roberts co

Construction Management Plan
Cumberland West Mental Health Services Relocation Project – Early Works (CWMHSR)

22 January 2024

Document Details

Title	Construction Management Plan
Client	NSW Health Infrastructure
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Roberts Co Project No.	20019
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Document Authorisation

PROJECT MANAGER

22 January 2024

Date

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1 DOCUMENT CONTROL

All changes made to the Construction Management Plan are recorded in the amendment table below. The version number and date of revision for the current document revision are shown in the footer of the document.

1.1 Revision History

Revision	Date	Description of changes	Prepared by	Approved by
1	1.8.23	Initial	WS	DV
3	22.01.24	Public Transport	WS	DV

1.2 Management reviews

Review date	Details	Reviewed by

1.3 Controlled copies

Name	Position	Date	Revision

2 TERMS AND DEFINITIONS

The following terms, abbreviations and definitions are used in this plan.

TERM	DEFINITION
HSE	Health, Safety and Environment
HSEQ	Health, Safety, Environment and Quality
IMS	Integrated Management System
ITT	Invitation to tender
PCG	Project Control Group
PMP	Project Management Plan
PRA	Project risk assessment
RCo	Roberts Co
SWMS	Safe Work Method Statement
The project	Cumberland West Mental Health Services Relocation – Early Works
WHS	Work health and safety
WHSP	Work Health and Safety Plan

Table 01 – Terms of references, definitions and abbreviations used in this plan.

ABBREVIATION	ROLE
CD	Construction Director
HoCP	Head of Cost Planning
CEO	Chief Executive Officer
PM	Project Manager
SM	Site Manager
SPE	Senior Project Engineer
SPC	Senior Project Coordinator
DM	Design Manager
CM	Contracts Manager

Table 02 – Role abbreviations

3 PROJECT UNDERSTANDING

3.1 Purpose of this Plan

This Construction Management Plan (CMP) has been developed to outline the Roberts Co approach to the construction planning and methodology proposed for delivery of desired project outcomes for the Cumberland West Mental Health Services Relocation – Early Works (IMHC) project.

The CMP addresses various anticipated issues, based on Roberts Co previous experience on similar projects and current understanding of the existing environment and contractual requirements. The proposed construction methodologies will be further developed throughout the planning and construction phases. It is a working document and may be subject to change throughout the life of the project. Such revision shall be notated in the footer.

3.2 Proposed Project

3.2.1 Description of the Works

The Cumberland West Mental Health Services Relocation Early Works project (CWMH Early Works) forms part of the Westmead Health and Education Precinct redevelopment. The new purpose-built Mental Health Complex will offer the potential to transform care through new holistic service models co-located with physical health services and better integrated with mental health services in the community.

The CWMH Early Works project is the first stage of the new Westmead Integrated Mental Health Complex (IMHC), with main works scheduled to commence in April 2024. The scope of the early works includes the following works split into two separate approvals:

REF

– Construction of the P14 Car Park ramp and associated access controls.
– Services diversions including private sewer and trade waste, Sydney Water sewer, water main, LV, communications fibre cabling and lighting.
– Demolition of the BIRS, WRPO and Casuarina Lodge buildings.

SSDA

– Bulk earthworks.
– Piling.
– Retention structures.
– HV conduit installation.
– Diesel tank installation.
– Trenching for inground hydraulic.
– Stormwater works.
– Bioretention basin.

3.2.2 Project Objectives

The primary objective of the CWMH Early Works is to facilitate infrastructure modifications required to the existing Westmead Health and Education Precinct to allow construction of the new Westmead IMHC and support improvements to the quality and efficiency of the services provided by the Westmead Health and Education Precinct.

The key objectives are to:

– Transform the delivery of mental health services across Western Sydney and deliver improved care for patients in line with state and national mental health reform.
– future-proof the site and to accommodate the future IMHC on the site.

3.3 Key Participants / Stakeholders

Participant	Stakeholder
Client	Health Infrastructure
Client Project Manager	TSA
Principal Contractor	Roberts Co (NSW)

Primary Project Contacts

Roberts Co

Address	Phone	Fax
Level 9, 60 Castlereagh Street	1300 019 692	

Name	Position	Phone
	State Director – NSW	
	Construction Director	
	Project Manager	

Role	Company	Point of Contact	Phone
Architect	Jacobs		
Structural	ARUP		
Services Engineer	Arup (Hydraulic) Stantec (Electrical)		
PCA	Phillip Chun		

3.4 Organisational Chart

The Roberts Co project team structure responsible for the delivery of the project is outlined within Appendix 1. This team has the responsibility and authority to ensure that the works are completed and meet the project requirements.

4 PROGRAM

Roberts Co have developed a construction program that outlines the work required to be undertaken and the sequence in which it is to be undertaken. Roberts Co will be refining design and construction methods to suit the delivery requirements of this project. Along the way, we will be consulting with reputable, established and capable contractors that can deliver the project in a timely manner without compromising safety or quality.

5 PROJECT COMMUNICATION

5.1 Communication Protocols

Roberts Co is committed to ensuring relevant information regarding the construction process and staging of works is disseminated between relevant stakeholders and external parties involved in the development.

To ensure that positive and proactive communication and consultation occurs on the project, Roberts Co is committed to engaging with relevant stakeholders to address any issues raised throughout the course of the project.

The need to provide prompt response to any complaints or disputes from adjoining owners is critical. All complaints must be logged onto a Complaints register and communications between Roberts Co and external parties should be reviewed by the State Director or the Construction Director.

Roberts Co utilises the web-based Aconex platform as the primary means of producing, transferring, tracking and filing of all contractual project correspondence. All parties involved in this project must use Aconex.

For further information regarding any of the processes dealing with communications, refer directly to the project specific Quality Management Plan.

5.2 Start-up Meeting

We propose a start-up meeting be arranged to run through with Health Infrastructure our proposed delivery methodology, as well as understanding the objectives of the Project and promote a culture of cooperation and teamwork for the management of works. This meeting will help to build a positive relationship between Health Infrastructure and Roberts Co (RCo).

Following the kick-off meeting, a regular Monthly Project Control Group Meeting will be held to discuss matters, including:

- Onsite work, health and safety matters
- Works completed to date
- Construction status against the contract programme
- Programme milestone dates
- Anticipated completion date
- Month lookahead
- Matters affecting the Project deliverables
- Potential delays
- Site instructions required from the Principal
- Current or pending variations to the Contract
- Progress claims

6 DESIGN MANAGEMENT AND PRE-CONSTRUCTION

Design Management procedures have been developed to provide a framework for the project team to carry out their responsibilities and obligations and provide assurance that design compliance requirements will be met. These aspects include, but are not limited to:

– novation and/or engagement of consultants
– tracking of the status of Consultant Agreements
– Safety in Design
– Quality Risk Assessment (QRA)
– environmental considerations
– design review and consent
– design changes
– sample approval, and
– value management

For further information regarding any of the processes dealing with design aspects, refer directly to the project specific Design Management Plan.

6.1 Design Finalisation, Documentation and Submissions

Our Certifier has issued a summary of the conditions on 2 August 2023, breaking down all the conditions into the relevant Crown Certificate Checklists.

During design finalisation various design activities will run concurrently with the Authority Approval and User group process in order to prepare and issue for construction (IFC) documentation. Some of the key design activities will include:

– Design finalisation and stakeholder management
– Architectural, structural and services coordination
– BCA Compliance review and assessment
– DDA / Accessibility) review and assessment
– Traffic review and compliance assessment
– CPTED review and assessment
– Landscaping and Civil review and coordination
– SSDA Approval
– Safety in Design Review

The above design activities will be undertaken concurrently with other activity streams with the outputs fed into other design disciplines work streams for them to coordinate and finalise their IFC documentation.

6.2 IFC Documentation and Submissions to the Principal

Post Contract award Roberts Co will develop an IFC documentation submissions register in collaboration with the Principal's Representatives for the Principal's acceptance of Roberts Co proposed submissions.

- Milestone 1: 24 July 23 – 18 August 2023

- Milestone 2a (Private Sewer and Trade Waste): 24 July 23 to 18 August 23
- Milestone 2b: 24 July 23 to 1 September 23

- Milestone 3: 24 July 23 to 1 September 23
- Milestone 4: 28 August 23 to 27 October 23

6.3 Authority Approval Process

In order to achieve the required completion date, we propose the Authority Approval process associated with the scope of works will be broken into staged Crown Certificates (CC's). Following award, we will agree the final number and break up associated with each CDC/ REF with the Principal Certifying Authority (PCA) including the approval strategy to establish an endorsed process with all project stakeholders in order to manage multiple CC's that will be run concurrently.

We propose the following Crown Certificates (CC's) approvals:

– CC1 – Milestone 1 and Milestone 2a (REF)
– CC1 – Milestone 2b and Milestone 3 (REF)
– CC1 – Milestone 4 (SSDA)

The REF Conditions were received on the 26 May 2023. The responsibility matrix has been agreed with Phillip Chun. The SSDA approval for Milestone 4 works has not been received, under the Contract the design is to proceed and then verify that there are no changes required following SSDA approval.

6.4 Procurement

We have held multiple meetings with critical trades to gain a better understanding of the scope of works to ensure that pricing received is complete and therefore giving us the confidence for letting and executing contracts expeditiously. We have resourced our team in such a way that ensures that we have sufficient personnel to package and let critical contracts early to facilitate works on site.

Key construction elements of the project will require critical early procurement of packages to be undertaken to ensure that the construction programme is maintained, and these include:

- Civil Works including:
  - Tree protection and removal
  - Civil Stormwater
  - Hydraulic Works
  - Contamination Management
  - Demolition
  - Pavement Works
  - Bulk Earthworks
  - Piling
- Electrical Works including
  - LV
  - Communications
  - Security
  - Boom Gates
  - HV

The balance of the procurement will be sequenced in line with the construction programme. We believe that the main trades are key to driving the construction programme whilst maintaining high quality and safety standards, and as such subcontractor selection will be consider capacity, experience and capability of undertaking the works.

Attention will be focused on the following key packages including:

- Milestone 1
- Milestone 2a

6.5 Project Management Plans

We have developed several plans to manage the delivery of this project, once implemented on site, these plans will outline the way in which the site will operate.

Project Management Plan: This plan provides the framework for all management plans. It outlines how Roberts Co will deliver the project and the documentation, plans and process that will be utilised to achieve this.

Construction Management Plan: This plan outlines the specific detail in which Roberts Co will establish site, provide an access strategy, working hours, contact information and construction sequencing and Stakeholder Management of the project. Site plans have been developed to ensure a clear and succinct representation of the site establishment plans which will then be communicated to subcontractors, Health infrastructure and Stakeholders.

WHS Plan: This plan details the Project Impacts and Hazards Register, Roberts Co procedures and controls governing operational site safety and wellbeing, as well as noise, dust, vibration, air quality, water and waste management plans which will address the requirements of the REF by identifying critical receivers and outlining strategies to ensure works are completed within acceptable limits.

Traffic Management Plan: This plan outlines the specific traffic strategy tailored to the changing points of site ingress, construction traffic paths, staff / patient / access, off-site site parking and any potential alternate traffic routes. The Management Plan will be detailed to show an uninterrupted access for emergency vehicles, staff, visitors and patients.

Other Plans: In addition to management plans that relate directly to the construction management processes of the project we have implemented several other plans to guide workplace strategies, namely:

– Design Management Plan
– Aboriginal Participation Plan
– Workplace Relations Management Plan
– Project Training Management Plan (including apprentices)
– Environmental Management
– Waste Management
– Quality Management
– Site Management Plan (Asbestos)

6.6 Dilapidation Survey

A dilapidation report has been undertaken covering the site and its surrounding streets and areas. This plan contains photographic evidence of the current condition of the respective surrounding streets and assets in order to ensure construction of the Early Works does cause damage to these respective areas.

A post construction dilapidation report will also be undertaken once works are complete and compared with the pre-construction dilapidation report.

6.7 Hours of Work

The permissible operating hours for the project are detailed below:

Working Hours	
Monday to Friday	7am to 6pm
Saturday	8am – 1pm (The IMHC Project is a 5 Day week project)
Sunday & Public Holidays	No Works

Roberts Co must work within the EPA Noise Control Guidelines for construction and demolition site noise, as well as the REF documentation. External noisy works must not be conducted outside of these hours unless prior notification has been given and agreed to by the relevant authorities. After hours works and night works must be managed between these parties and other relevant stakeholders on an as-needs basis.

6.8 Heritage and Archaeological Significance

Any discovery of an item of potential heritage significance, the relevant authorities and stakeholders must be contacted. A heritage consultant has been engage3d in accordance with the REF to be on site whenever excavation works are in the vicinity of the 1902 tram line.

6.9 Traffic Management

We understand the importance of providing a seamless traffic management strategy to ensure construction works do not impeded general vehicles and pedestrians in the surrounding streets. A preliminary Traffic Management Report for the project has been developed for the required vehicular and pedestrian movements during the delivery of the project.

The following restrictions must be considered in the development of the Traffic Management Plan:

- speed limit to be restricted on-site
- flashing hazard lights must be operated at all times for mobile plant
- reversing beepers
- personnel to wear high visibility clothing / vests at all times
- spotters / escorts to accompany vehicles where required by JSA/SWMS
- relevant signage will be erected as required for traffic management to suit the varying access requirements

6.9.1 Deliveries and construction vehicles

Roberts Co understands the impact construction works can have on an area and it's surrounding streets.

During various stages of work, vehicle access to and from site must be managed by the following actions:

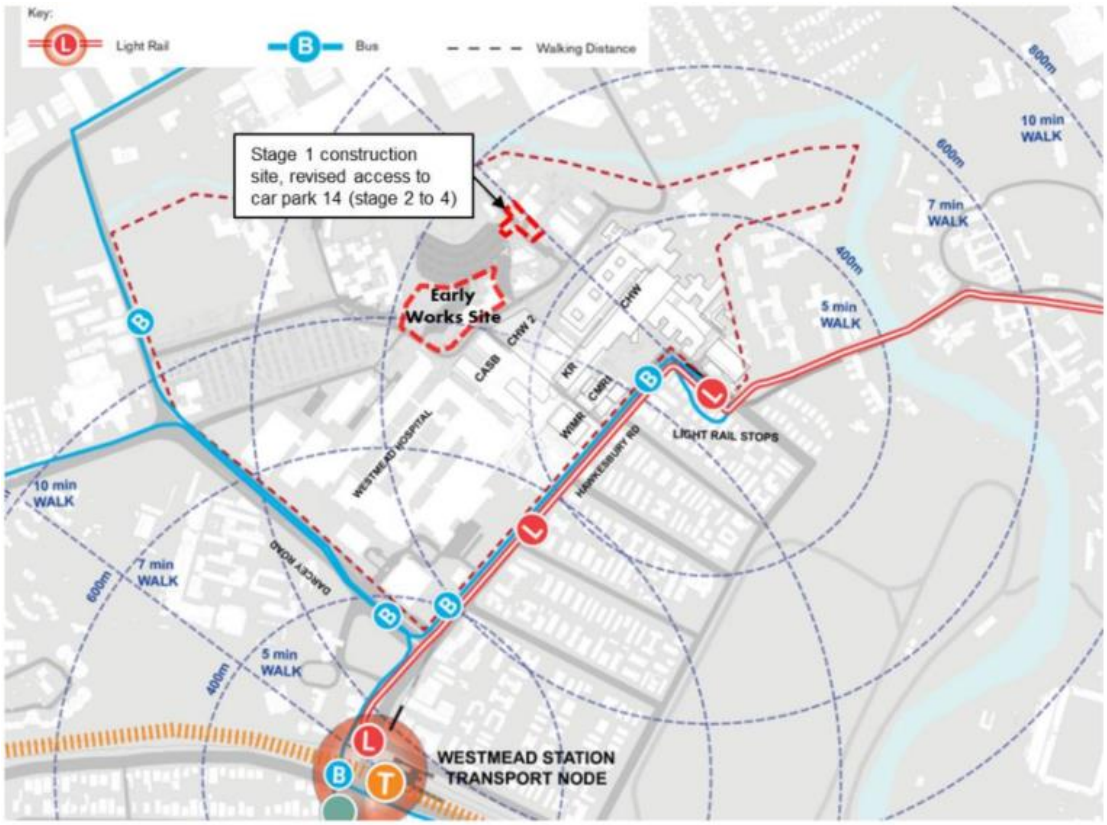
- minimising impact of high frequency of trucks upon local traffic movements by controlling movements and marshalling of trucks off-site. Drivers must continue to report to the Traffic Controller on-site to ensure street access space exists before proceeding to site
- liaison with the adjoining neighbours, businesses and local authorities
- all relevant site personnel must be inducted into the appropriate Traffic Management Plan focussing on the interface between construction activities and the public, and
- ongoing training must be provided for all supervision and staff during the various phases of delivery.

6.9.2 Contractor Parking

Limitations to parking in the area are detailed in all site inductions. Alternative means of transport, including the train, bus, and carpooling are highlighted and encouraged.

6.9.3 Public Transport

The site is well connected and near several existing and future public transport services, including existing high frequency bus corridors and heavy rail, and future Parramatta Light Rail and Sydney Metro West services. The sites accessibility with regards to the various services is illustrated in the image below.



The site is located within 900 metres (10 minutes walk) of Westmead Railway Station. The station is serviced by the Western Line (T1) providing frequent services to the Sydney CBD and the Cumberland Line (T5) which provides a north-south link between Campbelltown and Schofields.

Parramatta Railway Station is located one stop to the east of Westmead, providing a number of additional NSW TrainLink services extending to the Blue Mountains, and less regular services to Central West NSW including Orange, Bathurst and Dubbo.

Westmead Health Precinct is also well-served by the North-West T-Way which opened in 2007 and provides regular bus services with significantly increased reliability and good travel times, improving the level of service offered to passengers.

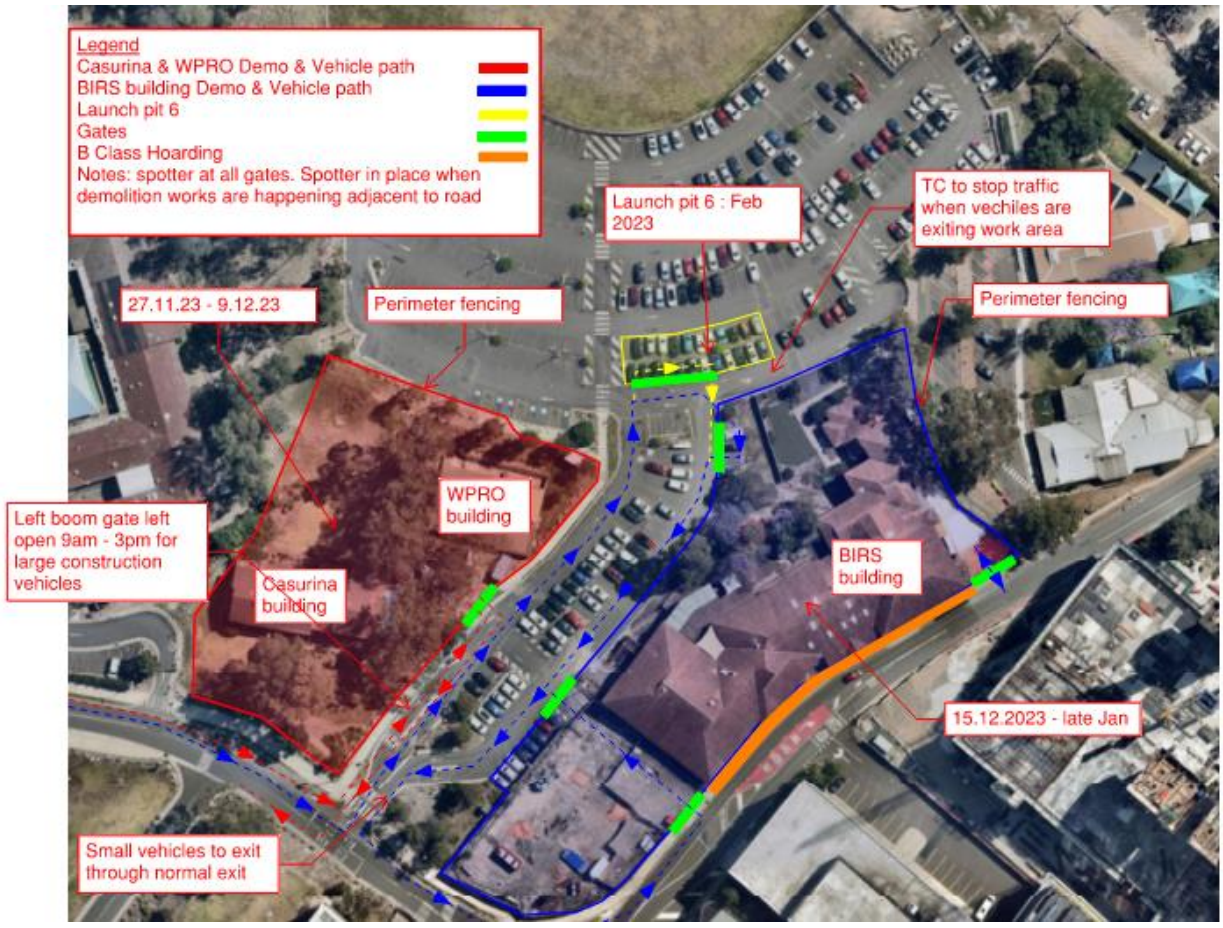
All bus services that pass the Westmead Health Precinct originate or terminate at Parramatta Railway Station with the exception of the 818 Merrylands to Westmead service. The majority of bus services operate as part of the T-Way, which provides direct services to/ from the north-west Sydney growth area that includes Rouse Hill, Glenwoodand Bella Vista. There are also limited services which provide local links to Blacktown and Constitution Hill.

6.10 Site Egress / Access

6.10.1 Worker Pedestrian Access

Workers will enter the site though a series of pedestrian gates within the hoardings, located at various positions around the site, in areas that avoid uncontrolled/limited visibility egress paths that are considered unsafe, or have potential to cause nuisance to the public.

For Stage 1, site amenities will be located within the existing WPRO building. When the P14 entry from Dragonfly Drive is closed gates will be installed on Dragonfly Drive.



6.10.2 Public Pedestrian Access

Public pedestrian access must be facilitated, as far as practicable, at all times during construction. Due to the nature and inherent risks involved in construction activities, it is unavoidable that some disruption to the public can be incurred, whereby public pedestrian access is to be temporarily restricted or adjusted. This must be clearly communicated to all key stakeholders and members of the public through project specific signboards, pedestrian restriction gates, and traffic controllers.

7 CONSTRUCTION STRATEGY

7.1 Site Establishment

As works are undertaken, the site will always be inaccessible to the general public and will only be accessible by authorised personnel. This will be achieved using a combination of hoarding and site fencing with gates that will always remain locked. Covered walkways and B class hoarding will be used where applicable to provide overhead protection and general safety to the public. Site security will always be of high priority.

7.1.1 Hoardings

To avoid unauthorised site access, and to minimise the impact of the construction works, appropriate boundary separation measures must be erected around the main construction zones and the various adjacent workspaces throughout the delivery of the works. This hoarding must be maintained and adjusted during the life of the project, in consultation with the relevant stakeholders.

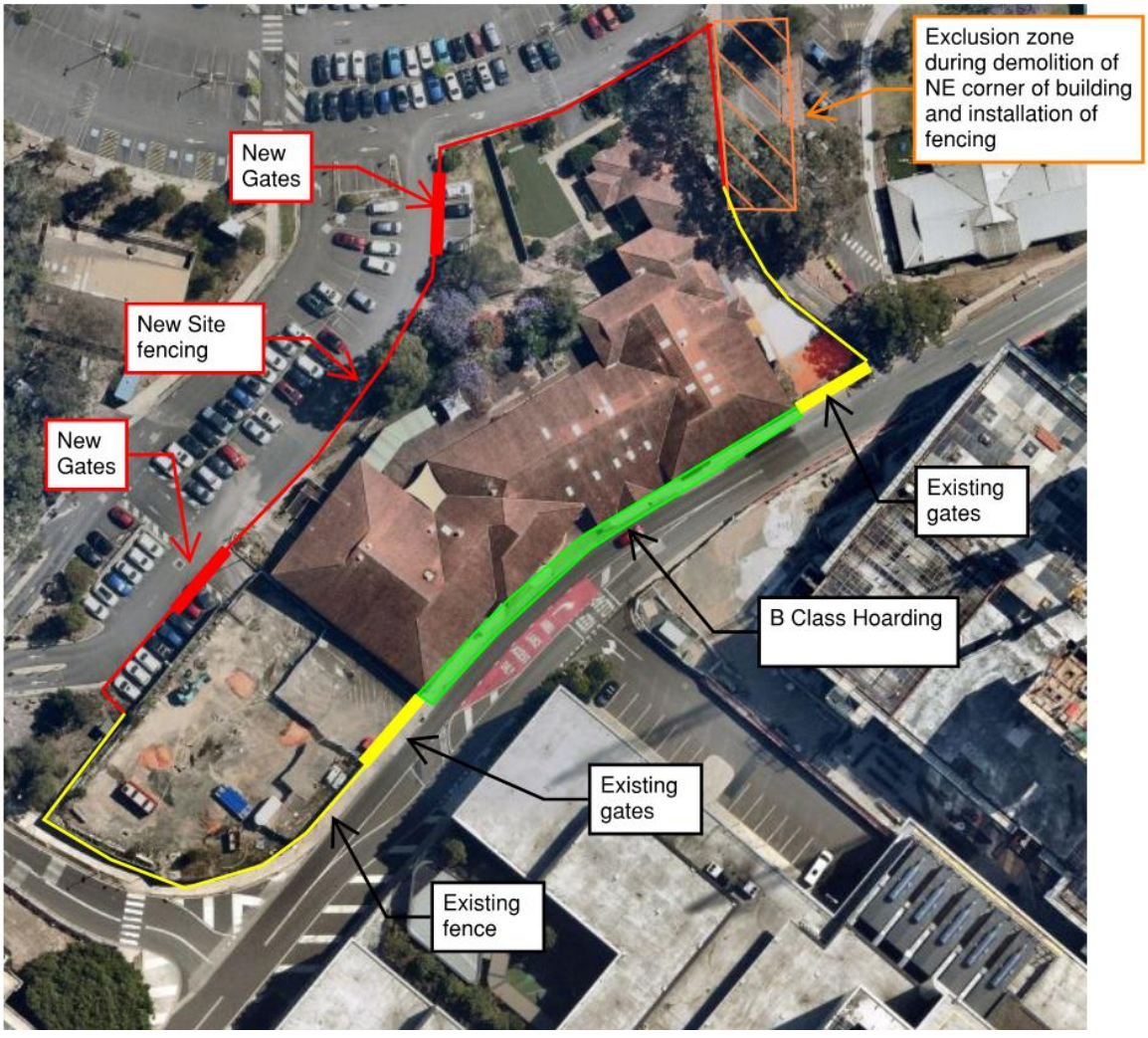
Directional and/or statutory signage, to redirect the public along a designated path, as well as traffic management, must be provided for pedestrian safety.

The following classes of hoardings will be utilised on this project:

TYPE	DESCRIPTION	LOCATION
Type 3 – Cyclone Fence 2100mm high	Standard chain wire fence 2100mm high with galvanized tubes fixed into ground (semi-permanent).	Chain wire fencing will be provided around the entire Milestone 1 and Milestone 3&4 sites. Where there is a risk of a fall, such as a large shaft launch pit, B class hoardings will be provided to remove climbing risk.
Type 4 - ATF	Modular and movable temporary fence panels on heavily weighted bases.	ATF fencing will be utilised for satellite sites for services diversion works where the site is required to be modified and or installed and removed rapidly to minimise impacts to Hospital operations.
Type 5 – Water or Concrete Barriers (Traffic)	Water and concrete barriers are designed to meet the general requirements of applications for pedestrian traffic delineation. Water barriers manufactured from high density Polypropylene and are connected by way of a special linking pinto forma chain.	Water barriers and concrete carriers will be used on the perimeter of the site where there is an excavation adjacent to ensure no public vehicles can accidentally fall into the excavation. Barriers will also be provided throughout the works to provide physical separation between the workers and the plant and equipment.
Type 6 – Crowd Barriers (General Public)	Crowd Barriers are designed to meet the general requirements of applications for pedestrian delineation. Crowd Barriers manufactured from high density Polypropylene and are connected by way of a special linking pinto forma chain.	Crowd barriers will be used throughout the site to provide dedicated access ways as well as delineate clean and dirty zones.

7.1.2 Gantries

Roberts Co will erect the following gantries to minimise the impact on pedestrian and traffic flows at key footpaths and roadways and maintain public safety around the site area. This will promote efficiency in construction works, as the public are able to safely move via designated channels, and in cohesion with site works. All required signage and lighting will be provided to ensure proper communication and visibility.



7.1.3 Site Amenities / Site Office

The site amenities and the site office will be established in the are shown on the figure below. The site amenities will be provided by way of sheds providing adequate accommodation of all contractors who are on site.

7.2 Construction Staging

Detailed staging and logistic plans, developed in consultation with key stakeholders and relevant Authorities, have been produced in preparation for the commencement of the construction works on site. The over-arching outcome of this process is to ensure that adequate separation between the public and the construction zone is maintained at all times.

Due to the project's operational requirements, sequencing has been developed to have minimal impact on the precinct's operations. The completion of the project involves four stages, all occurring separately. These stages have been broken down into sub-stages to clearly demonstrate how to complete these milestones ahead of program and with continuity to hospital operations, whilst maintaining necessary access.

The four stages are summarised as:

– Stage 1 – Milestone 1 (P14 car park).

– Stage 2 – Milestone 2 (services diversions, boring works and communications).

– Stage 3 – Milestone 3 (demolition of BIRS, WrPO and casuarina lodge).

– Stage 4 – Milestone 4 (piling, earthworks, retaining wall, ACM remediation, HV conduits and diesel tank).

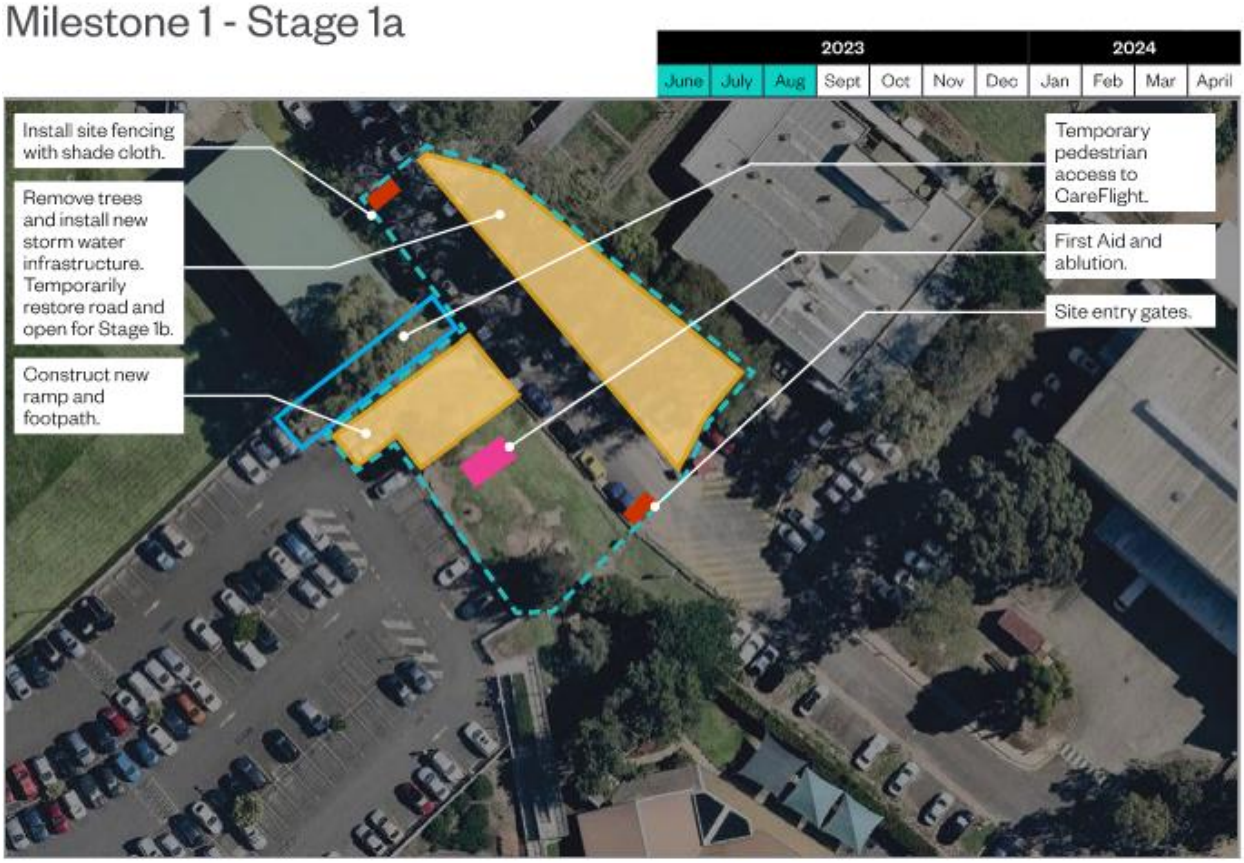
The following staging diagrams provide an overview of the works occurring with sub-stages to indicate the precautions in place to allow for pedestrian and vehicle access where required.

Milestone 1 - Stage 1 Overview

Key activities:

- Establish site amenities in existing WRPO.
- P14 ramp.
- New pedestrian footpath.
- New storm water infrastructure.
- Re-graded road to CareFlight including kerb and gutter.
- Tree removal.
- Boom gate installation.
- Bollards, line marking and final clean.

Milestone 1 - Stage 1a



Key activities:

- Establish perimeter site fence with shade cloth.
- Establish temporary pedestrian access from P14 car park to CareFlight.
- Gates to be provided to allow maintenance vehicle access to CareFlight.
- Site first aid and ablution to be installed.
- Removal of trees.
- Install new storm water infrastructure.
- Temporarily restore road to east side of road to allow CareFlight access in Stage 1b once storm water works have been completed.
- Footpath and ramp to begin construction.
- Road to remain clear for vehicle access.

Milestone 1 - Stage 1b

Key activities:

- Open temporary road for CareFlight along eastern fence line.
- Complete storm water from ramp pit to kerb.
- Re-grade road and complete kerb and gutters.
- Asphalt to road.
- Install boom gate, islands, gates and bollards.
- Construction of ramp and footpath to continue.

Milestone 1 - Stage 1c

Key activities:

- Open new road for CareFlight access.
- Re-grade temporary road previously used for CareFlight access.
- Install remaining boom gate, islands, gates and bollards.
- Complete construction of footpath and ramp to P14.

Milestone 1 - Stage 1d

Key activities:

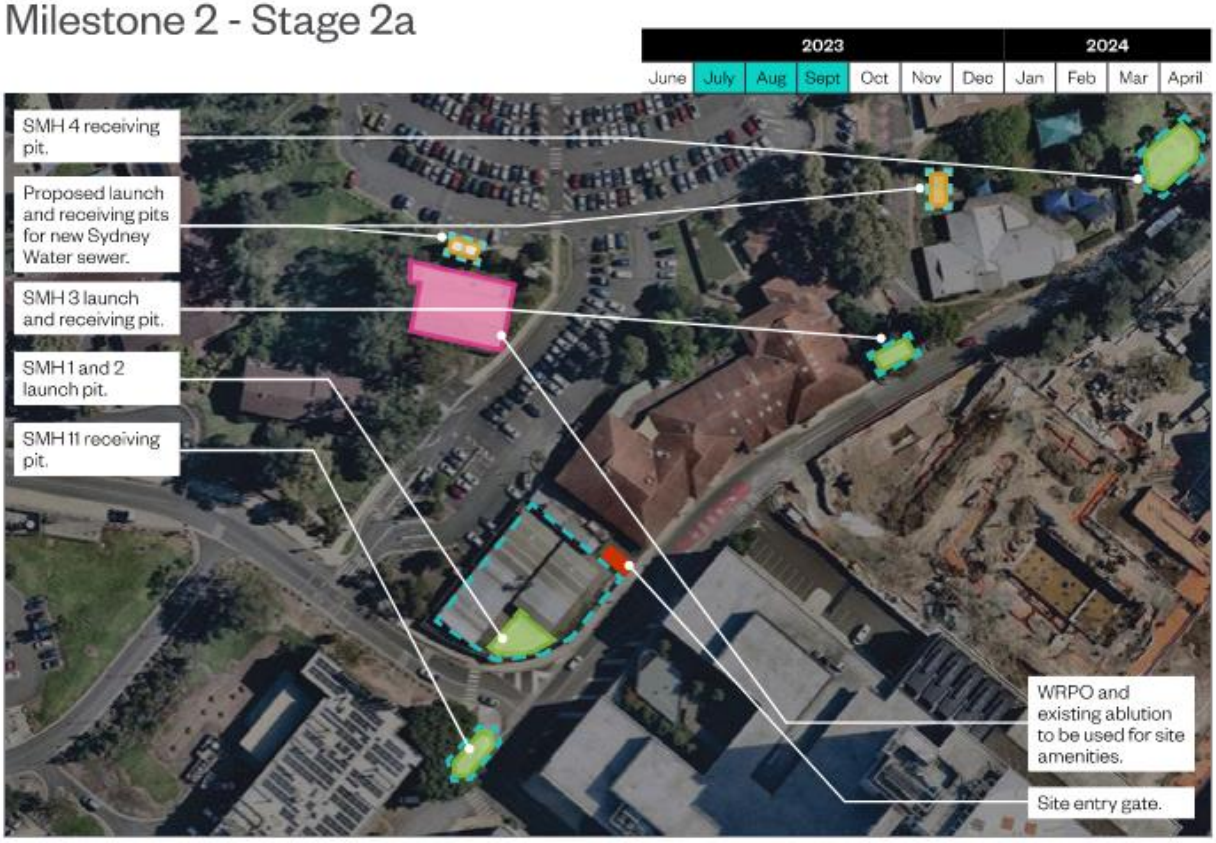
- Commission boom gates.
- Complete line marking.
- Final clean of new road and ramp to P14.
- Remove perimeter fencing.
- Remove site amenities.
- Remove temporary pedestrian access.
- Milestone 1 completed and handover.

Milestone 2 - Stage 2 Overview

Key activities:

- Existing campus private sewer, trade waste and water mains supply diversions.
- New water connection to site.
- New Sydney Water sewer installation.
- Communications installation works to Childcare Centre.

Milestone 2 - Stage 2a



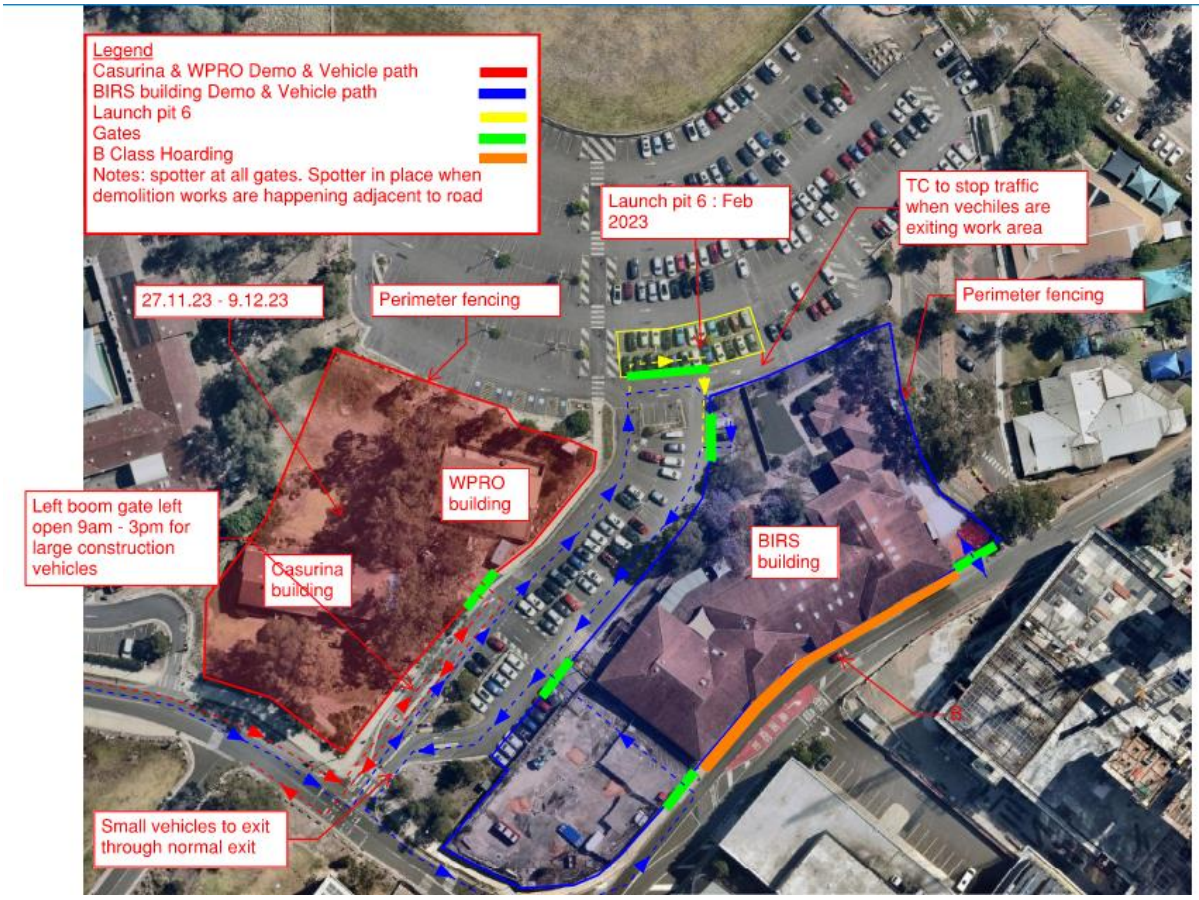
Key activities:

- Site establishment in the WRPO.
- Sewer launch pits to Sewer Man Hole (SMH) 11 (existing), SMH 1, 2, 3 and 4.
- Propose to complete Sydney Water sewer through horizontal boring. Receiving pit to be established adjacent to Childcare Centre, which will launch to receiving pit to the east. No boring to be completed at this stage.
- Perimeter fencing to each launch pit. Fencing to include asbestos monitors as well as geotextile fabric.
- Boring pits to be excavated and hosed down during excavation to ensure no dust is exposed to the atmosphere.
- Boring and pipework to commence to SMH 1-4 and 11. To continue in Stage 2b.

Milestone 3 - Stage 3 Overview

Key activities:

- Perimeter fencing from Stage 2b to be extended to capture BIRS and Casuarina Lodge.
- Demolition of BIRS, Casuarina Lodge and WRPO.
- Comms install works to continue.
- Demolition works to each building including:
  - Hazmat investigation and asbestos removal.
  - Asbestos clearance certificate.
  - Demolition.
- One crew to be on BIRS and second crew to complete Casuarina Lodge and WRPO.
- Power and lighting relocation works continue.



Milestone 3 – Stage 1

Access will still be maintained to P14 entry through dragonfly drive.

Casuarina Lodge and BIRS will have fencing around the site perimeter with a series of access gates through P14 carpark,

Watermain diversions and new water connection for IMHC

Milestone 3 – Stage 2

Continue demolition to BIRS and Casuarina Lodge

Power and lighting relocation works completed

Communications installation continue

Complete watermain diversions

Install new site accommodation on Casuarina Building slab post demolition.

Milestone 4 - Stage 4

Key activities:

- Detailed excavation.
- Piling works to be completed.
- Retaining walls construction.
- HV conduits installation.
- Diesel tank and pipework installation.
- Capping layer installation.
- Complete water main cutover.

7.2.1 Critical Works

P14 Ramp

During Stage 1, pedestrian and vehicle access will be maintained during construction to ensure no impacts to CareFlight's operations. Both pedestrian and vehicle access have been retained as part of the construction methodology.

Site accommodation will be established utilising the previous WRPO building and ablution facilities currently on site.

To allow for the vehicles to access CareFlight, a portion of the road will be worked on at one time whilst the other will remain clear for a 2.5m x 15m long vehicle to pass through. Traffic control will be present at the site entry to communicate with the site team for oncoming vehicles. Physical barriers will be in place to separate construction plant from vehicles.

Pedestrian access to CareFlight from the P14 car park will also be accommodated during Stage 1. As demonstrated below, pedestrian access will be maintained via a fenced off pathway. This pathway will be physically separated from the project, graded and illuminated along the fence line.

SMH boring overview

The below plan outlines the key boring activities, each of which are further outlined in the pages following. Key boring activities include:

- SMH 1 and 2, which launch to SMH 3 and 11.
- SMH 3, which receives from SMH 1 and 2, and launches to SMH4.
- SMH4, which receives from SMH3.
- Sydney Water SMHs, which launch from the west and receive in the east.

All of these pits are to be established under Asbestos contaminated conditions. The perimeter fencing will include geotextile fabric, asbestos monitors and water supply for dust suppression during excavation. We will also establish a decontamination unit to separate clean areas from contaminated.

SMH boring overview

The below plan outlines the key boring activities, each of which are further outlined in the pages following. Key boring activities include:

- SMH 1 and 2, which launch to SMH 3 and 11.
- SMH 3, which receives from SMH 1 and 2, and launches to SMH4.
- SMH4, which receives from SMH3.
- Sydney Water SMHs, which launch from the west and receive in the east.

All of these pits are to be established under Asbestos contaminated conditions. The perimeter fencing will include geotextile fabric, asbestos monitors and water supply for dust suppression during excavation. We will also establish a decontamination unit to separate clean areas from contaminated.

SMH 1 and 2

For the completion of SMH 1 and 2, the launch pit will be completed within site boundaries. This pit will be used to launch the boring works to SMH 11 and 3. There will be no impacts to traffic or pedestrians.

A gate will be established at the existing fence, adjacent to the patient transport parking bay. A-Class hoarding will be installed along the footpath adjacent to the boring pit, due to the 6.5m deep trench adjacent to fence line.

SMH 4

The works associated with the SMH 4 involve a 10m x 10m x 3.5m deep receiving pit. SMH 4 is a receiving pit and will connect to SMH 3 launch pit.

Roberts Co will install perimeter fencing around the boring pit, to be installed within ACM. We will ensure a thorough delineation between clean and dirty zones for the works and there will be no impacts to roads or footpaths due to the location of the site.

New Sydney Water sewer

Roberts Co are proposing to complete these works via horizontal directional drilling. This will cause minimal disruption to the operation of the Childcare Centre car park that the sewer line is located under. Additionally, completing the works via horizontal directional drilling will provide an opportunity to complete the works earlier within the program and remove dependency on the decanting and demolition of BIRS.

Boring pits will be established at the new sewer manholes. The boring works will be launched from within the site boundary and a receiving pit will be established at the landscape area adjacent to the Childcare Centre. The works will be protected with site fencing, including all ACM provisions to ensure the safety of the public around the works.

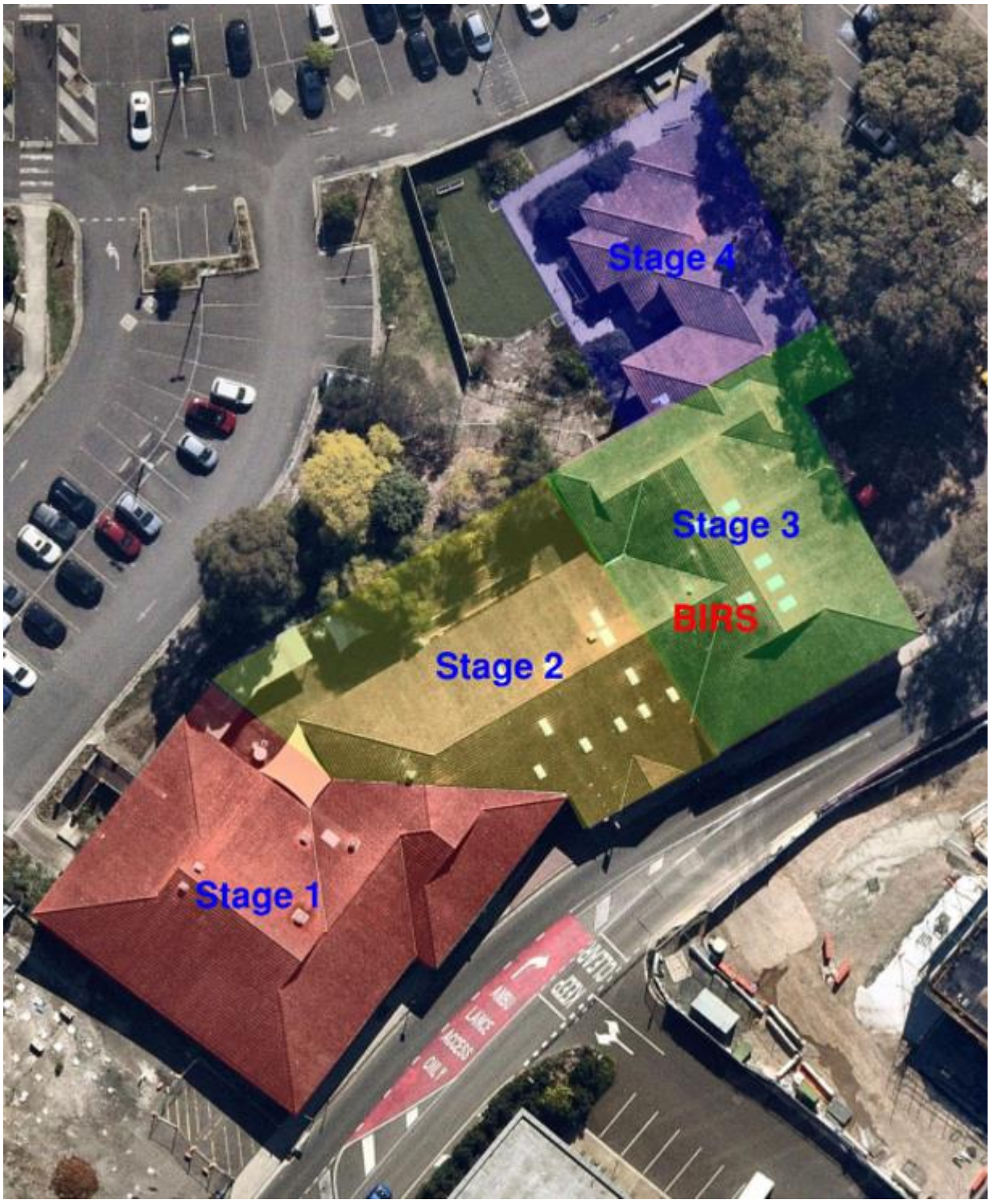
Demolition of BIRS

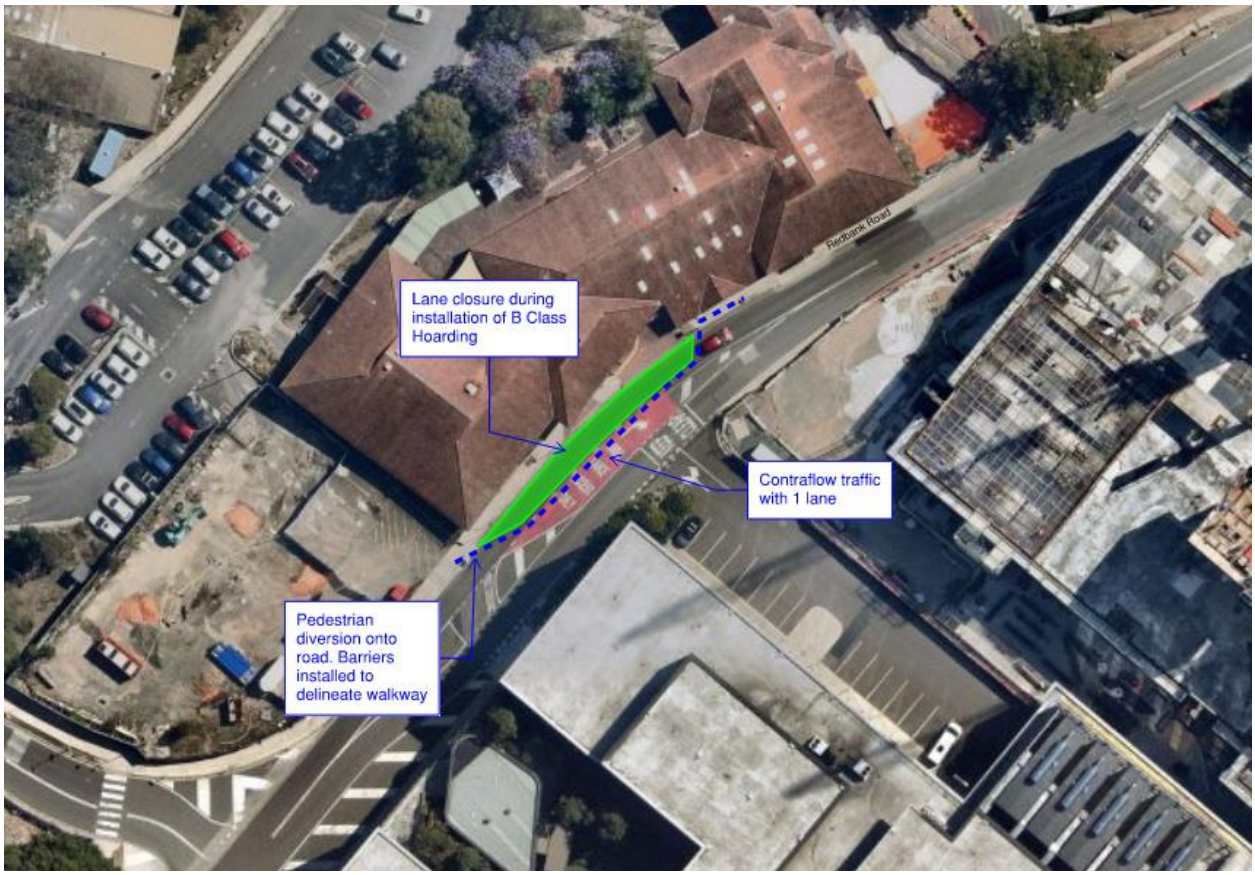
During the demolition of the BIRS stairs, we are planning to divert pedestrians to the opposite side of the road due to the proximity of the footpath to the building. Safe footpath access will be provided for all users by relocating the most northern boundary fence south to the PSB project.

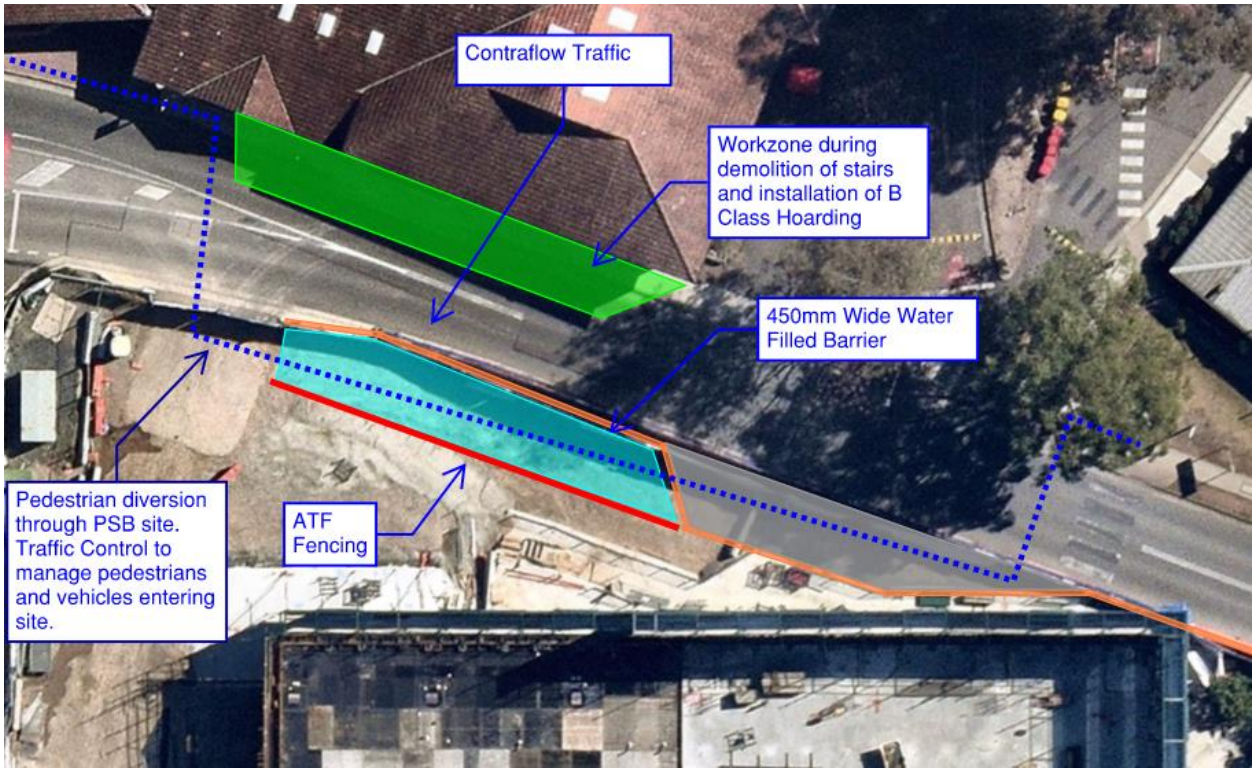
The below diagram shows the proposed pedestrian management to be implemented. B Class Hoarding will be installed along the Redbank Road footpath to protect pedestrians during demolition. The hoarding will be constructed during non-peak hour times to avoid any major impacts to pedestrian or vehicular traffic. HAZMAT clearance for BIRS will be completed prior to the commencement of heavy demolition works.

Demolition will commence from the South section of the building and work towards the North. Careful consideration will be given to noise, dust and vibration controls during the works in order to provide consistent amenity to all sensitive receivers and the general public in the precinct. Temporary works demolition engineers will determine the safest sequence of demolition to follow. Sensitive demolition along the Redbank Road frontage will be completed under traffic control in non-peak hour periods. Traffic will not be affected at any time during these works, with all demolition and truck movements working within the defined site boundaries to the north and accessing the site entrance on Dragonfly Drive.

Ground slabs will remain in place during demolition to allow the site to be treated as clean.


Stage 4
Stage 3
BIRS
Stage 2
Stage 1





7.3 Infection Control

Working to construct new or refurbish existing building fabric within active hospitals and health precincts is challenging given the complexities of patient care. *HINSW Infection Prevention and Control During Construction, Renovation and Maintenance Guidelines*, along with *Australian Health Facility Guidelines, Infection Prevention and Control*, provides a clear and robust set of processes for ensuring infection controls are maintained through the course of construction. We are very familiar with these guidelines from other recent projects.

In addition to these guidelines, Roberts Co will implement a project specific Project Infection Control Plan (PICP) prior to commencing construction works, given that the interface works occur within live hospital environments.

The PICP will prescribe the mitigation measures and level of infection control required. By standardising and prescribing the required processes prior to construction being undertaken, we ensure a consistent approach, reduce the risk to patient's health and ensuring compliance. Measures implemented by Roberts Co may include:

Infection Control Prevention is included as part of contractor and subcontractor Site Inductions to gain entry into site.

Full height, sealed hoardings where required next to a live hospital environment, including sealing

around all services to prevent air leakage and ensuring new works interfaces to all refurbishment areas are isolated from operational areas.

Works inside and adjacent live hospital areas, hoardings which have a cleanable face and skirting details.

Isolation of air ducts and services which serve refurbishment areas.

Hand sanitizers at work exit points when working within existing building.

Air-lock type entry into areas of the works which are refurbished, or adjacent the live areas of the existing building.

Air quality monitoring.

Debris containment and clean-up regularly with dust mitigation measures (i.e. Daily wet mopping).

Potentially upgrade and replace mechanical air intake filters which may be exposed to air borne particles.

Monitoring stormwater on site and dewatering to prevent stagnant water creating mould.

To ensure the successful operation of the hospital during construction, particularly the works within the existing building, we recommend a start-up meeting with HI and hospital staff prior to works beginning on site.

We will work with HI NSW and PwC to facilitate conversations around construction in a live hospital environment including methods to minimise patient exposure, ensuring that patient care equipment and supplies are protected from dust exposure, staff reporting of incidents / disruptions and risk management.

8 SITE MANAGEMENT

8.1 Site Inductions

All site personnel will undertake a project specific site induction which includes a project overview, as well as information on site specific safety issues and emergency procedures. All site personnel must have an industry induction card.

8.2 Site Security

Roberts Co will take necessary steps to assure that the site remains secure during and after working hours. Areas of consideration include but are not limited to:

Site access and egress

Site lighting

Site offices (including CCTV and alarms)

Roberts Co personnel are responsible to check all egress and access points at the end of each working day to confirm that all site personnel have exited the site and that all site entry points are secure and locked. A complete check of all perimeter hoardings/fences at the end of each working day will also be completed to confirm they are secure. Fences and hoardings will be maintained in good presentable condition.

8.3 Stakeholder Management Strategy

We have developed a Stakeholder Management Plan for IMHC with the purpose of providing a framework and approach for stakeholder involvement and consultation for the Project. The following Plan objectives are being successfully achieved, continually monitored, improved (as required) and implemented on Roberts Co projects:

Open, transparent and two-way communication with the Client, all stakeholders and the community

Engagement with stakeholders and the local community from project outset to nurture advocacy and long-term support. Understand their issues, drivers and aspirations and make every effort to ensure they are accurately informed and knowledgeable about the project and not influenced by inaccurate information in the public arena

Ensure that all stakeholders are well informed about the Project

Minimised impacts to affected stakeholders and community members with minimal negative feedback

8.3.1 Disruptive Notice (DN) Procedure

We will implement a Disruption Notification (DN) procedure that we will implement on the project. A DN Management Group will be established between HI, TSA and Roberts Co that will comprise of representatives from HI, TSA, the project team, Westmead Health District Hospital Management and, where required, Westmead Health District Engineering and other Westmead Precinct Contractor representatives.

The management group will meet weekly to discuss and plan short term, medium term, long term interface works and inform the stakeholders of proposed construction activities and progress. It will also provide the forum to review and approve current DNs and specifically look at major services shutdowns, out of hours work, potential hazardous material identification/removal and pedestrian or vehicular amendments. A DN register will be established and form the basis of the weekly review meetings to identify and track all proposed DNs.

DNs will be submitted for activities incorporating major interfaces such as:

– Service diversions.

– Demolition works.

– Hazardous Material management.

– Any other activities that have the potential to disrupt the operation of the hospital, such as services cut-overs, wayfinding changes and the like.

A DN would include:

– A description of the works and associated marked up sketch.

– Identification of all affected areas/services associated with the works, including the plan to eliminate any impact to the operation of the hospital.

– Details of the planned disturbance and identified access, noise, dust, or emergency services impacts (e.g. fire services, EWIS, etc) associated with the works.

– Identification of any impact to equipment or services affecting life safety.

– Contact details of the appropriate individuals undertaking the works and emergency contacts.

– Contingency planning for unforeseen circumstances which prolong the works or technical issues that arise during the works and risk mitigation measures.

– Estimated duration of the works.

– Traffic control plan for vehicle movements and impacts to the roads that divert from the traffic management plan.

DNs for major works (e.g. water main diversion works) will be issued up to six weeks prior to the planned works being scheduled to commence, whilst general DNs will be issued up to ten business days prior to the planned works being scheduled to commence. These notifications are provided to allow the project team sufficient time to review the interface, respond to stakeholder feedback and manage the impacts where possible, or if the impact is unavoidable, allow the hospital to plan and re-sequence their activities to ensure that any potential interruptions are minimised.

Risk Management

We have reviewed and understood the works required to successfully deliver the project. We have identified the following activities that have the potential to significantly impact on the surrounding streets and neighbours, if not managed effectively and communicated proactively with stakeholders:

- Pedestrian access
- Traffic and parking management
- Noise, dust and vibration management
- Access to the care glight hanger
- Incident Management
- Planning and management of services shutdowns and controlling disruptions
- Out of hours work and emergency after hours call out
- Hazardous material identification and removal of known materials
- Procedure for dealing with unknown hazardous material

A formalised risk register will remain a live document updated and reviewed throughout the course of the project. In addition, Roberts Co implement a number of measures to ensure risks are identified, planned for and managed accordingly. Some of these include the following:

- High Risk Workshop
- Workshop initiated by Roberts Co
- Attendees include Roberts Co and relevant subcontractors completing the high-risk works

Relevant subcontractor discusses their works, focusing on high-risk activities which are addressed in their SWMS

- Risks are workshopped, with all parties providing input

- High risk workshops will be conducted as part of the DN process with HI and TSA prior to submission of DNs
- Weekly Safety Walk
    - Attendees include Roberts Co and the Site Safety Committee
    - Site Coordination Meeting
    - Weekly or Fortnightly meeting as determined by the Site Team
    - Attendees include Roberts Co and subcontractors.
    - Review project at a site level, with a focus on program, safety, environment, communications and commissioning
    - Meetings may be split for efficiency (i.e. Structure Coordination Meeting and Finishes Coordination Meeting)
    - Discuss pending actions
- Safety in Design (SID)
- Quality Risk Assessment (QRA)

Integral to the Stakeholder and Management Plan is a collaborate approach to both establishing and managing stakeholder requirements and expectations. We work with the stakeholders early to understand the impacts of our works, to develop strategies to minimise the impacts of our works to acceptable levels and communicate timing of works clearly to all stakeholders to ensure there are “no surprises”.

The project team will handle all enquiries and complaints received arising out of the works and will carry out the following:

Record all such requests and complaints received in accordance with the Roberts Co “Enquiry / Complaints Handling Procedure” capturing the following information:

- Date of complaint;
- Name, Address, telephone number of complaints;
- Nature of complaint and;
- Response action required, taken and date closed out and;
- Notify HI and the Project Manager as soon as practicably possible.

The Roberts Co Project Manager maintains responsibility for this process. A register of reported complaints and corrective actions will be submitted to HI for monthly reporting. If upon investigation of the complaint, a non-conformance report (NCR) is to be raised by Roberts Co, notification as per above will be made. The respective complaint will then be notified of any corrective action taken. Our stakeholder management plan is designed to mitigate such complaints through maintaining positive and regular communications with the relevant project stakeholders.

LINE ITEM	ACTIVITY, PROCESS, METHODOLOGY	DISCIPLINE (WHS, ENV, QA)	POTENTIAL SAFETY, ENVIRONMENTAL AND QUALITY HAZARDS (Hazards / Risks / Aspects) [Insert description of HAZARD / RISK aspect]	IS THIS LINE APPLICABLE TO THIS PROJECT?	INITIAL RISK RATING			CONTROL MEASURES [Insert any / all control measures based on Hierarchy of Controls]	RESIDUAL RISK RATING		
				YES or NO	Likelihood	Consequence	Rating		Likelihood	Consequence	Rating
1	**Structural Demolition**	**WHS**	**Methodology** Inadequate methodology causing structural failure HRCW - *Demolition of load-bearing structure*	**Y**	1	1	HIGH	- A 3rd party structural engineer to complete review of the structure and provide a report on the structural requiremenmts for demolition - The contractor must ensure that the structural engineer report for demolition is reviewed and incorporated into the demolitoion methodology - Contractor Demolition Plan - Structural engineer report - HRCW SWMS	2	1	HIGH
2	**Structural Demolition**	**WHS**	**Services** Workers coming into contact with live services (power/gas/chemical/hydraulic) during demolition work HRCW - *Work on or near chemical, fuel or refrigerant* HRCW - *Work on or near pressurised gas mains or piping* HRCW - *Work on or near energised electrical installations or services*	**Y**	2	1	HIGH	- Prior to commencing structural demolition all services to the demolition floor are to be disconnected - The contractor is to provide RCo confirmation all services are isolated - Where a service is to remain in place and 'Live' or in use all demolition workers must be walked through the layout of the service and clear identifying tape placed along the length of the service. If plant can contact the service mechanical protection is to be in place - RCo Permit - Isolation - RCo HWWS - Isolation - HRCW SWMS	3	1	MEDIUM
3	**Disconnection of existing 'Live' services**	**WHS**	**Disconnection of existing 'Live' services - Electricity** Exposure to 'Live' electricity during isolation resulting in electrocution HRCW - Work on or near energised electrical installations or services	**Y**	2	1	HIGH	- Isolation point of existing mains power for the project is clearly identified - Isolation permit in place - The contractor to coordinate competent tradesman to undertake the decommissioning works - Any work outside the Construction Site boundary requires a Disruption Notice (DWN) reviewed and approved prior to works commencing. - RCo Isolation permit - RCo HWWS – Isolation - DWN for works external to site boundary - HRCW SWMS	3	1	MEDIUM
4	**Trenches & Pits**	**WHS**	**Horizontal Directional Boring Trenches** Trench collaspe and risk of slips/trips working near trenches greater than 1.5m HRCW - *Work in or near a shaft or trench deeper than 1.5 m or a tunnel*	**Y**	2	1	HIGH	- No persons are to enter an unsupported section - Trenching supports are appropriate to the conditions (i.e. trench sheilds, close sheeting, benching or battering) - Safe ladder access is provided - Spoil heaps are properly positioned at least 1 metre from edges of the trench - Areas are protected by physical barricading to prevent any access - HRCW SWMS - Contractor ITP - Contractor Risk Assessment	3	1	MEDIUM
5	**Plant operation**	**WHS**	**Excavator** Workers operating within the slew zone of the excavator and being struck or run over HRCW - *Work in an area with movement of powered mobile plant*	**Y**	2	1	HIGH	- Excavator operators must lower buckets to the ground when people must enter the slew zone of the excavator - Safety observers must be in visual contact and remain outside the slew zone of the excavator at all times while the bucket is raised - Workers inside an excavation must remain outside the reach zone of the excavator while it is in motion/operating - Contractor Training/Skills Register - RCo - Traffic, Plant & Equipment - HRCW SWMS	3	1	MEDIUM
6	**Plant operation**	**WHS**	**Piling rig** Workers being too close to the rotating shaft and becoming trapped HRCW - *Work in an area with movement of powered mobile plant*	**Y**	2	1	HIGH	Rotating parts of the piling rig must be guarded or an exclusion zone established to prevent workers coming into contact while in operation The contractor must ensure looses clothing, long hair etc are restrained - Contractor Training/Skills Register - RCo HWWS - Traffic, Plant & Equipment - HRCW SWMS	3	1	MEDIUM
7	**Asbestos Containing Material (ACM)**	**WHS**	**Removal of ACM - Planning** Failure to adequately plan management of asbestos on the project exposing people to asbestos risk HRCW - *Likely to involve distrubing asbestos*	**Y**	1	1	HIGH	- The contractor must ensure an Asbestos Management Plan has been developed in accordance with - SafeWork NSW C.O.P - How to Manage and Control Asbestos in the Workplace - WorkSafe VIC Compliance Code - REmoving Asbestos in workplaces (2019) - The contractor must ensure the relevant licenses to remove asbestos (company, supervisor and workers) - The contractor must ensure that the regulator notifications are in place - The contractor must ensure suitably qualified workers are engaged to identify the ACM as listed in the - Hygienist Hazardous Materials Report - The contractor must ensure a HRCW SWMS has been developed for the removal of ACM - Hygienist Hazardous Materials Report - Asbestos Management Plan - Asbestos Removal License - Asbestos Removal Supervisor License - Notification to Remove Asbestos to the Regulator - Contractor Skills and Training Register - HRCW SWMS	2	1	HIGH

8.4 WHS and Environmental Management

8.4.1 WHS Management Plan

Roberts Co considers health and safety as a precondition of everything we do. Our policies and procedures provide a framework to manage risk and accident prevention at the company's workplaces. The Health, Safety and Environment Management System (HSEMS) identifies the positions within the company that are responsible for designing, developing, implementing and enforcing health, safety and welfare in accordance with legislation.

Our team has reviewed the construction activities required for the IMHC works and have identified high risk construction work activities as defined in the NSW WHS Regulations:

- Work that that involves risk of a person falling more than 2 metres
- Work that involves demolition of an element of a structure that is load bearing
- Work that involves demolition of an element of a structure that is related to the physical integrity of the structure
- Work that involves structural alteration or repair that requires temporary support to prevent collapse
- Work in or near a shaft or trench deeper than 1.5 m or a tunnel
- Work on or near pressurised gas mains or piping
- Work on or near chemical, fuel or refrigerant lines
- Work on or near energised electrical installations or services
- Work that involves tilt-up or precast concrete
- Work carried out in an area of a workplace where there is any movement of powered mobile plant
- Work is carried out on, in or adjacent to a road, railway, shipping lane or other traffic corridor in use by traffic other than pedestrians

As an essential step in successfully managing these high-risk constructions activities, our team will create and maintain a Project Risk Register to ensure risks are monitored and catered for at any time. Following the review of our initial risk assessment during tender, our experienced site management team and our HSE Manager will invite the selection of subcontractors to discuss their Safe Work Method Statement (SWMS) and arrangements to be put in place to make sure the high-risk construction work is performed safely in accordance with the SWMS. Our site team will then monitor the implementation of the SWMS 'on the ground'.

8.4.2 Managing Hazardous Materials and Unexpected Finds

If unidentified hazardous materials are encountered during our early works remediation, the steps in managing the removal will be in accordance with Safework NSW and Roberts Co requirements and will include:

- Isolate and fully enclose the area
- Communicate the incident and initial safety to all stakeholders (step 1 when identified prior to works commencing)
- Employ hygienist or environmental consultant to urgently verify suspect material and provide remediation plans
- Notify Safework NSW and NSW EPA where required
- Manage any impact on site workforce (mitigate potential IR issues)
- Install environmental monitoring equipment e.g. air monitors to each construction zone

- Remediate affected area in accordance with the remediation plan, all hazardous material to be disposed of to a licensed facility and appropriate tracking of loads and dockets obtained
- Obtain a clearance certificate from the relevant hygienist or environmental hygienist that all asbestos has been removed and disposed of appropriately
- The clearance certificate shall form part of the handover pack to HI and update the hospital HAZMAT registers.

As per the RAP, if ACM material is found to be present in the fill material, then all fill material is to be removed as part of the remediation works for the site. The extent of fill to be removed from site as ACM is not known and will be determined following the additional testing discussed above.

8.4.3 Emergency Management

A project-specific Emergency Management Plan will be developed outlining the procedures to be followed in the event of an emergency. Evacuation Plans, with emergency contact details, will be posted in relevant locations around the site.

For further information regarding any of the processes dealing with emergency related matters, refer directly to the project-specific Emergency Management Plan.

8.4.4 Site Conditions

8.4.4.1 Heritage and Archaeological Investigations

No heritage or archaeological investigations are required. However and Archaeologist will be engaged to supervise excavation near the 1902 tram line location.

8.4.4.2 Geotechnical Investigations

JK Geotechnics have been engaged to undertake the additional site investigation works as required to satisfy the recommendations of the JK Geotechnics report.

8.4.5 Noise, Vibration, Dust and Air Quality Management

8.4.5.1 Noise and Vibration Management

The site objectives are to minimise the noise and vibration generated by construction activities, and its impact on adjoining properties and infrastructure, surrounding residents, businesses and workers. We will develop strategies to work within those limits, or where exceedance of the limitations cannot be avoided, investigate with stakeholders' ways to manage planned exceedances at appropriate times.

The Roberts Co team, together with our Acoustic Consultant, have created a report showing the sensitive areas and acceptable tolerances for noise and vibration. The report shows acceptable locations to place the noise and vibration monitors which can provide real time data and be set to provide notifications when readings reach 75% of notifiable levels. This way the team are notified early of any vibrations approaching acceptable limits before the limits are reached.

The following measures for implementation to control noise and vibration will include:

- Preparation of a Site Environmental Management Plan outlining the processes for managing environmental aspects and impacts in accordance with ISO 14001:2015, Protection of Environment Operations Act 1997 and the Protection of Environment Operations (Noise Control) Regulation 2008. Supporting the Site Environmental Management Plan is the Noise and Vibration Sub-Plan that will outline the specific operational controls that will be implemented to manage the noise and vibration aspects and impacts of the project.

- We will continue to engage an Acoustic Consultant to assist in developing the Noise and Vibration Management Plan, supply and install noise and vibration monitors and carry out monitoring during construction activities.
- Detailed assessment of background conditions to accurately assess baseline ambient conditions of noise and vibration.
- establish and maintain good relations with the community and neighbouring sites and consult where sensitive receivers exist.
- If complaints are received from stakeholders, our Project Manager can be immediately contacted, and issues resolved. Issues can also be raised at the weekly Construction Consultation Meeting. Any recorded breaches of the predetermined levels would allow changes to be made to construction methodology accordingly.
- where possible, silencing equipment to be considered when conducting works outside of normal operating hours, and/or where works are likely to occur for an extended period of time
- Safe Work Method Statements must be submitted which include the schedule of demolition and construction works, including the plant and equipment to be used
- Review of allowable limits on emitted noise from mechanical plant and equipment n comparison to any municipal requirements
- identification of works areas likely to generate noise and vibration, with warning signage in compliance with AS1319, to alert personnel to use personal protective equipment, and
- scheduling of adjacent works to mitigate potential exposure to noise and vibration.

For details of specific workplace controls for noise and vibration, refer to the Environmental Management Plan.

8.4.5.2 Dust and Air Quality Management

The site objectives are to minimise the dust generated by construction activities, and its impact on adjoining properties and infrastructure, surrounding residents, businesses and workers. The project team will implement controls to suppress dust and other suspended particles in accordance with legislation and risk management requirements minimising the generation of dust on site and potential emission issues relating to plant and equipment.

The Air Quality Management plan is included within the project Environmental Management Plan. As the site is known as contaminated, the risk of Asbestos or Asbestos Contaminated Material (ACM) is on the project. Our strategy will include the installation of asbestos air monitors as required in the Contract Preliminaries. These monitors will record air quality levels to confirm no asbestos fibres are present in the air surrounding the works. Additional asbestos monitoring may be required is ACM material is detected.

The following measures will be implemented to control dust:

- suppression measures such as water sprays, shade cloths, plastic canvas or similar to ensure there is minimal impact outside of the site
- wetting down of excavated spoil
- The use of water hoses during demolition and concrete cutting
- ensuring that trucks transporting materials to and from site are covered
- reviewing of dust control measures implemented on a regular basis for effectiveness
- regular periodic clean-up of work and staging areas
- Controls to be in place at gates to ensure vehicles exiting site do not leave dirt on the roads

For details of specific workplace controls for dust, refer to the Environmental Management Plan.

8.5 Hazardous Materials Storage

Some construction materials are classified as hazardous materials, the type of product will determine the method they are to be handled and the storage requirements of the materials. We propose to store all the hazardous materials in a secure location that does not pose a threat to the disruption of the operational surrounding hospital].

Wherever possible alternate materials will be selected that are less hazardous, for instance water-based products in lieu of solvent based products. This is not always practicable and hazardous materials are required to complete the works.

The hazardous material storage area shall be a secure, locked area. It shall include provision for containment of hazardous material as well as spill or leak control – (e.g. bunding to limit the spread of a liquid; warning devices that detect a gas leak). Fire control and emergency response – these are the steps to be taken if containment fails. The hazardous materials storage area will form part of the Site Emergency Plan, in the case of an incident the storage area shall be easily accessible to emergency services and incorporate fire control and monitoring devices relevant to the hazardous materials.

Ventilation of the storage area will be carefully considered in accordance with the requirements of the hazardous material. The location of the storage area shall be located away from any existing building window or intake vent. The area shall be adequately sign posted with warning signs and protected by barriers to prevent inadvertent collisions with vehicle and equipment. The area will undergo regular maintenance, inspections and cleaning to ensure the controls are current for the materials being stored.

The hazardous material storage area shall be in accordance with the Safe Work Australia Code of Practice 2005.

8.6 Waste Management Plan

The site objectives are to minimise waste generated by construction activities. The following measures will be implemented to control waste:

– waste bins provided on site and recycling off site, to ensure minimal wastage occurs and unnecessary landfill being generated.
– concrete and brick material to be recycled.

For details of specific workplace controls of waste, refer to the Waste Minimisation Plan.

9 DEFECT AND COMMISSIONING STRATEGY

9.1 Defects Management Methodology

Eliminating defects that arise during construction, or at the very best, resolving in a timely manner prior to completion, requires the application and proven processes designed to identify and resolve defects in real time.

To reduce the occurrence of defects and to ensure they are dealt with in an appropriate and timely manner, we will implement a defects management plan that forms part of the overall Handover and Finalisation Plan.

The defects management plan will provide the structure for the site team and subcontractors team that will be designed to:

– Ensure defects and quality issues are not allowed to accumulate
– Ensure inspections are carried out by the workface and that links are established with the company's quality assurance systems
– Ensure tradesmen and their direct line of supervisors see quality as their responsibility to enable quality issues to be resolved at the lowest possible level.

Our defects methodology is designed to eliminate defects rapidly without the need for excessive paperwork and administration. This process is supported through cloud-based defect management tool, utilising Aconex, or Zutec software, or a combination of the two. We will undertake the following processes utilising real-time data capture of defects and nonconformances as they occur, mitigating the risk of a substantial number of defects at completion.

This system enables:

– Defects and Quality inspections to be administered via the one application, with all information in one central repository
– Notification of defects to the applicable tradesmen and direct line supervisors; identifying the exact defect site location on the relevant drawing, the description, images and documentation, along with the required timeframe for rectification
– Ability to report and close out defects at the defect location via the application, using a lightweight mobile device on site, such as iPad or mobile phone, ensuring the defect is closed out only when rectified (not in a site office)
– Enables Roberts Co and HI to track the closure of all defects and a defects current status
– Maintains real time history of all actions including when the defect was created, when the responsible party took action, and determine programme and cost impacts
– All defects, whether open or closed to be filtered by trade, location and time frame, to ensure holistic overview and review

A focus on getting things right first time - eliminating the need for costly revisit and rework, as a Roberts Co representative can undertake inspections and sign offs simply via the application, resulting in greater vigilance. The option to invite consultants to monitor the quality of workmanship and finishes during the course of construction, provides a third level of inspection and reporting prior and during a defect's resolution.

The defect methodology process via the Roberts Co defects management application will be rigorously applied to the Project and site level quality awareness will be reinforced with quality inspections by the Design Consultants and this process will be an integral part to the installation, commissioning and handover process.

9.2 Commissioning Methodology

Project completion is a key phase of building delivery during which occupation certification, validation, training and handover take place. Roberts Co is acutely aware that planning for a successful, integrated project completion needs to start from day one of the project. Clear and efficient management of this stage of the project will ensure a transparent and collaborative validation process and subsequent smooth handover of an operating and fully commissioned building to informed and trained building management.

A pivotal component of the commissioning process is the Building Commissioning Plan. This shall be submitted for endorsement within the first 4 months of the date of contract. The Commissioning Management Plan will be a supporting document to the overall Roberts Co Handover and Finalisation Plan. Detailed building services commissioning plans will be provided by the respective specialist subcontractors to address specialised commissioning activities. This will include but not limited to:

– Process and requirements for Commissioning Management
– Process and requirements for the testing, commissioning and placing into service of the building services and specialist equipment
– Process for the hand-over of the operating systems to the Facility Managers
– Requirements for the provisions of as-built and Operating and Maintenance Documentation
– Summary of Operating Training
– Establish a maintenance regime as necessary for the maintenance and warranty period
– Personnel resources including responsibilities and required skills.

Our plan will also address the following objectives:

– Confirm the commissioning requirements for the project
– Identify and mitigate commissioning related risks
– Document the intended commissioning and handover process intended to fulfil the contract requirements
– Determine the key activities and interdependencies in relation to the commissioning programmes between the various systems to develop the critical path including the key coordination of activities between the subcontract disciplines and associated builders works
– Confirm client and consultant witness test requirements (such as attending representatives)
– Present the scope for training of end-users

Commissioning for the Early works is critical to minimise construction impacts to Hospital Operations. Commissioning for the Early works can be broken down into two divisions;

1. Authority Commissioning
2. Precinct Commissioning

The services consultant specifications, CIBSE Commissioning Codes, Australian Standards and HI Guidelines will be used to formulate the commissioning plan.

Authority Commissioning

A portion of the Early works package involve Authority Infrastructure works for Sydney Water. Sydney Water require specific inspections to be undertaken and completion documentation to be issued as works are completed prior to backfilling the works. It is therefore essential that the project team, and its subcontractors, understand the authority inspection and documentation requirements to ensure that adequate notification periods and submissions are executed. Roberts Co are committed to ensuring that no trenching works within the public roadways and footpaths are delayed due to a lack of authority compliance.

Precinct Commissioning

While much of the early works do not directly interface with the existing Hospital services infrastructure, there are three key elements of the works that will require connection to existing infrastructure. The communications diversion, watermain diversion and Boom Gate relocations will all require connection to the existing infrastructure network. As a result, a robust commissioning plan is required to ensure that as new services are connected to the existing network, they are commissioned efficiently with as little down time to the network as possible. If a robust plan is not in place, commissioning could take considerably more time than expected and result in potential critical impacts to Hospital Operations.

Our commissioning plan will focus on incremental testing of new services so that minimal commissioning is required for final connection. For example, as new pipework is installed it will be pressure tested and signed off. In this way, during the actual shutdown works minimal commissioning activities are required.

As part of this process each system progresses through a phased completion process and the associated completion of the commissioning records (such as ITP's) is to be conducted in line with the progression of the construction works. Once a system is commissioned and is ready to be functionally tested through cause-and-effect scenarios (integrated with other commissioned systems), we will lead the Functional Testing process enabling an increased level of confidence in achieving correct operation and interface of systems under operational scenarios.

Witness testing compliance will be offered to the end users and consultant parties to witness correct operation of the systems. Witnessing of the commissioning activities will be identified as part of the upfront Building Commissioning Framework.

Generally, the design consultants will be responsible for witnessing key commissioning activities associated with the Certificate of Occupancy and as necessary to confirm the design intent has been achieved in accordance with the Brief.

On the successful witnessing of the system and ensuring all contractual responsibilities are complete the system is ready for handover to the Client. At this point training of the system will commence. Further details of handover of systems to the client will be identified as part of the Building Finalisation Plan.

Due to the importance that the commissioning process has on successfully completing individual systems testing, holistic interface testing and handover to the client, the commissioning programme requires sufficient detail and linking tasks to ensure that the progress can be monitored on a regular basis. The programme will be jointly produced by Roberts Co services manager and the subcontractor commissioning management team.

In conjunction with the testing and commissioning process, preparation of the "as built" documentation will commence in readiness for handover. O&M manuals, incorporating the various operating and maintenance requirements, will be compiled on a progressive basis.

9.3 Commissioning Planning

We will create a detailed commissioning programme for each milestone describing the sequence of activities to occur and the dependencies required to enable the works to be successfully placed into operation. The programme will identify milestones required including activities to be undertaken to ensure the works can be completed.

It will be imperative that the Commissioning Working Group are communicating and driving expectations of all parties involved in the commissioning and finalisation process to follow and achieve the dates identified in the commissioning programme.

10 PROJECT COMPLETION

As completion and handover approaches, all statutory documentation will be obtained from suppliers and subcontractors to satisfy the PCA requirements, and to satisfy handover operational and maintenance manual requirements outlined by the Client. Where applicable, authorities will be consulted in order to facilitate site inspections provide assurance with as-built conditions.

In the final lead up to receiving a Certificate of Occupancy, the PCA will be expected to attend site a number of times prior to the final inspection walk(s). For further information regarding any of the processes dealing with completion and commissioning related matters, refer directly to the project-specific Handover Management Plan.

10.1 O&M Manuals and Training

The Operation and Maintenance (O&M) manuals will be formatted to enable upload to AFM Online. The collation process will be iterative with an early review with the Principal and if appointed, the facility manager to ensure that the content and format of manuals is optimally suited for future use by building users.

The final manuals will include:

– Building certifications documentation.
– Operation and maintenance manuals for works by each trade.
– Consultant and trade ‘works as executed’ drawings.
– Warranties.
– Commissioning data and certificates.
– Maintenance requirements with detailed breakdown of complex building services trades.
– Testing and training records.

The final aspect of commissioning is the training and handover to the building operators. This will incorporate final services commissioning and operator training activities. The main focus will be on the various building services operations and the presentation of the electronic O&M information. Other operational and handover issues, such as key systems, façade cleaning, maintenance of finishes and the like, will also be covered. Draft O&M documentation will be issued to the building operators prior to completion of the construction works.

We will provide the Client with site access during the final six months of construction and commissioning, in agreement with the. We encourage early involvement of the building operators as this creates a familiarisation and technical understanding of the operating building services, which is invaluable post-handover.

Earlier user group consultation will have established the key personnel required to be trained in the new building systems. A series of comprehensive one-on-one training sessions will be conducted prior to handover to provide a ‘soft landing’ for the building users, and to ensure the building operators are fully trained and appropriately prepared to run and manage the facility from day one.

APPENDIX A

APPENDIX B

Construction Programme – refer to Share Point