due to limitations with swept paths at the intersection. Arup have carried out swept path analysis identifying the turning circles which are included in the Appendix.

Construction vehicles will be minimised during commuter peak periods (7.00am-9.30am and 4.00pm -6.30pm) to minimise cumulative impacts on the traffic network.

Pedestrians will be diverted along High Street to Botany street and /or Avoca street.

Emergency access / egress arrangements to the main loading dock will be retained. There will be no impact on fire access to the SCHN.

SCHN parking will be retained in its current location. The 8 carspaces opposite Ainsworth building will be removed to facilitate these works from this time. Some minor modifications to existing kerbs and soft landscape will be carried out to provide a turning circle for these vehicles.

Traffic management details are identified in Traffic management plans located in section 4.6.

Figure 8 – North stage – services diversion – stage 3 of 6

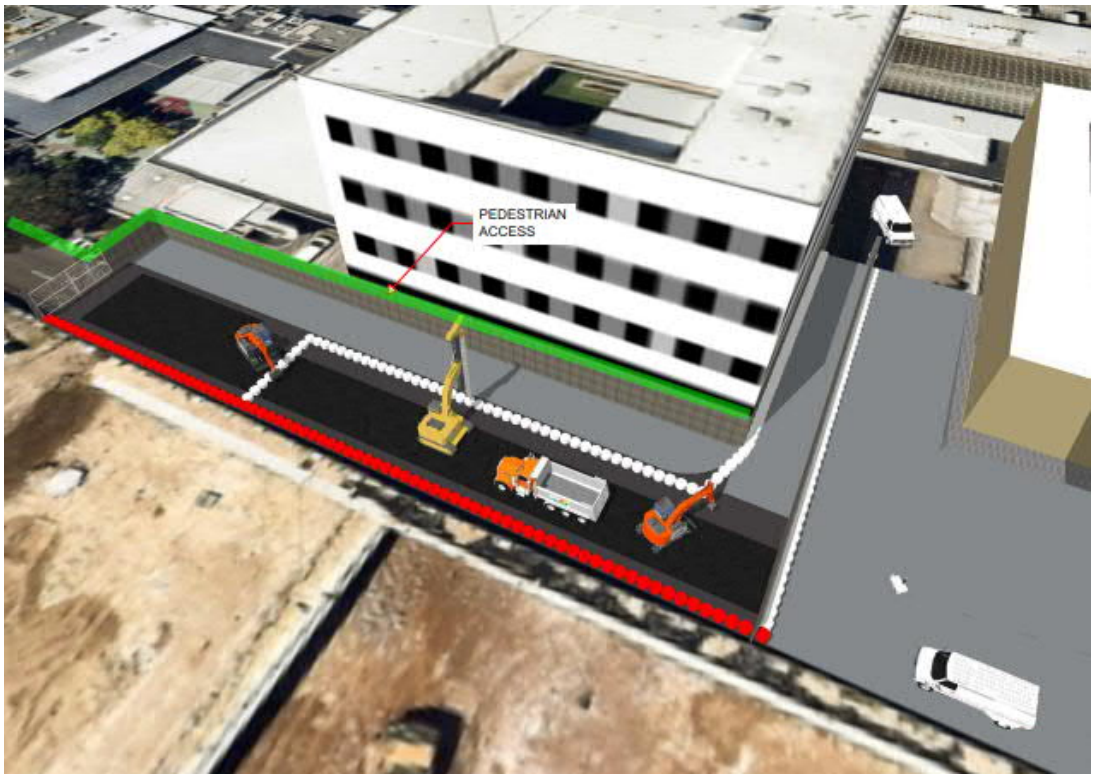


Figure 9 –North stage – retention piling – stage 3 of 6

3.3.4 Stage 4 of 6 – Lowering of Hospital Road – south side

During this stage bulk excavation will be undertaken

Pedestrians will be diverted along High Street to Botany street and /or Avoca street.

Emergency access / egress arrangements to the main loading dock will be retained. There will be no impact on fire access to the SCHN.

Construction vehicles will enter and exit the secure compound from Barker Street. Medium Rigid Vehicles (MRV) 9m long are proposed for these works. Deliveries to the Hospital Loading Dock will approach from High street & Hospital Road intersection. The current intersection is restricted to vehicles of up to 9m only to turn right. After consultation with Transdev and TfNSW, it is requested that no larger vehicles are proposed through High Street due to limitations with swept paths at the intersection. Arup have carried out swept path analysis identifying the turning circles which are included in the Appendix. The Hospital has an existing arrangement where Freight and service vehicles are minimised during commute peak periods (7:00am – 9.30am and 4pm – 6.30pm). This restriction will be maintained as requested by TfNSW to minimise cumulative impacts on the traffic network.

A slightly increased volume of construction vehicle movements are estimated during these works. This is indicated in the time motion chart. Construction vehicles will approach Hospital road from Barker street in order to excavate the existing road to new lower level. Intermittent weekend closures of the loading dock will be required to facilitate hoarding movements, piling and bulk excavation activities.

Traffic management details are identified in Traffic management plans located in section 4.7.

Figure 10 – South stage – Bulk excavation– stage 4 of 6

3.3.4 Stage 5 of 6 – Lowering of Hospital Road – North side

During this stage the remainder of the bulk excavation will be undertaken. Emergency access / egress arrangements to the main loading dock will be retained. There will be no impact on fire access to the SCHN.

Construction vehicles will enter and exit the secure compound from High Street. Construction vehicles will be restricted to Medium Rigid Vehicles (MRV) 9m long as requested by TfNSW. The current intersection is restricted to vehicles of up to 9m only to turn right. After consultation with Transdev and TfNSW, it is requested that no larger vehicles are proposed through High Street due to limitations with swept paths at the intersection. Arup have carried out swept path analysis identifying the turning circles which are included in the Appendix.

Construction vehicles will be minimised during commuter peak periods (7.00am-9.30am and 4.00pm -6.30pm) to minimise cumulative impacts on the traffic network.

Pedestrians will be diverted along High Street to Botany street and /or Avoca street.

A slightly increased volume of construction vehicle movements are estimated during these works. This is indicated in the time motion chart. Construction vehicles will approach Hospital road from High street in order to excavate the existing road to new lower level. Intermittent weekend closures of the loading dock will be required to facilitate hoarding movements, piling and bulk excavation activities.

Loading dock deliveries will be operating from Barker street. This will be in its final arrangement as per end state design.

Traffic management details are identified in Traffic management plans located in section 4.7.

3.3.5 STAGE 6 OF 6 – CONSTRUCTION UNSW EASTERN EXTENSION (BASE BUILDING ONLY) AND LINK BRIDGES

The IASB Addition construction critical path runs through the structural work packages being structural steel, formwork, reinforcement and concrete placement. To ensure the critical path is achieved Lendlease will be utilising “jumpsteel” to effectively and simply support the Level 01 slab over the lowered hospital road. This technique of fast tracking structural works will be utilised on other Lendlease projects such as Sydney Metro Martin Place.

The structural steel elements of the jump steel will be coordinated with the structural steel for the link bridge which is being constructed from the existing hospital out to meet the new façade line. A 3D image of that is also provided below.

The tower cranes for the ASB have been selected to provide lifting coverage for the UNSW Eastern Extension (Base Building only) structural works. This allows the delivery of jump steel and associated building elements to be delivered through Gate 1 or 2 off Botany street. The delivery vehicles will be unloaded on the north/west side of the ASB and lifted across to Hospital road. This will significantly reduce construction vehicles on Hospital road during the construction of the structure.

The below Tower crane Radius chart (figure 12) indicates the reach from the ASB site and coverage of the UNSW Extension building.

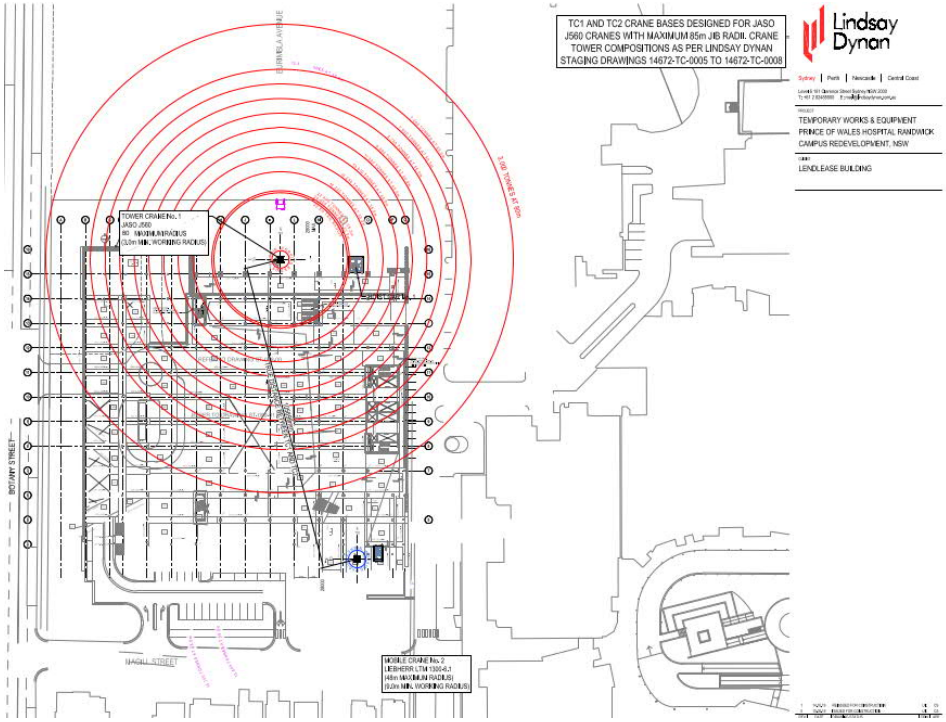


Figure 12 – Tower crane radius chart

At times there will be planned heavy lifts of prefabricated elements such as the bridges and facade components which will require large mobile cranes positioned in Hospital road. Weekend loading dock closures will be required to facilitate these works. These vehicles will approach off Barker road into Hospital road. Construction vehicle volumes on Hospital road are identified in the time motion chart (Figure 15).

Specific transport routes for the steel bridge deliveries will be agreed with TfNSW once a steel contractor is secured for the works.

Figure 13 – Structural Steel elements supported above Hospital Road

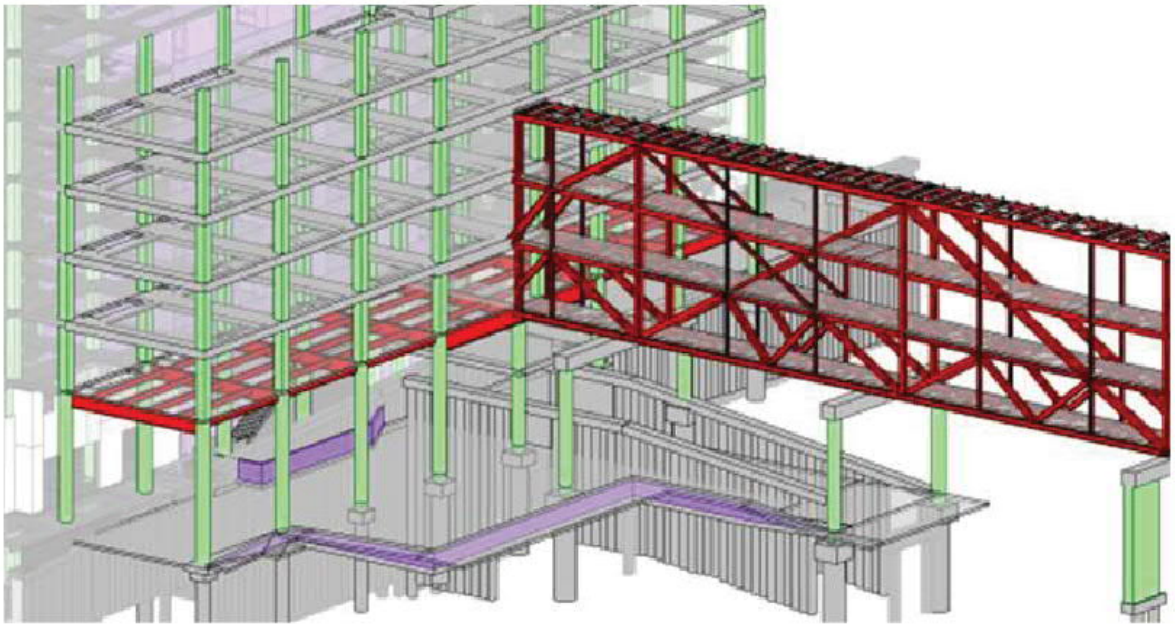


Figure 14 – Patient link bridge and jumpsteel integration

3.4 CONSTRUCTION PROGRAM

The Construction program for the UNSW extension works and Lowering of hospital road is identified in the below time motion study.

The time motion study below summaries the construction program into the stages of works providing detailed information on construction vehicle projections associated with each stage of the works. Peak construction activities are identified when Stage 4 and 5 occur. This is the completion of the bulk excavation of the northern section of Hospital Road and the installation of the Link Bridges to the existing hospital.

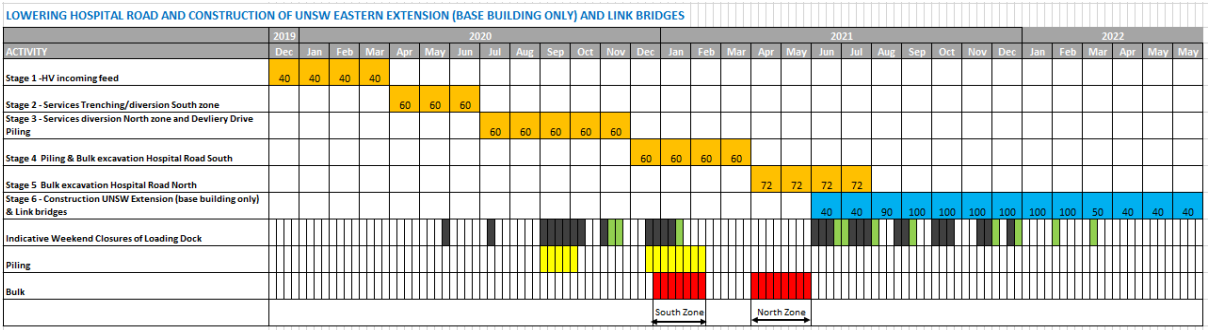


Figure 15 – Time Motion chart study

The cumulative impacts associated with the approved Acute Services Building is very low. The Structure for the

ASB has commenced and peak construction activities for ASB are from September 2020 to March 2021. From which resources and delivery frequency reduce. The below resources chart (figure 16) indicates the peak period of the ASB for comparison to identify low cumulative impact of both projects.

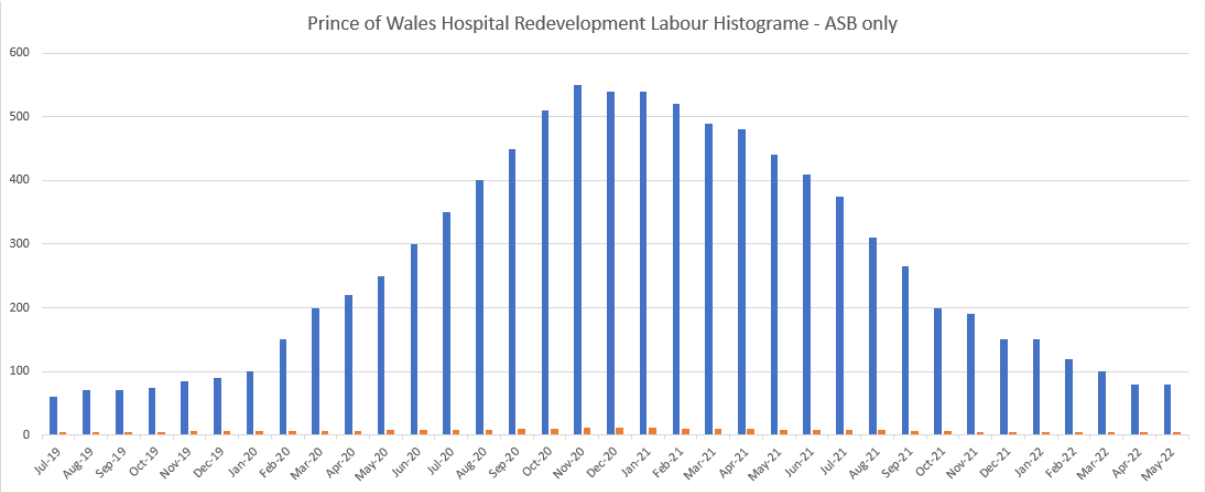


Figure 16 – Acute Services Building Peak workforce

4.0 PURPOSE OF THE CEMP

4.1 OVERVIEW

This CEMP has been developed for the RCR IASB works and provides a management system and procedures to ensure that Lendlease establish and maintain best practice controls to manage potential environmental impacts and risks during the Project and are aligned with the Environmental performance outcomes. Lendlease is committed to providing its services in a manner that conforms to the contractual requirements and to all relevant regulatory and legislative requirements. To achieve this, Lendlease will plan, implement and control an integrated management system that facilitates the management of the environmental aspects of the Project.

The Construction Environmental Management Plan (including all sub plans) is compliant and consistent with:

- ISO 14001:2015;
- NSW Ministers Conditions of Approval SSD 10339
- Environmental Impact Statement (EIS) and Submissions and
- Department of Planning and Infrastructure (known now as the Department pf Planning and Environment, DPE) Guideline for the Preparation of Environmental Management Plans, 2004.

This CEMP has been prepared to specify the actions and environmental controls required during construction works associated with the Project. The primary purpose of the CEMP is to provide a framework reference document detailing how Lendlease will manage and control environmental aspects of the Project during the construction phase. The CEMP will be used as a working document to ensure that obligations and commitments provided in the MCoA, and EIS, and other licences, permits and approvals are made known to all staff (including sub-contractors) and implemented effectively as an integral part of project construction.

It also aims to detail processes to minimise impacts associated with the construction of the project on adjacent sensitive areas in particular Hospital operations.

The CEMP contains core Environmental Management System (EMS) elements and follows the principles of ISO 14001 – 2015. This CEMP has been developed to satisfy the requirements of the Guidelines for the Preparation of EMP's (Department of Planning and Infrastructure (DP&I) 2004). The CEMP will be reviewed when necessary to reflect new processes, controls and procedures.

The CEMP, including the environmental management sub plans and procedures will be applicable to all staff and sub-contractors during the construction phase.

4.2 OBJECTIVES AND TARGETS OF THE CEMP

The environmental objectives for the CEMP in the construction period are:

- To satisfy key requirements contained within the Planning Approval conditions;
- To satisfy key commitments contained in the EIS, SPIR and in other planning documents;
- To ensure compliance with relevant legislation and regulatory requirements;
- To develop, implement and maintain effective management systems for the environmental aspects of construction works;
- To monitor environmental impacts relating to the project as identified in this document and related sub plans; and
- To be consistent with the elements of the Australian / New Zealand Standard 14001: 2015 – Environmental Management Systems (referred to as AS/NZS ISO 14001).

Lendlease will adopt the following objectives and targets:

Objective	Target
To comply with applicable legal and other requirements (environmental laws, regulations, statutory requirements and instruments of approval)	Nil instances of non-compliance with environmental statutory requirements (e.g. infringement notices, clean-up notices, etc.)
To implement a rigorous and comprehensive CEMP that meets the requirements of AS/NZS ISO 14001, and continuously monitor and improve environmental performance	Weekly Environmental Inspections completed; All Environmental Audits completed as per the Lendlease EMS and Environmental Audit program required under MCoA A37; 6 monthly CEMP reviews completed; and All Non-Conformances closed out in specified timeframes.
To minimise waste to land fill, maximise the recycling of waste and ensure traceability	At least 95% of inert and non-hazardous construction and demolition waste, excluding spoil, and at least 60% of office waste is recycled or alternatively beneficially reused.
To provide training and information on environmental aspects/impacts and controls for the project to workers	All workers complete an environment induction prior to commencement of works on site and attend environmental training as per Section 7 of this CEMP
To minimise the impacts of noise and vibration from construction activities.	Maintain noise and vibration levels within project goals, human comfort and structural damage criteria.
To minimise the impacts of dust from construction activities.	Prevent fugitive dust emissions from the construction site.
To protect all heritage items that will be impacted by the Project.	Maintain vibration limits within structural damage criteria. No damage to known 'relics' or heritage items unless consent has been obtained. Protect and manage heritage sites as per the Construction Heritage Management Plan.

4.3 PREPARATION OF THIS CEMP AND SUB PLANS

All environmental management requirements specified as being the responsibility of Lendlease, including those stipulated in the environmental documents, have been considered and addressed in preparing this plan, as have requirements of Lendlease's EMS which is accredited to AS/NZS ISO14001. This plan draws on the extensive knowledge Lendlease has acquired from successful environmental management of multiple and varied projects in a range of locations.

This CEMP has been developed in consultation with the relevant Authorities including Department of Planning, TfNSW, Randwick City Council, UNSW, and the SELHD. The Sub plans have been prepared in consultation where required with the above departments and records have been kept and maintained. This CEMP will be reviewed and revised as per the requirements of CoA B10. This includes:

• In response to internal Environmental Audits as per the requirements of AS/NZS 19011:2014 Guidelines for Auditing Management Systems;

• Consultation with required agencies, authorities and relevant stakeholders;

• Any new or changed environmental risks identified during the project;

• Changes to regulatory requirements;

• Results of corrective or preventive actions;

• Opportunities for improvements identified; and

• Requests by the NSW Department of Planning and Environment (DPE).

The CEMP is the key management tool in relation to environmental performance during the design and construction phases. The CEMP describes the construction environmental management requirements for the Project and Lendlease's system for minimising and managing environmental risks associated with the construction phase of the Project. The CEMP is a dynamic document that will be reviewed and amended to incorporate additional requirements as required, changes to the project team, organisational structure and responsibilities or as improvements to procedures and methodologies develop.

The CEMP will be issued to the project Certifier and a copy provided to the Planning Secretary.

4.4 ENVIRONMENTAL POLICY

Lendlease's Environmental Policy is provided below. Lendlease will seek to ensure that this policy, environmental procedures and construction methods are understood, implemented and maintained by personnel at all levels involved with the Project.

Policy
Environment Health and Safety
Building, Australia

Lendlease Building is part of the Lendlease Corporation, an international property and infrastructure group with core expertise in shaping cities and creating strong and connected communities. Our national delivery capability and sector focused approach enables innovative and industry leading project management, design and construction services driven by detailed sector knowledge and experience.

We are committed to our vision 'to create the best places' through workplaces free of incident and injury wherever we have a presence. Our vision is supported by an uncompromising culture which holds the health and safety of people and the protection of the environment as first in all our business reviews and decisions.

To achieve our vision we are committed to:

- Setting objectives and measurable targets for continual improvement aimed at eliminating work related environment, health and safety (EHS) impacts and incidents associated with our operational construction activities, products and services.
- Complying with applicable legislation, codes of practice, compliance standards, obligations and guidelines.
- Defining roles, responsibilities and accountability for clarity, consistency and predictability across our workforce.
- Understanding the needs and expectations of workers and other parties; including suppliers, subcontractors, clients, the community and regulatory authorities; through partnerships and consultative forums.

Key strategies to achieve our vision include:

- Implementing and maintaining an EHS Management System.
- Integrating risk identification and risk management principles into core planning and delivery activities.
- Considering and taking action on risks, impacts or opportunities that may affect (positively or negatively) the ability of the management system to deliver its intended outcomes, including enhanced EHS management at our workplaces.
- Reviewing objectives and targets regularly to promote continual improvement in EHS performance.
- Promoting senior leadership engagement in assessing the effectiveness of the management system and its implementation.
- Undertaking strategic review of system procedures, policies and annual performance outcomes to reflect current business operations, legal and other requirements.
- Engaging with external stakeholders, including government and industry, to develop and promote leading practices and innovation.
- Developing planning, design and construction delivery solutions that reduce reliance on individual behaviours and the potential for injury and impact.
- Investigating incidents, reviewing the effectiveness of corrective and preventative actions and sharing outcomes to prevent recurrence.
- Planning and implementing timely and effective health and safety, and environmental management remediation strategies.
- Facilitating timely and effective injury management and return to work / rehabilitation for injured workers.
- Consulting regularly with our workforce and key internal and external stakeholders to improve, communicate and seek feedback on EHS initiatives, risks, impacts and outcomes.
- Communicating environment, health and safety information, policies, procedures, alerts and lessons learned to employees, workers and other interested parties.
- Implementing learning and development initiatives to increase EHS skills, awareness and competencies.
- Implementing initiatives to promote the health and wellbeing of employees and other workers.
- Reviewing resources and system documents regularly to ensure effective and pro-active management of EHS.
- Recognising, rewarding and sharing excellence in EHS with internal and external stakeholders.

I commit all of our project management, design and construction services across Australia to this policy and the achievement of our vision, to create the best places.

Dale Connor
Chief Executive Officer, Building

Other Languages

Current as at 03 Sept 2019 Uncontrolled when printed

5.0 INSPECTION, MONITORING, AUDITING AND REPORTING

5.1 ENVIRONMENTAL INSPECTIONS

In accordance with MCoA B27, a compliance monitoring tracking program must be developed and implemented during construction works in order to monitor compliance with the terms of the project approval. Compliance tracking will be undertaken in accordance with the Tracking Program.

A compliance matrix has been established for the works incorporating MCoA, licence conditions, permits and other approvals relevant to the IASB works to track issues and ensure compliance issues are addressed and closed out.

In addition to reporting required under the CTP, the Lendlease Environmental Manager will also prepare a summary report or supply relevant documentation on environmental matters to Sydney Metro on a monthly basis, with a detailed report on environmental performance prepared quarterly.

The Report will include details on:

- Summary of works undertaken for the relevant reporting period;
- All cases of non-compliance with environmental obligations and the CEMP;
- Inspections by agencies and actions resulting from the inspection;
- Actioning and reporting of all incidents;
- Frequency of environmental checklists and actioning of concerns;
- Any client issues not addressed after two months.
- Monitoring results;
- Environmental complaints;
- Audits conducted (internal and external); and

The effectiveness of environmental protection measures described in this CEMP and sub plans will be assessed on a weekly basis by the relevant team members. A checklist will be used to:

- Provide a surveillance tool to ensure that safeguards are being implemented;
- Identify where problems might be occurring;
- Identify where sound environmental practices are not being implemented; and
- Facilitate the identification and early resolution of problems.

Weekly environmental inspections will monitor aspects including;

- Review of relevant works approvals and permits
- Erosion and sediment controls and review of associated plans
- Drainage protection
- Air quality, dust emissions and mitigating controls
- Heritage impacts
- Noise and vibration management including approved working hours, required respites and safe working distances

• Hazardous substances and dangerous goods

• Waste management, recycling and recovery

Any non-conformances identified through the checklist process will be highlighted and an environmental inspection report (minor issues) or an environmental improvement notice/environmental incident report will be completed by the Environment Manager.

The checklist will remain 'open' until:

• The issue has been resolved;

• A new or revised procedure has been established and implemented; or

• Training has been provided to relevant personnel/ sub-contractors.

Site Activity/Description	Frequency	By Whom	Form
Site inspections to ensure site controls operating as required	Daily	Site Supervisor/Foreman	Visual
Lendlease environmental site inspection of activities	Weekly/Monthly	Site Supervisor, Site Foreman, Site Manager, EHS coordinator, Construction Manager, Client Authorised personnel	Environmental Inspection checklist

5.2 ENVIRONMENTAL MONITORING

Environmental monitoring will involve collecting and interpreting data to provide quantification of the effectiveness of the CEMP and sub plans. As required under approved conditions , Construction Monitoring Programs are required to be prepared in consultation with the relevant government agencies. The following monitoring programmes will be implemented;

• A Construction Noise and Vibration Monitoring Program is incorporated within the Construction Noise and Vibration Management Plan (CNVMP) and includes provision of 'realtime' noise and vibration monitoring. This program has been developed in compliance with MCoA B12 and associated conditions during construction with all 'realtime' noise and vibration monitoring data being made available to DPE, EPA, the construction team, and other parties.

• A Groundwater Monitoring Program is incorporated within the Groundwater Management Plan (GWMP) and includes provisions to undertake monitoring of groundwater levels and quality.

• Waste monitoring reporting is incorporated within the Construction Waste Management sub plan (CWMSP). in accordance with the

These aspects will be managed by the site environmental management, inspection and auditing procedures.

The timing, frequency, methodology, locations and responsibilities for the proposed environmental monitoring programs are specified in the respective Sub plans. The monitoring programs range from those involving formal sample collection, analysis and measurement, to those involving a more qualitative assessment.

Irrespective of the type of monitoring conducted, the results will be used to identify potential or actual problems arising from construction processes. Where monitoring methods permit, results will be obtained at the time of the assessment and analysed immediately by the Environmental Manager. This will allow a prompt response to be initiated should an exceedance of accepted levels/criteria be identified.

Where this cannot be achieved, preliminary results will be requested as soon as possible following the monitoring

episode with a full report to follow.

Where a non-conformance is detected or monitoring results are outside of the expected range, the process described in Section 10.4 will be implemented, which would include:

• The results will be analysed by the Environmental Manager in more detail with the view of determining possible causes for the non-conformance;

• A site inspection will be undertaken by the relevant personnel;

• Relevant stakeholders will be contacted and advised of the problem.

• An agreed action will be identified; or

• Action will be implemented to rectify the problem.

A non-conformance Environmental Incident Report and/or Environmental Improvement Notice may be issued by the Environmental Manager in response to the problem if it is found to be construction related. The timing for any improvement will be agreed between the Construction Manager and Environmental Manager based on the level of risk e.g. a significant risk will require immediate action.

Monitoring Requirement	Frequency
Noise monitoring	Continuous 'realtime' monitoring and attended monitoring at the commencement of each work activity to confirm forecasts in the CNVIS
Vibration monitoring	Continuous 'realtime' monitoring and attended monitoring at the commencement of each work activity to confirm forecasts in the CNVIS
Dust monitoring	Visual monitoring completed throughout duration of works and during weekly environment inspections
Erosion and Sediment Control Monitoring	Weekly by environmental staff and as soon as practicable after any major rainfall event; i.e. 10mm in 24 hours

5.3 ENVIRONMENTAL AUDITS

5.3.1 INTERNAL LENDLEASE AUDITS

Internal environmental compliance audits will be conducted by the Environmental Manager. Elements to be audited include:

• Compliance with the conditions of approval;

• Compliance with the EIS;

• Compliance with the CEMP & associated sub plans;

• Compliance with approval, permit and licence obligations;

• Compliance with method statements;

• Complaint response;

• Sub-contractor activities;

• Training records;

• Non-conformances;

• Monitoring results; and

• System documentation such as checklist completion.

Regional environmental system compliance audits will be completed by the Lendlease Regional Environment and Sustainability Manager to monitor compliance with the Lendlease Environmental Management System. Frequencies are outlined in the table included in section 5.3.2.

5.3.2 EXTERNAL AUDITS

External audits may be conducted by Health Infrastructure and an Independent Environmental Auditor. The outcomes of any audit, if reported to Lendlease, will be documented. Corrective Action Requests (CAR) and

Observations of Concern (OOC) will be addressed through the same mechanisms as non-conformances. Resolution of CARs and OOCs will be documented and filed with the Audit Report.

As required by CoA A29 and C35-41, Independent Environmental Audits will be undertaken. A schedule for these audits is to be prepared and issued to the Planning Secretary and Certifier.

Audit Type	Auditor	Timing
Internal Environmental Compliance Audit	Site Construction/Environmental Manager	Pre construction and 3 monthly during construction
Lendlease Regional Environmental System compliance audit	Lendlease Regional Environment and Sustainability Manager	Initial audit within 3 months of construction commencement, then 6 monthly during construction
External Audits	Independent Environmental Auditor	Initial within 12 weeks of commencement, and subsequently 26 weeks.

5.4 COMPLIANCE REPORTING

Reports on compliance with the planning approval or any other statutory requirements will be submitted to DoP in the Compliance monitoring report (CoA B30). The Reports will include:

• a results summary and analysis of environmental monitoring;

• the number of any complaints received, including a summary of main areas of complaint, action taken, response given and proposed strategies for reducing the recurrence of such complaints;

• details of any review of, and minor amendments made to, the CEMP as a result of construction carried out during the reporting period;

• a register of any consistency assessments undertaken and their status;

• results of any independent environmental audits and details of any actions taken in response to the recommendations of an audit;

• a summary of all environmental incidents; and

• any other matter relating to compliance with the terms of this approval or as requested by the Secretary.

The Compliance Tracking Reports will be provided to the Environmental Representative for endorsement.

6.0 COMMUNITY CONSULTATION & COMPLAINT MANAGEMENT

6.1 PURPOSE

This Construction Communications Strategy has been prepared for the Integrated Acute Services Building (IASB) Addition and defines the approach to stakeholder engagement for construction and delivery of the IASB.
This plan has been developed to align with the RCR Communications and Engagement Strategy (RCR CSES) and overarching RCR Construction Communications Strategy.

6.2 STAKEHOLDER ENGAGEMENT

Guiding principles for IASB Stakeholder Engagement

Throughout all stages of IASB construction the project will remain committed to early, coordinated, proactive and transparent stakeholder engagement. Extensive planning and engagement has been undertaken to identify and develop collaborative and productive relationships with key stakeholders to support planning and delivery of the new Acute Services Building, and these have been and will continue to be leveraged throughout planning, design and delivery of the IASB.
Lendlease has a full time Stakeholder Engagement manager allocated to the project to be the direct point of contact for Stakeholder related issues.
The following principles underpin the project's approach to stakeholder engagement for the delivery of IASB:

- **Purposeful:** Engagement is meaningful to stakeholders and provided in a clear and consistent manner.
- **Timely:** Information is provided, and available, to stakeholders at the appropriate time and in the appropriate format.
- **Inclusive:** Engagement activities are accessible to all relevant interested and impacted stakeholders.
- **Respectful:** Stakeholders diverse, needs and perspectives are acknowledged and respected.
- **Transparent:** Engagement is open and honest with expectations clearly set.

Objectives

The success of this plan will be monitored as the project progresses. The successful implementation of this strategy can be articulated through the achievement of the objectives outlined below.

1. Deliver a high quality, consistent and integrated stakeholder engagement approach that supports and aligns with RCR planning and objectives.
2. Implement and maintain effective coordination and communication channels between the project and key stakeholders throughout planning and delivery of the project.
3. Effectively manage and mitigate potential impacts to Randwick Hospitals Campus business continuity and nearby residential and commercial neighbours.
4. Minimise construction impacts to ensure there is minimal impact on the staff, patient and visitor hospital service and experience.

5. Provide a transparent and pro-active consultation process that meets and exceeds best practice stakeholder engagement.
6. Build commitment to, and a shared understanding among project team and stakeholders on the benefits of the Project.

IASB engagement approach

In line with the Project's overarching communication and stakeholder engage plan and the Construction Communication Strategy, coordinated and transparent communications will be integral to the success of this plan.
The below table outlines key objectives that have been set for each main phase of IASB construction.

Project Phase	Objective	KPI
Planning	Identify and build collaborative relationships with impacted stakeholders.	Early identification of issues and modification to the construction methodology that responds to issues or concerns.
	Engage Campus and community stakeholders to analyse construction staging to ensure the methodology pro-actively responds to stakeholder needs.	Early identification of key construction impacts and development of mitigation strategies. Stakeholders are given the opportunity to provide input into the planning and design of the IASB Addition within communicated parameters Stakeholders are listened to and understand how their feedback has been used
	Anticipate and respond to potential issues or concerns transparently.	Provide quick and mutually agreeable resolutions to matters which may impact stakeholders.
Site establishment and construction	Deliver accurate and timely information that address the needs of each stakeholder group.	Stakeholders understand key stages of construction and how impacts are managed Build and maintain project awareness and support Early identification of issues and concerns Issues are managed promptly with transparency
	Deliver a comprehensive	Stakeholders understand how the

	communications program that ensure stakeholders are pro-actively notified of and clearly understand changes to site conditions.	construction activities affects them. Stakeholders clearly understand how to provide feedback or lodge complaints regarding construction activities.
	Provide stakeholders with clear communication channels to raise issues and provide project feedback.	Stakeholders feel valued and confident their feedback is received. Stakeholders receive timely responses to complaints and enquiries.
	Utilise notification platforms to document and communicate potential disruptions for Hospital campus.	Disruptions are communicated in a timely, interactive and transparent manner Disruptive works are approved by key campus stakeholders Stakeholders are provided with advance notice of disruptions Disruption to Hospital campus operations are minimised and effectively coordinated
	Deliver site specific inductions to all workers engaged in the IASB project	All site workers conduct their business in a respectful manner and understand their responsibilities when working in a live Hospital environment and in close proximity to sensitive receivers.
Commissioning and opening of IASB Addition	Communicate information about the benefits to community, site changes. Consistent enhanced reputation of all project partners across the life of the Precinct.	Stakeholders understand the features of the project and how it benefits them

Stakeholder Analysis

The Project's stakeholder environment is complex and extensive. The ongoing proactive identification of issues and sound analysis of stakeholders' needs have been critical factors in successfully managing the Project's interface with staff, health consumers and the community.
The Project team has developed a deep understanding of stakeholders and the engagement environment which has informed the timing, method and level of engagement across all

stages of the redevelopment.
In communicating and engaging with stakeholders, the Randwick Campus Redevelopment project team aims to ensure:

- Stakeholders are aware of the IASB Addition and its purpose within the broader redevelopment
- Stakeholders understand the impacts, benefits and drivers for the IASB Addition
- Stakeholders understand how they can find out more, ask questions and provide feedback about the IASB Addition
- Stakeholders are given the opportunity to provide input into the planning and design of the IASB Addition within communicated parameters
- Stakeholders are listened to and understand how their feedback has been used

IASB Project Stakeholders

Figure 17 – Stakeholder wheel

Table of Stakeholders – Communication Objective – Method of Engagement

Stakeholder Group	Communication objectives	Typical methods of engagement
Hospital - Prince of Wales Hospital Executive, Board, staff, patients, suppliers, visitors, unions, volunteers	• Build awareness • Show staff they are valued partners • Ensure accurate and timely information to staff and other stakeholders, including regular	• Project Governance • Staff Forums, Ward updates, Pop-Up Stands • Communications materials – signage, newsletters, intranet, noticeboard, email

	updates, pop-up stalls and briefings where required • Highlight benefits and drivers for the IASB Addition, including future health, educational and employment opportunities	•
Randwick Health and Education Precinct Executives (UNSW, HI, SESLHD, SCHN)	• Involved in project Governance • Actively participate in strategic development • Project and Precinct Champions - representing the vision and engaging other stakeholders to participate	• Project and Precinct Governance • Briefings – formal and informal • Collaboration workshops • Email
Randwick Hospitals Campus - Royal Hospital for Women, Sydney Children's Hospital, Randwick, Prince of Wales Hospital, Prince of Wales Private Hospital, Eastern Suburbs Mental Health Service, and other health and research institutions	• Build project awareness • Ensure accurate and timely information to staff and other stakeholders, including regular updates • Highlight benefits and drivers for the IASB Addition, including future health, educational and employment opportunities	• Briefings - Staff Forums, Ward Updates • Communications materials – newsletters, intranet, noticeboard, email • Pop-Up information stands
University of New South Wales – executives, other staff, students of UNSW	• Build project awareness • Ensure accurate and timely information, including regular updates and briefings • Highlight role of UNSW as key IASB Addition proponent and funding source • Highlight benefits and drivers for the IASB, including future health,	• Precinct Governance • Briefings – formal and informal • UNSW Newsletter • Pop up information stands • Signage

	educational and employment opportunities	
Randwick City Council – General Manager, planning, traffic and engineering staff, Communication Manager, Councillors	• Build project awareness • Ensure accurate and timely information, especially around the planning process and potential impacts on Magill Street • Be available for briefings as required • Collaborate during planning to ensure feedback, technical requirements are adequately considered in building design and construction staging	• Formal and informal briefings • Written correspondence
Precinct (other) – Transport for NSW CBD and South East Light Rail, community, local schools, bicycle users	• Build project awareness • Collaborative approach to planning and vision • Regular meetings, focused on interface issues, traffic and access and construction management	• Briefings – formal and informal • Communications materials – newsletters, email, signage
NSW Government (Ministry of Health and Departments)	• Collaborative approach to planning and vision • Collaborate during planning to ensure feedback, technical requirements are adequately considered in building design and construction staging	• Project and Precinct Governance • Regular briefings – formal and informal
Consumers – Members of the community, actively participating in planning for the Redevelopment	• Build project awareness • Keep informed •	• Website, phone and email • Briefings – formal and informal • Signage, factsheets,

		project website
Indigenous community – La Perouse Local Aboriginal Land Council	• Engaged in planning throughout project development for ASB.0	• Briefings – formal Engaged regarding Aboriginal Archaeology
Community – immediate neighbours	• Build project awareness, keep regularly informed about developments • Understand key impacts and mitigations proposed as part of the project • Regular contact to discuss project developments •	• Place Manager to perform regular consultation by door knock as project information becomes available with immediate neighbours • Construction impact notifications • Regular community updates • Website, phone and email • Community information drop in session •
Community – commercial, business	• Provide engaging and informative content that promotes accurate information and reiterates IASB Addition drivers and benefits	• Construction impact notifications • Regular community updates • Website, phone and email • Community information drop in session
Community – wider community	• Provide engaging and informative content that promotes accurate information and reiterates IASB Addition drivers and benefits	• Regular community updates • Website, phone and email • Community information drop in session

Communication tools

The following communication tools will be used to facilitate stakeholder engagement during delivery of the IASB.

TOOL	PURPOSE	FREQUENCY	TARGETED STAKEHOLDERS
24/7 community information phone	A key channel for stakeholders to raise issues, ask questions and speak directly to a member of the Lendlease project team.	Prior to commencement of works onsite	• All impacted stakeholders
Site signage	To inform the community about who is responsible for the construction activities and the contact details for further information about the work.	Prior to commencement of works onsite	• All impacted stakeholders
Disruptive Works Notice (Live Ops)	Our LiveOps system, a collaborative digital platform, will be utilised to effectively plan and program works which affect live operations	Issued for approval at least 10 days prior to works commencing	• RCR project team •
Construction Notices - Community	To inform the community about upcoming works on site and outline how to contact the project.	Generally issued monthly/ as required in advance of works	• Community stakeholders
Site Coordination Meetings	To provide information related to upcoming activities as well discuss onsite issues coordination of design and delivery	Weekly / Fortnightly (as directed)	• Prince of Wales Hospital
Construction Coordination Meetings	To help ensure works and materials handling on and around the Hospital campus are coordinated with all neighbouring	Fortnightly / monthly (as required)	• RCR project team • Site contractors

	contractors Opportunity to provide project status updates for the respective projects		
Subcontractor Induction	Educate staff and workers about the correct protocols and procedures when dealing with stakeholders.	Prior to commencing works onsite	• Onsite contractors and staff
Project Updates	To provide an update on the project's overall progress, key achievements and next stages. Updates to be distributed via email, phone or in person	Monthly As Required	• To be disseminated via RCR project team
Virtual Superintendent	A digital platform used to assist in the management of materials through the strategic routing of construction traffic, minimising disturbance to surrounding intersections and traffic flows. Efficient traffic flows will support Major Events within the surrounding Randwick community during construction periods.	As required	• RCR project team

6.3 COMMUNICATION AND ENGAGEMENT PROTOCOLS

Stakeholder and community notification periods

Stakeholder engagement and community notification will:

- outline the reason that the work is required
- outline the location, nature, and duration of the proposed works

- outline work hours
- be written in plain English
- include a diagram that clearly identifies the location of the proposed works, where required
- include 1800 community contact number, project email address and website details

The below table outlines minimum notification periods that will be targeted for stakeholder and community notification. Notification periods prescribed within development approvals or by approving bodies will be adhered to.

		Communication classification				
Construction activity classification	**Notification period**	A	B	C	D	E
Monthly project resident update (general work)	3 days	•	•			
Out of boundary works (low impact)	3 days	•	•			
Out of hours work (low impact)	3 days	•	•			
Out of hours work (high impact work that may cause sleep disturbance)	5 days	•	•	•	•	
Disruptions to public access (traffic and pedestrian diversions)	7 days	•	•	•	•	•
Significant disruptions (I.e. Road closure, disruption to services, closure of access)	7 – 14 days	•	•	•	•	•

A Community notice
B Project website
C Email to impacted stakeholders
D Door knock to impacted residents (including calling card)
E Stakeholder briefing

Stakeholder contact and complaints

Stakeholder contact is any communication with an external stakeholder or community member that results in a transfer of, or request for information. A contact may be a complaint, an enquiry, a comment or a compliment.

All stakeholder contact will be responded to in a professional and timely manner. All stakeholder contact will be documented and captured within the Project's record management system. A complaints register is maintained on the project's website to document complaints received and responses provided by the project team.

The following stakeholder contact categorisation matrix will be used to guide the approach to stakeholder contact.

Classification	Description	Action
High Issue cannot be resolved by the project team.	• Involves media attention/coverage • Involves political and/or government agencies • Relates to safety or security incident.	• Immediate report to the HI Communications Director • No comment to be provided
Medium Issue cannot be immediately resolved	• Involves an individual or group expressing negative sentiments towards the project with risk of further action. • The stakeholder raising the issue is not satisfied with the response provided.	• Project Stakeholder Manager engages the broader project team to investigate further, determine a suitable outcome and respond appropriately • Issue is reported on following reporting protocols
Low Issue can be responded to immediately.	• Involve an individual or group expressing negative sentiments towards the project • Involves an individual or group expressing concern for project impacts and outcomes • There is no threat of further action.	• Project Stakeholder Manager provides the appropriate response and notifies the broader project team as required • Records of low-level issues to be tracked and reported on following reporting protocols

Response Times

The following response times will be targeted for any external stakeholder feedback received (excluding media).

ACTIVTY	RESPONSE TIMEFRAME
Email enquiry acknowledgment	1 business day
Email / onsite enquiry response	5 business days
Site phone line	30 minutes
Website contact form	3 business days

Incident Management

Health Infrastructure's Incident and Communications and Stakeholder Management Plan has been developed for the purposes of providing an incident-specific, proactive framework for the management of incidents and issues with the potential to arise in the construction of major capital works.

The project will comply with the Incident Management Framework as outlined within the Plan. All incidents will be managed by the Project.

6.4 KEY MESSAGES

Key messages form part of the core information provided to stakeholders to remember and respond to. Their inclusion within project communications and accurate reporting in external

publications will be important to ensuring consistency and transparency in the delivery of all communications.

Planning

- Design of the IASB has occurred in close consultation and coordination with key project stakeholders.
- Planning and delivery of the IASB aims to minimise disruption to campus operations and prioritises the safety of staff, patients and the community, and the maintenance of business continuity.
- Careful and considered planning of construction activity and related road usage has occurred in ongoing consultation with Randwick City Council, Hospital campus and relevant road and transport authorities.

Construction

- The health and safety of patients, families, visitors, staff and the community is our top priority.
- We are working closely with Transport for NSW, CBD and South East Light Rail, UNSW and Randwick City Council to coordinate construction in the Randwick Precinct.
- All stages of the Randwick Campus Redevelopment, including the IASB comply with strict environmental and planning controls. Mitigation measures are in place to manage noise, dust and vibration.
- With the exception of trucks moving in and out of site, machinery and equipment will be used and housed behind site hoarding.
- The site perimeter will be secured at all times with no unauthorised access permitted. Construction worker access to the site will be controlled through a secure gate system.
- A hording wall will be installed around the site perimeter. Hoarding is a temporary protective structure designed and installed to allow safe movement around the site vicinity.
- Changes to Hospital Road access will be required during construction. Affected stakeholders will be consulted on all access changes.
- Access to the Hospital car park and loading dock will be maintained.

Workforce management

- Site workers will undertake induction training to make sure they are highly aware and considerate of their presence within the local community and live hospital precinct.
- The IASB construction workforce is provided with dedicated onsite worker amenities and facilities. Construction worker parking will be provided off-site along with a shuttle bus service.
- Littering, idling vehicles, loud or offensive language will not be tolerated by site workers.
- Lendlease works with the entire supply chain to ensure a clean, clear and safe working environment.

Commitment to stakeholders

- Throughout all stages of IASB construction the project will remain committed to early, coordinated, proactive and transparent stakeholder engagement.
- Any impact to the operations and business continuity of Hospital Road stakeholders and Hospital campus will be communicated and coordinated in consultation with key campus representatives
- During IASB delivery the project team will continue to engage with residents, the wider community and associated stakeholders to ensure that an open, honest, clear and consistent messaging is delivered.
- Regular CIG (Construction Interface Meetings) will be established and held to ensure that any interface to the hospital or affected stakeholders is done is in a controlled and timely manner.

6.5 ISSUES ANALYSIS

Due to the high-profile nature of the Project, its location within a prominent precinct in Sydney's east, and the vast number of stakeholders involved, it is important to identify potential issues that could arise throughout any phase of the project and proactively develop and implement mitigation strategies wherever possible.

	THEME	DETAILS	MITIGATION STRATEGIES
PLANNING	Stakeholder requests have not been accommodated	During construction planning users request haven't been actioned or addressed.	• To hold open, engaging and collaborative working group sessions and outline the parameters so the users understand where, and why, changes can and cannot be accommodated.
CONSTRUCTION	Operational capacity of the Randwick Hospital Campus	Management of disruption to essential services and/or infrastructure disruption.	• Develop a detailed services disruption process that is approved and communicated to all relevant parties prior to works commencing • All services disruptions are planned, approved, carefully coordinated, and communicated in a timely manner • Disruption Works Notices are disseminated in a timely fashion to ensure works are planned in a considerate and timely manner.
		Vibration, noisy works and/or dust arising from site.	• Disruptive Works Notices are disseminated in a timely fashion to ensure works are planned in a considerate and timely manner • Noise, dust and vibration control measures are to be implemented inside and outside the Hospitals and Community Health Centres.
		Unapproved obstruction and use of Hospital Road.	• No unapproved obstruction or parking of plant and/or equipment within dedicated hospital parking zones or access ways • All onsite contractors to be advised of no parking areas within

			signage to be displayed in and around site office.
	Site Interface	Avoid or minimise any construction impacts (such as noise, dust, mud) to owners or surrounding building occupants.	• Employ reasonable methods of noise and dust suppression on all compressors, jack-hammers, and other high-noise impact machinery • Disruption Works Notices are disseminated in a timely fashion to ensure works are planned in a considerate and timely manner • Regularly clean public roads which the site sits on as required or when conditions call for it and/or at the request of local authorities.
		Security of Site.	• Employ proper and adequate precautions to prevent unauthorised access to the site.
	Project Communications	Impacted/interested stakeholders are communicated with in a timely and accurate manner	• Disruptive Works Notices and/or Community Construction Notices are disseminated in a timely fashion to ensure works are planned in a considerate and timely manner. • Project signage to link to a project information website which provides details on upcoming activities and project progress. • Project communication material is provided to stakeholders in advance of works occurring.
		Coordination impacts from adjacent construction sites	• Facilitate a monthly Precinct Construction Coordination Group with representatives of contractors from the adjacent building sites • Ensure there is clear delineation and timed communication between projects to minimise construction fatigue and accuracy of information.

	Transportation and Movement	Changes to pedestrian and/or vehicular access to Randwick campus and/or adjacent neighbouring properties	• Any changes are carefully planned in coordination with the project team, Authorities and Randwick Hospital Campus management. Changes are then clearly communicated via onsite signage, briefings, letterbox drops, and the Disruptive Works Notice.
		Wayfinding difficulties	• Display of temporary signage and wayfinding.

6.6 MONITORING & REPORTING

The project promotes a culture of continuous improvement, constantly striving for better outcomes for the project, our reputation, the community and our stakeholders. The following channels will be used to monitor and review the effectiveness of stakeholder engagement.

CHANNEL	OBJECTIVE	DETAILS
Governance	To provide a summary of the stakeholder engagement and communication performance for inclusion in Governance reports.	• Outline key engagement activities for the period • Highlight key stakeholder issues and strategies implemented to address them • Provide visual updates on status of project (i.e. progress photos) • Report on complaints and enquiries response rates
Construction interface meetings with impacted stakeholders	To provide key project stakeholders and Hospital campus representatives with a summary of stakeholder engagement and communications activities underway. This forum acts as a mechanism to ensure key project stakeholders receive timely and relevant communications.	• Outline key engagement activities for the period • Highlight key stakeholder issues and strategies implemented to address them • Provide an opportunity for stakeholders to provide feedback on effectiveness of engagement • Provide stakeholders with an opportunity to share their engagement and communication needs
Communications Working Group (CWG)	To provide a summary of stakeholder engagement activities and issues raised and addressed.	• Outline key engagement activities for the period • Highlight key stakeholder issues and strategies implemented to address them • Reporting on key stakeholder issues, complaints and actions taken • Seeking advice on the engagement and communication needs of key stakeholder groups

7.0 CONSTRUCTION NOISE & VIBRATION MANAGEMENT SUB-PLAN

7.1 OVERVIEW

Lendlease has engaged a suitably qualified expert company, Acoustic Logic Pty Ltd to prepare the Construction Noise and Vibration Management sub plan (CNVMSP).

The CNVMSP has been prepared in accordance with the approved SSD 10339 Conditions to assess the potential noise and vibration impacts associated with the earthworks, excavation and construction components of the Randwick Campus Redevelopment Integrated ASB Addition.

This assessment has been conducted in accordance with the requirements below:

• Conditions B12, C4, C7, C13, C15, C16 and C17 of the Development Consent from the Minister for planning and Public Spaces (SSD 10339);

• NSW EPA Interim Construction Noise Guideline (ICNG);

• A consideration of the procedures and requirements set out Australian Standard 2436-2010 “Guide to Noise Control on Construction, Maintenance and Demolition Sites”;

• The requirements to control noise emissions from the construction site to levels which does not cause undue disturbance to the identified receiver locations;

• The noise mitigation measures available;

• German Standard DIN 4150-3 (1999-02) “Structural Vibration Effects of Vibration on Structures”;

• Environmental Noise Management Assessing Vibration, a technical guideline (DEC 2006)

• British Standard BS 6472 – ‘Guide to Evaluate Human Exposure to Vibration Buildings (1Hz to 80Hz)

The CNVMSP provides detailed baseline data and identifies measures to be implemented to comply with the requirements of the plan.

7.2 MONITORING & CONSULTATION

Condition C8 requires four weekends of monitoring the effectiveness of the CNVMSP. This process is outlined in the sub plan all relevant Consent conditions will be adhered to.

Acoustic Logic will prepare the specific out of hours CNVMP and will have resources on site during the weekend work to provide live monitoring data.

Due to the sensitive receivers and adherence with the CNVMSP, the plan will be monitored for its effectiveness during the works and updated to suit changing methodology or site

conditions. Any new versions of the plan will be submitted to the required Authorities.
As part of the EIS submission, a Noise and Vibration Impact Assessment prepared by Acoustic Studio was submitted. There were no responses received by the Community to this plan during the Response to Submissions time frame. Residents, Stakeholders and other relevant parties were invited to the two Community forums held by Health Infrastructure NSW to provide consultation on the upcoming works. Lendlease representatives were present during this time to discuss construction methodology of the works and associated impacts such as noise and vibration. No identified concerns or issues were raised at this time by those that attended impacting the development of the CNVMSP.
Following these forums, Lendlease identified that the key community consultation for developing the CNVMSP included the Hospital buildings adjacent to the proposed IASB works.

This included the:

- Royal Woman's Hospital (RHW)
- Sydney Children's Hospital (SCHN)
- Prince of Wales Private Hospital (PoWP)
- South East Sydney Local Health District (SESLHD)
- Healthshare

A dedicated Hospital Road Control Group (HRCG) has been formulated to bring together the key Community Stakeholders, along with Health Infrastructure, PwC and Lendlease to consult on the proposed works and impacts. Noise and vibration impacts and strategies have been identified and proposed as follows:

- Each individual Hospital operations identifying hazards and risks of the works
- Detailed presentations on the construction works and techniques at each stage of the programme and the proximity to the buildings
- Adopting construction techniques to suite access requirements for the works
- Describing predicted noise and vibration levels
- Implementation of hoardings to provide noise separation
- Advanced warning of noisy works
- Implementation of live monitoring
- Dedicated on site engineers during the works to provide consultation on exceedances.

7.3 CNVMSP

The CNVMSP is located in the Appendix 2.

8.0 CONSTRUCTION WASTE MANAGEMENT SUB-PLAN

8.1 OVERVIEW

Lendlease Building operates an integrated management system where the functions and requirements of environment management and work health and safety (WHS) /occupational health and safety (OHS)/occupational safety and health (OSH) management are integrated.

The LLB EHS MS Manual provides the overall framework for EHS management at LLB workplaces including construction projects. Within this manual there are specific sub plans. The Construction Waste Management Sub Plan (CWMSP) is a sub plan which is prepared in accordance with relevant Legislation and Guidelines. It is then adapted to the site specific requirements identifying waste streams and disposal locations and methodologies.

The CWMSP has been prepared in accordance with the approved SSD 10339 Condition B13. The plan has been prepared by the Construction Manager and reviewed by the Regional EHS Manager for Lendlease.

8.2 MONITORING & CONSULTATION

As part of the Lendlease Building EHS Manual, the plan is required to be updated 3-monthly. This will require a review of the scope, and the compliance with the plan. Monthly waste stream statistics will be received to monitor effectiveness of the methodologies, and streams of waste and volume generated. Consultation will occur with the relevant stakeholders if non conformances are identified.

The CWMSP will be issued to the subcontractors to ensure adherence and compliance throughout the project.

8.3 CWMSP

The CWMSP is located in the Appendix 3.

9.0 CONSTRUCTION SOIL AND WATER MANAGEMENT SUB-PLAN

9.1 OVERVIEW

Lendlease Building operates an integrated management system where the functions and requirements of environment management and work health and safety (WHS) /occupational health and safety (OHS)/occupational safety and health (OSH) management are integrated.

The LLB EHS MS Manual provides the overall framework for EHS management at LLB workplaces including construction projects. Within this manual there are specific sub plans. The Stormwater and Erosion Management Sub Plan (SEMSP) is a sub plan which is prepared in accordance with relevant Legislation and Guidelines. It is then adapted to the site-specific requirements identify strategies and mitigation measures to be implemented during construction activities and defines discharge protocols and treatment procedures to enable control of the impacts of the construction activities on potentially affected areas of adjacent water bodies.

The SEMSP has been prepared in accordance with the approved SSD 10339 Condition B11, B14, B18, C26 & C28. The plan has been prepared by the Construction Manager and reviewed by the Regional EHS Manager for Lendlease.

Lendlease has further engaged Douglas Partners, to develop a Dewatering Management plan to support the SEMSP and is included in the appendix of the SEMSP. This has been developed by site sampling of the strata and topography conditions.

9.2 MONITORING & CONSULTATION

As part of the Lendlease Building EHS Manual, the plan is required to be updated 3-monthly. This will require a review of the scope, and the compliance with the plan. Weekly and monthly environmental inspections will be carried out by Lendlease site personnel. After significant rain events inspections will take place. Following these inspections consultation will occur if any changes are required to the controls in place.

The SEMSP will be issued to the subcontractors to ensure adherence and compliance throughout the project.

The Dewatering Management Plan and SEMSP has been issued to Randwick City Council for consultation and commentary.

9.3 SEMSP

The SEMSP is located in the Appendix 4.

10.0 MANAGEMENT OF AIR QUALITY SUB-PLAN

10.1 OVERVIEW

Lendlease Building operates an integrated management system where the functions and requirements of environment management and work health and safety (WHS) /occupational health and safety (OHS)/occupational safety and health (OSH) management are integrated.

The LLB EHS MS Manual provides the overall framework for EHS management at LLB workplaces including construction projects. Within this manual there are specific sub plans. The Air Quality Management Sub Plan (AQMSP) is a sub plan which is prepared in accordance with relevant Legislation and Guidelines. It is then adapted to the site-specific requirements identify strategies and mitigation measures to minimise and control the generation of dust, odour and emissions to the environment during the construction activities.

The AQMSP has been prepared in accordance with the approved SSD 10339 Condition B11, C24 & C25. The plan has been prepared by the Construction Manager and reviewed by the Regional EHS Manager for Lendlease.

10.2 MONITORING & CONSULTATION

As part of the Lendlease Building EHS Manual, the plan is required to be updated 3-monthly. This will require a review of the scope, and the compliance with the plan. Monthly air quality data will be received to monitor effectiveness of the methodologies. Consultation will occur with the relevant stakeholders if non conformances are identified.

The AQMSP will be issued to the subcontractors to ensure adherence and compliance throughout the project.

10.3 AQMSP

The AQMSP is located in the Appendix 5.

11.0 GROUNDWATER MANAGEMENT PLAN

11.1 OVERVIEW

Lendlease has engaged a suitably qualified expert company, Douglas Partners Pty Ltd to prepare the Groundwater Management Plan (GMP).

This report provides an assessment of the site and the potential impact of groundwater (including seepage flows) and the water table upon the development. The report identifies measures to be implemented to effectively manage groundwater where affected. The GMP also identifies dewatering management processes for the site.

The GMP has been prepared in accordance with the approved SSD 10339 Condition B38, and utilises previous geological studies of the site.

11.2 MONITORING & CONSULTATION

The GMP identifies measures in place for effective monitoring of Groundwater during construction and required Consultation. The monitoring will be utilsing existing bore log well. By effectively monitoring this well, if any contaminants are identified, this will alert the subcontractor on potential risk. Measures are identified in the GMP on how to deal with these risks.
Douglas Partners will be engaged during the works to provide expert advice and consultation from ongoing monitoring of groundwater.

The GMP will be issued to the subcontractors to ensure adherence and compliance throughout the project.

11.3 GMP

The GMP is located in the Appendix 6.

12.0 UNEXPECTED FINDS PROTOCOL

12.1 OVERVIEW

Lendlease Building operates an integrated management system where the functions and requirements of environment management and work health and safety (WHS) /occupational health and safety (OHS)/occupational safety and health (OSH) management are integrated.

The following protocol is developed from the EHS manual which can utilized for finds relating to contamination, Aboriginal, and non-Aboriginal heritage associated works.

12.2 MONITORING & CONSULTATION

From the known conditions of the Site, and from the EIS reports prepared the following monitoring will be taking place during excavation works:

- Aboriginal heritage monitoring provided by the Local Land Council as directed by the Heritage Consultation, Mary Dallas and Associates. This is in accordance with the Aboriginal Cultural Heritage Assessment Report dated October 2018 and the

subsequent Appendix C.

- Possible Unexpected finds relating to asbestos in soils, as noted in the Douglas Partners DSI report. Within the Remediation Action Plan (RAP) a project specific detailed Unexpected Finds Protocol is outlined in section 10 of the RAP for compliance outlining the protocol and associated communications requirements.
- In accordance with Consent condition B33 and B34, the Douglas Partners Remediation Action Plan includes a detailed Asbestos management plan. This plan along with the RAP has been reviewed by the NSW EPA Accredited Site Auditor, Senversa for its completeness and compliance with legislation. This review is outlined in the Auditors statement included in the Appendix

12.3 Remediation Action Plan

The RAP is located in the Appendix 7.

12.4 Site Auditor Review Statement

The Site Auditor Review statement is located in the Appendix 8.

13.0 EXTERNAL TEMPORARY LIGHTING

13.1 OVERVIEW

Throughout the construction planning of the IASB works there has been no identified requirement for external temporary lighting.

Upon construction, should there be a requirement to install external temporary lighting caused by a change in sequence, methodology or request by others, Lendlease will engage a suitable Electrical Consultant to ensure that the lighting is design in compliance with AS4282-2019. Ensuring control of obtrusive effects of outdoor lighting.

14.0 APPENDICES

APPENDIX 1 – PROJECT ORGANISATIONAL CHART

APPENDIX 2 – CNVMSP

APPENDIX 3 – CWMSP

APPENDIX 4 – SEMSP

APPENDIX 5 – AQMSP

APPENDIX 6 – GROUNDWATER MANAGEMENT PLAN

APPENDIX 7 – RAP

APPENDIX 8 – SITE AUDITOR REVIEW STATEMENT

APPENDIX 10 – OUTDOOR LIGHTING ASSESSMENT FOR EXTENDED WORKING HOURS

To: [redacted]

From: [redacted]

Date: 22nd April 2020

Subject: Extended work Hours Application

In response to RCR Main Works Contract (HI17407MW) – Application for Extended Work Hours which calls for the provision of documentation to support an extended hours application for SSD9113 & SSD10339.

Item 1: Outdoor Lighting Assessment

Acknowledging that extended work hours will require additional specific task lighting, Lendlease propose the following strategy. The strategy has been developed to address the following 3 key challenges;

1. To provide a properly illuminated and safe work environment for staff and contractors.
2. To contain necessary light spill to the confines of the project site wherever possible.
3. To limit the amount of additional artificial evening light impact on the adjoining residents and buildings, in particular sensitive activities associated with the hospital functions.

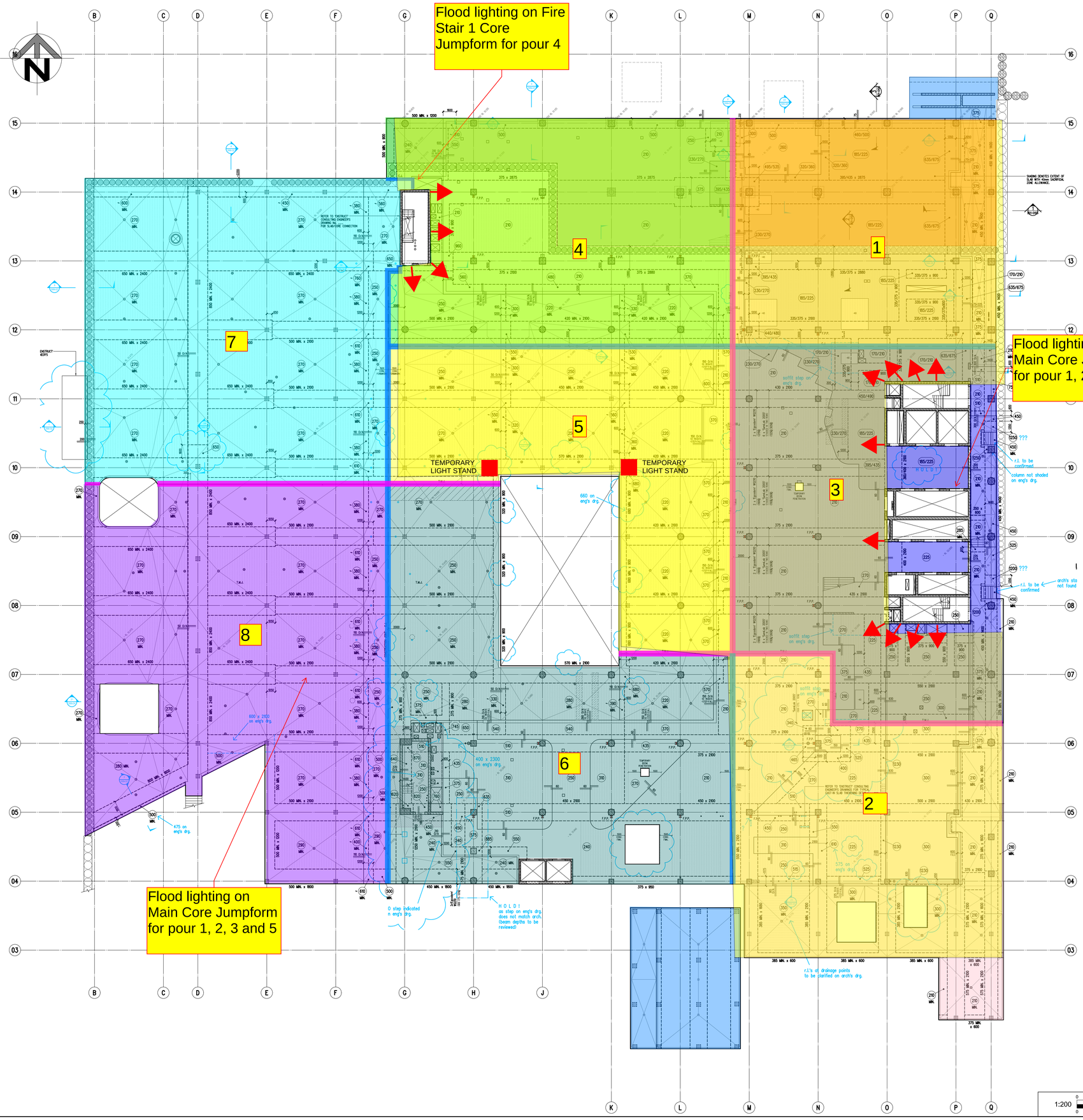
The extended working hours lighting strategy would include;

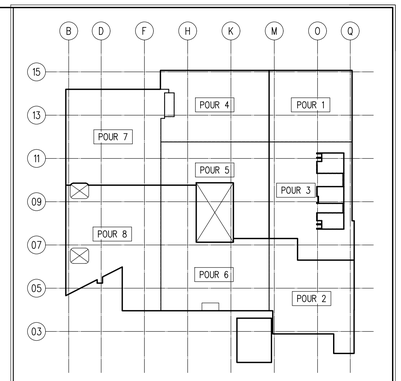
- Provision of floodlights located on cores and cranes to properly illuminate structural decks.
- Lighting to hoists and landing platforms on each level
- Lighting to jump forms
- Floodlighting to all areas of concrete pours
- Access lighting to all work faces from point of entry i.e. site sheds
- Flood lighting at site entrances, assembly area and material handling and laydown spaces
- Emergency lighting to/from every floor

Refer to following sketches for Lighting Strategy

The temporary lighting design shall be done on the basis of *AS4282-1997* as outlined in the SSD 9113.

Regards
Lendlease Building





LEVEL -01 (BASEMENT B1) - KEY PLAN

Fredon temp scope of works must be carried out to to enable to following

- Floodlights located on the cores / crane towers etc to light up structural decks to provide sufficient lighting for late concrete pour
- Lighting to hoists & landing platforms on each level.
- Lighting to the jump form.
- Lighting to the core system including trailing decks.
- Floodlighting to the concrete placing zones
- Access lighting to every floor of the structure including the roof & helipad.
- Access lighting to formed areas including allowance to relocate when required due to changes in site conditions.
- Emergency lighting & exit signage to every floor of the structure including the roof & helipad.

LEVEL

Rev.	Description	Date	By
A	FOR INFORMATION ONLY	19.03.20	G.G.

FOR INFORMATION

SRG GLOBAL — MAKING THE COMPLEX SIMPLE

Engineer Construct Sustain

SRG GLOBAL BUILDING (NORTHERN) PTY LTD ABN: 87 076 604 281
Suite 3 Level 1, 75 Carnarvon Street Silverwater NSW 2128
P: +61 2 8767 6200 E: info@srgglobal.com.au srgglobal.com.au

CLIENT

lendlease

PROJECT

RANDWICK CAMPUS REDEVELOPMENT
BUILDING 50
BAKER ST RANDWICK

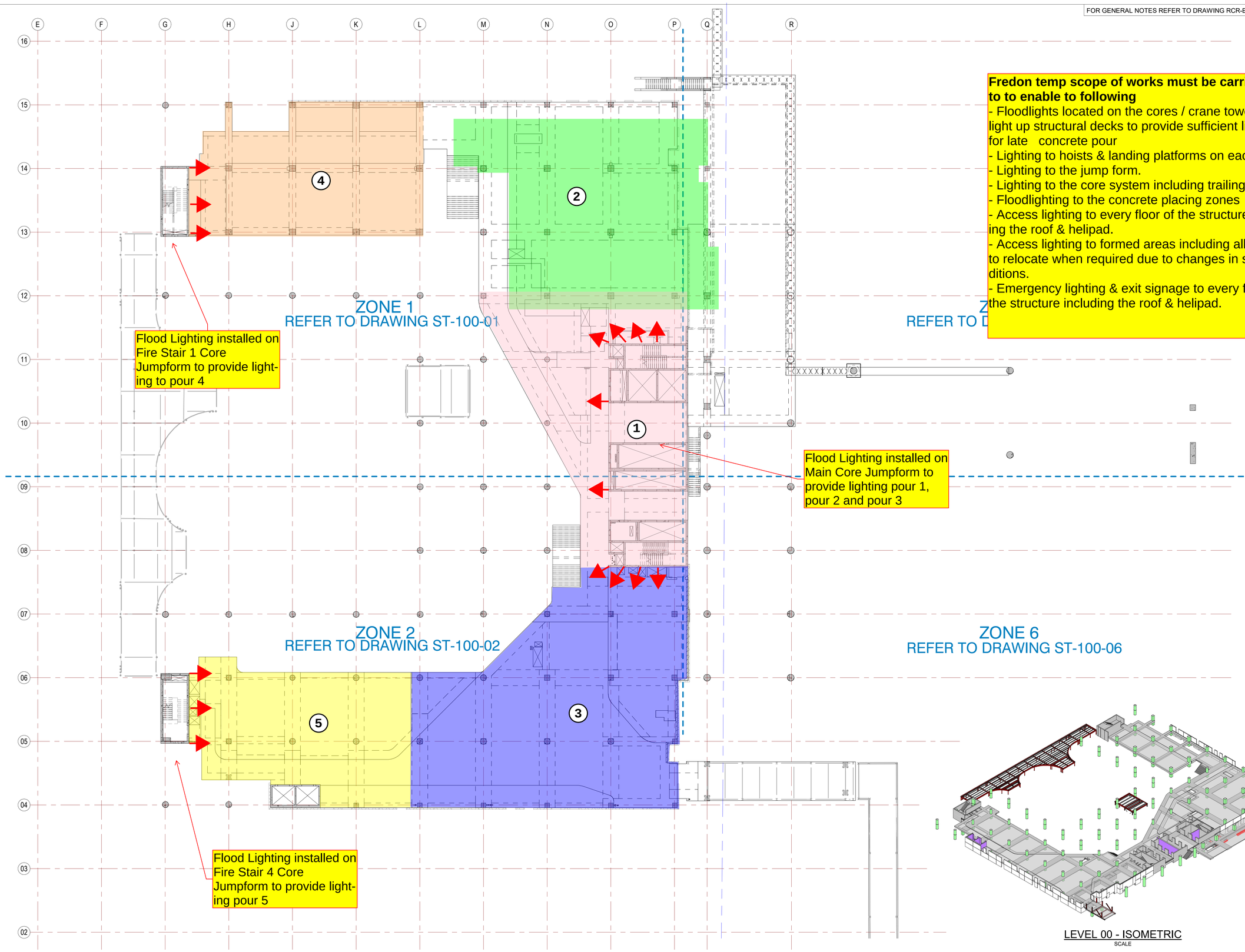
TITLE

LEVEL -01 (BASEMENT B1)
GENERAL CONCRETE PROFILES

Drawn Greg G.	Designed Nathan S.	Drawing Size B1	
Project No. N19050	Checked	Scale 1:200	
Drawing Number RCR-SRG-STR-50-SPD-B01-0001		Revision 'A'	

1:200 0 2m 4m 6m 8m 10m 20m 30m
0 50mm 100mm 150mm

FOR GENERAL NOTES REFER TO DRAWING RCR-ENS-STR-50-DRW-001-01



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LEVEL 00 - OVERALL GENERAL ARRANGEMENT
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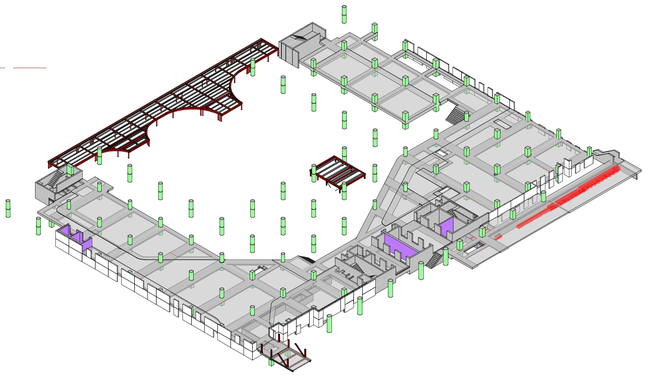

LEVEL 00 - ISOMETRIC
SCALE

HATCH INDICATES CURRENT PENETRATION PROVISIONS ZONE. REFER TO PLAN FOR LOCATIONS. REFER TO DRAWING ST-010-40 FOR DETAILS

HATCH INDICATES FUTURE PENETRATION PROVISIONS ZONE. REFER TO PLAN FOR LOCATIONS. REFER TO DRAWING ST-010-40 FOR DETAILS.

LEGEND:

- DENOTES CONCRETE ELEMENT OVER
- DENOTES LOAD-BEARING ELEMENT UNDER
- DENOTES LOAD-BEARING ELEMENT UNDER AND CONCRETE ELEMENT OVER
- DENOTES NON-LOAD BEARING PRECAST WALL

CONFIDENTIAL & COMMERCIAL-IN-CONFIDENCE

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NOTE
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ISSUE	DATE	FOR
A	11.07.17	DRAFT ISSUE
B	17.07.17	40% ISSUE
C	29.09.17	70% SD ISSUE
D	11.10.17	70% SD ISSUE
E	13.11.17	DRAFT 95% SD ISSUE
F	30.11.17	95% SD ISSUE
G	31.01.18	100% SD ISSUE
H	09.02.18	100% SD ISSUE UPDATE
I	16.02.18	100% SD ISSUE UPDATE
J	28.06.18	50% DD ISSUE
K	03.08.18	ISSUED FOR COODINATION
L	20.08.18	100% DD ISSUE
M	31.08.18	100% DD UPDATES
N	07.09.18	100% DD UPDATES
O	14.09.18	100% DD UPDATES
P	30.11.18	ISSUED FOR INFORMATION
Q	21.12.18	ISSUED FOR PRECAST TENDER
R	18.01.19	ISSUED FOR P/T DESIGN AND REVIEW
S	10.05.19	ISSUED FOR UNSW + HRL IMPACTS
1	16.08.19	CC2 ISSUE

PROJECT MANAGEMENT
PWC

ARCHITECTS
BVN / TERROIR

MECHANICAL ENGINEERING
LEHR CONSULTANTS INTERNATIONAL

ELECTRICAL ENGINEERING
WOOD & GRIEVE ENGINEERS

HYDRAULIC ENGINEERING
ACOR CONSULTANTS

CONSTRUCTION MANAGER
lendlease

CLIENT
NSW GOVERNMENT Health Infrastructure

HEALTH INFRASTRUCTURE
CLIENT NUMBER
130487

PROJECT
RANDWICK CAMPUS REDEVELOPMENT

BAKER ST
RANDWICK NSW 2031
AUSTRALIA

ENSTRUCT PROJECT NUMBER
5385

DRAWING KEY

TRUE NORTH PROJECT NORTH

GRAPHIC SCALE
0 2000 5000

SCALE
1 : 200@B1 DO NOT SCALE

STATUS
FOR TENDER

DRAWING
BUILDING 50
LEVEL 00 - OVERALL GENERAL ARRANGEMENT

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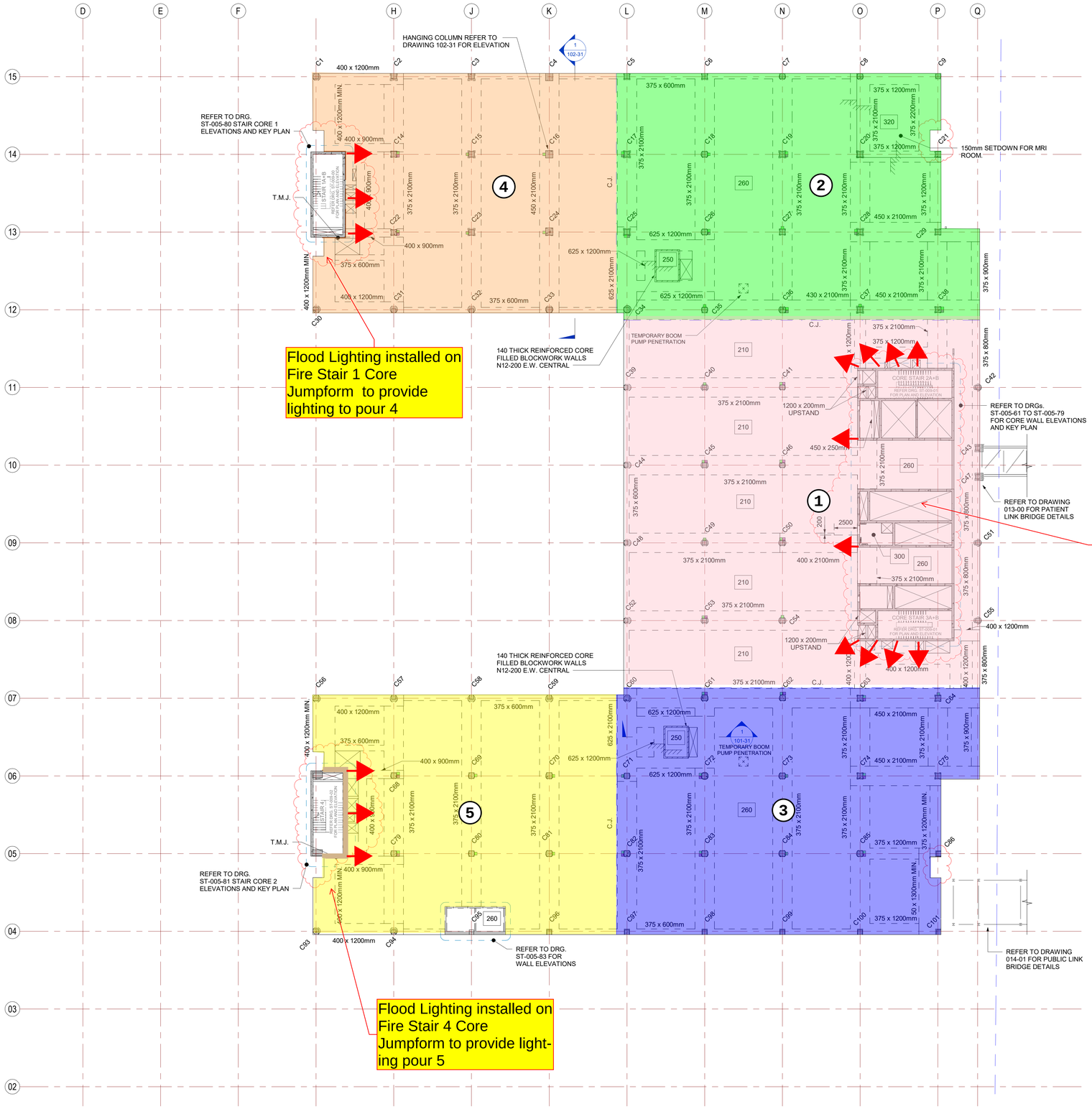
FOR GENERAL NOTES REFER TO DRAWING RCR-ENS-STR-50-DRW-001-01



- ALL SLABS / BEAMS CONCRETE STRENGTH f'c=40MPa U.N.O.
- POST TENSIONED SLAB THICKNESSES INCLUDE 40mm NON-STRUCTURAL TOPPING WHERE APPLICABLE TO BE POURED INTEGRAL WITH STRUCTURAL ELEMENTS TO ALLOW FOR FUTURE MODIFICATIONS TO SETDOWN AREAS.
- ALL BAND BEAMS TO BE POST TENSIONED U.N.O. BEAM THICKNESSES INCLUDE 40mm NONSTRUCTURAL TOPPING WHERE APPLICABLE TO BE POURED INTEGRAL WITH STRUCTURAL ELEMENTS TO ALLOW FOR FUTURE MODIFICATIONS TO SETDOWN AREAS.
- ALL PENETRATIONS 200mm AND ABOVE OR ANY GROUPED PENETRATIONS TO BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR APPROVAL.
- REFER TO ARCHITECTS DRAWINGS FOR SETDOWNS IN NON-STRUCTURAL ZONE, PLINTH AND HOB SETOUT, SIZES AND LOCATIONS. ALL HOBS AND PLINTHS TO BE POURED INTEGRAL WITH PRIMARY STRUCTURAL SLAB.
- DRAWING TO BE READ IN CONJUNCTION WITH ALL SERVICES CONSULTANTS DRAWINGS FOR PENETRATION, RISER LOCATIONS AND RISER SLAB INFILLS. NOTE SERVICES COORDINATION IS ONGOING.
- ALL DIMENSIONS ARE MINIMUM DIMENIONS.
- FALLS TO ARCHITECTS DETAIL.

T.M.J. DENOTES TEMPORARY MOVEMENT JOINT (TO BE LOCKED IN AFTER 56 DAYS.)

NOTE: LEVEL 1 SLAB HAS BEEN DESGINED TO ACHIEVE RF = 1 VIBRATION REQUIREMENT TO NORTH OF GRID 12 & SOUTH

NOTE:
ALL VERTICAL BRACING TO BE 20 Dia. ROD CROSS-BRAACING WITH TURNBUCKLE. ALLOW FOR SAG RODS FOR ALL HORIZONTAL ROOF BRACING.

LEGEND:

- DENOTES CONCRETE ELEMENT OVER
- DENOTES LOAD-BEARING ELEMENT UNDER
- DENOTES LOAD-BEARING ELEMENT UNDER AND CONCRETE ELEMENT OVER
- DENOTES NON-LOAD BEARING PRECAST WALL
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LEVEL 01 - GENERAL ARRANGEMENT

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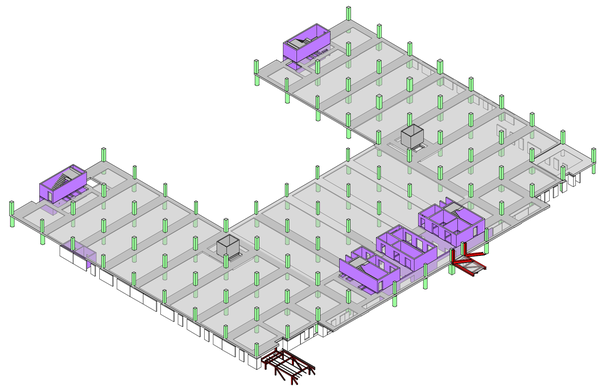

LEVEL 01 - ISOMETRIC

SCALE

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DRAWINGS DO NOT INCLUDE ANY ALLOWANCE FOR UNSW EXPANSION

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SCALE

As indicated@B1 DO NOT SCALE

STATUS

FOR TENDER

DRAWING

BUILDING 50
LEVEL 01 - GENERAL ARRANGEMENT

DRAWING NUMBER ISSUE

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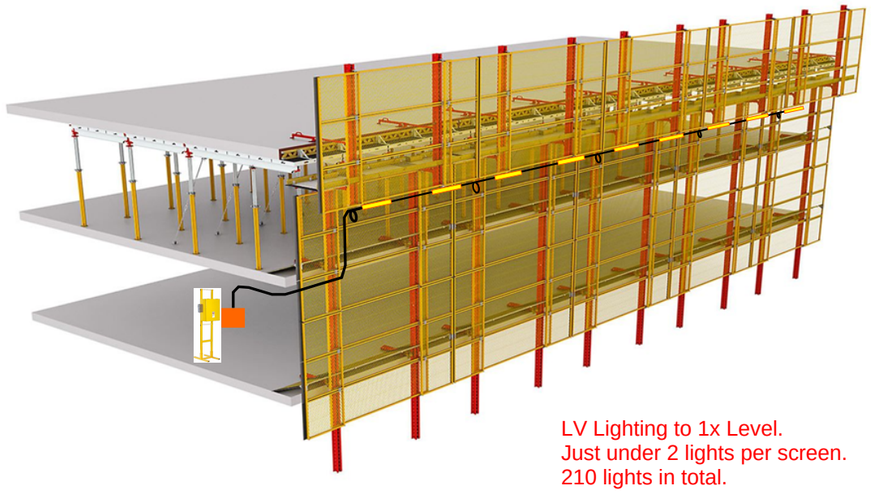


LV Lighting to 1x Level.
Just under 2 lights per screen.
210 lights in total.

OPTION PRICING

Lighting on each periscreen.
Lighting will need to be plug & play which will climb with the screens.
Lighting will need to be unplugged before the jump and plugged back in after it climbs

P03 SCREEN LAYOUTS LEVELS 2,3 & 4

SCALE NTS

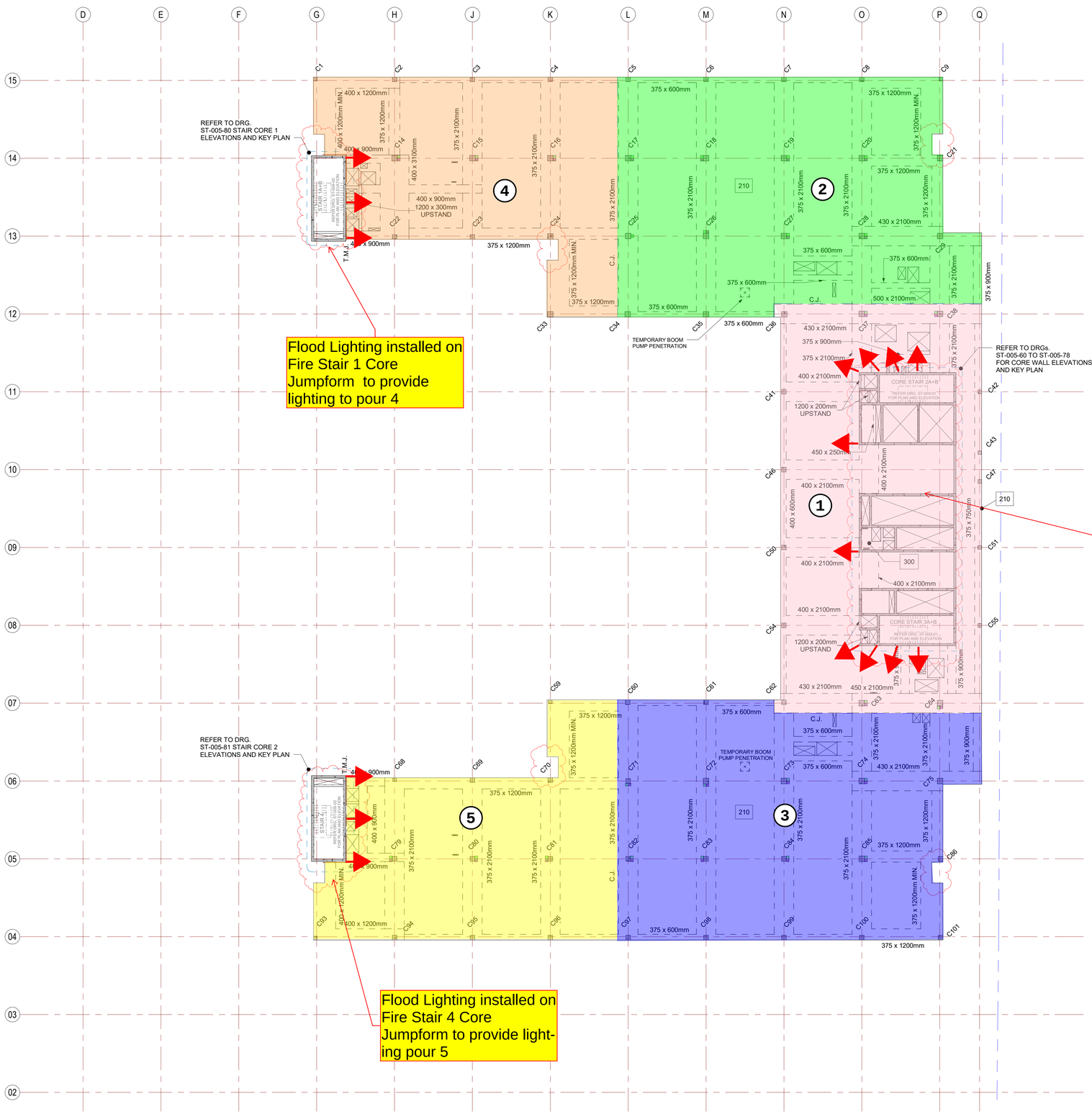
PRELIMINARY DRAWING

NOT FOR CONSTRUCTION
FOR DISCUSSION ONLY

Rev.	Description	Drawn	Date	Checked	Date
C					
B					
A					

PERI Australia Pty. Limited
ABN 85 078 003 568
116 Glendenning Road
Glendenning NSW 2761
Phone: (02) 8805 2300
Fax: (02) 9675 7277
E-mail: info@periaus.com.au

			by	Date
Company	WIDEFORM	Drawn	CH	09/09/2019
Project	RANDWICK HOSPITAL	Checked	MH	09/09/2019
Subject	PERIMETER SCREENS			
	SCREEN LAYOUTS LEVELS 2,3 & 4			
System	LPS			
Scale	A1 NTS / A3 1:200	Project No.: 2018 - 02 - 0717913	Drawing No.: SK1003	Revision: 0



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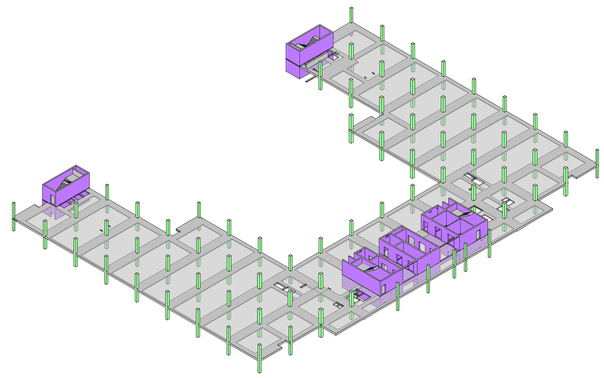
LEVEL 05 - GENERAL ARRANGEMENT

SCALE 1 : 200

- ALL SLABS / BEAMS CONCRETE STRENGTH f'c=40MPa U.N.O.
- POST TENSIONED SLAB THICKNESSES INCLUDE 40mm NON-STRUCTURAL TOPPING WHERE

Fredon temp scope of works must be carried out to to enable to following

- Floodlights located on the cores / crane towers etc to light up structural decks to provide sufficient lighting for late concrete pour
- Lighting to hoists & landing platforms on each level.
- Lighting to the jump form.
- Lighting to the core system including trailing decks.
- Floodlighting to the concrete placing zones
- Access lighting to every floor of the structure including the roof & helipad.
- Access lighting to formed areas including allowance to relocate when required due to changes in site conditions.
- Emergency lighting & exit signage to every floor of the structure including the roof & helipad.



LEVEL 05 - ISOMETRIC

SCALE

enstruct

enstruct group pty ltd

Level 4, 2 Glen Street
Milsons Point NSW 2061
Australia

Telephone (02) 8904 1444
Facsimile (02) 8904 1555
http: //www.enstruct.com.au

NOTE

CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCEMENT OF WORK OR PREPARATION OF SHOP DRAWINGS. DO NOT SCALE THIS DRAWING

ISSUE	DATE	FOR
A	11.07.17	DRAFT ISSUE
B	17.07.17	40% ISSUE
C	29.09.17	70% SD ISSUE
D	11.10.17	70% SD ISSUE
E	13.11.17	DRAFT 95% SD ISSUE
F	30.11.17	95% SD ISSUE
G	16.01.18	95% SD ISSUE UPDATES
H	31.01.18	100% SD ISSUE
I	01.03.18	100% SD COLUMN NUMBERING UPDATED
J	28.06.18	50% DD ISSUE
K	03.08.18	ISSUED FOR COODINATION
L	20.08.18	100% DD ISSUE
M	07.09.18	100% DD UPDATES
N	14.09.18	100% DD UPDATES
O	30.11.18	ISSUED FOR INFORMATION

DRAWINGS DO NOT INCLUDE ANY ALLOWANCE FOR UNSW EXPANSION

PROJECT MANAGEMENT

PWC

ARCHITECTS

BVN / TERROIR

MECHANICAL ENGINEERING

LEHR CONSULTANTS INTERNATIONAL

ELECTRICAL ENGINEERING

WOOD & GRIEVE ENGINEERS

HYDRAULIC ENGINEERING

ACOR CONSULTANTS

CONSTRUCTION MANAGER

lendlease

CLIENT

NSW GOVERNMENT Health Infrastructure

HEALTH INFRASTRUCTURE

CLIENT NUMBER

130487

PROJECT

RANDWICK CAMPUS REDEVELOPMENT

BAKER ST
RANDWICK NSW 2031
AUSTRALIA

ENSTRUCT PROJECT NUMBER

5385

DRAWING KEY

TRUE NORTH PROJECT NORTH

GRAPHIC SCALE

0 2000 5000

SCALE

As indicated@B1 DO NOT SCALE

STATUS

FOR TENDER

DRAWING

BUILDING 50
LEVEL 05 - GENERAL ARRANGEMENT

DRAWING NUMBER | ISSUE

RCR-ENS-STR-50-DRW-105-00 | O

C:\Users\jreyburn\Documents\Revit User Files\5385-ST-ASB-R\TJR18_CENTRAL_jreyburn.rvt 30/11/2018 4:58:26 PM

LV Lighting to 1x Level.
Just under 2 lights per screen.
210 lights in total.

OPTION PRICING

Lighting on each peri-screen.
Lighting will need to be plug & play which will climb with the screens.
Lighting will need to be unplugged before the jump and plugged back in after it climbs

REFER TO DRG. ST-005-80 STAIR CORE 1 ELEVATIONS AND KEY PLAN

REFER TO DRG. ST-005-81 STAIR CORE 2 ELEVATIONS AND KEY PLAN

REFER TO DRGs. ST-005-60 TO ST-005-78 FOR CORE WALL ELEVATIONS AND KEY PLAN

P05 SCREEN LAYOUTS LEVELS 6 TO 9

SCALE NTS

PRELIMINARY DRAWING

NOT FOR CONSTRUCTION
FOR DISCUSSION ONLY

Rev.	Description	Drawn	Date	Checked	Date
C					
B					
A					

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ABN 85 078 003 568
116 Glendenning Road
Glendenning NSW 2761
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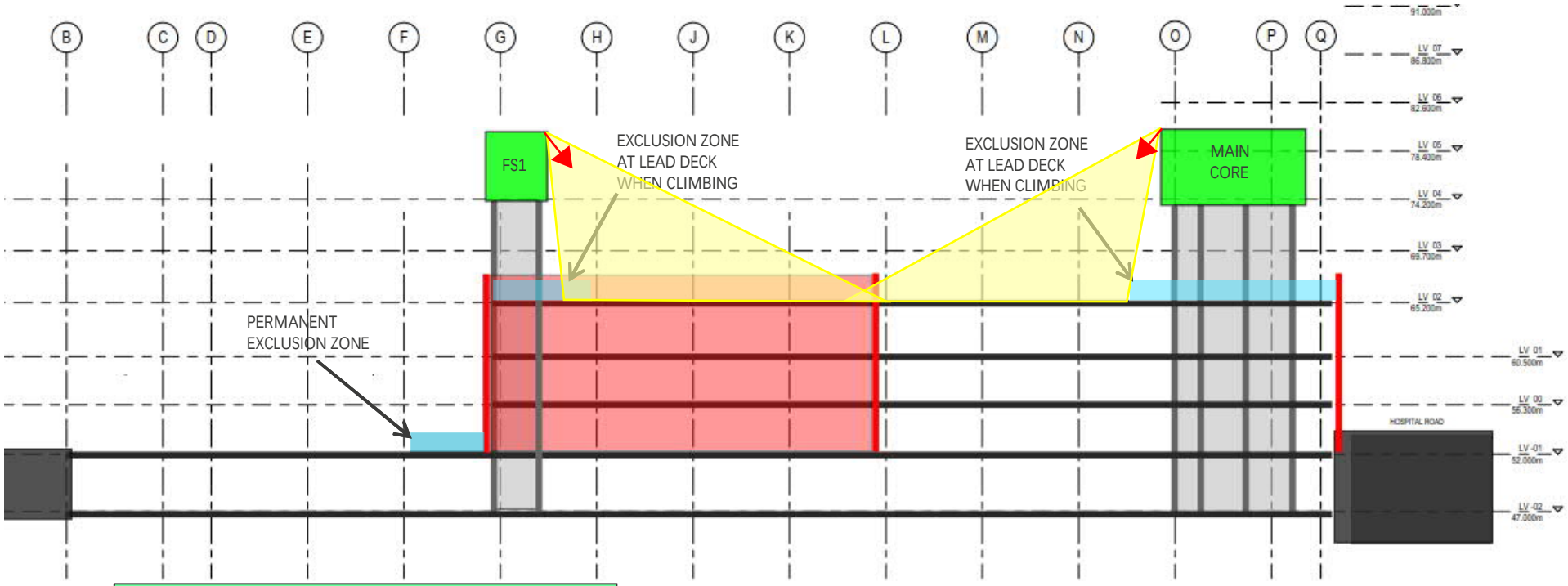
			by	Date
Company	WIDEFORM	Drawn	CH	09/09/2019
Project	RANDWICK HOSPITAL	Checked	MH	09/09/2019
Subject	PERIMETER SCREENS			
	SCREEN LAYOUTS LEVELS 6 TO 9			
System	LPS			

Scale			Project No.:	Drawing No.:	Revision:
	A1	NTS	2018 - 02 - 0717913	SK1005	0
	A3	1:200			

SELF CLIMBING JUMPFORM SYSTEM CONTROLS – MITIGATING



1. Exclusion Zones below jumpforms
- Lead deck enforced during climb / post-climb activities
- At B1 Level permanently enforced