AW EDWARDS

RYDE HOSPITAL REDEVELOPMENT

Early Works Construction Management Plan

RHR-AWE-EWCMP-001

Date: 27 March 2024
Author: Andrew Merchant
Revision: D
Status: For Approval

Prepared By:
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Project No.	683
Project Name	Ryde Hospital Redevelopment
Project Director	Michael Musarra
Project Location	Denistone Rd, Denistone NSW 2122
Phone No.	02 8036 7200
Client	NSW Health Infrastructure
SSDA No.	State Significant Development Application and Modification SSD-36778089 – Stage 1 State Significant Development Application SSD-58210458 – Stage 2
Scope of Works	Health Infrastructure is proposing a series of temporary works at Ryde Hospital at 1 Denistone Road, Denistone. The Purpose of the early/temporary works is to ensure that the ongoing operation of the hospital is not impacted during construction of the Ryde Hospital Redevelopment. Specifically, the proposed temporary works will compromise: • Construction of temporary Intensive and Critical Care building (ICU/CCU) • Provision of a temporary loading dock located off Denistone Road • Alterations to the Graythwaite Building rooftop and basement to facilitate new office space, kitchens and storage areas • Establishment of two construction zones to accommodate office space, workshops and storage • Construction of a pedestrian ramp that connects between Trigg House and the Graythwaite Building • Connection and augmentation of in-ground services and utilities, as required
Timing of the Works	Mid 2024 – Early 2025 (Early Works)

Revision Register:

Revision	Date	Status	Author	Approved By	Comments
A	11-Jan-24	Draft	Andrew Merchant	Michael Musarra	For Approval
B	30-Jan-24	For Approval	Andrew Merchant	Michael Musarra	Approved
C	19-Mar-24	For Approval	Andrew Merchant	Michael Musarra	Early Works submission
D	27-Mar-24	For Approval	Andrew Merchant	Michael Musarra	Response to comments
	Date	Status			
	Date	Status			

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1 INTRODUCTION

1.1 DESCRIPTION OF THE WORKS

1.1.1 PROJECT OVERVIEW

The early works and temporary works packages of the Ryde Hospital Redevelopment will help ensure that the ongoing operation of the hospital is not impacted during the Main Works stages of the project. Specifically, the proposed temporary works will comprise:

- Construction of temporary intensive and critical care building (ICU/CCU)
- Provision of a temporary loading dock located off Denistone Road
- Alterations to the Graythwaite Building rooftop and basement to facilitate new office space, kitchen and storage areas
- Establishment of two construction zones to accommodate office space, workshops and storage
- Construction of a pedestrian ramp that connects between Trigg House and the Graythwaite Building
- Connection and augmentation of in-ground services and utilities, as required.

Subject to approvals, the early works and temporary works are envisaged to commence from mid 2024 with completion in early 2025.

These works will be staged as they are spread around the hospital campus but this in turn will also minimise disruption to the Hospital and ensure operations remain ongoing. Additional information on the staging of these works can be found within Section 10 of this document.

1.1.2 PROJECT DESCRIPTION

Our site establishment and construction methodology has been developed based on our knowledge and understanding of the site, and our extensive experience in delivering complex healthcare construction projects.

Our study of the site has provided us with detailed knowledge of the following key elements:

- Site conditions (including remediation of the clean zones located in the car park area)
- Existing infrastructure (including underground services)
- Site specific challenges (knowledge of existing infrastructure), and
- Potential opportunities that can be leveraged.

Using this understanding of the site and our extensive experience in delivering complex healthcare construction projects, and following a review of the tender documentation we have developed a comprehensive site establishment and construction methodology that addresses the following key risks:

- Contamination and hazardous materials
- Hospital interface management including critical services
- Access and egress pathways
- Noise and vibration impacts

- Traffic and pedestrian management.

1.1.3 SCOPE OF WORKS

Construction of temporary intensive and critical care building (ICU/CCU), provision of temporary loading dock located off Denistone Road, alterations to the Graythwaite Building rooftop and basement to facilitate new office space, kitchens and storage areas, Establishment of two construction zones to accommodate office space, workshops and storage, construction of a pedestrian ramp that connects between Trigg House and the Graythwaite Building and connection and augmentation of in-ground services and utilities as required.

1.2 PURPOSE OF THIS PLAN

This Early Works Construction Management Plan (EWCMP) has been prepared in response to an early contractor engagement (ECI) award for the Project. This Plan is one of a number of Plans developed to manage our obligations as part of the project Delivery.

This construction management plan is written with the purpose of communicating to Health Infrastructure our construction management objectives, strategies, methodologies and actions for the execution of the works under the Contract.

This document is based on the AW Edwards Management System which is accredited to AS/NZS ISO 9001:2015 (Quality), AS/NZS ISO 14001:2015 (Environmental) and AS/NZS ISO 45001:2018 (Safety). The AW Edwards Management System provides detailed procedures for the undertaking of our regular construction activities. This CMP should be read in conjunction with the sub-plans and other management plans as illustrated in the hierarchy of plans below.

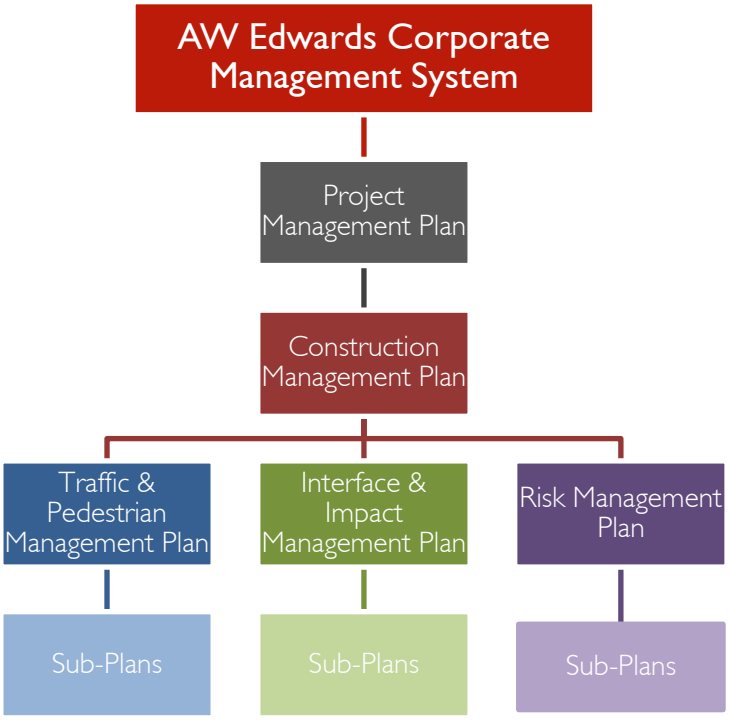


Figure 1 - Hierarchy of Management Plans

As part of the ECI process, AWE will provide further detailing or revision of this Plan to meet the Client and stakeholder requirements. Upon award of the main contract of works, this Plan will be reviewed and updated on a regular basis to reflect design development, and our developing construction methodology.

This Plan is to ensure all members of the A W Edwards team and other project stakeholders understand the objectives and the procedures and processes in place as necessary for the successful execution of works under the contract.

1.3 OBJECTIVES

The primary objective of this plan is to meet the obligations set out in the Contract and the Preliminaries document.

Our project objectives can be summarised as follows:

- Develop a strong working relationship with the Client and its project stakeholders
- Exceed the expectations of the Client to the greatest degree possible
- Develop and retain a cooperative and harmonious environment from commencement through to completion across all levels of the project
- Complete the project in accordance with the requirements of the Contract documents
- Complete the project within the timeframe identified in the Contract.
- Provide a safe and accident free workplace
- Avoid disputes wherever possible. In the event of disputes arising at any level on the project, to the resolve them in a mutually beneficial manner.
- Deliver a product which displays a high quality of workmanship

- Construct the project within the allocated budget and apply a balanced approach to the process of tendering / awarding of Subcontracts.

Our strategies to achieve these objectives are outlined in the following subsections.

1.4 REFERENCE DOCUMENTS

- AWE Management System
- Inspection and Test Plans
- The Contract Requirements.
- NSW Health Infrastructure – Ryde Hospital Redevelopment Project Overview
- NSW Health Infrastructure Communications and Consultation Strategy.
- Relevant Australian Standards
- NSW Government Guidelines for the consultation and liaison of communities affected by major capital works.
- Other AWE Project Management Plans for this project.
- NSLHD Policies and Procedure Guidelines.
- Dial Before You Dig (DBYD) information pack

1.5 PRECEDENCE

Where ambiguity is detected between the procedures and requirements in this plan and the AW Edwards Management Systems, then the procedures nominated in this plan will take precedence.

1.6 INTERFACE WITH OTHER PROJECT PLANS AND PROCEDURES

The Early Works Construction Management Plan forms part of an integrated set of Plans and should be read in conjunction with the Project Management Plans and associated sub-plans.

2 AUTHORITY APPROVAL

The Principal has obtained the following licences, approvals and consents for the Site and

the Works:

- Approval under Part 2 of the Biodiversity Conservation Act 2016 – Licence Number:

  SL 102605 dated 02/12/2021.

- Non-Controlled Action under EPBC Act (Application Number 2022/09129) dated

  28/06/2022.

- State Significant Development (SSD) Approval for a Concept Proposal for the Ryde Hospital Redevelopment and Stage 1 (Early and Enabling Works): *Determination under Part 4 Division 4.7 of the Environmental Planning and Assessment Act – Application No. SSD-36778089* – APPROVAL PENDING

  -Modification 1 to Application No. SSD-36778089 for works associated with bulk earthworks, piling and in-ground services as part of the Stage 1 Acute Services Building envelope. – APPROVAL PENDING

- Stage 2 SSD Application for the detailed design, construction and operation of the Ryde Hospital Development: *Determination under Part 4 Division 4.7 of the Environmental Planning and Assessment Act* – APPROVAL PENDING

2.1 LICENCES AND PERMITS (IF REQUIRED)

Asbestos Removal:
Not less than seven (7) days prior to commencing any asbestos removal work, notify the local office of SafeWork NSW and the Principal of the intention to carry out that work.

Demolition Licence:
Not less than five (5) calendar days prior to work commencing, notification to SafeWork NSW

Local Council Road Occupancy:
Road Occupancy Licence to conduct building and construction work to be requested from Service NSW – Online Planned Incident System (OPLINC)

2.2 PRINCIPAL CERTIFYING AUTHORITY (PCA)

The PCA has been appointed by the Principal and all fees prior to novation to the Contractor will be paid by the Principal.

AW Edwards will obtain the PCA's confirmation that the design and construction of the Works complies with all Statutory Requirements. AW Edwards will collate all necessary documentation for submission to the PCA.

2.3 HOURS OF WORK

As per the NSW Department of Planning Project Approval, the standard construction hours are:

Working Day	Working Hours
Monday to Friday	0700 to 1800
Saturday	0800 to 1300
Sunday and Public Holidays	Not permitted

Works may be undertaken outside these hours where:

- The delivery of materials is required outside these hours by the Police or other authorities
- It is required in an emergency to avoid the loss of life, damage to property and/or to prevent environmental harm
- Variation is approved in advance in writing by the Director General or their nominee

For rock hammering and breaking, sheet and driven piling and other impulsive/tonal noise generating activities, may only be carried out during the following hours:

Working Day	Working Hours
Monday to Friday	0900 to 1200
Monday to Friday	1400 to 1700
Saturday	0900 to 1200
Sunday and Public Holidays	Not permitted

Other hours may be worked if approved by the relevant authority.

Confining the prescribed construction activities (including the delivery of plant and equipment) to the hours above wherever feasible and reasonable helps reduce noise and vibration impacts by limiting potentially noisy construction activities to the day time, when background noise levels are higher, and by providing respite from construction noise during the evening, overnight and on weekends.

Provided noise levels do not exceed the existing background noise level plus 5dB, works may also be undertaken during the following hours:

Working Day	Working Hours
Monday to Friday	1800 to 1900
Saturday	1300 to 1600
Sunday and Public Holidays	Not permitted

2.4 OUT OF HOURS WORKS

Construction activities may be undertaken outside of the hours set out in Section 2.3 of this plan, 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) for the delivery, set-up and removal of construction cranes, where notice of the crane- related works is provided to the Planning Secretary and affected residents at least seven days prior to the works; or

(e) where a variation is approved in advance in writing by the Planning Secretary or his nominee if appropriate justification is provided for the works.

Any additional out of hours work must be carried out in accordance with Section 5.8 of the Interface & Impact Management Plan.

3 REGULATIONS AND LEGISLATIVE REQUIREMENTS

3.1 LEGISLATION AND REGULATION

All work shall be conducted, as appropriate, in accordance with (but not limited to) the following environmental regulatory and legislative requirements:

- Environmental Planning and Assessment Act 1979 and Regulations
- Protection of the Environment Operations Act 1997 and Regulations
- Environmental Protection and Biodiversity Conservation Act 2000 (Cth)
- Heritage Act 1997 and Regulation
- Heritage Amendment Act 2001 and Regulation;
- Australian Heritage Commission Act 1975 (Cth)
- Contaminated Land Management Act 1997 and Regulation
- Soil Conservation Act 1939 and Regulation
- Threatened Species Conservation Act 1995 and Regulation
- Endangered Species Protection Act 1992 (Cth)
- Noxious Weeds Act 1993 and Regulation
- Native Vegetation Conservation Act 1997
- Companion Animals Act 1998
- Dangerous Goods Act 1975 and Regulation
- Environmentally Hazardous Chemicals Act 1985 and Regulation
- Sydney Water Act 1994 and Regulation
- Water Act 1912 and Regulation
- Water Management Act 2001 and Regulation;
- Waste Avoidance and Resource Recovery Act 2001
- Local Government Act 1993
- Worker Compensation Legislation
- Work Health and Safety Act 2011
- Work Health and Safety Regulation 2017
- Building Code of Australia

3.2 CODES OF PRACTICE AND AUSTRALIAN STANDARDS

All work shall be conducted, as appropriate, in accordance with (but not limited to) the following environment and construction-related codes of practice and Australian Standards:

- Australian Standard AS 2436 – Guide to Noise Control on Construction, Maintenance and Demolition Sites;
- Australian Standard AS 2601 – Demolition of Structures;
- Australian Standard AS 4576 – Scaffolding

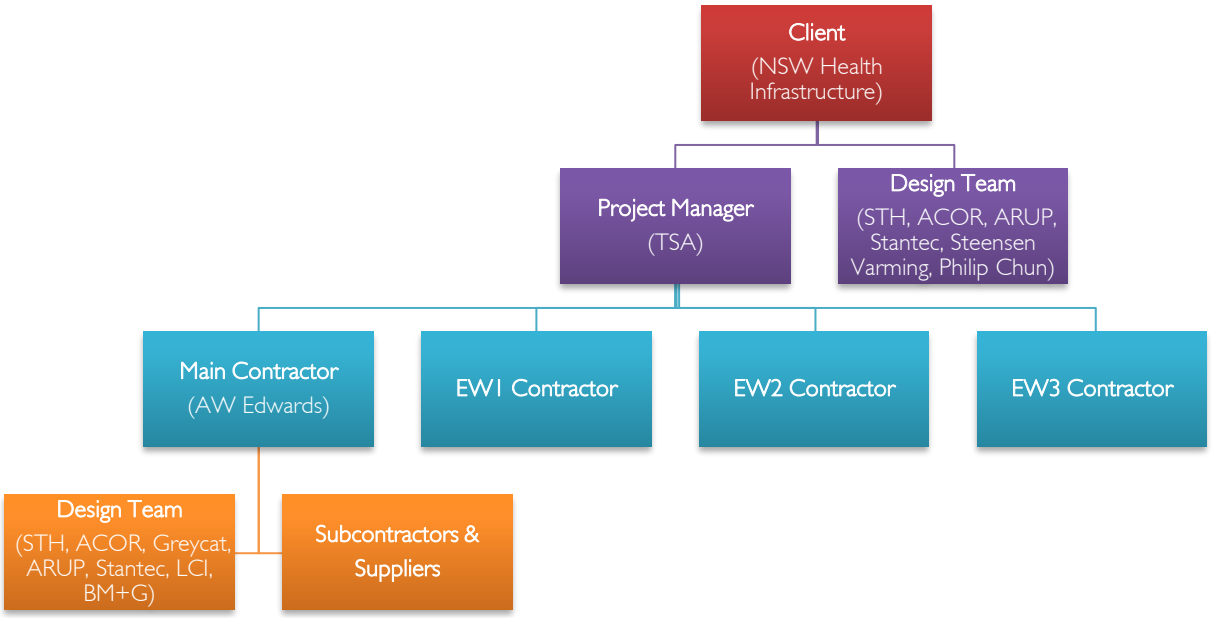
- Australian Standard AS 3610 – Formwork
- Australian Standard AS 3600 – Concrete Structures
- Australian Standard AS 2865 – Safe Working in a Confined Space
- Australian Standard AS 4839 – Safe Use of Portable & Mobile Oxy-Fuel Gas Systems
- Australian Standard AS/NZS 3012 – Electrical Installations - Construction and Demolition sites
- BS6472 – Evaluation and Human Exposure to Vibration in Buildings (1 to 80 Hz);
- BS7385 Part 2 – Evaluation and measurement of Vibration in Buildings Part 2;
- Manual Handling NOHSC: 1001
- Synthetic Mineral Fibres NOHSC: 1004
- Management and Control of Asbestos NOHSC: 2018
- Department of Conservation and Land Management, CALM (1992): Urban Erosion Control and Sediment Control;
- NSW DEC (2007): Noise Guide for Local Government;
- National Environment Protection Council (1998): National Environment Protection Measure (NEPM) on Ambient Air Quality;
- NSW Department of Housing (1998): Managing Urban Stormwater – Soils and Construction;
- NSW DEC (2004): Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes;
- DEC, NSW (2005): Approved Methods for the Modelling and Assessment of Air Pollutants in NSW.
- DEC, NSW (2007): Approved methods for the Sampling and Analysis of Air Pollutants in NSW;
- Code of Practice – How to Manage Work Health & Safety Risks
- Code of Practice – Work Health & Safety Consultation, Co-ordination and Co-operation
- Code of Practice – Excavation Work
- Code of Practice – Formwork
- Code of Practice – Labelling of Workplace Chemicals
- Code of Practice – Moving Plant on Construction Sites
- Code of Practice – Mono-strand Post – Tensioning of Concrete Buildings
- Code of Practice – How to Safely Remove Asbestos
- Code of Practice – How to Manage & Control Asbestos in the Workplace
- Code of Practice – Work in Hot or Cold Environments
- Code of Practice – Amenities for Construction Work
- Code of Practice – Overhead Protective Structures
- Code of Practice – Electrical Practices for Construction Work
- Code of Practice – Pumping Concrete
- Code of Practice – Cutting & Drilling Concrete and other Masonry Products
- Code of Practice – Safe Handling of Timber Preservatives and Treated Timber
- Code of Practice – Safe Use of Synthetic Mineral Fibres
- Code of Practice – Confined Spaces
- Code of Practice – Managing the Risk of Falls at Workplaces
- Code of Practice – Hazardous Manual Tasks

- Code of Practice – Managing the Work Environment & Facilities
- Code of Practice – Managing Noise & Preventing Hearing Loss at Work
- Code of Practice – Work Near Overhead Power Lines
- Safe Erection, Altering & Dismantling Scaffolding – Industry Safety Standard

4 PROJECT TEAM

4.1 PROJECT DELIVERY TEAM

We understand the structure of the project delivery team to be as follows



4.2 KEY CONTACTS & RESPONSIBILITIES

The key personnel proposed for this project are:

Key Personnel			
Name	Role	Responsibilities	Reports To
Michael Musarra	Project Director	• Being the senior point of contact for the Principal's Representative • Ensuring project schedule and budget • Delivering the Health Infrastructure vision and objectives • Providing overall team leadership • Developing a high performance culture • Driving a safe working culture • Developing and maintaining an effective working relationship with the Health Infrastructure • Mentor and guide the management team • Ensures the Project Team is adequately qualified • Approves expenditures, milestone schedules, valuation and other matters related to the overall project execution	Chief Executive Officer

Key Personnel			
Name	Role	Responsibilities	Reports To
		• Identifies the need for specific procedures or amendments necessary to fulfil the objectives of the project	
Glen Burley	Senior Project Manager	• Being the senior point of contact for the Principal's Representative • Develop and maintain an effective working relationship with the Health Infrastructure • Providing team leadership • Develop and monitor the program to ensure Milestone are being achieved • Allocate sufficient resources to complete works under the contract • Allocate adequate resources to implement workplace health, safety and environmental controls. • Promote safety and environmental awareness in site meetings • Verify progress payments and variations under the contract. • Develop with the cost planner and Contract Administrators the Guaranteed Construction sum for each milestone • Advise Health Infrastructure of risks to the contract and available mitigation measures • Responsible for the implementation of all management plans and to ensure resources are available to allow the Management plans to be implemented	Project Director
Hang Thuy Nghiem	Senior Design Manager	• Liaise with Health Infrastructure and the Principal's Representative as required to determine the number and nature of the consultancy agreements to be procured for the project • Undertake a detailed assessment of the Project Brief and actively manage the design process to ensure that overall requirements of the project brief are incorporated into the design documents • Ensure that the design intent is not compromised • Develop a transparent and trusting working relationship between the Contractor, the design consultants, Health Infrastructure and all stakeholders built around design workshops, presentations and submissions • Facilitate a coordinated approach across all design disciplines and construction trades and across the various project components with the assistance of the discipline specific managers and consultant team • Ensure that Safety in Design aspects are duly considered and addressed and that the CHAIR process is implemented as well as the development of extensive Design Risk Registers	Senior Project Manager

Key Personnel			
Name	Role	Responsibilities	Reports To
		• Ensure that the design is developed and documented in accordance with the Design Management Plan • Ensure that design complies with applicable statutory requirements including the Deemed To Satisfy (DTS) provisions of the Building Code of Australia and the DDA, or that appropriate alternative solutions are documented and certified • Ensure that the design is fit for the intended purpose and ensure that system definition and design reflect the requirements of all system elements • Identifying risk items and developing risk mitigation approaches from which mitigation plans will be defined and periodically reviewed to ensure that identified risks are properly	
Ryan Iacumin	Interface & Impact Manager	• Development and implementation of the community and stakeholder liaison plan • Develop and implement, along with Health Infrastructure, communication strategies for informing stakeholders and the community of construction activities and impacts, and where possible, introduce mitigating impacts on the community • Ensure that the requirements of all Stakeholders are identified via a process of consultation, open and meaningful communications and regular engagement. • All project inductions include training on the Community Relations and Communication Policy and Complaints Management; • All community representations and contacts are recorded on the project database regularly; • All complaints are managed in accordance with the requirements of the community liaison plan • Attend all meeting required by Health Infrastructure stakeholder and community liaison team meetings • All issues raised by the community or at the community liaison meetings are responded to promptly and accurately;	Senior Project Manager Construction Manager
Damien Mahr	Contracts Manager	• Develop and monitor the initial cost plan • Review all costs of the works and advise the Design Team where market norms are being exceeded so that options or alternatives can be explored at an early stage; • Ensure that cost planning takes appropriate consideration of temporary works, security, logistics and safety considerations • Provide advice and report on options considered to be viable for the detailed design development • Ensure probity and ethical behaviors re being adhered to through the tendering phase	Senior Project Manager

Key Personnel			
Name	Role	Responsibilities	Reports To
Kyle Sweeney	Commercial Procurement Manager	• Manage the expression of interest phase • Manage the RFT phase • Ensure probity and ethical behaviors re being adhered to through the tendering phase • Procure consultants and subcontractors in an open book approach with Health Infrastructure • Establish the Tender Assessment Panel • Provide Health Infrastructure with recommendations for appointments of consultants and subcontractors • Review costs of the works and advise the Design Team where market norms are being exceeded so that options or alternatives can be explored at an early stage; • Assist in any value engineering workshops • Provide contract support to the project manager • Review and engage in contract with consultants and subcontractors • Manage the contracts with subcontractors and consultants • Prepare progresses payments and variations advice	Senior Project Manager
Andrew Merchant	Construction Manager	• Ensure compliance to the WHSE section of the Project • Management Plans and WHSE policies, procedures, • rules and regulations. • Ensure compliance with legal obligations under relevant • Acts, Regulations and Codes of Practices. • Ensure all incidents are reported to Project Managers • by Site Managers within 2 hours, investigated if required • and lessons learnt disseminated. • Sites established within designated time periods and • defective items rectified promptly. • Prepare regular program reports including short term • programs as required to ensure forward planning is • maintained and potential delays minimised. • Monitor assigned project programs and review forward • planning as required. • Ensure subordinates are effectively planning and • programming their work. • Provide input into target and contract programs • Strive to be defect free at completion. • Ensure defects are promptly attended to during the • defect liability period.	Project Director Senior Project Manager

Key Personnel			
Name	Role	Responsibilities	Reports To
		• Compliance with policies and procedures. • Satisfy Project Management Plan (PMP) mandatory • responsibility and input requirements, and participate in review of PMP	
Ahmet Temur	Site Manager	• Provide buildability advice on the design and construction phases of the project • Lead the construction team in the execution of the physical works • Ensure all workplace health and safety issues are adequately controlled • Develop and monitor the contract program • Create target program for the site teams • Advise the community liaison manager of up and coming construction activities • Ensure all requirements under the WHS Act and Regulations are being met on the sites. • Ensure compliance with all management plans	Construction Manager
Chris Faulkes	WHSE Manager	• Co-ordinating staff training in the implementation of AW Edward's Safety & Environment System and specific safety topics. • Assisting the Project Manager in the implementation and monitoring of the project Safety & Environment System. • Assisting management personnel in meeting their obligations under the relevant WHS legislation / Regulation, Codes of Practice and Australian Standards. • Informing management personnel of changes in the relevant WHS legislation / Regulations, Codes of Practice and Australian Standards. • Conducting Safety & Environment audits of AW Edward's sites and reporting the findings to the respective Project Manager and/or Site Manager / Foreman. • Maintaining a library of safety data sheets (SDS) at Head Office, which are to be provided to sites on request. As required by legislation, the SDS library will be updated regularly to ensure that SDS's are replaced every 5 years. • Collating and reporting on monthly Safety & Environment System records from site. • Manage and track corporate sustainability goals and metrics for the business. • Ensure compliance with all relevant legislation and standards. • Promote industry leading best practices in sustainability for product design, development, manufacturing, sourcing, and delivery.	Construction Manager

Key Personnel			
Name	Role	Responsibilities	Reports To
		• Advise AW Edwards on how to find environmental benefits and manage social issues. • Outlines a monitoring program that includes the frequency of monitoring and maintenance and includes a check lists of equipment/components that should be inspected • Identify an appropriate response to rectify systems that are working outside of the target that includes life cycle cost analysis of existing conditions and improvement options • Setting and tracking the targets for local and sustainable material procurement • Setting and tracking the targets for use of local businesses to execute any contracting work and to supply any material/equipment required	

4.3 24 HOUR CONTACT

The 24 hour contact person for this project is:

Andrew Merchant

Construction Manager
0413 735 650

5 PRE CONSTRUCTION PLANNING

5.1 COMMUNICATION

5.1.1 PRO-ACTIVE & CO-OPERATIVE MANAGEMENT

AW Edwards apply a pro-active approach to all aspects of the project to ensure a high level of control is exercised and any potential problems can be identified (and responded to) as early as possible.

Our project team pro-actively manage the project by focusing closely on planning, programming, forecasting and monitoring activities. Programming, Planning and Productivity Management will be carried out in accordance with Appendix 18 of the Project Management Plan. This focus minimises the potential for problems to occur. We continue to develop contingency plans to address the possibility of problems actually arising. This approach is fundamental to the successful delivery of the project.

Despite the best endeavours of all stakeholders, problems or unforeseen circumstances may arise. We will actively resolve or help to resolve such problems in the most expedient and efficient way possible. Project staff with the experience and skills needed to solve complex problems in projects of this nature will remain committed to this project. In the event that unforeseen problems are encountered, the team will immediately initiate and implement a problem resolution plan to minimise any impacts.

We will encourage and promote a co-operative and harmonious project environment. This applies to relationships between clients, employees, consultants, suppliers, subcontractors, unions and other stakeholders. Our objective will be to eradicate conflict wherever possible and at all levels, as this can be a major impediment to progress and meeting project objectives.

5.1.2 GOOD COMMUNICATION

Success for the project will rely on good and effective communication between all parties. This means rapidly sharing and exchanging information with all project stakeholders and developing cooperative relationships with the Principal's Representative, Health Infrastructure and its consultants.

Systems for both formal and informal communications are to be agreed. We commit to ensuring our communications are timely and any surprises are minimised. We will ensure Health Infrastructure and its representatives are comfortable with the information provided to make timely and appropriate decisions.

5.2 CONSTRUCTION COMMUNICATIONS

Construction Communication methodology will be carried out in accordance with Section 7of the Interface & Impact Management Plan (IIMP).

The IIMP provides the framework for communication between the Health Infrastructure, Project Team and community stakeholders.

In particular, some key aspects of the plan is to:

- Ensure that the partial closure of the Project areas and the construction of the new facility are appropriately communicated;
- Identify all proposed communication and consultation tools to be used i.e. information staff, notifications, advertisements and signage;
- Ensure that there are procedures in place for managing issues if/as they arise;
- Policies and procedures for handling community complaints and enquiries, and for handling of media enquiries;
- Details of the Contractor's nominated 24-hour contact for management of complaints and enquiries.
- Ensure all communication strategies are approved by Health Infrastructure before implementation

5.3 STAKEHOLDER AND COMMUNITY LIAISON

AW Edwards has a history of excellent relationships with stakeholders and communities surrounding their projects as a result of open and transparent communication. We acknowledge the high profile nature of this project, and the emphasis the Client has placed on Stakeholder and Community Management.

We understand the responsibilities of the Principal Contractor in relation to stakeholder consultation and community relations management for the Project. AW Edwards will support Health Infrastructure in communicating and consulting with relevant stakeholders and communities throughout the course of the Project to meet the following key objectives;

- Ensure the reputation of Health Infrastructure and their stakeholders are maintained during the Project;
- Provide a framework, including policies, processes and procedures for communications management to ensure they are timely, relevant, accurate and consistent;
- Ensure all workers and Subcontractors are aware of and comply with these policies and procedures;
- Ensure relevant, accurate and timely information is provided on construction activities and potential impacts to the local community;
- Manage all correspondence, complaints and community contacts in a professional, efficient, timely and effective manner;
- Develop and maintain robust relationships with local communities, stakeholders, Council, the Principal and other contractors as appropriate so the project can be delivered on time and on budget.

AW Edwards will develop a Stakeholder and Community Relations Plan upon award of Main Contract Works.

5.3.1 AVOIDING DISRUPTION TO THE LOCAL COMMUNITY

As the site is located on the hospital grounds, the effect to the local community will be minimised, however, we acknowledge that residential streets surround the hospital.

To ensure a harmonious relationship with the local community, the client and the construction activities, the AW Edward's site management team will liaise with the surrounding stakeholders, conduct regular meetings during which any issues will be discussed and undertake public education exercises such as letter drops to mitigate the impact of the construction process on the area.

The purpose of community meetings and notices is to inform the community of the progress of the works, upcoming activities and any changes to previous issue of plans.

The notices will provide the community with avenue to provide comment on the construction activities.

5.3.2 COMPLAINTS RESPONSE PROCESS

The complaints response process for the Project will be outlined in Section 7.2.2 of the Interface & Impact Management Plan. This plan will describe AW Edwards approach and procedures for communication with internal and external stakeholders, authorities and the public.

5.4 LIAISING WITH THE HEALTH INFASTRUCTURE

Liaising with the Client will require prompt and professional communication to ensure the Client are informed as to the progress of the building works and matters that require notice to be given to the Client or its staff.

We would propose the communication with the Client will be along the lines outlined in Section 7of the Interface & Impact Management Plan and forms the basis for detailing the communication protocols with the Client.

5.5 ADJOINING PROPERTIES

5.5.1 PHOTOGRAPHIC SURVEY OF ADJOINING PROPERTIES

The survey completed prior to the demolition-taking place will be revisited to close out any issues arising. This will be supplemented with separate reports to record the conditions prior to our works commencing.

5.5.2 DILAPIDATION SURVEY

Upon contract award, AW Edwards will undertake a dilapidation survey which will detail the current structural condition of the site and adjoining areas, including all existing fences, adjoining buildings,

infrastructure, roads, crossovers etc. The dilapidation survey will include a written description and comprehensive photographic record of existing conditions.

AW Edwards will undertake periodic inspections of adjoining properties and infrastructure confirm no damage has occurred as a result of the execution of the works.

Prior to the commencement of construction, the Dilapidation Report shall be prepared in accordance with the following procedures:

- consultation with the relevant owner and provider of services and Infrastructure that are likely to be affected by the development to make suitable arrangements for access to, diversion, protection and support of the affected infrastructure;
- prepare a Pre-Construction Dilapidation Report identifying the condition of all public (non-residential) infrastructure and assets in the vicinity of the site (including roads, gutters and footpaths) that have potential to be affected;
- submit a copy of the Pre-Construction Dilapidation Report to the asset owner, Certifier and Council; and
- provide a copy of the Pre-Construction Dilapidation Report to the Planning Secretary when requested.

Unless otherwise stated by the Public Authority, within one month of the completion of the Stage 1 works, a Post-construction dilapidation report will be completed and provided to Council and the Department of Planning.

The Report shall:

- ascertain whether the construction works created any structural damage to public infrastructure by comparing the results of the Post-Construction Dilapidation Report with the Pre-Construction Dilapidation Report stated above
- have, if it is decided that there is no structural damage to public infrastructure, the written confirmation from the relevant public authority that there is no adverse structural damage to their infrastructure (including roads).
- be submitted to the Certifier;
- be forwarded to Council for information; and
- be provided to the Planning Secretary when requested.

5.5.3 PUBLIC RISK INSURANCE POLICY

For the Project, the Client will provide the public liability insurance policy of no less than $20m, for the duration of the works.

5.6 SAFETY AND ENVIRONMENT

5.6.1 PUBLIC SAFETY AND AMENITY

The safety of the general public is paramount. AW Edwards will ensure that the general public is protected from activities occurring on the site.

If not managed correctly, construction sites can create risk to the general public who move around the site or who adjoin them. Examples of the hazards that need to be managed include;

- Changes to the surface level
- Excavations, holes and trenches
- Falling material and debris
- Plant and equipment
- Dust, vapours or other hazardous substances
- Noise
- Vibration
- Movement of vehicular traffic

The building site will be kept neat and tidy to maintain public safety and local amenity. Where activities occur outside of the site boundaries such as works to local authority assets, steps will be taken to ensure the impact of the work is kept to a minimum.

5.6.2 WORK HEALTH & SAFETY

AW Edwards has developed a Project Management Plan (PMP) that complies with the WHS Act 2011 and WHS Regulations 2017. The WHS section within the PMP is based upon our Management System which is accredited to AS/NZS ISO 45001:2018 (Safety).

The 'for construction' Project Management Plan will be submitted prior to construction work commencing on site.

Further to the Project Management Plan, AW Edwards will complete a WHS Management Monthly Report in accordance with the Contract documents.

As evidence of commitment to WHS Management, AW Edwards will:

- Carry out all activities in compliance with the Work Health & Safety Act 2011, and the Workplace Health & Safety Regulation 2017
- Hold and maintain an accredited occupational health and safety & rehabilitation management system by a NSW Government agency that complies with the WHS&R Guidelines, for as long as any activities are carried out
- Carry out all activities in compliance with the NSW Government Code of Practice for Procurement;
- Comply with all WHS policies, procedures and measures implemented or directed by the Principal or the occupiers of any premises at or within which AW Edward's activities will be undertaken;
- Carry out all activities in accordance with AW Edwards Safety Management Plan;
- Create a safe working environment for all activities, ensure the safety of all authorised personnel on the Site and other work sites, and ensure no unauthorised individuals gain access to the site or other work sites; and
- Regard and ensure the safety of the public especially at all sites.

5.6.3 ENVIRONMENTAL MANAGEMENT

AW Edwards has developed a Project Management Plan (PMP) that complies with environmental legislation. The PMP incorporates the requirements of environmental management & is based upon our Management System which is accredited to AS/NZS ISO 14001:2015 (Environmental).

The Construction Environmental Management Plan (CEMP) within the PMP describes the environmental strategy, methods, controls, and requirements for the execution of the Project. It forms part of an integrated system alongside quality and safety and acts as the master document for site environmental activities, and refers to company procedures.

The primary aim/objective of the CEMP is to provide a framework of procedures to minimise the impacts of the construction of the project on the environment.

The secondary objectives of the CEMP are to provide certainty of delivery of the prescribed environmental outcomes during all phases of the project construction and to implement a system for compliance with all applicable requirements, obligations and commitments for the project to ensure:

- The company is compliant with all obligations and commitments from the pre-construction environmental assessment process;
- The company is compliant with Conditions of Approval;
- The company meets all relevant legislative requirements;
- All licences, approvals and/or permits needed to construct and/or operate the project have been granted;
- Compliance with other non-legislative requirements and commitments including:
  - ISO 14001:2015 Environmental Management Systems;
  - Australian Standards and Guidelines; and
  - Best practice environmental management
  - Environmental Management Plan Guideline: Guideline for Infrastructure Projects (DPIE April 2020)

5.6.4 ECOLOGICALLY SUSTAINABLE

AW Edwards is committed to delivering ecologically sustainable developments through the construction period.

During construction, we will identify strategies and objectives to reduce pollutants, greenhouse gas emissions and demand on non-renewable resources such as energy sources and water.

5.6.5 NOISE & VIBRATION MANAGEMENT

AW Edwards is committed to ensuring that no works significantly impact on local background noise or vibration limits at the project. A Construction Noise and Vibration Management Plan (CNVMP) has been developed which will document how the construction noise and vibration objectives will be managed.

The objective of the Construction Noise & Vibration Management Plan is to:

- Ensure that construction works do not significantly impact background noise levels around each site, and that applicable guidelines and regulations are met;
- Ensure all equipment operates within the applicable noise levels;
- Ensure that construction works do not cause sufficient vibration to damage surrounding buildings, and comply with the applicable guidelines and regulations.
- Vibration does not affect sensitive university equipment

Our approach to the management of noise and vibration will include:

- Obtaining the agreement of the Principal as to acceptable noise levels and durations within Authority requirements; obtaining the agreement by Principal of the times for undertaking noisy works;
- Devising demolition and construction methodologies which will minimise the impact of noise, dust and vibration;
- Using live noise levels to help plan and manage construction activities;
- Maintaining noise levels below agreed limits and durations; and
- When requested, provide noise monitoring.

5.6.5.1 Noise Management

From the NSW Department of Planning Project Approval, we understand the construction noise objectives are to manage noise from construction activities so it does not exceed:

- 54dB $L_{Aeq\ (15min)}$ during the daytime at the closest residential property boundary to the north of the site at Deakin Close at a height of 1.5 metres above ground level
- 54dB $L_{Aeq\ (15min)}$ during the daytime at the closest residential property boundary to the north-east the site at Toorak Court at a height of 1.5 metres above ground level
- 45dB $L_{Aeq\ (15min)}$ during the daytime at any internal hospital location

The Construction Noise and Vibration Management Plan (CNVMP) will detail the management controls to achieve the prescribed noise objectives in accordance with EPA'S Interim Construction Noise Guideline (DEC, 2009).

5.6.5.2 Vibration Management

From the NSW Department of Planning Project Approval, we understand the construction vibration objectives are to limit vibrations from construction activities to:

- 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
- 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).

The Construction Noise and Vibration Management Plan (CNVMP) will detail the management controls to achieve the prescribed vibration objectives.

5.6.6 DUST MANAGEMENT

The management of construction activities is important to ensure dust and exhaust emissions of plant and equipment is controlled to an acceptable level.

AW Edwards will develop a strategy for dust control, which will be included in the Environmental Management Plan. This strategy will include control measures and document how these measures are to be implemented and monitored.

AW Edwards understands that we must ensure that excessive dust is not generated by our works to the extent that it may interrupt the normal operations, place at risk or diminish the amenity of Client staff or visitors of the Client. Minimum considerations include:

- Implement measures which prevent the generation of dust during demolition and construction works; and
- Implement measures to prevent the ingress of dust to the existing surrounding buildings of Site during demolition and construction.

5.6.7 SOIL & WATER MANAGEMENT

A comprehensive soil and water management plan is contained within the Construction Environmental Management Plan (CEMP) – Sub Plan.

A W Edwards is committed to ensuring that no works significantly impact soil and water in and around the construction sites.

The objective of the Soil & Water Management Plan is to:

- Ensure that construction works do not significantly impact on the movement of sediment and soil across the site in the form of erosion;
- Ensure that construction works do not significantly impact on the quality of site run-off, causing potential turbidity and chemical contamination in stormwater and local waterways

5.6.8 HAZARDOUS MATERIALS

5.6.8.1 Ground Contamination

It is recognised that hazardous materials and substances, including Asbestos Containing Materials (ACM) and Chemicals of Concern (COC), have been found to be present in (and under) existing buildings and within some of the filled areas of the site.

Asbestos removal will be required to be undertaken prior to demolition works commencing in the affected buildings. Areas underneath buildings will require careful assessment and clearance prior following the demolition stage and prior to excavation works being undertaken. The site filling material and natural soils will require testing for COC and classification prior to any off-site disposal. This is due to some COC having been detected in the test samples completed to date.

A number of reports and surveys have been provided in the tender documents, including:

- The JBS&G Report - JBS&G contamination report (Detailed Site Investigation, Ryde Hospital, 26th November, 2019 56228/123127 (Rev 0) and subsequent Data Gap Analysis Assessment – 20th September, 2022 60938 / 146976 (Rev A)
- Hazardous Building Materials Surveys Report – 21st September, 2022 60938 / 147044 (Rev A)
- Noel Arnold and Associates Asbestos Materials Survey Report – January 2011 – SA0423:87952
- Ryde Asbestos Register – Ryde Hospital Updated 1st October, 2020
- JBS&G Remedial Action Plan – 150554 / 60938 (18th April, 2023)
- JBS&G Asbestos Management Plan – 151116 / 60938 (24th April, 2023) describes the measures to be taken to effectively manage the presence of asbestos on the site and we have allowed to comply with the requirements of the document.

The above documents provide details in relation:

A. The known extent of hazardous materials and COC based upon audits, inspections, investigations and tests.
B. A range of conclusions and recommendations in relation nature and extent of hazardous materials and chemicals of concern
C. The manner in which the site is to be remediated, including the requirement to undertake additional investigations and tests
D. The manner in which Hazardous Materials removal (including ACM) is to be undertaken and managed
E. Requirements to be satisfied prior to off-site disposal of excess site spoil
F. The requirements to be satisfied in order for the site to be considered safe for use as a public hospital

A summary of identified items (within buildings) is included below:

SUMMARY OF IDENTIFIED ITEMS

The following table provides a general overview of the types of Hazardous Materials identified on site, specific finding are identified in the Hazardous Materials Register.

Building	Asbestos		Hazardous Materials				
	Non-Friable	Friable	SMF	PCBs	Lead Containing Dust	Lead Based Paints	Lead in Soils
2			Assumed			Yes	
3	Yes	Yes	Assumed	Assumed	Yes	Yes	
4	Yes		Yes	Assumed		Yes	
5	Yes	Yes	Assumed	Assumed	Yes	Yes	Yes
6	Yes	Yes	Assumed	Assumed	Yes	Yes	
7			Assumed				
8	Yes	Yes	Assumed	Assumed	Yes	Yes	
9	Yes	Yes	Assumed	Assumed	Yes	Yes	
10	Yes	Yes	Assumed	Assumed	Yes	Yes	
11	Yes	Yes	Assumed	Assumed	Yes	Yes	
12	Yes	Yes	Assumed	Assumed	Yes	Yes	
13	Yes	Yes	Assumed	Assumed	Yes	Yes	
14	Yes	Yes	Assumed	Assumed	Yes	Yes	
15	Yes		Assumed	Assumed		Yes	
16	Yes		Assumed		Yes	Yes	
17			Assumed				
18	Yes	Yes	Assumed	Assumed	Yes	Yes	
19	Yes	Yes	Assumed	Assumed	Yes	Yes	

Buildings with asbestos contaminated subfloor spaces	Friability
5	Friable
6	Non-Friable and Friable
8	Friable
10	Friable
12	Friable
13	Friable
14	Friable
18	Friable
19	Friable

Figure 22: Extract from Hazardous Material Risk Assessment prepared by JBS&G

The Asbestos Management Plan (AMP) sets out requirements for an Asbestos Consultant to be engaged to provide advice prior to commencement of any works. We have allowed to engage the Asbestos Consultant to provide the services required to be performed in the AMP. A licensed Asbestos Removal Contractor will also be engaged and comply with the requirements of the AMP. At all times, the asbestos removal work will be undertaken in a manner which accords with the requirements of the AMP and the site will be maintained in a safe manner. The required asbestos management procedures will be adhered to.

Where off-site disposal of ACM is required, this will be completed in strict accordance with all relevant requirements (as described in the AMP). Monitoring, inspection and supervision will be undertaken by the Asbestos Consultant and Hygienist.

We note that there may be a requirement for further investigations to be undertaken in order to determine the extent of the hazardous materials presence at the site. We have made allowances to undertake additional assessments, including testing and classification of the material and filling material underneath building. In essence, in order to proceed with work after buildings have been cleared of asbestos (and demolition complete), inspection and testing of the natural soil and filling material can be undertaken.

The additional inspections and testing regimes will enable material to be formally classified prior to any required off-site disposal. Further, the additional testing and classification may identify areas of the site which may require remediation (ie in areas where excavation and of-site disposal is not required).

In all cases, we will strictly comply with the requirements identified in the Asbestos Management Plan and the Remedial Action Plan.

We will aim to establish clear lines of demarcation between material considered to be affected by asbestos or other hazardous substances, such that cross-contamination (ie with clean material) does not occur. We will require our Asbestos Consultant and Environmental Consultant to provide classification of waste material on an area-by-area basis, with a view towards the establishment of a range of waste streams (for disposal at various licensed waste facilities). This strategy was successfully implemented at the University of NSW Village Green project, whereby off-site disposal costs were also minimised.
A W Edwards is experienced in dealing with contaminated sites - including sites containing hazardous materials - and on site remediation. In particular, we are experienced in the removal of asbestos from buildings to be demolished and where asbestos is located in filling materials. We are cognisant of processes and procedures to be followed and to the safety requirements for dealing with asbestos within a live hospital environment. The Concord Hospital and Westmead Hospital Enabling Works / Early Works projects are excellent examples of projects involving Hazardous Materials removal and disposal.

Our overall approach to the management of hazardous materials removal will be as follows:

1. Strict adherence to the requirements of the Remedial Action Plan and the Asbestos Management Plan provided in the tender documents.
2. Undertake further assessment / investigations to determine the extent of site contamination and the presence of hazardous materials. Specialist Consultants will be engaged to undertake the additional assessments and to provide specific processes and procedures to implemented.
3. Once hazardous materials have been removed from buildings to be demolished (and following subsequent demolition) areas beneath demolished buildings will be inspected, assessed and / or tested to determine whether clearance certificates can be provided. At this point, soil and filling material can be tested and classified for off-site disposal (when excavation is required)
4. Unexpected finds protocol – if additional (ie in addition to already identified in reports) potential ACM is encountered, we will cease work until it has been tested.
5. Air monitoring – A W Edwards will undertake air monitoring during all civil works and hazardous materials removal works. Air monitoring results will be provided to TSA regularly in an open and transparent manner.
6. Due Diligence with asbestos controls – as asbestos works are required, our experienced team will implement several asbestos controls including dust suppression via regular hosing or other suitable means such as fog cannons, covering of stockpiles, decontamination of equipment prior to removal from site, all required respirators and protective suits. These controls will be monitored on an ongoing basis by the A W Edwards Site Manager.
7. Validation of imported materials – all materials being brought onto the site must be tested and approved by the Site Hygienist prior to delivery.
8. Classification of waste material – all materials being removed from the site will be tested and appropriately classified by the Environmental Consultant.
9. An Asbestos Consultant and Hygienist will be engaged to perform all required consultancy work, inspections and reporting.
10. Off-Site disposal of ACM – once classified, asbestos containing material will be taken off-site in covered trucks for disposal at a licensed facility. All required materials tracking (for example, 'Waste Locate') and Environment Protection Authority (EPA) requirements will be met.

Our process will also involve:

1. Identify potential locations for hazardous materials through visual investigations

2. Communicate the proposed methodology and timing of the works to TSA and HI
3. Isolate the work area with signage and provide segregation
4. Implement appropriate controls including air monitoring and exclusion zones
5. Complete the hazardous material removal works (to be undertaking by the licensed contractor)
6. Dispose of materials at an appropriately licensed facility (to be undertaking by the licensed contractor)
7. Perform a deep clean of the areas, and
8. Provide clearance certificates.

For the demolition and excavation activities, prior to handing over an area for others to work in, a validation process with appropriate inspections and handover documentation will be provided.

Ultimately, our Consultants will certify that the work has been completed in accordance with the requirements of the Asbestos Management Plan and the Remedial Action Plan. A Long-Term Environmental Management Plan will also be prepared.

5.6.8.2 Asbestos Removal

The Noel Arnold and Associates Asbestos Materials Survey Report – January 2011 – SA0423:87952, Ryde Asbestos Register – Ryde Hospital Updated 1st October, 2020, JBS&G Remedial Action Plan – 150554 / 60938 (18th April, 2023), JBS&G Asbestos Management Plan – 151116 / 60938 (24th April, 2023) describes the measures to be taken to effectively manage the presence of asbestos on the site.

Prior to the removal of the asbestos, we will engage an occupational hygienist to provide direction on the safe removal and disposal of the asbestos.

This direction will be in accordance with the following standards, codes and guidelines:

- SafeWork Authority of NSW requirements
- SafeWork Code of Practice How to manage and control asbestos in the workplace
- SafeWork Code of Practice How to safely remove asbestos
- Environmentally Hazardous Chemicals Act 1985 (NSW)
- Waste Avoidance and Resource Recovery Act 2001 (NSW)

Prior to the removal of the asbestos, the following procedures will be followed:

Notification and Permit

- Not less than seven (7) days prior to commencing any asbestos removal work, we will notify the local office of SafeWork and the Principal of the intention to carry out that work.
- Where the regulations require a licence for asbestos removal work, before the work commences, we will submit to the principal a copy of the current licence held by the contractor that will undertake the work and a copy of any SafeWork permit required for the work.

Monitoring

- We will provide air monitoring by an independent testing authority on each day during asbestos removal and on completion of each area where removal has been undertaken.

Clearance Certificate

- We will submit to the Principal a clearance certificate from an independent testing authority at the completion of the asbestos removal work.

5.6.9 UNEXPECTED DISCOVERY

If any hazardous substance not specified in work under the Contract is discovered on the Site AW Edwards will suspend all work which may result in exposure to such hazardous substance and notify the Principal immediately of the type of substance and its location.

The initial notification to the Principal will include the following details:,

- The additional work and additional resources estimated to be necessary to deal with the substance so that work and subsequent use of the Works may proceed safely and without risk to health;
- Estimated of the cost of the measures necessary to deal with the substance; and
- Other details reasonably required by the Principal.

Direction from the principal will be sought prior to undertaking any work, unless the unexpected discovery poses an immediate risk to the health and safety of workers onsite, in which case works will be undertaken to reduce or eliminate the immediate risk.

5.6.10 WASTE MANAGEMENT

AW Edwards will prepare a complete Waste Management Plan (WMP) as an appendix to the PMP. In the interim, an Early Works Waste Management Plan has been added in Appendix J.

This Early Works Waste Management Plan will outline how AW Edwards Pty Limited will manage the waste management on the Project and in particular for the Early Works and temporary building. All waste generated during construction must be assess, classified and managed in accordance with the Waste Classification Guidelines Part 1: Classifying Waste (EPA, 2014).

A W Edwards is committed to ensuring appropriate methods of waste minimisation, recycling and disposal and spoil management.

The objective of the Construction Waste Management Plan is to:

- Ensure that waste generation is avoided as a priority;
- Ensure that environmentally sensitive work practices are followed within waste minimisation programs;
- Ensure that, wherever practicable, waste materials are recycled/re-used;
- Ensure that the disposal of all liquid and non-liquid wastes is in accordance with the EPA regulations;

- Ensure that spoil from sites is managed appropriately to minimise environmental and health risks;
- Ensure that the air quality surrounding sites is appropriately managed;
- Ensure that all spoil is disposed of to prevent contamination of any lands.

5.7 GREEN STAR REQUIREMENTS

This section is not relevant to the Early Works package.

5.8 QUALITY MANAGEMENT

AW Edwards approach to quality management is to develop an overarching Project Management Plan which stipulates the processes and procedures to be implemented in order for the works and services to meet the project requirements.

The AW Edwards Management System which is accredited to AS/NZS ISO 9001:2015 (Quality), which will be the basis for development of the Project specific quality management plan.

The plans will include the processes and activities that determine quality policies, objectives and responsibilities so that the Project will satisfy the level of quality required. The Quality Management Plan integrated into Project Management Plan are to be read in conjunction with the overall requirements of the A W Edwards Management System.

The primary quality processes to be established and implemented for the project are as follows:

- Quality Planning
- Quality Assurance
- Quality Control

5.9 WORKPLACE RELATIONS

AW Edwards has an exemplary Workplace Relations record and a stable, long-serving work force in a company environment where there is mutual respect for all. We also engage subcontractors with whom we have close relationships. These relationships are strong at both management and on-site levels. Site staff is actively encouraged to apply practical and fair Workplace Relations practices

AW Edwards will develop, submit and implement a Project Workplace Relations plan, within 14 days of award of main contract works.

The Workplace Relations Management Plan will outline how AW Edwards will manage Workplace Relations on the Project.

AW Edwards will comply with the NSW government *Workplace Relations Management Guidelines* and manage all aspects of Workplace Relations in accordance with the Contract.

The Objectives of the Workplace Relations Management Plan are as follows:

- Provide a base for the successful completion of the Project in relation to safety, cost, quality, community and environmental outcomes;
- Clearly identify responsibilities for Workplace Relations management on the Project;
- Ensure that there is minimal disruption to the construction program due to industrial issues;
- Identify real and perceived industrial risks to the Project, processes and actions, to manage them and any emergent industrial risks;
- Provide a positive impact to the workplace culture;
- Enhance positive relationships with industry parties; and
- Ensure compliance with the applicable framework.

5.10 GENDER EQUALITY ACT

The Equal Opportunity for Women in the Workplace Act 1999 (**EOWW Act**) has been renamed the Workplace Gender Equality Act 2012 (**WGE Act**) to put a focus on promoting and improving gender equality and outcomes for both women and men in the workplace. Similarly, the Equal Opportunity for Women in the Workplace Agency has been renamed the Workplace Gender Equality Agency (**Agency**).

The principal objects of the WGE Act are to:

- Promote and improve gender equality (including equal remuneration between women and men) in employment and in the workplace
- Support employers to remove barriers to the full and equal participation of women in the workforce, in recognition of the disadvantaged position of women in relation to employment matters
- Promote, amongst employers, the elimination of discrimination on the basis of gender in relation to employment matters (including in relation to family and caring responsibilities)
- Foster workplace consultation between employers and employees on issues concerning gender equality in employment and in the workplace
- Improve the productivity and competitiveness of Australian business through the advancement of gender equality in employment and in the workplace.

AW Edwards supports the Workplace Gender Equality and provide annual reporting in accordance with the Act.

5.11 ABORIGINAL PARTICIPATION

An Aboriginal Participation Plan has been prepared by A W Edwards Pty Limited for the Ryde Hospital Redevelopment Main Works project in accordance with the New South Wales Government Aboriginal Procurement Policy January 2021.

The Aboriginal Participation Plan is to be read in conjunction with the following documents.

- NSW Government Aboriginal Procurement Policy

https://buy.nsw.gov.au/__data/assets/pdf_file/0007/949174/app_policy_jan_2021.pdf

- Commencing in January 2021, the policy is designed to encourage NSW Government agencies and suppliers to create opportunities for Aboriginal people, Aboriginal-owned businesses and Aboriginal communities.

The objectives of the policy are to:

- Support employment opportunities for Aboriginal and Torres Strait Islander people
- Support sustainable growth of Aboriginal businesses by driving demand via Government procurement of goods, services and construction.
- The policy introduces a minimum requirement for 1.5% Aboriginal participation for all contracts valued at $7.5 million or above.

A W Edwards is committed to exceeding the minimum Aboriginal Procurement Policy requirement of 1.5% Aboriginal participation and achieving an overall Project Spend of 6% of the Contract Price (as at the Date of Contract).

The target of 6% will be met by meeting the following sub-targets:

- Subcontracting: 2.81% of the Contract Price to be subcontracted to Aboriginal business.
- Employment: 3.12% of the Contract Price to applied to employing Aboriginal people on the Project.
- Education, training and capability building: 0.07% of the Contract Price to be applied to the cost of education, training or capability building for Aboriginal staff or businesses directly contributing to the Contract.

The Aboriginal Participation Plan includes;

- Senior Management commitment to creating and extend opportunities for Aboriginal participation in this project
- Develop and implement specific objectives and targets for participation of Aboriginal people in the construction process.
- Commitment by AW Edwards that sufficient resources will provided for the effective implementation of aboriginal participation in this Project
- Identify a management representative in AW Edwards Aboriginal Participation Plan who is specifically responsible for Aboriginal participation,

The Managing Director of AW Edwards has issued a policy statement entitled *Managing Statement for Support for Aboriginal Participation*. We have developed a Management Plan which will provide the framework for the implementation, monitoring and reporting of AW Edwards's commitment to Aboriginal Participation

5.12 TRAINING MANAGEMENT

A W Edwards is committed to the investment into the people it employs, in its supply chain, and in the communities that A W Edwards works in. A W Edwards has consulted heavily with the NSW Infrastructure Skills Legacy Program to ensure that it is proactively working towards a construction industry that is highly skilled and values diversity. We recognise that fostering skills and knowledge within our team and the supply chain of NSW Health Projects have long term impacts on the broader community and assist in futureproofing our industry.

AW Edwards will develop, submit and implement a Workforce Development Plan, within 14 days of award of contract. A W Edwards' Workforce Development Management Plan is designed to foster a culture of diversity and inclusion. As an organisation committed to providing equal opportunities and empowering individuals from all backgrounds, we have implemented key initiatives that highlight our dedication to promoting diversity in our workforce.

The Workforce Development Management Plan will outline how AW Edwards will manage workforce development on the Project.

Some objectives of the Workforce Development Plan will include:

- Identify training requirements specific to this Project
- Expand the pool of skilled workers by offering structured entry –level training
- Enhance the skills of existing workers by providing skilled opportunities
- Clearly Identify responsibilities for Training Management on the Project

5.13 TRAFFIC & PEDESTRIAN MANAGEMENT PLAN

A traffic and pedestrian management plan will be developed which will detail how traffic, pedestrian and cyclist access will be managed on the Project.

Key issues for traffic, pedestrian and cyclist management during the construction include:

- Ensure maximum safety of on-site personnel, pedestrians, cyclists, commuters, residents and drivers;
- Minimise environmental nuisance and impact as a result of construction traffic;
- Ensure construction traffic does not interrupt existing traffic flows on the local road network
- Safe operation of buses and other transport services during construction
- Establish strict scheduling of vehicle movements to ensure there are no vehicles waiting off the site
- Have no vehicles arrive at the site outside the site working hours
- Encourage site workers to utilise local public transport system and car sharing wherever possible
- Timely and effective implementation of traffic management measures

- Fulfilling the Council requirements

AW Edwards will liaise with the local Council to get their endorsement of the traffic and pedestrian management plan.

Project Specific traffic management measures are detailed in the construction methodology section of this management plan.

Requirements around Traffic & Pedestrian Management can be found in the Construction Traffic Management Plan and will be finalised after contract award.

5.14 ARCHAEOLOGY

We are not aware that the site contains material of archaeological significance. In the event that any material is found on the site, which is considered to be of archaeological significance, we will cease works in the immediate area notify the Principal's Representative for further direction.

5.15 ECOLOGY

To the Southern boundary of the Site is the Ryde Blue Gum High Forest. It is a tall open forest with predominantly Sydney Blue Gum (Eucalyptus Saligna) and Blackbutt (Eucalyptus Pilularis) across 3.8 ha. The forest is classified as a Critically Endangered Ecological Community (CEEC) under the Environmental Protection and Biodiversity Conservation (EPBC) Act. A W Edwards will advise all new workers on the site around the sensitivity and importance of the Forest.

A W Edwards have also been made aware of the potential of micro bats within existing building around the Hospital. We will work with the LHD and Health Infrastructure around any specific requirements for these animals.

5.16 COMMISSIONING

In order to ensure compliance with all the requirements of the contract A W Edwards will implement the Commissioning Management Plan which will embrace all activities under the contract, specifically relating to inspections and the testing necessary for commissioning.

The Project Commissioning Management Plan will be developed as systems are specified and design details are refined. The Commissioning Management Plan will provide;

- Presentation of commissioning procedures for the Project installations to Principal's Representative
- Commissioning program
- Identification of systems to be commissioned
- Verification of installed system performance and compliance with the specified design for each installation as defined within the Project Contract
- Certification as required by the contract.
- Test Record Sheet management process.

- Implementation of corrective processes and action, where this is deemed necessary under the Contract.
- Acceptance criteria
- The roles and responsibilities of key owner operator stakeholders in the commissioning process are known.
- A confirmation that completed building works complies with all requirements of the Building Code of Australia (BCA) the Fire Strategy and Safety Assessment Report (FSSAR) and applicable Australian Standards.
- Compliance with any Greenstar requirements
- Ensuring owner/operator staff receive appropriate training before handover

In accordance with the contract documents, a Commissioning Management Plan will be issued to the Principal 12 months before completion of the main contracts works.

5.17 MAINTENANCE PERIOD

A maintenance program for the defects liability period will be provided 4 weeks prior to practical completion. The program will detail the maintenance requirements for the first 12 months of occupancy.

5.18 SUBCONTRACTOR ASSESSMENT

The thorough assessment of subcontractors is critical to the successful completion of the project. We have a reputation for regular repeat business with subcontractors that have good track records. There is an abundance of subcontractors who have the capacity, the necessary pre-qualifications and preference for working with AW Edwards.

The AW Edwards Management System includes procedures for the careful assessment of subcontractors during the letting process. The contract documentation given to all tendering subcontractors outlines the project requirements, should the tenderer be successful.

During our projects, established procedures are implemented for verification of the subcontractor's compliance with the industry schemes and the appropriate awards and workplace arrangements.

5.19 DEFECT FREE COMPLETION

5.19.1 INTRODUCTION

In reality many projects are completed defect free or close to same. Certainly, that is the AW Edwards experience. Many items referred as defects are in fact outstanding items or items that require attention. These outstanding items are often the result of time pressures builders are under leading to incomplete work rather than defects.

AW Edwards recognise this as the first step to a defect free completion. That is; allow sufficient time in the program to complete the work. Once sufficient time is available the builder can then concentrate on procedures and processes to ensure the works are defect free on completion.

Refer to the Commissioning and Handover Management Plan for our approach and methodology to achieve defect free completion throughout the whole construction period.

5.19.2 QUALITY MANAGEMENT PLAN

The quality management plan referred above details all the requirements necessary to satisfy our relevant accreditations. This is very important and results in a project, which the client can be assured, have been verified in terms of compliance with the specifications and other documents.

Just completing the requirements of the Quality management plan as such will not however guarantee a defect free completion which we all desire.

Defect free completion starts with having a level of competent supervision at site level. Conversant with the documentation this supervision will ensure site teams are also conversant with the desired quality outcomes and will know any defects on completion are unacceptable.

AW Edwards have allocated the required competent supervision to the Project to achieve a defect free completion.

5.19.3 HOW IS DEFECT FREE COMPLETION ACHIEVED?

As work progresses AW Edwards establish lists of "outstanding items" or "Items Requiring Attention". These are essentially items that would be defects on completion if left unattended. It can be demoralizing during the project to constantly direct lists of "defects" to site teams.

Construction work requires skilled operatives working in what can be arduous circumstances. The last thing they need is someone telling them their work is "no good" when given the appropriate time, assistance and encouragement the work can be completed "defect free".

Generally these outstanding items are easily rectified in the time the contract has remaining or indeed may need to be rectified to allow completion of a following trade. Adherence to the process will avoid items being elevated to Non-Conformances under the Quality Management Plan.

As the date for practical completion approaches it becomes increasingly difficult with pressure on available resources to rectify defective work. Practical completion can sometimes be granted on the basis the remaining defects do not affect the client's ability to occupy the premises and function efficiently.

Some defective items may become evident during the testing and commissioning period. We have allowed sufficient time for the commissioning period such that items that do become evident can be rectified in the time frame allotted.

5.19.4 OPPORTUNITIES FOR CONTRACTORS

There exists a real opportunity for contractors to capitalize on the defect or outstanding work exercise to the benefit of the project, the contractor, and the contractors relationship with the client.

The benefits to the contractor are the opportunity for their personnel to take part in the rectification process. This teaches organisational skills to those executing the process. It more importantly teaches those involved what a defect is, what it takes to fix and how they can possibly be avoided in the future. Our sub-contractors like working with AW Edwards because they know this kind of assistance is readily provided.

Many projects, due to the angst of trying to extract information during the works, develop difficult relationships between consultants and contractors. We find our cooperative approach to working with the design team and consultants is always enhanced when they see AW Edwards' attention to detail on items such as defects.

5.19.5 METHOD FOR EXECUTION

Preparation and issue of lists will take various formats; largely influenced by the consultants involved.

If consultants are engaged to regularly inspect and report on the work we would like to discuss the format of lists early. If they can be discussed early our influence on the format will save us money and time down the track in issue and execution of the list.

The process can be started early and used to check off outstanding work/ issues. By the time practical completion is achieved all involved are familiar with the process.

It is extremely important the lists are distributed promptly upon receipt of lists from the client, consultants or indeed the contractor. This includes dissecting with clear allocation of responsibilities.

Breaking down to issue only those issues affecting a particular trade will assist in their coming to terms with the scope of their work.

We always make a phone call, after issue to all recipients, to confirm receipt and gain commitment to completion. This call will usually reveal questions as to responsibility and contractual obligations. These issues will differ from job to job and should be addressed accordingly.

The format can vary to suit the different ways consultants will want to produce them. A few simple additions for our requirements can usually be incorporated.

These are:

- Column for trade allocation
  This can be added by us on soft copy. Though its not always possible quickly on site and at least on initial hard copy it will help PM/SM to allocate responsibilities.

- Column for sign off
  The most important column! The need to establish a paper trail for accountability is essential. Some sub-contractor supervisors prefer to tick items off when reviewing the status of a list.

This leads to ticking off items in the site office instead of reviewing in the field and signing off. By initialling or signing off each item the reviewer takes a level of responsibility for the item from that point on.

5.19.6 RECORDS

Records kept may depend on the reporting requirements of the client. The least we require is to comply with the project quality plan & our management system.

In addition we file all originals of sign off to provide the traceability referred above.

Sign off can be our personnel or subcontractors sign off of their work. Discretion needs to be exercised whether we need to re check subcontractors sign off before declaring to the client work is complete.

5.20 DELIVERABLES SCHEDULE

This construction management plan is prepared to address the requirements set out in the Development Consent, Preliminaries documents and the contract.

A detailed deliverable schedule will be developed upon award of main contract of works.

6 SITE MANAGEMENT STRATEGY

6.1 SURVEY AND SETOUT

A registered surveyor will be engaged to set out the works and verify its location to the property boundaries and the approved alignment levels.

At the completion of the project, AW Edwards will provide a final survey, completed by a registered surveyor, which will document the relationship of the works to any relevant property boundaries and easements.

6.1.1 AS CONSTRUCTED SURVEY

An "As Constructed survey" of the work will be certified by a Licensed Surveyor.

Items to be shown on the "As –Constructed' survey will include:

- Position of all external elements of the building in relation to the survey marks, surrounding buildings, roadways and the like
- Position of all in-ground services
- All as-constructed surveys and details as required by Local Authorities and other statutes

The external works elements will be surveyed for the following:

- Pavements, Kerbing, Retaining Walls and Landscaping: Surveyed to represent any changes of grade or 10 metre intervals, whichever is the lesser
- Above and Below Ground Services: Surveyed for position and level
- Underground Cabling: Surveyed for change in direction and levels at critical points
- Pipes: All pipe diameters and inverts levels shown
- Manhole lids and Chambers: Manhole lid types and chamber sizes recorded
- Signage: All located for position and type

The building elements will be surveyed for the following:

- Location: All buildings shall be located where they intersect with the ground, including any overhangs and awnings
- Floor Levels: All floor levels and roof heights shall be surveyed, including any change in floor level throughout each level of the building

6.2 SAFETY

6.2.1 INDUCTION

All employees and sub-contractors must undertake a site induction prior to their commencement of their works on the site.

The site induction will cover the following:

- Objective and purpose of the project
- Site details, including working hours, deliveries and parking
- General safety requirements
- Equipment, plant and tools
- General environmental requirements
- First aid and emergency procedures
- Fire and evacuation emergency procedures
- Discrimination
- Site specific requirements, inc community liaison, media, adjoining neighbours etc

At completion of the site induction, all personnel must complete a site induction attendance record and provide a copy of their general industry induction card and any other certificate of competency they hold. By completing the induction attendance record, personnel declare their acknowledgement of the site rules and their responsibilities towards them.

The site induction will be updated to reflect changes in the site conditions or the introduction of new procedures and controls.

Regular toolbox meetings will be used to advise site personnel of changes to the induction.

All personnel completing the site induction will be issued with an induction sticker that is to be place on their hard hat. The induction sticker will record the site, their induction number and date of induction.

AW Edwards will align their site induction with any site specific contractor induction related to interface works with operational buildings.

6.2.2 CLIENT SITE INDUCTION PROCEDURES

When works are required to be completed within the existing NSLHD facilities, all contractors will complete the relevant documentation and induction procedures required before works commence. The NSLHD Work Health and Safety – Contractor Management Procedure is to be followed and all required permits and safety documentation submitted for review in consultation with NSLHD including but not limited to SWMS, Disruption Notices, Working with Children Check, WHS Management plan, Risk Assessment, Contractor Card and General Construction Induction Training Card.

Details on client site induction requirements can be found in the Interface & Impact Management Plan.

6.2.3 INCIDENT REPORTING

Incidents are to be reported and recorded in accordance with the following management plans;

- Health and Safety incidents are to be reported in accordance with the Project Work Health and Safety Plan;
- Environmental incidents are to be reported in accordance with the Project Environmental Management Plan;
- Community related incidents are to be reported in accordance with the Project Community Liaison Management Plan

Incidents may fall under more than one of the above categories and the reporting of such incidents will need to comply with all of the relevant plans.

6.2.4 SAFE WORK METHOD STATEMENTS

Safe work method statement (SWMS) will be completed for each construction activity as prescribed in the Work Health and Safety Regulations 2017.

AW Edwards will complete an internal review of each subcontractors SWMS and if acceptable, provide a Permit to Work. Once a Permit to Work has been issued, a subcontractor may commence work.

AW Edwards will periodically check a subcontractor's compliance with their SWMS, and direct action as necessary.

6.2.5 PERSONNEL PROTECTIVE EQUIPMENT

AW Edwards requires the use of Personnel Protective Equipment (PPE) by all subcontractors and visitors to the site.

All PPE must comply with the relevant Australian Standards.

Mandatory Personnel Protective equipment includes:

- Hard hats
- Steel capped boots
- Hi-Visibility clothing

Other PPE must be worn as identified in the associated safe work method statement.

6.2.6 DRUG AND ALCOHOL POLICY

AW Edwards's policies provide for a total ban on the possession and consumption of alcohol and drugs on all construction sites.

AW Edwards will continue this policy on this Project

The main objective of the policy is:

- The AW Edwards Site Manager and contractors are to enforce a total ban on the possession and consumption of alcohol and drugs during working hours and shall ensure that all persons in the work place who appear to be affected by drugs or alcohol are immediately removed from risk of danger to themselves, others and then counselled

6.2.7 EMERGENCY RESPONSE AND INCIDENT MANAGEMENT

An Emergency Response and Incident Management Plan will be developed for the Project as an Appendix to the Project Management Plan.

The aim of this emergency plan is to document the organisational arrangements, systems, strategies and procedures relating to the response and management of emergencies.

An Emergency Planning Committee (EPC) will be established, and, in collaboration with the workers onsite, will determine which types of emergencies warrant specific emergency response procedures to include within this plan.

The EPC, Chief Warden, site team, and nominated workers shall participate in the implementation and maintenance of the emergency plan, as appropriate to their role.

The Emergency Plan shall include the following:

- Emergency Preparedness;
- Emergency Mitigation;
- Activities for, and prevention of emergencies, such as training and maintenance;
- Overall control and co-ordination arrangements for emergency response, including evacuation strategies for site workers with a disability; and
- Roles and responsibilities.

This Emergency Plan will be discussed during all site inductions, and the specific emergency response plans will be displayed on the site noticeboard, and posted in the site induction room.

Development of this plan will occur in conjunction with Health Infrastructure to ensure that our emergency response objectives are aligned.

6.3 TEMPORARY WORKS

Temporary works will be designed, planned, engineered and implemented to ensure they are suitable for the application and is coordinated with the ongoing construction activities.

Temporary works may include;

- Propping / strutting
- Formwork design

- Specialised lifting equipment
- Scaffolding
- Loading platforms
- 3rd party verifications

It is currently envisaged that temporary works will be needed where construction activities will be undertaken in the existing buildings and grounds. The temporary works will be planned with the Principal's Representative and the operating facility.

Written approval will be obtained from the Principal if any Temporary Works are proposed to be left in position upon the Completion of the Works.

6.4 SIGNAGE

Site notice(s) will be prominently displayed at the boundaries of the site during construction for the purposes of informing the public of project details and must satisfy the following requirements:

- minimum dimensions of the site notice(s) will measure 841 mm x 594 mm (A1) with any text on the site notice(s) to be a minimum of 30-point type size;
- the site notice(s) will be durable and weatherproof and must be displayed throughout the works period;
- the approved hours of work, the name of the builder, Certifier, structural engineer, site/ project manager, the responsible managing company (if any), its address and 24-hour contact phone number for any inquiries, including construction/ noise complaint will be displayed on the site notice; and
- the site notice(s) must be mounted at eye level on the perimeter hoardings/fencing and must state that unauthorised entry to the site is not permitted.

Safety related statutory signage will also be erected on the boundary of the site in accordance with SafeWork requirements. For works within public areas, signage related to pedestrian traffic, vehicular traffic etc will be addressed in the Pedestrian & Traffic Management Plan.

6.5 VISUAL AMENITY

In order to protect the visual amenity of the site, the following practices will be implemented:

- Materials will be stored in a safe and organised manner and prevented from dispersing into public areas;
- Excavated soil will be removed from site shortly after excavation, rather than stockpiled for lengthy periods;
- Vehicles leaving the site will be cleaned to prevent spilling of mud and debris on to adjoining traffic routes
- Site hoarding and/or shade cloth will be well maintained.
- Any graffiti or bill posters on site hoardings, fences & gantries will be removed within 48 hours

6.6 IDENTIFICATION OF SERVICES

Services shown on drawings can be indicative. AW Edwards will complete a Before You Dig (www.1100.com.au) investigation to understand the extent of services in the immediate area.

If services are identified in within the works area, a services location consultant will be engaged to identify the location of the services onsite.
Once the services have been identified, a surveyor will survey the location of the services and provide a drawing which will be issued to the relevant subcontractors.

When undertaking excavation works near an asset, information will be obtained from the asset provider regarding safe digging practices.

Not all services are members of Before You Dig, and therefore the possibility exists that services within the site are not documented on the Dial Before You Dig Survey.

A visual inspection of the site should be undertaken to identify and risers, manholes, pits, poles, drains etc, that are not identified on the Before You Dig survey.

6.7 EXISTING SERVICES SHUTDOWNS

AW Edwards in collaboration with the Health Infrastructure will develop an existing services shutdown schedule which will provide information and instruction to all project stakeholders about the intended shutdown of existing services.

The schedule will accompany a notification procedure which will be developed in collaboration with the building managers.

When shutdowns are required, AW Edwards will issue an Interruption to Building Services Permit, to the building manager or Principal's representative.

The permit will include

- Details of the service to be disrupted
- Date and time that the disruption will commence
- Estimated duration of the disruption and when the service will resume operation
- The possible impact of the disruption
- Any other relevant information

The notification period for existing services shutdown will need to be negotiated with building management and the Principal's Representative.

6.8 SECURITY

Control of people and vehicles during the construction stages is critical to the safety and smooth delivery of construction and the security of the works.

We will continue to maintain the site in a safe and secure manner. The site is permanently fenced (or hoarded) and sign-posted in a manner, which will assure the safety of the public and those working on the project.

Safety lighting will be provided throughout the project, to provide a visible means of identifying trespassers.

A monitored alarm system will be setup in the site office complex.

Our supervision staff also monitors the effectiveness of the site security and safety measures on a daily basis, via the hazard & observation inspection process, implemented by the Site Manager.

A Security Management Plan will be developed upon award of main contract works. This plan will cover security risks throughout the entire duration of the project.

6.9 VISITOR CONTROL

Casual visitors to the site will be discouraged due to safety considerations. All visits will need to be scheduled and arranged through the Site Manager or his appointed assistant.

AW Edwards will maintain a visitor log book, and all visitors will be required to complete a visitor's induction, sign the register. The Site Manager will ensure that visitors wear appropriate safety equipment during their visit.'

It is AW Edwards's policy, that all visitors are escorted by AW Edwards's personnel.

6.10 HARASSMENT AND INAPPROPRIATE LANGUAGE

AW Edwards maintains strict policies against harassment and inappropriate language. All forms of harassment are unacceptable. Offensive behaviour and/or language includes all behaviour that reinforces inappropriate, demeaning or discriminatory attitudes or assumptions about persons based on age, race, sex, sexual orientation, transgender status, marital status or disability. Behaviour such as whistling or unsolicited remarks of a sexual nature is prohibited.

The site induction explains AW Edwards's policy with regards to harassment and inappropriate language. If any personnel is found to be harassing a fellow worker, student of Client staff member, they will be immediately removed from site

6.11 MEDIA ENQUIRES

High profile projects can attract media attention. If handled poorly, adverse media attention can result.

AW Edwards understands that all media enquires must be directed to the Principal's representative.

As part of the site induction all site personnel will be advised that any media enquiries should be directed to AW Edwards, who will advise the Principal's representative accordingly.

The Principal's Representative may provide written consent for AW Edwards to respond to media enquiries.

7 PROJECT ADMINISTRATION, PROGRAM AND TIME MANAGEMENT

7.1 DOCUMENT MANAGEMENT

The Client has directed that Aconex is to be used as the document management system for the Project. Aconex provides a platform for the transfer of all correspondence, design documents and contractor documentation. All correspondence must be issued via Aconex, and as such will be recognised in terms of the Contract

AW Edwards is well experienced in the operation of Aconex

7.1.1 OPERATION AND MAINTENANCE MANUALS

Upon completion and in accordance with a future, approved Building Commissioning Plan, AWE will provide handover documentation including as built drawings, warranties and maintenance manuals.

The information contained in the manuals will indicate the operating sequence, for all installed equipment, fixtures and fittings. Instruction on all operation and maintenance procedures comprising preventative maintenance and routine maintenance schedules and the operation and function of all plant and equipment under both automatic and manual control will be included in the manuals. The document will be supported by all necessary plant and system, lay-out drawings, key diagrams of the services, controls, circuits and wiring diagrams applicable.

Lists of all consumable parts required for the maintenance procedures, product distributor and respective contact details along with the product literature will be included in the master document.

AW Edwards with liaise with the Principal's facility management personnel in the preparation of all Operation and Maintenance manuals and as part of the information being uploaded onto AFM Online.

Subject to Client confirmation, AW Edwards will provide an "Asset Register", in excel format, using the asset operator's required asset naming, coding and classification system.

Specific submission requirements around quantities and formatting are outlined in Section 9.7 of the Preliminaries document and will be agreed to following approval of a future Building Commissioning Plan.

7.1.2 BUILDING OPERATIONS MANUAL

The Preliminaries document (GC21 e2 Preliminaries HI 07-02-2023 Section 9.7) has specifically requested a Building Operations manual be provided. The Building Operations manual is separate and in addition to the technical operating and maintenance manuals provided for operations and maintenance of the building

The Building Operations Manual will provide a comprehensive description of the functions and operation of the building. This manual is intended to inform and be a resource for the building

occupants, describing the building's key features and operating requirements, including HVAC natural ventilation, design temperature ranges, water systems and the like. The manuals will be linked to the assets listed in the *"Asset Register"*.

The Building Operations Manual may be required to be developed with input from the Principal's Independent Commissioning Agent.

7.2 BUILDING INFORMATION MODEL (BIM)

The Principal's design has been developed using Building Information Model (BIM) prepared using Autodesk Revit software. AW Edwards will continue to use the Revit software to develop and coordinate the design, construction and as built documentation.

As Built information will be prepared in compliance with the Principal's *BIM Requirement For Projects* and AWE's future *Building Commissioning Plan.* At completion of the project, a complete BIM model is to be issued to the Principal in an agreed format and arrangement.

7.3 MEETINGS

7.3.1 MEETING SCHEDULE

In accordance with the contract, AW Edwards will coordinate, minute and attend weekly/ fortnightly meetings with the Principal and other representatives as required.

The meeting agenda will be developed in collaboration with AW Edwards and the Principal.

AW Edwards will prepare and issue the minutes within 24 hours of the site meeting.

7.3.2 COORDINATION MEETINGS

A number of meetings will be required to ensure the construction activities are progressing in accordance with Health Infrastructure proposed integration and operation schedules. AW Edwards will provide a representative at these meetings, who will provide a co-ordination interface with the construction team. Before each meeting A W Edwards shall prepare an agenda for that meeting & after each meeting, prepare minutes of the meeting and distribute them to all attendees.

These meetings may include:

- Enabling Works Meetings
- Interface and DWN Meetings
- Commissioning Meetings
- Logistics Meetings
- Project Control Group (PCG)
- Project Coordination Team (PCT)
- Planning Committees, User Groups, Focus Groups

- Statutory Authorities

7.4 CONSTRUCTION PROGRAM

A construction program will be further developed, based on the tender construction program submitted with the tender.

The program is the primary tool to identify the key procurement activities, design and construction activities on the project. Regular discussions and workshops with the design team, subcontractors and suppliers will be used to adjust and monitor the construction program to ensure the project objectives are achieved.

The site manager will actively review the program on a weekly basis and implement strategies to ensure the project objectives are met or improved upon.

7.4.1 ITEMS FOR INCLUSION IN CONSTRUCTION PROGRAM

The construction programs will identify the following activities;

- Authority Approvals
- Appointment of major subcontractors
- Commencement and completion dates for design activities
- Commencement and completion dates of construction activities
- Dated for milestones and contractual completion dates
- Provision and approval of shop drawings, samples or other product data;
- Submission and review periods to the Principal's representative
- Any off-site activities such as fabrication;
- Procurement of major plant;
- Logical relationships between activities
- Lead times and Lags
- Critical path activities
- Supply of furniture and equipment
- Commissioning durations
- Supply of draft and final operating and maintenance manuals and instructions;
- Supply of as-built and installed information;
- Principal training;
- Contractor's rectification of defects.

7.4.2 SUBMISSION TO THE PRINCIPAL'S REPRESENTATIVE

In accordance with the contract documents, a construction program will be issued to the Principal's Representative within 14 days after the date of contract. The program will be submitted in the following formats;

- Microsoft Project
- Adobe PDF

On a monthly basis or whenever directed by the Principal's Representative, the construction program will be updated. The revised will take into account any changes or instruction from the Principal's Representative. These changes may include the following;

- Significant change in scheduling
- Instruction from the Principal's Representative
- Extensions of time granted by the Principal's Representative,
- Actual progress made,
- Variations,
- Any other changes to the activities.

The revised program will be issued within seven (7) days of receiving any such instruction,

Detailed programs for specific activities will be submitted to the Principal's Representative for review, as required.

7.5 MONTHLY REPORT

AW Edwards, in accordance with the contract documents will issue a Monthly report including as a minimum:

- Progress of all elements of the works including 6 digital photographs;
- Summary of outstanding issues;
- Updated project program, including phases of design, as applicable;
- Updated three month detailed forward program;
- Forecasted anticipated completion date of the Works;
- Status of Works against the current programme;
- Construction Status of Work against the current programme, particulars of any deviations from the current programme;
- Details of any matters which currently have a positive or adverse effect on the Works;
- Details of any matters which in the Contractor's opinion have the potential to affect or delay the Works;
- Particulars of preventative and remedial action which has been, is being, or may be taken in respect of potential delays in relation to the Works.
- Report on the status of all Variations, including variations for which a variation order has issued, or any proposed variations;
- Summary of claims made by the Contractor under the Contractor, and the status of those claims;
- Details of any other matters affecting or likely to affect the progress and cost of the Works; and

- A programme showing the projected status of the Works three weeks from the date of the written report.
- Details of all meetings, workshops, inspections and the like;
- Inspections required in the next three months;
- Client approvals, decisions and directions made, and required within the next 3 months;
- Work, Health, Safety & Rehabilitation matters;
- Compliance with APP Policy;
- Provide an update on TARP Compliance;
- Provide an update on Modern Slavery compliance;
- Provide an update on Sustainability Management Plan performance/compliance;
- Provide an update on Safety Health & Wellbeing Plan Plan performance/compliance;
- Provide a status on BIM and asset systems, software, processes, content and outputs of the Works;
- Provide a status of all dRofus & BIM content, validation, coordination and clash detection processes and issue tracking
- Updated project risk register, where possible quantifying the potential implications of those risks; and
- Contract financial summary, showing the initial contract price and all adjustments anticipated, submitted, approved and outstanding, together with a schedule of payment claims submitted and payments made.

7.6 SITE DIARY

A site diary will be maintained by AW Edwards, which will record;

- General progress and significant events
- Subcontractors and number of personnel on site
- Temperature and weather conditions
- Meetings, visits and inspections
- Delays
- Unusual events
- Accidents and near misses

A copy will be made available for inspection by the Principal at any time without notice.

7.7 WORKS AS EXECUTED DRAWINGS

Works as executed drawings will be progressively produced as works are completed. A W Edwards will ensure that project consultants progressively update Documents to reflect work as executed, within 28 days of completion of that work. A W Edwards shall notify Health Infrastructure of all updates and endorse each update certifying the accuracy and correctness.

All As-Built information will be prepared in compliance with the Principal's BIM Requirements for projects and the *Building Commissioning Plan* and Commissioning Program, and all other BIM requirements developed for the project (as approved by the Principal).

8 PROJECT SPECIFIC REQUIREMENTS

We have identified the following requirements are specific to this project and provide our methodology to address each issue.

8.1 MOBILISATION

After the award of contract, AW Edwards will:

- Submit Site specific Project Management Plan as detailed in this Construction Management Plan
- Undertake a Contractor Induction with Health Infrastructure, and align the AW Edwards site induction with the conditions of this induction.
- Establish a thorough understanding of the Client notification and services interruption procedures;
- Let primary subcontract trades and advise the Principals Authorised Person of all subcontractors to be engaged;
- Prepare a Dilapidation Survey, as detailed in this construction Management Plan
- Confirm Site Representatives and 24 hour contact person
- Confirm location of site facilities and amenities

8.2 TRAFFIC MANAGEMENT

The site is located on two major roads (Ryedale Road and Denistone Road) that are local council roads and land and require approval for any modification of traffic conditions.
An entry and exit gate will be used for accessing the Early Works (and Stage 1) site via Ryedale Road and this will allow efficient movement of materials and unloading within the future car park area. Traffic control will also be present to supervise the movement of vehicles as required.

Depending on the element of the Early Works, access will also be made from Denistone Road. This will particularly be the case during construction of the temporary ICU/CCU, Loading Dock, Executive and IPO office and Compactor Area. During these works, any construction activities will be mindful of Hospital operations and will not impede Ambulance movements. Traffic control will also be present to supervise the movement of vehicles as required.

Our traffic management plan and staging diagrams will maintain access pathways in accordance with Decant documentation and marked access requirements.

We will maintain the pedestrian access pathways along the footpath as currently provided by using B Class hoarding for overhead protection.
Egress pathways from the Ryde Medical Centre and Graythwaite Building will be provided as documented.
Wheelchair access will be maintained at all times to ensure that patients can safely access the hospital.
The traffic control diagrams produced by Stantec clearly shows the pedestrian pathways and the required mitigation measures implemented to manage the changes to the pedestrian routes.

Refer to Pedestrian & Traffic Management Plan for project specific requirements after contract award.

8.3 PARKING

A W Edwards will encourage the use of public transport or carpooling to minimise the impact of construction parking on the Ryde Hospital precinct.

Commuter parking is available adjacent to Denistone and Eastwood Stations which are located approximately 500m away to Denistone Station and 3.7km to East Station Parking and is a 13-minute walk to Denistone Station (see figure 45 below). We will propose this as a suitable location for workers to park and walk to the site as required to minimise the impact of the additional workers on the already strained parking facilities. As mentioned above, we will also consider the implementing a shuttle bus for transporting workers to and from the stations to the worksite.

The unloading zone provided for each Stage of works will allow for vehicles to pull in and be unloaded; assisting in managing key deliveries and preventing the need for workers to park on site.

For further details please refer to the project Construction Worker Transport Strategy document.

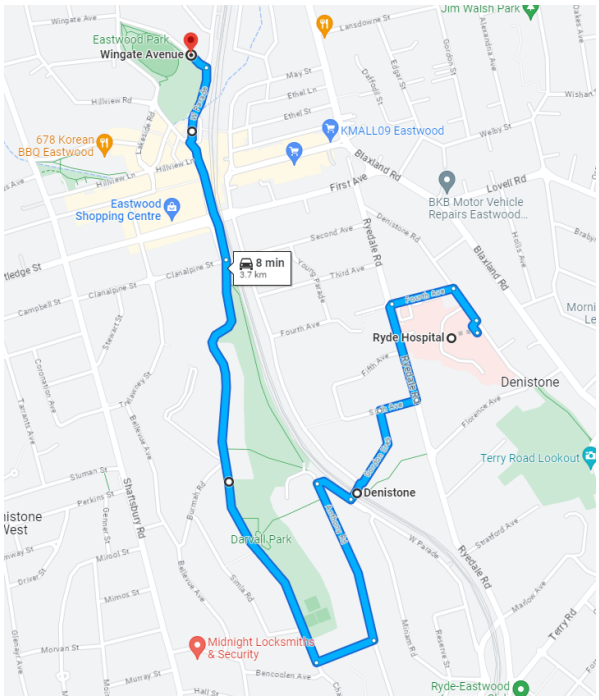


Figure 45: Map showing the Distance from Denistone Station and the Work Site

8.4 MATERIALS LOADING

During the Early Works, we will use various sized mobile cranes to assist with materials handling and the construction of vertical elements like structural steel.

A telehandler and electric pallet jacks will be utilised for horizontal movement.

The unloading zone for the Early Works is located within the hospital grounds and within or around each work area. This will allow for multiple vehicles to pull in and be unloaded while under the supervision of traffic control and minimising impact to the surrounding roads. Storage will also be provided within or around each work area.

8.5 NOISY OR DISRUPTIVE WORKS

From the NSW Department of Planning Project Approval, we understand the construction noise objectives are to manage noise from construction activities so it does not exceed:

- 54dB $L_{Aeq\ (15min)}$ during the daytime at the closest residential property boundary to the north of the site at Deakin Close at a height of 1.5 metres above ground level
- 54dB $L_{Aeq\ (15min)}$ during the daytime at the closest residential property boundary to the north-east the site at Toorak Court at a height of 1.5 metres above ground level
- 45dB $L_{Aeq\ (15min)}$ during the daytime at any internal hospital location

The Construction Noise and Vibration Management Plan (CNVMP) will detail the management controls to achieve the prescribed noise objectives in accordance with EPA'S Interim Construction Noise Guideline (DEC, 2009).

Disruptive Work will be managed in accordance with Section 6 of the Interface & Impact Management Plan.

8.6 DISRUPTION TO SERVICES

There will be requirements during period of the project where services to the hospital may be disrupted. These may be related to connection of new services or changeover of older services. These disruptions will be planned and a procedure will be implemented to advise the hospital of timeframes and implications. We have noted a procedure in section 6.6 Identification of Services.

It will be necessary to isolate some of the services from the construction zone. Although services are isolated, where required, services will be maintained to the operational building. The isolations will be coordinated with Health Infrastructure.

Disruptive Work will be managed in accordance with Section 6 of the Interface & Impact Management Plan.

8.7 MODIFICATIONS TO ROADS AND FOOTPATHS

During the external works phase of the project, roads and footpaths will be modified to suit the new kerb and road alignments. AW Edwards will develop a detailed staging plan for these works which will be issued to the principal for comment. Once the staging is agreed, a notification process to Client will be implemented to ensure all stakeholders are aware of the changing conditions of the site during these works.

Areas surrounding the area will be well sign posted to provide clear direction to pedestrians and drivers.

8.8 DUST/ INFECTION CONTROL

We understand that dust has a major impact on the operation of the hospital and can cause complications for patients and staff within the hospital.

The key controls we propose to implement on this project include:

Designated On-site Vehicle Movements and Speed
Vehicles will be restricted to direct routes and limited to a minimal level of maneuvering on the site. Furthermore, vehicle speed is to be restricted to no more than 10km/hr. All trucks transporting material off site will be covered, and high traffic zones within the site will be watered down to reduce dust.

Damping Down
The construction site shall be kept in a sufficient state of dampness to minimise the disturbance of dust. This can be done by a series of different measures such as Mist sprayers Water carts or water directly fed to plant and handheld machinery Hose. Frequency of water application shall be as often as required to prevent dust rising into the air under the prevailing conditions. This will be particularly pertinent during the demolition works and substructure works.

Stockpiles and Materials
Any stockpile on site cannot be greater than 2m in height. If stockpiles are observed to emit fugitive dust, then the area is to be damped down as required. Furthermore, if stockpiles are to remain, they should be covered with consideration to seal the stockpiles, if practical. Where practical, the location of stockpiles shall consider the risk of entry points into the hospital and be located accordingly.

Physical Barriers
Dust generally leaves site in two directions, straight up or outwards toward the site boundary. Physical barriers such as shade cloth or timber hoardings are ideal in controlling the dust directed outwards with majority of dust within the site being controlled by damping down or similar methods.

Dust Control Mats
Sticky/tacky dust mats will prevent the spread of dust via workers boots. Typically placed at the hoarding door exiting from a breakthrough area, the mat will need to be monitored throughout the working day and 'peeled' back, if necessary, to remain effective.

Negative Pressure
If required at high risk patient areas, a negative pressure ventilation system can be used to prevent the transmission of dust from a refurbishment area to an adjoining clinical area. This involves the use of a

temporary fan system that maintains a pressure in the construction area that is lower than the neighboring areas.

General Housekeeping and Cleanliness
Winds over night or over the weekend can disturb large quantities of dust. Accordingly, it is important to address any items with the potential to disturb dust prior to leaving the site.

Filters on Air intakes
A W Edwards will undertake a review of the current Hospital ventilation system to assess any risks that dust may enter the hospital via such paths. Following consultation with the Hospital some controls could be to temporarily close certain air intakes or to fit appropriate filters to reduce dust transfer. These intakes will be regularly checked and temporary construction filters changes as required during the dust intensive works.

8.8.1 DUST MONITORING

Dust monitoring will be undertaken to ensure the levels of external and internal airborne dust are acceptable.

All monitoring shall be undertaken by a suitably qualified technician using equipment that holds current calibration and that can measure PM_{10} continuously for a minimum interval of five minutes over a period of at least three days. The time of day, duration and weather shall be noted.

Monitors shall be connected via wireless modem so that data can be transmitted automatically; eliminating the requirement to access each monitor and thereby reducing impact on the Hospital. These monitors will require 240V power and so will be able to send various alerts that can be used by A W Edwards to further manage dust issues before they arise.

Before any construction or demolition activities commence:

- Air monitors are to be installed to establish a baseline for external and internal areas (with the locations to be determined in consultation with Ryde Hospital
- Target air quality levels are to be advised by the specialist consultant in consultation with Ryde Hospital
- Monitoring methodology and reporting frequency is to be discussed with Ryde Hospital

8.8.2 INFECTION CONTROL

The Infection, Prevention & Control Management Plan further outlines key requirements and considerations for the project.

The control measures will be selected according to the risk of the adjacent patient groups. Control measures will include sealing the hoardings at the floor and ceiling, and installing sticky mats to prevent the spread of dust via workers boots. Waste material shall be removed using sealed containers.

This management plan will be developed further after contract award and we will seek endorsement once it has been finalized.

8.9 FIRE PROCEDURES

AW Edwards will gain an understanding of the hospital emergency evacuation procedures. We will align the site emergency and evacuation procedures with that of Project. Workers will be advised of the evacuation procedures during the site induction.

Items to be included in the site induction include:

- Workers to respond to hospital evacuation procedures
- Follow direction from any emergency services
- Emergency egress paths from the hospital are to be keep clean and clear at all times

AW Edwards will complete evacuation drills during the course of the project. We will advise Health Infrastructure of the intended drills as to not alarm hospital occupants.

AW Edwards will provide the necessary fire fighting equipment for the construction works. This equipment will be selected for the type of work being conducted and kept in good working order.

As the building is over 12m high, during construction fire hydrants will need to be maintained a maximum of 2 floors below the highest works deck in accordance with the BCA.

8.10 EMERGENCY ACCESS

The Existing Hospital Emergency Evacuation plan filters numerous egress routes depending on the location within the Hospital Campus.

The Ryde Hospital Evacuation Plan directs building occupants in an emergency to a nominated assembly location depending on the point of egress. The Evacuation Plans must be revised and supplemented with Wayfinding and Egress corridors maintaining safe egress opportunity to the occupants.

Special consideration will be given to egress routes from Stage 1 and Stage 1 during Stage 3 works to ensure they are not affected. AWE will continue to work through these solutions with the BCA Consultant, Certifier and Redevelopment team throughout the Project.

Figure 2: Evacuation Diagram

8.11 EXISTING EGRESS DOORS

AW Edwards will review the current egress paths used by Ryde Hospital building to ensure construction activities to not impede on dedicated egress paths.

Should construction activities block or restrict egress paths, AWE will liaise with Health Infrastructure to determine alternative egress routes.

Construction materials must not block any existing egress paths.

8.12 NON SMOKING POLICY

In accordance with Client policy, AW Edwards will introduce a non-smoking policy on the site.

The non-smoking policy will be part of the site induction.

8.13 PRINCIPAL ACCESS

Works around occupied portions of the building will be kept clean and clear to minimise nuisance to the occupants and ensure their safety.

Prior to undertaking works around these areas, AW Edwards will liaise with the Hospital and Health Infrastructure.

As required AW Edwards will provide access to the principal's contractors to complete maintenance works where access is required though the site. During this time, the contractor will need to comply with any AW Edwards WHS requirements.

8.14 HOSPITAL DELIVERIES

Hospital related deliveries are critical to the operation of the hospital. We appreciate the importance of these deliveries and will provide clear access where possible for these deliveries to be made. Part of the early works will involve construction of a new temporary loading dock and kitchen in order to better ensure the ongoing operation of the hospital is not impacted during construction of the main works.

The Ryde Hospital Redevelopment early works project will be constructed directly adjacent to existing hospital buildings. It is important that during the construction works we minimise the impact of construction traffic on the local road network in the vicinity of the site and that Emergency Vehicles always take priority. In doing so, significant consideration has been given to how we manage access and egress of hospital to the general public and hospital personnel.

As a general rule of thumb, the following processes will be followed prior to any changes being made to current Hospital access arrangement:

- All DWN approvals, Authority and Council approvals to be obtained prior to any works commencing
- In ground services searches to be completed and documented prior to any works commencing
- Traffic and Pedestrian control plans developed as part of the DWN process
- Community Consultation to be undertaken prior to any works commencing
- Emergency Services consultation and acceptance of the works proceeding will be obtained prior to the works commencing
- Agreed evacuation procedures and plans are to be agreed prior to the works commencing throughout all stages of the works (Consultation with the PCA will be sought where required)
- Appropriate wayfinding, temporary hoardings, and traffic control measures to be put in place prior to works proceeding in accordance with the approved DWN

Construction access, maintenance access and hospital deliveries will require a cooperative approach from both AW Edwards and Health Infrastructure. Our company culture is based upon a cooperative and collaborative approach, which we have successfully completed on a number of complex projects surrounded by operating buildings.

Further details can be found in Section 5.3 of the Interface & Impact Management Plan.

8.15 WORKS BY OTHERS

We understand the principal is arranging works by other contractors, listed below, which may impact on the construction activities. Where possible we will cooperate with the other contractors, and advise the principal where works by others will affect the construction program.

- IT cabling diversion (prior to construction)
- Electrical high voltage work in the vicinity of the existing substation (building D11B)
- Design and construction of the commercial cafe fitout
- Oversight and verification of building commissioning by an Independent Commissioning Agent

- Installation and commissioning of IT and communications active equipment (by ICT)
- Other works as may be advised in writing from time to time by the Principal
- Any works deemed "Group 2"

8.16 GENERAL MAINTENANCE CONTRACTORS

We understand the requirement for maintenance access into the Site and realise that some access cannot be scheduled if an emergency.

We will maintain maintenance access where possible. If access to certain parts of the building may be restricted during the works, we will advise Client to agree alternative access arrangements.

If scheduled maintenance is likely to affect the construction works, we recommend Client contract the Site Manager to arrange the best time to come the maintenance as to minimise the effects on the construction works.

8.17 OBSTACLE LIMITATION SURFACE (OLS)

AW Edwards has identified no OLS requirements on the project.

8.18 HELICOPTER MANAGEMENT

A W Edwards has identified no requirements for Helicopter Management.

8.19 PROTOTYPES

The purpose of constructing prototype rooms is to provide a benchmark for all room components and set an agreed standard for detailing. Prototype rooms will be required for the Ryde Hospital Redevelopment Project. Prototypes and Prototype rooms will form part of the Main Works.

9 SITE LAYOUT AND LOGISTICS

9.1

A W Edwards' approach to site establishment is centred around minimising any potential adverse impact on the adjacent stakeholders, namely the RH, NSLHD, NSW Ambulance, Clovel Child Care and Early Leaning and neighbouring residents.

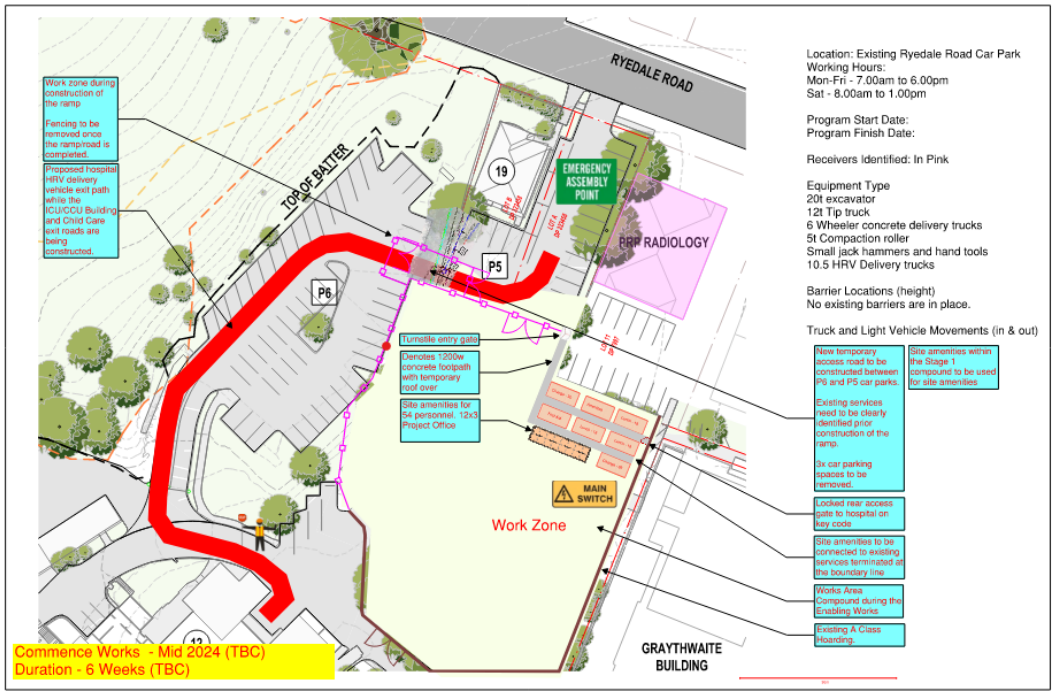
The initial site establishment for Early Works and Stage 1 will take place in Mid 2024 and this will involve taking possession of the previous HPAC site to establish any additional perimeter hoardings and fencing, temporary services and the facilities that will house the first stage of worker amenities. Initial works will involve Early Works packages including construction of an internal temporary road between CP5 & CP6 and the Loading Dock, relocation of the Compactor units, Executive, IPO and Engineering offices, temporary ICU/CCU, Stores and Temporary Loading Docks, Admin Corridor modifications and new temporary Kitchen arrangements. Similarly, OSD2 will be constructed early on to allow for future placement of the site amenities. These initial site establishment and Early Works will allow for the continual construction of the Stage 1 Acute Services Building.

Diligent services scanning will be required immediately after the handover of the various milestones to AWE to verify the relevant services relocations and confirm that there are no remaining live services within the footprint of the excavation. These services scans will be verified with as built drawings and Dial Before You Dig drawings to confirm all services have been captured. An updated set of drawings will be issued to the hospital at project completion for their records.

As the project progresses, a series of B Class hoardings will be established between the Acute Services Building Stage 1 to the existing theatre rooms.

A class hoardings and temporary fencing will be lined with indigenous artwork supplied by HI as well as any temporary signage to help redirect pedestrians.

The diagrams below shows the proposed site set up and hoarding configurations for the very initial Eary Works and Stage 1 Works.



Upon being granted site possession to Stage 1, an A Class hoarding will be erected along Ryedale Rd and ATF fencing with approved graphics shade cloth to the remaining perimeter excluding the B Class Hoarding zone between the site and the Graythwaite Building, ensuring a high standard of safety is maintained for pedestrians. Pedestrian pathways to and from the PRP Facility to the main hospital and from the Graythwaite buildings will be maintained and diverted around the site, within a B Class Hoarding. These temporary hoardings and fencing lines will be established, which will delineate the construction site.

9.1.1 SITE ACCOMMODATION

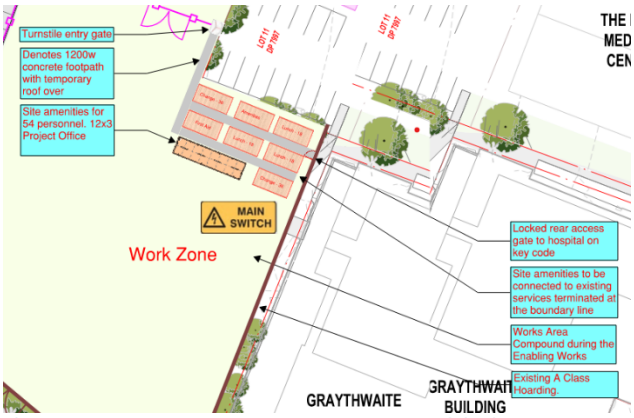
Due to site constraints and the staging of works, AWE will have multiple site accommodation set-ups.

All site accommodation by A W Edwards will:

- Be on-site, to limit the movement of workers throughout the precinct;
- Have project specific branding or artwork via printed shadecloth / vinyl;
- Provide sufficient amenities for the workforce which will grow during the works.

An initial site shed / accommodation complex will be established at the beginning of the project for worker amenities. Sheds including the changerooms and toilets will be placed on the southern side of the site. These will have a concrete footpath for accessibility along with a temporary roof over to provide dry access .

This initial set up of accommodation is envisaged to cater up to 54 workers (not including AWE personnel) during the early works.



Site accommodation during Early Works and OSD2 construction

The positioning of this accommodation will be designed to allow the turning circle of the excavation load out trucks and trailers to pass. This arrangement will also allow for the construction of OSD2 and stormwater infrastructure within the P6 car park area along with the demolition of Camelia Cottage. Both of these areas will house the future construction amenities for the later stages of the Project. Later site amenities are addressed further in the overall Construction Management Plan.

9.1.2 ACCESS POINTS AND SECURITY

The security of the site from deliberate or unintended intrusion is imperative for the safety of all persons on site and the protection of the works.

A W Edwards will provide secure hoardings to prevent access by unauthorised persons. Nominated access gates will be provided and these will be secured by a turnstile system. Only persons who have completed the site induction may access the site during working hours via a facial recognition system. Those who have not yet undertaken the induction will be directed to the site office.

Vehicle entry points will be monitored via traffic control and all vehicle deliveries will be managed via the Veyor booking system – only deliveries that have been booked in and approved by AWE will be allowed to enter the site.

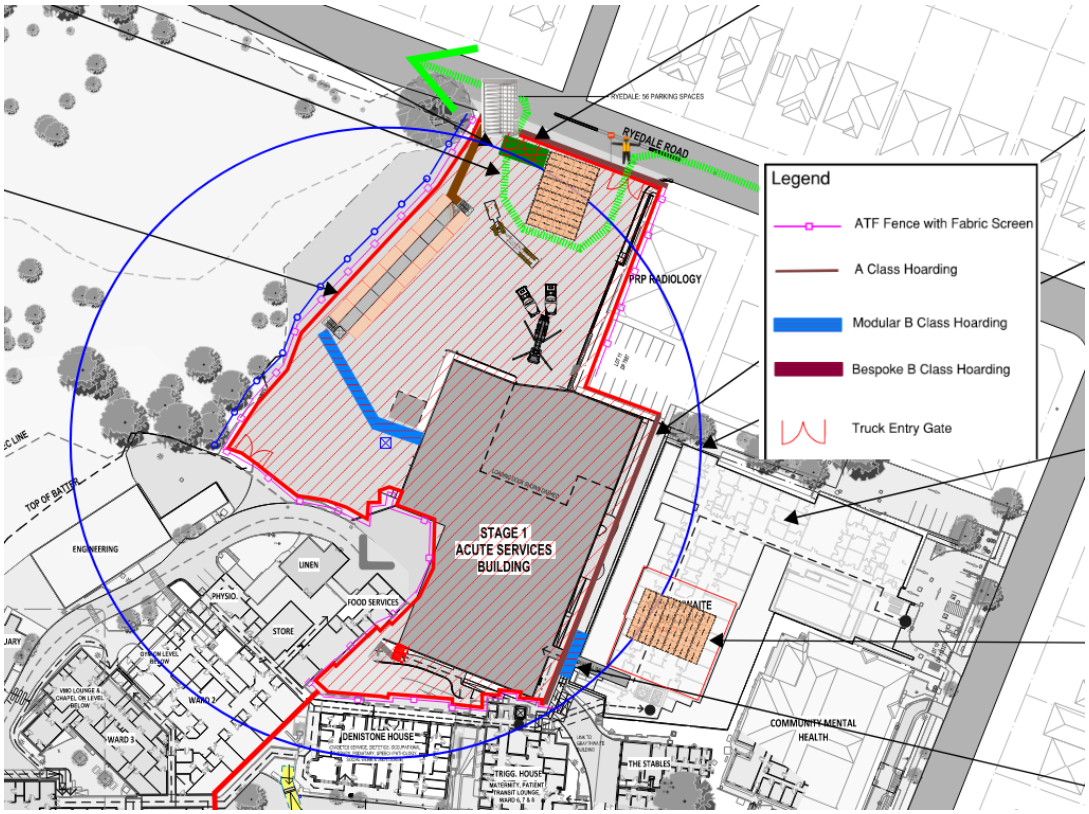
Security systems will be installed at the site office and at strategic locations around the site, which will be monitored remotely by an off-site security company.

9.1.3 TRAFFIC AND PEDESTRIAN MANAGEMENT

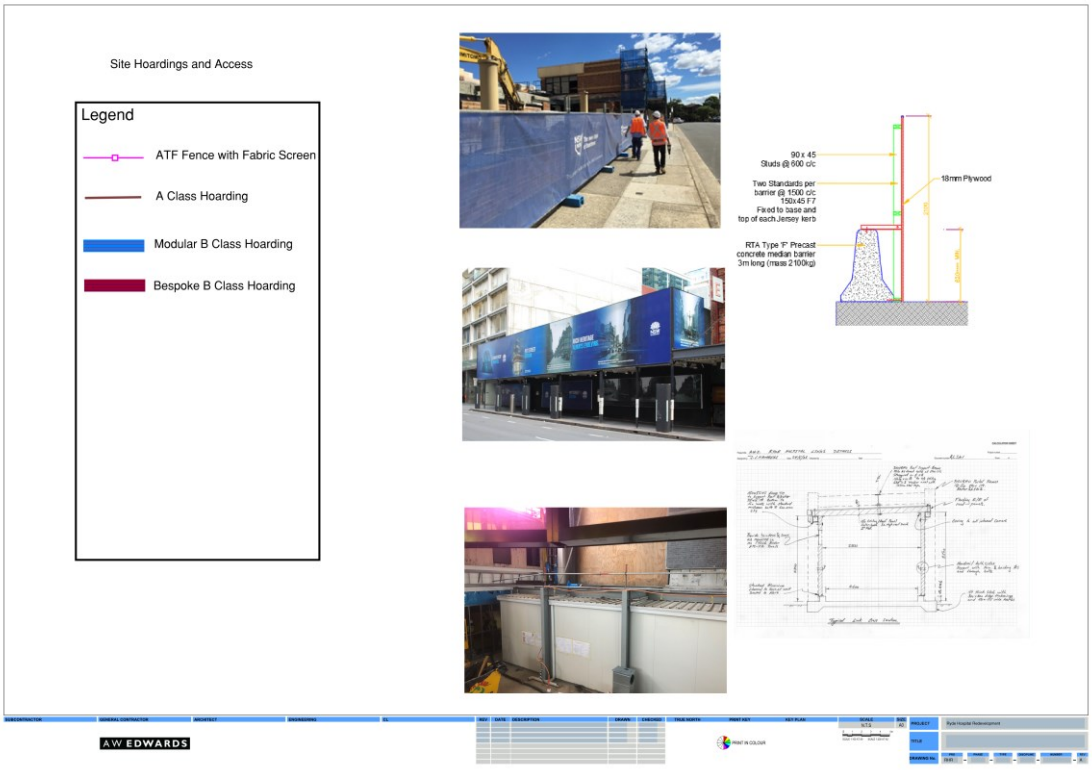
Refer to the Construction Traffic Management Plan.

9.2 HOARDING

We have reviewed the requirements for hoardings and have developed a methodology that provides the required access, protection to the public and visual amenity.
Our hoarding strategy for the Early Works and Stage 1 will involve utilising A-Class Hoardings and new ATF fencing to the site boundaries as indicated in the site staging interfaces document.
The hoardings will ensure the site is secure and will provide clear delineation between public areas and the construction site.
Shadecloth or vinyl banners will be installed to the hoarding, depicting either Ryde Hospital project branding or Indigenous artwork.
We understand the importance of maintaining egress key access and egress pathways and therefore we have made allowance for disabled access pathways to be maintained for Ryde Medical Centre and Graythwaite Building.



Stage 1 Hoarding Plan



Hoarding Details

9.3 MATERIALS HANDLING

9.3.1 MOBILE CRANES

For the Early Works, AW Edwards envisage utilizing various sized mobile cranes to assist with vertical movement of materials and temporary buildings.

The mobile cranes will generally be set up within the designated work areas, or appropriately separated from the public and hospital operations when required.

9.3.2 FORK LIFT

To supplement the mobile cranes during Early Works, AW Edwards will use forklifts and telehandlers across the project during the Early Works and temporary building install. This plant will assist in the horizontal movement of material and will generally unload delivery trucks, move material around site as required and move material internally in the future buildings.

9.3.3 HOISTS

This section is not relevant to the Early Works.

9.3.4 BUILDERS LIFT

This section is not relevant to the Early Works. A W Edwards will utilize the existing Graythwaite Building Goods lift with the LHD's approval to move transfer equipment as required.

9.4 MATERIALS STORAGE

Storage is less of an issue as there is space as the existing buildings are knocked down and the landscaping areas are created.

Our site establishment strategy utilises the car park to drop off and store materials. We see this as an important area that will be required for storage throughout the project.

There is also additional storage located on the southern boundary. This will be effective for placing material including reinforcement and concrete sundries.

Our overall the strategy for the project is to delivery materials as required, lift the materials from the back of the truck directly onto the loading platforms servicing each level and store the materials on the level where the works are required.

9.5 CONSTRUCTION ZONE

A construction zone will be established along Denistone Road during the construction of the temporary bin compactor area. The work zone will assist in allowing construction vehicles to be unloaded or drop off material during the construction of this area. In order to allow sufficient line of site and room for the collection vehicles to maneuver out of the compactor area, it is envisaged that some of the parking spaces along the roadway will also be temporarily removed for the duration of this arrangement until the permanent facilities are constructed. All permits and approvals will be discussed with Ryde Council and the Redevelopment team.

9.6 ELEVATED WORKING PLATFORMS

Scissor lifts, boom lifts, mobile scaffolds and the like will be provided to ensure safe and efficient access where required.

9.7 LOADING PLATFORMS

This section is not relevant to the Early Works.

We will also use the larger terraces area on each stage of the building construction as landing areas once the platforms are removed.

9.8 RUBBISH REMOVAL

The Construction Environmental Management Plan (CEMP) Sub-Plan – Early Works Waste Management Plan outlines all the requirements for waste management. This has also been added as Appendix J on this plan for convenience.

9.9 TEMPORARY SERVICES

9.9.1 ELECTRICAL SERVICES

As part of our site establishment, we will provide temporary services including power, water, security, fire and telecommunications.
We propose to connect into existing services available within each of the work zones as required to minimise the costs while also providing appropriate controls to prevent any disruption to the hospital.
As part of our temporary power solution, we propose using the feed from the existing main distribution board MSB2 in the P1 covered carpark area below Building 2 for stage 1 and 2. We have identified potential submain capacity from our previous on inspection of the campus as required to utilise this during construction.
The main temporary power will be fed from an Enertainer battery storage innovation, which requires a much smaller site temps submain (100A) to trickle feed rather than the traditional temporary builder's supply (1000kVA) sized for all the peak maximum demand of large cranes and hoists. This is expected to provide substantial greenhouse gas and carbon reduction to the construction phase of the Works by significantly reducing the maximum demand. It also eliminates the need to provide temporary generators.

Temporary power will be provided to the entire site based on the rule of work faces less than 25 metres from the power boards. Access and safety lighting will be provided to access corridors on each floor, fire stair and lift landings.

The main power consumers will be the hoist and crane, then the commissioning power requirements.

The temporary power will be installed, tested and regularly maintained in accordance with AS3000 and the SafeWork Code of Practice – Electrical Practices for Construction Work.

9.9.2 HYDRAULIC SERVICES

For all temporary hydraulic services, AW Edwards will aim to utilize existing connections within and around the Hospital campus. Any isolations and changeover that may affect the hospital will be appropriately discussed and corresponding DWNs provided.

9.9.3 NURSE CALL SYSTEM

A fully wireless and battery operated nurse call system will be installed. The wireless system provides greater flexibility in the relocation of the nurse call stations as the works fronts change throughout the project. The nurse call system is integrated with the site 2-way radios, which will announce the location of the nurse call station in alarm. This combined system will ensure a prompt response when the nurse call is activated.

Wireless controlled sirens including strobe lights will be installed throughout the project. The sirens are powered with 240v and include a 6 hour battery backup. The evacuation trigger will be a keyed switch located in the site office.

9.9.4 FIRE CONTROL MEASURES

All work amenities, offices, vehicles, plant and storage facilities including those of contractors will have a suitable type and number of fire extinguishers available for use in the event of a fire.

An assessment of the suitable suitability of firefighting equipment will be undertaken on the project.

During connection to the existing services, isolation of the fire system in the immediate work area may be required. This isolation will be discussed and agreed with Client.

10 CONSTRUCTION METHODOLOGY

A series of Construction Planning Diagrams have been developed which provides a detailed overview of the key aspects of the construction methodology to be implemented during the various Early Works/Temporary Building stages of the project. The construction planning diagrams should be read in conjunction with the text in this section and with the overall Construction Management Plan.

The construction planning diagrams for the Early Works and temporary buildings can be found in Appendix B.

Our construction methodology, detailing our proposed access for materials, location of site compound, noise minimisation, coordination of services shutdowns and reconnections, working in an operational hospital, identification and management of key project risks is outlined below.

The project has also prepared several project specific plans and documents that support our methodology and will provide critical guidance to the Project Delivery Team in terms of the key issues, risks identification, risk mitigation strategies, staging requirements, materials handling, site establishment, traffic management, and design and commissioning deliverables to be considered and implemented following engagement.

Requirements around construction methodology have been and upon contract award, be captured in subsequent plans:

- Design Management Plan
- BIM Execution Plan
- Project Delivery Management Plan
- Interface and Impact Management Plan
- Noise, Vibration and Management and Monitoring Plan
- Risk Register
- Commissioning, Training and Handover Plan (Volume 1 – Introduction & Governance)
- Construction Pedestrian and Traffic Management Plan
- Infection Prevention and Control Management Plan

10.1 STAGING OF THE EARLY WORKS

The early works and temporary works will occur separate to and prior to the main works. These works will be staged in order to generally minimize disruption to the Hospital and to better ensure continuation of hospital operations. The works are also generally staged as they are spread out around campus.

The stages and activities will generally consist of the following separate elements (in indicative order of timing):

- Construction of internal temporary roadway from Ryedale Road through CP5 and CP6 (which will allow for the closure of the internal roadway and install of the temporary walkway listed below)
- Construction of the temporary walkway between Trigg House and Graythwaite
- IPO and Engineering Offices
- Food Services and temporary loading dock
- Temporary ICU & CCU
- Compactor and bin store facilities

The completion of these early works and temporary facilities will allow the commencement of parts of the main works. This is particularly the case with departments that are required to be relocated in order to be able to commence demolition of existing buildings and in turn the construction of the future hospital footprint.

10.2 ESTABLISHMENT WORKS

Upon site possession, we will erect hoardings around the site and commence the establishment works which include:

- Services searches
- Further Soil classification
- Signage
- Establish contract protocols
- Environmental controls

We note that the principal engaged a separate contractor to complete the enabling works on the site, which has been completed before we were granted possession of the site.

10.3 CIVIL WORKS & SUBSTRUCTURE

10.3.1 PILING & EXCAVATION

This section of works is generally related to the Main Works and can be found in the overall Construction Management Plan.

In regards to the Early Works, it is envisioned that minor piling and excavation will be required for the temporary ICU/CCU building. Piles will be installed using a dedicated piling rig within the construction area whilst a smaller excavator will assist in excavating the pile caps. The piles will be bored from a readymade piling platform which will be validated in terms of compaction prior to commencing the works. Piling may also be required for the temporary road behind the Day Care, pending Geotechnical advice.

Other Early Work areas requiring minor excavation include the temporary road behind Day Care and the Temporary Loading Dock (Hardstand Area).

All excavated material will be carted off-site via truck and dog from within the site boundaries. All truck movements will be managed via traffic control. Vehicle access ways will be established to ensure that trucks are not carting out material onto the neighbouring streets.

10.3.2 DETAILED EXCAVATION

Smaller excavators will be used to excavate the perimeter of pad footings and inground services abd progressively hand over the pads for the FRP trades to commence.

10.3.3 CONCRETE PLACEMENT

This section generally relates to the Main Works package given the size of the works. For the Early Works, AWE will be required to pour minor concrete elements including slab on ground areas, smaller suspended slabs (ICU/CCU), columns and piles.

For these works, we will utilize a mix of concrete line pumps, boom pumps and pouring from the back of the concrete agitator truck directly depending on access and quantities.

10.3.4 IN GROUND SERVICES

The in ground services will commence immediately surrounding the Level 0, Area A. There are minimal in ground services in this location, which will allow the expedient casting of the Level 0 slab on grade.

The in ground services installation will then be completed in Area A. There are a number of services which are under slung on the Level 1 slab, these will be completed once the level 1 slab has been poured and stripped. All other services within Area A will be installed and tested prior to casting of the level 1 slab.

The in ground services to Areas B, C & D will be completed after the Level 2 slab is poured and the back propping has been removed.

The in ground services to Areas E & F will be completed as the pile caps are poured.

We understand that services may need to be cast into the sides of the pile caps, detailed coordination of inverts and location will occur to endure the services are installed in the correct location.

Prior to the casting of any concrete structure of in ground hydraulics, the services will be air tested in accordance with the specification.

10.3.5 SLAB ON GRADE

As mentioned previously, minor slab on grade slabs will be required for the Early Works. They will be poured via a line pump or directly off the back of the concrete agitator depending on access.

10.4 STRUCTURE

10.4.1 FORMWORK

There are minor formwork elements for the Early Works/ Temporary Buildings. We envisage using conventional formwork for the elements that are required to be formed up- including slab on ground areas, Temporary ICU/CCU structure and the future temporary roadway behind Day Care (subject to Geotechnical advice).

10.4.2 CAST IN SERVICES

The correct location of cast in services will be critical. To ensure services are cast in the correct position, a surveyor will be used to set out the position of all cast in services.

The surveyor will work from a coordinated CAD drawing to set out the services.

10.4.3 CONCRETE PLACEMENT

The Early Works involve various constrained sites working in and around the live hospital. For each concrete element we are required to construct for this stage of the Project, we will ensure that the method does not impede Hospital operations. Different placement options include directly from the concrete agitator, using a concrete line pump or using a concrete boom pump.

10.4.4 SCAFFOLDING

The advantage of scaffold is that it provides a safe working edge that can be used to install the various façade elements in a safe manner that negates the need to use harnesses and expose workers to live edges. Scaffold also allows a thorough testing and easy access to allow addressing of any leaks prior to completion of the project.

The scaffolding will generally be 5 boards wide with a 2-board hop-up but may be reduced where possible. This provides a safe means of perimeter edge protection, sufficient access for personnel movements and the ability to modify the hop-up as required for façade installation. All perimeter scaffold will be wrapped in chain-wire and shade cloth with indigenous artwork prints to prevent falling objects, debris and as a means of dust mitigation and infection control.

For the Early Works, scaffolding will generally be required around the temporary ICU/CCU structure and loading dock structure.

10.5 FAÇADE

Façade for the Early Works will generally consist of Spandek sheeting for an efficient install. It will generally be pre installed on the exterior of buildings that will be lifted into place or installed from a perimeter scaffold.

10.6 STRUCTURAL STEEL & ROOFING

Detailed shop drawings and erection plans will be developed for all elements of the structural steel.

The structural steel for the Early Works will be installed with the assistance of a smaller mobile crane or Maeda style crane.

Roofing will commence immediately after installation of the structural steel to provide a weather proof environment for the rough in and fit out trades to progress.

10.7 FIT OUT

10.7.1 PROTOTYPE ROOM

This section is not applicable to the Early Works.

10.7.2 ROUGH IN

Extensive coordination of services will be required before the rough-in activities can commence. It will be critical that services are coordinated and installed in a systematic sequence to provide efficient installation and avoid any clashes. The Design Team and Services Team will drive the resolution and coordination of services to ensure shop drawings, procurement and installation are undertaken as required.

As the formwork and back propping is removed, partitions will be set out and high level service rough ins will commence.

10.7.3 PARTITIONS

Once the first pass of the high level services has been installed, framing of the internal partitions will progress. Generally, the most efficient way to fit out complex hospital floors is to allocate crews to complete particular tasks, such as wall framing, sheeting, ensuite rough in, bed head rough in etc. By allocating each task to a crew, they fully understand what they are required to complete and the repetition creates efficiency in fit out activities.

Room layout sheets will be affixed to each room so all contractors are aware of the fit out requirements, in particular around future fixings and plywood backing requirements.

Separate crews will be employed to rough in services in a methodical sequence. Upon verification that all services have been installed and tested, the walls will be sheeted and closed.

Once the walls have been sheeted, the ceiling services, grids and MME brackets (hepa filter frames, cotton reels, lifters etc) will be installed. Installation of these critical elements will enable the correct setout of the ceiling grid. A detailed inspection of services including acoustic and fire rating details will be completed prior to the closing up of ceilings.

Once the ceiling has been lined, set and sanded, the services will be cut out in preparation for painting and service fit off.

10.7.4 WET AREAS

The wet areas will be progressed ahead of the adjoining rooms due to the long thread of activities within wet areas. As the partitions are installed, we will focus on the linings with the wet areas to enable the rough in of services.

Plywood blocking will be installed within the metal stud work and ceiling grid for mounted items such as basins, grab rails, shower curtains etc.

Detailed inspection and test plans will be implemented to ensure the critical elements of the ensuite are inspected and certified e.g. waterproofing.

Fit off of services will occur once the wall and floor finishes are completed.

10.7.5 FLOOR FINISHES

Where required, a survey will be conducted on the concrete floor to determine the highest and lowest points, particularly given the slabs are post tensioned. Once the baseline is established, the floor will be topped to within acceptable floor tolerances if required.

The floor finishes will be applied progressively, focusing firstly on patient rooms and theatres where a longer fit out duration is required. Corridors will be left for as long as possible. As areas are completed, protection will be applied to the floors.

10.8 PLANT ROOMS

Access and work within existing plant rooms for the Early Works will be coordinated with the Hospital. Any cut ins or isolations will be progressed through DWNs.

10.9 FIT OFF

Services will continued to be tested during the fit off activity. Services fit off will follow the initial painting of the ceilings and walls.

Once the services have been fit off, ceiling and walls will be touched up.

Dust covers will remain on smoke detectors, until final commissioning and fire tests are completed.

Once the services have been fit off, final testing and commissioning will follow.

10.10 FIXED FURNITURE AND EQUIPMENT

As the ceiling, floor finishes and painting is progressing, the FF&E required to be installed by AW Edwards will progressively be fitted.

We will coordinate access with the LHD for their contractors to install FF&E supplied and installed by the Client.

Major medical equipment will be carefully coordinated to allow the equipment to be installed at the correct time, whilst not exposing the equipment to damage.

10.11 INTERNAL/INTERFACE WORKS

There is a significant amount of internal and interface works within the existing hospital, in close proximity to live clinical departments and hospital operations. This environment demands a coordinated approach from AW Edwards, in conjunction with the NSLHD, TSA and subcontractors.

We have prepared a number of draft staging plans and activities as part of the Early Works and Main Works. These staging plans document proposed access routes and key dependencies relating the NSLHD decant. These staging plans are included in the AWE Interface and Impact Management Plan and will continue to be developed during construction in conjunction with TSA and NSLHD.

The internal and interface works will be captured in a Disruptive Works Notice that will be produced in consultation with project stakeholders. During the works, hoardings may be installed to enclose the work area and to prevent unauthorised access. Worker access routes will be defined during the works with the aim of reducing and minimising contractor thoroughfare and overall impact to the Hospital. Infection control measures will also be implemented in the Infection Prevention and Control Management Plan.

10.12 FINAL CLEAN

As the Early Work buildings are complete, we will undertake a builders clean of each element. All debris, dust and plant will be removed from the building.

We will provide access to NSLHD and their contractors to undertake the final clinical clean as required.

10.13 COMMISSIONING

We have identified the importance of allowing sufficient time to commission the services on this project, especially given the complexity of Hospital projects.

12 months prior to the end of the Project, AWE will look to submit a Commissioning and Handover Management Plan.

The plan will outline the commissioning and handover procedure and detail specific timing and processes.

10.14 REMOVAL OF TEMPORARY FACILITIES

As parts of the main works are complete, commissioned and handed over, the temporary facilities will in turn be decommissioned and removed.

Upon completion of Stage 1 as an example, Food Services will decant from their temporary arrangement and into the permanent facilities. Similarly, upon completion of the Stage 2 footprint, ICU facilities will be relocated from the temporary structure and into their permanent location. The temporary structure will then be removed as part of the Stage 3 works.

The timing of the removal of these temporary facilities will be coordinated with the LHD and HI in order to minimize impact to the hospital operations. Methods to remove the facilities will involve a mix of simply decommissioning services and removing buildings via cranes (e.g. for the Executive/Engineering/IPO offices) or full demolition procedures for more complex and laborious structures (e.g. the temporary ICU/CCU).

11 CONSTRUCTION RISKS AND MITIGATION MEASURES

11.1 EARLY RISK IDENTIFICATION AND MITIGATION

Our approach to risk management is to identify, at the earliest possible opportunity, risk and governance issues that could impact the Project and seek innovative solutions to minimise them. The risk management process will be consistent with processes that are embedded in management activities throughout the Project.

AW Edwards will provide oversight and give assurance that all prudent risk management measures are taken. Senior managers will be responsible for risk management and assurance activities within their spheres of control. Specialist advisers will be appointed where required to support AW Edwards's managers and provide additional assurance to the Project Team.

11.2 RISK MANAGEMENT STRATEGIES

The critical objective of our risk management strategy is to minimise the risk exposure of the Principal, AW Edwards and other stakeholders to the Project.

Various risk management strategies will need to be considered to assist in achieving this objective, consisting of the following;

- Identify risks to the Project before they occur; that is, events or circumstances that may have an impact on one or more of the Project's objectives
- Treatment plans for the key risks are developed and implemented
- Accountability for the management of the key risks is allocated to an appropriate Manager
- Eliminate risks wherever possible or reduce the likelihood of their occurrence through proven mitigation strategies
- New and/or emerging risks are identified and considered
- Assess cost and program effect of any agreed risk

To ensure the objective of our risk management strategy is achieved, AW Edwards will prepare a Risk Management Plan (RHR-AWE-RMP-001) based on the principles and guidelines of AS/NZS ISO 31000:2009.

An important aspect of the Risk Management Plan is that it will provide the necessary framework needed to continuously identify, assess and minimise risks throughout the various stages of the project. This framework also aligns people, processes and interoperates with other organisational systems required for the project, namely procurement, delivery, program management, stakeholder management, design management, safety and environmental management.

To ensure the successful execution of the Risk Management Plan, a broad level of commitment will be required by all parties and stakeholders to the Project to ensure the effective management of risk is achieved within a collaborative environment;

- A partnership approach. The project stakeholders, including project team (both in-house and contractor), the business and contextual influencers such as related projects must work closely together to identify and manage risks.
- Commitment at all levels. The commitment to managing a project's risks must start with the agency's senior management and continue through all participants and stakeholders in the project.
- Communication and consultation. The project must maintain contact with their internal and external stakeholders at every stage of the risk management process and concerning the process as a whole. Risks are prone to varying perceptions and it is important to reflect and reconcile these.
- Risk ownership. Each identified risk must be assigned to the person, role, team or agency best able to manage it in terms of their responsibilities. They must have the overall responsibility and authority for managing the risk.
- A continuous approach. Risk management is a continuous process throughout all stages of a project. The project team must constantly monitor the project's risks to assess the effectiveness of the risk management measures, to identify any new or changing risks, and develop revised risk treatments as appropriate.
- Effective system engineering and project management. The project must ensure that there are plans and processes for managing the project's risks. The project's management team should, through participation in similar projects, have a good understanding of the risks that the project may face and of appropriate methods for managing those risks.
- An appropriate risk management process. The use of proven methods can significantly increase the effectiveness of the risk management process. Appropriate methods and techniques, used by experienced managers and team members, will guide the identification and analysis of risks and will assist with the development of effective risk treatments.

11.3 PROJECT RISKS

We have identified a number of construction related risks and mitigation measures. The mitigation measure will be implemented through planning, training, site inductions, tool box talks and Safe Work Method Statements.

Risk	Mitigation Measures
Noise from the works in general	• Cutting/sawing/pulveriser and crushing techniques vs. hydraulic breakers

Risk	Mitigation Measures
	• Noise mitigation equipment fitted to construction equipment • Close consultation with all stakeholders during the works phase to inform of timing and any works which may impact on their operations and amenity • Remove large sections of structure (pre-cast elements) from site and break up elsewhere • Install noise sensors and alarms • Undertake works in accordance with Australian Standard AS 2436- 1981 Guide to Noise Control on Construction, Maintenance and Demolition on Sites; and DECC Noise Management Guideline – Construction Noise
Noise from construction	• Implement a Noise Mitigation Strategy • Noise mitigation equipment fitted to construction equipment • Position concrete pumping operations in locations that minimize effect on neighbours • Close consultation with all stakeholders during the early works phase to inform of timing of any works that may impact on their operations and amenity • Install noise sensors and alarms • Undertake works in accordance with Australian Standard AS 2436- 1981 Guide to Noise Control on Construction, Maintenance and Demolition on Sites; and DECC Noise Management Guideline – Construction Noise
Noise from construction plant and equipment	• Selection of electric tower cranes • Temporary sound barriers for stationary equipment (compressors, generators, jack-hammers etc) if required • Test/fix mufflers & maintain equipment • Locate equipment as far as practicable from sensitive buildings • Undertake works in accordance with Australian Standard AS 2436- 2010 Guide to Noise Control on Construction, Maintenance and Demolition on Sites; and DECC Noise Management Guideline – Construction Noise
Vibration	• Close consultation with all stakeholders to inform of timing of any works that may impact on their operations and amenity • Install vibration monitors and alarms (if required)
Dust	• Use of perimeter site screens/ shade cloth

Risk	Mitigation Measures
	• Removal offsite of precast elements to allow crushing elsewhere • Hosing down of demolition vehicles • A water cart for spraying to reduce dust generation on construction vehicle access routes • Street sweeper vacuum truck to regularly clean external roads • Regular cleaning of adjacent pavements • Trucks transporting materials off site shall be covered • Stockpiles shall be kept damp or stabilised, or covered or turfed, to prevent generation of dust
Stormwater runoff	• Use of silt socks and filter fabric in stormwater runoff pits and gutters • Silt fences and sediment ponds to prevent runoff of sediment into drainage lines and bushland areas
Flora and Fauna	• Tree protection zones established around all trees to be retained • Equipment storage areas and stockpile areas located away from tree protection zones • Exclusion zones around Blue Gum High Forest as required
Hazardous materials removal	• Works not to commence until the hazardous material assessment has been completed and approved removal and disposal methods developed
Wastewater	• Waste water from construction activities collected and treated prior to disposal
Air quality	• The burning of timber and other combustible materials not to be permitted on site at any time
Construction and demolition traffic	• Ensure appropriate traffic control measures are employed to ensure separation of construction activities and the public • Pre-agreed safe public access pathways to be established and maintained • Provide alternative parking for construction workers
Client Deliveries	• Access to Project entrance well signposted • Erect way-finding signage • Endeavour to provide temporary access routes in similar locations to existing routes • Public notice boards and general information in prominent locations which provide information on the development and change to access routes • Construction personnel to look out for and be aware of the delivery drivers and provide guidance

Risk	Mitigation Measures
Visitors and general public	• Access to Project entrance well signposted • Erect way-finding signage • Construction hoardings and fences to be in good, sound condition and provide visual and physical barriers to the construction areas • Construction areas to be sign posted as 'no unauthorised entry', with directions to the site office for visitors • Public notice boards and general information in prominent locations which provide information on the development and change to access routes • Construction staff to look out for and be aware of visitors and provide guidance

11.4 PROJECT RISK ASSESSMENT

A project risk assessment will be developed which will identify all the WHSE risks on the project and how each risk will be controlled.

The SE4131 Project Risk Register becomes the base document for reviewing all Safe Work Method Statements (SWMS) and Risk Assessments (RA). The Project Risk Assessment will be continually updated to capture any new hazards.

Copies of the Project Risk Assessment will be issued to subcontractors, to ensure the relevant identified risks are included in their SWMS.

12 RECORDS

Records of compliance for A W Edwards Project Construction Management Plan shall be maintained in accordance with AWE-009 Records procedures in the AW Edwards Management System

13 AUDITING

The collaborative audit process established for the Project Works will be followed when planning audits of the Construction Management Plan. Refer to the A W Edwards Management System procedure AWE-011 Audits for details of the audit plans and processes.

The A W Edwards Project Construction Management Plan and A W Edwards' related obligations and actions arising from it are to be audited every 12 months.

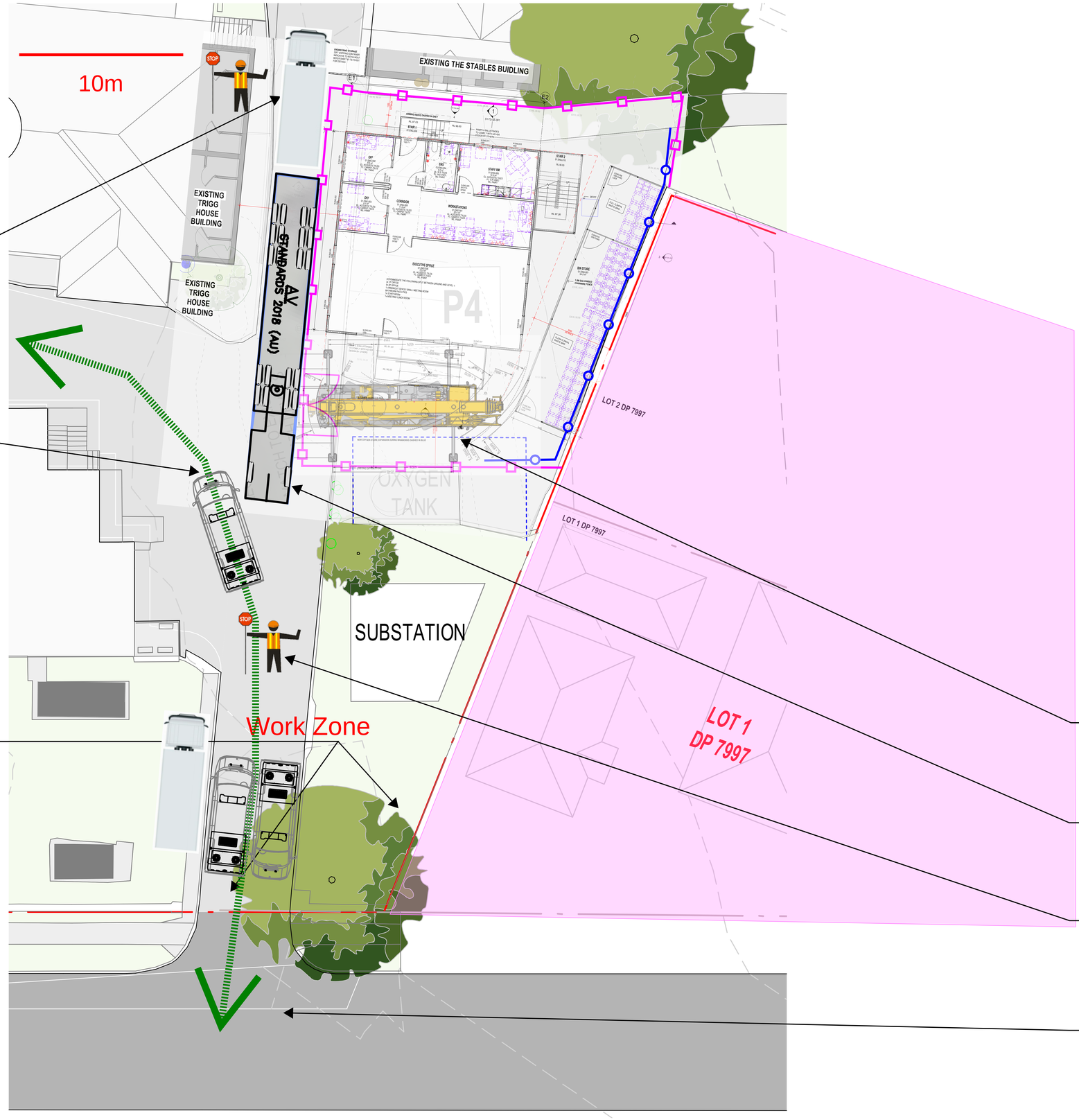
14 APPENDICES

APPENDIX A - SELF VERIFICATION CHECKLIST

Self Verification Checklist

Contract Document Requirement	Brief Description of Requirement	Location in Plan
Contract Document?		
	To be completed upon Contract Award	

APPENDIX B - STAGING PLANS (EARLY WORKS AND TEMPORARY BUILDINGS)



Hospital delivery vehicle path during construction until Denistone Rd revised delivery path is operational or the Graythwaite Building is operational

Ambulance travel path to emergency. All works to be undertaken in accordance with agreed DN. Ambulance to not be impeded at any time.

New council cross over to be constructed. Council fees required.

Location: Cnr Florence Ave & Denistone Rd
Working Hours:
Mon-Fri - 7.00am to 6.00pm
Sat - 8.00am to 1.00pm

Program Start Date:
Program Finish Date:

Receivers Identified: In Pink

Equipment Type:
50t excavator
12t Tip truck
6 Wheeler concrete delivery trucks
Small jack hammers and hand tools
Semi-trailers - 19m
10.5 HRV Delivery trucks

Barrier Locations (height)
No existing barriers are in place.

Truck and Light Vehicle Movements (in & out)

Site amenities within the Stage 1 compound to be used for site amenities

60t crane footprint is able to sit within the site work zone. Shed delivery vehicles will be positioned outside the compound.

Semi-trailer deliveries to be confirmed and planed with the hospital

Traffic control to manage all vehicle movements in and out of the hospital precinct.

CTMP to define the TGSs required to manage the delivery to and from the site using semi-trailers of Denistone Rd

10m

SUBCONTRACTOR | GENERAL CONTRACTOR | ARCHITECT | ENGINEERING | CL

AW EDWARDS

REV	DATE	DESCRIPTION	DRAWN	CHECKED
A	14/02/24	Site Establishment Plan	AM	

TRUE NORTH | PRINT KEY | KEY PLAN

PRINT IN COLOUR

SCALE: N.T.S | SIZE: A0

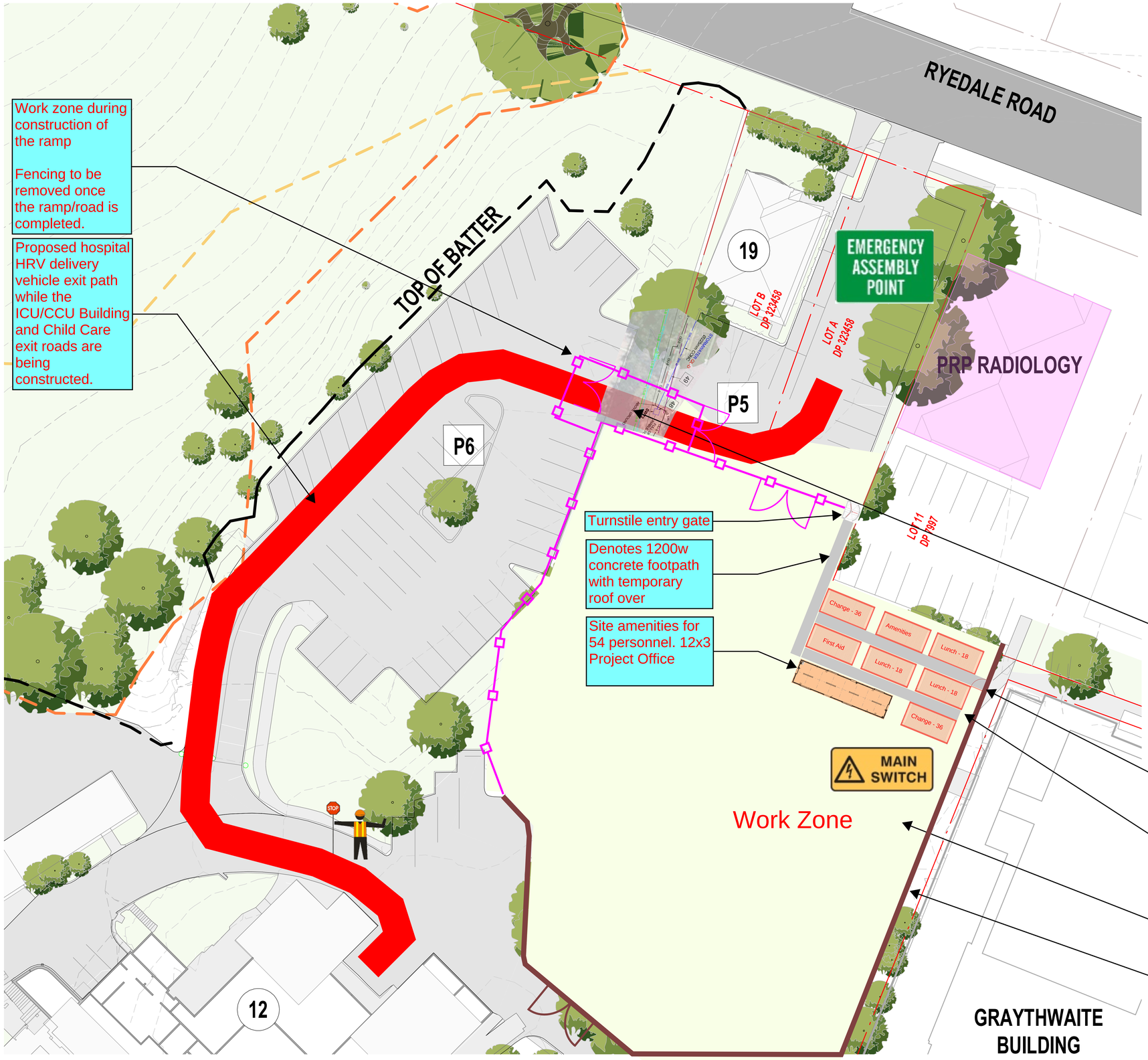
0 1 2 3 4 5m
SCALE 1:100 AT A0 SCALE 1:200 AT A2

PROJECT: Ryde Hospital Redevelopment

TITLE: Exec/IPO/Eng

DRAWING No.: RHR - - - - - - A

PRO | PHASE | TYPE | DISCIPLINE | NUMBER | REV



Work zone during construction of the ramp

Fencing to be removed once the ramp/road is completed.

Proposed hospital HRV delivery vehicle exit path while the ICU/CCU Building and Child Care exit roads are being constructed.

Location: Existing Ryedale Road Car Park
Working Hours:
Mon-Fri - 7.00am to 6.00pm
Sat - 8.00am to 1.00pm

Program Start Date:
Program Finish Date:

Receivers Identified: In Pink

Equipment Type
20t excavator
12t Tip truck
6 Wheeler concrete delivery trucks
5t Compaction roller
Small jack hammers and hand tools
10.5 HRV Delivery trucks

Barrier Locations (height)
No existing barriers are in place.

Truck and Light Vehicle Movements (in & out)

New temporary access road to be constructed between P6 and P5 car parks.

Existing services need to be clearly identified prior construction of the ramp.

3x car parking spaces to be removed.

Site amenities within the Stage 1 compound to be used for site amenities

Locked rear access gate to hospital on key code

Site amenities to be connected to existing services terminated at the boundary line

Works Area Compound during the Enabling Works

Existing A Class Hoarding.

SUBCONTRACTOR	GENERAL CONTRACTOR	ARCHITECT	ENGINEERING	CL
	AW EDWARDS			

REV	DATE	DESCRIPTION	DRAWN	CHECKED
A	06/02/24	Site Establishment Plan	AM	

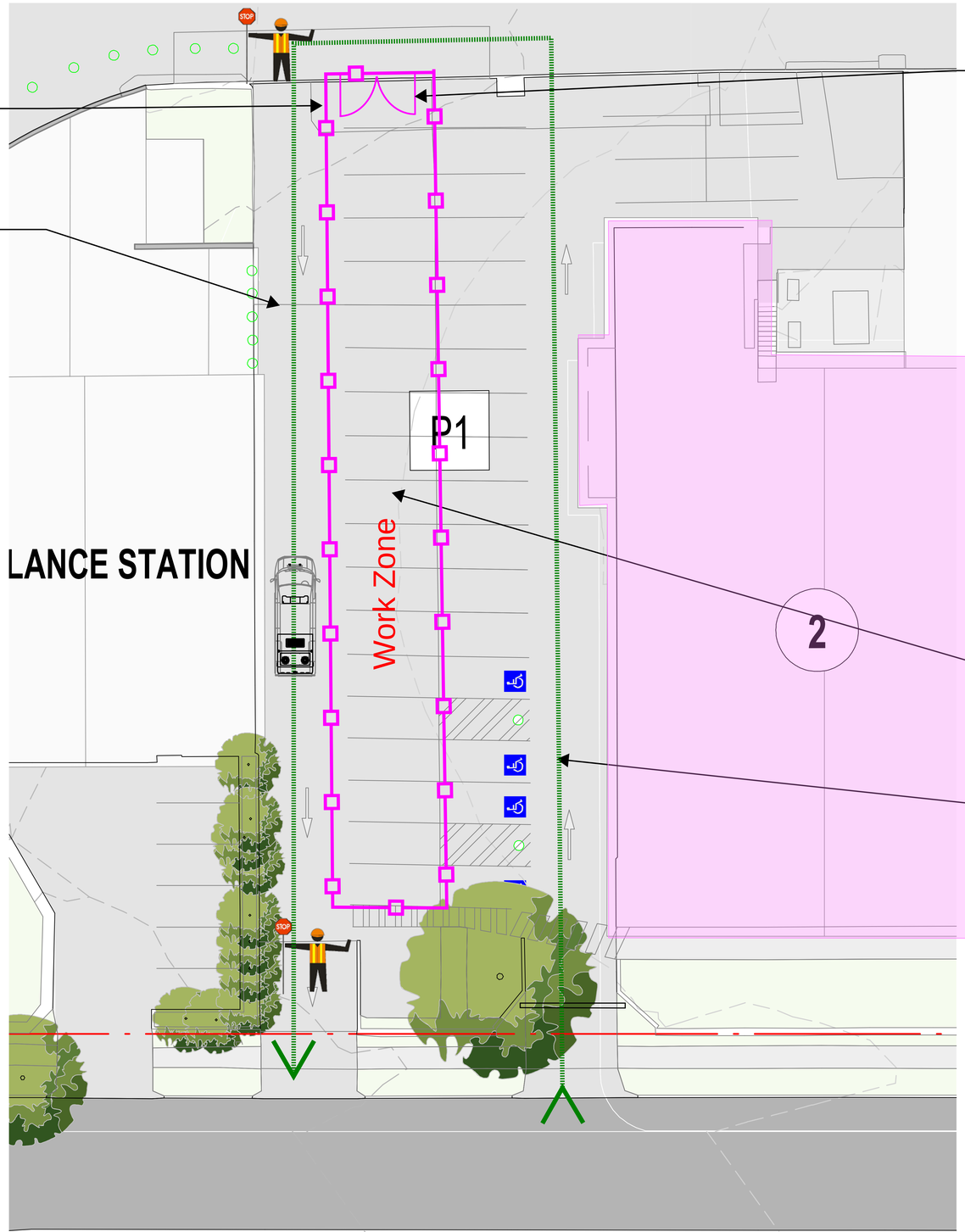
TRUE NORTH | PRINT KEY | KEY PLAN

PRINT IN COLOUR

SCALE: N.T.S | SIZE: A0

0 1 2 3 4 5m
SCALE 1:100 AT A0 SCALE 1:200 AT A2

PROJECT	Ryde Hospital Redevelopment
TITLE	Existing Loading Dock Temporary Access
DRAWING No.	PRO: RHR – PHASE: – TYPE: – DISCIPLINE: – NUMBER: – REV: A



Site fencing to isolate the work area from public

Ambulance and vehicle traffic to be maintained at all times in accordance with agreed TGS and DNs.

Construction worker access

Location: Denistone Rd
Working Hours:
Mon-Fri - 7.00am to 6.00pm
Sat - 8.00am to 1.00pm

Program Start Date:
Program Finish Date:

Receivers Identified: In Pink also on the opposite side of Denistone Rd

Equipment Type:
10.5 HRVs
Small delivery vehicles

Barrier Locations (height)
No existing barriers are in place.

Truck and Light Vehicle Movements (in & out)

Site amenities within the Stage 1 compound to be used for site amenities

All works to be defined within the DN.

Vehicle traffic flow during this stae

Stage 1 - Line Marking

20m

SUBCONTRACTOR	GENERAL CONTRACTOR	ARCHITECT	ENGINEERING	CL
	AW EDWARDS			

REV	DATE	DESCRIPTION	DRAWN	CHECKED
A	06/02/24	Site Establishment Plan for Kitchen Works	AM	

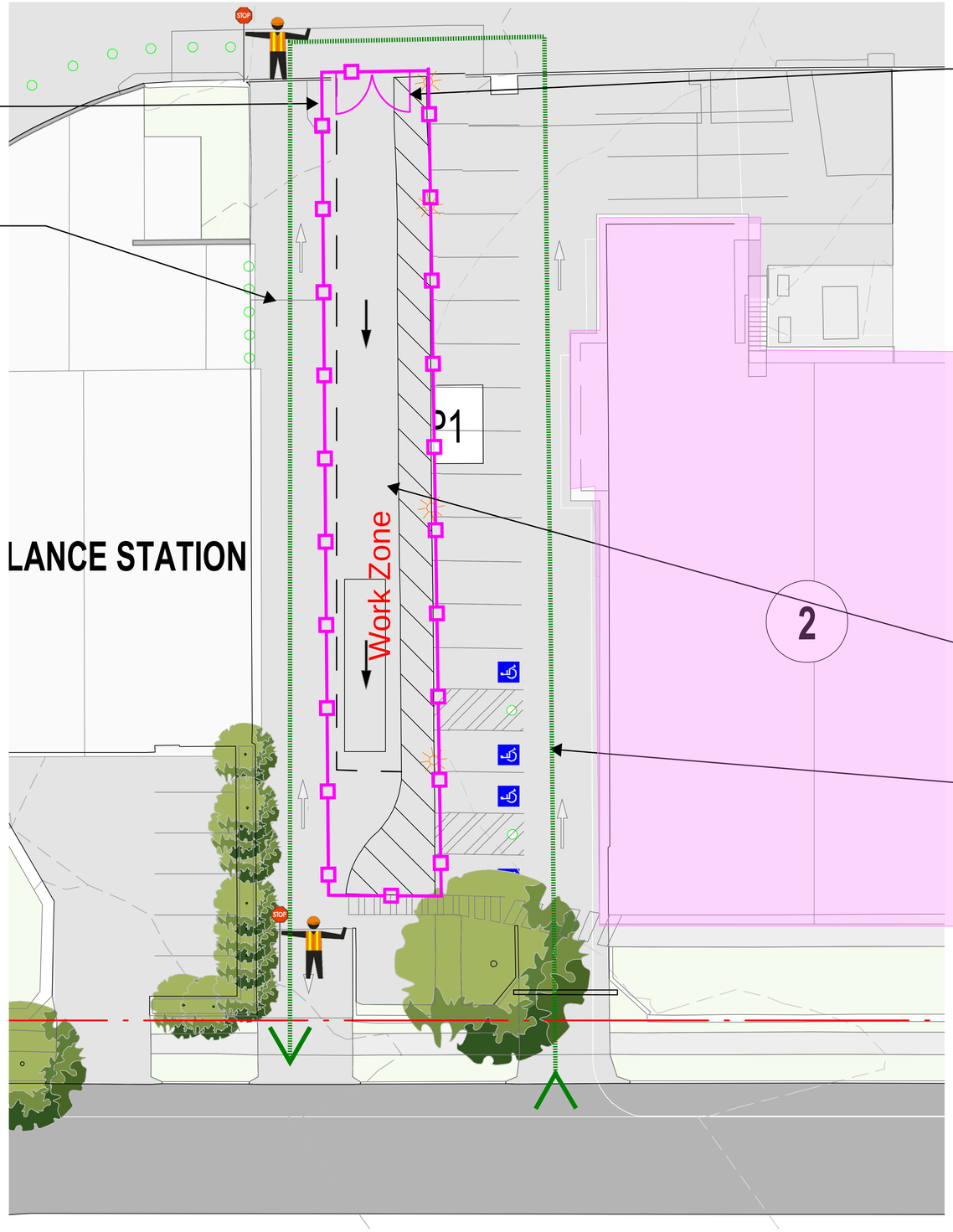
TRUE NORTH | PRINT KEY | KEY PLAN

PRINT IN COLOUR

SCALE: N.T.S (0 1 2 3 4 5m; SCALE 1:100 AT A0 SCALE 1:200 AT A2)

SIZE: A0

PROJECT	Ryde Hospital Redevelopment
TITLE	New ICU/CCU Building
DRAWING No.	PRO: RHR – PHASE: – – TYPE: – – DISCIPLINE: – – NUMBER: – – REV: A



Location: Denistone Rd
Working Hours:
Mon-Fri - 7.00am to 6.00pm
Sat - 8.00am to 1.00pm

Program Start Date:
Program Finish Date:

Receivers Identified: In Pink also on the opposite side of Denistone Rd

Equipment Type:
10.5 HRVs
Small delivery vehicles

Barrier Locations (height)
No existing barriers are in place.

Truck and Light Vehicle Movements (in & out)

Stage 1 - Line Marking

20m

SUBCONTRACTOR | GENERAL CONTRACTOR | ARCHITECT | ENGINEERING | CL

AW EDWARDS

REV	DATE	DESCRIPTION	DRAWN	CHECKED
A	06/02/24	Site Establishment Plan for Kitchen Works	AM	

TRUE NORTH | PRINT KEY | KEY PLAN

PRINT IN COLOUR

SCALE: N.T.S (SCALE 1:100 AT A0 / SCALE 1:200 AT A2) | SIZE: A0

PROJECT: Ryde Hospital Redevelopment

TITLE: New ICU/CCU Building

DRAWING No.: RHR – [PHASE] – [TYPE] – [DISCIPLINE] – [NUMBER] – A

PRO | PHASE | TYPE | DISCIPLINE | NUMBER | REV

Site fencing to isolate the work area from public

Ambulance and vehicle traffic to be maintained at all times in accordance with agreed TGS and DNs.

We need to develop a section along this edge to ensure that we can create the space for the road adjacent the ambulance station. The space required for vehicles and ambulance, traffic barriers , 3 board scaffold and the building

Vehicle traffic flow during this stae

Construction worker access

All construction deliveries are to be made using HRVs no larger than 10.5m

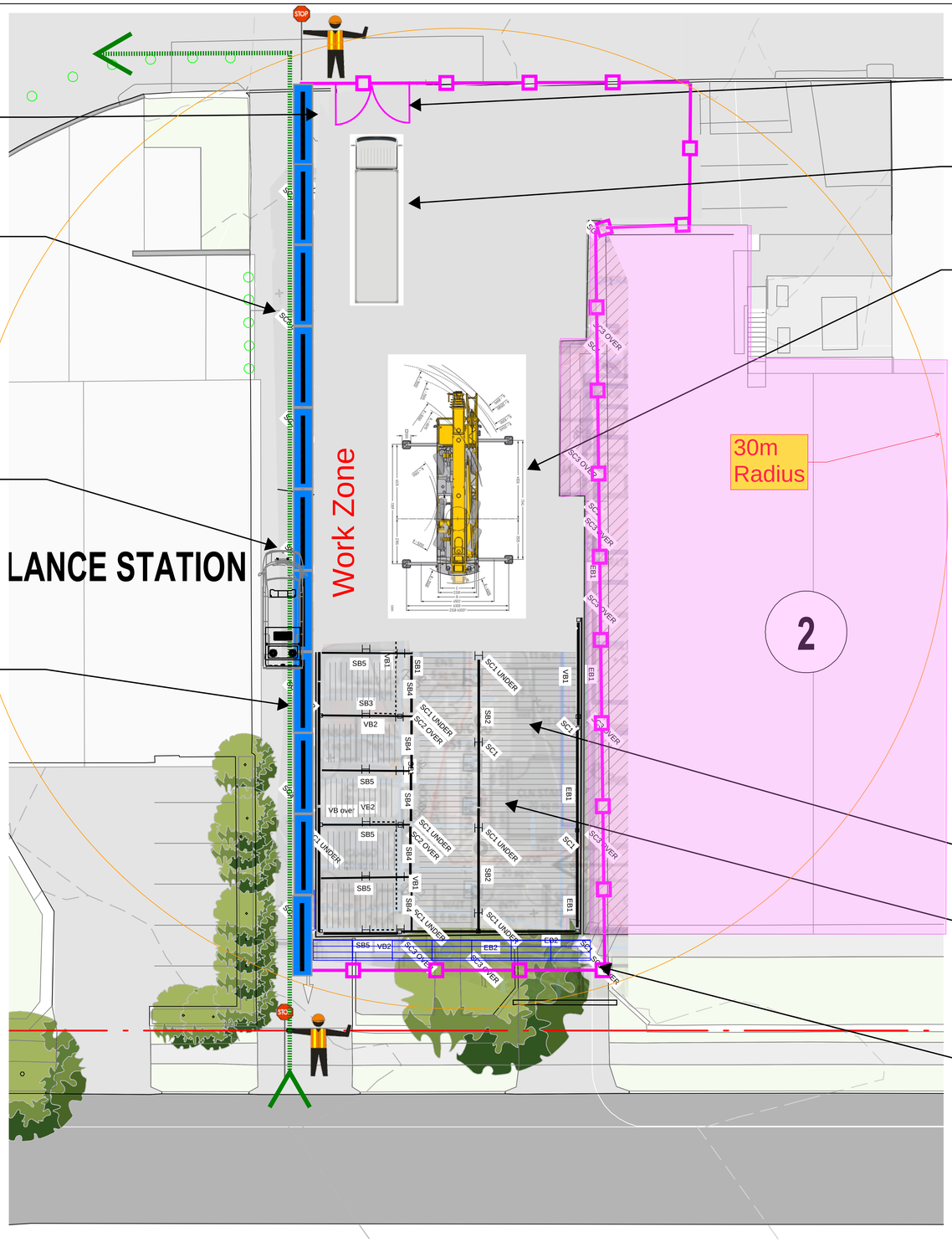
Maximum 55t All terrain crane to erect steel from North to south

Site amenities within the Stage 1 compound to be used for site amenities

Works are to proceed from north to south

All works to be defined within the program and DNs.

Scaffold to be erected on all elevations during construction of the deck, erection of the facades and installation of the roof.



Location: Denistone Rd
Working Hours:
Mon-Fri - 7.00am to 6.00pm
Sat - 8.00am to 1.00pm

Program Start Date:
Program Finish Date:

Receivers Identified: In Pink also on the opposite side of Denistone Rd

Equipment Type:
5t excavator
12t Tip truck
6 Wheeler concrete delivery trucks
Small jack hammers and hand tools
10.5 HRV Delivery trucks
60t Mobile crane

Barrier Locations (height)
No existing barriers are in place.

Truck and Light Vehicle Movements (in & out)

Stage 2 - Footing and Steel Erection

20m

SUBCONTRACTOR | GENERAL CONTRACTOR | ARCHITECT | ENGINEERING | CL

AW EDWARDS

REV	DATE	DESCRIPTION	DRAWN	CHECKED
A	06/02/24	Site Establishment Plan for Kitchen Works	AM	

TRUE NORTH | PRINT KEY | KEY PLAN

PRINT IN COLOUR

SCALE: N.T.S (0 1 2 3 4 5m) SCALE 1:100 AT A0 SCALE 1:200 AT A2 | SIZE: A0

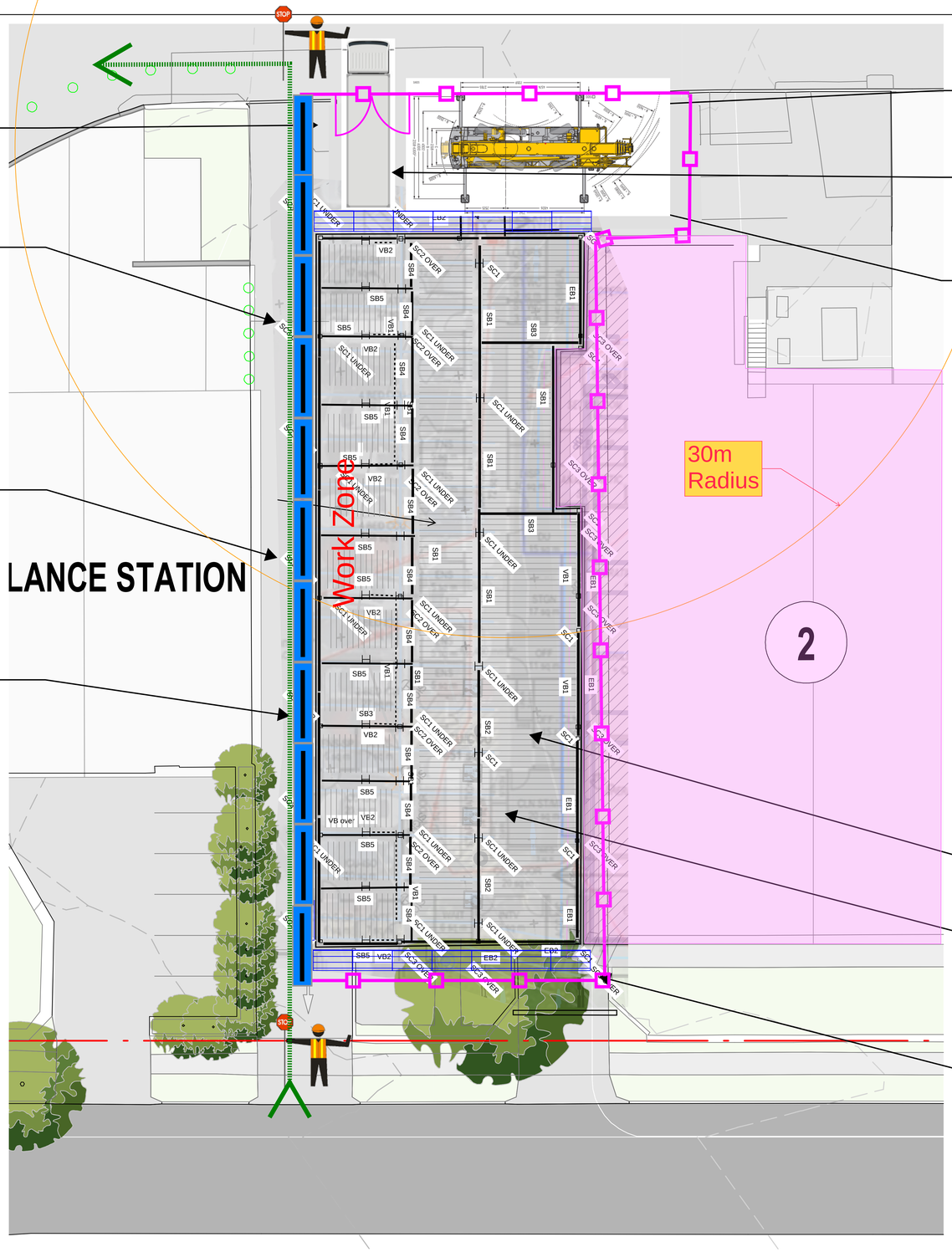
PROJECT	Ryde Hospital Redevelopment
TITLE	New ICU/CCU Building
DRAWING No.	PRO: RHR – PHASE: – TYPE: – DISCIPLINE: – NUMBER: – REV: A

Site fencing to isolate the work area from public

Ambulance and vehicle traffic to be maintained at all times in accordance with agreed TGS and DNs.

We need to develop a section along this edge to ensure that we can create the space for the road adjacent the ambulance station. The space required for vehicles and ambulance, traffic barriers , 3 board scaffold and the building

Vehicle traffic flow during this stae



Construction worker access

All construction deliveries are to be made using HRVs no larger than 10.5m

Maximum 55t All terrain crane to erect steel from North to south

Site amenities within the Stage 1 compound to be used for site amenities

Works are to proceed from north to south

All works to be defined within the program and DNs.

Scaffold to be erected on all elevations during construction of the deck, erection of the facades and installation of the roof.

Location: Denistone Rd
Working Hours:
Mon-Fri - 7.00am to 6.00pm
Sat - 8.00am to 1.00pm

Program Start Date:
Program Finish Date:

Receivers Identified: In Pink also on the opposite side of Denistone Rd

Equipment Type:
5t excavator
12t Tip truck
6 Wheeler concrete delivery trucks
Small jack hammers and hand tools
10.5 HRV Delivery trucks
60t Mobile crane

Barrier Locations (height)
No existing barriers are in place.

Truck and Light Vehicle Movements (in & out)

Stage 2 - Footing and Steel Erection

20m

SUBCONTRACTOR | GENERAL CONTRACTOR | ARCHITECT | ENGINEERING | CL

AW EDWARDS

REV	DATE	DESCRIPTION	DRAWN	CHECKED
A	06/02/24	Site Establishment Plan for Kitchen Works	AM	

TRUE NORTH | PRINT KEY | KEY PLAN

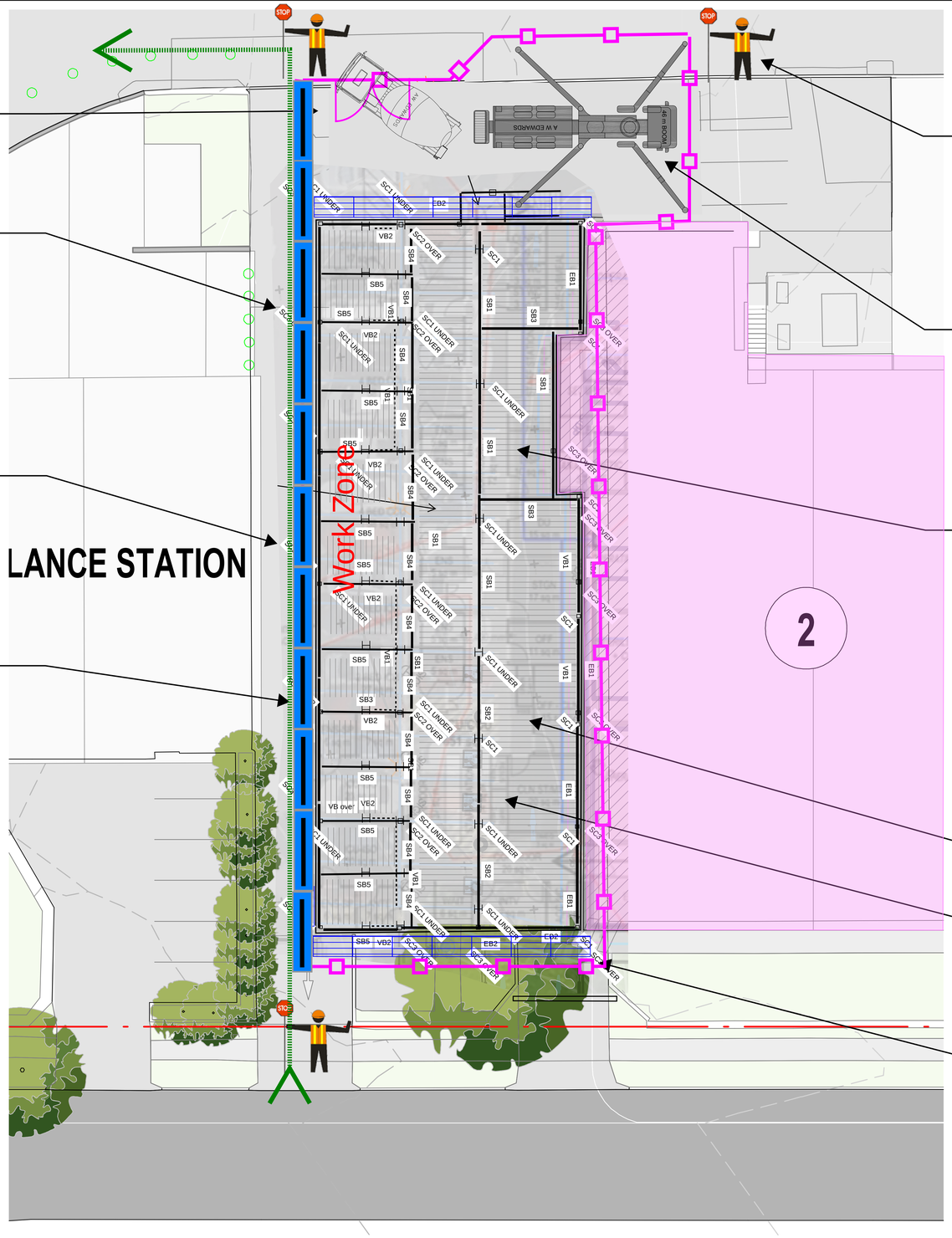
PRINT IN COLOUR

SCALE: N.T.S (0 1 2 3 4 5m) SCALE 1:100 AT A0 SCALE 1:200 AT A2

SIZE: A0

PROJECT	Ryde Hospital Redevelopment
TITLE	New ICU/CCU Building

DRAWING No.: PRO RHR – PHASE – TYPE – DISCIPLINE – NUMBER – REV A



Site fencing to isolate the work area from public

Ambulance and vehicle traffic to be maintained at all times in accordance with agreed TGS and DNs.

We need to develop a section along this edge to ensure that we can create the space for the road adjacent the ambulance station. The space required for vehicles and ambulance, traffic barriers , 3 board scaffold and the building

Vehicle traffic flow during this stae

Site fencing to be adjusted and additional traffic control required on the day of the concrete pour. Vehicle traffic to be maintained at all times in accordance with agreed TGSs and DNs

Concrete boom to manoeuvred onto and off the site using traffic control of Denistone Rd

Wall framing, roof structure, roof cladding and wall cladding to be lifted onto the ICU/CCU slab using mobile crane. Maeda crane may be required to assist in the erection working from the suspended slab.

Site amenities within the Stage 1 compound to be used for site amenities

Works are to proceed from north to south

All works to be defined within the program and DNs.

Scaffold to be erected on all elevations during construction of the deck, erection of the facades and installation of the roof.

Location: Denistone Rd
Working Hours:
Mon-Fri - 7.00am to 6.00pm
Sat - 8.00am to 1.00pm

Program Start Date:
Program Finish Date:

Receivers Identified: In Pink also on the opposite side of Denistone Rd

Equipment Type:
50m Concrete boom
6 Wheeler concrete delivery trucks
Small percussion tools and hand tools
10.5 HRV Delivery trucks
1.7t Maeda crane

Barrier Locations (height)
No existing barriers are in place.

Truck and Light Vehicle Movements (in & out)

Stage 3 - Concrete Placement, Framing and Cladding

20m

SUBCONTRACTOR	GENERAL CONTRACTOR	ARCHITECT	ENGINEERING	CL
	AW EDWARDS			

REV	DATE	DESCRIPTION	DRAWN	CHECKED
A	06/02/24	Site Establishment Plan for Kitchen Works	AM	

TRUE NORTH | PRINT KEY | KEY PLAN | PRINT IN COLOUR

SCALE: N.T.S (0 1 2 3 4 5m) SCALE 1:100 AT A0 SCALE 1:200 AT A2 | SIZE: A0

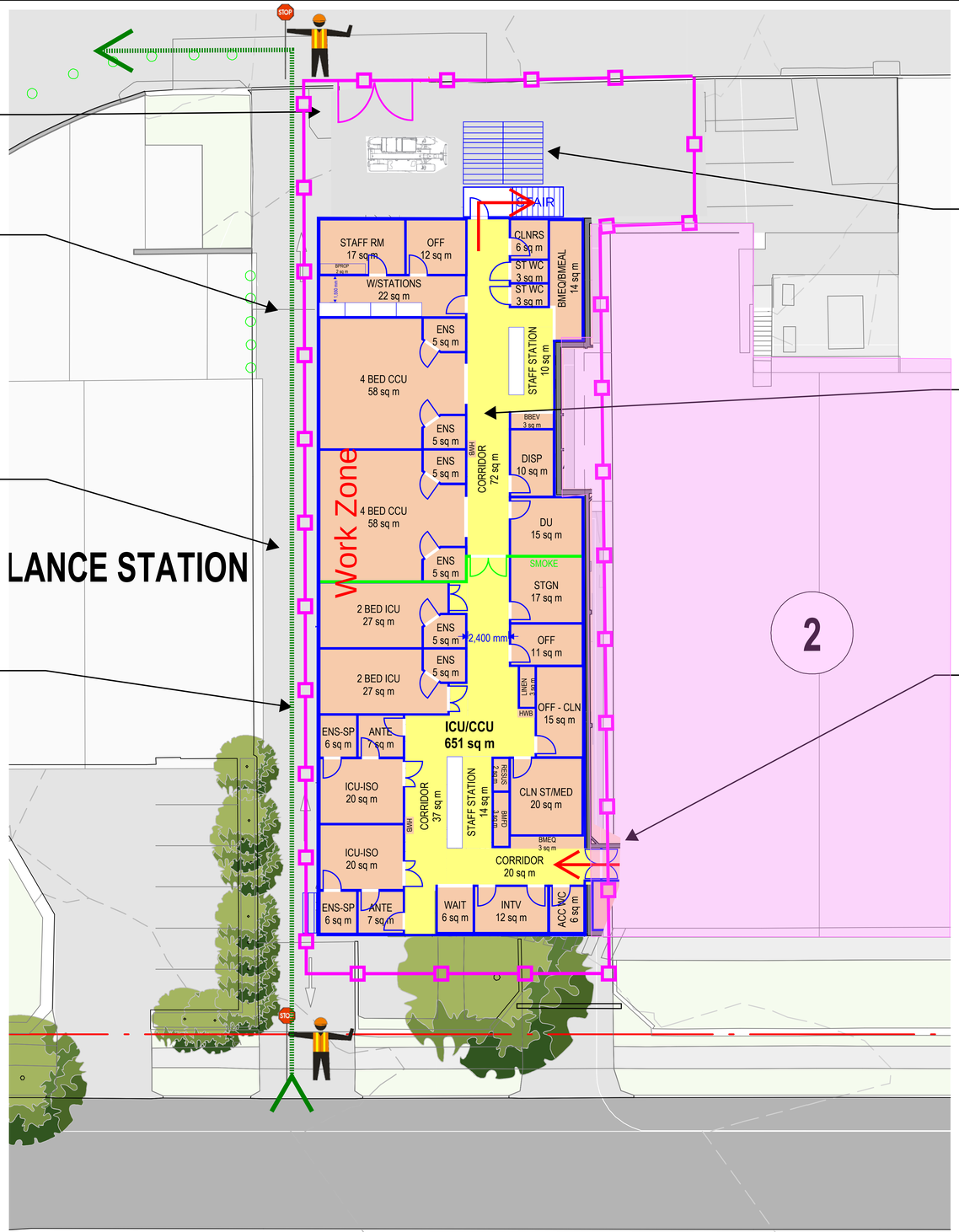
PROJECT	Ryde Hospital Redevelopment
TITLE	New ICU/CCU Building
DRAWING No.	PRO: RHR – PHASE: – TYPE: – DISCIPLINE: – NUMBER: – REV: A

Site fencing to isolate the work area from public

Ambulance and vehicle traffic to be maintained at all times in accordance with agreed TGS and DNs.

We need to develop a section along this edge to ensure that we can create the space for the road adjacent the ambulance station. The space required for vehicles and ambulance, traffic barriers , 3 board scaffold and the building

Vehicle traffic flow during this stae



2t Scaffold landing platform to be constructed to allow materials to be lifted via a telehandler to the ICU/CCU Building during the fit out. Access to the building will be vai the rear entry door and not through the hospital

Internal fit out. to new ICU/CCU Building foot print.

Existing building works to proceed in accordance with agreed scope and DNs.

New building work is to proceed independently of the existing building.

Final break through and connections are not to the existing building will not be undertaken until the new ICU/CCU is near completion and access has been restricted to via the hospital.

Location: Denistone Rd
Working Hours:
Mon-Fri - 7.00am to 6.00pm
Sat - 8.00am to 1.00pm

Program Start Date:
Program Finish Date:

Receivers Identified: In Pink also on the opposite side of Denistone Rd

Equipment Type
3t Telehandler
Small percussion tools and hand tools
10.5 HRV Delivery trucks
Small delivery vehicles

Barrier Locations (height)
No existing barriers are in place.

Truck and Light Vehicle Movements (in & out)

Site amenities within the Stage 1 compound to be used for site amenities

Stage 4 - ICU/CCU Fit Out

20m

SUBCONTRACTOR	GENERAL CONTRACTOR	ARCHITECT	ENGINEERING	CL
	AW EDWARDS			

REV	DATE	DESCRIPTION	DRAWN	CHECKED
A	06/02/24	Site Establishment Plan for Kitchen Works	AM	

TRUE NORTH | PRINT KEY | KEY PLAN

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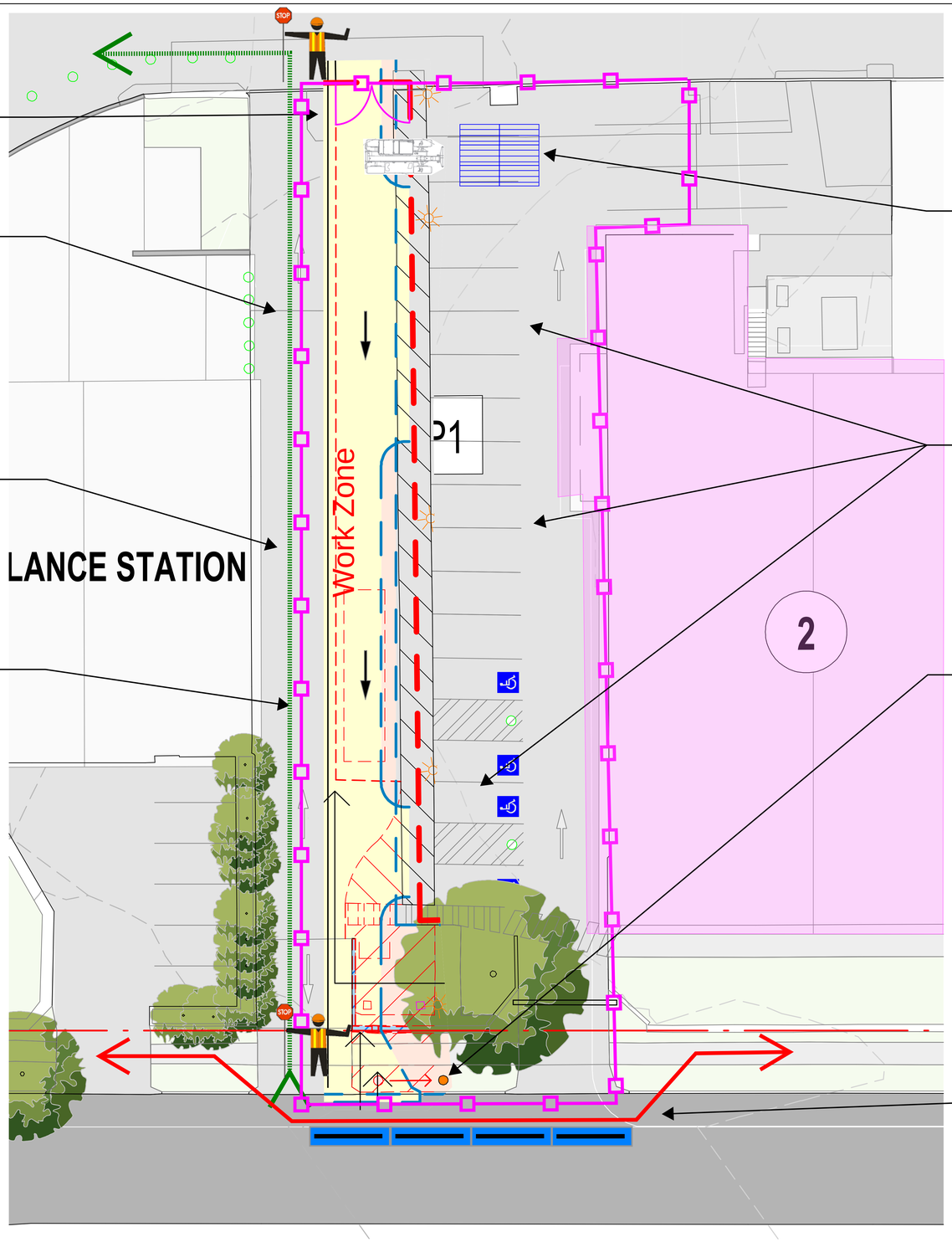
SCALE: N.T.S (SCALE 1:100 AT A0, SCALE 1:200 AT A2) | SIZE: A0

PROJECT	Ryde Hospital Redevelopment
TITLE	New ICU/CCU Building
DRAWING No.	PRO: RHR – PHASE: – TYPE: – DISCIPLINE: – NUMBER: – REV: A



Site fencing to isolate the work area from public

Ambulance and vehicle traffic to be maintained at all times in accordance with agreed TGS and DNs.

We need to develop a section along this edge to ensure that we can create the space for the road adjacent the ambulance station. The space required for vehicles and ambulance, traffic barriers , 3 board scaffold and the building

Vehicle traffic flow during this stae

2t Scaffold landing platform to be constructed to allow materials to be lifted via a telehandler to the ICU/CCU Building during the fit out. Access to the building will be vai the rear entry door and not through the hospital

New lighting and services within the car aprk area under the new ICU/CCU building to be completed during the fit out of the ICU/CCU Building.

Power Pole relocation to be completed as part of the Early Works.

Authority Design and Approval required for this work to proceed in order to augment the Denistone Drive Way Entry

Location: Denistone Rd
Working Hours:
Mon-Fri - 7.00am to 6.00pm
Sat - 8.00am to 1.00pm

Program Start Date:
Program Finish Date:

Receivers Identified: In Pink also on the opposite side of Denistone Rd

Equipment Type:
5t excavator
12t Tip truck
6 Wheeler concrete delivery trucks
Small jack hammers and hand tools
10.5 HRV Delivery trucks
2t roller
Small asphalt machine

Barrier Locations (height)
No existing barriers are in place.

Truck and Light Vehicle Movements (in & out)

Site amenities within the Stage 1 compound to be used for site amenities

Public Access along Denistone Rd while the new entry, lay back and cross over are constructed.
Any conduits and pits for future services to be installed during this stage.

All works are to proceed in accordance with Council Requirements.

Works to commence once the facade of the building is completed.

Stage 5 - Denistone Rd Entry Upgrade

20m

SUBCONTRACTOR

GENERAL CONTRACTOR

AW EDWARDS

ARCHITECT

ENGINEERING

CL

REV	DATE	DESCRIPTION	DRAWN	CHECKED
A	06/02/24	Site Establishment Plan for Kitchen Works	AM	

TRUE NORTH

PRINT KEY

PRINT IN COLOUR

KEY PLAN

SCALE: N.T.S
0 1 2 3 4 5m
SCALE 1:100 AT A0 SCALE 1:200 AT A2

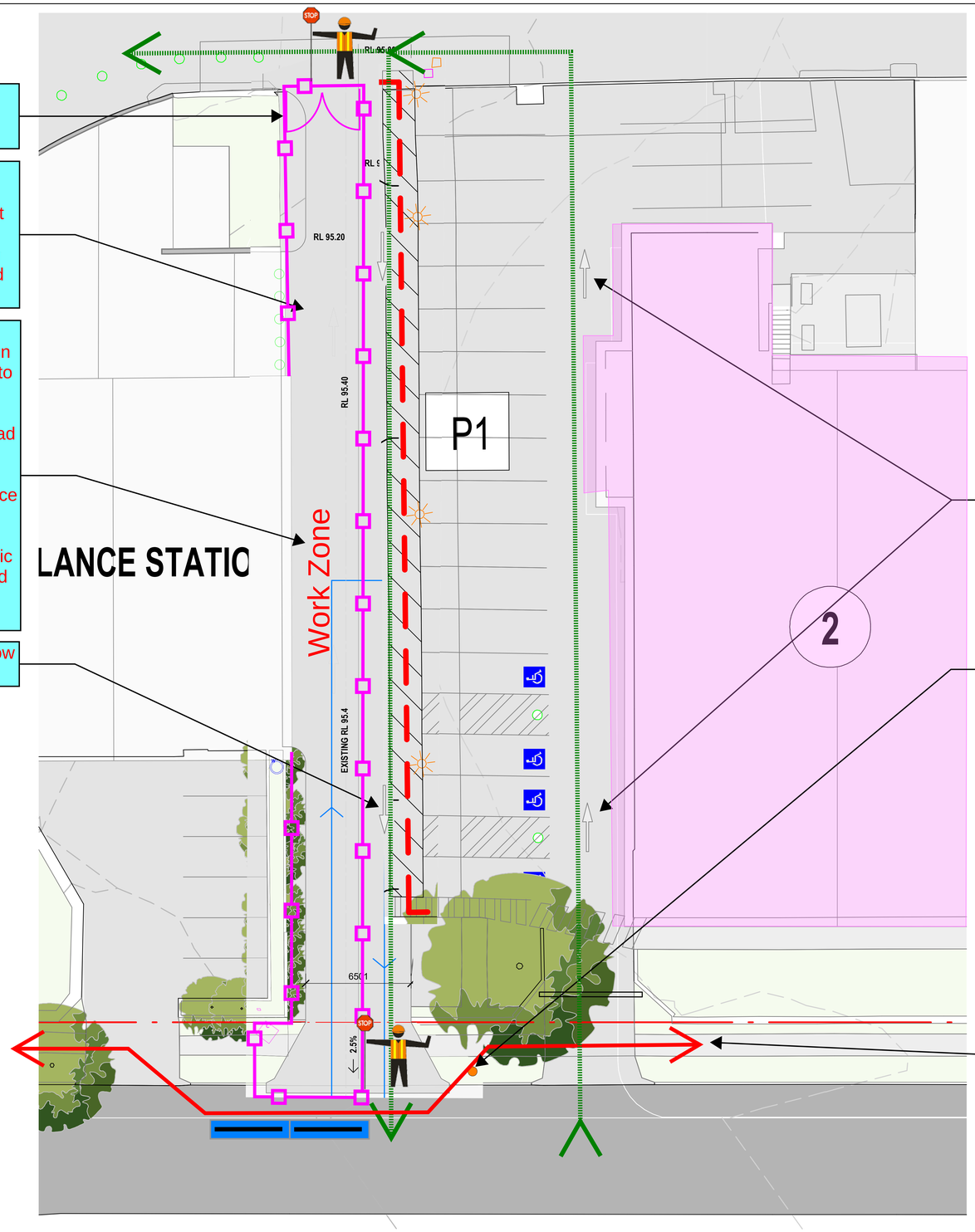
SIZE: A0

PROJECT: Ryde Hospital Redevelopment

TITLE: New ICU/CCU Building

DRAWING No.

PRO	PHASE	TYPE	DISCIPLINE	NUMBER	REV
RHR					A



Location: Denistone Rd
Working Hours:
Mon-Fri - 7.00am to 6.00pm
Sat - 8.00am to 1.00pm

Program Start Date:
Program Finish Date:

Receivers Identified: In Pink also on the opposite side of Denistone Rd

Equipment Type:
5t excavator
12t Tip truck
6 Wheeler concrete delivery trucks
Small jack hammers and hand tools
10.5 HRV Delivery trucks
2t roller
Small asphalt machine

Barrier Locations (height)
No existing barriers are in place.

Truck and Light Vehicle Movements (in & out)

Stage 6 - Denistone Rd Entry Upgrade - Second Stage to be undertaken once the ICU/CCU is operation

20m

SUBCONTRACTOR	GENERAL CONTRACTOR	ARCHITECT	ENGINEERING	CL
	AW EDWARDS			

REV	DATE	DESCRIPTION	DRAWN	CHECKED
A	06/02/24	Site Establishment Plan for Kitchen Works	AM	

TRUE NORTH | PRINT KEY | KEY PLAN

PRINT IN COLOUR

SCALE: N.T.S (0 1 2 3 4 5m; SCALE 1:100 AT A0 SCALE 1:200 AT A2) | SIZE: A0

PROJECT	Ryde Hospital Redevelopment
TITLE	New ICU/CCU Building
DRAWING No.	PRO: RHR – PHASE – TYPE – DISCIPLINE – NUMBER – REV: A

Site fencing to isolate the work area from the plant room access pathway

Access for services reticulation down the site of the building to developed. Areas below to be securely fenced and defined within future DNs.

Construction worker access path from lift to roof work zone area.

Speed wall hoarding to isolate the work zone from the lift foyer area.

Work Zone

70m Radius

50m Radius

7

8

10m

Location: Graythwaite Building Roof
Working Hours:
Mon-Fri - 7.00am to 6.00pm
Sat - 8.00am to 1.00pm

Program Start Date:
Program Finish Date:

Receivers Identified: In Pink

Equipment:
Type
200t Mobile crane
Semi-trailors- 19m
Small percussion drills and hand tools
10.5 HRV Delivery trucks

Barrier Locations (height)
No existing barriers are in place.

Truck and Light Vehicle Movements (in & out)

Site amenities within the Stage 1 compound to be used for site amenities

All works to be defined within the DN.

Construction worker access path from ground to the lifts

Crane lifting zone. area to be isolated and spotters to be deployed around the crane.

In ground services and ground bearing pressures to be defined before crane establishments.

Delivery and transport vehicle staging and lifting area.
All activities to be undertaken in accordance with agreed DNs.
Traffic control and spotters to be implemented to ensure that Ambulance services are not disrupted.

10m

SUBCONTRACTOR | GENERAL CONTRACTOR | ARCHITECT | ENGINEERING | CL

AW EDWARDS

REV	DATE	DESCRIPTION	DRAWN	CHECKED
A	06/02/24	Site Establishment Plan for Kitchen Works	AM	

TRUE NORTH | PRINT KEY | KEY PLAN

PRINT IN COLOUR

SCALE: N.T.S | SIZE: A0

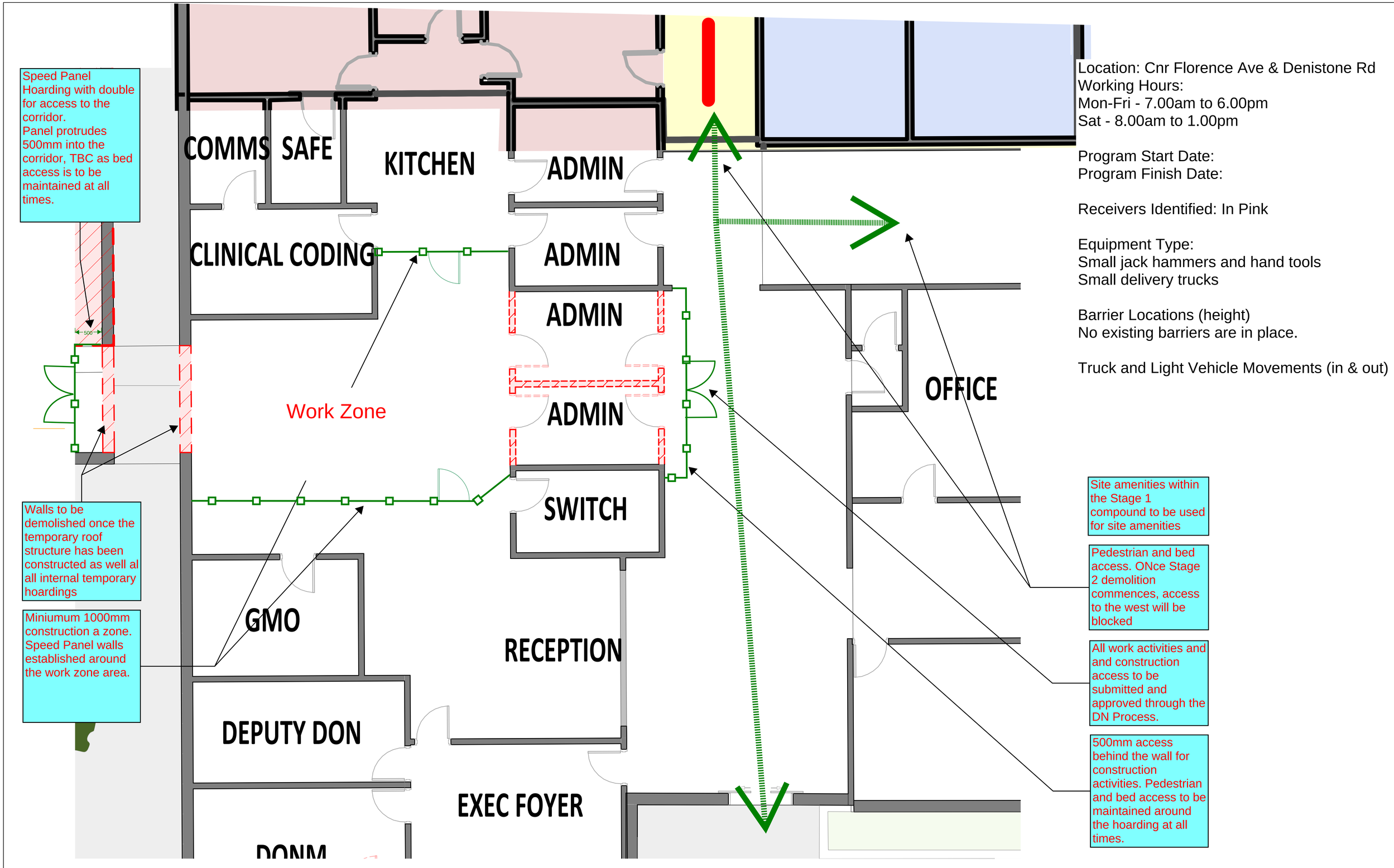
SCALE 1:100 AT A0 | SCALE 1:200 AT A2

PROJECT: Ryde Hospital Redevelopment

TITLE: New Temporary Kitchen

DRAWING No.: RHR - - - - - - A

PRO	PHASE	TYPE	DISCIPLINE	NUMBER	REV
RHR					A



Speed Panel Hoarding with double for access to the corridor.
Panel protrudes 500mm into the corridor, TBC as bed access is to be maintained at all times.

Walls to be demolished once the temporary roof structure has been constructed as well al all internal temporary hoardings

Miniumum 1000mm construction a zone. Speed Panel walls established around the work zone area.

Location: Cnr Florence Ave & Denistone Rd
Working Hours:
Mon-Fri - 7.00am to 6.00pm
Sat - 8.00am to 1.00pm

Program Start Date:
Program Finish Date:

Receivers Identified: In Pink

Equipment Type:
Small jack hammers and hand tools
Small delivery trucks

Barrier Locations (height)
No existing barriers are in place.

Truck and Light Vehicle Movements (in & out)

Site amenities within the Stage 1 compound to be used for site amenities

Pedestrian and bed access. ONce Stage 2 demolition commences, access to the west will be blocked

All work activities and and construction access to be submitted and approved through the DN Process.

500mm access behind the wall for construction activities. Pedestrian and bed access to be maintained around the hoarding at all times.

SUBCONTRACTOR	GENERAL CONTRACTOR	ARCHITECT	ENGINEERING	CL
	AW EDWARDS			

REV	DATE	DESCRIPTION	DRAWN	CHECKED
A	26/02/24	Site Establishment Plan	AM	

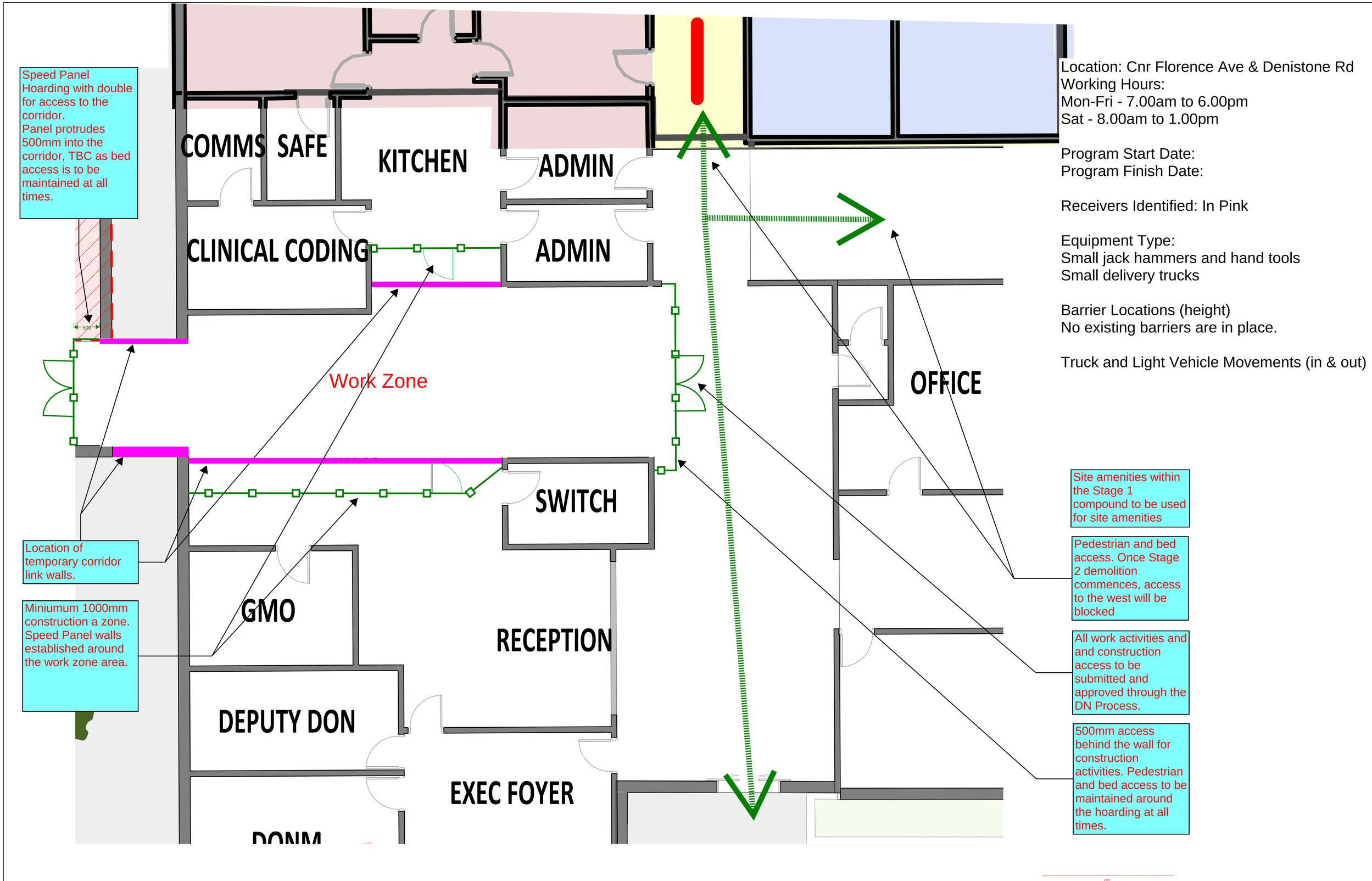
TRUE NORTH | PRINT KEY | KEY PLAN

PRINT IN COLOUR

SCALE: N.T.S (0 1 2 3 4 5m) SCALE 1:100 AT A0 SCALE 1:200 AT A2 | SIZE: A0

PROJECT	Ryde Hospital Redevelopment
TITLE	Old Admin Corridor - Demolition Phase

DRAWING No.: PRO RHR – PHASE – TYPE – DISCIPLINE – NUMBER – REV A



Location: Cnr Florence Ave & Denistone Rd
Working Hours:
Mon-Fri - 7.00am to 6.00pm
Sat - 8.00am to 1.00pm

Program Start Date:
Program Finish Date:

Receivers Identified: In Pink

Equipment Type:
Small jack hammers and hand tools
Small delivery trucks

Barrier Locations (height)
No existing barriers are in place.

Truck and Light Vehicle Movements (in & out)

SUBCONTRACTOR	GENERAL CONTRACTOR	ARCHITECT	ENGINEERING	CL
	AW EDWARDS			

REV	DATE	DESCRIPTION	DRAWN	CHECKED
A	26/02/24	Site Establishment Plan	AM	

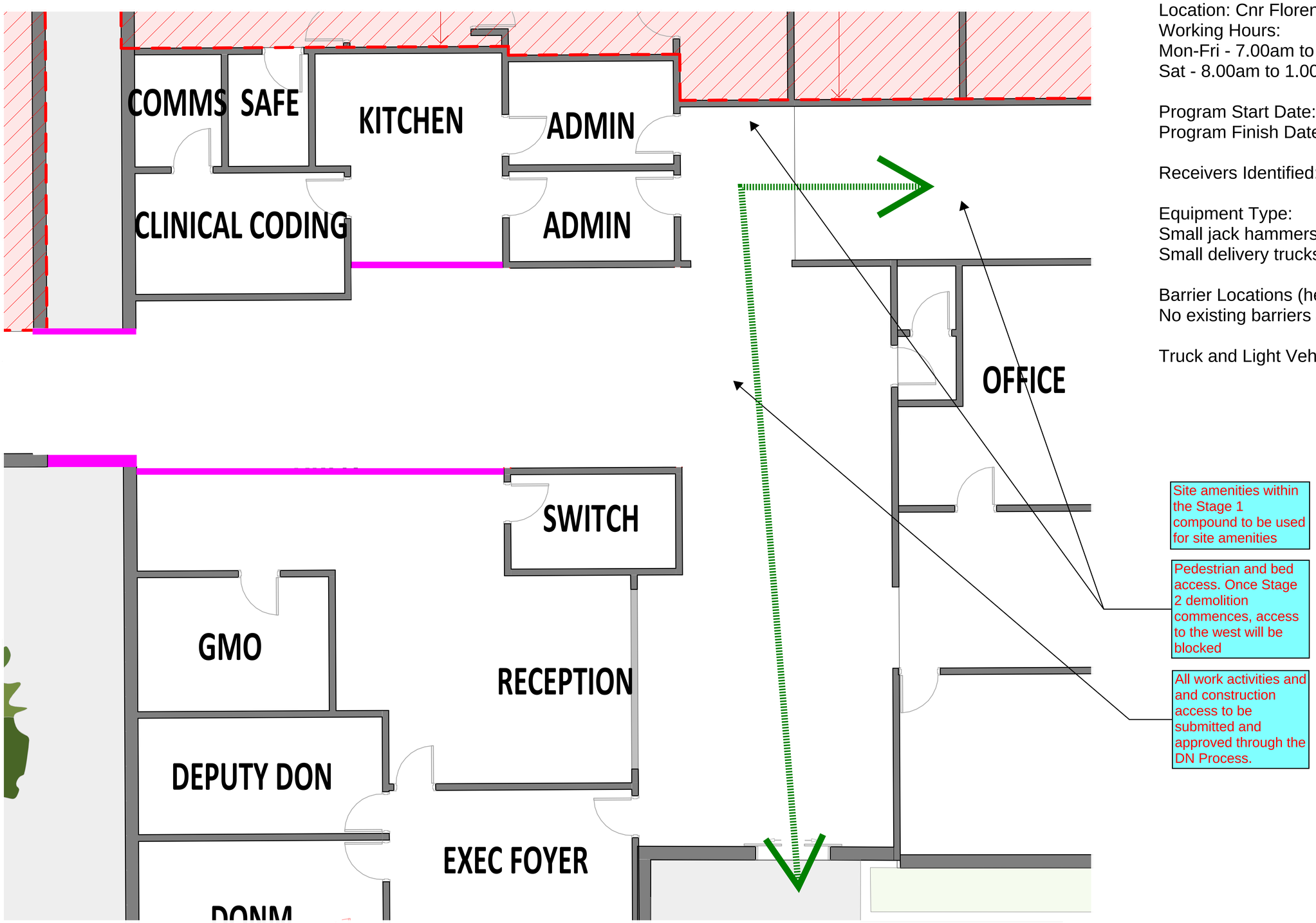
TRUE NORTH | PRINT KEY | KEY PLAN

PRINT IN COLOUR

SCALE: N.T.S | SIZE: A0

0 1 2 3 4 5m
SCALE 1:100 AT A0 SCALE 1:200 AT A2

PROJECT	Ryde Hospital Redevelopment
TITLE	Old Admin Corridor - Wall Construction
DRAWING No.	PRO: RHR – PHASE: – TYPE: – DISCIPLINE: – NUMBER: – REV: A



Location: Cnr Florence Ave & Denistone Rd
Working Hours:
Mon-Fri - 7.00am to 6.00pm
Sat - 8.00am to 1.00pm

Program Start Date:
Program Finish Date:

Receivers Identified: In Pink

Equipment Type:
Small jack hammers and hand tools
Small delivery trucks

Barrier Locations (height)
No existing barriers are in place.

Truck and Light Vehicle Movements (in & out)

Site amenities within the Stage 1 compound to be used for site amenities

Pedestrian and bed access. Once Stage 2 demolition commences, access to the west will be blocked

All work activities and and construction access to be submitted and approved through the DN Process.

10m

SUBCONTRACTOR	GENERAL CONTRACTOR	ARCHITECT	ENGINEERING	CL
	AW EDWARDS			

REV	DATE	DESCRIPTION	DRAWN	CHECKED
A	26/02/24	Site Establishment Plan	AM	

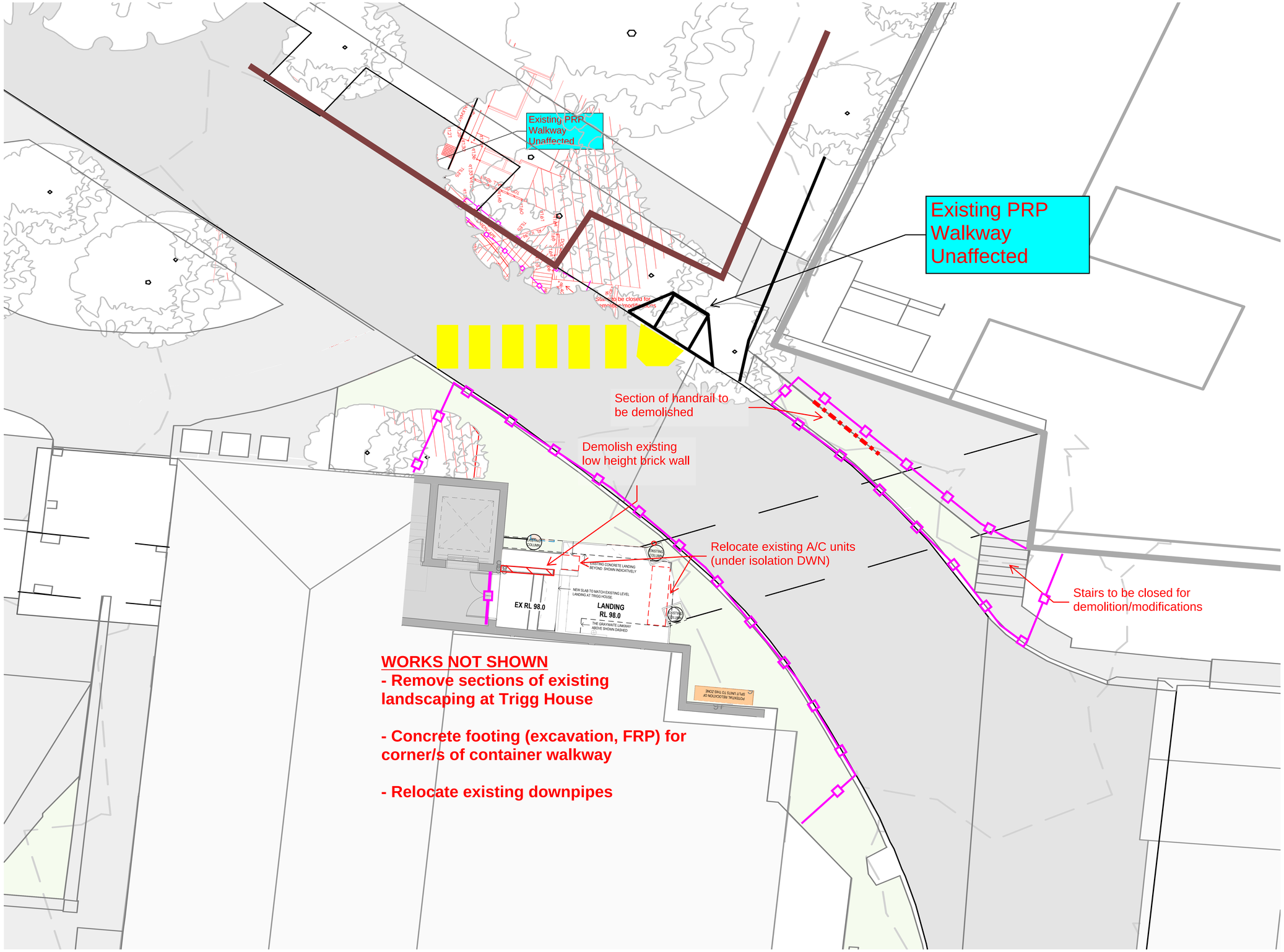
TRUE NORTH | PRINT KEY | KEY PLAN

PRINT IN COLOUR

SCALE: N.T.S (0 1 2 3 4 5m) SCALE 1:100 AT A0 SCALE 1:200 AT A2

SIZE: A0

PROJECT	Ryde Hospital Redevelopment
TITLE	Old Admin Corridor - Wall Construction
DRAWING No.	PRO: RHR – PHASE: – TYPE: – DISCIPLINE: – NUMBER: – REV: A



Stage 1 - Enabling/Demolition Works

SUBCONTRACTOR	GENERAL CONTRACTOR	ARCHITECT	ENGINEERING	CL
	AW EDWARDS			

REV	DATE	DESCRIPTION	DRAWN	CHECKED

TRUE NORTH | PRINT KEY | KEY PLAN

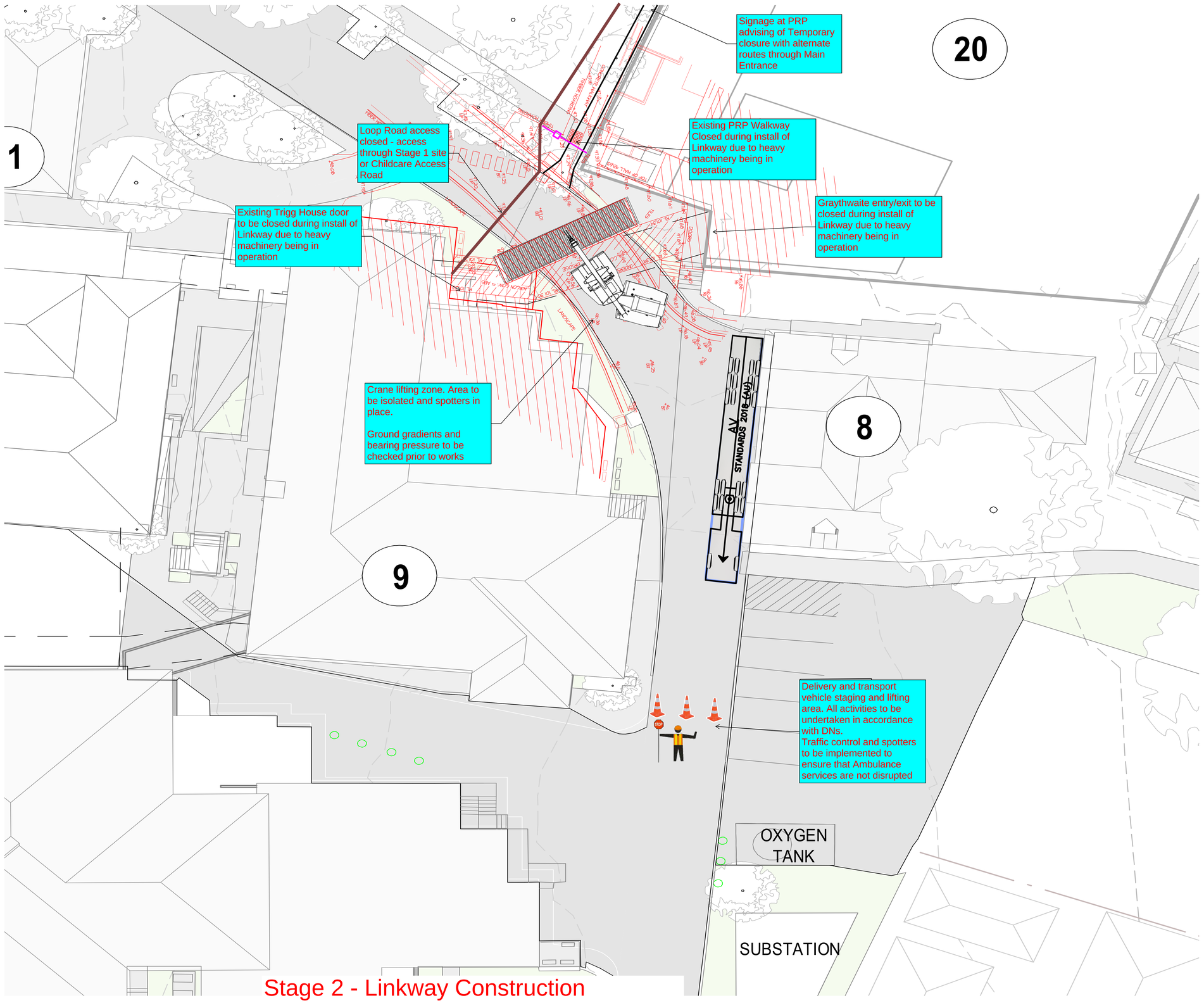
PRINT IN COLOUR

SCALE: N.T.S — SIZE: A0

0 1 2 3 4 5m

SCALE 1:100 AT A0 SCALE 1:200 AT A2

PROJECT	Ryde Hospital Redevelopment
TITLE	LINKWAY / LOADING DOCK - ENABLING WORKS (1/3)
DRAWING No.	PRO: RHR – PHASE: – TYPE: – DISCIPLINE: – NUMBER: – REV: A



Stage 2 - Linkway Construction

SUBCONTRACTOR

GENERAL CONTRACTOR

AW EDWARDS

ARCHITECT

ENGINEERING

CL

REV	DATE	DESCRIPTION	DRAWN	CHECKED

TRUE NORTH

PRINT KEY

PRINT IN COLOUR

KEY PLAN

SCALE: N.T.S

0 1 2 3 4 5m

SCALE 1:100 AT A0 SCALE 1:200 AT A2

SIZE: A0

PROJECT: Ryde Hospital Redevelopment

TITLE: LINKWAY / LOADING DOCK - LINKWAY CONSTRUCTION (2/3)

DRAWING No.

PRO	PHASE	TYPE	DISCIPLINE	NUMBER	REV
RHR	–	–	–	–	– A

Loop Road access closed - access through Stage 1 site or Childcare Access Road

New temporary Linkway between Trigg House and Graythwaite in use

Existing overhead walkway shown dashed

Modification works including A/C relocation, minor demolition and floor modifications complete

Indicative temporary Loading Dock and stairs. Steel structure with roofing over

1

9

20

8

P4

OXYGEN TANK

SUBSTATION

Stage 3 - Dock Construction

SUBCONTRACTOR	GENERAL CONTRACTOR
	AW EDWARDS

REV	DATE	DESCRIPTION	DRAWN	CHECKED

TRUE NORTH | PRINT KEY | KEY PLAN

PRINT IN COLOUR

SCALE: N.T.S

0 1 2 3 4 5m

SCALE 1:100 AT A0 SCALE 1:200 AT A2

SIZE: A0

PROJECT	Ryde Hospital Redevelopment
TITLE	LINKWAY / LOADING DOCK - DOCK CONSTRUCTION (3/3)
DRAWING No.	PRO: RHR – PHASE: – TYPE: – DISCIPLINE: – NUMBER: – REV: A

APPENDIX C - ABORIGINAL PARTICIPATION PLAN

FINAL VERSION TO BE PROVIDED UPON CONTRACT AWARD

APPENDIX D - WORK HEALTH AND SAFETY PLAN

FINAL VERSION TO BE PROVIDED UPON CONTRACT AWARD

APPENDIX E - ENVIRONMENTAL MANAGEMENT PLAN

FINAL VERSION TO BE PROVIDED UPON CONTRACT AWARD

APPENDIX F - TRAFFIC AND PEDESTRIAN MANAGEMENT PLAN

WORKING DOCUMENT - FINAL VERSION TO BE PROVIDED UPON CONTRACT AWARD

Stantec Australia Pty Ltd
Level 9, 203 Pacific Highway
St Leonards NSW 2065
Tel: +61 2 8484 7000
ABN 17 007 820 322 www.stantec.com/au

27 March 2024

Enquiries: Karen McNatty
Project No: 300305362

AW Edwards
Level 12/558 Pacific Hwy St Leonards NSW 2065
ST LEONARDS NSW 2065

Attention: **Amy Schmahmann**

Dear Amy

RE: **Ryde Hospital Redevelopment Temporary Works**
Review of Environmental Factors Traffic and Parking Statement

Health Infrastructure is proposing a series of temporary works at Ryde Hospital at 1 Denistone Road, Denistone.

The purpose of the temporary works is to ensure that the ongoing operation of the hospital is not impacted during construction of the Ryde Hospital Redevelopment.

Specifically, the proposed temporary works will comprise:

- Construction of temporary intensive and critical care building.
- Provision of a temporary loading dock located off Denistone Avenue.
- Alterations to the Graythwaite Building rooftop and basement to facilitate new office space, kitchens and storage areas.
- Establishment of two construction zones to accommodate office space, workshops and storage.
- Construction of a pedestrian ramp that connects between Trigg House and the Graythwaite Building.
- Connection and augmentation of in-ground services and utilities, as required.

Health Infrastructure have engaged Stantec to prepare a Traffic and Parking Statement to support the Review of Environmental Factors (REF) for the proposed temporary works.

On the above basis, this letter addresses the transport implications of the temporary works, set down through the following sections:

- Background and Proposal
- Existing Conditions
- Loading Appraisal
- Parking Appraisal
- Traffic Appraisal
- Design Review
- Summary.

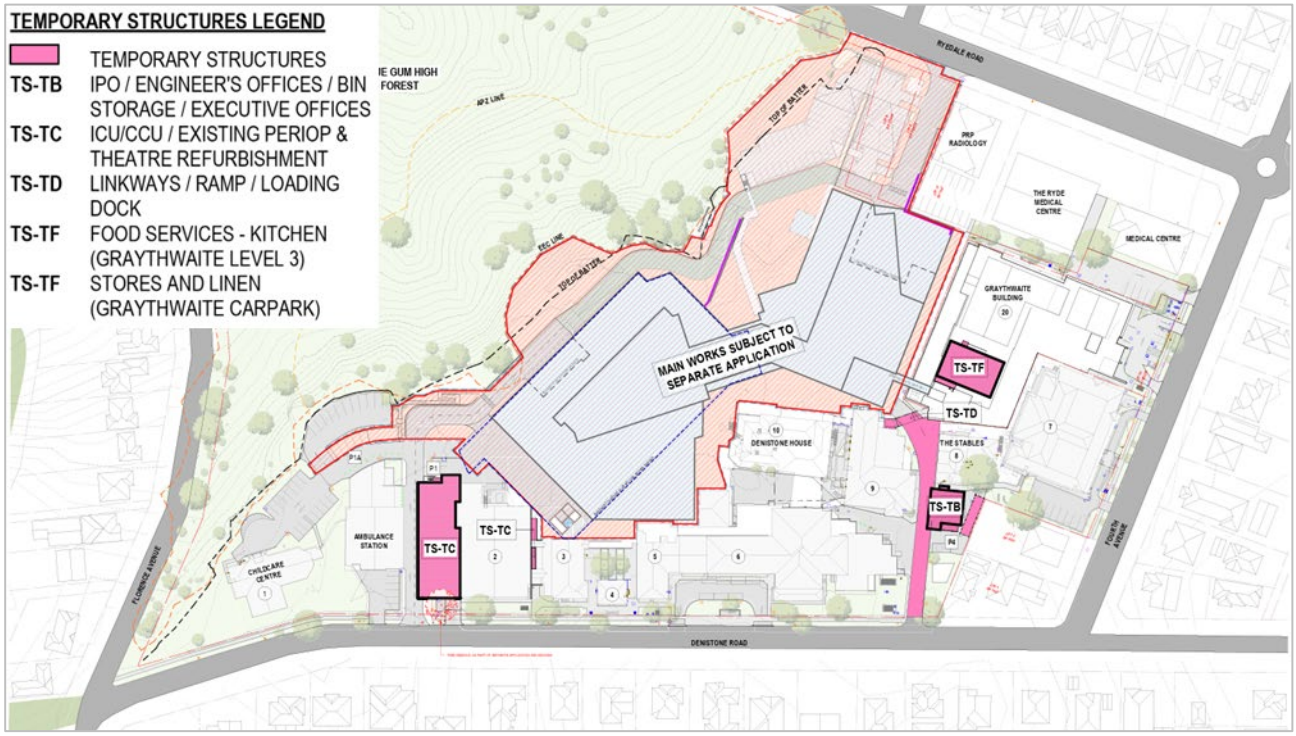
1. Background and Proposal

In 2019 the NSW Government announced a $479 million dollar investment to redevelop Ryde Hospital to provide modern and enhanced emergency, critical care, inpatient, community and ambulatory care services. A State Significant Development Application (SSD-58210458) was submitted on 14 August 2023 for the project. Stantec prepared a Traffic and Parking Report as part of the submission.

During construction of the Ryde Hospital redevelopment, the hospital has to remain open to service needs of the community. With that in mind and to facilitate construction works, certain facilities need to be temporarily relocated on site and temporary facilities, including construction zones, need to be prepared as detailed in the section above.

The temporary works site areas are shown in Figure 1.1.

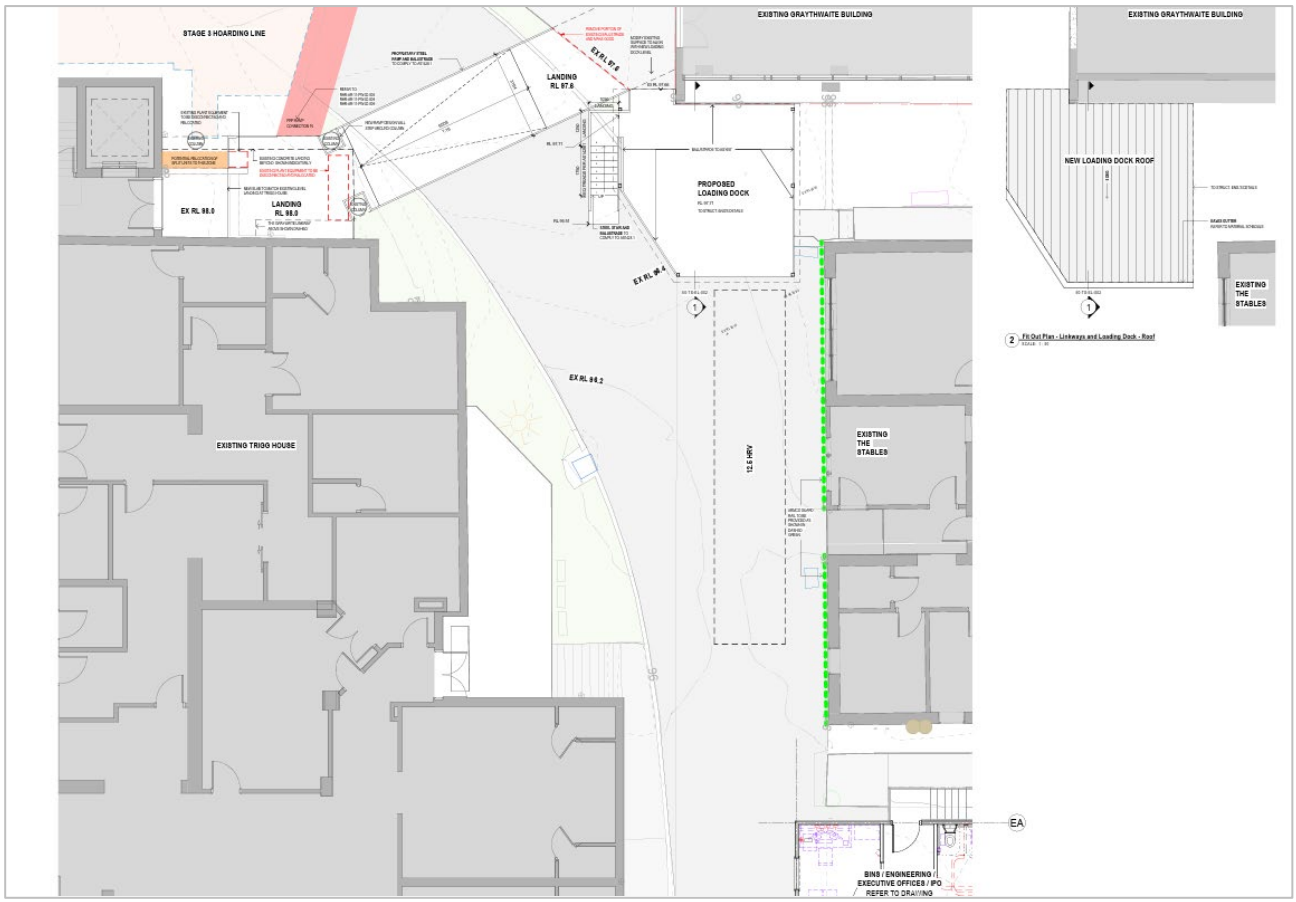
Figure 1.1 – Temporary Works Site Areas



Source: Temporary Structures – Proposed Site Plan, Drawing No. RHR-AR-DWG-10-TS-00-001 Revision 4, STH, 20 March 2024

The key temporary works area as discussed in the context of this report are shown in Figure 1.2 to Figure 1.4.

Figure 1.2 – Temporary Loading Dock (TS-TD in Figure 1.1)

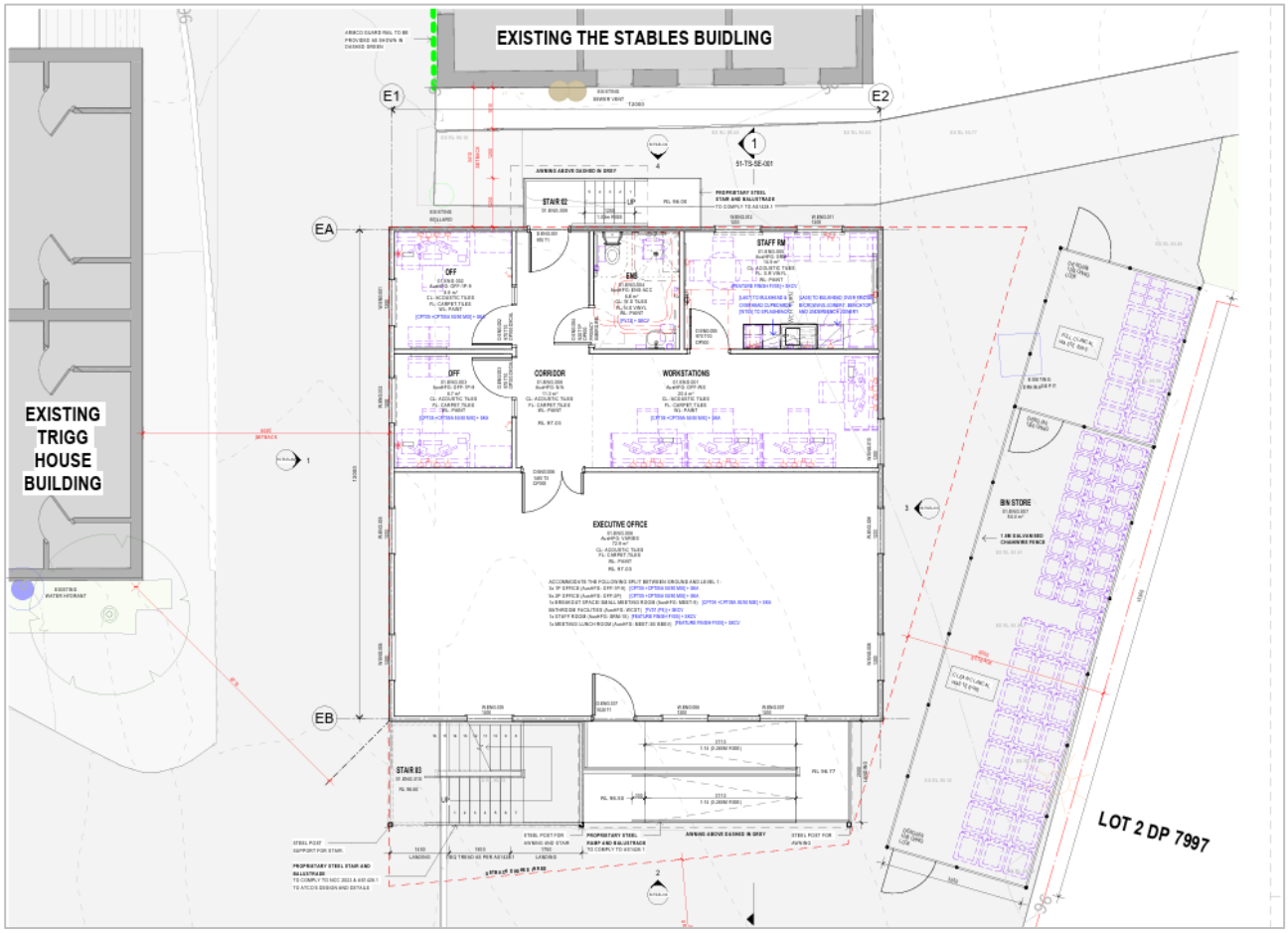


Source: Fit Out Plan – Linkway / Loading Dock, Drawing No. RHR-AR-DWG-61-TS-TD-001 Revision 4, STH, 20 March 2024

Figure 1.3 – Temporary modification to Graythwaite Car Park

Source: Fit Out Plan – Stores and Linen, Drawing No. RHR-AR-DWG-61-TS-TF-001 Revision 3, STH, 20 March 2024

Figure 1.4 – Temporary building (TS-TB in Figure 1.1)



Source: Fit Out Plan – Bins / Engineering / Executive Offices/ IPO, Drawing No. RHR-AR-DWG-61-TS-TB-001 Revision 4, STH, 20 March 2024

2. Existing Conditions

2.1 Site Overview

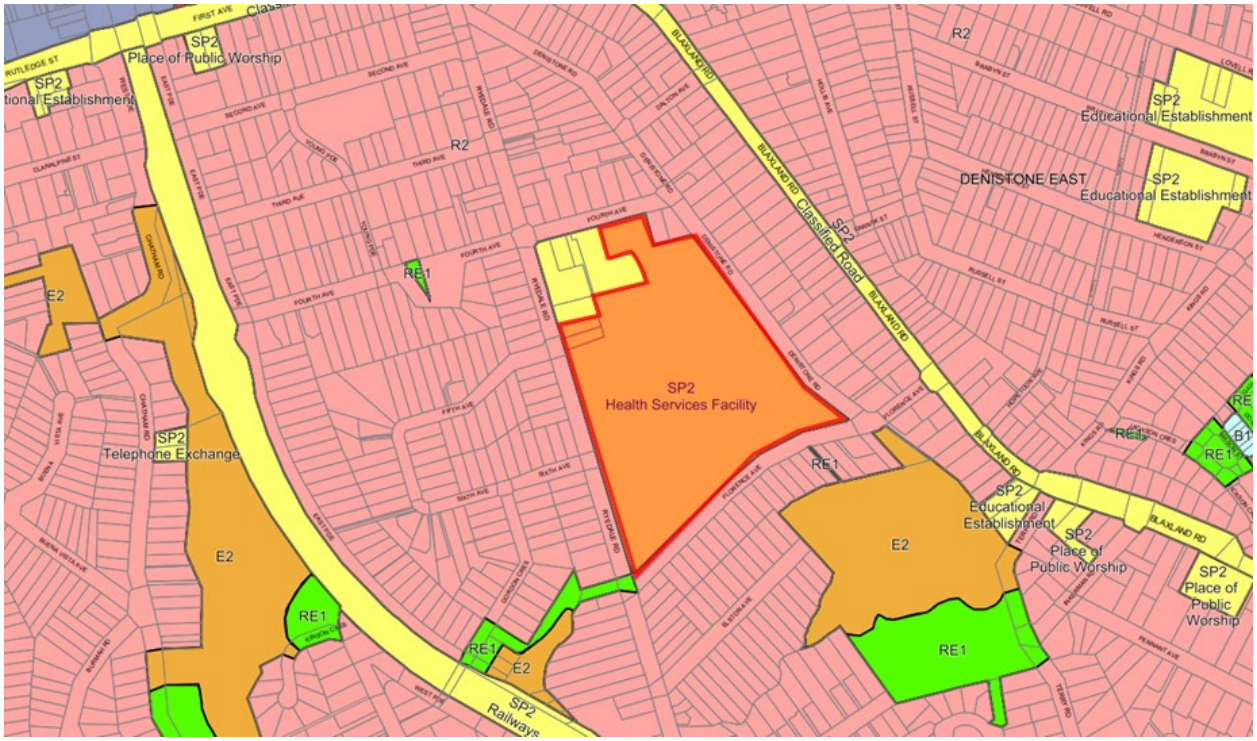
The existing Ryde Hospital is located in Denistone and comprises Lot 10 DP1183279, Lot 11 DP1183279, Lot A DP323458 and Lot B DP323458. The subject site is bounded by Denistone Road, Fourth Avenue, Ryedale Road and Florence Avenue, and occupies approximately 72,333 square metres. Blue Gum High Forest, located in the sites southwest corner, occupies approximately 56 per cent of the existing site area. The subject site currently has a land use classification of SP2 – Infrastructure Health Services Facilities and is primarily surrounded by low density residential dwellings.

The location of Ryde Hospital and its surrounding environs is shown in Figure 2.1 and land zoning map is shown in Figure 2.2.

Figure 2.1 – Subject site and surrounding environs

Base image source: https://www.street-directory.com.au/, accessed 8 June 2021

Figure 2.2 – Land zoning map



Source: City of Ryde LEP 2014, Land Zoning Map – Sheet LZN_002

2.2 Road Network

Roads are classified according to the functions they perform. The main purpose of defining a road's functional class is to provide a basis for establishing the policies which guide the management of the road according to their intended service or qualities.

In terms of functional road classification, State roads are strategically important as they form the primary network used for the movement of people and goods between regions, and throughout the State. Transport for NSW is responsible for funding, prioritising and carrying out works on State roads. State roads generally include roads classified as freeways,

state highways, and main roads under the Roads Act 1993, and the regulation to manage the road system is stated in the Australian Road Rules.

Transport for NSW defines four levels in a typical functional road hierarchy, ranking from high mobility and low accessibility, to high accessibility and low mobility. These road classes are:

Arterial Roads – Controlled by Transport for NSW, typically no limit in flow and designed to carry vehicles long distance between regional centres.

Sub-Arterial Roads – Managed by either Council or Transport for NSW under a joint agreement. Typically, their operating capacity ranges between 10,000 and 20,000 vehicles per day, and their aim is to carry through traffic between specific areas in a sub region or provide connectivity from arterial road routes (regional links).

Collector Roads – Provide connectivity between local sites and the sub-arterial road network, and typically carry between 2,000 and 10,000 vehicles per day.

Local Roads – Provide direct access to properties and the collector road system and typically carry between 500 and 4,000 vehicles per day.

Key roads surrounding the site are discussed below.

Denistone Road

Denistone Road functions as a collector road, aligned in a north south direction bounding the eastern side of the hospital. Near the site, Denistone Road is around 12 metres wide and configured with one travel lane in each direction separated by a 1.5-metre-wide painted median. Denistone Road provides primary access to Ryde Hospital, including main entrance/ emergency pick up and drop off area, public and staff on-site parking and emergency services and logistics access.

Parking is generally unrestricted on both sides of the road, with the exception of restrictions along the site frontage including 2P, loading zone and Visiting Medical Officer (VMO) parking. Denistone Road has a posted speed limit of 50 kilometres per hour, reduced to a 40 kilometres per hour “hospital zone” between Florence Avenue and Fourth Avenue.

Ryedale Road

Ryedale Road functions as a collector road, aligned in a north south direction bounding the western side of the hospital. The road provides access between West Ryde and Eastwood and is around 10.5 metres wide, configured with one travel lane in each direction separated by double dividing lines. Parking is generally unrestricted on both sides of the road, with the exception of two spaces subject to 3P restrictions and two spaces subject to five-minute parking restrictions on the eastern side of the road north of Fifth Avenue. Ryedale Road has a posted speed limit of 50 kilometres per hour.

Ryedale Road has a steep decline south of Fifth Avenue in the southbound direction, with reduced sight distance at the crest of the hill near Fifth Avenue.

Blaxland Road

Blaxland Road is a classified State Road functioning as an arterial road and aligned in a general north south direction. It provides two travel lanes in each direction and is a key road used to access Ryde Hospital providing connection to the M2 Motorway in the north and Lane Cove Road in the south. Blaxland Road has a posted speed limit of 60 kilometres per hour.

Fourth Avenue

Fourth Avenue functions as a local road aligned in an east west direction with one travel lane in each direction. Parking is unrestricted on the northern side and subject to 3P restrictions along the hospital frontage on the southern side. Fourth Avenue has a posted speed limit of 50 kilometres per hour.

Florence Avenue

Florence Avenue functions as a local road aligned in an east west direction with one travel lane in each direction. The road intersects with Blaxland Road in the east and Ryedale Road in the west. Parking is unrestricted on both sides of the road. Florence Avenue has a posted speed limit of 50 kilometres per hour.

First Avenue

First Avenue is a classified State Road functioning as an arterial road aligned in an east west direction. It has two travel lanes in each direction. The road travels through Eastwood town centre intersecting with Blaxland Road to the east and transitioning into Rutledge Street to the west. First Avenue has a posted speed limit of 60 kilometres per hour.

2.3 Site Access and On-Site Car Parking

Access to Ryde Hospital is provided from Denistone Road, Fourth Avenue and Ryedale Road. The main visitor, staff parking, logistics and emergency access are via various access points on Denistone Road and the P5 staff only car park on Ryedale Road.

The Hospital currently includes five main car parking areas separated into P1, P1A, P4, P5 and P6 car parks. In combination, they service most staff and visitor parking demand. Additional parking is provided along the internal road and adjacent to existing buildings with use of such limited parking generally restricted to staff, visiting medical officers (VMOs) and emergency vehicles. The main car parking areas and site access arrangements are illustrated in Figure *2.3*.

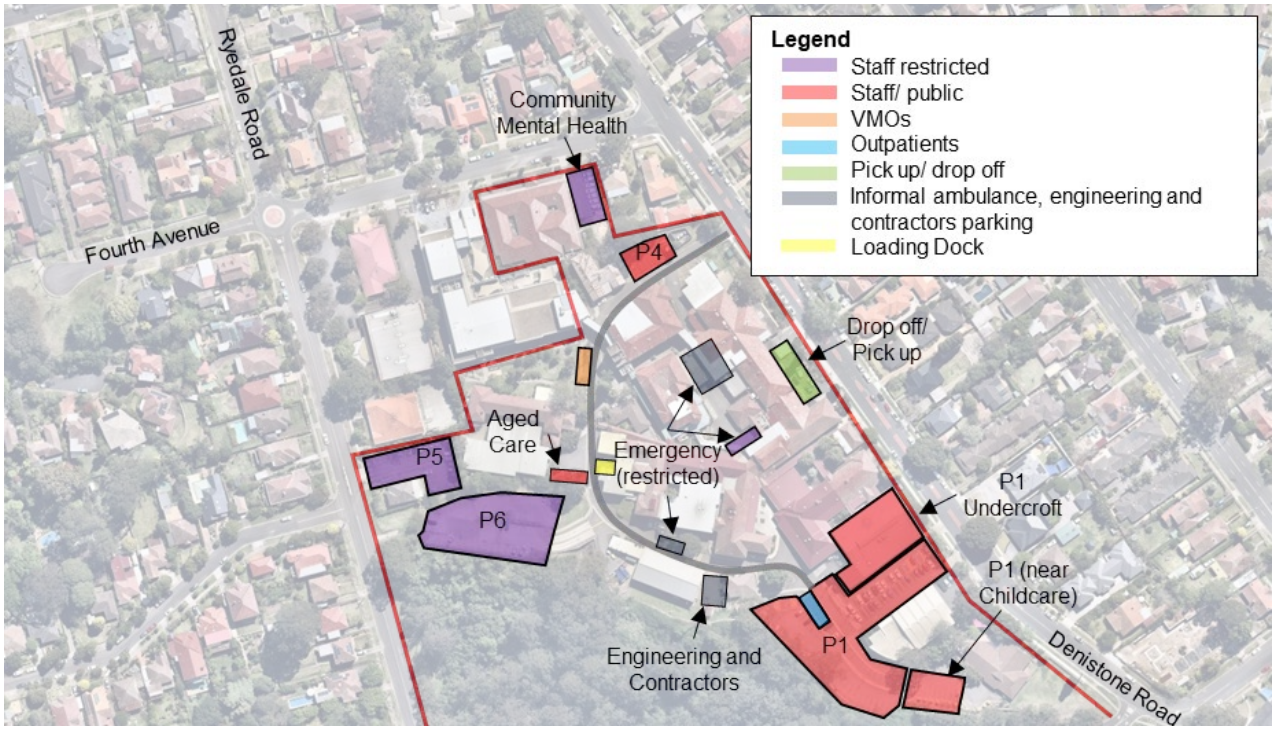
Figure 2.3 – Site access arrangements and main existing car parking areas

Base image source: Silver Thomas Hanley Architects, drawing no. RHR-AR-DWG-02-PW-00-002, rev. E, dated 24 March 2023

2.4 Car Parking Supply

Stantec compiled an inventory of all on-site car parking in October 2021. The existing Ryde Hospital car parking areas are shown indicatively in Figure 2.4.

Figure 2.4 – Ryde Hospital parking facilities



Base image source: Nearmap

Ryde Hospital

Overall, the existing Ryde Hospital accommodates 271 parking spaces including the Community Mental Health Services building. Majority of parking spaces (60 per cent) are unallocated, hence can be used by either staff or public. There are currently 16 parking spaces near the existing childcare centre, excluding two staff only spaces, that were observed to be used by staff/ public visiting the hospital as there is no existing signage allocating these spaces to the centre. As such, these spaces are assumed to be part of the hospitals existing supply. The existing on-site parking supply is summarised in Table 2.1. This excludes any informal parking areas.

Table 2.1 – Existing (October 2021) Ryde Hospital parking supply

Area	Description	Staff/ Fleet	Staff/ Public	Accessible	VMOs	Outpatients	Other[1]	Total Supply
P1	General	-	82	8	-	6	-	96
	Undercroft	-	31	-	-	-	-	31
	Near Child Care[2]	-	16	-	-	-	-	16
P4		-	13	1	-	-	-	14
P5		28[3]	-	-	-	-	-	28
P6[4]		53	-	-	-	-	-	53
Community Mental Health		8[5]	-	-	-	-	-	8
Internal Road	Aged Care	-	3	1	-	-	-	4
	General	5	-	-	2	-	9	11
Emergency	Restricted Access	3	-	-	-	-	1[6]	4
Main Entry/ ED	Pick up/ Drop off	-	-	3	-	-	3	6
	Total	**84[3]**	**145**	**13**	**2**	**6**	**13**	**271**

[1] Includes service vehicles, patient transfer space, three drop off and pick up bays (excluding accessible) and restricted parking bays (chaplain parking, engineering etc.)
[2] Excludes dedicated child care staff parking spaces/ drop off and pick up area
[3] Includes nine fleet parking spaces, two family care centre (camelia cottage) spaces and one restricted space
[4] A total of 26 spaces in P6 are restricted during the AM period in P6 to provide on-site parking for staff working afternoon/ evening shifts. Therefore, during the AM period only 58 spaces are available to staff
[5] Includes eight fleet parking spaces
[6] One patient transfer parking bay is designated, with the remaining ambulances observed to informally park in a restricted parking area with capacity for up to four ambulances.

The review indicates that 92 staff only spaces, 145 general spaces, 13 accessible, six outpatient and two VMO spaces are provided on-site. A further 13 spaces are allocated to service vehicles, ambulance parking, drop off and pick up activity (excluding accessible) and restricted parking (chaplain parking etc.).

Ambulance Parking

The hospital is currently supported by an informal[1] ambulance/ emergency services parking area, shown in Figure 2.4. One patient transfer parking bay is designated, with the remaining ambulances observed to informally park in a restricted parking area with capacity for up to four ambulances as shown in Figure 2.5. Informal[1] ambulance parking is also provided along an ambulance only loop road providing accessing to the Birthing Unit accessed along the internal road as shown in Figure 2.6.

Figure 2.5 – Informal ambulance parking in restricted parking area

Figure 2.6 – Informal ambulance parking along internal road (birthing unit access)

[1] No line marked parking bays

Child Care

A child care is currently provided at the south-eastern corner of the hospital accessed through P1 from Denistone Road, shown in Figure 2.4. The child care has one staff parking space and at adjacent drop off/ pick up zone as shown in Figure 2.7. These spaces have been excluded from the Ryde Hospital parking inventory.

Figure 2.7 – Child Care parking (excluded from Ryde Hospital parking supply)

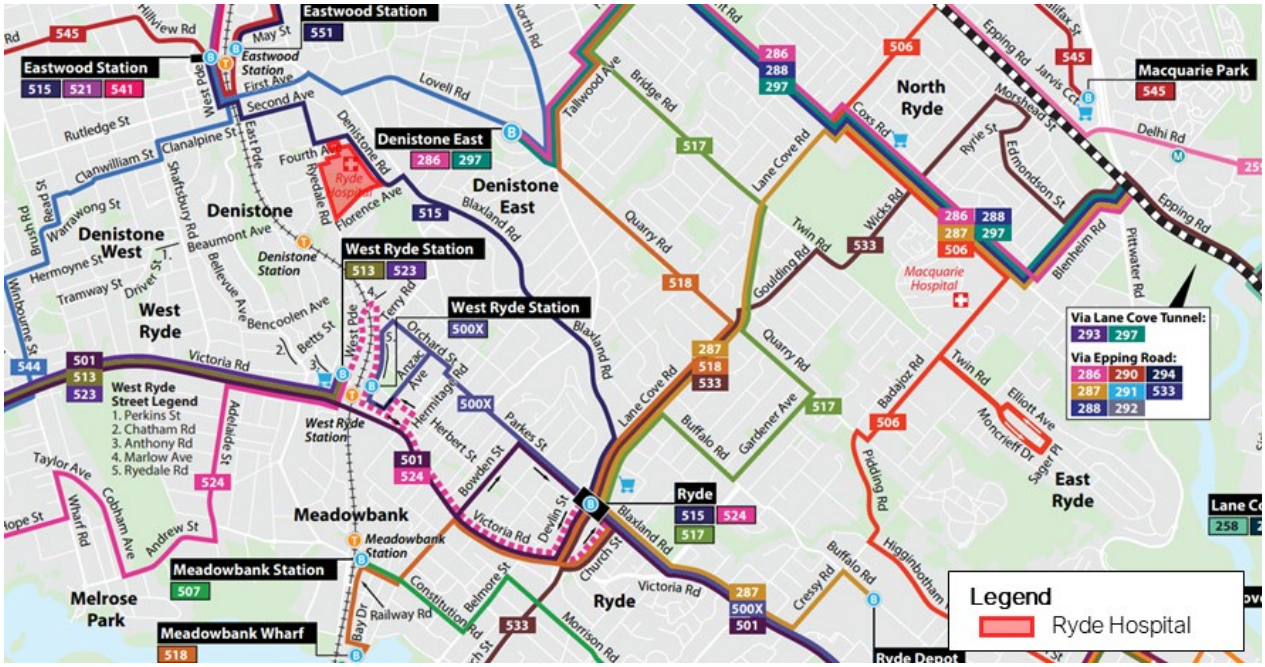
2.5 Public Transport

A bus stop is provided at the main hospital entrance on Denistone Road, serviced by route 515 travelling from Eastwood Station to Top Ryde City Shopping Centre operating at a 15 minute frequency during the peaks, and 60 minutes during off-peak periods.

Denistone railway station and Eastwood railway station are respectively located around 500 metres (seven-minute walk) and 1.1 kilometres (13 minute walk) from the site. While Denistone railway station is closer, the route to Eastwood involves significantly less grades and the station is co-located with retail and food and beverage outlets hence both stations are likely used by existing staff. Both stations are on the T9 Northern Line, connecting to northern and central Sydney as well as Sydney CBD. Services generally operate at a frequency of 15 minutes.

The surrounding public transport network is shown in Figure 2.8.

Figure 2.8 – Surrounding public transport network



Base image source: R7NetworkMap260422.indd (transportnsw.info), accessed March 2023

The “Shop Ryder” is a free community bus service provided by the City of Ryde Council. It operates from Wednesday to Saturday between 8:30am to 2:00pm at a frequency or 60 minutes. The bus stops on Denistone Road at the existing bus stop located near the hospital entrance and travels through Gladesville, Meadowbank and West Ryde. Stops include Top Ryde City Shopping Centre, Meadowbank Station, West Ryde Station and Eastwood Station.

2.6 Active Transport

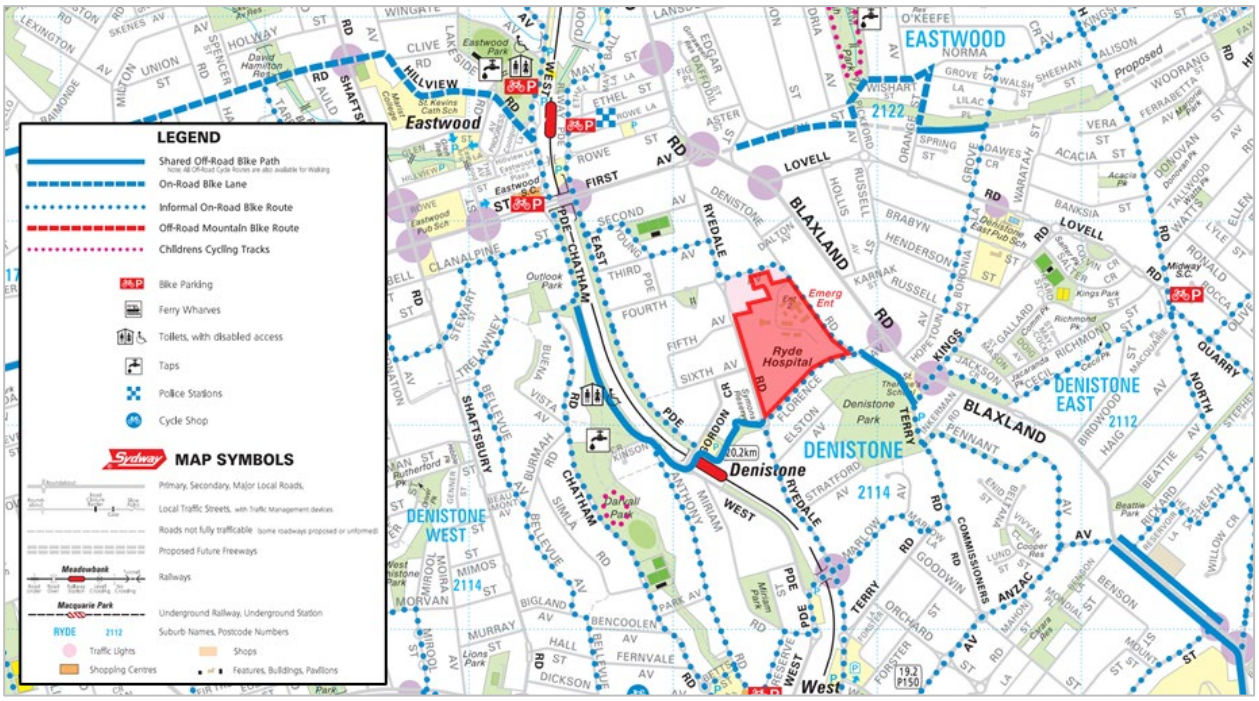
Pedestrian footpaths are generally provided on both sides of surrounding roads. Key routes include towards Denistone railway station, notwithstanding the steep gradient to/ from the hospital, and Eastwood railway station and surrounding retail precinct. Pedestrian crossings are provided on the eastern, northern and southern legs of the First Avenue/ Rutledge Street signalised intersection, facilitating pedestrian movements to/ from the station.

On road cycle routes are provided along Florence Avenue, Fourth Avenue and Ryedale Road. These routes provide connection to nearby stations including Eastwood, West Ryde and Denistone as well as surrounding suburbs.

Bicycle parking racks are provided on site located in P1 and P4. Three shower facilities are also provided on-site located in Denistone House and the staff accommodation/ dining building.

The surrounding cycle network is shown in Figure 2.9.

Figure 2.9 – Surrounding cycle network



Base image source: City of Ryde Bike Map, accessed March 2023

2.7 Loading and Servicing Areas

The hospital is currently supported by a loading dock along its internal road near car park 6, as shown in Figure 2.10 and Figure 2.11.

Figure 2.10 – Internal road, looking towards loading dock on right

Figure 2.11 – Existing loading dock

The loading dock is able to accommodate two vehicles that typically include vehicles up to 8.8 metre Medium Rigid Vehicles. Notwithstanding, vehicles up to 10 metres have been observed to use the dock.

3. Loading Appraisal

Overview

The main works site as shown in Figure 1.1 (subject to a separate application), will cut off the existing internal hospital road that circulates the site just north of the existing loading dock. As such, the loading dock will be relocated to near car park 4 as shown in Figure 1.1 and Figure 1.2. The temporary loading dock has been designed to accommodate the required volume of deliveries required by the existing hospital, as well as to ensure effective access to the adjacent ambulance parking area is maintained at all times as discussed below.

Adequacy of Dock

Ryde currently has around 52 scheduled deliveries per week, comprising regular groups including various food deliveries, medical consumables and linen deliveries. These scheduled deliveries are typically completed by larger vehicles, including around 12 metre long Heavy Rigid Vehicles for linen. The hospital is otherwise serviced by unscheduled deliveries typically completed by smaller vehicles (vans/ cars) for pathology, pharmacy, SSD, mail. parcels, among others.

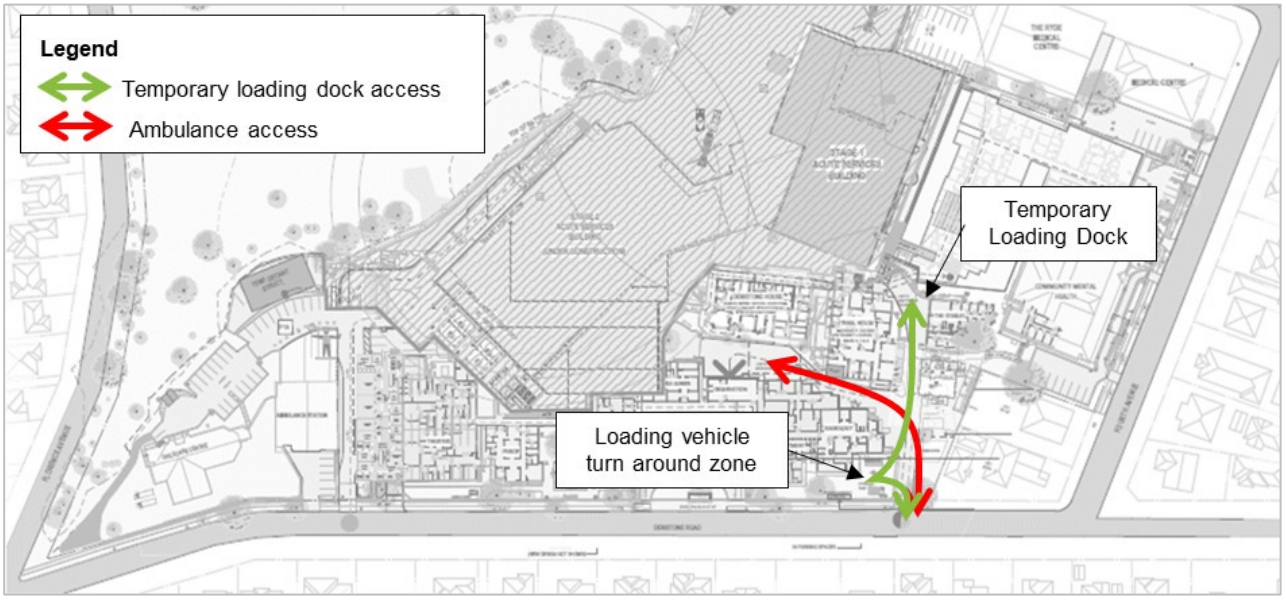
NSLHD has prepared a schedule for deliveries to the temporary dock according to dock availability. The current schedule allocates around eight to 12 deliveries per day between 5:00am to 6:00pm. Each delivery is allocated around a 20 minute to one hour window, with the dock expected to be otherwise empty to accommodate any unscheduled/ ad-hoc deliveries. As such, the dock is expected to be empty and available for unscheduled deliveries for at least five hours a day. Any vehicle that arrives when the dock is in use will be able to store in the turnaround bay to ensure access by ambulances is never interrupted. NSLHD will be responsible to ensure all service vehicle drivers arriving to site are aware of and understand the loading dock management strategy and operate within its requirements.

Dock Access

To ensure loading vehicles travel forward in and forward out when accessing site, a turnaround area is provided on-site adjacent to Denistone Road as shown in Figure 3.1. This area is subject to a separate works approval application and is not under assessment as part of this REF. All vehicles would enter in a forward direction, turn around and reverse back to the dock. The provision of this separate turning area is critical to ensure that loading vehicle movements do not impact access by emergency vehicles as it provides vehicles opportunities to store on site outside of the travel path of incoming ambulances as required.

To ensure appropriate access, any vehicles greater than an 8.8m Medium Rigid Vehicles will be required to arrive from the north and turn right into site. A swept path assessment of the arrangement has been completed and provided in Appendix B, indicating appropriate access for vehicles up to 12.5m Heavy Rigid Vehicles.

Figure 3.1 – Temporary loading dock access



Base Image Source: AW Edwards, provided February 2024

4. Parking Appraisal

The temporary works will result in the temporary loss of around 56 parking spaces. This includes:

- Removal of 14 parking spaces in car park 4
- Removal of around 21 parking spaces in Graythwaite Basement car park
- Removal of around 21 parking spaces in car park 1, following construction of the column grid to support the ICU/CCU.

The Church of Latter Day Saints located at 412-420 Blaxland Road, around 550 metres (seven minute walk) south-east of the hospital, has agreed for the Hospital to use their car park to offset the temporary loss of parking. The Church has agreed to allow NSLHD staff to use of the car park during construction.

The Church has a parking supply for around 60 spaces as shown in Figure 4.1. The car park would be exclusively used by staff to ensure parking spaces on site are reserved for public use. There are appropriate at-grade pedestrian connections between the Church and hospital, including footpaths and alternate routes either through Denistone Park or along Blaxland Road as desired, with signalised crossing points at each major intersection along Blaxland Road. Staff could also catch the 515-bus service between the Church and hospital, noting a bus stop is available directly in front of the Church and connects staff to the main entrance along Denistone Road. The bus operates every 15 minutes during peak periods, and 30 minutes off peak, and the travel time between the car park and hospital is approximately three minutes.

A communication plan will be developed by NSLHD during construction that directs staff to park at the off-site car park. This plan would communicate the availability of a direct bus connection and therefore advertise the convenience of this parking solution for staff.

Figure 4.1 – Potential off-site parking area during construction

Base Image Source: Nearmap

Given loss of around 56 spaces, provision of 60 spaces off-site offset this loss. As part of this strategy, any parking spaces that remain on site will be prioritized for use by public.

5. Traffic Appraisal

The Temporary Works will not result in a change in traffic generation of the Ryde Hospital. Further, it will result in a minor redistribution of vehicular activity internal to the precinct, with only minimal, if any, change expected external to the site. As such, the Temporary Works are not expected to result in any change to traffic conditions around the site and could not be expected to compromise the safety or function of the surrounding road network.

6. Design Review

Any modifications to existing parking areas, namely including within car park 1 and Graythwaite car park, will be designed to meet the requirements outlined in the following documents:

- Australian Standard for Off Street Car Parking (AS/NZS2890.1:2004 and AS/NZS2890.6:2009)
- Sustainable Hospital Car Park Investment Program (SHCPIP) Volume 3, Hospital Car Park Design Guidelines V1.2, Health Infrastructure, May 2019.

It is noted that the designs are continuing to be developed, however key considerations include:

- need to maintain a 5.8 metre wide aisle with 0.3 metre additional width to any bollard associated with the temporary works area in the Graythwaite car park, in accordance with AS/NZS2890.1:2004.
- need to ensure any column associated with the ICU/CCU in car park 1 is located outside of the car parking envelope as detailed in Figure 5.2 of AS/NZS2890.1:2004
- need to ensure minimum height clearance of 2.0 metres is provided, consistent with the existing height clearance requirements.

7. Construction Impact

The preparation of a Construction Traffic Management Plan (CTMP) will be undertaken by the contractor, however in order to understand the potential construction impacts, Stantec has prepared a preliminary CTMP contained in Appendix B.

8. Summary

On the above basis, the proposed temporary works are expected to have a minimal impact to the existing parking and traffic conditions within Ryde Hospital nor on the surrounding road network.

Further, NSLHD will be responsible to ensure all service vehicle drivers arriving to site are aware of and understand the loading dock management strategy and operate within its requirements. A communication plan will also be developed by NSLHD during construction that directs staff to park at the off-site car park, and prioritises any on-site parking for use by public.

I trust this is satisfactory; should you have any questions, please do not hesitate to contact me directly.

Yours sincerely

Stantec Australia Pty Ltd

Karen McNatty
Senior Principal - Transport

Encl.
Appendix A – Swept Path Assessment
Appendix B – Preliminary Construction Traffic Management Plan

Appendix A. Swept Path Assessment

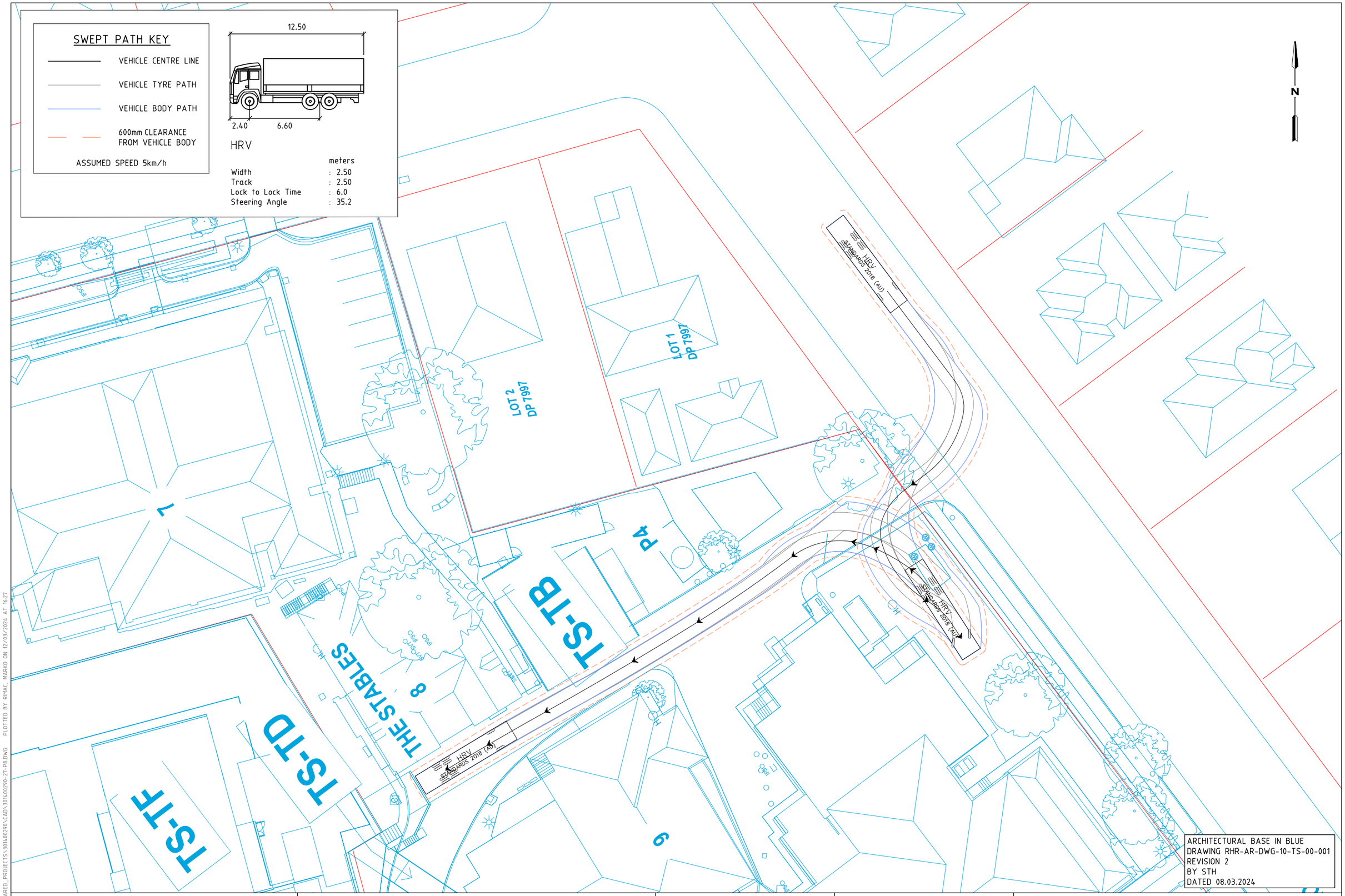
SWEPT PATH KEY

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 600mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 5km/h

HRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 35.2



ARCHITECTURAL BASE IN BLUE
DRAWING RHR-AR-DWG-10-TS-00-001
REVISION 2
BY STH
DATED 08.03.2024

Stantec

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY
SUBJECT TO CHANGE WITHOUT NOTIFICATION

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DESIGNED M.RIMAC	DESIGN CHECK I.BISSAKER
APPROVED BY K.MCNATTY	DATE ISSUED 12 MARCH 2024

SCALE A3 0 2 4 8 1:400

CAD FILE NO. 301400290-27-P8.DWG

RYDE HOSPITAL REDEVELOPMENT
TEMPORARY LOADING BAY

VEHICLE SWEPT PATH ASSESSMENT

DRAWING NO. 301400290-27-01 SHEET 01 OF 01 ISSUE P8

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Appendix B. Preliminary Construction Traffic Management Plan

Ryde Hospital Redevelopment

Temporary Works – Preliminary Construction Traffic Management Plan

Prepared for: A W Edwards Pty Ltd

Ref: 300304854 | Date: 27 March 2024

Revision

Revision	Date	Comment	Prepared By	Reviewed By	Approved By
A	27 March 2024	Final	Connor Hoang & Ingrid Bissaker	Ingrid Bissaker	Karen McNatty

Karen McNatty

For and on behalf of

Stantec Australia Pty Ltd

L9, The Forum, 203 Pacific Highway, St Leonards NSW 2065

Acknowledgment of Country

In the spirit of reconciliation, Stantec acknowledges the Traditional Custodians of country throughout Australia and their connections to land, sea and community. We pay our respect to their Elders past and present, and extend that respect to all Aboriginal and Torres Strait Islander peoples.

Limitations

CONTENTS

TEMPORARY WORKS – PRELIMINARY CONSTRUCTION TRAFFIC MANAGEMENT PLAN

Ryde Hospital Redevelopment

1. Introduction

1.1 Background

A W Edwards has been commissioned to carry out Temporary Works at Ryde Hospital to ensure that the ongoing operation of the hospital is not impacted during construction of the Ryde Hospital Redevelopment. Stantec has prepared this preliminary Construction Traffic Management Plan (CTMP) on behalf of A W Edwards as part of the Temporary Works package to support the Review of Environmental Factors.

In this regard, the overarching principles of traffic management during the construction activity have been considered, including:

- providing an appropriate and convenient environment for pedestrians
- minimising the impact on pedestrian and cyclist movements
- maintaining appropriate public transport access
- minimising the loss of parking
- maintaining access to/ from adjacent buildings
- restricting construction vehicle movements to designated routes to/ from the site
- managing and control construction vehicle activity near the site
- carrying out construction activity in accordance with Council's approved hours of works.

This preliminary CTMP has been prepared by qualified transport consultants who hold the SafeWork NSW Traffic Control Work Training Card. Details of the accredited consultants are provided below:

- Ingrid Bissaker – Authorisation No. TCT0029970.

1.2 Purpose of this Report

This report examines the transport related impacts associated with the Ryde Hospital temporary works construction on the surrounding road network. This includes vehicles, cyclists and pedestrians and details the mitigation measures necessary to address specific construction related impacts. It aims to maintain the safety of all workers and road users in the vicinity of the construction site, with the following objectives:

- identify the need for adequate and compliant traffic management requirements in the vicinity of the Ryde Hospital
- provide continuous, safe and efficient movement of traffic for both the general public and construction workers
- establish a safe pedestrian environment around and near the site
- inform all contractors and set the ground rules for managing traffic associated with the construction site.

1.3 References

In preparing this report, reference has been made to the following:

- several inspections of the site and its surrounds
- Traffic Control at Work Sites Technical Manual, TfNSW, February 2022
- Australian Standard AS1742.3:2019 'Manual of Uniform Traffic Control Devices – Traffic control for works on roads
- Austroads Guide to Temporary Traffic Management series (2021)
- other documents referenced in this report.

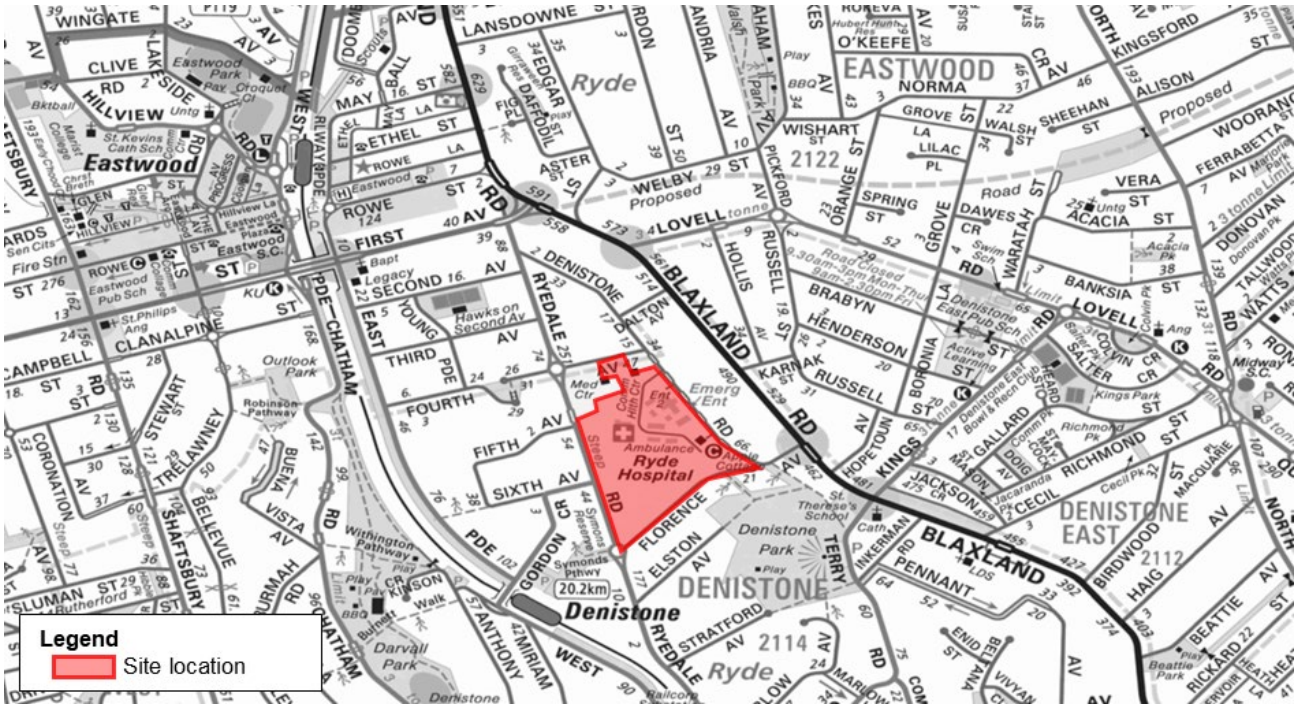
2. Existing Conditions

2.1 Location

The existing Ryde Hospital is in Denistone and comprises Lot 10 DP1183279, Lot 11 DP1183279, Lot A DP323458 and Lot B DP323458. The site is bounded by Denistone Road, Fourth Avenue, Ryedale Road and Florence Avenue, and occupies 72,333 square metres. Forested area, known as Blue Gum High Forest occupies in the south-west corner of the site and covers about 56 per cent of the existing site. The site has a land use classification of SP2 – Infrastructure Health Services Facilities and is primarily surrounded by low density residential dwellings. Other independent medical centres including the Graythwaite Rehabilitation Centre (accessed via Fourth Avenue) and PRP Diagnostic Imaging (accessed via Ryedale Road) are also adjacent to the site.

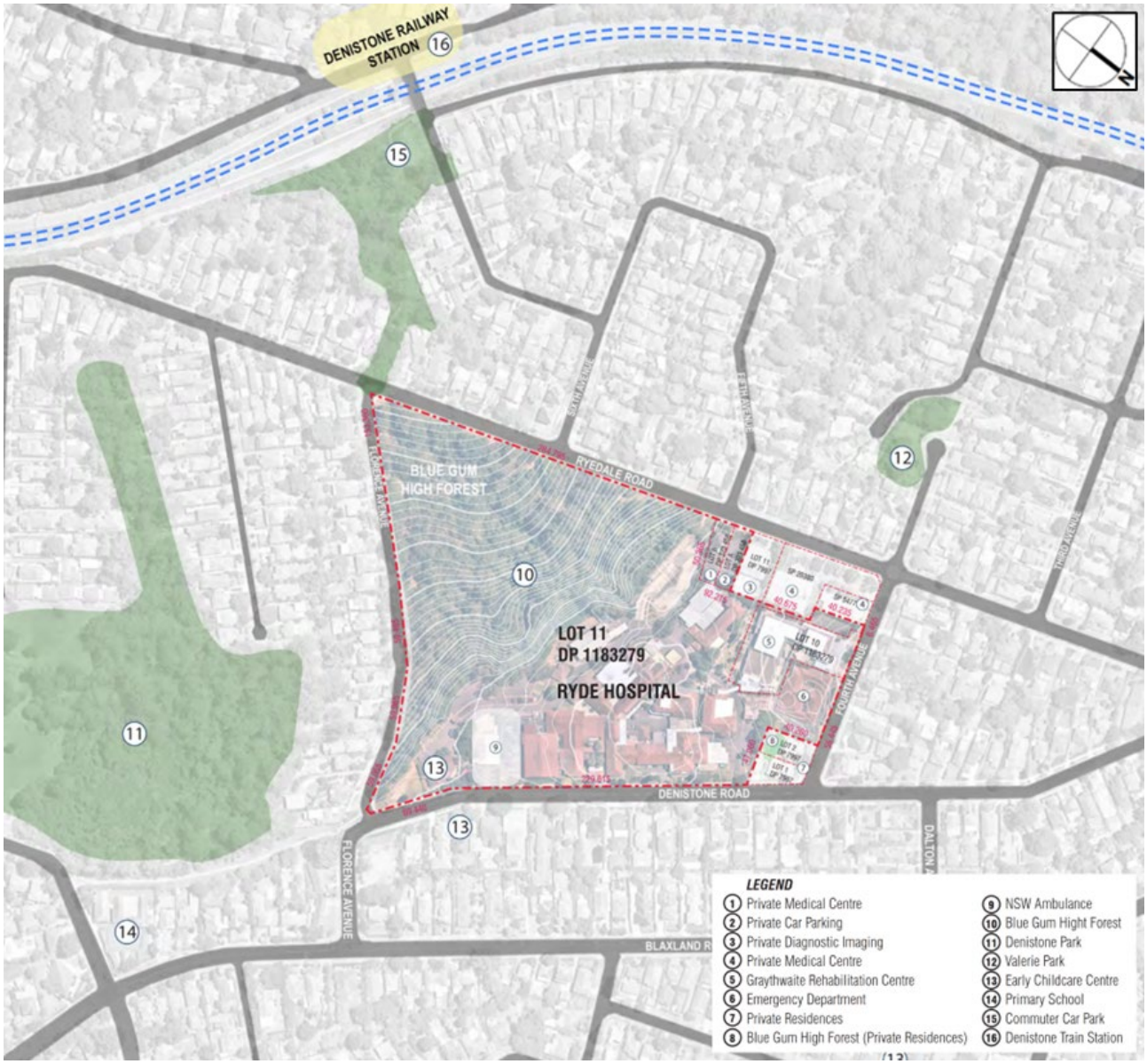
The location of Ryde Hospital and its surrounding environs is shown in Figure 1 and Figure 2.

Figure 1: Subject site and surrounding environs



Base image source: https://www.street-directory.com.au/, accessed June 2023

Figure 2: Ryde Hospital and surrounds



Source: Silver Thomas Hanley Architecture, drawing no. RHR-AR-DWG-02-PW-00-001, rev. E, dated 24 March 2023

2.2 Road Network

2.2.1 Road Hierarchy

Roads are classified according to the functions they perform. The main purpose of defining a road's functional class is to provide a basis for establishing the policies which guide the management of the road according to their intended service or qualities.

In terms of functional road classification, State roads are strategically important as they form the primary network used for the movement of people and goods between regions, and throughout the State. Transport for NSW is responsible for funding, prioritising and carrying out works on State roads. State roads generally include roads classified as freeways, state highways, and main roads under the Roads Act 1993, and the regulation to manage the road system is stated in the Australian Road Rules.

Transport for NSW defines four levels in a typical functional road hierarchy, ranking from high mobility and low accessibility, to high accessibility and low mobility. These road classes are:

Arterial Roads – Controlled by Transport for NSW, typically no limit in flow and designed to carry vehicles long distance between regional centres.

Sub-Arterial Roads – Managed by either Council or Transport for NSW under a joint agreement. Typically, their operating capacity ranges between 10,000 and 20,000 vehicles per day, and their aim is to carry through traffic between specific areas in a sub region or provide connectivity from arterial road routes (regional links).

Collector Roads – Provide connectivity between local sites and the sub-arterial road network, and typically carry between 2,000 and 10,000 vehicles per day.

Local Roads – Provide direct access to properties and the collector road system and typically carry between 500 and 4,000 vehicles per day.

Key roads surrounding the site are discussed below and illustrated in Figure 1.

2.2.2 Existing Road Network

Denistone Road

Denistone Road functions as a collector road, aligned in a north south direction bounding the eastern side of the hospital. Near the site, Denistone Road is around 12 metres wide and configured with one travel lane in each direction separated by a 1.5-metre-wide painted median. Denistone Road provides primary access to Ryde Hospital, including main entrance/ emergency pick up and drop off area, public and staff on-site parking and emergency services and logistics access.

Parking is generally unrestricted on both sides of the road, with the exception of restrictions along the site frontage including 2P, loading zone and Visiting Medical Officer (VMO) parking. Denistone Road has a posted speed limit of 50 kilometres per hour, reduced to a 40 kilometres per hour “hospital zone” between Florence Avenue and Fourth Avenue.

Ryedale Road

Ryedale Road functions as a collector road, aligned in a north south direction bounding the western side of the hospital. The road provides access between West Ryde and Eastwood and is around 10.5 metres wide, configured with one travel lane in each direction separated by double dividing lines. Parking is generally unrestricted on both sides of the road, with the exception of two spaces subject to 3P restrictions and two spaces subject to five-minute parking restrictions on the eastern side of the road north of Fifth Avenue. Ryedale Road has a posted speed limit of 50 kilometres per hour.

Ryedale Road has a steep decline south of Fifth Avenue in the southbound direction, with reduced sight distance at the crest of the hill near Fifth Avenue.

Blaxland Road

Blaxland Road is a classified State Road functioning as an arterial road and aligned in a general north south direction. It provides two travel lanes in each direction and is a key road used to access Ryde Hospital providing connection to the M2 Motorway in the north and Lane Cove Road in the south. Blaxland Road has a posted speed limit of 60 kilometres per hour.

Fourth Avenue

Fourth Avenue functions as a local road aligned in an east west direction with one travel lane in each direction. Parking is unrestricted on the northern side and subject to 3P restrictions along the hospital frontage on the southern side. Fourth Avenue has a posted speed limit of 50 kilometres per hour.

Florence Avenue

Florence Avenue functions as a local road aligned in an east west direction with one travel lane in each direction. The road intersects with Blaxland Road in the east and Ryedale Road in the west. Parking is unrestricted on both sides of the road. Florence Avenue has a posted speed limit of 50 kilometres per hour.

First Avenue

First Avenue is a classified State Road functioning as an arterial road aligned in an east west direction. It has two travel lanes in each direction. The road travels through Eastwood town centre intersecting with Blaxland Road to the east and transitioning into Rutledge Street to the west. First Avenue has a posted speed limit of 60 kilometres per hour.

1.1.1 Surrounding Intersections

The key intersections surrounding the site include:

- Blaxland Road/ Florence Avenue (signalised)
- Blaxland Road/ Dalton Avenue (priority controlled)
- Fourth Avenue/ Denistone Road (priority controlled)
- Ryedale Road/ Fourth Avenue (roundabout)
- Ryedale Road/ Florence Avenue (roundabout)
- Ryedale Road/ First Avenue (priority controlled).

2.3 Site Access and On-Site Car Parking

Access to Ryde Hospital is provided from Denistone Road, Fourth Avenue and Ryedale Road. The main visitor, staff parking, logistics and emergency access are via various access points on Denistone Road and the P5 staff only car park on Ryedale Road.

The Hospital currently includes five main car parking areas separated into P1, P1A, P4, P5 and P6 car parks. In combination, they service most staff and visitor parking demand. Additional parking is provided along the internal road and adjacent to existing buildings with use of such limited parking generally restricted to staff, visiting medical officers (VMOs) and emergency vehicles. The main car parking areas and site access arrangements are illustrated in Figure 3.

Figure 3: Site access arrangements and main existing car parking areas

Base image source: Silver Thomas Hanley Architects, drawing no. RHR-AR-DWG-02-PW-00-002, rev. E, dated 24 March 2023

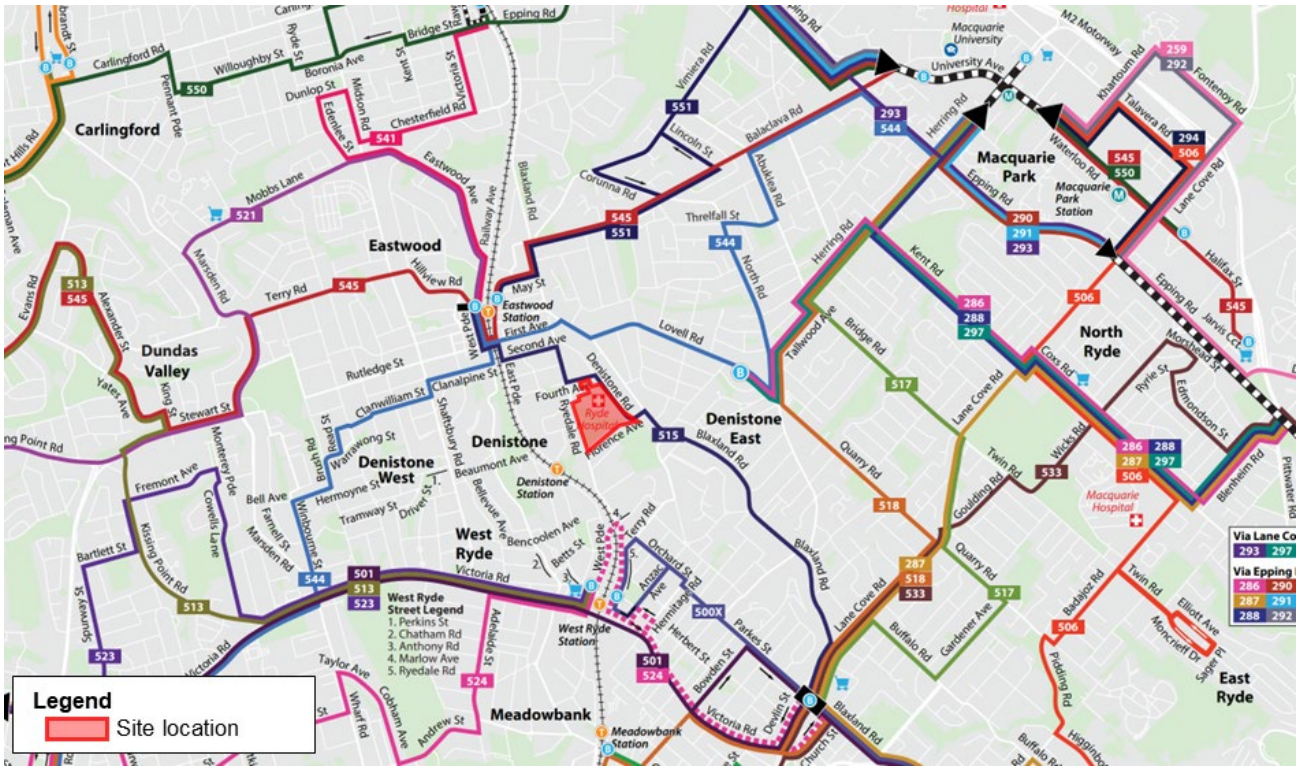
2.4 Public Transport

A bus stop is provided at the main hospital entrance on Denistone Road, serviced by route 515 travelling from Eastwood Station to Top Ryde City Shopping Centre operating at 15-minute frequencies during the peaks, and 60 minutes during off-peak periods.

Denistone and Eastwood railway stations are respectively located around 500 metres (seven-minute walk) and 1.1 kilometres (13-minute walk) from the site. While Denistone railway station is closer, the route to Eastwood involves significantly less grades and the station is co-located with retail and food and beverage outlets hence both stations are likely used by existing staff. Both stations are on the T9 Northern Line, connecting to northern and central Sydney as well as Sydney CBD. Services generally operate at 15-minute frequencies.

The surrounding public transport network is shown in Figure 4.

Figure 4: Surrounding public transport network



Base image source: https://transportnsw.info/document/5788/r7networkmap260422.pdf, accessed June 2023

The "Shop Ryder" is a free community bus service provided by the City of Ryde Council. It operates from Wednesday to Saturday between 8:30am and 2:00pm at a 60-minute frequency. The bus stops on Denistone Road at the existing bus stop near the hospital entrance and travels through Gladesville, Meadowbank and West Ryde. Stops include Top Ryde City Shopping Centre, Meadowbank Station, West Ryde Station and Eastwood Station.

2.5 Active Transport

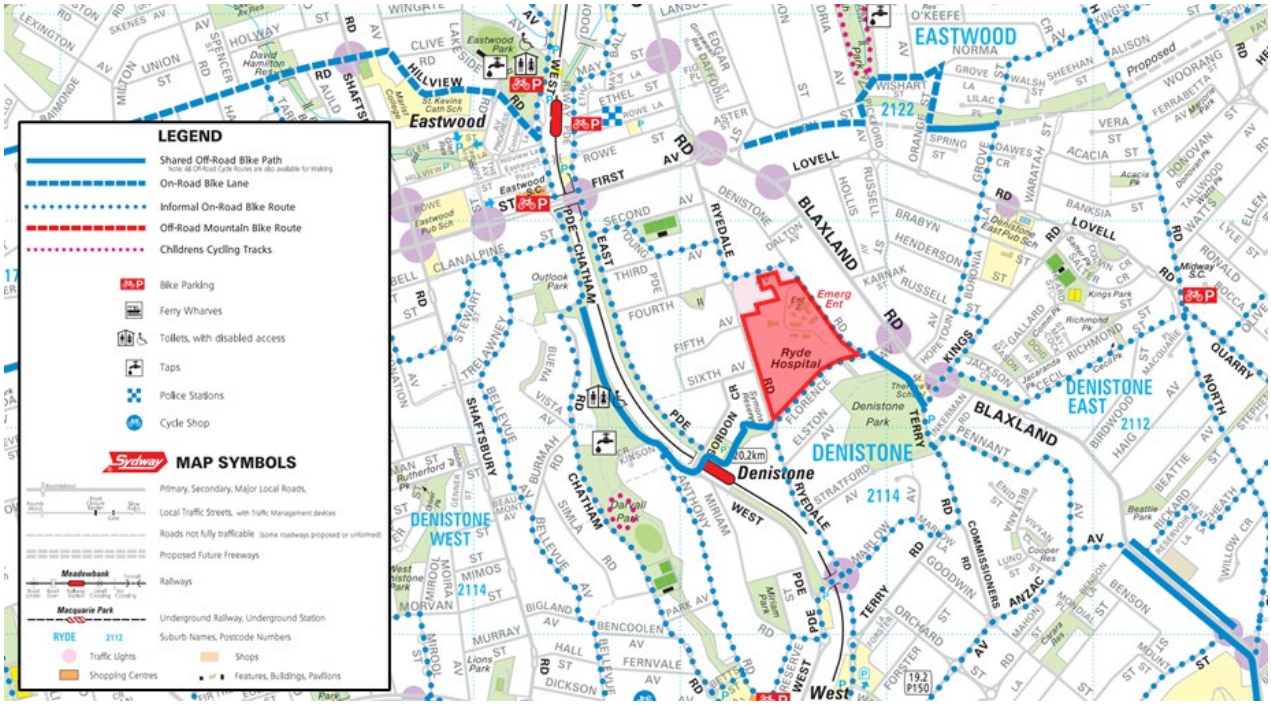
Pedestrian footpaths are generally provided on both sides of surrounding roads. Key routes include towards Denistone railway station, notwithstanding the steep gradient to/ from the hospital, and Eastwood railway station and surrounding retail precinct. Pedestrian crossings are provided on the eastern, northern and southern legs of the First Avenue/ Rutledge Street signalised intersection, facilitating pedestrian movements to/ from the station.

On road cycle routes are provided along Florence Avenue, Fourth Avenue and Ryedale Road. These routes provide connection to nearby stations including Eastwood, West Ryde and Denistone as well as surrounding suburbs.

Bicycle parking racks are provided on-site and within the P1 and P4 car parks. Three shower facilities are also provided on-site in Denistone House and the staff accommodation/ dining building.

The surrounding cycle network is shown in Figure 5.

Figure 5: Surrounding cycle network



Base image source: ryde.nsw.gov.au/files/assets/public/maps/, accessed June 2023

3. Overview of Construction Activities

3.1 Project Overview

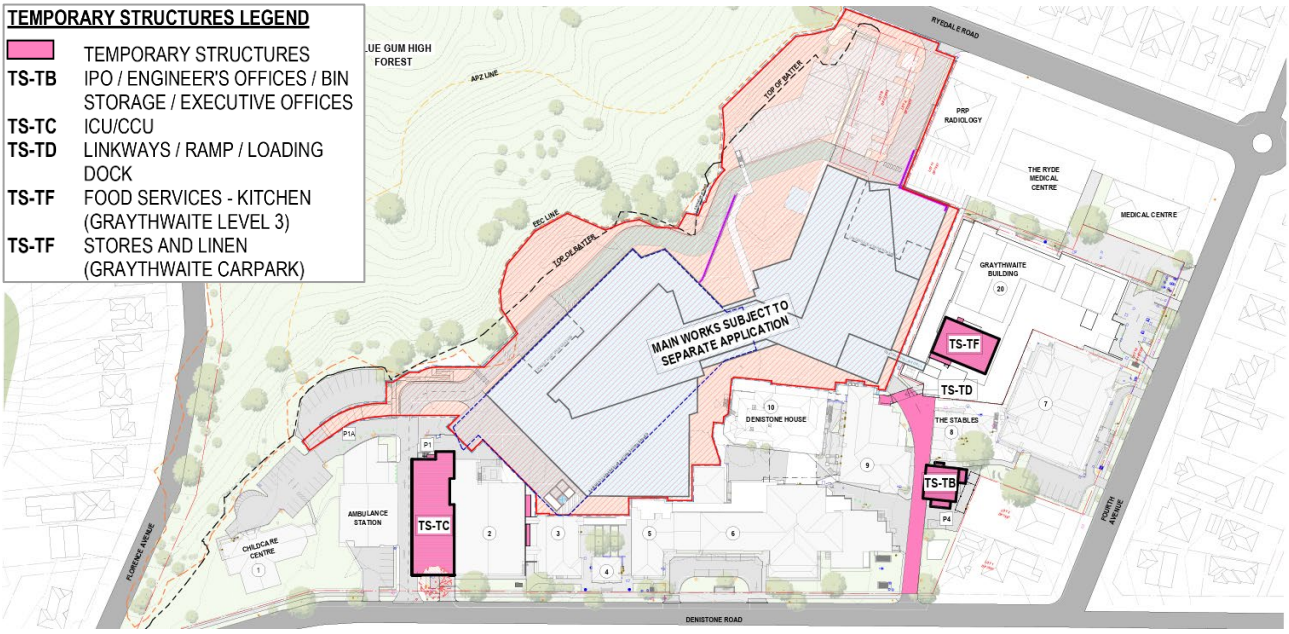
The Ryde Hospital redevelopment temporary works project includes:

- Construction of temporary intensive and critical care building.
- Provision of a temporary loading dock located off Denistone Avenue.
- Alterations to the Graythwaite Building rooftop and basement to facilitate new office space, kitchens and storage areas.
- Establishment of two construction zones to accommodate office space, workshops and storage.
- Construction of a pedestrian ramp that connects between Trigg House and the Graythwaite Building.
- Connection and augmentation of in-ground services and utilities, as required.

Temporary works are expected to be completed across a six to seven month period from June 2024 to January 2025.

For reference, each temporary works site area is shown in Figure 6. These temporary works are proposed to enable further main works. With that in mind, Figure 6 illustrates the proposed main works area however they are subject to a separate application and CTMP.

Figure 6: Temporary Works Area

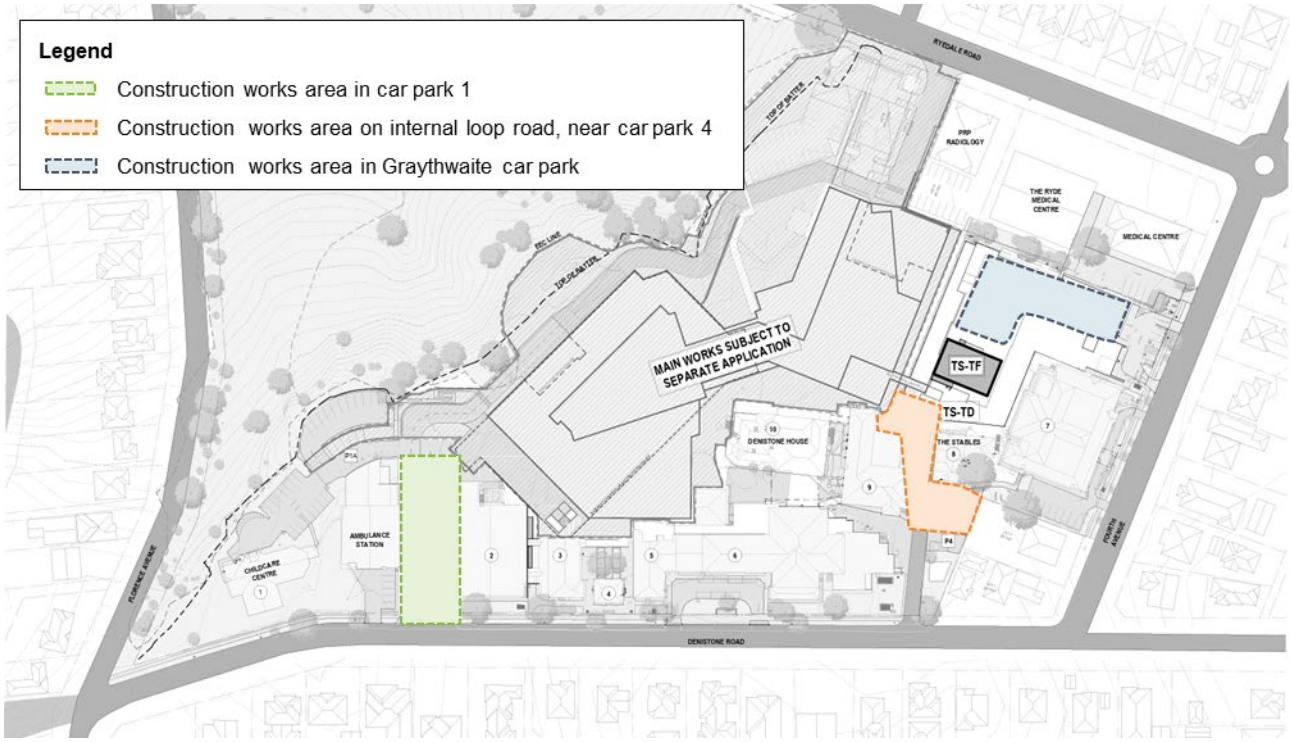


Source: Temporary Structures – Proposed Site Plan, Drawing No. RHR-AR-DWG-10-TS-00-001 Revision 2, STH, 8 March 2024

Key construction work areas and associated works as discussed in the context of this report are shown in **Figure 7** and comprise the following:

- Car park 1:
  - Construction of temporary intensive and critical care building.
- Internal loop road, near car park 4:
  - Alterations to the Graythwaite Building rooftop via mobile crane
  - Construction of the IPO, executive offices, engineers stores and bin storage
  - Construction of a pedestrian ramp that connects between Trigg House and the Graythwaite Building
  - Provision of a temporary loading dock located off Denistone Avenue.
- Graythwaite car park

Figure 7: Temporary Works Area



Base Image Source: Temporary Structures – Proposed Site Plan, Drawing No. RHR-AR-DWG-10-TS-00-001 Revision 2, STH, 8 March 2024

3.2 Work Hours

Work associated with the Temporary Works Project will be carried out between the following hours:

- Weekdays: 7:00am – 6:00pm.
- Saturdays: 8:00am – 1:00pm.
- Sundays and public holidays: no work permitted.

AW Edwards will be responsible for instructing and controlling all subcontractors regarding the hours of work. Workers would be advised of the approved work hours during induction. Any works outside of the approved work hours would be subject to specific prior approval from the appropriate authorities. Such works may include delivery of large plant or equipment required on the site that require oversize vehicle access.

3.3 Construction Worker Parking

There is expected to be between 20 to 30 construction workers on-site per day across the duration of the project.

Given the site's proximity to public transport services, including rail services through Eastwood Station and Denistone Station, workers will be encouraged to use public transport, where practical. During site induction, workers will be informed of the existing public transport network and agreed off-site parking arrangements. Appropriate arrangements will be made for any equipment/ tool storage and drop-off requirements.

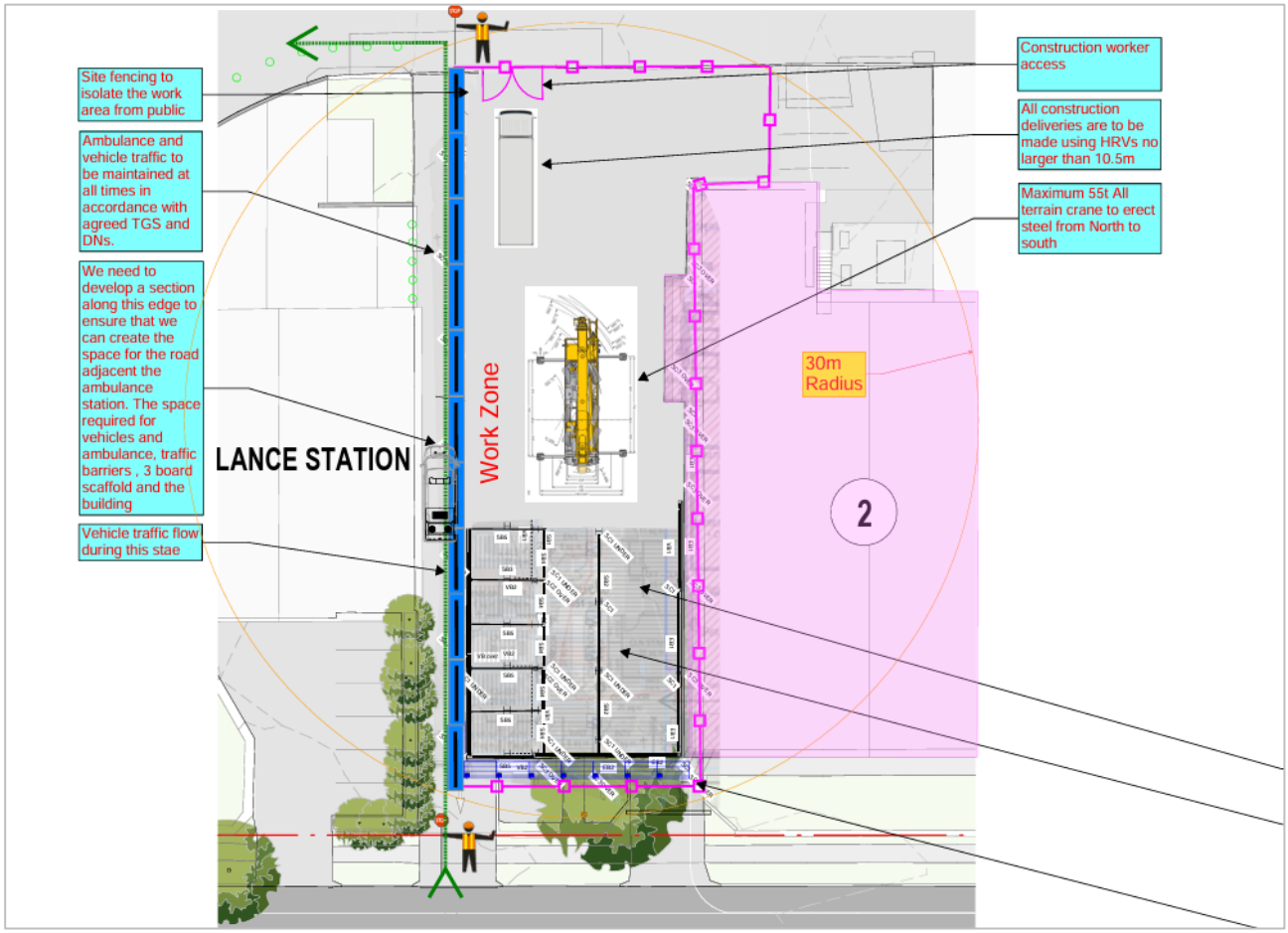
The construction site is such that provision of any formal area for construction worker parking is not feasible within the hospital campus. All existing car parks are required to be maintained for specific use by hospital staff and visitors with any such construction impacts to on-site parking mitigated by available on-street parking in the immediate vicinity. Construction workers will not be permitted to park on the roads immediately surrounding the hospital within 200 metres of the site. AW Edwards will be required to manage compliance of construction worker with this requirement.

3.4 Construction Site Access and Loading

Construction works area in Car Park 1

Construction access to the works area in car park 1 will be provided from Denistone Road as shown in Figure 10.

Figure 8: Works area in car park 1

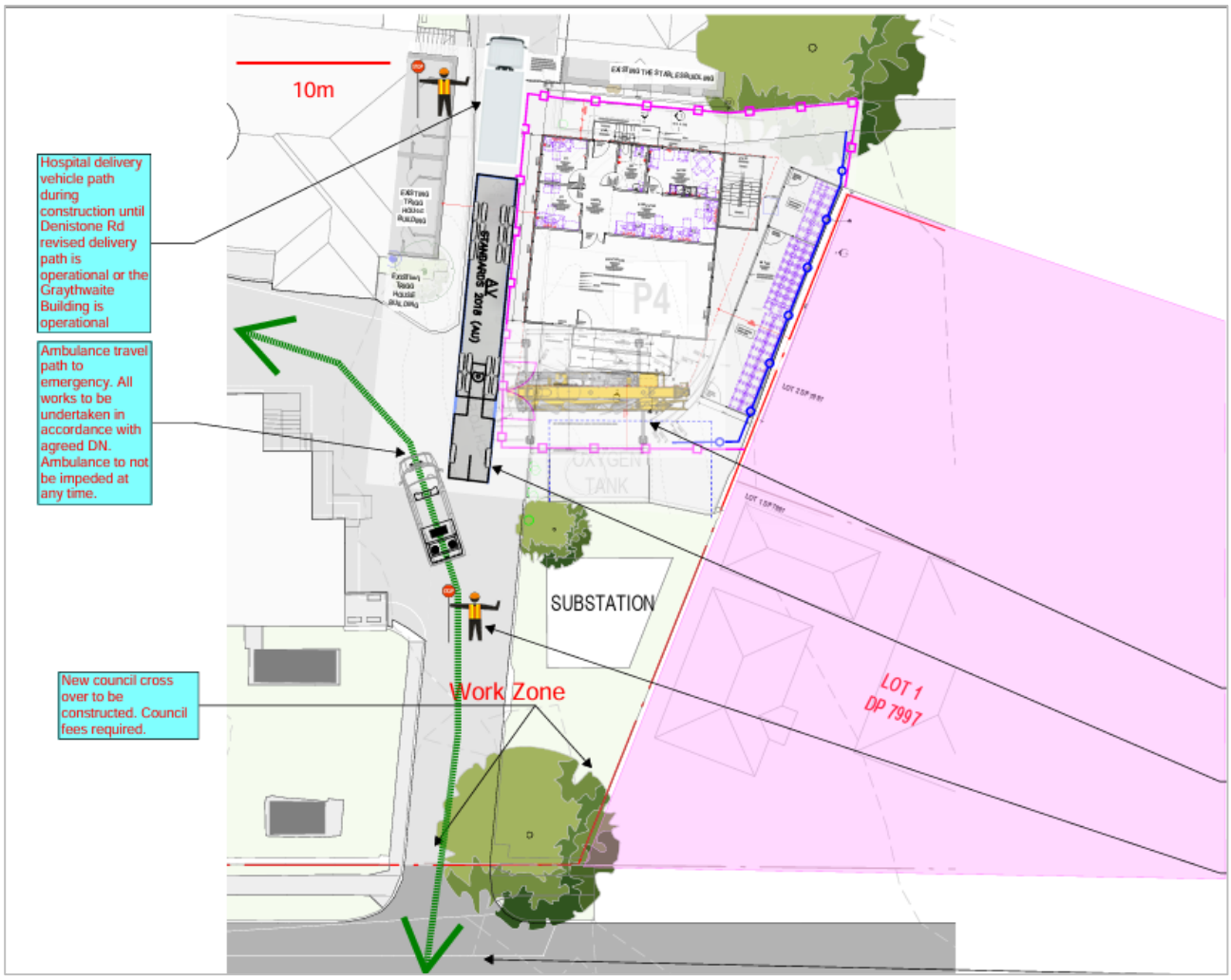


Source: A W Edwards

Construction works area along internal loop road, near Car Park 4

Construction access to the works area along the internal loop road, near Car Park 4, will be provided from Denistone Road as shown Figure 11.

Figure 9: Works area along internal loop road, near Car Park 4



Source: A W Edwards

Construction works area in Graythwaite car park

Construction access to the works area within the Graythwaite car park will occur via the existing car park access points along Fourth Avenue as shown in Figure 3. Vehicles would be restricted to B99 vehicles (cars / vans) with maximum height of 2.2 metres.

3.5 Construction Vehicle Volumes

There will be various types of construction vehicles accessing the site during construction. The largest of these vehicles will include:

- concrete trucks
- concrete pump and boom vehicles
- mobile cranes
- rigid trucks, truck and dog combinations and articulated vehicles.

Most construction traffic will be associated with the general delivery of materials and equipment. These activities will occur within the designated construction zone during each stage.

Articulated vehicles may be required to reverse onto the mobile crane located along the internal loop road as discussed in Section 3.4 above. Such manoeuvres will be infrequent and would require accredited traffic controllers to temporarily hold traffic along Denistone Road.

It is expected that works could generate up to five construction vehicle movements per hour during any peak period. This equates to one vehicle every 12 minutes. Given the expected low construction traffic volumes and the proximity of the

site to the arterial road network, it is anticipated that the construction traffic will have a minor impact on the surrounding road network.

3.6 On-street Works Zone

No on-street works zones would be necessary during any stage of construction. In the event that one is necessary, the contractor would be required to obtain approval from relevant authorities (Council, Transport for NSW).

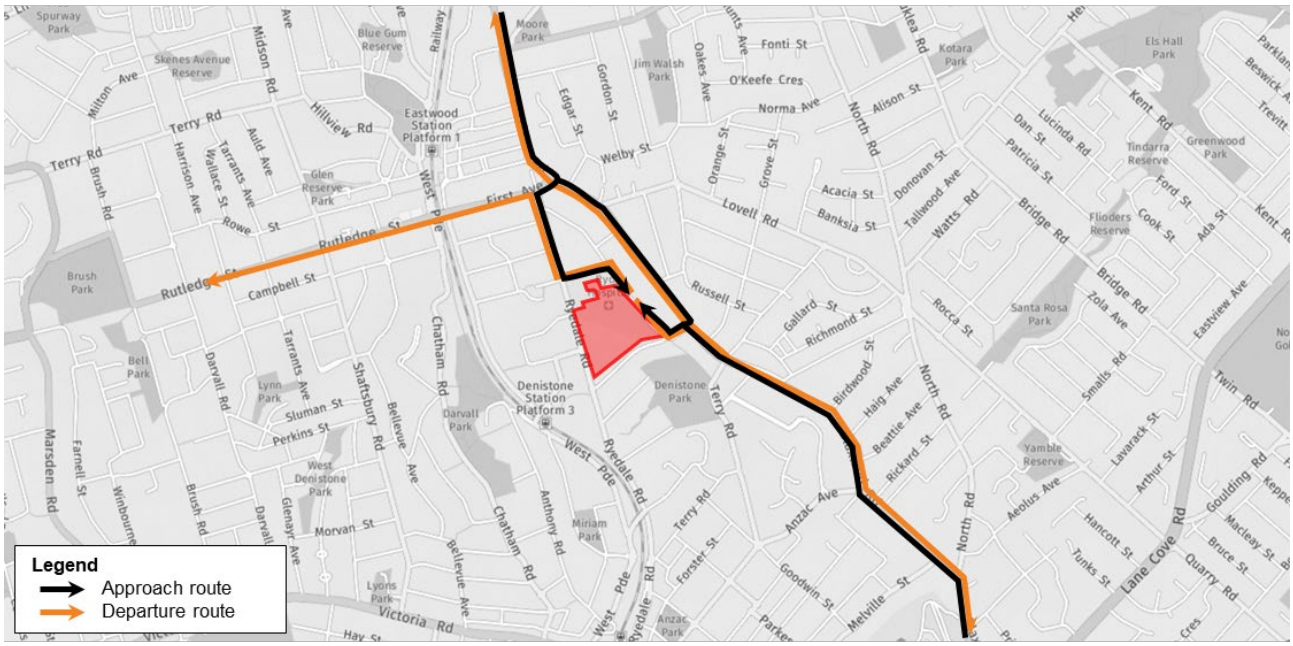
3.7 Haulage Routes

Truck movements will be restricted to designated routes and confined to the State and Regional Roads. Truck routes to/ from the site, as indicated below, have been identified with the aim of minimising the impact of construction traffic on roads near the site. Truck drivers will be advised of the designated truck routes to/ from the site.

The directional distribution and assignment of traffic generated by the construction works will be influenced by a number of factors, particularly the origin/ destination of materials, configuration of access points to the site and the surrounding arterial road network.

Figure 12 provide a summary of the anticipated construction vehicle routes to/ from the site with all truck drivers to be advised of the routes.

Figure 10: Construction vehicle routes using Denistone Road



Base image source: Nearmap

4. Construction Traffic Management

4.1 Traffic Guidance Scheme

As part of the detailed CTMP, Traffic Guidance Schemes (previously referred to as Traffic Control Plans) will be prepared in accordance with the principles of the Traffic Control at Work Sites manual (Transport for NSW, 2020). The Traffic Guidance Schemes primarily show where construction signs will be located at specific locations (such as uncontrolled intersections) along the approved truck routes to warn other road users of the increase in construction vehicle movements. Traffic controllers will be employed to manage construction vehicle movements in and out of the site.

The Traffic Guidance Schemes will generally include the following considerations:

- Construction vehicle activity, including the loading/ unloading of trucks to be conducted within the work site.
- Positioning of traffic controllers to manage construction vehicle access in/ out of the site.
- Pedestrians and all passing vehicles will maintain priority.
- Clear definition of the work site boundary to be provided by erection of fencing around the site boundaries.
- All signage will be clean, clearly visible and not obscured.
- All construction vehicle activity will be minimised during peak periods, where possible.

4.2 General Requirements

In accordance with TfNSW requirements, all vehicles transporting loose materials will be required to have the entire load covered and/ or secured to prevent excess dust or debris being deposited on to the roadway during travel to and from the site. The contractor should monitor the roads leading to and from the site and take all necessary steps to clean any debris deposited by construction vehicles.

Vehicles operating to, from and within the site shall do so in a manner which does not create unreasonable or unnecessary noise or vibration.

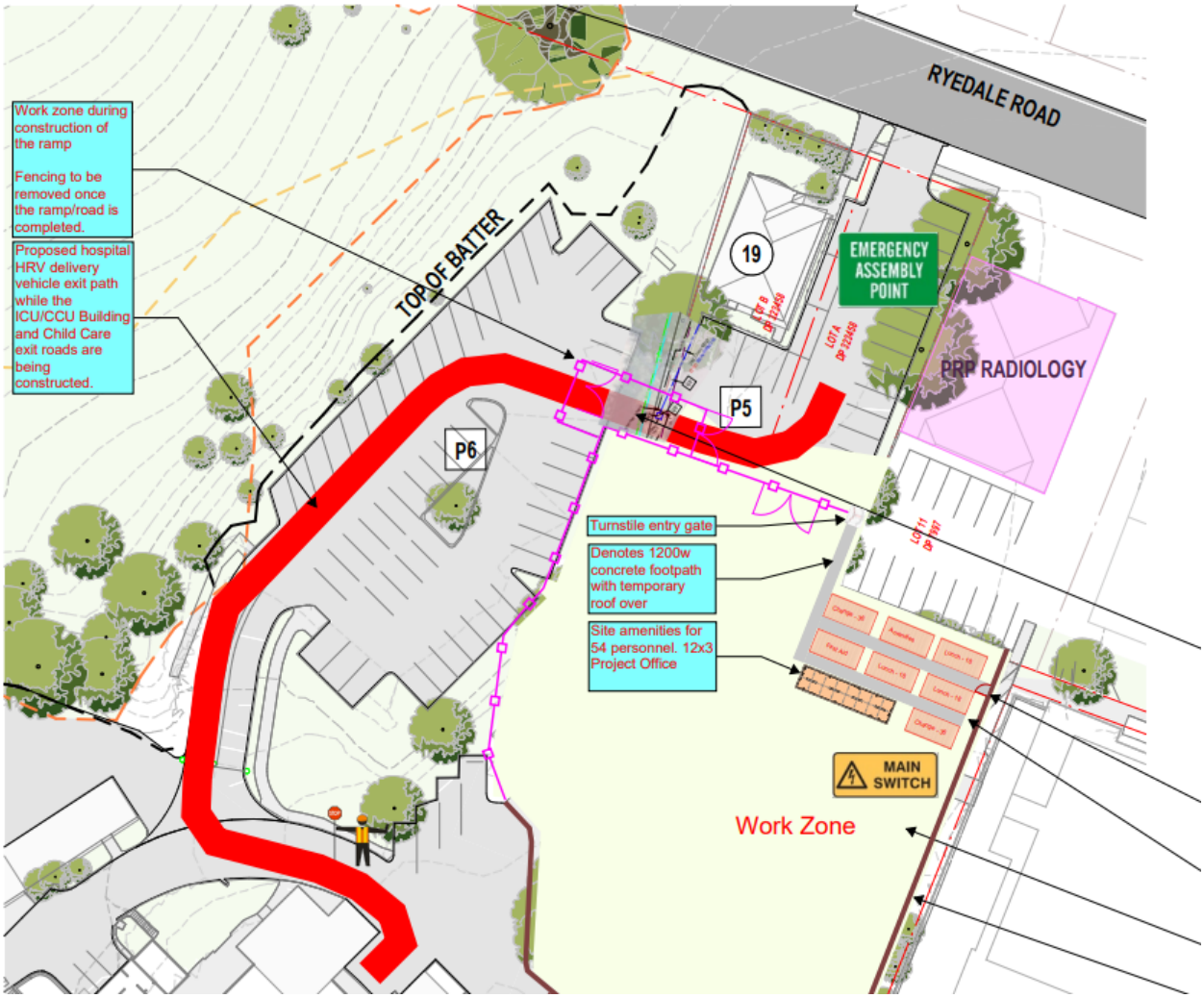
No tracked vehicles will be permitted on any paved roads. Public roads and access points should not be obstructed by any materials, vehicles, refuse skips or the like, under any circumstances.

4.3 Site Access Management

Loading Dock Access

Currently, access to the loading dock is provided along the internal loop road via the northern intersection with Denistone Road. This internal road will be blocked temporarily throughout works as shown in Figure 11. As such, a revised access to the loading dock will temporarily be provided through car park 5 and 6 via a ramp to be constructed prior to temporary works, as indicatively shown in Figure 4.

Figure 11: Temporary link and access to Ryedale Road



Source: A W Edwards

P1 and Child Care

During construction of the ICU/ CCU – a significant proportion of car park 1 will be closed and two-way vehicle movements at Denistone Road will no longer be feasible.

With that in mind, to ensure access to and from the existing loading dock and child care centre can be retained for pick up and drop off activities, access will be provided to Ryedale Road through the new link as shown in Figure 4. At any point that access is not available, then access to and from P1 will be operated as two-way, one lane with entry movements from Denistone Road prioritised to ensure no impact to Denistone Road.

Graythwaite Basement Car Park

No change is proposed to access between Graythwaite car park and Fourth Avenue. During works within the car park, the main car park aisle will operate as two-way, one-way during construction hours. An accredited traffic controller will manage traffic flow during the entire period where aisle width is less than 5.8 metres.

Ambulance and Public Emergency Department Access

There would be no changes to the existing access arrangements for ambulances and ED access along Denistone Road during stage 1 and 2 works.

4.4 Pedestrian and Cyclist Management

Maintaining pedestrian access around the hospital and along its frontages is critical to all stages of construction. As such, all construction activities must be completed in a manner that minimises any such pedestrian impact.

Pedestrian movements will be maintained via a combination of Class A and Class B hoardings along the perimeter of and through the site during each stage. External footpath closures are not expected, however should this be required the impact would be managed through the CTMP, with alternative arrangements provided. Turnstiles would be provided at all worker access points to ensure separation from public areas of the hospital. Accredited traffic controllers will be positioned at all site accesses during each stage to manage pedestrian/ cyclist movements at times when construction vehicles are entering/ exiting the site.

Wayfinding directional signage during construction will be considered in consultation with Health Infrastructure. The signage would be installed on hoarding and advise hospital visitors of the access paths to key destinations. All pathways would be appropriately lit to ensure safe access to the hospital at all times.

Truck movements will be avoided during peak hours where possible to minimise the impact on pedestrians and cyclists.

4.5 Public Transport

The construction activities are not expected to impact existing public transport services near the site.

4.6 Traffic Impacts

Some minor increases in average delay to vehicles at surrounding key intersections can be expected at select times during the construction period as is typical for construction projects however, any such delays would be negligible across the day. Truck movements will be minimised as much as possible during road network peak hours.

Traffic controllers may be required to temporarily hold traffic during construction vehicle movements into and out of the site accesses on occasion, particularly on Denistone Road proximate to the northern Ryde Hospital access road to facilitate construction vehicles reversing back to the mobile crane positioned to service the Graythwaite roof top works. Considering the low traffic volumes along Denistone Road, particularly outside peak periods, such arrangements are considered appropriate.

4.7 Emergency Vehicles Access

The construction works are not expected to impact on emergency vehicle movements within the local road network nor limit access to neighbouring sites by emergency vehicles.

Emergency vehicle access arrangements for Ryde Hospital would be unchanged from existing condition during the temporary works. Emergency protocols on the site should include a requirement for any traffic controllers associated with works proximate to the ambulance access (including new temporary building, temporary loading dock or alterations to Graythwaite rooftop) to assist with emergency access from the surrounding road network. All truck movements that may interfere with the emergency vehicle access to the site and/ or incident point would be suspended and cleared.

Liaison would be maintained with police and emergency services agencies throughout the construction period and a 24-hour contact made available in the event of after-hours emergencies and access requirements.

4.8 Traffic Movements in Adjoining Areas

No adverse effects are expected from the movement of heavy vehicles through adjacent council areas.

4.9 Site Induction

All workers employed on site by A W Edwards (including sub-contractors) would be required to undergo a site induction.

The induction would include:

- permitted truck routes to and from the work site
- restricted parking within the hospital precinct and adjacent local roads
- preferred travel to site by public transport and overview of off-site parking locations and shuttle bus arrangements

- standard environmental, Work Health and Safety, and driver protocols
- pedestrian management and associated requirements
- emergency procedures
- agreed work hours.

4.10 Workplace Health and Safety

Any workers required to undertake works or traffic control within the public domain shall be suitably trained and covered by adequate and appropriate insurances. All traffic control personnel will be required to hold Transport for NSW certification in accordance with the 'Traffic Control at Work Sites' manual.

4.11 Site Inspections and Record Keeping

The construction work would be monitored to ensure that it proceeds as set out in A W Edwards' Construction Management Plan. Inspections would be completed on a regular basis to ensure that conditions accord with those stipulated in the plan with no potential hazards. Any possible adverse impacts would be recorded and dealt with should they arise.

5. Overview Construction Vehicle Code of Conduct

The following overview code of conduct will form part of the requirements of the contractor, where the contractor is expected to comply with the code of conduct in full. It is expected that the Code of Conduct will be implemented for all traffic and transport construction activities associated with construction. The code of conduct will be revised by AW Edwards in conjunction with the contractor prior to commencement of on-site works for the project.

5.1 Driver's Code of Conduct

This overview code of conduct will be communicated to all site workers during the site induction process. Workers will be reminded of the requirements of the code of conduct regularly in toolbox meetings.

The code of conduct will be revised prior to commencement of on-site works and when required during construction works.

5.1.1 Travelling Speeds

All vehicles associated with the site are required to travel within the posted speed limits on public roads. In situations where driver's visibility and traffic safety on public roads is affected by weather related conditions such as heavy rainfall or fog, construction vehicles should reduce their speed limit until visibility and traffic safety has improved.

Vehicle tracking management systems will be used for all site-based vehicles during construction.

5.1.2 Haulage Routes and Timing of Transport

All large vehicles associated with the site will follow the designated heavy vehicle routes in the surrounding area. A map of the haulage routes highlighting critical locations will be attached to the transport code of conduct. Any school zones and school bus routes corresponding to the transport routes will be marked on the route maps.

5.1.3 Safe Driving Practices

The operators of all vehicles associated with the site would maintain a high level of awareness and respect for all other road users. All on-site staff will receive a site induction, which will include details regarding the CTMP, and associated code of conduct. Regular toolbox meetings will be held to maintain awareness of required controls. Details of the traffic and access training and induction will focus on:

- Objectives of the CTMP to be prepared by the Contractor.
- Performance goals.
- Mitigation measures required to be implemented.
- Traffic and access monitoring and reporting requirements.
- Incident investigation and response protocols.

Training is to be provided prior to start-up of any traffic and access related management tasks and updated if task, equipment or procedures are expected to, or have changed.

The following requirements would be adhered to at all times:

- Obey all laws and regulations.
- Do not drive whilst under the influence of alcohol, drugs, nor any medication which may affect ability to drive.
- Be medically fit to drive at all times and must inform site coordinators if they have any medical condition which may affect their ability to drive.
- Drive in a considerate manner at all times and respect the rights of others to use and share the road space.
- Report all vehicle defects to their employer. Serious defects must be corrected immediately, or an alternative vehicle supplied.
- Any vehicle crash or incident resulting in injury or significant damage to property must be reported to the police.
- Report any near misses.
- Always adhere to the site working hours.

- Only drive the construction vehicle when conducting works related to the project.
- Securely fasten and cover loads, as appropriate.
- Keep their vehicle clean and in good mechanical condition to reduce the environmental impact.
- Extra care should be taken when driving at dawn or dusk, being particularly watchful for wildlife.
- Vehicles must give way to pedestrians, public and school buses and emergency vehicles.

The transport contractor is to develop and implement a maintenance program for the heavy transport vehicles that is consistent with these safety requirements.

5.1.4 Heavy Vehicle Driver Fatigue

Fatigue is one of the biggest causes of crashes for heavy vehicle drivers. The Heavy Vehicle Driver Fatigue Reform was therefore developed by the National Transport Commission and approved by Ministers from all States and Territories in February 2007. The heavy vehicle driver fatigue law commenced in NSW on 28 September 2008 and applies to trucks and truck combinations over 12 tonne gross vehicle mass (however there are Ministerial Exemption Notices that can apply). Under the law, industry has the choice of operating under three fatigue management schemes:

- Standard hours of operation.
- Basic fatigue management.
- Advanced fatigue management.

AW Edwards and the contractor will be responsible to ensure all heavy vehicle drivers operating out of the site are to be aware of and understand the adopted fatigue management scheme and operate within its requirements.

5.1.5 Maintenance Requirements

The operators of all vehicles associated with the site would maintain a high level of maintenance. The following requirements would be adhered to at all times:

- Ensure their vehicle complies with relevant State legislation in relation to roadworthiness and modifications.
- Undergo regular vehicle checks and maintenance.
- Ensure their vehicles have correctly fitted mufflers to minimise noise disturbance.

5.1.6 Complaint Resolution and Disciplinary Procedure

All traffic related complaints will be managed in accordance with the Complaints Handling Procedure to be prepared by AW Edwards.

Failure to comply with these procedures for safe transport may result in disciplinary action. Vehicle tracking will be used to follow-up on any complaints lodged.

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APPENDIX G – CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN

WORKING DOCUMENT - FINAL VERSION TO BE PROVIDED UPON CONTRACT AWARD

Ryde Hospital Redevelopment

Noise and Vibration Impact Statement & Management Plan

Review of Environmental Factors - Construction Phase

VMS AUSTRALIA

Report Number 23158.1.2

A W Edwards Pty Limited

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Quality Management

Reference	Status	Date	Prepared	Checked	Authorised
23158.1.2	Rev 2	10 April 2024	Sam Demasi	Mark Blake	Sam Demasi
23158.1.2	Rev 1	22 March 2024	Sam Demasi	Olivia Madesta	Sam Demasi
23158.1.2	Rev 0	12 March 2024	Sam Demasi	-	-

This report in its finalised version has been prepared, checked, and authorised by suitably qualified and experienced personnel from VMS Australia Pty Ltd, who are members of the Australian Acoustical Society (AAS). Draft versions of this report may not be subject to this qualification.

This Report by VMS Australia Pty Ltd is prepared for the Client listed above and is based on the objective, scope, conditions and limitations as agreed. The Report presents only the information that VMS Australia Pty Ltd believes, in its professional opinion, is relevant and necessary to describe the issues involved. The Report should not be used for anything other than the intended purpose. All surveys, forecasts, projections, and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to VMS Australia Pty Ltd at the date of this report, and upon which VMS Australia Pty Ltd relied.

VMS Australia Pty Ltd does not accept any liability or responsibility to any party with respect to the information and opinions contained in this report.

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1 Introduction

1.1 Background

The Minster for Planning and Public Spaces has provided approval (Application Number SSD 36778089) for the Concept and Stage 1 works associated with the Ryde Hospital Redevelopment (RHR) on 30 June 2023 subject to Conditions.

At the time of preparing this assessment, SSD 58210458, associated with Stage 2 of RHR is currently awaiting a Response to Submissions, with lodgement having ended on 30 January 2024.

During Early Contractor Involvement (ECI), construction efficiencies have been identified by A W Edwards Pty Limited (AWE) and these suggested changes have triggered a Review of Environmental Factors (REF) for the Construction Phase of the project, including Early/Temporary Works.

On this basis, a construction noise and vibration impact assessment and management plant is to be prepared to accompany the REF. As a result, VMS Australia Pty Ltd (VMS) has been engaged by AWE.

Specific terminology is used in this report and therefore common noise and vibration terms is provided in **Appendix A**.

1.2 Description of Site and Surrounds

The Hospital is located at Denistone Road, Eastwood in an area considered to be a suburban environment with respect to noise. Major nearby noise sources include:

- Blaxland Road to the east, between the site, Denistone Road and two rows of houses (approximately 110m distance).
- The Northern Rail Line to the west, between the site, Ryedale Road and multiple rows of houses (approximately 350m distance).

Single and double-storey residential receivers are located:

- Across Fourth Avenue to the north.
- Across Florence Street to the south.
- Across Ryedale Road to the west.
- Across Denistone Road to the east.
- Adjoining the site on the corner of Denistone Road and Fourth Avenue.

There are a small number of commercial premises located across Denistone Road and adjoining the site along Fourth Avenue and Ryedale Road. At least one of these receivers (PRP Diagnostic Imaging) will include vibration sensitive equipment.

Within the Hospital are other related commercial receivers such as; ambulance station, child care and rehabilitation services. Vibration sensitive equipment will be located within the operating suites which will be in use during construction works.

There are also heritage items located within and outside of the Hospital site, however, is critical to appreciate that an item that is considered heritage is not necessarily considered to be more sensitive to vibration.

1.3 Description of Major Elements of Proposed Construction Works

In terms of current (and near future) approval, this project will be delivered in three stages, however following the ECI, all work activities have been streamlined, combined and integrated to efficiently deliver this project.

Early/Temporary Works relating to the temporary relocation of certain Hospital operations (prior to Stage 1) are proposed to occur across four main construction zones (A to D) to ensure that the ongoing operation of the Hospital is not impacted during the RHR. The following main works is proposed across these zones.

Zone A

- Alterations to the Graythwaite Building including rooftop and basement alterations to facilitate new office space, kitchens and storage areas.

Zone B

- Provision of a temporary loading dock located off Denistone Road.
- Construction of a pedestrian ramp that connects between Trigg House and the Graythwaite Building.

Zone C

- Construction of temporary IPO and Exec Offices.

Zone D

- Construction of temporary intensive and critical care building (ICU/CCU).

In addition to the above, the following may also be required in some of the Zones:

- Connection and augmentation of in-ground services and utilities, as required.
- Subject to further design confirmation, minor earthworks, including the need for small piles (in the order of 400mm diameter) may be required to construct some of the temporary buildings.

These works are considered minor to moderate with respect to noise impacts from on-site activities.

Vibration intensive works are not proposed with the most intensive works being limited to the localised use of hand held jack hammers and bored piling rigs.

Traffic generation will also be minor with only a very low number of heavy vehicle movements envisaged.

Furthermore, in the first instance, all works are proposed to occur during Standard Hours.

Considering the above, presented in **Table 1** is a summary of the major work activities and associated equipment likely to be used. This information has been used to develop the worst-case noise scenarios.

Table 1 Scope of Major Works Associated with the REF

ID	Indicative Schedule	Work Activity	Main Equipment Likely to be Used	Construction Zone
1	June 2024 to August 2024	Alterations	Powered Hand Tools Mobile Crane (~60 t)	A
2a	June 2024 to August 2024	Loading Dock Construction	Powered Hand Tools (incl. Rattle Guns) Mobile Crane (~40 t) Excavator (approx. 5 t) Small Tipper Truck	B
2b		Pedestrian Ramp Construction	Powered Hand Tools (incl. jackhammers) Mobile Crane (~ 40 t) Concrete Trucks	B
3a	June 2024 to December 2024	Delivery and Lifting	Semi Trailers Mobile Crane (~ 60 t)	C
3b		Fitout	Powered Hand Tools	C
4a	June 2024 to August 2024	Footings	Piling Rig (~40 t) Excavator (~5 t)	D
4b		Steel Erection	Powered Hand Tools (incl. Rattle Guns) Mobile Crane (~60 t)	D
4c		Concrete Placement	Small Tipper Truck Concrete Trucks + Pump	D
4d	August 2024 to January 2025	Fitout including cut-ins	Powered Hand Tools (incl Demo Saws inside) Tele (~3 t)	D

Figure 1 Aerial Showing Project Site, Construction Zones and Sensitive Receivers

Source: As prepared by AWE and modified by VMS.

2 Noise and Vibration Sensitive Receivers

With reference to the noise and vibration impact assessment submitted as part of the Concept and Stage 1 SSD application (ref: 20221208 SVM3410.0004.Rep.docx, Issue 3, dated 08.12.2022, prepared by Acoustic Studio), **Figure 2** provides an aerial of the site, surrounding receivers and ambient noise measurement locations .

Measurements 1 to 4 (yellow) are the noise logger locations whereas measurements A to I (magenta) show the attended locations.

The most noise sensitive receivers, off-site will be the residential areas surrounding the Hospital, whilst on-site there will be sensitive receivers such as operating theatres or consultation rooms.

The proposed works are not vibration intensive, however vibration sensitive receivers will be confirmed prior to works following consultation as required to ensure any impacts can be minimised or managed.

Figure 2 Aerial Showing Project Site, Surrounding Receivers and Measurement Locations

Source: SSD 36778089 (Noise and Vibration Impact by Acoustic Studio).

3 Noise and Vibration Management Levels

In terms of construction, the following presents the relevant guidelines and management levels, which in the absence of specific requirements, are guided by the Conditions of the existing SSD approval to ensure consistency across the delivery of the entire project.

As mentioned previously, the proposed works are not vibration intensive and so impacts will be dominated by airborne noise from on-site activities and on this basis vibration and ground borne noise are not considered further in this assessment. Similarly, the potential increase in traffic noise along the road network from additional construction vehicles, is considered negligible and also not considered.

Vibration criteria however, is provided for information.

It is further noted that given works are to be conducted during Standard Hours, in the unlikely event that ground borne noise is present, it will adequately be addressed by confirming the vibration criteria relating to human comfort is met.

3.1 Hours of Construction

The preferred hours of construction are outlined in **Table 2** and are consistent with Condition of Approval C4.

Table 2 Hours of Construction

Day	Recommended Standard Hours
Monday to Friday	7.00 am to 6.00 pm
Saturdays	8.00 am to 1.00 pm
Sundays or Public Holidays	No construction

At this point, no specific works have been identified to occur outside Standard Hours. If this will occur, an additional assessment will be undertaken as per the Health Infrastructure (HI) document, *"Out of Hours Works - Protocol and application requirements for HI Projects, Version 2.0, dated 27 April 2022"*. This Protocol is based on the TfNSW Construction Noise and Vibration Strategy (Strategy) and will be useful in assisting with mitigation of impacts from construction works both during Standard Hours and Out of Hours (OOH).

3.2 Construction Noise Management Levels

When dealing with noise from construction works, the NSW Environment Protection Authority (EPA) has published the *Interim Construction Noise Guideline*, 2009 (Guideline) for the management of construction works noise. Additional guidance is also provided in AS2436 *Guide to Noise Control on Construction, Maintenance and Demolition Sites* (AS2436).

The Guideline recommends that the $L_{Aeq(15minute)}$ noise levels arising from a construction project, measured within the curtilage of an occupied noise sensitive premises i.e. at boundary or within 30 m of the residence, whichever is the lesser, should not exceed the levels indicated in **Table 3**. These noise management levels (NMLs) are generally consistent with community reaction to construction noise. The Guideline also recognises other kinds of noise sensitive receivers and provides recommended construction noise levels for them. Those specific receivers and their recommended noise levels are presented in **Table 4**. The construction noise levels for commercial premises have also been recommended in the Guideline and are summarised in **Table 5**.

Please note that only the likely receiver types in the local area are presented.

Table 3 Construction Noise Management Levels - Airborne Noise - Residences

Period of Noise Exposure	$L_{Aeq(15minute)}$ Construction NMLs
Recommended Standard Hours	Noise Affected[1] RBL[2] + 10 dBA
	Highly Noise Affected[3] 75 dBA
Outside Recommended Standard Hours (OOH)	Noise Affected[1] RBL[2] + 5 dBA

Note 1: The noise affected level represents the point above which there may be some community reaction to noise.

Note 2: Rating Background Level.

Note 3: The highly noise affected level represents the point above which there may be strong community reaction to noise.

Table 4 Construction Noise Management Levels - Airborne Noise - Other Sensitive Uses

Land Use	$L_{Aeq(15minute)}$ Construction Noise Management Level
Classrooms at schools and other educational institutions	Internal noise level 45 dBA
Hospital wards and operating theatres	Internal noise level 45 dBA

Table 5 Commercial Premises

Land use	$L_{Aeq(15minute)}$ Construction Noise Management Level
Office, retail outlets	External noise level 70 dBA

3.3 Construction Vibration Management Levels

Three main aspects are considered regarding construction vibration:

- Potential damage to buildings and structures directly from vibration impinging on the structure.
- Potential annoyance to the occupants of buildings as a result of vibration impinging on the structure, this is typically referred to as “human comfort”.
- Potential interference to the operation of or damage to specialised instrumentation.

With guidance from the Conditions of the existing SSD approval, C17 nominates relevant Standards and Guidelines to address damage and comfort relating to vibration generated by construction activities. The approval does not specify guidance in relation to vibration sensitive instrumentation or the like.

As mentioned previously, given the low risk that vibration intensive activities will occur, criteria related to vibration is provided for information only.

3.3.1 Damage to Structures

AWE committed to undertake a dilapidation survey of all relevant structures that could be impacted by these works. This is consistent with Conditions B4, B5 and B6.

In terms of the most recent relevant vibration damage criteria, Australian Standard AS 2187: Part 2-2006 *Explosives - Storage and Use - Part 2: Use of Explosives* recommends the frequency dependent guideline values and assessment methods given in BS 7385 Part 2-1993 *Evaluation and measurement for vibration in buildings Part 2* as they "are applicable to Australian conditions". This approach is considered appropriate for this project given that heritage structures have been identified requiring specific criteria and also given the proximity of adjoining residential and Hospital buildings. In regard to heritage, just because a structure is identified as being heritage does not automatically imply that the structure is more sensitive to vibration. This is consistent with AS2187, which states:

"A building of historical value should not (unless it is structurally unsound) be assumed to be more sensitive."

AS2187 sets guide values for building vibration based on the lowest vibration levels above which damage has been credibly demonstrated. These levels are judged to give a minimum risk of vibration induced damage, where minimal risk for a named effect is usually taken as a 95% probability of no effect.

Sources of vibration that are considered in the standard include demolition, blasting (conducted during mineral extraction or construction excavation), piling, ground treatments (e.g., compaction), construction equipment, tunnelling, road and rail traffic and industrial machinery.

The recommended limits (guide values) for transient vibration to ensure minimal risk of cosmetic damage to residential and commercial buildings are presented numerically in **Table 6** and are likely to be considered typical for surrounding receivers (subject to a final inspection or dilapidation as required necessary).

Specific to building damage, several conservative assumptions are made including:

- They are inground vibration levels, i.e. do not take into account the dynamic response of the structure.
- The dominant frequency of the vibration source occurs at 4Hz.
- Continuous vibration, which in turn assumes that the building structure will resonate (at 4Hz).
- Resonance will lead to the consideration that the guide values in BS7385:2-1993 may need to be reduced by up to 50%. This leads to an automatic application of a 50% reduction without merit.

VMS considers this to be a very conservative approach and this position is consistent with other acoustic consultants working on similar projects.

Table 6 Transient Vibration Guide Values - Minimal Risk of Cosmetic Damage

Line	Type of Building	Peak Component Particle Velocity in Frequency Range of Predominant Pulse	
		4 Hz to 15 Hz	15 Hz and Above
1	Reinforced or framed structures Industrial and heavy commercial buildings	50 mm/s at 4 Hz and above	
2	Unreinforced or light framed structures Residential or light commercial type buildings	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above

3.3.2 Human Comfort

Structural vibration in buildings can be detected by the occupants possibly affecting them in many ways including reducing working efficiency and quality of life. Complaint levels from occupants of the buildings subject to vibration depend on the use of the building and the time of day.

Acceptable levels of continuous vibrations depend on the time of day and the activity being undertaken. The preferred values for continuous and impulsive vibration for relevant spaces are presented in **Table 7** and **Table 8** (as nominated in the EPA's *Assessing Vibrations: a technical guideline, Table C1.1*), this guideline is referenced as part of the existing SSD approval.

Table 7 Criteria for Exposure to Continuous Vibration

Space Occupancy	Time of Day	Peak Velocity (mm/s)	
		Preferred	Maximum
Residential	Day	0.28	0.56
	Night	0.20	0.4
Offices	Day/Night	0.56	1.1
Critical working areas (e.g., Hospital operating theatres, precision laboratories)	Day/Night	0.14	0.28

Table 8 Criteria for Exposure to Impulsive Vibration

Space Occupancy	Time of Day	Peak Velocity (mm/s)	
		Preferred[1]	Maximum
Residential	Day	8.6	17.0
	Night	2.8	5.6
Offices	Day/Night	18.0	36.0
Critical working areas (e.g., Hospital operating theatres, precision laboratories)	Day/Night	0.14	0.28

In the case of intermittent vibration, which is caused by plant such as rock breakers, the criteria are expressed as a Vibration Dose Value (VDV). The calculation of a VDV is used to evaluate the cumulative effects of bursts of intermittent vibration. Numerous studies have shown that VDV assessment methods far more accurately assess the level of disturbance than methods which assess the vibration magnitude only.

The acceptable VDV intermittent vibration for various spaces are presented in **Table 9** (as nominated in the *EPA's Assessing Vibrations: a technical guideline, Table 2.4*).

Table 9 Acceptable Vibration Dose Values

Space Occupancy	Time of Day	VDV (m/s$^{1.75}$)	
		Preferred	Maximum
Residential	Day	0.20	0.40
	Night	0.13	0.26
Offices, schools, educational institutions, places of worship	Day/Night	0.40	0.80
Critical areas[1]	Day/Night	0.1	0.2

Note 1: Examples include Hospital operating theatres and precision laboratories where sensitive operations are occurring.

3.3.3 Sensitive Equipment

The Hospital and nearby medical centres may use equipment that could be sensitive (such as electron microscopes or MRI) to construction induced vibration. Furthermore, the buildings that house such equipment may require assessment against stricter criteria than typically considered for building damage or even human comfort. In addition, the operation of such equipment may be impaired by construction vibration and as such specific acceptable vibration levels should be obtained from the manufacturer of such equipment.

It is recommended that this section is updated only if vibration intensive works are proposed in close proximity to sensitive equipment (or procedures). The type of equipment, location and both installation details and building details which house the sensitive equipment are also to be confirmed.

4 Existing Background Noise Environment

Construction NMLs for airborne noise emission are generally based on the existing background noise levels within a given area with an allowable increase due to the temporary nature of construction works (refer **Section 3.2**). In some instances, NMLs may also be based on the sensitivity of particular building spaces. For example, the acceptable noise level within a factory would be much higher than for a recording studio.

A background noise survey formed part of the SSD application and the results are summarised in **Table 10**.

Table 10 Summary of Background Noise Levels

Monitoring Location	RBL derived from Measured Background Noise Levels (dBA)		
	Day[1]	Evening[2]	Night[3]
L1 as per **Figure 2**	41	40	34
L2 as per **Figure 2**	43	38	30
L3 as per **Figure 2**	41	40	35
L4 as per **Figure 2**	44	40	38

Note 1: Daytime 7.00am to 6.00pm except Sundays and Public Holidays where day begins at 8.00am.
Note 2: Evening 6.00 pm to 10.00 pm.
Note 3: Night 10.00 pm to 7.00 am except Sundays and Public Holidays where night ends at 8.00am.

5 Construction Noise and Vibration Management Levels

5.1 Construction Noise Management Levels

The airborne noise objective for residential receivers indicates that noise from construction activities should be managed such that the L_{Aeq} noise level, measured over a period of not less than 15 minutes, should not exceed the RBL by more than 10 dBA.

Based on the RBLs presented in **Table 10** and the surrounding receiver types, site specific Construction NMLs have been established and are presented in **Table 11**.

In the first instance and given that specific works outside standard construction hours are not planned at this stage, only NMLs during standard constructions hours are shown.

Table 11 Construction Noise Management Levels

Location	$L_{Aeq(15minute)}$ Construction NMLs during Standard Construction Hours
Child Care Centre	Classrooms - 45 dBA (internal) or 55 dBA (external[1])
Hospital, Medical Centre	45 dBA (internal) or 55 dBA (external[1])
Residential Receiver[2]	These are external levels. Highly Noise Affected is 75 dBA Noise Affected (based on RBL +10 dB) ranges from 51 to 53 dBA
Office, retail outlet	65 dBA (external facade)

Note 1: In the first instance and on the basis of operable windows, a 10 dB reduction across the façade is assumed. This is likely to be conservative for the Hospital/Medical Centres and this will be confirmed by VMS prior to construction works commencing.

5.2 Construction Vibration Management Levels

The Vibration Management Levels (VMLs) will depend on the type of construction activity and the receiver type.

Given the low risk that vibration intensive works will occur, let alone be in close proximity of a sensitive receiver or equipment, this section is provided to ensure an “allowance” in the event that such events arise.

Specific monitoring for comparison against human comfort, sensitive equipment or building damage requirements can be developed if necessary with reference to **Section 3.3**.

6 Identification of Worst-Case Noise Intensive Works

Worst case scenarios assume the use of all equipment in any 15 minute period at the closest location to a receiver. It is unlikely that such activities will operate simultaneously, at full capacity, and at the closest point for many 15 minute periods and so impacts will below the predicted levels for the majority of the time.

For these works, and with reference to **Table 1**, the worst-case noise intensive scenario at each construction zone has been modelled. The scenarios are shown in **Table 12**.

Table 12 Worst-Case Noise Intensive Scenarios in each Construction Zone

ID	Work Activity	Main Equipment Likely to be Used Concurrently	Construction Zone	Sound Power Level[1] (dBA)
1	Alterations	Powered Hand Tools Mobile Crane (~60 t)	A	95[2] 102[3]
2b	Pedestrian Ramp Construction	Powered Hand Tools (including jackhammers) Mobile Crane (~40 t) Concrete Trucks	B	113[4,5,6] 100[3] 102[3]
3a	Delivery and Lifting	Semi Trailers Mobile Crane (~60 t)	C	95[7] 102[3]
4b	Steel Erection	Powered Hand Tools (including Rattle Guns) Mobile Crane (~60 t)	D	107[4,5,6] 102[3]

Note 1: Typical sound power level sourced from TfNSW's Strategy or VMS Database.

Note 2: 100% utilisation over worst-case 15 minute period.

Note 3: 50% utilisation over worst-case 15 minute period.

Note 4: 33% utilisation over worst-case 15 minute period.

Note 5: Level includes a 5dB penalty.

Note 6: Assumed up to 2 working in the same 15 minute period.

Note 7: Assumed idling for entire 15 minute period.

7 Construction Noise Assessment

7.1 Airborne Noise from On-site Construction

The predictions have been undertaken using iNoise V2024 and include the following main inputs:

- Ground and air absorption.
- Shielding from existing buildings, existing 2.4m hoarding and existing boundary fences.
- Typical construction octave band sound power levels.

With consideration to the four worst-case scenarios identified in **Section 6** and the main inputs on the previous page, **Table 13** provides a summary of highest predicted $L_{Aeq(15min)}$ noise levels for each noise sensitive receiver grouping. The following conclusions can be made from these predictions:

- There are no exceedances at commercial receivers and there are no HNA residences.
- There are no exceedances at the residential to the north (Fourth Avenue) or west (Ryedale Street).
- Exceedances to residences to the south, east and those adjoining the site are up to 3dB, 14dB and 5dB above NMLs respectively.

Table 13 Predicted Airborne Noise from on-site Construction

Receiver Type	NML $L_{Aeq(15min)}$ dBA	Predicted[1] Airborne Noise within each Zone $L_{Aeq(15min)}$ dBA			
		Zone A	Zone B	Zone C	Zone D
Across Fourth Avenue to the North					
RES	51 (75 HNA)	49	43	49	<40
Across Florence Street to the South					
RES	53 (75 HNA)	<40	<40	<40	***56***
Across Ryedale Road to the West					
RES	51 (75 HNA)	<40	<40	<40	48
Across Denistone Road to the East					
RES	51 (75 HNA)	***56***	***65***	***57***	***63***
COM	65	54	63	54	61
Properties adjoining site					
RES	51 (>75 HNA)	***54***	***56***	***55***	<40
COM	65	48	47	46	48

Note 1: Numbers in bold italics indicate exceedance of the NML.

7.2 Standard Mitigation Measures

Mitigation measures that are recommended to be considered for these works are provided in **Table 14** to **Table 17**. The mitigation measures are typically divided into four categories as per below and are aimed at reducing impacts:

- Administration
- Source
- Path
- Receiver

Table 14 Standard Mitigation Measures - Administration

Item	Mitigation Measure	Details	Feasibility	Reasonableness	Project Implementation
10.1	Complaints Management	Ensure the community can register complaints and enquires.	Yes	Yes	AWE/HI to provide relevant contact details for the community to provide feedback on perimeter hoarding.
10.2	Inductions	All contractors and sub-contractors shall be site inducted.	Yes	Yes	AWE will ensure all contractors and subcontractors are inducted to site.
10.3	Construction Hours	Approval will issue relevant conditions as expected. In the event that works outside these hours are required, then the Protocol is to be followed.	Yes	Yes	AWE to ensure works are conducted during Standard Hours only. Sufficient planning is to be conducted to minimise works outside these hours. Protocol to be followed if works must be conducted outside these approved hours.
10.4	Scheduling of Works	Carry out intensive works following specific consultation with nearby receivers and stakeholders to minimise impact during more sensitive times i.e. operations /use of sensitive instrumentation. Ensure ICU cut in is managed with all stakeholders.	Yes	Yes	A pre-commencement meeting with nearby receivers and stakeholders to be undertaken by AWE after which it is recommended that scheduling of works is considered as required.
10.5	Community Engagement and Notification	Notify all nearby receivers following review of surrounding receiver types.	Yes	Yes	Yes
10.6	Confirmation of vibration limits for sensitive equipment	Ensure that any vibration sensitive equipment is not damaged and can operate normally during construction.	Yes	Yes	AWE to request an inventory of all vibration sensitive equipment adjacent to worksite including make, model, vibration tolerance specification and location.
10.7	CEMP and WMS	Mitigation to be included in CEMP and also outlined in WMS.	Yes	Yes	Yes
10.8	Site Diary	AWE to maintain and note items such as main works conducted daily, mitigation installed, complaints received and management, heavy vehicle movements, weather condition and incidents.	Yes	Yes	Yes

Table 15 Standard Mitigation Measures - Source

Item	Mitigation Measure	Details	Feasibility	Reasonableness	Project Implementation
11.1	Equipment Selection	Select quiet, modern and well maintained plant. Low vibration.	Yes	Yes. Potential 3 dB to 8 dB benefit and lower vibration.	To be implemented where possible.
11.2	Process and Technique	Well trained contractor to: • Ensure spoil is placed and not dropped into truck. • Limit shaking the bucket. • Limit cleaning the muck off piling using brake.	Yes	Yes. Potential 3 dB to 8 dB benefit. Will reduce short-term high-level events.	Training to be provided in site specific toolbox meeting.
		Saw cut site perimeter or slabs prior to hammering.	Yes	Yes. Will reduce vibration and regenerated noise.	Training to be provided in site specific toolbox meeting.
		Limit cumulative works where possible and practical.	Yes	Yes. Provided that project timing does not blow out.	To be considered by AWE and dependant on impacts and project timing.
11.3	Reversing alarms to be non-tonal	Ensure all plant is fitted with quiet, non-tonal alarms.	Yes	Yes. Will reduce short-term high-level events.	Yes
11.4	Audits/Trials	Attended noise measurements of major plant/processes as required.	Yes	Yes. Will be able to verify near field levels.	Yes. Any exceedance to be noted.
11.5	Truck Speeds	Limit on-site truck speeds.	Yes	Yes. Can reduce noise.	All drivers to be notified of speed limit onsite.
11.6	Switch off plant not being used	Limit the use of unnecessary plant including idling.	Yes	Yes. Will reduce noise.	Yes

Table 16 Standard Mitigation Measures - Path

Item	Mitigation Measure	Details	Feasibility	Reasonableness	Project Implementation
12.1	Shielding	Install Temporary Solid Barrier around works.	Yes	Yes, only to adjoining residences.	2.4m Class A hoarding to remain from previous contractor. Ensure boundary fence to adjoining residences is solid, continuous and at least 1.8m in height.
12.2	Site movements (Heavy Vehicles)	Trucks to enter/exit via Ryedale Road as much as possible.	Yes	Yes, likely to reduce noise to some receivers.	Yes.
12.3	Site movements (Light Vehicles)	Encourage strategies such as use of public transport and car pooling.	Yes	Yes, likely to reduce noise to some receivers.	Yes.

Table 17 Standard Mitigation Measures - Receiver

Item	Mitigation Measure	Details	Feasibility	Reasonableness	Project Implementation
13.1	Closing Windows and Doors	Notification to close windows and doors during noisy works.	Yes	Yes, could provide an additional reduction of 10dB from outdoors to indoors.	Yes. AWE to add to their notifications.
13.2	Scheduling of Works with Consultation of adjacent receivers	Consult with Childcare, Ambulance Station and Hospital to minimise high noise/vibration events.	Yes	Yes. Provided that project timing does not blow out.	To be considered by AWE and dependant on impacts and project timing.
13.3	Monitoring of impacts.	Specific monitoring of noise/vibration during intensive works such as use of jack hammer and demo saws. During ICU cut in if scheduling cannot occur.	Yes	Yes	To be considered by AWE during intensive works and ICU cut in if scheduling cannot occur.
13.4	Dilapidation.	Dilapidation survey to be conducted as required, including Ambulance Station, heritage buildings and vibration sensitive equipment.	Yes	Yes	Yes. AWE and VMS to liaise and ensure appropriate vibration management levels are selected if vibration intensive works are to occur near sensitive receivers/equipment.

7.3 Additional Management Measures

As per the Protocol, additional mitigation measures (AMM) will be triggered once the predicted noise level (air-borne noise) exceeds RBL + 20dB and once vibration levels exceed maximum levels (regarding Human Comfort or Building Damage).

Table 18 has been reproduced with reference to the Protocol for airborne construction noise.

Table 18 AMM Matrix - Airborne Construction Noise

Time Period		Mitigation Measures			
		Predicted $L_{Aeq(15minute)}$ Noise Level Above RBL			
		Qualitative Assessment of Noise Levels			
		0 to 10 dB (Noticeable)	10 to 20 dB (Cleary Audible)	20 to 30 dB (Moderately Intrusive)	>30 dB (Highly Intrusive)
Standard Hours	Monday-Friday (7.00am - 6.00pm)	-	-	LB[1], M[2]	LB[1], M[2]
	Saturday (8.00am - 1.00pm)				
	Sunday/ Public Holiday (Nil)				

Note 1: LB - Letter Box Drops - Allows information regarding impacts to be delivered including contact details for complaints or additional information.

Note 2: M - Monitoring - Attended noise monitoring is to be undertaken (where required) to verify that noise level predictions.

With reference to **Table 13**, AMMs are triggered for residences across Denistone Road to the East when work will occur within Construction Zone B and D. The extent of the AMMs are addressed in the following Sections.

7.3.1 Letter Box Drops

The extent of letterbox drops will be as follows:

- The first row of residences opposite Denistone Road between Fourth and Florence Avenues.

However, it is also recommended that the following area also receive regular notification via letterbox drops:

- The adjoining two residences on the corner of Denistone Road and First Avenue.
- All receivers within the Hospital.

7.3.2 Noise and Vibration Monitoring

Attended noise monitoring has been triggered when works are undertaken within Construction Zone B and D. Monitoring will occur at a residential receiver deemed to be most impacted by the works, which will most likely be a receiver directly across from the works at the time. It may also be sensible to conduct monitoring at the Ambulance Station/within Hospital if safe and accessible during works within Zone D/cut-in.

Monitoring shall also occur in response to complaints and to confirm the sound power levels from intensive equipment/plant/processes.

Monitoring regarding the ICU cut in, will depend on if impacts can be controlled by scheduling.

The noise monitoring would be performed by VMS on behalf of AWE and corrective action, if required will be provided immediately by experienced VMS personnel including a comparison against NMLs to confirm how well mitigations are performing and to compare against the predictions.

Equipment and methods will comply with all relevant standards and guidelines as required and a calibrated Class 2 (as a minimum) instrument shall be used. The statistical parameters to be measured will be, as a minimum, the L_{A90}, L_{Amax} and L_{Aeq} evaluated over consecutive 15-minute periods.

At this stage, vibration monitoring is considered unlikely, however “allowances” should be made in the event that vibration intensive works will be necessary and will occur in close proximity to vibration sensitive structures, equipment or occupants/patients.

7.3.3 Indicative Noise Monitoring Locations

With reference to **Figure 3**, it is likely that following monitoring locations will need to be considered:

- At least one location at a residence along Denistone Road opposite Zone B and Zone D.
- At least one location at the adjoining two residences on the corner of Denistone Road and First Avenue opposite Zone B.
- A receiver within the Hospital and the Ambulance when works associated with Zone D are occurring.

Figure 3 Potential Monitoring Locations

Source: As prepared by AWE and marked up by VMS.

8 Identifying and Managing Future Noise and Vibration Issues

Regular site inspections will be undertaken during construction at the project site which may include:

- Weekly documented inspections to be undertaken by the project manager to identify and action any noise or vibration issues.
- Daily informal checks by site project manager, site supervisor, engineers and environmental team to identify and action any noise or vibration issues. This would include daily reviews of weather forecasts, observation of meteorological conditions, on-site noise and vibration emissions.
- Pre-use plant inspection will be conducted and recorded to ensure that plant is in good working order including subjective comments regarding noise and vibration emissions.

If additional activities or plant are found to be necessary that will emit noise or vibration significantly exceeding those assumed for this assessment, these will, if required, be assessed by VMS and appropriate mitigation measures will be implemented.

Progressive impact assessments will be conducted as the works proceed if works significantly deviate from those originally planned.

9 Reporting

The Consultant will, if required, submit reports to the Project Manager at weekly intervals. These reports will cover the preceding weeks' activities and may include the following:

- Location of unattended monitoring instruments.
- Unattended monitoring results (data graphed with two day per page).
- Operator-attended monitoring locations.
- Tabulation of attended noise/vibration measurement results together with notes identifying the principal noise sources/vibration sources.
- Summary of measurements exceeding the criteria levels and descriptions of the plant or operations causing these exceedances (if available).

Details of corrective action applicable to criteria exceedances and confirmation of its successful implementation. Where corrective action has not yet been implemented, it may be shown as pending and the status of its implementation shall be carried forward to following reports.

10 Non-Compliance and Corrective Action

Where the monitoring identifies non-compliance with the relevant criteria, AWE will plan and conduct corrective action.

The corrective action may involve supplementary monitoring to identify the source of the non-conformance and/or may involve modification of the construction techniques or programme to avoid any recurrence or minimise its adverse effects.

11 Complaint Handling

AWE will adopt the following approach for handling complaints. This approach is intended to ensure that the issues are addressed, and that appropriate corrective action is identified and implemented as necessary:

- AWE will record all verbal and telephone complaints in writing and will forward all complaints to the Project Manager, together with details of the circumstance leading to the complaint and all subsequent actions.
- The Project Manager will investigate the complaint in order to determine whether a criterion exceedance has occurred or whether noise and/or vibration have occurred unnecessary.
- If excessive or unnecessary noise and/or vibration have been caused, corrective action will be planned and implemented by the construction contractor.
- Complainants will be informed by the Project Manager that their complaints are being addressed, and (if appropriate) that corrective action is being taken.
- Follow up monitoring or other investigations will be conducted by the Project Manager and the construction contractor to confirm the effectiveness of the corrective action.

Complainants will be informed of the implementation of the corrective action that has been taken to mitigate the adverse effects.

Terminology Relating to Noise and Vibration

Sound Pressure	Sound, or sound pressure, is a fluctuation in air pressure over the static ambient pressure.
Sound Power	Sound Power is the rate at which sound energy is emitted, reflected, transmitted or received, per unit time. Unlike sound pressure, sound power is neither room-dependent nor distance-dependent.
Sound Pressure Level (SPL)	The sound level is the sound pressure relative to a standard reference pressure of 20µPa ($20x10^{-6}$ Pascals) on a decibel scale.
Sound Power Level (SWL)	The Sound Power Level is the sound power relative to a standard reference pressure of 1pW ($20x10^{-12}$ Watts) on a decibel scale. The SWL of a simple point source may be used to calculate the SPL at a given distance (r) using the following formula: $SPL = SWL - 10 \times Log_{10}(4 \times \pi \times r^2)$ Note that the above formula is only valid for sound propagation in the free-field (see below).
Decibel (dB)	A scale for comparing the ratios of two quantities, including sound pressure and sound power. The difference in level between two sounds s1 and s2 is given by 20 log10 (s1 / s2). The decibel can also be used to measure absolute quantities by specifying a reference value that fixes one point on the scale. For sound pressure, the reference value is 20µPa.
A-weighting, dBA	The unit of sound level, weighted according to the A-scale, which takes into account the increased sensitivity of the human ear at some frequencies.
Noise Level Indices	Noise levels usually fluctuate over time, so it is often necessary to consider an average or statistical noise level. This can be done in several ways, so a number of different noise indices have been defined, according to how the averaging or statistics are carried out.
$L_{eq,T}$	A noise level index called the equivalent continuous noise level over the time period T. This is the level of a notional steady sound that would contain the same amount of sound energy as the actual, possibly fluctuating, sound that was recorded.
$L_{max,T}$	A noise level index defined as the maximum noise level during the period T. Lmax is sometimes used for the assessment of occasional loud noises, which may have little effect on the overall Leq noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.
$L_{90,T}$	A noise level index. The noise level exceeded for 90% of the time over the period T. L90 can be considered to be the "average minimum" noise level and is often used to describe the background noise.
$L_{10,T}$	A noise level index. The noise level exceeded for 10% of the time over the period T. L10 can be considered to be the "average maximum" noise level. Generally used to describe road traffic noise.
Free-Field	Far from the presence of sound reflecting objects (except the ground), usually taken to mean at least 3.5m
Fast/Slow Time Weighting	Averaging times used in sound level meters.
Octave Band	A range of frequencies whose upper limit is twice the frequency of the lower limit.
$D_{nT,w}$	The single number quantity that characterises airborne sound insulation between rooms over a range of frequencies.
Rw	Single number quantity that characterises the airborne sound insulating properties of a material or building element over a range of frequencies.
Reverberation	The persistence of sound in a space after a sound source has been stopped.
PPV	The particles of a medium are displaced from their random motion in the presence of a vibration wave. The greatest instantaneous velocity of a particle during this displacement is called the Peak Particle Velocity (PPV) and is typically measured in the units of mm/s.
Hertz, Hz	The unit of Frequency (or Pitch) of a sound or vibration. One hertz equals one cycle per second. 1 kHz = 1000 Hz, 2 kHz = 2000 Hz, etc.
Acceleration	Acceleration is defined as the rate of change of Velocity of a particle over a period of time and is typically measured in the units of m/sec^2.
Vibration Dose, VDV	When assessing intermittent vibration it is necessary to use the vibration dose value (VDV), a cumulative measurement of the vibration level received over an 8-hour or 16-hour period. The VDV formulae uses the RMS Acceleration raised to the fourth power and is known as the Root-mean-quad method. This technique ensures the VDV is more sensitive to the peaks in the acceleration levels. VDVs are typically measured in the units of $m/s^{1.75}$.

APPENDIX H – WATER TESTING MANAGEMENT PLAN

AW EDWARDS

RYDE HOSPITAL REDEVLOPMENT

Water (Testing) Management Plan

RHR-AWE-WTMP-001

Date: 1 March 2024
Author: Andrew Merchant
Revision: A
Status: For Approval

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Project No.	683
Project Name	Ryde Hospital Redevelopment
Project Director	Michael Musarra
Project Location	Denistone Rd, Eastwood NSW 2122
Phone No..	02 8036 7200
Client	NSW Health Infrastructure
SDA No..	State Significant Development Application and Modification SSD-36778089 – Stage 1 State Significant Development Application SSD-58210458 – Stage 2
Scope of Works	Demolition of existing buildings, services relocation and augmentation for the construction of two building envelopes (Stages 1 & 2) for a new clinical service with an approximate GFA of 40,000m2. Stage 3 includes the construction works for the restoration of the Heritage Building (Denistone House and Stables), new on grade car parks, patient drop off zones, vehicle and pedestrian access roads and path as well as landscaping. State Significant Development Application 1 Determination SSDA36778089 – June 2023 Modification 1 to State Significant Development Application SSDA36778089 – Dec 2023 State Significant Development Application 2 Determination SSDA58210458 – Aug 2024
Timing of the Works	Mid 2024 – Mid 2027

Revision Register:

Revision	Date	Status	Author	Approved By	Comments
A	1-Mar-24	For Approval	Andrew Merchant		
	Date	Status			
	Date	Status			
	Date	Status			
	Date	Status			
	Date	Status			

CONTENTS

1 INTRODUCTION

1.1 PROJECT DESCRIPTION

Refer to the Environmental Management Plan for a description for the works.

1.2 PURPOSE OF THIS PLAN

This Water (Testing) Management Plan (WTMP) has been developed as an appendix to the Construction Management Plan for the Ryde Hospital Redevelopment Project (the Project). This Plan is one of a number of Plans developed to manage our obligations as part of the project Delivery.

This Water (Testing) Management Plan is written with the purpose of communicating to the Project Stakeholders our management objectives, strategies, methodologies and actions for the execution of the works under the Contract. It should be read in conjunction with the Environmental Management Plan.

This document is based on the A W Edwards Management System which is accredited to ISO 9001:2015 (Quality), ISO 14001:2015 (Environmental), ISO 45001:2018 (Safety) and in accordance with the NSW Government Environmental Management Guidelines (construction procurement) - Edition 4, Dec 2019. A W Edwards Management System provides detailed procedures for the undertaking of our regular construction activities.

This WTMP should be read in conjunction with the sub-plans and other management plans as illustrated in the hierarchy of plans below.

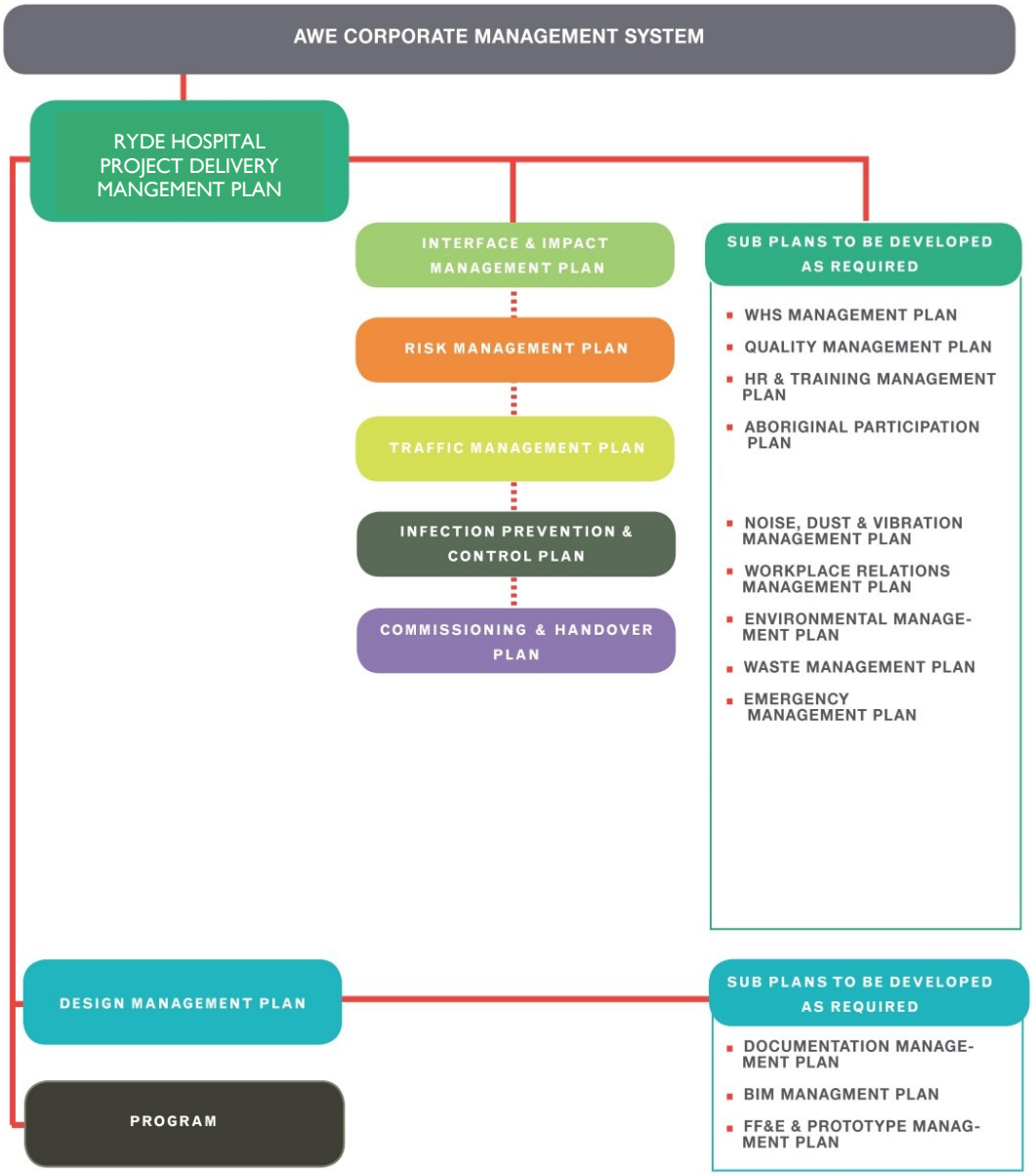


Figure 1 - Hierarchy of Management Plans

During construction, this Plan will be reviewed and updated on a regular basis to reflect design development, and our developing construction methodology.

This Plan is to ensure all members of the A W Edwards team and other project stakeholders understand the objectives and the procedures and processes in place as necessary for the successful execution of works under the contract.

1.3 OBJECTIVES

A W Edwards is committed to ensuring that no works significantly impact soil and water in and around the construction sites.

The objective of this Water (Testing) Management Plan is to:

- In conjunction with the EMP and its' appendices, ensure that construction works do not significantly impact on the movement of sediment and soil across the site in the form of erosion
- Through planning, control and testing, ensure that construction works do not significantly impact on the quality of site run-off, causing potential turbidity and chemical contamination in stormwater and local waterways

1.4 REFERENCE DOCUMENTS

- A W Edwards Management System
- State Significant Development (SSD)-36778089
- Subcontract Preliminaries Document
- Environmental Management Plan
- Protection of the Environment Operations Act 1997 and associated Regulations;
- Department of Housing, Managing Urban Stormwater: Soils and Construction (commonly known as "The Blue Book").
- Sediment and Erosion Control Drawings

1.5 PRECEDENCE

Where ambiguity is detected between the procedures and requirements in this plan and the A W Edwards Management Systems, then the procedures nominated in this plan will take precedence.

1.6 INTERFACE WITH OTHER PROJECT PLANS AND PROCEDURES

The Water (Testing) Management Plan forms part of the Construction Environmental Management Plan and should be read in conjunction said plan and its associated appendices.

2 RISK ASSESSMENT

The risk assessment process, as detailed in Project Risk Register (SE4131) – Appendix 6 of the Project Management Plan has been applied to the Project in order to determine the sources and environmental risks associated with the Project including (but not limited to) potential soil and water issues. Details of the risk assessment, including mitigation measures/controls, have been included in the Project Risk Register (SE4131) – Appendix 6 of the Project Management Plan.

The risk assessment process will be reviewed for this aspect at the following times:

- Every six months during a site audit, and including comments from personnel and subcontractors on site;
- Following high monitoring results;
- Following a complaint;
- If new work processes that have not been previously addressed start on site; and
- Should new requirements for the project or new legislation take effect.

3 MANAGEMENT AND MITIGATION

3.1 IDENTIFYING POTENTIAL CONTAMINANTS

Prior to the commencement of operations at each site, including construction site, site compounds and construction depots, the following forms of contaminants shall be identified:

- Soil and sediments – including areas that may undergo erosion if uncontrolled, and areas that may produce sediment movement, including airborne and waterborne sediment.
- Waters – including effluent water, contaminated water such as wash water and process run-off, surface water run-off from rain and groundwater.
- Potential contaminants – products stored on site that may contaminate soil and water, including oils and paints.

3.2 MANAGING POTENTIAL CONTAMINANTS

Prior to construction commencing control measures shall be determined for all identified sources of potential contaminants. These shall be recorded in Project Risk Register (SE4131) – Appendix 6 of the Project Management Plan.

Mitigation measures may include, but not be limited to:

- Erection of sediment barriers, such as silt fences and hay bales, particularly at stormwater exit points.
- Direction of surface run-off to facilitate management of turbidity.
- Planting or covering of open unsealed areas.
- Collection of wash water and surface run-off in detention areas, to facilitate settling of solid matter. Where possible this water should be re-used on site, for example in water carts, irrigation and wash water.
- Disposal of collected waters into the stormwater system provided the water complies with EPA requirements and that appropriate permits and licences are obtained.
- Bunding of all fuels and liquid chemicals, such as paints, to ensure containment of leaks and spills.
- Provision of spill kits and appropriately trained personnel to manage and contain spills.

3.3 RISK MANAGEMENT – IMPACTS AND ASPECTS

Potential environmental impacts and aspects associated with the project (including risks and opportunities) shall be identified prior to the start of the project, by the Project Manager during the project risk review and via a review of council or planner requisites, legislative or statutory authority requirements, any formal Environmental Impact Assessment or Review of Environmental Factors, and/or contract requirements. Identified environmental aspects and impacts, and controls will be recorded in the Project Risk Register (SE4131) – Appendix 6 of the Project Management Plan.

Where required or applicable to the works, the Project Manager will engage specialist environmental consultants to carry out a survey of the site to confirm constraints and to provide recommendations on how environmental aspects shall be managed.

The Project Risk Register (SE4131) will be provided to Subcontractors and suppliers as part of the Subcontract and Supply Contracts.

Where risks are identified as extreme or very high in the matrix, the impacts associated with A W Edwards activities, products and services will be deemed as significant and require operational controls that shall be described on the Project Risk Register (SE4131).

3.4 ENVIRONMENTAL CONTROLS

The Project Risk Register (SE4131) describes operational controls and identifies the Environmental Control Procedures applicable to the project.

The Site Manager will ensure that environmental controls are inspected in accordance with these plans - Hazard and Observation Sheet (SE6301).

Information on hazardous materials, including each material's potential impact on the environment and measures to be taken in the event of accidental release will be managed using information in the Hazardous Chemicals Register & Risk Assessment (SE6205) and Safety Data Sheets.

4 EMERGENCY PREPAREDNESS

The following emergency situations are planned for:

- Fuel and chemical spills
- Uncontrolled release of water, including surface run-off and groundwater
- Uncontrolled sedimentation of a local waterway

Procedures for the above emergency situations can be found in Appendix 16 of the Project Management Plan.

In preparation of any forecast significant rain or storm event, A W Edwards will issue all subcontractors on the Project with a Wet Weather Action Plan (see Appendix F). This Action Plan will provide detail of the forecast event, and the measures to be considered/ implemented in preparation of the pending storm event.

4.1 ENVIRONMENTAL INCIDENT NOTIFICATION

In accordance with Environmental Legislation referenced in the Project Management Plan, A W Edwards will notify the relevant regulatory authorities in the event of a notifiable incident.

Further, should there be an environmental incident, including (but not limited to) any of the above noted emergency situations, the Principal's Authorised Person shall be notified. Incident and corrective/preventive action records shall be completed in response to and in investigation of any incident.

5 TRAINING

A W Edwards Site Manager, Supervisor and earthworks subcontractor shall be trained by an approved/ registered training authority to perform basic water quality tests. Other personnel shall be trained from time to time to ensure that the requirements of this procedure are met.

The personnel authorised to complete basic water testing on the Project are:

- Andrew Merchant
- Ahmet Temur
- Chris Faulkes
- Claire Davies

6 NON-COMPLIANCE AND COMPLAINTS

The protocol for the handling, recording and reporting of soil and water related complaints will be in accordance with the Project Management Plan.

Should it be found that monitoring results are exceeding the criteria reactive measures will be taken to modify demolition/construction operations and minimise the potential for soil erosion or water pollution. These measures shall include the following:

- An assessment shall be made of sources of erosion/pollution during the monitoring period that are likely to be contributing to the higher than acceptable levels
- Controls and/or operational modifications shall be determined that will decrease the levels of erosion/pollution from those specific sources. Should the activity have ceased once sampling results are obtained, measures shall be put in place to ensure that similar results are not obtained from the same process at different sites.
- Monitoring results following to the reactive measures shall be checked to ensure that actions taken have reduced erosion/pollution. Should results still be outside the acceptable limits an assessment shall be made as to the appropriateness of the process. If the process cannot be avoided, and further modifications cannot be implemented, the Principal's Representative shall be consulted to determine the most appropriate course of action.
- An incident form shall be completed if erosion/pollution monitoring results significantly exceed the acceptable limit. All incidents shall be notified to the Principal's Representative as soon as practicable.

7 SUBCONTRACTOR MANAGEMENT

Subcontractor management shall be conducted as per the relevant requirements of the A W Edwards Corporate Management System to ensure that the requirements of this procedure extend to subcontractor works.

Subcontractors will be audited at periodic intervals to ensure their compliance with A W Edwards' requirements. Auditing shall be random and based on the length of time subcontractors are situated on site. Audits may also be the result of non-compliance of the subcontractor to A W Edwards' requirements.

8 POST CONSTRUCTION

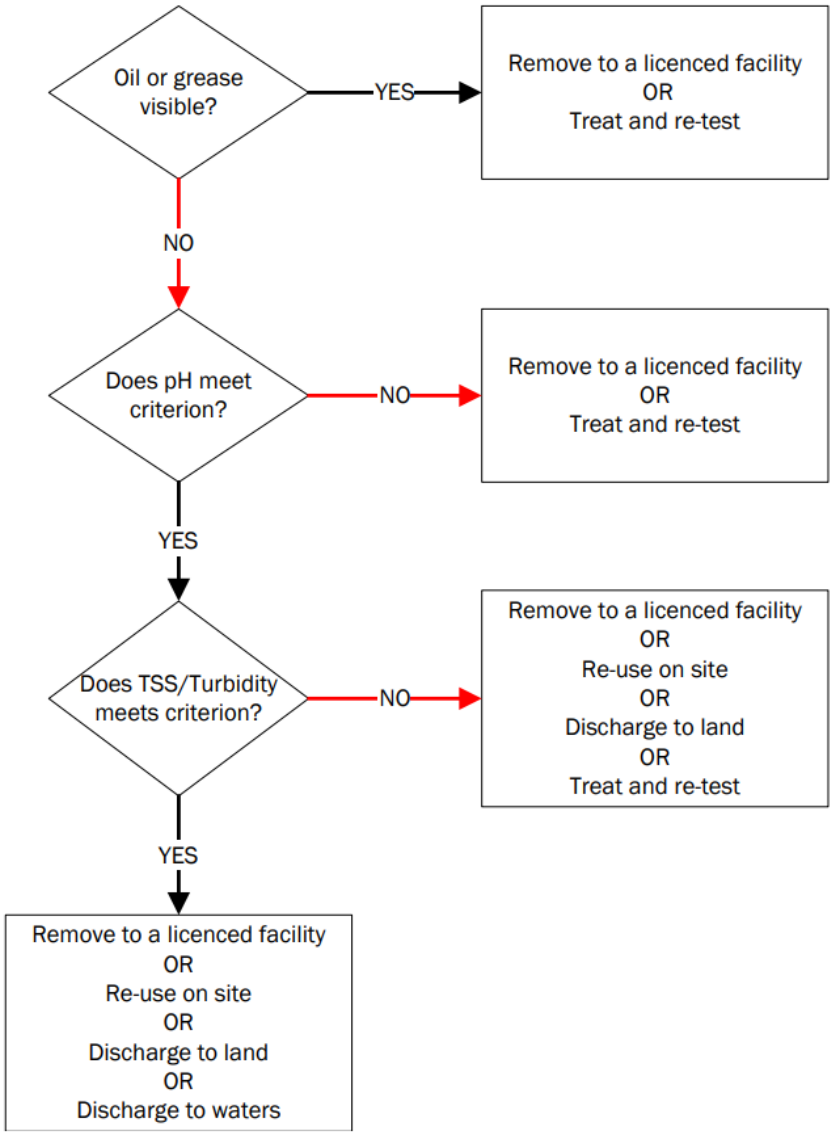
Following the construction at the site and prior to A W Edwards handing the site over to the Principal, all goods and materials stored shall be removed from the site, unless otherwise indicated by the Principal. Should the Principal require materials to remain on site, they shall be stored in a manner to ensure they do not potentially contaminate the surrounding environment.

All areas identified as requiring sediment and erosions control shall be left in a manner to ensure that they do not cause erosion and sedimentation of waterways, preferably through rehabilitation of the area.

9 WATER DISCHARGE METHODOLOGY

9.1 DEWATERING AND DISCHARGE PROCESS

Water runoff/stormwater on site is collected and/or prevented from running off to adjacent areas. Collected water shall be tested prior to discharge. See flowchart for test and discharge process below.



Procedure outline

i. All water on site is directed or pumped to the stormwater tank/pit within the Ryedale Car Park.
ii. Collected water is tested in accordance with section 9.2.1 of this plan.
iii. Water is treated (as necessary) to achieve the required pH and Turbidity levels

iv. Once the pH and Turbidity levels are within the accepted limits, apply for a permit – where applicable (from Sydney Water and/or City of Ryde Council)
v. Only once written council approval has been provided – where applicable, the water is pumped into the stormwater system
vi. The stormwater tank is cleaned out during periods of dry weather and no water has been collected
vii. Any sediment is transferred to site rubbish bins for removal from site
viii. Should local waterways have sustained damage as a result of the release, rehabilitate the area

In the event that rain exceeds the capacity of the stormwater tank within the on grade car park, excess water will accumulate within the car park area, and the same standards apply.

Tests shall be conducted on samples of water prior to any discharge to the stormwater system. During pumping operations further tests are to be completed at 30 minute intervals. Water test results shall be recorded in the Water Testing Register (SE9401).

Water shall be treated (as necessary) to achieve the required pH and turbidity levels. Where required stormwater collected shall be flocculated to settle suspended particles (typically clays and fine silts).

From the ANZECC and ARMCANZ Water Quality Guidelines, the following acceptance criteria for the discharge of water into any water body or stormwater system is:

pH	Turbidity (NTU)
6.5 – 8.0	6 - 50

A W Edwards will engage a suitably qualified hygienist/specialist to undertake water testing (at or in adjacent natural water courses or stormwater systems) to calculate acceptance criteria, in addition to establishing a correlation between Total Suspended Solids (TSS – mg/L) and Turbidity (NTU).

Once the pH and Turbidity levels are within the accepted limits, the Site Manager shall apply for a permit (from Sydney Water and/or Local Council) and where required by the contract, from the Client, before discharging water into the stormwater system.

Testing equipment is to be stored and calibrated in accordance with the manufacturer's recommendations.

Should local waterways have sustained damage as a result of the release, A W Edwards will rehabilitate the area.

After a significant rain event, the WHSE Coordinator or other Project Team member will conduct a site inspection and record any areas requiring dewatering on a Hazard and Observation Sheet (SE6301) and follow the above noted process for testing prior to dewatering/discharge.

9.2 MONITORING

Sediment laden water that accumulates within the site is not to be discharged into any water body or stormwater system without being treated and assessed for pH and turbidity. To ensure this occurs, the following steps must be adhered to:

- All dewatering must cease immediately where ANY water quality results fall outside ANZECC water quality reference values;
- Contact council if sediment laden water has left the subject premises;
- The non-conformance is to be documented and reported to the site supervisor;
- Trouble shooting should be undertaken to ascertain the reason for the failure and a second test should be undertaken to confirm or refute the non-conforming result;
- Trouble shooting would need to cover a review of the testing equipment, sampling techniques and the extent of flocculation of the water body;
- No dewatering shall recommence until the water quality results meet the ANZECC water quality criteria.

9.2.1 TESTING PROCEDURE

Tests are to be conducted on samples from the stormwater detention pit. Refer to Appendix E for Test locations. During pumping operations further tests are to be completed at 30min intervals.

To test water quality for discharge, obtain a 500ml sample of site water in a clean container.

When obtaining water from the stormwater tank, ensure water is collected without disturbing the sediment from the edge or base of the tank.

Using this sample carry out the following two simple tests.

pH level – using the pH meter, test the pH level of the water;

1. Remove cap and press the POWER button to turn on the tester
2. Dip sensor in at least 20 mm of test solution
3. Stir once and let the reading stabilize. Note the measured value
4. To hold reading, press the 'HOLD/ENT' button. Screen flashes "HO" once, then displays measurement with blinking unit (pH) to indicate that tester is in the hold mode.
5. Record pH reading on the *WATER TESTING REGISTER*.
6. Press the 'HOLD/ENT' button again to cancel hold mode ("HC")
7. Press the POWER button to shut the tester off.

Turbidity – using the turbidity meter, test the NTU of the water.
For LOW Turbidity samples (ie. <1100NTU);

1. Rinse the vial with approximately 10 ml of the sample, capping the vial with the screw cap and gently inverting it several times. Discard the used sample and repeat the rinsing procedure two more times.

2. Fill the vial with the sample. Cap the vial.
3. Allow the vial to stand undisturbed for 1 minute so that bubbles can disappear.
4. Wipe the vial with the lint-free cloth to remove water drops and fingerprints. Ensure that the outside of the vial is dry and clean.
5. Place the vial in the sample chamber. Align the mark on the vial with the arrow on the meter.
6. Close the light shield lid. Press the 'MEAS' key to measure. The measure icon should start flashing.
7. Wait for the indicator to stop flashing as the measurement stabilizes.
8. Record the turbidity reading on the *WATER TESTING REGISTER*.

The acceptance criteria for the discharge of water into any water body or stormwater system is:

pH	Turbidity (NTU)
6.5 – 8.0	6 - 50

Erosion control shall be reviewed weekly during the work area environmental management audits and also during on-site CEMP audits. Should any erosion be observed, control measures should be implemented.

9.2.2 TESTING EQUIPMENT

Testing equipment is to be stored and calibrated in accordance with the manufacturer's recommendations.

9.2.3 APPROVALS

In accordance with conditions of the SSD-36778089 (Development Consent), any seepage, rainwater, or groundwater collected onsite during the construction works must not be pumped to the street stormwater system unless separate prior approval is given in writing by Ryde City Council.

9.2.4 FLOCCULATION

Prior to pumping/discharging collected stormwater, and should turbidity results not be within acceptable ranges, the stormwater tank shall be flocculated to settle suspended particles (typically clays and fine silts).

Ground gypsum at a dosing rate of approximately 30kg per 100m^3 of stored water (section E4.1 from the 'Blue book'). Alternatively, depending on the amount of suspended particles or 'flocc blocks' or PAC23 Solution (Aluminium Salt solution) in accordance with the manufacturers' instructions will be used as a flocculent. The flocculent to be used is depending on the amount of suspended particles (turbidity).

Ensure adequate periods are allowed for settling prior to the testing and discharge of collected rainwater.

9.2.5 PUMPING

The discharge pump will be a standard 50mm flex drive pump. The rated maximum capacity is nominally 14 litres per second, however due to elevation head and discharge hose friction losses this will be somewhat less. In unusual rain events, supplementary pumps may be introduced, however only a single pump will be used under normal conditions.

The suction point of the pump is to be suspended from the base of the sediment basin to ensure settled particles are not disturbed during pumping operations.

'Tested' water discharged (pumped) from the site treatment tank, will only be to the campus stormwater system (ie. via the retention basin).

9.2.6 COUNCIL NOTIFICATION

Discharge to the street stormwater system is generally prohibited.

Should a discharge to the street stormwater system be likely, prior to any such event, City of Ryde Council must be notified via email, regarding the intention to discharge water from the site into the street stormwater system.

The following information is to be provided within the email:

- Date of discharge
- Commencement Time
- Expected duration of discharge
- Discharge point

10 RECORDS

Records for this Plan, as under the Environmental Management Plan, shall be maintained in accordance with detailed procedures in the A W Edwards Management System.

When discharging water from the site a record of discharge is to be completed. Refer to Appendix B. The information to be provided is:

- Date
- Name of person completing test
- Location of test
- pH and Turbidity results
- Time of pumping
- Duration of pumping
- Discharge point
- Comments

11 AUDITING

The collaborative audit process established for the Project Works will be followed when planning audits of the Water (Testing) Management Plan. Refer to the A W Edwards Management System Audit Procedure for details of the audit plans and processes.

The A W Edwards' Water (Testing) Management Plan and A W Edwards' related obligations and actions arising from it are to be audited every 12 months.

12 APPENDICES

APPENDIX A – UNCONTROLLED RELEASES OF WATER AND SEDIMENTATION OF LOCAL WATERWAYS

UNCONTROLLED RELEASES OF WATER AND SEDIMENTATION OF LOCAL WATERWAYS

1. If safe to do so, divert the flow of water into a holding area (eg. Ryedale car park stormwater tank, or otherwise sediment/flocc pond)

2. Notify the Principal's Representative and appropriate Authorities of the incident and complete incident and corrective/preventive action forms

3. Determine the cause of the uncontrolled release and implement corrective actions to manage the release and flow

4. If able to contain the water, allow water to settle and sample for pH, Total Suspended Solids and for Oil and Grease

5. Should sampling results be within acceptable limits, apply for a permit – where applicable (from Sydney Water and/or City of Ryde Council) to discharge the water

6. Once the permit been obtained or authority has been provided in writing – where applicable, discharge water

7. Should local waterways have sustained damage as a result of the release, rehabilitate the area

APPENDIX B – WATER TESTING REGISTER

WATER TESTING REGISTER

Test No	Name of Tester	Date	Time	Location of test	pH meter reading	Turbidity reading	Test water acceptable for discharge	Comments
1							Yes / No	
2							Yes / No	
3							Yes / No	
4							Yes / No	
5							Yes / No	
6							Yes / No	
7							Yes / No	
8							Yes / No	
9							Yes / No	
10							Yes / No	

The acceptance criteria for the discharge of water into any water body or stormwater system is:

pH	Turbidity (NTU)
6.5 – 8.0	6 - 50

Testing is to be carried out in accordance with the A W Edwards Water (Testing) Management Plan.

APPENDIX C – WATER DISCHARGE REGISTER

WATER DISCHARGE REGISTER

Test No. - Refer to Water Testing Register	Date application made to BCC	Date approval received from BCC	Discharge Date	Time pumping started	Time pumping Finished	Where is the water being discharged?	Approx. volume discharged?	COMMENTS

APPENDIX D – SEDIMENT AND EROSION CONTROL PLANS

- Developed upon award of contract

APPENDIX E – STORMWATER CONTROL PLAN

- Developed upon award of contract

WET WEATHER ACTION PLAN (SEE APPENDIX F).

- Developed upon award of contract

APPENDIX I – DUST MANAGEMENT PLAN

WORKING DOCUMENT - FINAL VERSION TO BE PROVIDED UPON CONTRACT AWARD

Ryde Hospital Redevelopment

Dust Management Plan

Review of Environmental Factors - Construction Phase

VMS AUSTRALIA

Report Number 23158.1.3

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Quality Management

Reference	Status	Date	Prepared	Checked	Authorised
23158.1.3	Rev 1	22 March 2024	Sam Demasi	Olivia Madesta	Sam Demasi
23158.1.3	Rev 0	13 March 2024	Sam Demasi	Olivia Madesta	Mark Blake

This Report by VMS Australia Pty Ltd is prepared for the Client listed above and is based on the objective, scope, conditions and limitations as agreed. The Report presents only the information that VMS Australia Pty Ltd believes, in its professional opinion, is relevant and necessary to describe the issues involved. The Report should not be used for anything other than the intended purpose. All surveys, forecasts, projections, and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to VMS Australia Pty Ltd at the date of this report, and upon which VMS Australia Pty Ltd relied.

VMS Australia Pty Ltd does not accept any liability or responsibility to any party with respect to the information and opinions contained in this report.

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1 Introduction

1.1 Background

The Minster for Planning and Public Spaces has provided approval (Application Number SSD 36778089) for the Concept and Stage 1 works associated with the Ryde Hospital Redevelopment on 30 June 2023 with conditions of consent.

At the time of preparing this assessment, SSD 58210458, associated with Stage 2 of the Redevelopment is currently awaiting a Response to Submissions, with lodgement ended 30 January 2024.

During Early Contractor Involvement (ECI), construction efficiencies have been identified by A W Edwards Pty Limited (AWE) and these suggested changes have triggered a Review of Environmental Factors (REF) for the Construction Phase of the project, including Early/Temporary Works.

Accordingly, this construction dust management plant is to be prepared to accompany the REF. As a result, VMS Australia Pty Ltd (VMS) has been engaged by AWE.

Specific terminology is used in this report and therefore common air quality terms is provided in **Appendix A**.

It should be further noted that this document may need to be updated to meet the requirements of the existing SSD approval (Concept and Stage 1 works) and pending SSD approval (Stage 2 works).

1.2 Description of Site and Surrounds

The hospital is located at Denistone Road, Eastwood in an area considered to be a suburban environment with respect to dust. Major nearby dust sources include:

- Blaxland Road and Denistone Road to the east.
- Ryedale Road and the Northern Rail Line to the west.

Single and double storey residential receivers are located:

- Across Fourth Avenue to the north.
- Across Florence Street to the south.
- Across Ryedale Road to the west.
- Across Denistone Road to the east.
- Adjoining the site on the corner of Denistone Road and Fourth Avenue.

There are a small number of commercial premises located across Denistone Road and adjoining the site along Fourth Avenue and Ryedale Road. At least one of these receivers (PRP Diagnostic Imaging) may include dust sensitive equipment.

Within the hospital are other related commercial receivers such as ambulance station, child care and rehabilitation services. Dust sensitive equipment and operating theatres will be located within the operating suites which will be in use during the works.

1.3 Description of Major Elements of Proposed Construction Works

In terms of current (and near future) approval, this project will be delivered in two stages, however following the ECI, all work activities have been streamlined, combined and integrated to efficiently deliver the Project.

Based on the ECI, the following key elements of acoustically dominate work are considered with practical completion achieved in approximately 220 weeks.

Early/Temporary works relating to the temporary relocation of certain Hospital operations (prior to Stage 1) are proposed to ensure that the ongoing operation of the hospital is not impacted during the RHR:

- Establishment of two construction zones to accommodate office space, workshops and storage.
- Construction of temporary intensive and critical care building (ICU/CCU)
- Provision of a temporary loading dock located off Denistone Road.
- Alterations to the Graythwaite Building rooftop and basement to facilitate new office space, kitchens and storage areas.
- Construction of a pedestrian ramp that connects between Trigg House and the Graythwaite Building.
- Connection and augmentation of in-ground services and utilities, as required.
- Connection between existing and temporary ICU via façade cut ins.

Subject to further design confirmation, minor earthworks, including the need for small piles (in the order of 400mm diameter) may be required to construct some of the temporary buildings.

Stage 1 works relating to Site Preparation and Initial Works associated with the Acute Services Building (ASB):

- Site Preparation
- Earthworks
- Piling
- Concreting
- Fabricating

Stage 2 works relating to the construction of the ASB:

- Demolition
- Excavation
- Piling
- Concreting
- Fabricating
- External works and landscaping

Stage 3 works relating to refurbishment of Deniston House and The Stables:

- Minor Demolition
- Refurbishment
- External works including on grade carpark and landscaping

The location of the Project site, work stages and sensitive receivers is shown in **Figure 1**.

It is noted that the four Stage works as proposed by AWE will be delivered in 3 Stages as Stage 1 and 2 works will be conducted concurrently .

Figure 1 Aerial showing Project Site, Work Stages and Sensitive Receivers

Source: As prepared by AWE.

Note: Stage 1 and 2 works will be delivered concurrently.

Considering the information contained in **Figure 1**, the following considerations are also relevant to the proposed work activities, particularly in terms of potential dust impacts:

- A childcare centre is located on Denistone Road, next to the Ambulance Station. The Centre or Station may be suitable for dust loggers with real-time data and alerts.
- Sensitive equipment is located within PRP Diagnostic Imaging as well as within various parts of the Hospital including the Operating Theatres. In addition, procedures that would be sensitive to construction dust will occur within the Theatres. A list of relevant equipment and procedures is required prior to works being undertaken, however an allowance for real-time dust monitoring is likely in these areas during intensive works. This may include works associated with the cut in between existing and temporary ICU.
- Residential receivers are located across Ryedale Road, Denistone Road and adjoining the Site on the corner of Fourth Avenue and Denistone Road. Monitoring at these locations is likely during intensive works.

2 Air Quality Criteria

The air quality criteria have been outlined in EPA's Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales and are summarised in **Table 1**.

Previous experience indicates that although the air quality criteria is specifically for outdoors, that it can also be applied indoors.

It is important to note that this section focuses on dust generated by construction activities. Potential specific health related aspects such as disease, contamination or the like are not addressed as part of this Plan. In the event that such advice is required, AWE will seek the appropriate specialist advice.

In addition these criteria, there may be the need to consider human health impacts such as from asbestos and lead. Such specialised advice is outside the scope of this Plan and shall be addressed by AWE if required.

Table 1 Impact Assessment Criteria for $PM_{2.5}$, PM_{10}, and TSP

Pollutant	Averaging period	Concentration	Source
$PM_{2.5}$	24 hours	25 µg/m^3	NEPC (2021)
	Annual	8 µg/m^3	NEPC (2021)
PM_{10}	24 hours	50 µg/m^3	NEPC (2021)
	Annual	25 µg/m^3	NEPC (2021)
Total suspended particulates (TSP)	Annual	90 µg/m^3	NHMRC (1996)
Deposited Dust	Annual	4 g/m^2/month	NERDDC (1988)

3 Construction Dust Management Levels

In accordance with the EPA's recommended dust levels presented in **Table 1**, Site Dust Management Levels have been nominated and are presented in **Table 2**. As previously mentioned, these Management Levels can also be applied inside the hospital and are for the purposes of managing dust only.

Table 2 Dust Management Levels

Pollutant	Averaging Period	Management Level
Particulate matter < 10 µm (PM_{10})	24 hour 10 minutes	50 µg/m^3 250 µg/m^3
Deposited Dust	30 days ± 2 days 12 months	8 g/m^2 4 g/m^2

As the Dust Quality Management Levels are based on long-term averages, it would be sensible to obtain at least 1 month of base line monitoring before major dust generating works commence.

4 Identification of Intensive Works

The works as identified include as potentially dust intensive:

Stage 1 - earthworks is likely to lead the worst case dust impacts during this stage, utilising:

- 3 x 20t excavators (at least one with a hammer)
- 2 x D8 dozers
- 3 x truck and dogs

Stage 2 - demolition is likely to lead the worst case dust impacts during this stage, utilising:

- 2 x 20t excavators
- 2 x demolition saws
- 3 x truck and dogs

Stage 3 - external works including on grade carpark and landscaping will likely lead the worst case dust impacts during this stage, utilising:

- 2 x 20t excavators
- 2 x 10t vibratory rollers
- 2 x 20t trucks

Compared to the intensive works mentioned above, the Early/Temporary works will involve typically smaller and less intensive processes that will be very low or negligible in relation to the generation of construction dust. These works are considered to be low to negligible risk. Given that the mitigation measures in **Section 5.1** will be implemented across all project stages, the impacts associated with Early/Temporary works are considered to be adequately managed.

5 Dust Management and Mitigation

AWE will have responsibility for the implementation of mitigation measures during the construction of this project. This includes ensuring that all AWE staff and subcontractors are fully informed about their individual obligations.

In the first instance, all standard mitigation measures that will reduce the dust emissions shall be considered following an assessment of feasibility and reasonableness. Once this process has been completed and the impacts remain high, then additional measures are to be considered with the aim of further managing the residual impacts.

5.1 Standard Mitigation Measures

Mitigation measures that are recommended to be considered for these works are provided in **Table 3** to **Table 6**. The mitigation measures are typically divided into four categories as per below:

- Administration
- Source
- Path
- Receiver

Table 3 Standard Mitigation Measures - Administration

Item	Mitigation Measure	Details	Feasibility	Reasonableness	Project Implementation
10.1	Complaints Management	Ensure the community can register complaints and enquires.	Yes	Yes	AWE/HI to provide relevant contact details for the community to provide feedback on perimeter hoarding.
10.2	Inductions	All contractors and sub-contractors shall be site inducted.	Yes	Yes	AWE will ensure all contractors and subcontractors are inducted to site.
10.3	Construction Hours and Respite	Approval will issue relevant conditions as expected. In the event that works outside these hours are required, then Protocol to be followed.	Yes	Yes	AWE to ensure Conditions relevant to construction hours is followed and that sufficient planning is conducted to minimise works outside these hours. Protocol to be followed if works must be conducted outside these approved hours.
10.4	Scheduling of Works	Carry out intensive works following specific consultation with nearby receivers and stakeholders to minimise impact during more sensitive times i.e. operations/use of sensitive instrumentation. Ensure ICU cut in is managed with all stakeholders.	Yes	Yes	A pre-commencement meeting with nearby receivers and stakeholders to be undertaken by AWE after which it is recommended that scheduling of works is considered as required.
10.5	Community Engagement and Notification	Notify all nearby receivers following review of surrounding receiver types.	Yes	Yes	Yes
10.6	Confirmation of dust limits for sensitive equipment and spaces	Ensure that any dust sensitive spaces adequately protected, and equipment is not damaged and can operate normally during construction.	Yes	Yes	AWE to request an inventory of all dust sensitive equipment and spaces adjacent to worksite including make, model, tolerance specification and location.
10.7	CEMP and WMS	Mitigation to be included in CEMP and also outlined in WMS.	Yes	Yes	Yes
10.8	Site Diary	AWE to maintain and note items such as main works conducted daily, mitigation installed, complaints received and management, heavy vehicle movements, weather condition and incidents.	Yes	Yes	Yes

Table 4 Standard Mitigation Measures - Source

Item	Mitigation Measure	Details	Feasibility	Reasonableness	Project Implementation
11.1	Process and Technique	Well trained contractor to: • Ensure spoil is placed and not dropped into truck. • Limit shaking the bucket. • Limit cleaning the muck off piling using brake.	Yes	Yes. Can reduce dust.	Training to be provided in site specific toolbox meeting.
		Limit cumulative works where possible and practical.	Yes	Yes. Provided that project timing does not blow out.	To be considered by AWE and dependant on impacts and project timing.
11.2	Truck Speeds	Limit on-site truck speeds.	Yes	Yes. Can reduce dust.	All drivers to be notified of speed limit onsite.
11.3	Seal Haul Roads	Select dedicated and sealed haul roads.	Yes	Yes. Can reduce dust.	Yes. AWE to also ensure haul road is kept clean.
11.4	Water Suppression	During works that may produce dust, maintain sufficient water suppression, taking into account weather.	Yes	Yes. Can reduce dust.	Yes
11.5	Covering Truck Loads	All trucks to cover loads with tarps.	Yes	Yes. Can reduce dust.	Yes
11.6	Wheel Wash	Install wheel wash for trucks leaving site.	Yes	Yes	Yes
11.6	Sweeper/Cart	Dust sweeper/water cart.	Yes	Yes	As required.
11.7	Switch off plant not being used	Limit the use of unnecessary plant including idling.	Yes	Yes. Will dust and other emissions.	Yes
11.8	Avoid excavation and load-out during windy conditions	Assess weather and limit excavation and load-out works when windy	Yes	Yes. Will reduce dust and other emissions.	Yes

Table 5 Standard Mitigation Measures - Path

Item	Mitigation Measure	Details	Feasibility	Reasonableness	Project Implementation
12.1	Shielding	Install Temporary Solid Barrier, shade cloth around works.	Yes	Yes, likely to reduce dust to some receivers.	Yes
		Install dust screens and airlocks for internal works or works adjacent to active sensitive spaces	Yes	Yes. Can reduce dust.	Yes
12.2	Site movements	Trucks to enter/exit via Ryedale Road as much as possible.	Yes	Yes, likely to reduce dust, particularly to PRP.	Yes.

Table 6 Standard Mitigation Measures - Receiver

Item	Mitigation Measure	Details	Feasibility	Reasonableness	Project Implementation
13.1	Closing Windows and Doors	Notification to close windows and doors during dusty works.	Yes	Yes, can reduce dust impact.	Yes. AWE to add to their notifications.
13.2	Scheduling of Works with Consultation of adjacent receivers	Liaise with Childcare, Ambulance Station and Hospital to minimise high dust events.	Yes	Yes. Provided that project timing does not blow out.	To be considered by AWE and dependant on impacts and project timing.
13.3	Monitoring of impacts.	Specific monitoring of dust during highly intensive works	Yes	Yes	To be considered by AWE during highly intensive works.
13.4	Washdown of dirty areas.	Provide washdown service to neighbouring receivers to keep sites clean.	Yes	Yes	To be considered by AWE during highly intensive works.

5.2 Additional Management Measures

Any additional measures are likely to be receiver specific and will require additional discussions with the impacted receivers.

6 Air Quality (Dust) Monitoring

Dust monitoring is typically only conducted long-term and unattended. This is primarily due to the fact the assessment criteria are averages over 24 hour periods or longer and so short-term monitoring will not provide adequate data.

The following section provides recommended allowances that will need to be reviewed once all Approvals are issued, construction staging is finalised, and all sensitive receivers (and equipment) are confirmed.

In order to manage onsite dust emissions, monitoring of Total Suspended Particles (TSP), $PM_{2.5}$ and/or PM_{10}, and deposited dust would be undertaken at up to three locations (following consultation). These locations may need to be reviewed from time to time as the work stages progress.

The dust monitoring would be performed by VMS on behalf of AWE.

At least one alert level (with guidance from **Section 3**) will be set-up for the unattended, real-time monitoring and this will include email or text messages sent to relevant personnel (AWE and VMS).

Corrective action, if required will be provided immediately by experienced VMS personnel. Given that this will be solely based on unattended data, input from AWE will be required to facilitate this.

Equipment and methods will be guided by relevant standards and guidelines as required and a calibrated instrument shall be used. The parameters to be measured will be, as a minimum, TSP, $PM_{2.5}$ and/or PM_{10} levels evaluated over consecutive 10-minute periods and averaged over 24 hour periods at the end of the day. The dust deposition data would be collected monthly and sent to a NATA accredited lab for analysis.

6.1 Indicative Monitoring Locations

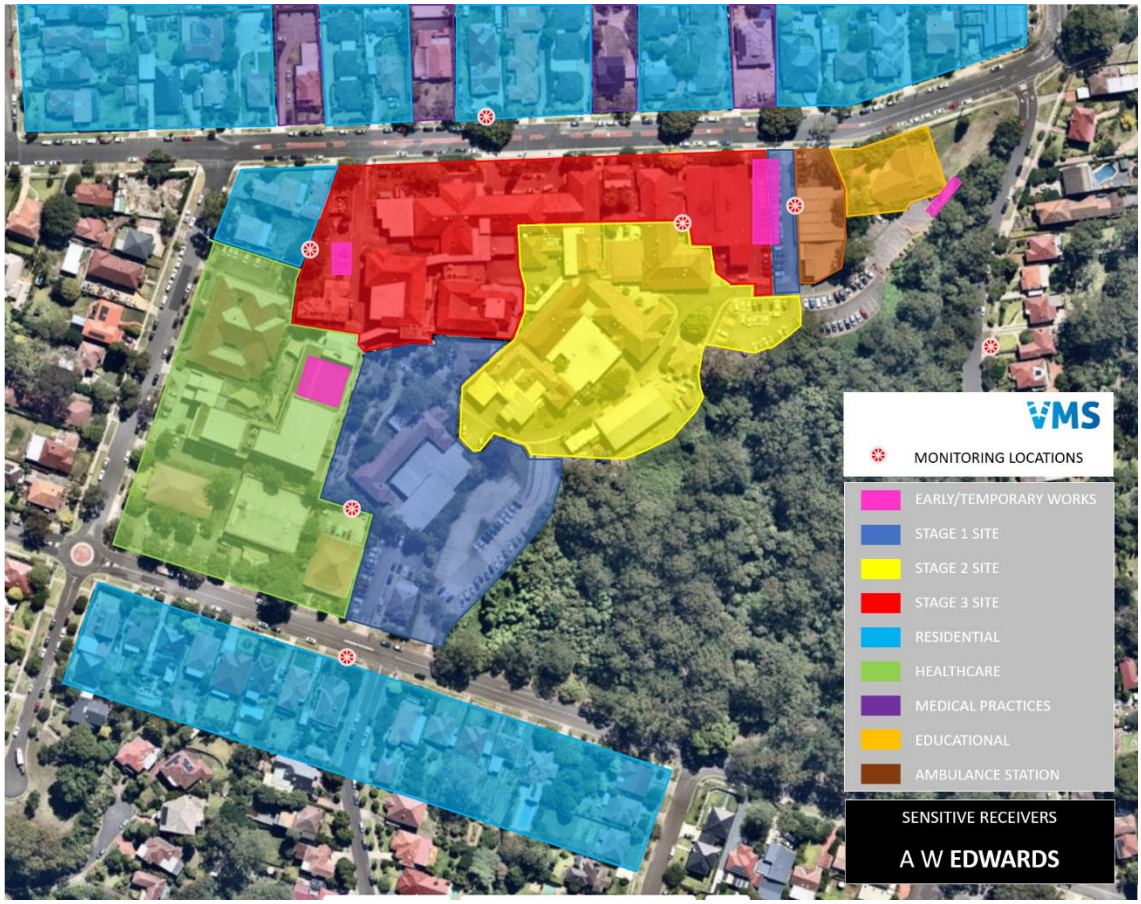
With reference to **Figure 2**, it is likely that following monitoring approach and location is allowed for to manage the risks associated with dust. Real-time dust monitors could be easily relocated between sites during the different stages. All monitors shall be configured to include alerts.

- Early/Temporary Works

Given that these works are only anticipated to generate low to negligible amounts of construction dust, and for very short periods of time, the impacts will be adequately managed by implementing the measures outlined in **Section 5.1**. However, as mentioned previously, baseline dust measurements would be sensible and at least 2 dust monitors should be installed prior to these works. Suitable locations include:

    - PRP Diagnostic Imaging (parking area) OR residences across Ryedale Road (front yard).
    - Ambulance/Child Care Centre OR residences across Ryedale Road.
- Stage 1 Works
    - PRP Diagnostic Imaging (parking area) OR residences across Ryedale Road (front yard).
- Stage 2 Works
    - Within/near the operating theatres AND Ambulance Station/Child Care Centre.
- Stage 3 Works
    - Within the side/front yards of nearby residences AND Ambulance Station/Child Care Centre particularly during demolition and bulk earthworks.

Figure 2 Potential Monitoring Locations



Source: As prepared by AWE and marked up by VMS.

7 Identifying and Managing Future Air Quality Issues

Regular site inspections will be undertaken during construction at the project site which may include:

- Weekly documented inspections to be undertaken by the project manager to identify and action any air quality issues.
- Daily informal checks by site project manager, site supervisor, engineers and environmental team to identify and action any air quality issues. This would include daily reviews of weather forecasts, observation of meteorological conditions and on-site dust emissions. This would inform mitigation measured or alternations to construction activities to be implemented during unfavourable weather conditions (such as dry weather and strong winds).
- Pre-use plant inspection will be conducted and recorded to ensure that plant is in good working order.

If additional activities or plants are found to be necessary that will emit pollutant (dust) significantly exceeding those assumed for this assessment, these will, if required, be assessed by VMS and appropriate mitigation measures will be implemented.

Progressive impact assessments will be conducted as the works proceed if works significantly deviate from those originally planned.

8 Reporting

The Consultant will, if required, submit reports to the Project Manager at weekly intervals. These reports will cover the preceding week's activities and will include the following:

- Location of unattended monitoring instruments.
- Unattended monitoring results (air quality data graphed with two days per page).
- Dust monitoring results summary together with notes describing any dust related activities.
- Summary of measurements exceeding the criteria levels and descriptions of the plant or operations causing these exceedances (if available).
- Details of corrective action applicable to criteria exceedances and confirmation of its successful implementation. Where corrective action has not yet been implemented, it may be shown as pending and the status of its implementation shall be carried forward to following reports.

9 Non-Compliance and Corrective Action

Where the air quality monitoring identifies non-compliance with the relevant criteria, AWE will plan and carry out corrective action.

The corrective action may involve supplementary monitoring to identify the source of the non-conformance and/or may involve modification of the construction techniques or programme to avoid any recurrence or minimise its adverse effects.

10 Complaint Handling

AWE will adopt the following protocol for handling complaints. This protocol is intended to ensure that the issues are addressed, and that appropriate corrective action is identified and implemented as necessary:

- AWE will record all verbal and telephone complaints in writing and will forward all complaints to the Project Manager, together with details of the circumstance leading to the complaint and all subsequent actions.
- The Project Manager will investigate the complaint in order to determine whether a criterion exceedance has occurred or whether dust generation has occurred unnecessary.
- If excessive or unnecessary dust generation has been caused, corrective action will be planned and implemented by the construction contractor.
- Complainants will be informed by the Project Manager that their complaints are being addressed, and (if appropriate) that corrective action is being taken.
- Follow up monitoring or other investigations will be carried out by the Project Manager and the construction contractor to confirm the effectiveness of the corrective action.

Complainants will be informed of the implementation of the corrective action that has been taken to mitigate the adverse effects.

Terminology Relating to Air Quality

Particulate Matter	PM_{10} (PM Coarse) - Solid or liquid particles with an aerodynamic particle size less than or equal to 10 micrometres, such as dust and aerosols, which may settle to the ground or stay suspended in air. $PM_{2.5}$ (PM Fine) - Small particles or liquid droplets measuring less than or equal to 2.5 micrometres in diameter. Due to their smaller size, these particles can be more harmful to public health than PM coarse particles.
Carbon Dioxide (CO_2)	Most prevalent of the greenhouse gases generated primarily from the combustion of fossil fuels.
Carbon Monoxide (CO)	A gas formed from the incomplete combustion of substances that contain carbon (such as gasoline and wood).
Micrograms per cubic meter ($\mu g/m^3$)	A measure of pollutant concentration. Micrograms of pollutant per cubic meter of air.
Sulphur dioxide (SO_2)	A colourless, non-flammable, water-soluble, suffocating gas, SO_2, formed when sulphur burns: used chiefly in the manufacture of chemicals such as sulfuric acid, in preserving fruits and vegetables, and in bleaching, disinfecting, and fumigating.
Nitrogen dioxide(NO_2)	A reddish-brown, highly poisonous gas, NO_2, used as an intermediate in the manufacture of nitric and sulfuric acids, and as a nitrating and oxidizing agent; a major air pollutant from the exhaust of internal combustion engines that are not fitted with pollution control devices.
Photochemical oxidants (as ozone)	Ground level ozone is a colourless, gaseous secondary pollutant. It is formed by chemical reactions between reactive organic gases and oxides of nitrogen in the presence of sunlight. Ozone is one of the irritant secondary pollutants in photochemical smog and is often used as a measure of the latter
Total suspended particulates (TSP)	An archaic regulatory measure of the mass concentration of particulate matter (PM) in community air. It was defined by the (unintended) size-selectivity of the inlet to the filter that collected the particles.
Hydrogen fluoride	A colourless corrosive gas, HF, the anhydride of hydrofluoric acid, used chiefly as a catalyst and in the fluorination of hydrocarbons.

APPENDIX J – EARLY WORKS WASTE MANAGEMENT PLAN

AW EDWARDS

Ryde Hospital Redevelopment

Waste Management Plan

RHR-AWE-EWWAS-001

Original Version Author:	Elijah Hammond
Current Revision Author:	Andrew Merchant
Current Revision:	B
Current Revision Date:	19 March 2024
Status:	For Approval

Prepared By:
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MANAGEMENT PLAN AUTHORISATION

POSITION	NAME	SIGNATURE	DATE
Project Director	Michael Musarra		19/03/2024

Project No.	683
Project Name	Ryde Hospital Redevelopment
Client	Health Infrastructure
Client Project Manager	TSA Management
Project Location	Denistone Road, Eastwood NSW 2122
Planning Instrument	Stage 1 – SSD-36778089, Stage 1 Mod 1 SSD-36778089-Mod-1, SSD-58210458
AWE Project Director	Michael Musarra
Phone No.	02 8036 7200
Scope of Works	Health Infrastructure is proposing a series of temporary works at Ryde Hospital at 1 Denistone Road, Denistone. The Purpose of the temporary works is to ensure that the ongoing operation of the hospital is not impacted during construction of the Ryde Hospital Redevelopment. Specifically, the proposed temporary works will compromise: • Construction of temporary Intensive and Critical Care building (ICU/CCU) • Provision of a temporary loading dock located off Denistone Road • Alterations to the Graythwaite Building rooftop and basement to facilitate new office space, kitchens and storage areas • Establishment of two construction zones to accommodate office space, workshops and storage • Construction of a pedestrian ramp that connects between Trigg House and the Graythwaite Building • Connection and augmentation of in-ground services and utilities, as required
Timing of the Works	Mid 2024 – Early 2025 (Early Works)
Authorised By:	Andrew Merchant

Revision Register:

REV	DATE	STATUS	AUTHOR	APPROVED BY	COMMENTS
A	1/02/2024	For Approval	Andrew Merchant	Michael Musarra	
B	19-Mar-24	For Approval	Andrew Merchant	Michael Musarra	
	Date	Status			
	Date	Status			
	Date	Status			
	Date	Status			

CONTENTS

1 INTRODUCTION

OBJECTIVES

This Early Works Waste Management Plan outlines how A W Edwards Pty Limited will manage the waste management on the Ryde Hospital Redevelopment Project Early Works, including the construction of the temporary buildings.

A W Edwards is committed to ensuring appropriate methods of waste minimisation, recycling and disposal and spoil management.

The objective of the Early Works Waste Management Plan is to:

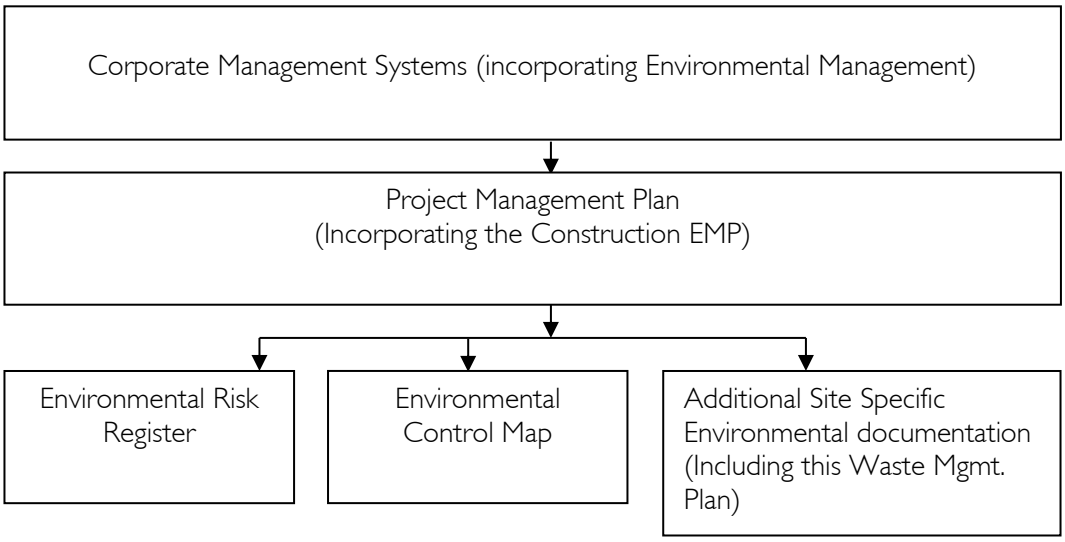
- Ensure that waste generation is avoided as a priority;
- Ensure that environmentally sensitive work practices are followed within waste minimisation programs;
- Ensure that, wherever practicable, waste materials are recycled/re-used;
- Ensure that the disposal of all liquid and non-liquid wastes is in accordance with the EPA regulations;
- Ensure that spoil from sites is managed appropriately to minimise environmental and health risks;
- Ensure that the air quality surrounding sites is appropriately managed;
- Ensure that all spoil is disposed of to prevent contamination of any lands.
- Ensure that biomedical, infectious or toxic wastes & storage of any chemicals/hazardous materials are correctly managed.

Over the past few years the environmental regulation body has undergone a number of name changes, including:

- Australian Government Environmental Protection Authority (EPA);
- NSW Environment Protection Authority (NSWEPA).

2 SCOPE

This Management Plan has been developed as part of the Project Management Plan and has been provided to assist Health Infrastructure with overall Project planning. The relationship between environmental management documentation can be summarised in the flow chart below:



The scope of this Management Plan is to provide Project information regarding waste management, re-use and spoil management for the Ryde Hospital Redevelopment Project and in particular the Early Works and temporary buildings.

Further information may be required at site, detailing specific site requirements and mitigation measures.

3 STATUTORY REQUIREMENTS

Documents and references relevant to the implementation of the Waste Management Plan include:

- Head Contract;
- Project Management Plan (and appendices);
- A W Edwards Construction Documentation;
- Legal and other requirements identified in the *Legal and Other Requirements Register* attached to the Project Management Plan

4 RISK ASSESSMENT

The risk assessment process, as detailed in the Project Management Plan, has been applied to the Project, in order to determine the sources and risks associated with waste and spoil production issues. Details of this risk assessment, including mitigation measures, have been included in Risk Management section of the Project Management Plan. Specific risks associated with each site are included in the Project Management Plan, Environmental Control Map(s) and associated Environmental Risk Register.

The risk assessment process will be reviewed for this aspect at the following times:

- Through internal and external site audits, and including comments from personnel and subcontractors on site;
- Following high monitoring results;
- Following a complaint;
- If new work processes that have not been previously addressed start on site;
- Should new requirements for the project or new legislation take effect.

5 MANAGEMENT AND MITIGATION

Although the Early Works and Temporary Buildings form a small part of the overall project, all construction areas for these works shall still identify waste streams, minimisation options and shall dispose of non-recyclable waste materials in the following ways:

- Hazardous materials surveys to be completed.
- Materials to be removed prior to demolition
- Registers and waste disposal requirements as per SafeWork NSW, EPA and NSWEPA requirements for removal, storage, transport and disposal.
- General site wastes –use one bin system and sort in contractor's yard to produce quantities of material for recycling, reuse, disposal etc.
- Empty drums are to be taken off-site for disposal.
- Empty drums shall be crushed prior to recycling/disposal.
- Do not overfill skip bins. Provide plenty for use. Cover where potential for windblown litter.

6 RECYCLING STRATEGY

GOAL

In line with the *NSW Waste and Resource Recovery Strategy 2014 – 21 (NSW EPA 2014)*, A W Edwards have a minimum goal of 80 per cent of construction and demolition waste (by weight) is diverted from landfill, and either recycled or reused.

STRATEGY

During the Early Works and temporary building construction, all construction areas shall adhere to a recycling strategy where practicable in the following ways:

a. Where reasonably practicable, through project planning, actions will be taken to reduce the amount of waste generated, eg. package considerations, and good housekeeping and material storage practices (*Avoid and Reduce Waste*)
b. Items to be considered for inclusion, but are not limited to:

   Spoil;

   Concrete;

   Timber;

   Metal/glass;

c. Ascertain whether materials can be re-used on-site and provide a designated area for storing such materials (*Reuse Waste*);

d. If material cannot be re-used on-site establish a collection service for the recyclable materials (*Recycle Waste*);
e. Erect signs within the construction areas to encourage employees to reduce, re-use, and recycle.

Specific strategies for the above-identified materials may include but are not limited to;

- Spoil – where possible; any contaminated spoil will be disposed of as waste material. A suitable location for clean spoil will be sought, and haulage organised.
- Concrete – Waste concrete shall be disposed of at an appropriately licensed facility where separation and recycling can take place. Surplus concrete and concrete washings shall be transported to an appropriate recycling facility.
- Any weed waste generated during works shall be disposed of to landfill.
- Timber – The following procedures shall occur regarding timber wastes:

Pallets and other packaging shall be returned to the supplier for reuse where possible;

- Metal/Glass - The following procedures shall occur regarding metal and glass wastes:

Drums and other metallic packaging shall be returned to the supplier for reuse where possible;

Reinforcing steel shall be sold to scrap metal merchants for recycling;

Although the Early Works and temporary buildings will have limited opportunities to explore the above strategies, A W Edwards will continue to pursue them where possible.

7 MONITORING

In order to ensure that the recycling goal is met at all sites the following will be monitored:

- The amount of waste disposed of during the Early Works and Temporary Building construction will be recorded;
- The amount of disposed waste that has been recycled or reused during the Early Works and Temporary Building construction will be recorded;
- The percentage of waste recycled or reused during the Early Works and Temporary Building construction will be determined in order to ensure that it complies with the overall recycling goal.

Where required, in order to ensure that there is no wastage of energy used on site, the following should be monitored:

- Energy consumption figures will be recorded/monitored;
- Spikes or overuse shall be identified, and the potential source identified;
- Specific monitoring of individual pieces of equipment or processes shall be considered if areas of high usage cannot be accurately determined.

8 RECORDS

Records for this Management Plan, as under the Project Management Plan, shall be maintained in accordance with detailed procedures in the A W Edwards Management System.

All documents requiring sign-off shall be forwarded to the Principal's Representative prior to the sign-off being required.

Particular documents required to be maintained in this Management Plan include, but are not limited to:

- Disposal receipts for all waste;
- Monthly waste and recycling reports provided by skip bin company engaged by A W Edwards for the project
- Correspondence with the Principal's Representative and other interested parties regarding waste management control;
- Records of any complaints.

Appendix A of this report provides the record keeping document for the construction phase of the project.

9 AUDITING

Auditing of this and associate management plans shall be conducted in accordance with the Project Management Plan.

10 NON-COMPLIANCE AND COMPLAINTS

The protocol for the handling, recording and reporting of soil and water related complaints will be in accordance with the Project Management Plan, and/or Community Communication Management Plan (where one exists).

Should it be found that the recycling goal is not met, reactive measures will be taken to modify demolition/construction operations to meet the goal. These measures shall include the following:

- An assessment shall be made of sources of waste production during the monitoring period that are likely to be contributing to the higher than acceptable levels
- Controls and/or operational modifications shall be determined that will decrease the levels of waste production from those specific sources, and lean towards recyclable materials. Should the activity have ceased once sampling results are obtained, measures shall be put in place to ensure that similar results are not obtained from the same process at different sites.
- Monitoring results following the reactive measures shall be checked to ensure that actions taken have reduced waste production. Should results still be above the acceptable limits an assessment shall be made as to the appropriateness of the process. If the process cannot be avoided, and further modifications cannot be implemented, the Principal's Representative shall be consulted to determine the most appropriate course of action.

11 SUBCONTRACTOR MANAGEMENT

Subcontractor management shall be conducted as per the relevant requirements of the A W Edwards Project Management Plan to ensure that the requirements of this procedure extend to subcontractor works.

Subcontractors will be audited at periodic intervals to ensure their compliance with A W Edwards' requirements. Auditing and inspections shall be random and based on the length of time subcontractors are situated on site. Audits may also be the result of observed non-compliance of the subcontractor to A W Edwards' requirements.

12 APPENDICES

APPENDIX A – WASTE MANAGEMENT RECORD

AW EDWARDS

WASTE MANAGEMENT RECORD

SE6206

PROJECT: ______________________________ SUBCONTRACTOR/WASTE PRODUCER: ______________________________ CONTACT PERSON/DETAIL: ______________________________

Date of service	Waste Generating Process	Type of Waste *	Quantity (kg, cubic metres, or Litres)	Contaminant(s)	Transporter	Nominated Facility for Disposal/ Treatment/ Storage	Licencing Requirements	Monitoring/ Reporting Requirements	Receipt received (Y/N)

* L - Liquid CD - Construction/Demo H - Hazardous GS - General Solid O - Organic VENM ENM X - Other