KANE

ENVIRONMENTAL MANAGEMENT PLAN

Children's Hospital Westmead
Forecourt & Retail Pod

9/10/2023

CHANGE HISTORY

FREQUENCY OF REVIEW			
☐ Monthly	☑ Quarterly	☐ Annually	☐ Event: ……..

CONTENT AUTHOR	Peter Boutros

ISSUE	CHANGE TYPE	AMENDMENT SUMMARY	AUTHOR	DATE
01	For Approval	First Issue	PB	26/06/2023
02	Reviewed	PwC review	CC	09/10/2023
03				
04				
05				
06				
07				
08				

SCHEDULE 3 (Clause Ref 3.5)

Environmental Management Plan

Who shall implement	Project Manager to prepare for implementation on site
When to implement	Each Project
How to use/implement	The Project Manager shall prepare and authorise for use the Project Environmental Management Plan EMP. In preparing the EMP, the Project Manager must: • insert names of Kane staff into the chart • detail consultation process • prepare environmental risk assessment and checklist • prepare incident response flowchart

SELF VERIFICATION CHECKLIST

SSDA REQUIREMENT	DOCUMENT REFERENCE
Prior to the commencement of construction, the Applicant must submit a Construction Environmental Management Plan (CEMP) to the Certifier and provide a copy to the Planning Secretary for information. The CEMP must include, but not be limited to, the following: (a) Details of:	
(i) hours of work;	Section 5.1
(ii) 24-hour contact details of site manager;	Attachment 4
(iii) management of dust and odour to protect the amenity of the neighbourhood;	Section 5.3 / Attachment 2
(iv) groundwater management plan including measures to prevent groundwater contamination	Section 5.13
(v) external lighting in compliance with AS4282-2019 Control of the obtrusive effects of outdoor lighting	Section 5.12
(b) an unexpected finds protocol for contamination and associated communications procedure to ensure that potentially contaminated material is appropriately managed;	Attachment 8
(c) an unexpected finds protocol for Aboriginal and non-Aboriginal heritage and associated communications procedure;	Attachment 9
(d) Construction Traffic and Pedestrian Management Sub Plan	Refer CTPM Sub-Plan
(e) Construction Noise and Vibration Management Sub-Plan (see condition B13);	Refer CNVM Sub-Plan
(g) Construction Soil and Waste Management Sub-Plan (see condition B14); and	Refer CWM Sub-Plan
(h) Flood Emergency Response	Refer to CSWMP

CONTENTS

1 INTRODUCTION

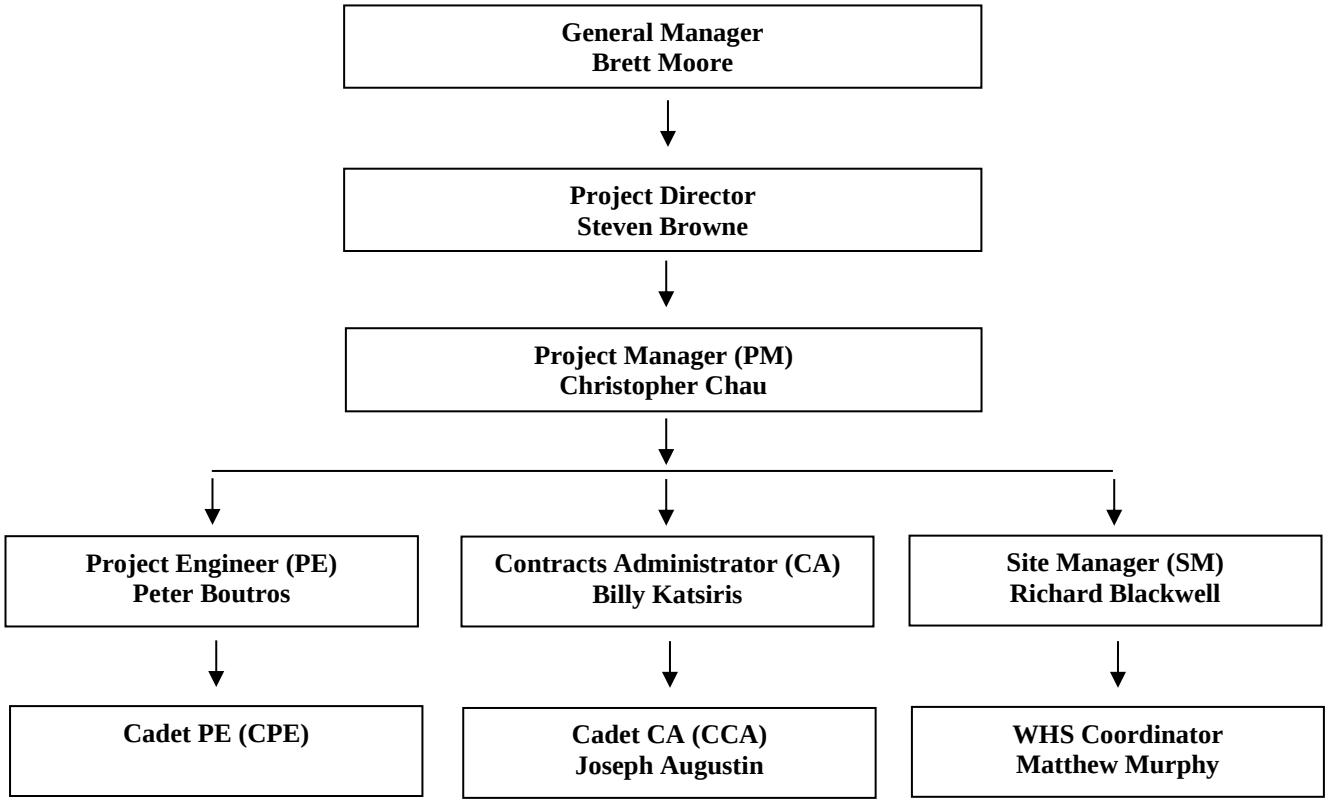
The Kane Constructions Environmental Management System is third party certified to ISO 14001 and developed for functionality and use at construction site level. The system is designed so that when implemented, will assist in achieving the objectives of the Kane Environmental Management Policy.

The Environmental Management Plan facilitates a systematic approach to site environmental management by applying the processes, checklists and forms of the Kane EMS to achieve compliance with relevant Environmental Legislation. When implemented on site, the checklists and forms of the Kane EMS become a record of project environmental management. We audit internally for compliance with the Kane EMS and randomly select sites for third party surveillance auditing for compliance with ISO 14001.

The Environmental Management Plan is developed to identify workplace environmental hazards, assess risks and implement control measures associated with activities, products and services over which Kane have control or influence.

The Kane project team is identified in the chart below. The project staff responsible for environmental management is assessed for competence, understanding and acceptance of the environmental responsibilities. Confirmation of this is provided – *refer Attachment 7*

1.1 Project Team Chart



2 CONSULTATION AND COMMUNICATION

2.1 Site Induction

Before commencing work, all visitors must report to the site office for a site specific induction where employees and service providers are presented information contained in the Environmental Induction Booklet *(refer Attachment 3)*. Consultation and communication processes established are communicated at the site induction. All workers are encouraged to express their views on environmental issues direct to the Site Manager.

2.2 Currency and Awareness of Environmental Information

Kane Constructions seek Environmental advice, assistance and keep updated with changes to Environmental legislation, regulations and guidelines through the following (not limited to);

- Environmental Protection Authority Victoria
- Office of Environment and Heritage NSW
- Department of Environment and Resource Management QLD
- Department of the Environment, Climate Change, Energy and Water ACT
- Standards Australia Update emails etc.

During toolbox talks, the Site Manager shall communicate relevant alerts, newsletters, bulletins, results of audits, corrective actions etc. consistent with current activities on site. These shall be recorded using the OHSMS Schedule W-Record of Meeting proforma.

3 TRAINING AND COMPETENCY

3.1 Kane Staff

Kane Constructions ensures ongoing Environmental Management and Awareness training for all employees based on skill gaps. This targets the needs of individual people and relates appropriately to their roles and responsibilities. Certificates of competency are maintained in staff personnel files and available to validate competency upon request.

3.2 Non Kane Staff

The employer is responsible for providing their employees with the relevant training and supervision so they have the necessary competency and skills to undertake their responsibilities.

4 HAZARD IDENTIFICATION AND RISK CONTROL

4.1 Risk Assessment

An Environmental Risk Assessment and Checklist is prepared by the Project Manager to identify environmental aspects associated with the activities to be undertaken *(refer Attachment 2)*. The risk of those aspects occurring and causing environmental impact is rated, and control measures identified to reduce the risk.

The Site Manager is responsible for ensuring the control measures determined in the Environmental Risk Assessment and Checklist are implemented and remain effective. The aspects that have significant impact and assessed to be of higher risk must be given the highest order of priority.

5 ENVIRONMENTAL ASPECTS

5.1 Work Hours

Construction, including the delivery of materials to and from the site, may only be carried out between the following hours:

(a) between 7am and 6pm, Mondays to Fridays inclusive; and

(b) between 8am and 1pm, Saturdays (and between 1pm and 5pm if works do not exceed the existing background noise level plus 5dB).

No work may be carried out on Sundays or public holidays.

5.2 Noise

The Site Manager will ensure noise and vibration levels meet acceptable standards and statutory requirements. Potential noise sources include but not limited to; plant, machinery, radios and construction methods.

The impact from noise on the surrounding areas shall be restricted to early construction activities undertaken until the building fabric is established further reducing noise impact on adjoining properties. A summary of the activities and equipment are detailed below:

Activity	Predicted Level dB(A)$L_{10(15\text{-minute})}$	Noise Management Level
Excavator with Bucket (up to 20 tonnes)	47 to 54	**NSW EPA *Interim Construction Noise Guideline*** **Residential Areas** Noise Affected Level: 53 dB(A)$L_{eq(15min)}$ (for condition C4 approved hours) 48 dB(A)$L_{eq(15min)}$ (for condition C5 approved hours) Highly Noise Affected Level: 75dB(A)$L_{eq(15min)}$ (Assessed at property boundary)
Concrete Saw	47 to 54	
Bobcat	47 to 54	
Heavy Trailers (idling)	42 to 49	
Piling Plant	48 to 55	
Concrete Pump	52 to 59	
Concrete Vibrators	47 to 54	
Hand Tools (Used Externally)	45 to 52	
Work Zone (Forklifts, Trucks, etc.)	45 to 49	
Crane (electric)	43 to 49	

As detailed within this report “on site” noise assessments of specific equipment shall be undertaken throughout the course of the project to ensure that safe noise levels for both on site workers and adjoining residence and businesses are maintained.

Refer to the Construction Noise Vibration Management Plan.

5.3 Dust and Odour

The main site activities that have potential to generate dust & odour are; disturbance of ground conditions including the interim capping layer, vehicle movements, vehicle emissions, dry powdery soils, stockpiled soils, and ponding water. The Project Manager will identify sources and apply appropriate controls while the Site Manager will ensure the controls are managed effectively. It is up to the Project Managers discretion to identify dust causing activities and appropriate controls to be implemented. Such controls could include; wheel shakers, wheel wash, manual cleaning, tarpaulins to cover haulage trucks, daily monitoring of weather conditions (wind), daily hose down of problem areas, dust protection sprinklers, dust suppression machines and chemical applications as required.

5.4 Waste

The accumulation of waste resulting from demolition works, construction works, packaging, office tasks and amenities will be managed accordingly by Kane and/or engaged subcontractors. The Site manager shall ensure facilities are provided to adequately dispose of all types of waste. All site waste management will be in accordance with the Kane Constructions Waste Management Plan.

5.5 Chemicals

Various chemicals stored on site include but not limited to fuels, oil, paint and adhesives may have an impact on the environment if not handled appropriately. The Site manager will ensure minimum quantities of chemicals are stored correctly on site and empty packaging is disposed of in accordance with state laws and regulations.

5.6 Land Contamination / Soil Contamination

Various activities may contribute to the contamination of land and soil including wash water, brick cutting and plaster. Effective controls shall be implemented to ensure contamination to soil is minimised.

5.7 Erosion and Sediment

Rain and/or water used on site over recently disturbed or bare areas of soils have potential to carry sediment off site and cause erosion impacting native vegetation and water courses. The Site Manager shall minimise the disturbance of vegetation to reduce the likelihood of sediment loss and erosion. All erosion and sediment controls will be completed in compliance with the Erosion and Sediment Control Plans (SSDA Condition B19).

5.8 Flora / Fauna

Plant/machinery and various forms of construction work can impact negatively on surrounding flora and native vegetation. Protection of existing native vegetation from the impacts of construction work shall be implemented by the Site Manager.

When native fauna is encountered, it must not be disturbed. Notify the Site Manager if you see any fauna which is in the way of conducting work. Disturbing, injuring or killing native fauna without a permit may lead to prosecution.

5.9 Mud on Road

Vehicle movements after heavy rain events increase the risk of transferring mud and dirt onto public roads. The Site Manager shall put controls in place to ensure the risk of mud on roads is minimised. These controls may include; shaker grids, wheel wash downs, tarpaulins on haulage trucks and road cleaning as required.

5.10 Heritage Sites

Various forms of construction work including demolition can have an impact of the cultural heritage of an existing building or site. The heritage significance of the building shall be determined by the Project Manager and the Site Manager shall ensure agreed protection methods are implemented on site.

5.11 Air Pollution

Poor plant maintenance and exhaust emissions will impact the quality of the air. The Site Manager shall ensure that incoming plant is assessed and confirmed to be maintained in accordance with manufacturer's recommendations. Other sources of air contaminants shall be contained and managed appropriately.

5.12 Obtrusive Lighting

All external site lighting will be selected, positioned and controlled in a manner that there will be no obtrusive impacts on surrounding buildings in accordance with AS4282-2019. Project Manager and site management will monitor the above and ensure compliance.

5.13 Groundwater Management

Groundwater contamination can occur when three main components exist: a potential source of contamination; an aquifer as the receptor; and a pathway for transfer between the two.

One of the primary pathways for groundwater contamination is infiltration of contaminants from the land surface, through the unsaturated zone, and to the unconfined aquifer below. Shallow unconfined aquifers (including karstic, conduit and fractured rock aquifers) are particularly vulnerable to contamination, especially where the associated land use includes hazardous activities with uncontrolled contamination sources. The porosity and permeability of the unsaturated zone contributes significantly to the travel time of contaminants between the source and the groundwater. A highly porous or permeable unsaturated zone, such as karst limestone, can result in the relatively quick transfer of contaminants from the surface to groundwater. However, 'reaction' of contaminants with the soil and rock of the unsaturated zone can slow or even stop contamination reaching groundwater. The unsaturated zone can be an important consideration in groundwater quality management.

Human-induced contamination is most often referred to as either point source or diffuse source. Point sources refer to localised contamination, often centred on one or more identifiable locations.

Many industrial chemicals are in use in Australia. Leaks, spills and other releases of these chemicals pose a risk to groundwater quality.

Changing groundwater levels have the potential to cause water quality changes as a result of processes such as seawater intrusion and mobilisation of acidity and metals in sulfidic soil or rock. In some cases, these can have detrimental impacts. Such changes in groundwater levels and consequent changes in groundwater quality may result from anthropogenic processes such as groundwater pumping and climate change as well as from natural climate variability. Falling groundwater levels have resulted in the drying of some wetlands. This can oxidise acid sulphate soils, which creates acidic conditions that mobilise metals and sometimes release arsenic. Falling groundwater levels due to pumping can also result in seawater intrusion into a fresh aquifer or leakage of higher- salinity groundwater into a fresher aquifer. On the other hand, rising groundwater levels or changes in groundwater flow directions can cause flow of contaminated or poor-quality groundwater into streams and wetlands. They can also bring salts in the groundwater to the surface and cause dryland and stream salinity. To mitigate this risk, groundwater is to be separated during dewatering to ensure the water is not contaminated through construction works or by accident.

6 SYSTEM IMPLEMENTATION AND RESPONSIBILITIES

Site staff have responsibility for implementation of the following site specific Environmental Management system procedures and related Kane Business Management System procedures. Responsibilities listed below must be read in conjunction with the Kane EMS responsibilities (refer Clause 3.1). The priority, order and timeframes in which the items below are implemented may differ as determined by the Project Manager to suit the project construction programme and the findings of the environmental risk assessment.

Project Specific Systems	Corporate Responsibility	Individual Responsibility
1. Include Environmental Management as a fixed agenda item of meetings	Kane	Kane PM, CM, CA
2. Develop the Environmental Management Plan EMP and all attachments	Kane	PM
3. Deliver Site Induction (including policy, controls, incident response)	Kane	SM / WHS Coordinator
4. Implement the environmental controls identified in the EMP	Kane and Subcontractors	SM, Subcontractor Supervisor, WHS Coordinator
5. Implement Incident Response procedure (where incidents occur)	Kane and Subcontractors	SM, Subcontractor Supervisor, WHS Coordinator
6. Raise Non-conformance reports and initiate corrective and preventative action	Kane and Subcontractors	SM, Subcontractor Supervisor, WHS Coordinator
7. Communicate alerts, incidents etc via Toolbox Meetings	Kane and Subcontractors	SM, Subcontractor Supervisor
8. Update site noticeboard with material waste data sheets	Kane	SM, WHS Coordinator
9. Monitor and evaluate environmental controls (document weekly)	Kane and Subcontractors	SM, Subcontractor Supervisor, WHS Coordinator
10. Measure and evaluate the effectiveness of the EMP	Kane	PM, WHS Coordinator

7 INCIDENT NOTIFICATION, INVESTIGATION AND RESPONSE

7.1 Incident notification

All site employees are responsible for notifying the Site Manager if they witness a pollution incident including leak, spill or escape of a substance or pollution incident causing or threatening public or property harm. In the event of an incident, the clean-up process shall be managed under the direct supervision of the Site Manager. The Site Manager is responsible for reporting notifiable incidents to the relevant environmental authority, Kane Senior Management and the Client Emergency Contacts in accordance with Attachment 4 Incident Response Flowchart.

7.2 Investigation and action taken

Procedural and/or legislative Non-conformances are identified, investigated, corrected and prevented by raising an Improvement Notice (refer Attachment 5). When raised, Kane Site Management documents the non-conformance and recommendation on how to correct the non-conformance. The Improvement Notice recipient is required to document the action taken to rescind the notice. Kane Site Management determines if the rectification is complete and adequate to prevent recurrence.

If the incident is of a large magnitude and poses high risk, the Site Manager shall contact and allow emergency services to manage the clean-up process. Such incidents shall be investigated using Kane OHSMS Schedule M/2 - Incident Investigation to determine how the incident occurred, how to prevent recurrence and how procedures may require revision to improve preparedness and response. The findings of an investigation are reviewed by the Construction Director, Systems Manager, Systems Coordinator, and Construction Supervisor NSW/QLD with a view to disseminating the lessons learnt to all projects.

8 AUDITING AND FREQUENCY

8.1 Internal

Quarterly Audit Report (refer Attachment 7) is used by the Project Manager to audit effective implementation of the Kane EMS. Points are awarded for effective implementation and points taken where noncompliance is observed. The audit facilitates recognising good practice environmental management and requires actions be documented where improvement is necessary. Each site is audited quarterly (minimum) close to the end of each reporting period on a day determined by the Project Manager. The audit report is issued to the Systems Manager for VIC projects or Construction Supervisor for NSW/QLD projects to review against company objectives/targets and identify trends that may appear (positive and negative). The audits are scheduled at the end of the following months (or otherwise scheduled to avoid holiday and extremely busy periods i.e. lead up to Christmas)

- March (Jan – Mar)
- June (Apr – Jun)
- September (Jul – Sept)
- December (Oct – Dec)

Random EMS audits are undertaken by the Systems Manager/Coordinator (VIC) and Construction Supervisor (NSW/QLD). Reports are prepared and distributed to all staff on the project for actioning and for information to the Directors in each state.

8.2 External

Kane Constructions certification to ISO 14001 – Environmental Management requires third party surveillance audits be undertaken. Projects are selected randomly. Each audit confirms if the company certification should remain. Corrective action must be promptly closed where identified.

It is not uncommon for head contracts to require external audits of projects. The auditor is commonly required to have Lead Auditor competency. Audit frequency and reporting requirements differ based on project complexity and risks.

9 ATTACHMENTS

Attachment	Document Title	Document Number	Revision
1	Schedule of Acts, Regulations, Standards and Codes of Practice	EMS-SYS-SCH3-ATT1	A2
2	Risk Assessment and Checklist	EMS-SYS-SCH3-ATT2	A2
3	Environmental Induction	EMS-SYS-SCH3-ATT3	A2
4	Incident Response Flowchart	EMS-SYS-SCH3-ATT4	A2
5	Improvement Notice	EMS-SYS-SCH3-ATT5	A2
6	Quarterly Audit Report	EMS-SYS-SCH3-ATT6	A2
7	Confirmation of Responsibilities	EMS-SYS-SCH3-ATT7	A2

The below table identifies the documents associated with this EMP, however are integrated with and presented in the Kane Occupational Health and Safety Management System.

Document Title	Document Description	Document Number	Kane OHS / BMS Reference
Skills Register	Register of training /competency	OHS-SYS-SCHD	OHS Schedule D
Post Tender Interview	Contract document detailing environmental management obligations of all subcontractors engaged	NA	Section 8.26
Incident Investigation	Form completed for the purposes of investigating incidents	OHS-SYS-SCHM2	OHS Schedule M2
Site Induction Record	Form completed by all inductees detailing personal and employment details	OHS-SYS-SCHP	OHS Schedule P
Record of Consultation	Form used to record consultation / communication	OHS-SYS-SCHW	OHS Schedule W

ATTACHMENT 1

Schedule of Acts, Regulations, Standards and Codes of Practice

Who shall implement	Construction Director/Secretary- Maintain currency of documentation All Project Staff- Ensure availability of publications
When to implement	Bi Annually- Maintain Currency As required - Provide documentation
How to use/implement	The list of publications is available to confirming legal obligations / best practice controls / guidance material for works on site. All Commonwealth legislation applies across

Publication	Source
Acts Environment Protection Protection of the Environment Administration Act 1991 National Environment Protection Council (NSW) Act 1995	NSW Legislation and Parliamentary Document Website http://www.legislation.nsw.gov.au/ Search Using title OR
Protection of the Environment Operations Act 1997 Smoke Free Environment Act 2000	Commonwealth Legislation Website http://www.comlaw.gov.au/Home Search using title
Contaminated Land Management Act 1997	
Planning and Environmental Impact Assessment	
Waste Avoidance and Resource Recovery Act 2001	
Environmental Reform (Consequential Provisions) Act 1999	
Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)	
Heritage and Other Land Protection	
Legislation	
National Parks and Wildlife Act 1974	
Other Acts with Potential to Affect Construction Activities	
Health Administration Act 1982	
Dangerous Goods (Road and Rail Transport) Regulation 2014	
Water Act 2007 (Commonwealth)	

Regulations Protection of the Environment Operations (Clean Air) Regulation 2010 Protection of the Environment Operations (General) Regulation 2009 Protection of the Environment Operations (Noise Control) Regulation 2017 Protection of the Environment Operations (Waste) Regulation 2014 Contaminated Land Management Regulation 2013 Smoke-Free Environment Regulations 2016	NSW Legislation and Parliamentary Document Website http://www.legislation.nsw.gov.au/ Search using title
Office of Environment and Heritage Publications and Guidelines Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW Managing Urban Stormwater Harvesting and Re-Use Soil and Construction Environmental Management on the Urban Fringe 6.1 Economic incentives for environmental management 6.2 Property management plan 6.3 Environmental assessment Storing and Handling Liquids: Environmental Protection - Participants Manual Interim Construction Noise Guideline Review of alternatives to 'beeper alarms' for construction equipment Assessing Vibration: A Technical Guideline Land Contamination: What are my Responsibilities? (Website only)	NSW Government – Office of Environment and Heritage Website http://www.environment.nsw.gov.au/ Search using title http://www.environment.nsw.gov.au/clm/index.htm https://www.epa.nsw.gov.au/
Other Standards and Guidelines ISO ASNZS ISO 14001:2015 - Environmental Management Systems Environmental Management System Guides – Risk Based Licencing Biodiversity Biodiversity Conservation Act 2016 The National Strategy for the Conservation of Australia's Biological Diversity	http://www.environment.gov.au https://legislation.nsw.gov.au/view/html/inforce/current/ac%20t-2016-063

Australian Government Department of Defence Defence Environmental Strategic Plan 2016- 2036	Department of Defence Infrastructure Management Website https://defence.gov.au/EstateManagement/governance/p%20olicy/environment/Policy/EnvironmentStrategy2016.PDF

ATTACHMENT 2

Risk Assessment and Checklist

ATTACHMENT 2 – INTERIM ENVIRONMENTAL RISK ASSESSMENT and CHECKLIST (Cl 3.5.1)

Job No. 2504

Job Title: Children's Hospital Westmead Stage 2 – Forecourt & Retail Pod

Prepared By : Chris Chau

Position : Project Manager

Sign : CCHAU **Date Approved: 29/05/2023**

Date of Review: 26/06/2023

Review Number 1

Risk Review undertaken by (list names / company);

- **Chris Chau**

ASSESS RISK RATING IN ACCORDANCE WITH THE BELOW RISK CLASSIFICATION TABLE

Determine the RATING for each aspect (including any site specific) after consideration of the standard risk controls. After implementation of the standard risk controls, is there:

• Potential for pollution resulting in long term damage • Potential for pollution that cannot be mitigated immediately • A specific contract requirement • A specific permit requirement • A specific authority requirement	**H - HIGH**	**Additional risk controls required. Frequency of monitoring to be based on level of risk**
• Minimal potential for public or other complaint • Minimal potential for pollution (mitigated with minor damage)	**M - MEDIUM**	**Monitor weekly to ensure controls are effective (may require increased monitoring based on inspections)**
• No potential for public or other complaints • No potential for a legal breach • No specific contract requirement • No specific permit requirement • No specific authority requirement	**L - LOW**	**No additional risk controls. Monitor weekly**

No	ASPECTS	SOURCE	STANDARD RISK CONTROLS	Residual Risk Rating (H, M, L)	Additional Risk Controls Required (where risk rating is H)	No. of Compliant Controls Observed	No. of Non-Compliant Controls	Minor Actions Required [Improvement Notice (Attachment 5) to be raised where significant Non-compliance is observed]	Initial and Date when action Completed
1	Noise	Plant / Machinery Construction Methods Radios	• Plant /machinery maintained in accordance with manufacturer recommendations • Silencers placed on large compressors / generators • Comply with council work hours • Limit volume of radios • Utilise prefabricated materials	L		5	0	0	CC
2	Dust & Odour	Ground disturbance Vehicle Movement Dry powdery soils	• Protect surrounding buildings ventilation systems with louvre filters • Protect areas of vegetation and minimise clearing / disturbance • Cover exposed ground with mulch or other suitable material • Restrict vehicle movements • Dampen surfaces with fence mounted sprinklers, water cart (seek approval where water restrictions apply) • Landscape and re-vegetate as soon as possible • Seed, or cover and maintain soil stockpiles • Special, high quality hoarding which meets infection control standards installed for operational healthcare facilities • Plant / machinery maintained in accordance with manufacturer recommendations • Plant / machinery exhaust emissions monitored for smoke (should not observe continuous smoke for longer than 10 seconds)	L		9	1	Pumping zone and temporary driveway to be washed down as dust being generated from heavy trucks	CC
3	Waste	Demolition Construction Works Packaging Office Amenities	• Utilise separate recycle bins for paper, steel etc (space permitting on site) • Use bin contractors who sort and recycle construction waste • Utilise existing client facilities for domestic recyclables (paper, cans etc) • ~~Recycle demolished materials wherever possible~~ • Place lids on domestic waste bins for odour and vermin control	L		4	0		CC
4	Chemicals	Fuel Oil Paint Adhesives	• No bulk storage of fuel / oil on site (fuel tankers to visit site as required) • Paints, adhesives stored on site at minimum quantities in vented containers/rooms • All storage of chemicals shall comply with the Material Safety Data Sheet • Major servicing of plant e.g. where large quantities of oil requires changing shall be undertaken off site	L		4	0		CC
5	Contamination (from slurry / wash water) & Soil Contamination	Paint Plaster Concrete	• Documented evidence of contaminated soil removed from site is accepted by landfill facility	L		1	0		CC
6	Erosion and Sediment	Disturbed / cleared soils Rain events	• Protect and maintain natural vegetation and minimise clearing / disturbance • Connect downpipes to stormwater drainage as soon as possible or pipe roof water onto grassed areas • Install sediment fences close to the site boundary and drains where surface water may carry sediment off site • Place gravel sausages across pit openings	L		4	0		CC
7	Mud on Road	Muddy site Vehicle Movements Significant Rain Event	• Crushed rock placed in areas of vehicle movement • Restrict vehicle movements on un-vegetated/exposed ground • Cover exposed trafficked ground with mulch or other suitable material • Protect areas of vegetation and minimise clearing / disturbance • Remove water from site by connecting downpipes to stormwater drainage • Install rumble strips at site exit to promote cleaning mud off vehicle tyres	L		5	0		CC
9	Air Pollution	Plant / Machinery	• Plant / machinery maintained in accordance with manufacturer recommendations • Plant / machinery exhaust emissions monitored for smoke (should not observe continuous smoke for longer than 10 seconds)	L		2	0		CC
Total Compliant and Non-compliant Observed			• **This Week**			34	1		

ATTACHMENT 3 (Clause 3.5.2)

Environmental Induction Booklet for the Children's Hospital Westmead Forecourt & Retail Pod

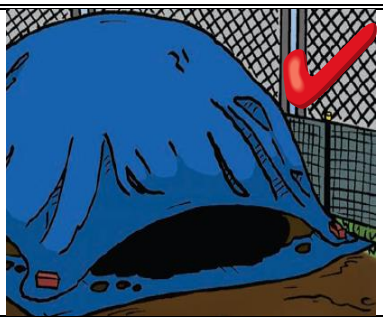
Environment Policy	All personnel (Kane Constructions and Subcontractors) must be committed to achieving the objectives of Kane's Environment Policy. The policy is posted on the noticeboard or induction room for all inductees to read

Incident Response	All site employees are responsible for notifying the Site Manager if they witness a pollution incident including leak, spill escape of a substance or pollution incident causing or threatening public or property harm

Waste Data Sheets	The Site Noticeboard is updated as required with Material Waste Data Sheets (good practice environmental control information) for all to read

NOISE	**Source** • Plant / Machinery • Construction Methods • Radios • Unnecessary
	**Risk Controls** • Plant /machinery maintained in accordance with manufacturer recommendations • Silencers placed on large compressors / generators • Comply with council work hours • Limit volume of radios • Utilise prefabricated materials

DUST & ODOUR	**Source** • Ground disturbance • Vehicle Movement • Dry powdery soils • Cutting • Stagnant water • Infection Control
	**Risk Controls** • Protect areas of vegetation and minimise clearing / disturbance • Cover exposed ground with mulch or other suitable material • Restrict vehicle movements • Dampen surfaces (seek approval where water restrictions apply) • Landscape and re-vegetate as soon as possible • Seed or cover soil stockpiles • Monitor stormwater catchments and eliminate ponding zones • Special, high quality hoarding which meets infection control standards installed for operational healthcare facilities



WASTE

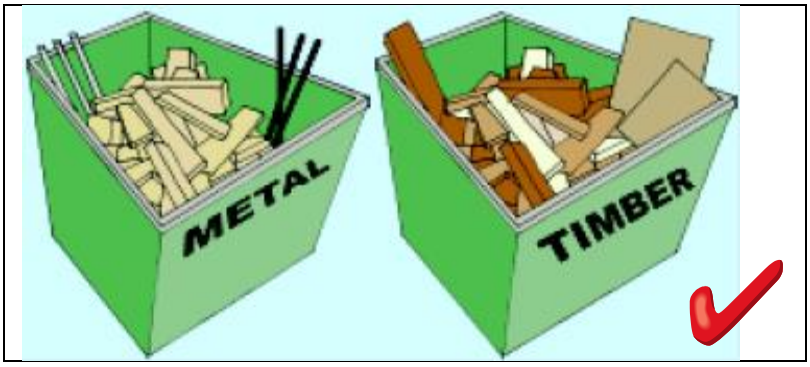
Source

- Demolition
- Construction Works
- Packaging
- Office
- Amenities

Risk Controls

- Utilise separate recycle bins for paper, steel etc (space permitting on site)
- Use bin contractors who sort and recycle construction waste
- Utilise existing client facilities for domestic recyclables (paper, cans etc)
- Recycle demolished materials wherever possible
- Place lids on domestic waste bins for odour and vermin control

RECYCLE



CHEMICALS

Source

- Fuel
- Oil
- Paint
- Adhesives

Risk Controls

- No bulk storage of fuel / oil on site (fuel tankers to visit site as required)
- Paints, adhesives stored on site at minimum quantities in vented containers/rooms
- All storage of chemicals shall comply with the Material Safety Data Sheet
- Major servicing of plant e.g. where large quantities of oil requires changing shall be undertaken off site

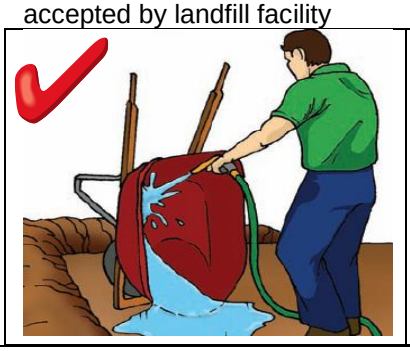
CONTAMINATION (FROM SLURRY/ WASHWATER)

Source

- Paint
- Plaster
- Concrete
- Brick / Tile / Paver cutting

Risk Controls

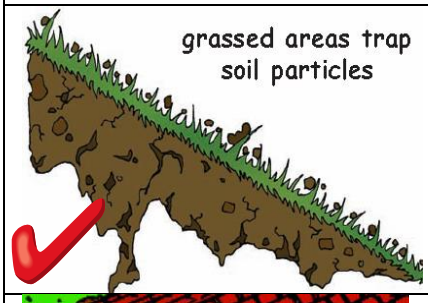
- Use paint wash trough. Settled solids should be removed by an appropriate waste disposal company
- Designate a washing up and brick cutting area away from stormwater drains. Build an earth bund to contain wash water from concrete, plaster, brick cutting
- Designate a washing up and brick cutting area away from stormwater drains. Build an earth bund to contain wash water from concrete, plaster, brick cutting
- Documented evidence of contaminated soil removed from site is accepted by landfill facility



EROSION AND SEDIMENT

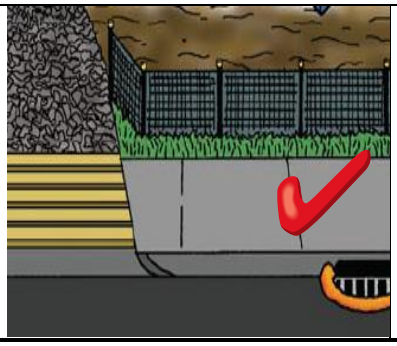
Source

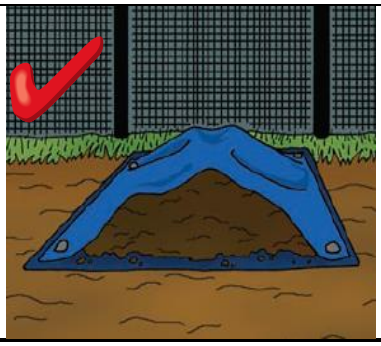
- Disturbed / cleared soils
- Rain events



Risk Controls

- Protect and maintain natural vegetation and minimise clearing / disturbance
- Connect downpipes to stormwater drainage as soon as possible or pipe roof water onto grassed areas
- Install sediment fences close to the site boundary and drains where surface water may carry sediment off site
- Place gravel sausages across pit openings





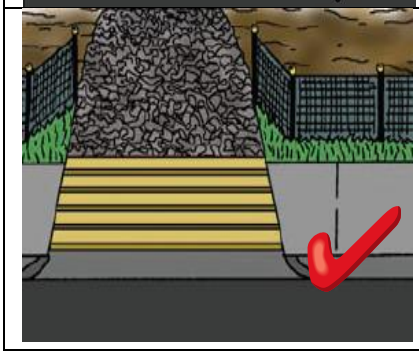
MUD ON ROAD

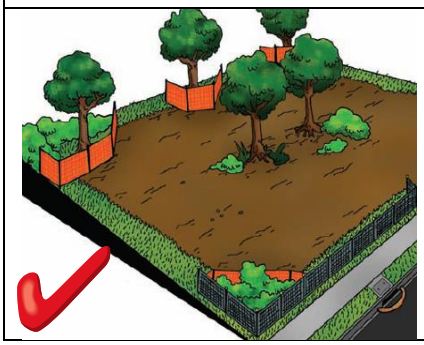
Source

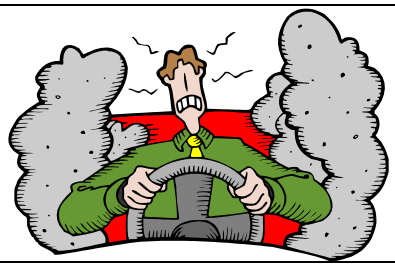
- Muddy site
- Vehicle Movements
- Significant Rain Event

Risk Controls

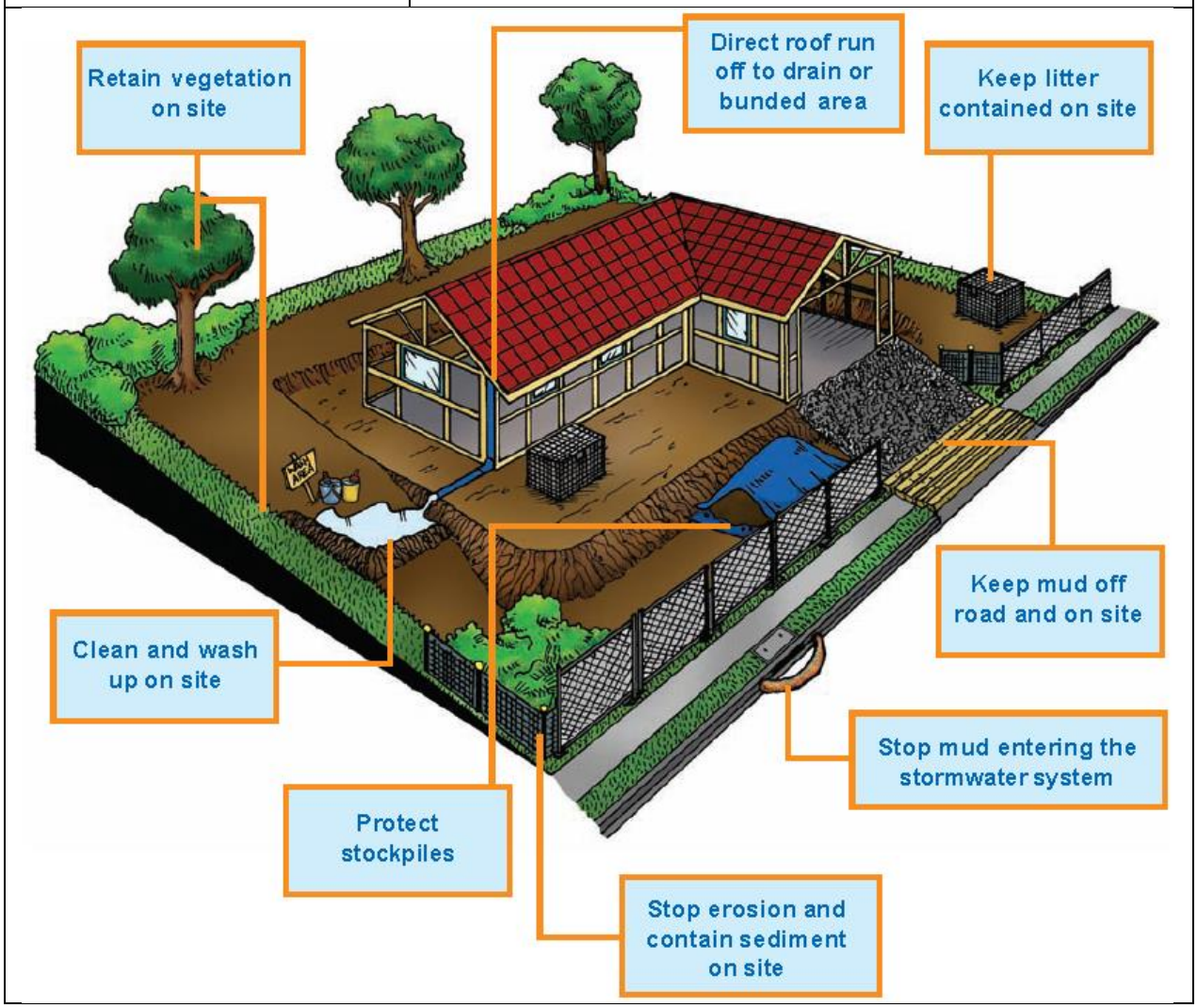
- Crushed rock placed in areas of vehicle movement
- Restrict vehicle movements on un-vegetated/exposed ground
- Cover exposed trafficked ground with mulch or other suitable material
- Protect areas of vegetation and minimise clearing / disturbance
- Remove water from site by connecting downpipes to stormwater drainage
- Install rumble strips at site exit to promote cleaning mud off vehicle tires



FLORA / FAUNA	Source
	• Plant / Machinery • Construction Works
	**Risk Controls** • Trees, shrubs etc is protected by flagging, roped off i.e."No Go Zone" • Vehicles parked outside of tree root zone to avoid damage • No entry to fenced off areas, no pets on sites, stick to access roads, and notify Site Manager of any fauna

AIR POLLUTION	Source
	• Plant / Machinery
	**Risk Controls** • Plant / machinery maintained in accordance with manufacturer recommendations • Plant / machinery exhaust emissions monitored for smoke (should not observe continuous smoke for longer than 10 seconds)

SUMMARY	Risk Controls



ATTACHMENT 4

Incident Response Flowchart

ATTACHMENT 4 (Clause 3.5.3)

Incident Response NSW

New South Wales

Organisations operating under the New South Wales Department of Planning and Environment (DPE) issued environmental licences are required to notify pollution incidents by calling the DPE Pollution Watch Line.

Pollution incident means an incident or set of circumstances during or as a consequence of which there is or is likely to be a leak, spill or other escape or deposit of a substance, as a result of which pollution has occurred, is occurring or is likely to occur. It includes an incident or set of circumstances in which a substance has been placed or disposed of on premises, but it does not include an incident or set of circumstances involving only the emission of any noise.

- Protection of the Environment Operations Act 1997 (links are to the NSW legislation website):
    - Section 116: It is an offence to willfully or negligently cause any substance to leak, spill in a manner that harms or is likely to harm the environment.
    - Section 120: It is illegal to pollute or cause or permit pollution of waters.
    - Section 124-126 Businesses must maintain and operate equipment and deal with materials in a proper and efficient manner to prevent air pollution at all times.
    - Section 139 and 140: It is an offence to allow noise from your premises to be generated as a result of the failure to maintain or operate machinery.
    - Section 142: It is an offence to pollute land
    - section 147: Meaning of material harm to the environment
    - section 148: Pollution incidents causing or threatening material harm to the environment
    - section 149: Manner and form of notification
    - section 150: Relevant information to be given
    - section 151: Incidents not required to be reported
    - section 152: Offence for breaching duty to notify pollution incidents
    - section 153: Incriminating information

The DPE relies on everyone in the community to report pollution. The community is encouraged to call the DPE Pollution Watch Line when the following is noticed:

- Smoke or odours from an industry or business
- Spills or slicks in waterways
- Illegal dumping of wastes
- Noise from a factory or industrial complex
- Littering
- Smokey Vehicles

CONTACT ENVIRONMENT LINE

Metropolitan – 131 555 (24 hours)

All site employees are responsible for notifying the Site Manager if they witness a pollution incident including leak, spill escape of a substance or pollution incident causing or threatening public or property harm. When notified, the Site Manager shall implement the attached Incident Response Flowchart.

ATTACHMENT 4 (Clause 3.5.3)

Incident Response

In the event of an ENVIRONMENTAL INCIDENT

(all types of incidents) notify the Site Manager

NOTIFY THE SITE MANAGER IMMEDIATELY

(24-Hour contact)

Name - Richard Blackwell

Mobile - 0400 743 356

Is the pollution incident (including leak, spill escape of a substance &/or other pollution incident) causing or threatening public health, property or environment harm?

YES

CALL 000 (FIRE BRIGADE)

NOTIFY NSW ENVIRONMENT LINE on 131 555 (24hrs)

Kane site team to notify Kane Senior Management

NO

Emergency Services & DPE Notification is **NOT required.**

Clean-up to be managed under the direct supervision of the Site Manager

Kane to report incident via WhatsApps message on established project channel as per Incident Management Framework

3. Incident Management Framework

Category 1 – Critical Incident **Trigger**: Incident involving fatality or severe injury or major impact to critical hospital operations or incident resulting in potential severe corporate reputational damage.	Category 2 – Significant Incident **Trigger**: Incident involving major detrimental impact to project, including damage to civil structures, extreme weather impacts, and threats to life or property or major environmental impact, or significant impact to critical hospital operations or any LTI, significant near-miss or external environmental breach.	Category 3 – Minor Incident **Trigger**: Incident involving Medical Treatment Injury (MTI), potential for LTI, or on-site environmental impact, or minor near miss or non-conformance likely to lead to LTI	Category 4 – Notifiable Incident **Trigger:** Minor incident and/or safety breach on worksite For example: first aid treatment or non-conformance on site not likely to lead to an LTI
Step 1 – Immediate **Contractor sends WhatsApp message on established project channel:** Project Manager HI Regional Director / Senior Project Directors/Project Directors/Construction Managers **Contractor informs** Regulators and Emergency Services if required	**Step 1 – Immediate** **Contractor sends WhatsApp message on established project channel:** Project Manager HI Regional Director / Senior Project Directors/Project Directors/Construction Managers **Contractor informs** Regulators and Emergency Services if required	**Step 1 – Within 1 hour** **Contractor sends WhatsApp message on established project channel:** Project Manager HI Regional Director / Senior Project Director/Project Directors/Construction Managers **Contractor informs** Regulators	**Step 1 – Within 4 hours** **Contractor sends WhatsApp message on established project channel:** Project Manager HI Project Directors/Senior Project Directors/Regional Director /Construction Managers
Step 2 – Immediate **Regional Director informs:** HI Chief Executive Executive Director Western Region/Executive Director Northern Region/Executive Director Rural & Regional HI Communications Business Partner and Director Communications and Engagement	**Step 2 – Immediate** **Regional Director informs:** HI Chief Executive Executive Director Western Region/Executive Director Northern Region/Executive Director Rural & Regional HI Communications Business Partner and Director Communications and Engagement	**Step 2 – Within 1 hour** **Regional Director / Senior Project Director / Project Director informs:** Executive Director Western Region/Executive Director Northern Region/Executive Director Rural & Regional HI Communications Business Partner and Director Communications and Engagement	**Step 2 – Within 8 hours** **Project Director/Senior Project Director:** Engage with HI Communications Business Partner and Director Communications and Engagement
Step 3 – Immediate **Chief Executive and Executive Director:** Inform Secretary (and if instructed to the Minister), Ministry, Local Health District/s Inform the HI Board Chair Engage with Director Communications and Engagement	**Step 3 – Immediate** **At discretion of CE and ED.** Chief Executive and Executive Director inform Secretary (and Minister if instructed), Ministry, Local Health District/s Informs the HI Board Chair Engage with Director Communications and Engagement	**Step 3 – Within 2 hours** **Executive Director:** Informs CE and Leadership Team	**Step 3 – Within 3 working days** Incident report submitted with recommended mitigation to Executive Director Incident Management Team not required Managed through routine project governance and reporting
Step 4 – Immediate **HI Chief Executive / Executive Director** officially declare incident as detailed in the NSW health Incident Management Policy	**Step 4 – Immediate** **At discretion of CE and ED** HI Chief Executive / Executive Director officially declare incident	**Step 4 – Within 24 hours** Stakeholder Communications Plan implemented Media Management Plan implemented, as required	**Step 4 – Within 24 hours** Stakeholder Communications Plan implemented Media Management Plan implemented, as required
Step 5 – Within 1 hour Upon CE / ED officially declaring incident, a **HI Incident Management Team is formed** – see Section 2 below	**Step 5 – Within 1 hour** Upon CE / ED officially declaring incident, a **HI Incident Management Team is formed** – see Section 2 below	**Step 5 – Within 3 working days** Incident report submitted with recommended mitigation to Executive Director Incident Management Team not required Managed through routine project governance and reporting Employee status monitored and incident escalated if condition becomes serious	
Step 6 – Ongoing **Incident Management Team assumes control of incident response** **Media and stakeholder communication** managed in line with Section 3 – Stakeholder Relationship Managers and Appendix 1 – Incident Media Protocols	**Step 6 – Ongoing** **Incident Management Team assumes control of incident response** **Media and stakeholder communication** managed in line with Section 3 – Stakeholder Relationship Managers and Appendix 1 – Incident Media Protocols		

ATTACHMENT 5

Improvement Notice

ATTACHMENT 5 (Clause 3.5)

Improvement Notice

This notice is issued as a consequence of your failure to maintain adequate environmental controls during the performance of your contract works

PROJECT – CHILDREN'S HOSPITAL WESTMEAD STAGE 2.	**PROJECT NO.**
SITE MANAGER – Richard Blackwell	**DATE:**

TO: ..... Company Name

FROM: ..... Company Name

❑	Noise	❑	Dust and/or Odour
❑	Waste	❑	Chemicals
❑	Contamination (slurry, wash water, oil)	❑	Erosion and Sediment
❑	Flora / Fauna	❑	Mud on road
❑	Heritage	❑	Air Pollution
❑	Other	❑	

Where this Improvement Notice is issued as a result of an environmental incident,

IDENTIFY ACTION TAKEN TO CLEAN UP

ACTION TAKEN TO ELIMINATE THE CAUSE (i.e re-induction, improved control measure etc)

VERIFICATION OF ACTION TAKEN (Kane Site Management use only)

☐ Action verified as completed

☐ Action inadequate (describe why inadequate)

.....

.....

Signed: .....

Date:.....
Kane Representative

In the event the company issued this notice fails to action, all costs incurred to undertake these works will be back-charged.

☐ Labour to Rectify

men x hours = Total Hours

Distribution:
☐Site File
☐Project Manager
☐Subcontractor

ATTACHMENT 6

Quarterly Audit Report

ATTACHMENT 6 (Clause 4.1.2)

Environmental Management Audit

Who shall implement	Project Manager (Auditor) - Audit and submit report Site Manager (Auditee) - Implement actions identified
When to implement	Quarterly (minimum)
How to use/implement	Project Manager to check compliance, with the Site Manager, of all items against actual site record/observations and score out of 150. If not applicable, write N/A and award total points. Do not award negative points. Lowest score possible is zero. Any issue identified shall be listed *(immediate actions required column)* and actioned by the Site Manager *(sign and date in the closed column)*. The report is to be issued to the Systems Manager (Vic) or Construction Supervisor (NSW/QLD).

Job Title: CHILDREN'S HOSPITAL WESTMEAD STAGE 2 – FORECOURT & RETAIL POD		**Period Audited**
Site Manager: Richard Blackwell	**Job No.**	**Date Audited**

*** if not applicable write N/A and award total points**

EMS Sch / CL Ref	Audit Criteria	* Points Scored	Immediate Actions Required	Closed Sign/Date
Sch 1B	1. All EMS (body and schedules) implemented on site is the most current revisions i.e check documents against revision control table *(Award 15 points, less 2 points for each document not current)*			
Sch 3	2. Environmental Management Plan is signed, dated and prepared using current revision *(15 points if signed, dated and current. Less 10 points if not signed and dated. Zero points if not current revision used)*			
Sch 3 Att 2	3. Environmental Risk Assessment and Checklist prepared *(15 points if prepared, less 10 points if not signed and dated by PM, less 10 points if risk rating is not completed, less 5 points if names of attendees not listed, zero points if not prepared)*			
Sch 3 Att 2	4. Environmental Risk Assessment implementation *(15 points for completed weekly checks, less 10 points for weeks not completed, zero points for no implementation)*			
Sch 3 Att 2	5. Tally of Compliant / Non-Compliant Controls Maintained *(5 points, less 2 points if tally not updated, zero points if no tally)*			
Sch 3 Att 2	6. Environmental Risk Assessment minor actions required *(10 points for minor actions required and closed out, less 2 points each action not closed out)*			

EMS Sch / CL Ref	Audit Criteria	* Points Scored	Immediate Actions Required	Closed Sign/Date
Sch 3 Att 3	7. Environmental Induction Booklet displayed in induction room *(10 points for induction book displayed, zero points if not displayed)*			
Sch 3 Att 4	8. Incident Response Flowchart completed with Site manager's name and displayed on site noticeboard *(10 points if completed and displayed, less 5 points for not displaying on the noticeboard and zero points if not completed)*			
Sch 3 Att 5	9. Improvement notices raised and closed out *(20 points for notices closed out, less 10 points for each notice raised and not closed out)*			
Sch 4	10. Materials Waste Data Sheets displayed on site notice board relevant to stage of project works *(10 points, less 2 points for each data sheet not relevant to works)*			
Sch 3 Att 6	11. Quarterly environmental reporting statistics are submitted by the requested date *(15 points, less 10 points if not submitted on time)*			
Sch 3 Att 6	12. Are issues/actions repeated from previous audits? *(10 points, less 10 points if answered Yes without an explanation why the issues/actions are repeated from previous audits)*	Yes/No	If Yes, list the reasons why the issues/actions are not actioned from previous audits	
4.1.2	13. Is the Kane EMS effective in achieving the objectives and targets? *(10 points, less 10 points if answered No without an explanation why the system is not effective)*	Yes/No	If No, list why *(i.e system change, training etc)*	

Total Points achieved	maximum score 160	**Date Immediate Actions must be closed by**	write date above

If maximum points are <u>not achieved</u> on the Audit Criteria 1 and 2 above, the Total Points achieved for this audit shall default to "Improvement Required"

If maximum points are <u>not achieved</u> on the Audit Criteria 3, 4 and 6 above, the Total Points achieved for this audit shall default to "Unsatisfactory Result"

Between 90 - 100% (144 – 160) Points	**Kane EMS trainer/mentor suitable to train young foreman**
Between 70 – 89 % (112 – 143) Points	**Good Implementation (above average implementation)**
Between 50 – 69 % (80 – 111) Points	**Improvement Required (average implementation)**
Below 50 % (0 – 79) Points	**Unsatisfactory result (Non-conformance report and re-induction)**

Print Name …… (Site Manager)

Print Name…… (Project Manager)

<u>Distribution</u>
Site File
Systems Manager/Systems Coordinator (VIC)/Construction Supervisor (NSW, QLD)

ATTACHMENT 7

Confirmation of Responsibilities

ATTACHMENT 7

Confirmation of Responsibilities

The project staff responsible for management of environmental management is assessed for competence, understanding and acceptance of their environmental responsibilities. Confirmation of this is provided below.

Each individual shall complete the table to verify the items listed below. Write either Yes or No (alongside the item in your column only) sign and date.

Item 1 I understand my responsibilities identified in the Kane EMS (revision A2)
Item 2 I understand my responsibilities identified in the Environmental Management Plan (revision 1)
Item 3 I was consulted and given opportunity for input in the development of this Environmental Management Plan
Item 4 I am competent to carry out my responsibilities identified in the Kane EMS and this Environmental Management Plan
Item 5 I will carry out my responsibilities identified in the Kane EMS and this Environmental Management Plan

	Project Manager	**Site Manager**	**Site Foreman**	**Project Engineer**	**Contracts Administrator**	**Cadet Contracts Administrator**	**Cadet Project Engineer**	**HSEQ Manager**
Name	Christopher Chau	Richard Blackwell	Brendan Foster	Peter Boutros	Billy Katsiris	Joseph Augustin	Alisia Hanna	Matthew Murphy
Item 1 (yes/ no)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Item 2 (yes/ no)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Item 3 (yes/ no)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Item 4 (yes/ no)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Item 5 (yes/ no)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sign								
Date	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023

R – Responsible
A – Accountable
C – Consulted
I – Informed

ATTACHMENT 8

Unexpected Finds Protocol Contamination and Associated Communications Procedure

UNEXPECTED FINDS PROTOCOL FOR CONTAMINATION AND ASSOCIATED COMMUNICATIONS PROCEDURE

It is acknowledged that previous investigations of the site have been undertaken to assess the identified contaminants of potential concern in selected parts of the site. However, ground conditions between sampling points may vary, and further hazards may arise from unexpected sources and/or in unexpected locations during remediation. The nature of any residual hazards which may be present at the site are generally detectable through visual or olfactory means, for example;

- >10 m2 of ACM fragments encountered in one location (visible);
- Friable ACM such as lagging (visible);
- bottles / containers of chemicals (visible);
- construction / demolition waste (visible);
- ash and/or slag contaminated soils / fill materials (visible);
- petroleum contaminated soils (staining / discolouration visible) beyond the identified impact, or at levels that prevent off-site disposal without treatment; and
- volatile organic compound contaminated soils (odorous).

As a precautionary measure to ensure the protection of the workforce and surrounding community, should any of the abovementioned substances be identified (or any other unexpected potentially hazardous substance), the procedure summarised in the following flowchart is to be followed.

An enlarged version of the unexpected finds protocol, suitable for use on-site, will be posted in the Site Office and referred to during the Site Specific Induction by the Contractor.

Revision History

Revision	Date	Author	Approval	Description
REV A	09/03/2022	MO		DRAFT
REV 1	26/05/2022	SS	SB	ISSUED FOR CC

BE AWARE

UNEXPECTED HAZARDS MAY BE PRESENT

drums

asbestos

chemical bottles

odour

ash / slag

demolition waste

If you <u>SEE</u> or <u>SMELL</u> anything unusual

<u>STOP WORK</u> & contact the Site Manager / WHS Coordinator

do not restart working before the area has been investigated and cleared by an Environmental Consultant.

ATTACHMENT 9 -

Unexpected Finds Protocol Aboriginal & Non-Aboriginal Heritage Items

UNEXPECTED FINDS PROTOCOL FOR ABORIGINAL AND NON-ABORIGINAL HERITAGE ITEMS

PURPOSE

This management plan has been developed to provide a consistent method for managing unexpected finds of either Aboriginal or non-Aboriginal heritage discovered during work on a project site.

This procedure assumes that an appropriate level of Aboriginal and non-Aboriginal heritage assessment has been undertaken prior to work commencing.[1]

Despite appropriate and adequate investigation, unexpected heritage items may still be discovered during construction works. When this happens, the following procedure must be followed.

REVISION HISTORY

Revision	Date	Author	Approval	Description
Rev 1	08/09/2023	PB		Submission to HI

LEGISLATIVE REQUIREMENTS

Table 1 below identifies some of the relevant legislation / regulations for the protection of heritage and the management of unexpected heritage finds in NSW.

Table 1: Requirement and Objectives

Relevant Requirement	Objectives and offences
Environmental Planning and Assessment Act 1979 (EP&A Act	Requires heritage to be considered within the environmental impact assessment of projects. This guideline is based on the premise that an appropriate level of Aboriginal and non-Aboriginal cultural heritage assessment and investigations and mitigation have already been undertaken under the relevant legislation, including the EP&A Act, during the assessment and determination process. It also assumes that appropriate mitigation measures have been included in the conditions of any approval
Heritage Act 1977	The Heritage Act provides for the care, protection and management of (Heritage Act) heritage items in NSW. Under section 139, it is an offence to disturb or excavate any land knowing or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed, unless the disturbance or excavation is carried out in accordance with an excavation permit issued by the Heritage Division of the . Under the Act, a relic is defined as: 'any deposit, artefact, object or material evidence that: (a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and (b) is of State or local heritage significance.' A person must notify the Heritage Division of DPE, if a person is aware or believes that they have discovered or located a relic (section 146). Penalties for offences under the Heritage Act can include six months imprisonment and/or a fine of up to $1.1million.

[1] If previous studies have identified that finds are likely, an *application may be required under the Heritage Act 1977 or the National Parks and Wildlife Act 1974*.

National Parks and Wildlife Act 1974 (NPW Act)	The NPW Act provides the basis for the care, protection and management of Aboriginal objects and places in NSW. An Aboriginal object is defined as: 'any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains'. An 'Aboriginal place' is an area declared by the Minister administering the Act to be of special significance with respect to Aboriginal culture. An Aboriginal place does not have to contain physical evidence of occupation (such as Aboriginal objects). Under section 87 of the Act, it is an offence to harm or desecrate an Aboriginal object or place. There are strict liability offences. An offence cannot be upheld where the harm or desecration was authorised by an AHIP and the permit's conditions were not contravened. Defences and exemptions to the offence of harming an Aboriginal object or Aboriginal place are provided in section 87, 87A and 87B of the Act. A person must notify DPE if a person is aware of the location of an Aboriginal object. Penalties for some of the offences can include two years imprisonment and/or up to $550,000 (for individuals), and a maximum penalty of $1.1 million (for corporations)

It should be noted that significant penalties exist for breaches of the listed legislation as a result of actions that relate to unauthorised impacts on heritage items. Further, it is noted that heritage that has been assessed and is being managed in accordance with relevant statutory approvals(s) can be exempt from these offences.

To avoid breaches of legislation, it is important that Kane and its contractors are aware of our statutory obligations under relevant legislation and that appropriate control measures are in place to ensure that unexpected heritage items are appropriately managed during construction.

AN UNEXPECTED FIND

An *unexpected find* in the context of heritage is usually categorized as one or more of the following:

a) Aboriginal objects
b) Historic (non-Aboriginal) heritage items
c) Human skeletal remains

All of these are protected by law and destruction or disturbance of them could result in significant fines or even jail terms. The relevant legislation that applies to each of these categories is described below.

a) ABORIGINAL OBJECTS

The *National Park and Wildlife Act 1974* protects *Aboriginal objects*. These include stone tool artefacts, shell middens, axe grinding grooves, pigment or engraved rock art, burials and scarred trees.

If any impact is expected to an Aboriginal object, an Aboriginal Heritage Impact Permit (AHIP) is usually required from the Department of Planning and Environment (DPE). When a person becomes aware of an Aboriginal object they must notify the Secretary of the Department Planning Industry and Environment about its location. Assistance on how to do this is provided in Section 7.

b) HISTORIC HERITAGE ITEMS

Historic (non-Aboriginal) heritage items may include:

- Archaeological 'relics'

  Other historic items (i.e. works, structures, buildings or movable objects).

c) ARCHAEOLOGICAL RELICS

The *Heritage Act 1977* protects relics which are archaeological items of local or state significance which may relate to past domestic, industrial or agricultural activities in NSW, and can include bottles, remnants of clothing, pottery, building materials and general refuse.

d) OTHER HISTORIC ITEMS

Some historic heritage items are not considered to be 'relics'; but are instead referred to as works, buildings, structures or movable objects. Examples of these items may be encountered include culverts, historic road formations, historic pavements, buried roads, retaining walls, tramlines, cisterns, fences, sheds, buildings and conduits. Although an approval under the *Heritage Act 1977* may not be required to disturb these items, their discovery must be managed in accordance with the procedure as per *Figure 1.*

As a general rule, an archaeological relic requires discovery or examination through the act of excavation. An archaeological excavation permit under Section 140 of the *Heritage Act 1977* is required to do this. In contrast, 'other historic items' either exist above the ground's surface (e.g. a shed), or they are designed to operate and exist beneath the ground's surface (e.g. a culvert).

Despite this difference, it should be remembered that relics can often be associated with 'other heritage items', such as archaeological deposits within cisterns and underfloor deposits under buildings.

e) HUMAN SKELETAL REMAINS

Human skeletal remains can be identified as either an Aboriginal object or non-Aboriginal relic depending on ancestry of the individual (Aboriginal or non-Aboriginal) and burial context (archaeological or non-archaeological). Remains are considered to be archaeological when the time elapsed since death is suspected of being 100 years or more. Depending on ancestry and context, different legislation applies.

As a simple example, a pre-European settlement archaeological Aboriginal burial would be protected under the NPW Act, while a historic (non-Aboriginal) archaeological burial within a cemetery would be protected under the Heritage Act. In addition to the NPW Act, finding Aboriginal human remains also triggers notification requirements to the Commonwealth Minister for the Environment under section 20(1) of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984(Commonwealth*).

However, where it is suspected that less than 100 years has elapsed since death, the human skeletal remains come under the jurisdiction of the State Coroner and the *Coroners Act 2009* (NSW). Such a case would be considered a 'reportable death' and under legal notification obligations set out in section 35(2); a person must report the death to a police officer, a coroner or an assistant coroner as soon as possible. This applies to all human remains less than 100 years old[2] regardless of ancestry (i.e. both Aboriginal and non-Aboriginal remains). Public health controls may also apply.

SEEKING ADVICE

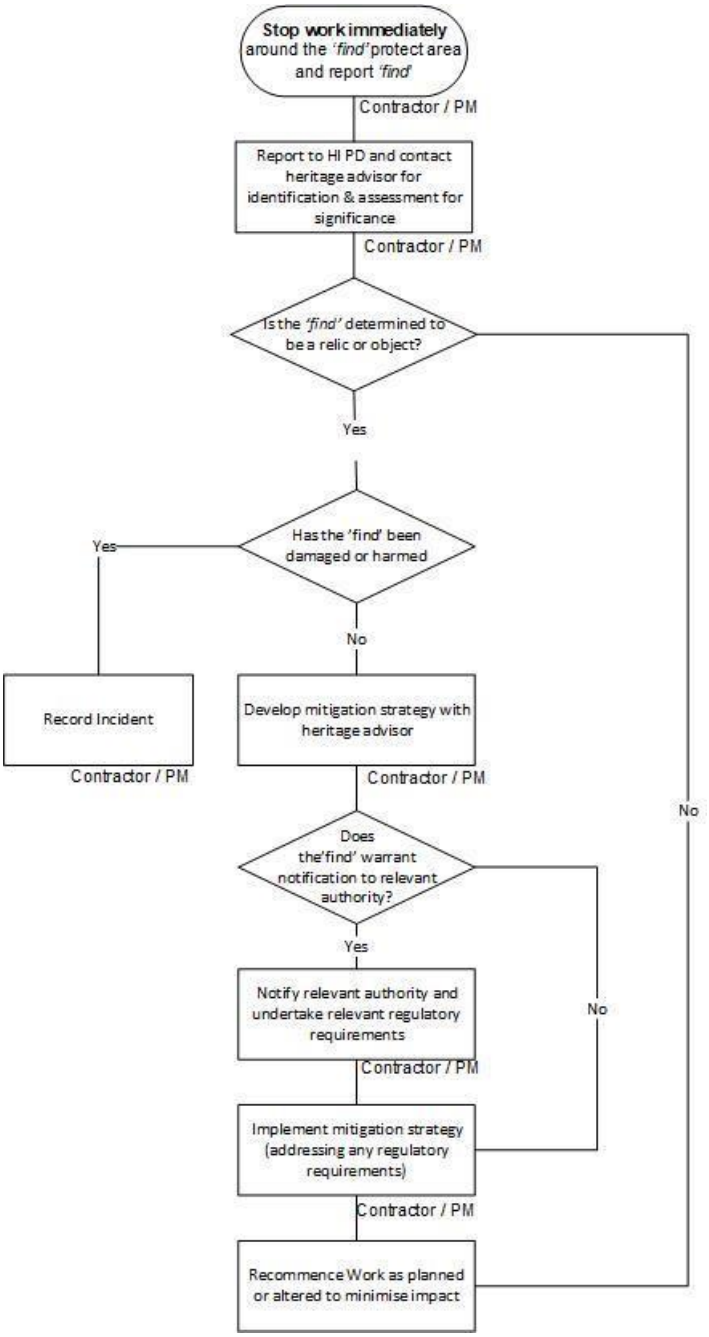
Technical archaeological or heritage advice regarding an unexpected heritage item should be sought from HI and the contracted archaeologist. Technical specialist advice can also be sought from heritage policy staff within Environment Branch to assist with the preliminary archaeological identification and technical reviews of heritage/archaeological reports.

[2] Under section 19 of the *Coroners Act 2009*, the coroner has no jurisdiction to conduct an inquest into reportable death unless it appears to the coroner that (or that there is reasonable cause to suspect that) the death or suspected death occurred within the last 100 years.

UNEXPECTED HERITAGE ITEMS PROCEDURE

In the event that an unexpected find is encountered, refer to flow chart below for procedure.

Figure 1: Procedure flow chart with an unexpected finding



APPENDIX A

UNCOVERING BONES

All matters relating to uncovering bones/human remains require notification to HI Development Team staff. They will guide Project Managers through occurrences of uncovering bones.

This appendix A provides Project Managers with advice (1) on what to do on first uncovering bones (2) the range of human skeletal notification pathways and (3) additional considerations and requirements when managing the discovery of human remains.

1. FIRST UNCOVERING BONES

Stop all work in the vicinity of the find. All bones uncovered during project works should be **treated with care and urgency** as they have the potential to be human remains. Therefore they must be identified as either human or non-human as soon as possible by a qualified forensic or physical anthropologist. These specialist consultants can be sought by contacting regional environment staff and/or heritage staff at Environment Branch.

On the very rare occasion where it is instantly obvious from the remains that they are human, the Project Manager (or a delegate) **should inform the police by telephone** prior to seeking specialist advice. It will be obvious that it is human skeletal remains where there is no doubt, as demonstrated by the example in Figure 2. Often skeletal elements in isolation (such as a skull) can also clearly be identified as human. Note it may also be obvious that human remains have been uncovered when soft tissue and clothing are present.

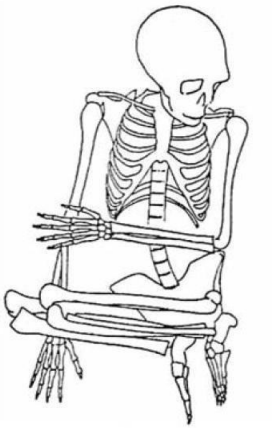


Figure 2: Schematic of a complete skeleton that is 'obviously' human[12].

Figure 3: Disarticulated bones that require assessment to determine species.

[12] After Department of Environment and Conservation NSW (2006), *Manual for the identification of Aboriginal Remains*:

Where it is not 'obvious' that the bones are human (in the majority of cases, illustrated by Figure 3), specialist assessment is required to establish the species of the bones. Photographs of the bones can assist this assessment if they are clear and taken in accordance with guidance provided in photo above. Good photographs often result in the bones being identified by a specialist without requiring a site visit; noting they are nearly always non-human. In these cases, non-human skeletal remains must be treated like any other unexpected archaeological find.

If the bones are identified as human (either by photographs or an on-site inspection) a technical specialist must determine the likely ancestry (Aboriginal or non-Aboriginal) and burial context (archaeological or forensic). This assessment is required to identify the legal regulator of the human remains so urgent notification (as below) can occur. Preliminary telephone or verbal notification by the Project Manager to the HI Representative, and/or HI's planning team is essential.

2. RANGE OF HUMAN SKELETAL NOTIFICATION PATHWAYS

The following is a summary of the different notification pathways required for human skeletal remains depending on the preliminary skeletal assessment of ancestry and burial context.

A) HUMAN BONES ARE FROM A RECENTLY DECEASED PERSON (LESS THAN 100 YEARS OLD).

☑ Action

A police officer must be notified immediately as per the obligations to report a death or suspected death under s35 of the Coroners Act 2009 (NSW). It should be assumed the police will then take command of the site until otherwise directed.

B) HUMAN BONES ARE ARCHAEOLOGICAL IN NATURE (MORE THAN 100 YEARS OLD) AND ARE LIKELY TO BE ABORIGINAL REMAINS.

☑ Action

The DPE and the HI's Planning Team must be notified immediately. The Planning Team, must then contact and inform the relevant Aboriginal community stakeholders who may request to be present on site. .

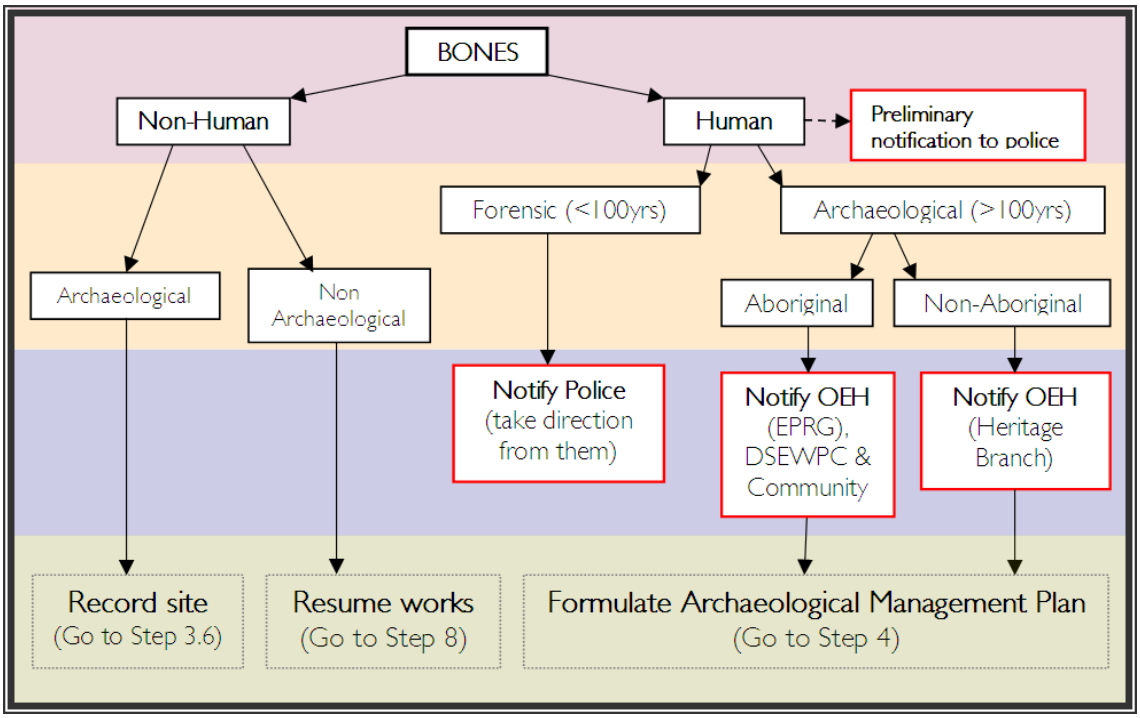
C) HUMAN BONES ARE ARCHAEOLOGICAL IN NATURE (MORE THAN 100 YEARS OLD) AND LIKELY TO BE NON-ABORIGINAL REMAINS.

☑ Action

The DPE (Heritage Branch, Conservation Team) must be notified immediately.

The simple diagram below summarises the notification pathways on finding bones.

Figure 2: Notification pathways on bones finding



After the appropriate verbal notifications (as described in B and C), the Kane Project Manager must proceed through the Unexpected Heritage Items Procedure to formulate an archaeological management plan (Step 4). Note no archaeological management plan is required for forensic cases (A), as all future management is a police matter.

Non-human skeletal remains must be treated like any other unexpected archaeological find and so must proceed to recording the find as per Step 3.6.

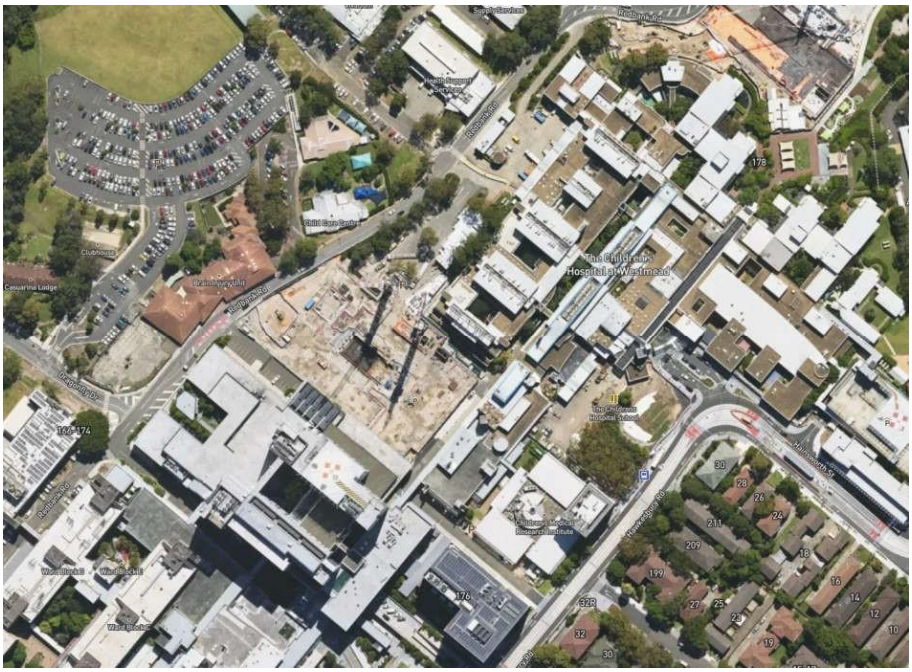
[13] This requirement is in addition to heritage approvals under the *Heritage Ac*

Construction Traffic & Pedestrian Management [Sub-Plan] (CTMPSP)

The Children's Hospital at Westmead

CHW Forecourt

Hawkesbury Road & Hainsworth Street, Westmead NSW 2145



Local Government:	City of Parramatta Council
Client:	Kane Constructions
Principal:	NSW Health

Revision History

REVISION	REASON FOR CHANGE	PAGE NUMBER(S)
1.0	Initial CTMPSP Drafting	All
1.1	Content Added, Existing Content Revised	All
1.2	Updated on client feedback	

Distribution

The following distribution list contains details of the positions and location of hardcopies and electronic copies of this document.

COPY	DISTRIBUTION	LOCATION	HARDCOPY (CONTROLLED)	ELECTRONIC COPY
1	Titanium Traffic Plans	Nowra	☒	☒
2	Asset Traffic Management	Sydney	☒	☒
3	Kane Constructions	Waterloo	☒	☒

All printed copies of this plan are uncontrolled

Declaration

I, Greg Cocker (SafeWork NSW PWZTMP Certification TCT0027509) declare that I, as the Traffic Management Designer for Asset Traffic Management have designed this Construction Traffic & Pedestrian Management [Sub-Plan]. This CTMPSP has been prepared in accordance with the TfNSW Traffic Control at Worksites Manual Issue 6.1 2021 and AS 1742.3-2019.

Signature: Date: 28/11/23

Checked and Reviewed by: Beau Sawyers
SafeWork NSW PWZTMP Certification TCT0007639

Signature: Date: 28/11/23

1.1	24/07/2023	Version 1.1	G. Cocker	B. Sawyers	G. Cocker
1.2	28/11/2023	Version 1.2	C. Chau	C. Chau	C. Chau
Issue	**Date**	**Description of Revision**	**Prepared**	**Checked**	**Approved**

Table of Contents

1. Overview

1.1 Introduction

Kane Constructions have commissioned Asset Traffic Management to develop this Construction Traffic & Pedestrian Management [Sub-Plan] (CTMPSP)

This CTMPSP shall address, and be used by both parties, to manage the impacts on vehicular traffic, local residents, the environment, and cyclist & pedestrian movements throughout the implementation of works at the subject site.

It establishes the execution philosophy and defines the organisation, work processes, and systems to be employed for management of all road users during the construction phase of this project. This CTMPSP forms part of the overall planning and approval process associated with the project.

The purpose of the CTMPSP is to describe how Kane Constructions propose to manage the work activities to ensure the safe and efficient movement of pedestrian and vehicular traffic around the work area.

A main priority of this project is to minimize disruption to traffic (both vehicular and pedestrian) and to ensure all activities undertaken are carried out in a safe manner within the scope permitted by all stakeholder authorities. Key objectives are listed below:

- Implementing traffic control arrangements that maximise safety for workers and public by isolating the work area whilst minimizing delay to road users.
- Planning and staging all work activities to effectively minimise road and/or footpath occupancy and any potential impacts on the road network.
- Seeking advice and approvals as required from key stakeholders including the NSW Government, Transport for NSW (TfNSW), City of Parramatta Council, Emergency Services and Local Businesses & Residents to ensure they are informed about the works and changes to traffic conditions.

In order to achieve these objectives, it will be necessary to ensure appropriate control measures are implemented during work activities to address all potential traffic impacts and that these control measures comply with regulations and conditions of approval. In an effort to meet these objectives the CTMPSP will incorporate the following strategies:

- Ensuring delays are minimized as much as possible
- Ensuring all road users are managed including motorists, pedestrians, cyclists, disabled road users and people using public transport.
- Ensuring work activities are carried out sequentially to minimize adverse impacts.
- Ensuring appropriate controls are in place to provide a safe construction site for all workers.

- Provision will be made for works personnel to enter the work area in a safe manner in accordance with safety procedures.
- All entry and exit movements to and from traffic streams will be in accordance with the requirements of safe working practices.

Site-specific Traffic Guidance Schemes (TGS') will be developed for all stages of the Project where there is interaction between Workers, the Work Area and Pedestrian or Vehicular Traffic. Said TGS' shall identify the traffic control measures to be implemented during the various stages of the project.

All proposed arrangements, signage and devices details contained within this CTMPSP and TGS' are in accordance with Australian Standards 1742.3, AGTTM Edition 1.0 as well as the TfNSW Traffic Control at Work Sites Manual Issue 6.1 2021 and Specification G10 – Control of Traffic.

The Conditions of Consent relevant to this CSWMSP are listed in Tables 1. A cross reference is also included to indicate where the condition is addressed in this Plan or other Project management documents.

Table 1: Forecourt SSDA Conditions of Consent relating to this CSWMSP

SSDA No.	Condition of Consent	Document Reference
B16	The Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP) must be prepared to achieve the objective of ensuring safety and efficiency of the road network and address, but not be limited to, the following: (a) be prepared by a suitably qualified and experienced person(s); (b) be prepared to the satisfaction of Council's Traffic and Transport Manager and TfNSW; and (c) detail: (i) measures to ensure road safety and network efficiency during construction in consideration of potential impacts on general traffic, cyclists and pedestrians and bus services; (ii) measures to ensure the safety of vehicles and pedestrians accessing adjoining properties where shared vehicle and pedestrian access occurs; (iii) detail the measures that are to be implemented to minimise the impact of activities associated with the construction of the development the subject of this consent on the Parramatta Light Rail (PLR) Project, in liaison with PLR's Construction Contractor and/or Operator; (iv) construction and heavy vehicle routes, access and parking arrangements; (v) the swept path of the longest construction vehicle entering and exiting the site in association with the new work, as well as manoeuvrability through the site, in accordance with the latest version of AS 2890.2; (vi) arrangements to ensure that construction vehicles enter and leave the site in a forward direction unless in specific exceptional circumstances under the supervision of accredited traffic controller(s); (vii) details of crane arrangements including location of any crane(s) and crane movement plan; and (viii) detail measures to minimise cumulative construction impacts on surrounding road networks, identifying the duration of impacts.	(a) Page 2 & Page 3 (b) Page 2 & Page 3 (c) (i) Page 19 (ii) Page 30 (iii) Page 14 (iv) Page 28 (v) Page 36 (vi) Page 25 (vii) Page 27 & Page 33 (viii) Page 24 & Page 30

Formatted: Font: 8 pt

Formatted: Normal

1.2 Project Overview

As part of the overall Stage 2 $619 million redevelopment of The Children's Hospital at Westmead, the existing forecourt and former Ambulance Bay will be transformed into "KidsPark".

KidsPark will create a more vibrant and lively space for staff, patients and their families with additional retail offerings which is planned to include a grocer offering fresh produce, a "Village Green", an Aboriginal Meeting Place and a playground for all ages to enjoy.

At the entrance, an Aboriginal Meeting Place is being designed to provide a safe and welcoming space for our First Nations people to connect, share and provide learnings. Working together with our local Aboriginal community, the new space will also provide non-Aboriginal community members the opportunity to learn about and experience Indigenous culture. Learnings will be through the use of colours, a new Aboriginal garden featuring plants significant to indigenous people and through Connecting to Country.

The "Village Green" within KidsPark will provide a green, open space for people to relax, with more seating and shade surrounded by native flora including the existing established Gum Trees. With more shaded areas, the green space aims to promote wellbeing by creating a space for people to get outdoors to interact, socialise and have fun. This includes a new playground being installed with a range of contemporary climbing and balancing play equipment for kids of all ages and abilities to play and keep active.

The new forecourt is expected to be completed and open for public use in 2024.

Figure 1: Artist's Impression of the new Forecourt (Source:

https://westmeadkidsredevelopment.health.nsw.gov.au/news-and-publications/articles/2022_09/transformed-forecourt)

1.3 Scope of Works

As previously mentioned, the existing forecourt and former Ambulance Bay of The Children's Hospital at Westmead will be transformed into a new area called KidsPark,

To facilitate this upgrade, essential works will include, but are not limited to:

- Demolition of the existing on-grade car park, portions of the existing hospital building and forecourt landscape areas
- Tree removal;
- Construction of several hospital building entryways and internal building refurbishment works;
- Bulk and detailed earthworks cut and fill;
- Construction of piling and footings and slabs for retail pod, canopy, playground and other landscaping fixtures;
- Trenching for inground services, such as:
    - Fire
    - Hydraulic
    - Electrical
    - Communications
- Construction of new landscape areas consisting of a central oval, an Aboriginal Meeting Place, playgrounds, pedestrian footpaths & communal gardens; and Adjustment

of the existing driveway into a maintenance vehicle cul-de-sac access.

It should be noted that these works are currently in progress, with Kane Constructions taking over the site in its current form to facilitate and oversee Project completion.

1.4 Road Layout & Site Details

The Forecourt Works will be carried out along Hawkesbury Road and Hainsworth Street, Westmead.

As Hawkesbury Road is the main emergency route for both the adults' and childrens' Emergency Departments, this plan has been developed to minimise the disruptions during the Forecourt Works and ensure priority is given to emergency vehicles at all times.

This portion of Hawkesbury Road, as well as Hainsworth Street, Westmead is a 2-lane, 2-way road divided by the Parramatta Light Rail tracks. It is a classified local road with a signposted 40 km/H High Pedestrian Activity speed limit.

There are concrete pedestrian footpaths along both sides of Hawkesbury Road and Hainsworth Street.

There are no resident or commercial driveways or accesses within the immediate work areas, as the site itself is away from the roadway and thus no property accesses of a Residential or Commercial nature will be affected by any stages of Work. Accesses shall be maintained at all times around the Work Area. The site is currently securely delineated by fencing and hoarding from the travelled way, and clearly signposted in accordance with all relevant legislation.

Hawkesbury Road is a local road, administered by the City of Parramatta Council. As such, no Road Occupancy Licences (ROL's) will be required from the Transport Management Centre. However, consultation and approval will take place with:

- City of Parramatta Council
- Western Sydney Local Health District (WSLHD)
- Sydney Children's Hospital Network (SCHN)

.

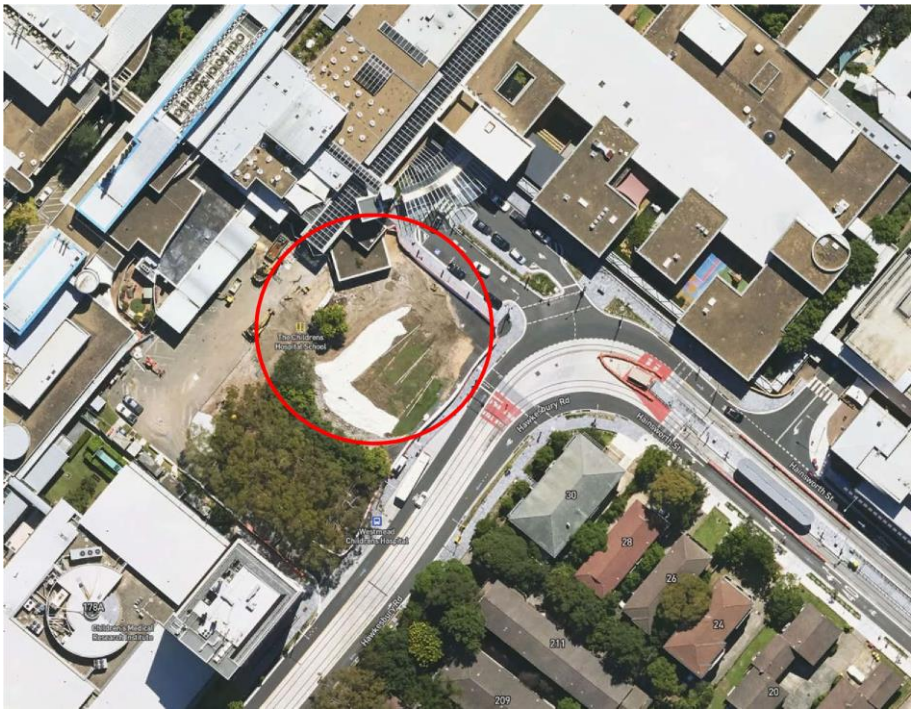


Figure 2a: Site Overview [Aerial View] (Source: Metromap Dated 16/03/2023)

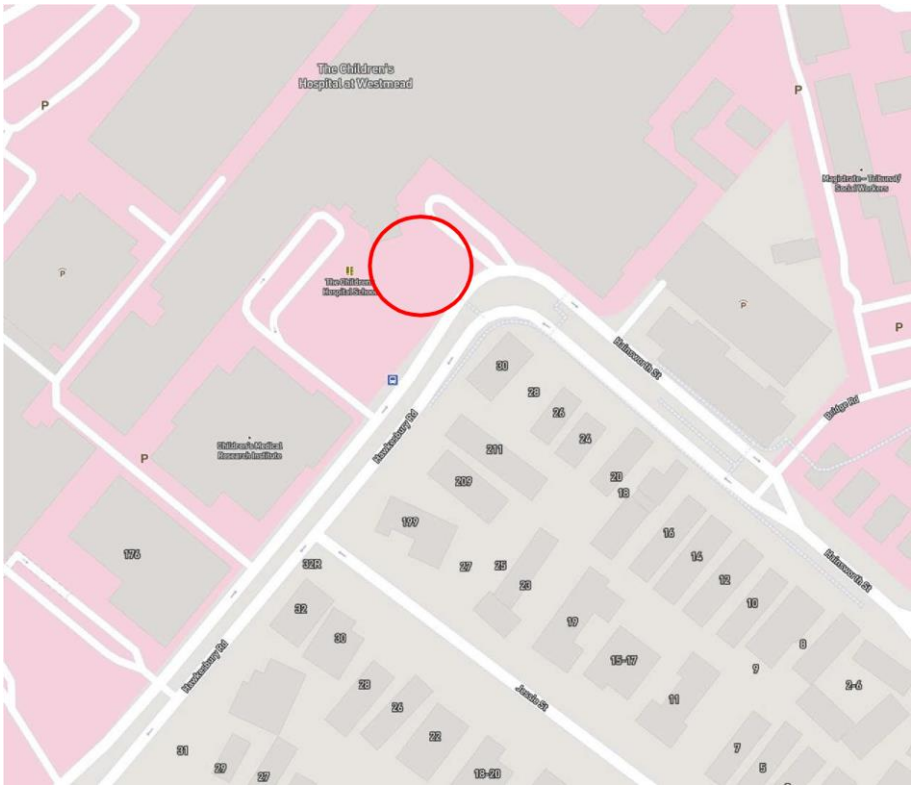


Figure 2b: Overall Site Overview [Map View] (Source: Metromap)

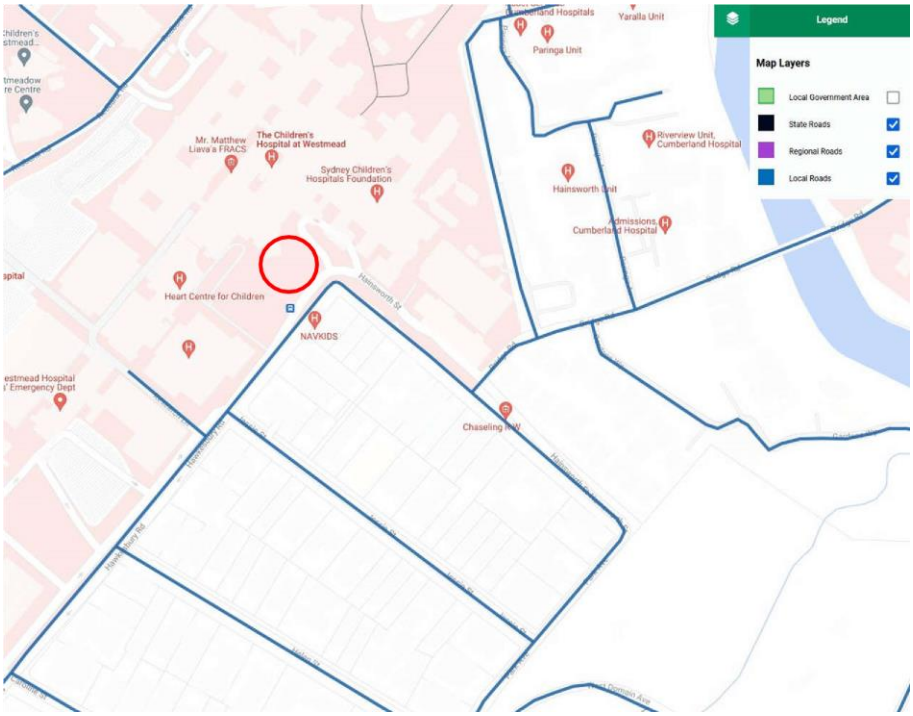


Figure 2c: Overview of Road Classifications
(Source: https://roads-waterways.transport.nsw.gov.au/classification/map)

1.5 Pedestrians and Cyclists

As mentioned previously, pedestrian access must and will be maintained into and out of the hospital, around the work area.

Works are and will be clearly and securely delineated from public access, and Pedestrian Management will be signposted in accordance with the TfNSW TCaWS Issue 6.1 2021, Australian Standards and LGA requirements, with SafeWork NSW Accredited Traffic Controllers on-site as required during Works.

Any vehicle movements in and out of site accesses will be undertaken under normal road rules, or with the assistance of SafeWork NSW Accredited Traffic Controllers with positive communication between both Traffic Management Personnel and plant/vehicle operators.

1.6 Residents & Access

There are no residential establishments located in the immediate vicinity of the Work Area. Nearest residents are located on the Southern side of Hawkesbury Road and Hainsworth Street.

There are no direct property accesses within the immediate Work Areas that will be affected by any works or Treatments pertaining to Traffic Management of these Sites, as the Site does not encroach on any residential properties.

In conclusion, Kane Constructions shall maintain all property access/egress at all times whilst undertaking all stages of Work.

1.7 Adjacent Construction Activities

At the time of drafting this CTMPSP, there are no concurrent adjacent Construction Activities taking place, that will impose any increased risk or conflict to the proposed Works outlined in this Construction Traffic & Pedestrian Management [Sub-Plan].

The majority of Parramatta Light Rail (PLR) works are completed in this area, and concurrent Construction Activities all form a part of the delivery of the overall Project (The Children's Hospital at Westmead Stage 2).

1.8 Work Hours & Duration

The proposed working hours shall be as follows:

- Monday to Friday 0700-1800
- Saturdays 0800-1300
- No works on night shift, Sundays or Public Holidays

There could be delays or alterations to the above should there be any unforeseen circumstances such as, but not limited to: Inclement weather

- Conflicting works
- Direction by relevant Authorities such as ○ Transport for NSW (TfNSW), ○ Emergency Services, ○ Transport Management Centre (TMC) or ○ City of Parramatta Council.

The Project is expected to be completed in 2024.

1.9 Hospitals & First Aid

The nearest Hospital with a 24-Hour Emergency Department is Westmead Hospital, adjacent to the site. The Emergency Department is approximately 340 metres south of the Work Area.

 Westmead Hospital
Cnr. Hawkesbury Road and Darcy Road, Westmead NSW 2145
(02) 8890 5555

In all emergency situations, 000 must be called in the first instance.

There will be a nominated First Aid Representative on-site at all times, during work hours, to be advised, communicated and noted at pre-start by Kane Constructions.

1.10 Buses & Public Transport

There is one Bus Stop in the immediate vicinity of the Work Area.

- Westmead Childrens Hospital, Hawkesbury Rd (Stop ID 214515) This Bus Stop services the following Bus routes:
  - Route 711 – Blacktown to Parramatta via Constitution Hill
  - Route 712 – Westmead Children's Hospital to Parramatta
  - Route 818 – Westmead Hospital to Merrylands
  - Route 824 – Westmead Hospital to Parramatta via South Wentworthville

These buses run from 0502 through to 2358 on weekdays.

This Bus Stop is unaffected by any works and associated Traffic Management required to be undertaken. Regular access will be maintained to and from the Bus Stop at all times, of both a vehicular and commuter nature.

The adjacent Parramatta Light Rail is still in final construction and testing phase, and is not yet open for operation.

Overall, no Buses, Trains, Light Rail or any other form of Public Transport will be affected by the Proposed Works in any way.

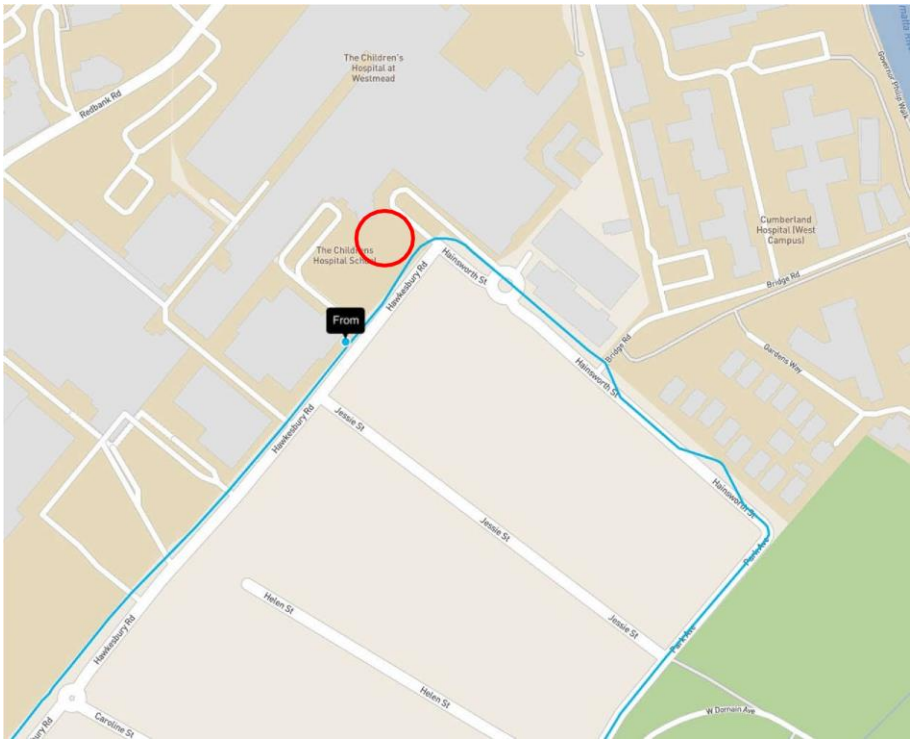


Figure 3: Overview of Bus Routes in the area
(Source: https://transportnsw.info/trip#/departures?depart=214515)

2. Management of the CTMPSP

Kane Constructions and Asset Traffic Management has warranted that it will provide people, materials, resources and systems to properly perform the Services pertaining to traffic management.

City of Parramatta Council, SafeWork NSW and Transport for NSW require the people to be competent, experienced and qualified to carry out the required Services.

2.1 Implementation of the CTMPSP

Traffic Management for sites will be in accordance with the TfNSW Traffic Control at Work Sites Manual Issue 6.1 2021, adapted to site-specific conditions.

Before the Routine Services or any Ordered Work begins, Asset Traffic Management carry out Risk Assessments and develop treatments and Plans to eliminate or mitigate any identified hazards.

On-site implementation and understanding of this Construction Traffic & Pedestrian Management [Sub-Plan] and any associated Traffic Guidance Schemes shall be undertaken by the Team Leader and the additional Traffic Controllers assigned to site by Asset Traffic Management.

2.2 Reviewing this CTMPSP

Asset Traffic Management will review this CTMPSP to ensure it is appropriate and is being implemented effectively. Changes may arise from a change of scope, comments from authorities, or from other opportunities for improvement. This Construction Traffic & Pedestrian Management [Sub-Plan] will then be updated to reflect any changes which have occurred.

This shall occur as additional risks or hazards are identified and the need arises, or on a bi-annual basis, whichever comes first. This review shall be undertaken by Kane Constructions and Asset Traffic Management.

2.3 Roles and Responsibilites

Role/Responsibility	Company	Name	Phone	E-Mail
Traffic Manager	Asset Traffic Management	Sharif Chalghin	0488101559	info@assettrafficmanagement.com.au
Traffic Management Designer	Titanium Traffic Plans	Greg Cocker	0424464572	greg@titaniumtrafficplans.com.au
Site Engineer	Kane Constructions	Peter Boutros	0432264187	pboutros@kane.com.au

2.4 Asset Traffic Management's Objectives

Asset Traffic Management's objectives with respect to this Construction Traffic & Pedestrian Management [Sub-Plan] (CTMPSP) are to:

- Identify, assess and control traffic hazards arising from the work activities being performed,
- Ensure the safety of its employees, contractors, the general public, pedestrians, cyclists and traffic,
- Keep traffic delays to a minimum,
- Maintain satisfactory property access at all times,
- Minimise disruption to businesses,
- For works near speed cameras, traffic lights & traffic counting devices, etc. Asset Traffic Management shall:
    - Inform TfNSW, as required
    - Not damage the equipment
    - Make suitable arrangements, where necessary
- When required, obtain approvals such as Road Occupancy Licences and Speed Zone Authorisations,
- Minimise disturbance to the environment,
- Design temporary roadways and detours in accordance with TfNSW Guides as well as Australian Standards codes and practices, and
- Meet the requirements of TfNSW G10 Traffic management, TfNSW G11M Road Occupancy Provisions and the TfNSW Traffic Control at Worksites Manual Issue 6.1 2021.

3. Traffic Management

3.1 Traffic Management Scenarios

Several considerations are taken into account when determining the best Treatment required when implementing Traffic Management. These include, but are not limited to, the Safety, Practicability, the Nature of the Works, and the road layout of the Site. A desktop/virtual Site Inspection was undertaken by the Traffic Management Designer to better understand these requirements and make informed decisions on the Treatments required for the Site.

These works are relatively low-impact on the surrounding road and pedestrian network, with controls in place to maintain safe access around the Site at all times. Due to the nature and location of the works, and the road configuration - it is proposed that the Works outlined in this Construction Traffic & Pedestrian Management [Sub-Plan] will be Treated with the following Scenarios:

- Pedestrian Management, with all plant/equipment parked off-road and within site and not encroaching on any trafficable lanes.
- Gate Management, with SafeWork NSW Accredited Traffic Controllers overseeing and co-ordinating access, with normal road rules applying for access/egress arrangements.

3.2 Traffic Controllers

Asset Traffic Management will ensure any workers undertaking traffic management duties have completed all relevant SafeWork NSW accredited Traffic Controller training, and hold a current General Construction Induction Card, Traffic Controller (RIISS00044) and Implement Traffic Management Plan (RIIWHS302D) accreditation as a minimum.

Traffic Controllers will carry all relevant tickets on their person.

Traffic Controllers will wear high-visibility outer garments complying with the TfNSW WH&S Policy 4.0, and all required Personal Protective Equipment (PPE). Said outer garments shall bear the words "Authorised Traffic Controller" and Asset Traffic Management Logo.

Traffic Controllers shall be relieved from their duties or rotated every 2 hours, or as required. Clear duties will be set-out by the Team Leader and/or Site Supervisor.

A clear escape route and safe zones must be available for Traffic Controllers at all times, shown on the relevant TGS' and noted on the pre-start shift paperwork.

3.3 Inspections

Temporary Traffic Management arrangements including all advanced warning signage and devices must be checked and inspected regularly by the Team Leader to assess their effectiveness.

This is required to be undertaken to ensure all Traffic Management Signage and Devices are in place as per the approved TGS, and to confirm all Controls are in place and clearly visible, and have not fallen or been knocked over, etc.

These inspections shall take place every 2 hours at a maximum, with a minimum of 5 inspections to take place over a 10-hour shift. These TTM inspections shall be recorded and noted on the relevant shift paperwork.

3.4 Incident Response

In the event that an incident is to occur on-site, the following protocol will be followed:

- Announce "emergency, emergency, emergency" via radio
- Modify temporary traffic management as necessary and manage until emergency services arrive.
- Ensure Incident area is safe before administering assistance to affected individuals.
- In the event of serious injury, Workers, TCs, or other available person to call Emergency Services (000 or 112)
- Notify Operations as soon as practicable
- Administer assistance if safe and if you are qualified to do so
- Maintain a safe exclusion zone and preserve site until emergency services arrive
- Do not move affected people unless there is a risk of further harm
- Do not move affected vehicles unless there is a risk of further harm Notify the relevant authorities and update accordingly following their instructions.

In the event of an emergency situation, the following relevant authorities must be contacted and advised of the nature of the works, type of emergency and contact details for the Site Supervisor:

- Emergency Services: (000)
- Transport Management Centre (1800 679 782)

In the case of needing to vacate the road and return it to normal operating condition:

- Work Crews will ensure the road surface is acceptable before all plant and vehicles are removed.

- Once the dead lane is clear, Asset Traffic Management will inspect to ensure the road is safe to open up.
- Asset Traffic Management will pack up the lane closure in a safe manner with reference to the SWMS.
- Once the road is re-opened to normal operating conditions, Asset Traffic Management is to monitor before removing or covering up any non-required signage and devices.

This is a general guide only, and is to be read and operated to, only in conjunction with the relevant Safe Work Method Statement (SWMS) and company Standard Operating Procedures.

4. Plant and Equipment

4.1 Traffic Management & Construction Vehicles

All vehicles used in Traffic Management operations will be equipped with the appropriate vehicle mounted warning devices in accordance with the AS 1742.3-2019 and the TfNSW Traffic Control at Work Sites Manual Issue 6.1 2021.

Traffic Control Vehicles are required for the set-up of signs and devices, the on-going monitoring of these signs and devices, and for the pack-up of the site, as required.

All work and construction vehicles shall be equipped with rotating beacons, which will used only as required. There is no requirement for vehicles to be parked within the trafficable road reserve of the Great Western Highway.

All of these movements will be monitored by SafeWork NSW Accredited Traffic Controllers supplied by Asset Traffic Management.

4.2 Types of Plant and Equipment

The typical plant and equipment expected to be used onsite are as per, but not limited to the below:

- Excavators
- Piling Rigs
- Skidsteers
- Crew Trucks
- Work Utes/LV's
- HR Vehicles
- Semi-Trailers
- Truck & Dogs
- Traffic Control Vehicles
- Hand Tools
- Advanced Warning Signage
- Traffic Control Devices
- Site Hoarding/Fencing
- Lighting Towers

4.3 After-Hours Signage and Devices

After-Hours Signage will be limited to Pedestrian wayfinding signage erected to direct people around the securely hoarded/fenced work area. These signs are long-term and will remain until the completion of the Project. No long-term advanced warning road signage is required, as the site footprint is off-road with no effect to vehicular traffic.

4.4 Vehicle Movements

All work vehicles shall enter site with the flow of traffic and exit site with the flow of traffic.

There shall be no reversing into live traffic, nor contravening any other road rules. No U-turns are permitted at any time on any existing roads, this is a G10 requirement.

Vehicles entering and leaving site will do so under normal road rules, giving way to oncoming traffic and only entering the traffic stream when there is a safe gap to do so.

Work vehicle movements shall be monitored on-site by SafeWork NSW Accredited Traffic Controllers, however no intervention will be required except in an emergency situation.

Work vehicle access routes can be referenced in Figure 4. Essentially, routes will be as follows:

- From the Great Western Highway, turning into Hawkesbury Road Northbound, ○ Following Hawkesbury Road northbound to Site.
- From Old Windsor Road/Briens Road, turning into Briens Road Southbound, ○ Following Briens Road to Darcy Road, ○ Turning left into Darcy Road and following this around to Hawkesbury Road, ○ Turning left into Hawkesbury Road northbound to Site.

Major vehicle movements will be planned for intra-peak times, to minimise impact on the local road network:

- Monday to Friday 09:00 -14:00
- Saturday 07:00 – 13:00

4.4.1 Exceptional circumstances for vehicles entering and exiting site

- There is inadequate space for semi-trucks to complete a three-point turn within the job site to enable trucks to exit in a forward direction. Traffic controllers will be available to direct vehicles back out from site whilst they are reversing.

Formatted: Font: Bold

Formatted: No bullets or numbering

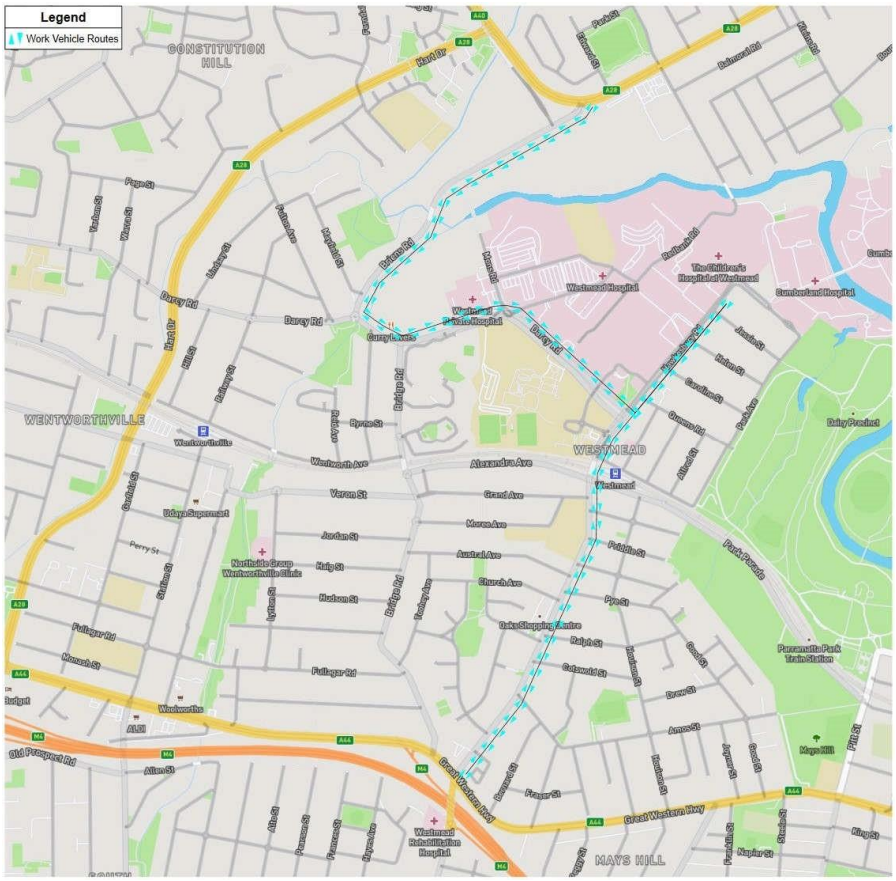


Figure 4: Overview of Vehicle Hauling and Access Routes to/from Site

Figure 5: Overview of Site Access arrangements

4.5 Construction Traffic Volumes

During the construction work, there will be a small volume of construction traffic generated by the associated activities. It is anticipated that these said vehicles will have minimal impact on current traffic access and egress movements within the local road environment. All vehicles will stand within the enclosed Work Areas, and will not affect any live traffic lanes at any time.

Per day, it is expected that there will be no more than 5 vehicle movements at a maximum. These vehicles will include regular/light vehicles (LV's), Small Rigid Vehicles (SR's), Medium Rigid Vehicles (MR's) and Heavy Rigid Vehicles (HR's). No Truck and Dog's or other articulated vehicles will be utilised on the project.

One one-off occasions for specific Work Tasks, there will be a semi-trailer for the delivery of Structural Steel. A Mobile Crane will also be used for the installation of the Structural Steel Awning.

All vehicle movements to and from the work area will be managed on-site in real time by SafeWork NSW Accredited Traffic Controllers, or undertaken on a left-in, left-out basis with normal road rules applying. In these instances, any construction vehicles will give way to Pedestrians at all times during any access or egress movements.

Stage	Vehicles per day	Range of vehicles during stage
Construction	3	LV to HR

Table 1: Estimated Vehicles Per Day, including Type.

4.6 Vehicle Parking

There will be minimal parking available on-site for Workers. Said vehicles will park within Site Compounds only, with no road parking permitted at any time. Normal road rules will apply and all relevant signposting adhered to.

Designated parking for any other site staff and contractors is available off Mons Road. Any other PCBU's that must drive to/from site (due to carrying of Tools of Trade, etc.) may choose to utilise existing Paid Public Parking Stations, normal road rules and restrictions applying (IE: these vehicles are treated like a normal vehicle with no exceptions or special permissions applicable):

- Westmead Children's Hospital Car Park, Hawkesbury Road, Westmead (approx. 400 spaces)
- Westmead Hospital Car Park - P4 (360 spaces)

Both car parks, including pre-booking and payment of Parking can be found at the below link: https://www.secureparking.com.au/en-au/car-parks/?latitude=-33.8022159&longitude=150.9894069&maxDistance=10000&limit=100&showAllResults=true

Alternatively, PCBU's may utilise the extensive Public Transport Network for travel to and from the Site, where practicable. Westmead Train Station is located 800 metres south of the Site, with a Bus Stop directly adjacent to the Work Area.

Any truck layovers must be provided within site, with any deliveries or spoil removal trucks staggered to alleviate any potential queueing of vehicles.

4.7 Public Transportation Strategy

The closest railway station to the site is Westmead Train Station, which is 800 metres (about a 10-minute walk) to the south of the site.

Westmead Station is serviced by the T1 North Shore, Northern and Western Line, T5 Cumberland Line and Blue Mountains Line. Services along the T1 and T5 lines operate every 5 to 10 minutes, with express services to the Sydney CBD (from Parramatta Station). It interchanges with the T9 Northern Line at Strathfield, the T7 Olympic Park Line and the T3 Bankstown Line at Lidcombe and the T2 Inner West and Leppington line at Parramatta, Lidcombe or Strathfield. The T5 Cumberland Line interchanges with the T1 Western and T2 Inner West and Leppington lines at Parramatta, the T3 Bankstown Line at Cabramatta and Liverpool, and the T8 Airport and South Line at Glenfield. Services on the Blue Mountains Line operate every 30 minutes. Note these times are applicable for Weekdays only.

The below links provide live service information:

- Platform 1 – (city and Leppington-bound) https://transportnsw.info/trip#/departures?depart=2145661
- Platform 2 – (citybound) https://transportnsw.info/trip#/departures?depart=2145662
- Platform 3 – (Penrith-bound) https://transportnsw.info/trip#/departures?depart=2145663
- Platform 4 – (Penrith and Richmond-bound) https://transportnsw.info/trip#/departures?depart=214510&type=platform

As mentioned in Section 1.10, there is a Bus Stop directly adjacent to the main Access Gate.

- Westmead Childrens Hospital, Hawkesbury Rd (Stop ID 214515) This Bus Stop services the following Bus routes:
- Route 711 – Blacktown to Parramatta via Constitution Hill
- Route 712 – Westmead Children's Hospital to Parramatta
- Route 818 – Westmead Hospital to Merrylands
- Route 824 – Westmead Hospital to Parramatta via South Wentworthville

These buses run from 0502 through to 2358 on weekdays. The below link provides real-time timetabling information:

https://transportnsw.info/trip#/departures?depart=214515

In addition, the North-West Transitway services Westmead Hospital, on Darcy Road. This is located approximately 700 metres south of the Site. A plethora of route service this stop, with at least 1 service every 10 minutes during work hours, and more during peak operating times. The following link provides live timetable information from this Stop: https://transportnsw.info/trip#/departures?depart=2145559

5. Driver's Code of Conduct

5.1 Impacts of Earthworks and Construction

KANE is committed to protecting the environment and preventing air, water and noise pollution. The operators of all construction-related vehicles are subject to environmental regulations relating to vehicle emission and product spill and to minimise the impacts of earthworks and construction on the local and regional road network.

KANE also understands and appreciate the seriousness of polluting the environment and the consequences of this any carelessness or neglect of responsibilities may cause personal injury, loss of life, property damage, substantial fines, and adverse publicity for the company.

All drivers of vehicles transporting loose materials will be required to ensure the entire load is covered using a tarpaulin or similar impervious material. The vehicle driver will need to take all precautions to prevent any excess dust or dirt particles depositing onto the roadway during travel to and from the site. Truck cattle grid and wheel wash station shall be positioned at the exit point of all gates. The respective trades will be inducted by the head contractor into the above procedures and will monitor all trucks exiting the site to ensure the procedures are met.

Kane will be required to monitor the roadways leading to and from the site on a daily basis and take all necessary steps to rectify any adversely impacted road deposits caused by site vehicles. The roads will also be cleaned on a regular basis to minimise dirt particles depositing externally from the site. Such cleaning will occur in the evenings outside of the peak traffic period.

5.2 Conflicts with other Road Users

The road is there to share and therefore, it is KANE's requirement that the heavy vehicle operators display courtesy and restraint towards other road users to minimise conflicts with other road users.

Public roads and access points will not be obstructed by any materials, vehicles, refuse skips or the like, under any circumstances. All deliveries and works will be carried out within the site at the designated Construction Zones. If there is a requirement to operate any material handling machinery on public access roads, Kane will be required to seek separate Council/Police/TfNSW/Sydney Buses approval prior to the event.

5.3 Road Traffic Noise

Generating excessive noise is governed by legislation and is an offence. Heavy trucks generate a higher level of noise than light vehicles. The amenity of surrounding road users/residents is to be

maintained as far as practical during the construction process. Vehicles traveling to, from and within the site shall not create unreasonable or unnecessary noise or vibration to minimise interference to adjoining building operations. No tracked vehicles will be permitted or required on any paved roads. All heavy vehicle operators are required to adhere to the following during the course of their duty:

- If possible, minimise road traffic noise by not using engine brakes near residences and built-up areas.
- All vehicles must be fitted with audible reversing alarms. These are essential for the safety of all personnel. Reversing alarms are, however, the source of potential noise complaints from neighbouring residents, so all drivers should be aware of this and try to minimise reversing when possible.
- Avoid loading and unloading of materials/deliveries outside of daytime hours.
- Compounds and work areas should be designed as one-way to minimise the need for vehicles (up to 18.1m truck and dog trailers) to reverse.
- Trucks should not idle near to residential receivers.
- Stationary sources of noise, such as generators, should be located away from sensitive receivers.
- Project personnel, including relevant sub-contractors, to acquaint themselves with noise and vibration requirements and the location of sensitive receivers during inductions and toolbox talks.
- Delivery vehicles should be fitted with straps rather than chains for unloading, wherever possible.
- Truck drivers should avoid compression-braking as far as practicable.
- Where night-time works are required, trucks should use broadband reversing alarms.

5.4 Specified Routes

All trucks must enter and exit the works via the site gates. The preferred routes for access to and from the site are provided in Section 4.4.

Where possible, you should always:

- Use main roads,
- Use bypasses,
- Avoid communal areas, schools, e.g. (particularly during school start and finish times), parks, etc.

The heavy vehicle operators must stick to the defined routes laid down unless there are exceptional circumstances. Such exceptional circumstances may be:

- Normal route blocked (eg: Flooded) A revised route, that has been agreed to in writing.

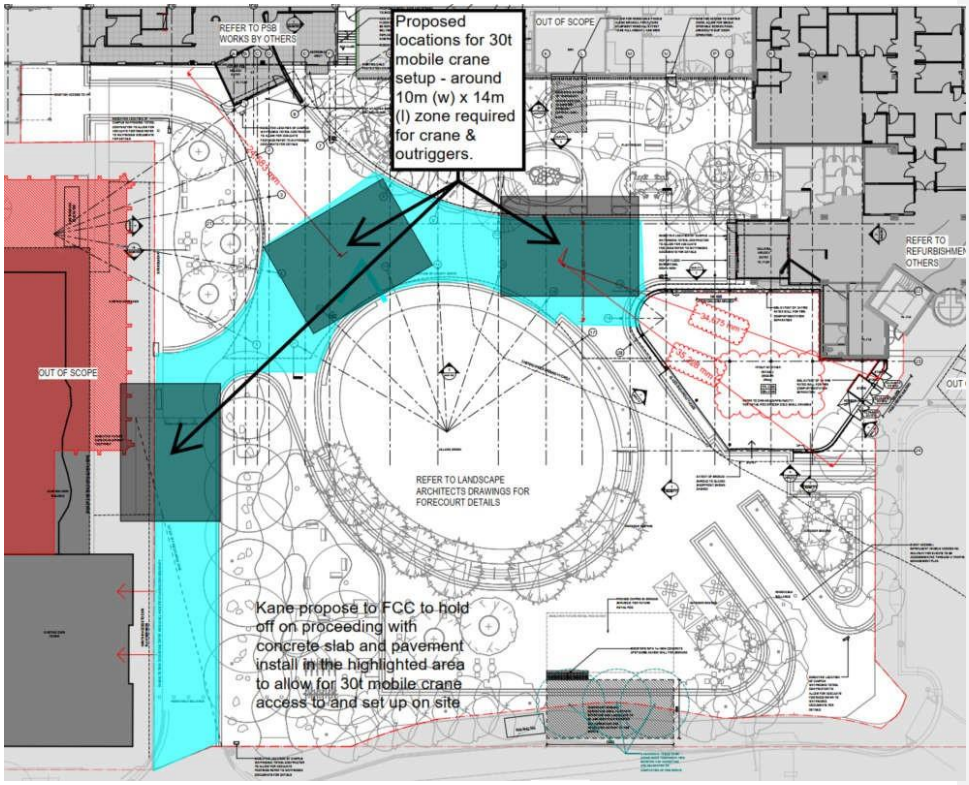
Trucks and other Heavy Vehicles shall not use local residential streets.

6. Crane Movement Plan

The project will be built with a 30T crane primarily for the erection of the structural steel across the site as well as major material movements required for the roofing and cladding. The crane will required 3 set ups to facilitate the installation as per the mark below.

The loading of the 30T crane is within the capacity of the pavement slab as well as within the structural loading design of the adjacent light rail infrastructure.

All other materials will be hand held and carried as required.


Proposed locations for 30t mobile crane setup - around 10m (w) x 14m (l) zone required for crane & outriggers.
REFER TO PSB WORKS BY OTHERS
OUT OF SCOPE
REFER TO LANDSCAPE ARCHITECTS DRAWINGS FOR FORECOURT DETAILS
Kane propose to FCC to hold off on proceeding with concrete slab and pavement install in the highlighted area to allow for 30t mobile crane access to and set up on site

ASSET TRAFFIC MANAGEMENT

KANE

enscape studio

Enscape Studio Pty Ltd
ABN 91 649 181 171
8 Garden Street
Kogarah NSW 2217
T: 0411 267 151
Email: info@enscapestudio.com.au

ENQUIRIES: IAN HARRIS
PROJECT NO: 0060

15 SEPTEMBER 2023

Kane Constructions Pty Ltd
2 John Street
Waterloo, NSW 2017 Australia
FAO: Chris Chau

WESTMEAD CHILDRENS HOSPITAL – FORECOURT CRANE LOADING CHECK

This letter has been prepared to confirm that the pavements as documented in the Arup design drawings CHW-ARP-CV-DG-KP-00-XX700 Rev C and CHW-ARP-CV-DG-KP-00-XX791 Rev A have been checked to ensure they will be able to support the loading from the proposed 30t crane Kane will be using to install the steel for the forecourt works.

Enscape studio have undertaken some bearing and shear stress checks for the crane loading based on the information provided by Kane in the Aconex correspondence Kane C-GCOR-006607 and can confirm that a minimum of 700mm x 700mm spreader plate will be required under each crane outrigger.

As previously noted the design calculations assume that the pavement subgrade has been compacted in a uniform manner and there are no softspots located below the pavement, it also assumes that the pavements have been laid correctly and are sufficiently mortared onto the concrete pavement to prevent paver rotation which can cause cracking in the pavers.

We trust that this information is sufficient for your purposes, however should you have any queries in regards to this report please feel free to contact me.

Yours faithfully

Ian Harris BEng (Hons) NER
Director
for Enscape Studio

7. Swept Path Analyses

Swept path Analysis has been completed by Enspire Solution Pty Ltd in accordance with the latest version of AS2890.2

REV	DATE	DESCRIPTION	DRN	DES	VERIF	APPD
2	[illegible]	ISSUED FOR APPROVAL	MDH	MDH	MRH	MRH
1	11/01/2023	ISSUED FOR INFORMATION	MDH	MDH	MRH	

Client: FORD CIVIL

Scale: SCALE 1:200 @A1

The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.

enspire
Enspire Solutions Pty Ltd
Level 4, 153 Walker Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135

Project: WESTMEAD HOSPITAL
HAWKESBURY ROAD CONSTRUCTION SITE ACCESS
TURNING PATHS

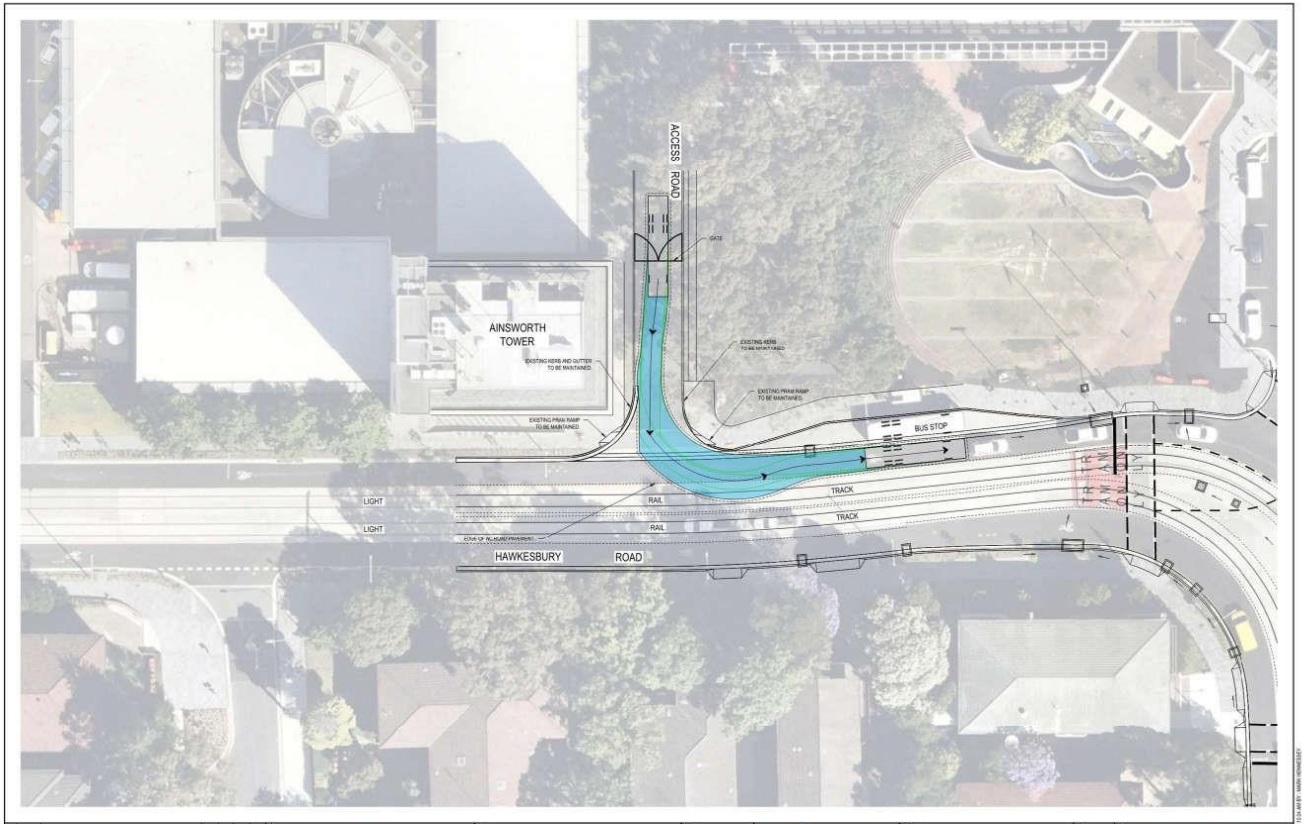
Title: 12.5m HEAVY RIGID
VEHICLE TURNING PATH
ENTRY INTO SITE

Scale: 1:200
Date: 11/01/2023
Size: A1
Datum: GDA 94

Status: FOR APPROVAL-CONSTRUCTION

Project Number/Drawing Number: 190078-10-C22.01

Revision: 2



REV	DATE	DESCRIPTION	DRN	DES	VERIF	APPD
2	23/01/2023	ISSUED FOR APPROVAL	MDH	MDH	SRH	SRH
1	11/01/2023	ISSUED FOR INFORMATION	MDH	MDH	SRH	

Client: FORD CIVIL

Scale: SCALE 1:200 @A1

The copyright of this drawing remains with Enspire Solutions Pty Ltd and must not be copied wholly or in part without the permission of Enspire Solutions Pty Ltd.

enspire
Enspire Solutions Pty Ltd
Level 4, 153 Walker Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135

Project: WESTMEAD HOSPITAL
HAWKESBURY ROAD CONSTRUCTION SITE ACCESS
TURNING PATHS

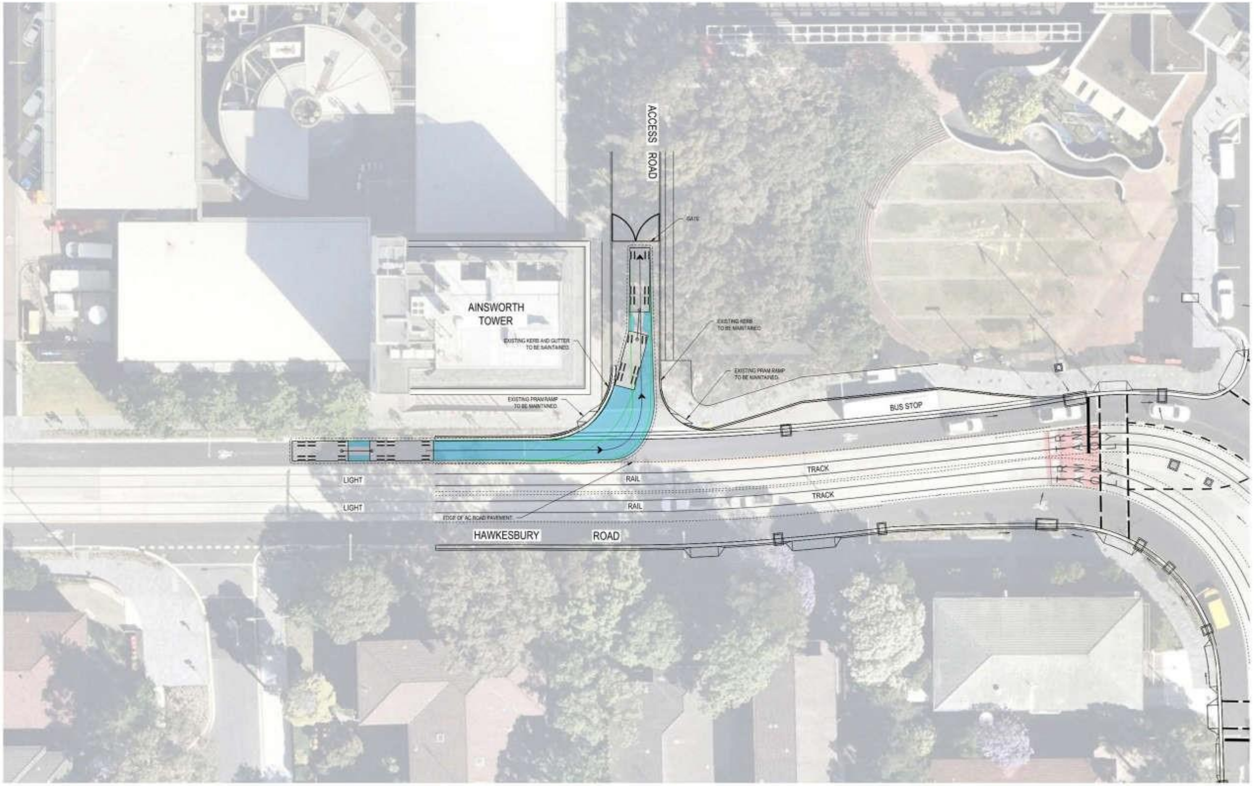
Title: 12.5m HEAVY RIGID
VEHICLE TURNING PATH
EXIT FROM SITE

Scale: 1:200
Date: 11/01/2023
Size: A1
Datum: GDA 94

Status: FOR APPROVAL-CONSTRUCTION
Project Number/Drawing Number: 190078-10-C22.02
Revision: 2

CAD File: P:\190078 Westmead\Hosp\CPlan\3-Civil\10-Hawkesbury Road Turn Paths\Drawings\6-DAC\190078-10-C22.02 12.5m HR TURNING PATH EXIT.dwg

DATE PLOTTED: 12 January 2023 7:15 AM BY: MARK HENNESSEY



REV	DATE	DESCRIPTION	DRN	DES	VERIF	APPD
2	12/01/2023	ISSUED FOR APPROVAL	MDH	MDH	MKH	MKH
1	11/01/2023	ISSUED FOR INFORMATION	MDH	MDH	MKH	

Client: FORD CIVIL

Scale: 0 5 10 15 20m SCALE 1:200 @A1

North

enspire

Enspire Solutions Pty Ltd
Level 4, 153 Walker Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135

Project: WESTMEAD HOSPITAL
HAWKESBURY ROAD CONSTRUCTION SITE ACCESS
TURNING PATHS

Title: TRUCK AND DOG
VEHICLE TURNING PATH
ENTRY INTO SITE

Scale: 1:200
Date: 11/01/2023
Size: A1
Datum: GDA 94

Status: FOR APPROVAL-CONSTRUCTION

Project Number/Drawing Number: 190078-10-C22.11
Revision: 2

REV	DATE	DESCRIPTION	DRN	DES	VERIF	APPD
2	12/01/2023	ISSUED FOR APPROVAL	MDH	MDH	MKH	MKH
1	11/01/2023	ISSUED FOR INFORMATION	MDH	MDH	MKH	

Client: FORD CIVIL

Scale: 0 5 10 15 20m SCALE 1:200 @A1

North

enspire
Enspire Solutions Pty Ltd
Level 4, 153 Walker Street, North Sydney NSW 2060
ABN: 71 624 801 690
Phone: 02 9922 6135

Project: WESTMEAD HOSPITAL HAWKESBURY ROAD CONSTRUCTION SITE ACCESS TURNING PATHS

Title: TRUCK AND DOG VEHICLE TURNING PATH EXIT FROM SITE

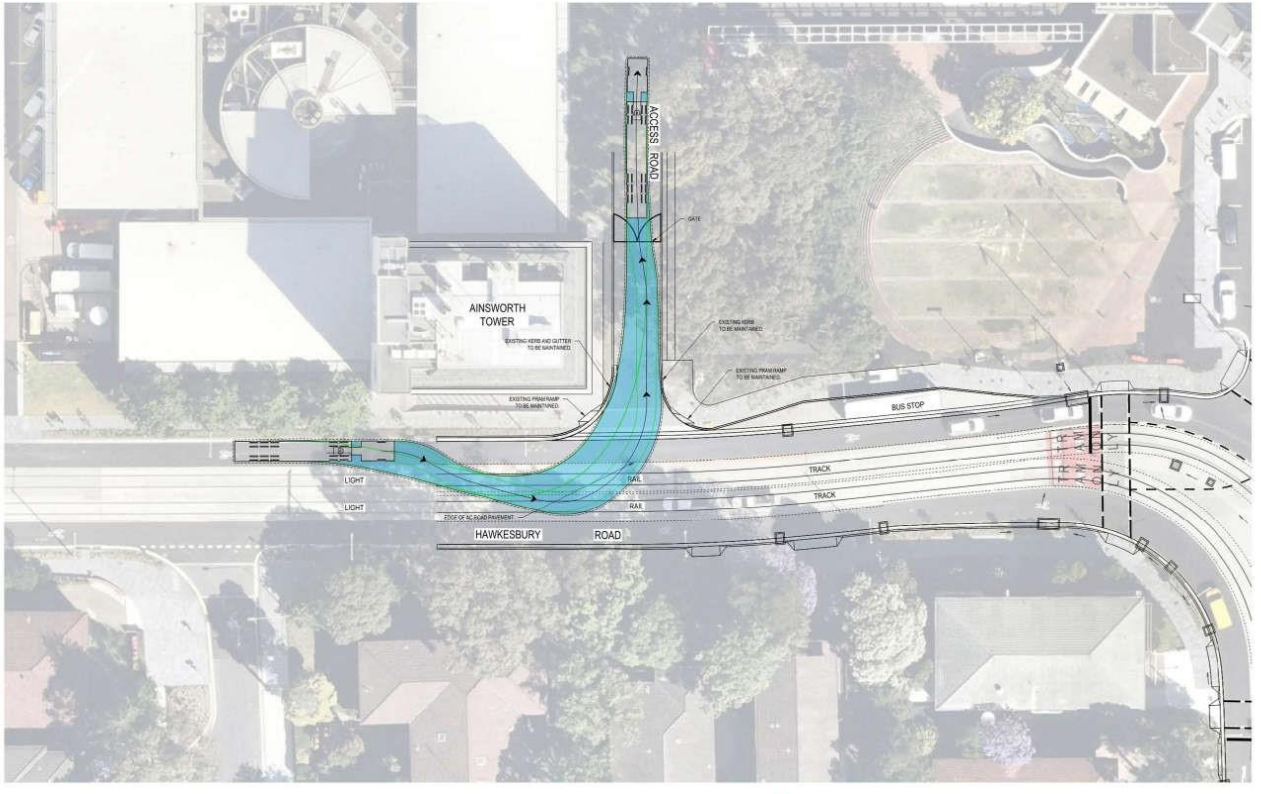
Scale: 1:200 | Date: 11/01/2023 | Size: A1 | Datum: GDA 94

Status: FOR APPROVAL-CONSTRUCTION

Project Number/Drawing Number: 190078-10-C22.12 | Revision: 2

DATE PLOTTED: 12 January 2023 10:20 AM BY : MARK HENNESSEY

CAD File: P:\190078 WestmeadHospCPark\D-Civil\10-Hawkesbury Road Turn Paths\Drawings\6-DACC\190078-10-C22.12 TRUCK AND DOG TURNING PATH EXIT.dwg



REV	DATE	DESCRIPTION	DRN	DES	VERIF	APPR
2	12/01/2023	ISSUED FOR APPROVAL	MDH	MDH	MMS	MMS
1	11/01/2023	ISSUED FOR INFORMATION	MDH	MDH	MMS	

Client: FORD CIVIL

Scale: 0 5 10 15 20m; SCALE 1:200 @A1

North

enspire

Enspire Solutions Pty Ltd
Level 4, 153 Walker Street, North Sydney NSW 2060
ABN: 71 624 501 690
Phone: 02 9922 6135

Project: WESTMEAD HOSPITAL
HAWKESBURY ROAD CONSTRUCTION SITE ACCESS
TURNING PATHS

Title: 20.0m SEMI-TRAILER
VEHICLE TURNING PATH
ENTRY INTO SITE

Scale: 1:200

Date: 11/01/2023

Size: A1

Datum: GDA 94

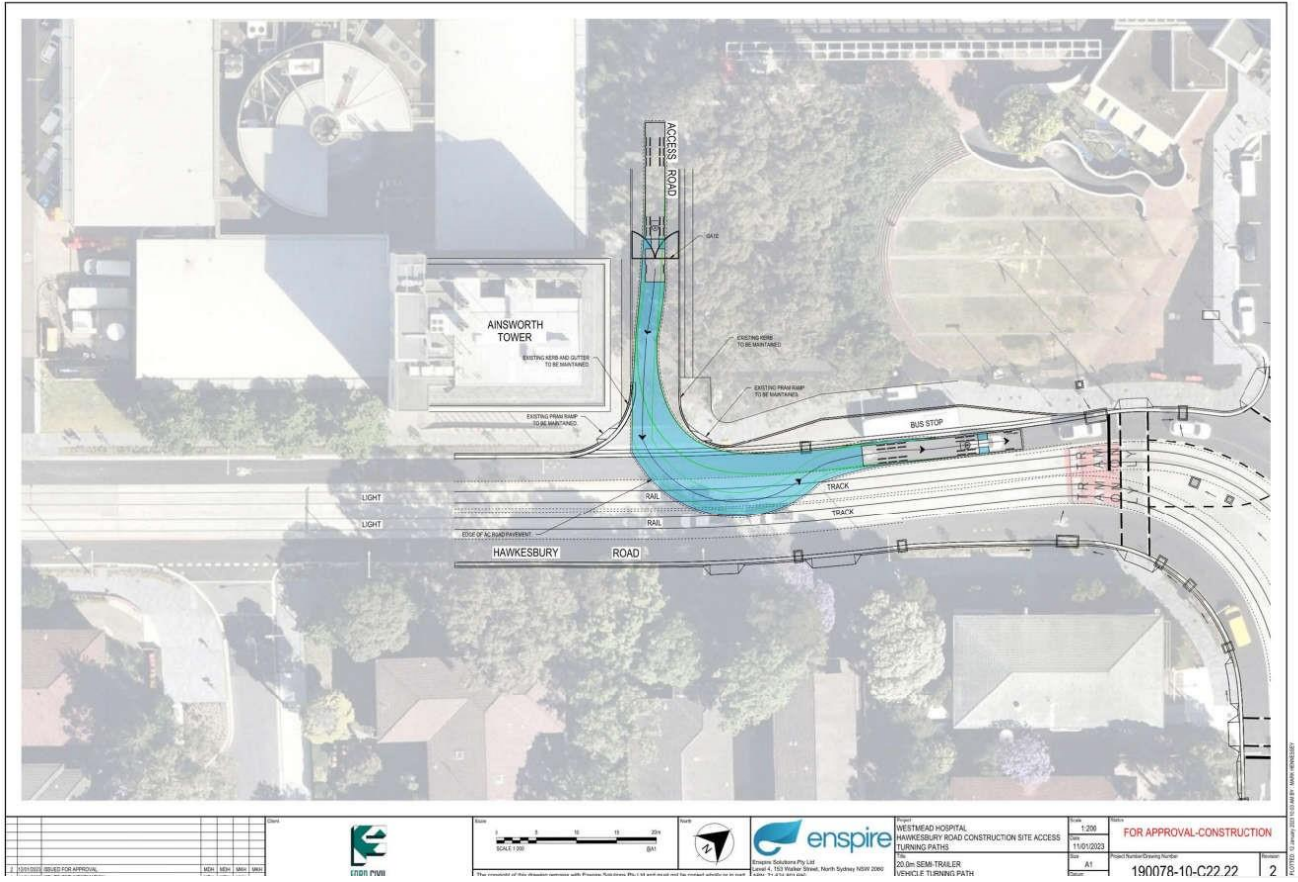
Status: FOR APPROVAL-CONSTRUCTION

Project Number/Drawing Number: 190078-10-C22.21

Revision: 2

CAD File: P:\190078 Westmead\Hosp\Civil\D-Civil\10-Hawkesbury Road Turn Paths\Drawings\B-CAD\190078-10-C22.21 20.0m SEMI-TRAILER TURNING PATH-ENTRY.dwg

DATE PLOTTED: 12 January 2023 10:49 AM BY: MARK HOWLETT



2	17/01/2023	ISSUED FOR APPROVAL	MDH	MDH	MNH	MNH	

Client: ENDEAVOUR

Scale: SCALE 1:200 @A1

North

enspire

Enspire Solutions Pty Ltd
Level 4, 153 Walker Street, North Sydney NSW 2060

Project: WESTMEAD HOSPITAL
HAWKESBURY ROAD CONSTRUCTION SITE ACCESS
TURNING PATHS

Title: 20.0m SEMI-TRAILER
VEHICLE TURNING PATH

Scale: 1:200
Date: 11/01/2023
Size: A1

Status: FOR APPROVAL-CONSTRUCTION

Project Number/Drawing Number: 190078-10-C22.22

Revision: 2

PLOTTED: 17 January 2023 10:03 AM BY: MARK HENNESSEY

8. Authority Approvals

Chris Chau

From: Behzad Saleh <BSaleh@cityofparramatta.nsw.gov.au>
Sent: Tuesday, 10 October 2023 12:13 PM
To: Chris Chau
Cc: Joseph Augustin; Billy Katsiris
Subject: RE: 2504 Westmead Childrens' Hospital Forecourt - Soil and Water Management Plan

Thanks Chris,

I have no further comments. The list of conditions provided with the previous approval of the CTMP are still to be adhered to.

Kind Regards,

Behzad Saleh
Traffic and Transport Investigations Engineer | Development and Traffic Services

P: (02) 9806 8410

City of Parramatta
126 Church Street, Parramatta NSW 2150
PO Box 32, Parramatta, NSW 2124
cityofparramatta.nsw.gov.au

CITY OF PARRAMATTA

GREAT RIVER CITY LIGHT RAIL
LIFE MORE LIVEABLE

Chris Chau

Project Manager

Kane Constructions Pty Ltd

2 John Street, Waterloo

NSW, 2017

6 October 2023

Dear Mr. Chau,

Re: Request for Construction Vehicle Access to PLR's Trackslabs on Hawkesbury Road for the "Children's Hospital Westmead CHW Stage 4 – Forecourt and Retail Pod" Project in Westmead

Background and purpose

1. Under the 'PLR Stage 1 SOM Contract' dated 19 December 2018 between Transport for New South Wales (ABN 18 804 239 602) (**TfNSW**) and Great River City Light Rail Pty Ltd (ACN 622 239 605) (**GRCLR**) (the **SOM Contract**), GRCLR has agreed to carry out certain works (as defined in the SOM Contract) with respect to the Parramatta Light Rail network (**SOM Works**), on the land described as the 'Site', the 'Extra Land' and the 'Remote Site' in the SOM Contract (together, **PLR Site**).

2. It is understood by GRCLR that **Kane Constructions Pty Ltd** (ABN - 49 007 354 396) ("Kane" – the **Contractor**) requires permission to access a section of the PLR (Parramatta Light Rail) trackslabs on Hawkesbury Road in Westmead, which is within the PLR Site (the **Access Area**) as illustrated in the Appendix of this letter for the purpose of facilitating material deliveries to site for the "Children's Hospital Westmead CHW Stage 4 – Forecourt and Retail Pod" project (the "**Purpose**").

3. "Universal Steel Constructions (Australia) Pty Ltd" (ABN 32 085 106 609), has been appointed by Kane to carry out works associated with the Purpose (the **Subcontractor**) and Kane warrants that it will ensure that the Subcontractor complies with and performs Kane's obligations under this letter as if the Contractor was named in this letter.

4. GRCLR requires Kane to sign and return the Acknowledgment and Acceptance attached to this letter as a condition of Kane and its Subcontractor having access to the Access Area for the Purpose.

5. Kane acknowledges that this letter operates as an agreement and is enforceable against Kane in accordance with its terms.

Conditions of entry to the Access Area

Great River City Light Rail
ABN 60 622 239 605
GPO Box 5092, Melbourne, VIC 3001
Tel: +61 3 8681 7501

6. Kane must not, and must ensure that its Subcontractor does not, access, occupy or use any part of the PLR Site, other than the Access Area and for the Purpose only.

7. Kane agrees that it and its Subcontractor may only access the Access Area on the following days and at the following times:

    a. 1st November 2023 to 31st December 2023
    b. 7:00am to 5:00pm, Monday to Saturday only

    (the **Access Period**).

8. Kane will:
    a. provide adequate and appropriate supervision of its staff and Subcontractor associated with the Purpose;
    b. ensure that the works (including the manoeuvring of vehicles accessing the Access Area) are performed in a safe, diligent and workmanlike manner; and
    c. will remain responsible and liable, at all times, for the safety of the workforce of Kane and its Subcontractor as well as members of the general public in or near the Access Area during the Access Period. However, Kane will immediately report to a GRCLR Representative any illness or injury at the Access Area. GRCLR will not be liable for any incidents or accidents caused to any person either directly or indirectly associated with the Purpose as a result of the Purpose.

9. Kane acknowledges and agrees, that notwithstanding the granting of access to the Access Area, Kane will (and will ensure that its Subcontractor will) comply with the reasonable directions and requirements of GRCLR and/or GRCLR's subcontractor CAF Rail Australia Pty Ltd (ABN 15 146 694 537) (CAF).

10. Kane is required to ensure that the Access Area is left in a clean and tidy state with all rubbish, stains, soil and debris removed which may have been caused as a result of the Purpose during the Access Period.

11. Kane will provide adequate traffic management control whilst construction vehicles are entering from and exiting to Hawkesbury Road when normal traffic may be impacted as a result to ensure that traffic in the area is managed in a safe and orderly manner for other vehicles and pedestrians.

12. Kane will provide measures as appropriate to prevent PLR assets (both permanent and temporary including rails, track slabs, road deterrent kerbs, signage etc) from structural, physical and visual damages that may be caused as a result of the Purpose.

13. In the event that access is required to the Access Area by GRCLR or other PLR contractors during the Access Period to perform PLR related works out of expectancy or emergency, Kane and its Subcontractor must coordinate with a GRCLR representative to provide access as a priority for the PLR works.

14. In the event that access is required to the Access Area by a third party during the Access Period (for example emergency or maintenance works by a utility company), Kane and its Subcontractor must coordinate with the third party to facilitate access as so far as reasonably practicable.

15. A dilapidation survey shall be conducted by Kane with the attendance of a GRCLR representative before and after the Access Period.

Indemnity and Insurance

16. Kane acknowledges and agrees that it will not, and will ensure that its Subcontractor does not:
    a. cause any damage to the Access Area; and/or
    b. in any way interfere with, delay, or disrupt the SOM Works being carried out by GRCLR and/or CAF, in and around, the Access Area at any time.

17. Kane will, at its cost, make good any damage to the Access Area.

18. In the event of;
    a. damage to the Access Area; and/or
    b. interference, delay or disruption to the SOM Works,

    caused by, or contributed to, by Kane and / or its Contractor, Kane will indemnify GRCLR, and CAF, against any Claim, delay, damage, cost, expense, loss, compensation, charge, fine, penalty or liability suffered or incurred by GRCLR and/or CAF arising out of or in any way in connection with such damage, interference, delay or disruption.

19. Kane warrants that it holds appropriate insurance to cover Kane's risks and liabilities arising from this letter.

Confidentiality

20. Each of Kane and GRCLR must keep the terms of this letter confidential, save that:
    a. Kane may disclose its content to its Subcontractor for the purposes of meeting its obligations under this letter; and
    b. GRCLR may disclose its contents to:
        i. TfNSW;
        ii. CAF; and
        iii. its related bodies corporate.

This letter is governed by the laws of New South Wales. Please sign and return the Acknowledgment and Acceptance attached to this letter.

Regards,

Alan Brittain

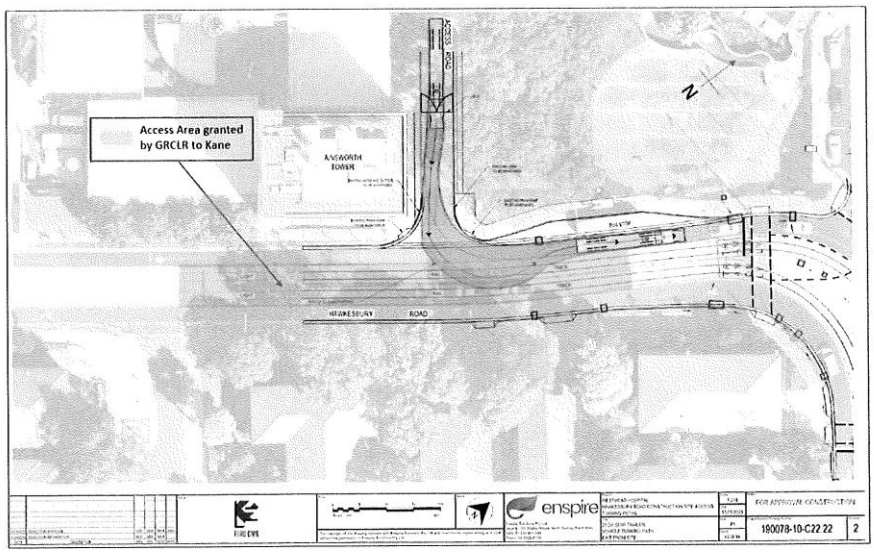
Project Delivery Director

Great River City Light Rail

Great River City Light Rail
ABN 60 622 239 605
GPO Box 5092, Melbourne, VIC 3001
Tel: +61 3 8681 7501

GREAT RIVER CITY LIGHT RAIL
LIFE MORE LIVEABLE

Appendix – Access Area



Great River City Light Rail
ABN 60 622 239 605
GPO Box 5092, Melbourne, VIC 3001
Tel: +61 3 8681 7501

GREAT RIVER CITY LIGHT RAIL
LIFE MORE LIVEABLE

Acknowledgment and Acceptance of terms of access

We hereby agree to the access terms set out above.

Executed by an authorised representative of Kane Constructions Pty Ltd (ABN 49 007 354 396)

CHRISTOPHER CHAN

Print name of Authorised Representative

Signature of Authorised Representative

09/12/2023

Date

Great River City Light Rail
ABN 60 622 239 605
GPO Box 5092, Melbourne, VIC 3001
Tel: +61 3 8681 7501

MATTHEW PALAVIDIS
VICTOR FATTORETTO
MATTHEW SHIELDS

Westmead Children's Hospital Forecourt

Construction Noise & Vibration Management Sub-Plan (CNVMSP)

SYDNEY
9 Sarah St
MASCOT NSW 2020
(02) 8339 8000

ABN98145324714
www.acousticlogic.com.au

Project ID	20230673.1
Document Title	Construction Noise & Vibration Management Sub-
Attention To	Kane Constructions Pty Ltd

Revision	Date	Document Reference	Prepared By	Checked By	Approved By
0	10/07/2023	20230673.1/1007A/R0/RF	RF		VF
1	28/11/2023	20230673.1/1007A/R1/RF	CC	CC	CC

TABLE OF CONTENTS

B13 Consent Satisfaction Table

Condition	Condition requirements	Document reference
B17	The Construction Noise and Vibration Management Sub-Plan must address, but not be limited to, the following:	
	(a) be prepared by a suitably qualified and experienced noise expert;	Appendix A
	(b) describe procedures for achieving the noise management levels in EPA's Interim Construction Noise Guideline (DECC, 2009);	Section 8
	(c) describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers;	N/A to this project
	(d) include strategies that have been developed with the community for managing high noise generating works;	Section 9
	(e) describe the community consultation undertaken to develop the strategies in condition B14;	Section 9
	(f) include a complaints management system that would be implemented for the duration of the construction; and	Section 9
	(g) include a program to monitor and report on the impacts and environmental performance of the development and the effectiveness of the implemented management measures in accordance with the requirements of condition B11.	Section 8.4.6

1 INTRODUCTION

This report presents our assessment of the processes which will be followed in order to manage noise and vibration from construction activities associated with the Westmead Children's Hospital Forecourt development. This report is pursuant to development consent SSD conditions B17 for the provision of a Construction Noise and Vibration Management Sub-Plan.

The principal objective of this study is to undertake an evaluation of work to be performed during construction phases and forecast potential impacts of noise and vibration. The evaluation will be used to formulate and streamline effective regulation and mitigation measures.

The principal issues which will be addressed in this report are:

- Specific activities that will be conducted and the associated noise/vibration sources.
- Identification of potentially affected noise/ vibration sensitive receivers.
- The development, hours of work and excavation period.
- The construction noise requirements specified in consent condition B17.
- Noise/ vibration response procedures,
- Assessment of potential noise/vibration from the proposed construction activities; and
- Contingency plans to be implemented in the event of non-compliances and/or noise complaints.

2 SITE DESCRIPTION & PROPOSED DEVELOPMENT

The works include erection of a canopy structure, installation of a section of façade to an existing building, installation of playground equipment and landscaping works.

We note that enabling works will have been completed prior to the commencement of the proposed works. Anticipated duration of works is

approximately four months.

The CNVSMP prepared for the enabling works phase for Ford Civil (refer Appendix B) indicates that the nearest affected receivers are as follows:

- SCHN: the Sydney Children's Hospitals Network.
- CHW: Children's Hospital Westmead.
- WSLHD: Western Sydney Local Health District.
- H1: Kids Research institute (KRI).
- H2: Children's Medical Research Institute (CMRI).
- R1: Residential receivers to the south across Hawkesbury Road.

An aerial photo of the site, monitoring locations and surrounding receivers is shown below in Figure 1. This image is taken from the CNVSMP prepared for the enabling works phase for Ford Civil.

Figure 1 – Overview of site and surrounds and surrounding developments (obtained CNVSMP prepared for the enabling works phase for Ford Civil)

3 HOURS OF WORK AND DURATION

4 ACTIVITIES TO BE CONDUCTED AND ASSOCIATED NOISE SOURCES

The following equipment and activities are likely to occur during the construction works based on information provided by Kane Constructions.

- Installation of structural steel canopy and retail pod – hand tools
- Installation of roof sheeting – hand tools
- Installation of facade around a section of the existing building – hand tools
- Installation of playground equipment – hand tools
- Trucks for material delivery
- Mobile cranes
- Forklifts

4.1 HOURS OF WORK

Consent conditions C4-C8 stipulates that construction hours are limited as follows:

Construction Hours	
C4	Construction, including the delivery of materials to and from the site, may only be carried out between the following hours: (a) between 7am and 6pm, Mondays to Fridays inclusive; and (b) between 8am and 1pm, Saturdays. No work may be carried out on Sundays or public holidays.
C5	Notwithstanding condition C4, provided noise levels do not exceed the existing background noise level plus 5dB, works may also be undertaken during the following hours: between 1pm and 5pm, Saturdays.
C6	Construction activities may be undertaken outside of the hours in condition C4 and C5 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.
C7	Notification of such construction activities as referenced in condition C6 must be given to affected residents before undertaking the activities or as soon as is practical afterwards
C8	Rock breaking, rock hammering, sheet piling, pile driving and similar activities may only be carried out between the following hours: (a) 9am to 12pm, Monday to Friday; (b) 2pm to 5pm Monday to Friday; and (c) 9am to 12pm, Saturday.

Formatted: Font: (Default) +Body (Calibri)

A summary of approved construction hours is provided in Table 1 below:

Table 1 – Summary of Approved Construction Hours

Construction Activity	Development Consent Condition	Day of the Week – Permitted Times		
		Monday - Friday	Saturday	Sunday & Public Holidays
Construction and delivery of materials to and from site	C4	7:00am – 6:00pm	8:00am – 1:00pm	None permitted.
Construction and delivery of materials to and from site	C5 (BG+5 noise limit)	N/A	1:00pm – 5:00pm	None permitted
Rock breaking, rock hammering, sheet piling, pile driving	C8	9:00am – 12:00pm, and 2:00pm – 5:00pm	9:00am– 12:00pm	None permitted

Formatted: Font: (Default) +Body (Calibri)

5 CONSTRUCTION NOISE AND VIBRATION EMISSION MANAGEMENT LEVELS

5.1 NOISE MANAGEMENT LEVELS

Noise management levels are to be developed with reference to the following:

- Development Consent Condition B17
- NSW EPA's I*nterim Construction Noise Guideline (DECC, 2009),*
- Protection of the Environment Operations Act 1997,
- Australian Standard AS2436:2010 "Guide to Noise Control on Construction, Maintenance and Demolition Sites.

5.1.1 External Receivers

Noise management levels applicable to residential receivers surrounding the site are detailed in the CNVMSP prepared for the enabling works and summarised in the table below. We note that the noise management levels have been formulated in accordance with the EPA ICNG.

Table 2 – Noise Management Levels (Residential Receivers)

Receiver	Noise Management Level - dB(A)$L_{eq(15min)}$	"Highly Noise Affected" Level - dB(A)$L_{eq(15min)}$
Residential R1/R2	59 (RBL + 10 dB) (Standard construction hours) 54 (RBL + 5dB) (Outside standard hours)	75

5.1.2 Receivers within Westmead Health Precinct

In determining appropriate noise management levels for areas within the hospital precinct construction noise management levels are provided below:

Table 3 – Construction Noise Emission Management Level (Hospital Precinct)

Receiver	Noise Management Level - dB(A)$L_{eq(15min)}$
Within Hospital precinct SCHN/CHW/WSLHD/H1/H2	80*

*Based on an AS2107+5dB(A) internal noise level and a 30dB(A) reduction across a fixed/closed façade.

5.1.3 Protection of the Environment Operations Act 1997,

We note that, in the absence of specific noise limits provided in the Protection of the Environment Operations Act 1997 with respect to construction noise, it is considered that adherence to the requirements of the NSW EPA's ICNG is sufficient in the assessment of 'offensive noise'.

Formatted: Font: (Default) +Body (Calibri)

5.1.4 Australian Standard AS2436:2010 "Guide to Noise Control on Construction, Maintenance and Demolition Sites

Australian Standard AS2436 does not provide specific noise management targets. The guideline focuses on strategies for developing feasible and reasonable mitigation methodologies, management controls and community liaison to reach realistic compromises between the needs of construction activities and potentially affected receivers.

For the control and regulation of noise from construction sites AS2436:2010 *Guide to noise control on construction, maintenance and demolition sites* nominates the following:

- That reasonable suitable noise management objectives are established.
- That all practicable measures be taken on the building site to regulate noise emissions, including the siting of noisy static processes to locations of the site where they can be shielded, selecting less noisy processes, and if required regulating demolition hours.

5.2 VIBRATION OBJECTIVES

Development consent conditions state the following with respect to vibration:

Vibration Criteria	
C16	Vibration caused by construction at any residence or structure outside the site must be limited to: (a) for structural damage, the latest version of DIN 4150-3 (1992-02) Structural vibration - Effects of vibration on structures (German Institute for Standardisation, 1999); and (b) for human exposure, the acceptable vibration values set out in the Environmental Noise Management Assessing Vibration: a technical guideline (DEC, 2006) (as may be updated or replaced from time to time).
C17	Vibratory compactors must not be used closer than 30 metres from residential buildings unless vibration monitoring confirms compliance with the vibration criteria specified in condition C16.
C18	The limits in conditions C16 and C17 apply unless otherwise outlined in a Construction Noise and Vibration Management Plan, approved as part of the CEMP required by condition B13 of this consent.

The criteria and the application of the guidelines mentioned in condition C16-18 are discussed in separate sections below.

5.2.1 German Standard DIN 4150-3 (1999-02) - Ground Borne Vibrations and Damage Limits

German Standard DIN 4150-3 (1999-02) provides vibration velocity guideline levels for use in evaluating the effects of vibration on structures. The criteria presented in DIN 4150-3 (1999-02) are presented in Table 4.

It is noted that the peak velocity is the absolute value of the maximum of any of the three orthogonal component particle velocities as measured at the foundation, and the maximum levels measured in the x- and y-horizontal directions in the plane of the floor of the uppermost storey.

Formatted: Font: (Default) +Body (Calibri)

Table 4 – DIN 4150-3 (1999-02) Safe Limits for Building Vibration

	TYPE OF STRUCTURE	PEAK PARTICLE VELOCITY (mms^{-1})			
		At Foundation at a Frequency of			Plane of Floor of Uppermost Storey
		< 10Hz	10Hz to 50Hz	50Hz to 100Hz	All Frequencies
1	Buildings used in commercial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40
2	Dwellings and buildings of similar design and/or use	5	5 to 15	15 to 20	15
3	Structures that because of their particular sensitivity to vibration, do not correspond to those listed in Lines 1 or 2 and have intrinsic value (e.g. buildings that are under a preservation order)	3	3 to 8	8 to 10	8

5.2.2 Environmental Noise Management Assessing Vibration: a technical guideline (DEC, 2006) - Managing Assessing Impacts

Department of Environment and Conservation NSW "Assessing Vibration: A Technical Guideline" (Feb 2006) is based on the guidelines contained in BS 6472:1992. This guideline provides procedures for assessing tactile vibration and regenerated noise within potentially affected buildings.

The recommendations of this guideline should be adopted to assess and manage vibration within the excavation/construction site.

Table 5 – EPA Recommended Vibration Criteria

Place	Time	RMS acceleration (m/s^2)		RMS velocity (mm/s)		Peak velocity (mm/s)	
		Preferred	Maximum	Preferred	Maximum	Preferred	Maximum
Continuous Vibration							
Critical Working Areas	Daytime	0.005	0.01	0.1	0.2	0.14	0.28
Residences		0.01	0.02	0.2	0.4	0.28	0.56
Offices		0.02	0.04	0.4	0.8	0.56	1.1
Workshops		0.04	0.08	0.8	1.6	1.1	2.2
Impulsive Vibration							
Critical Working Areas	Daytime	0.005	0.01	0.1	0.2	0.14	0.28
Residences		0.3	0.6	6.0	12.0	8.6	17.0
Offices		0.64	1.28	13.0	26.0	18.0	36.0
Workshops		0.64	1.28	13.0	26.0	18.0	36.0

Formatted: Font: (Default) +Body (Calibri)

6 ASSESSMENT OF NOISE EMISSIONS

6.1 ACTIVITIES TO BE CONDUCTED AND THE ASSOCIATED NOISE SOURCES

We have been advised of the typical equipment/processes anticipated to be used on the project site. Noise impacts from these activities on the amenity of the surrounding identified sensitive receivers will be predicted based on the A-weighted sound power levels outlined in the table below.

Table 6 – Equipment Sound Power Levels

EQUIPMENT /PROCESS	SOUND POWER LEVEL dB(A)
Truck – medium rigid	103
Forklift	100
Hand Tools	100
Crane – Mobile	105

*Noise levels take into account correction factors for tonality where necessary.

The noise levels presented in the above table are derived from the following sources:

1. On-site measurements;
2. Table D2 of Australian Standard 2436-1981 & Table A1 of Australian Standard 2436-2010; and
3. Data held by this office from other similar studies.

Formatted: Font: (Default) +Body (Calibri)

6.2 NOISE EMISSION PREDICTIONS AND ASSESSMENT

6.2.1 Methodology

Noise generated by plant and equipment will be managed to generally comply with the nominated noise management levels, and where this noise goal may be exceeded, noise will be managed based on principles consistent with Australian Standard 2436.

Predictions of noise levels at the sensitive receivers identified have been made of the construction processes with the potential to produce significant noise.

6.2.2 Predicted Noise Levels

An assessment of the principal sources of noise emission has been undertaken to identify the activities that may produce noise and/or vibration impacts so that appropriate ameliorative measures can be formulated.

Noise levels from construction works have been predicted at the surrounding receivers and assessed against the construction noise management levels set out in Section 5. Refer to tables below for predicted noise levels for each receiver.

Predictions take the following into account:

- The distance between the noise source and the receiver.
- The screening effected provided by any remaining building structure/shell and topography.
- The expected duration of the activity within a worst case 15-minute time period.

2009 NSW Environmental Protection Authority (EPA) document – "Interim Construction Noise Guideline (ICNG) 2009"

The EPA's ICNG assessment requires:

- Review of noise levels at nearby development
- If necessary, recommendation of noise control strategies in the event that compliance with noise emission goals is not possible.

EPA guidelines adopt differing strategies for noise control depending on the predicted noise level at the nearest residences for construction during the recommended standard hours:

- "Noise Affected" level – Where construction noise is predicted to exceed the "noise affected" level at a nearby residence, the proponent should take reasonable/feasible work practices to ensure compliance with the noise affected level. For residential properties, the noise affected level occurs when construction noise exceeds the rating background noise level by more than 10dB.
- "Highly Noise Affected" level – Where noise emissions are such that nearby properties are "highly noise affected", noise controls such as respite periods should be considered. For residential properties, the highly noise affected level occurs when construction noise exceeds 75dB(A)Leq(15min) at nearby residences.

The guideline also provides external management levels for land used for commercial or industrial purposes to be assessed at the most affect occupied point of the premises. EPA guidelines recommend a construction noise management level for industrial receivers of 75dB(A)Leq(15-minute).

Section 4.1.2 of the guideline provides that, for other sensitive land uses such as classrooms at educational institutions, the noise management level should not exceed 45 dB(A) internally.

Formatted: Font: (Default) +Body (Calibri)

Table 7 – Predicted Noise Emissions to R1 Residential Receivers

Activity	Predicted Level dB(A)$L_{10(15\text{-minute})}$	Noise Management Level	Comment
Truck – medium rigid	48-57	NSW EPA *Interim Construction Noise Guideline* Residential Areas Noise Affected Level: 59dB(A)$L_{eq(15min)}$(forconditionC4approvedhours) 54dB(A)$L_{eq(15min)}$ (forconditionC5approvedhours) Highly Noise Affected Level: 75dB(A)$L_{eq(15min)}$ (Assessed at property boundary)	See discussion in Section 6.3.
Forklift	52-61		
Hand Tools	52-61		
Crane – Mobile	54-63		

Table 8 – Predicted Noise Emissions to Children's Hospital Westmead

Activity	Predicted Level dB(A)$L_{10(15\text{-minute})}$	Noise Management Level	Comment
Truck – medium rigid	49-71	80 dB(A) $L_{eq(15\ minute)}$ (Internal)	Below adoptedNML
Forklift	63-85		
Hand Tools	53-75		
Crane – Mobile	55-77		

Table 9 – Predicted Noise Emissions to H1 – Kids Research Institute

Activity	Predicted Level dB(A)$L_{10(15\text{-minute})}$	Noise Management Level	Comment
Truck – medium rigid	45-49	80 dB(A) $L_{eq(15\ minute)}$ (Internal)	Below adoptedNML
Forklift	49-53		
Hand Tools	49-53		
Crane – Mobile	51-55		

Table 10 – Predicted Noise Emissions to H2 – Children's Medical Research Institute

Activity	Predicted Level dB(A)$L_{10(15\text{-minute})}$	Noise Management Level	Comment
Truck – medium rigid	45-69	80 dB(A) $L_{eq(15\ minute)}$ (Internal)	Below adoptedNML
Forklift	49-63		
Hand Tools	49-63		
Crane – Mobile	51-65		

6.3 DISCUSSION – NOISE

Predicted construction noise levels to surrounding receivers, as presented in tables above, are summarised and discussed below:

6.3.1 R1 - Residential Receivers

Construction noise impacts to residential receivers to the north of site are expected to intermittently exceed the noise affected level (NAL). Exceedances are expected when equipment/activities are operated/undertaken near to the southern site boundary. In is not expected that the 'Highly Noise Affected Level' (HNAL) will be exceeded from any process at surrounding residential locations. As the predicted exceedances of the NAL are minor (up to 4 dB(A) and generally 2 dB(A) or less) and are only expected to occur intermittently, it is not considered reasonable to implement specific mitigation measures beyond what would normally adopted as normal practice to minimise emissions.

All proposed construction activities have the potential to exceed a BG+5 noise management level during C5 hours when undertaken near the southern site boundary. If after hours works are proposed in the future, then the activities to be undertaken should be assessed and all reasonable and feasible measures should be adopted to minimise noise impacts to receivers as outlined in this plan.

6.3.2 Receivers within Westmead Hospital Precinct

Construction activities are predicted to be below the adopted NML at all receivers within the Westmead Health Precinct. Therefore, no specific measures other than those normally implemented to minimise construction noise are required to manage noise impacts to these receivers.

7 GROUND VIBRATION IMPACTS

Bulk excavation and groundworks is to be undertaken by others prior to use of the site by Kane. The proposed works are not typically associated with high levels of vibration and as such vibration monitoring is recommended only in the event of complaint or concern for structural damage to nearby buildings.

7.1 VIBRATION MONITORING

In the event of complaints or concern for structural damage to nearby buildings, vibration monitors can be installed during the key stages.

The monitors are proposed to be fitted with GSM modem and remotely signal up to five mobile phones indicating any exceedance of the prescribed vibration criteria to enable immediate notification to be sent to the contractor when vibration thresholds are approached.

We note, it is impossible to predict the vibrations induced by the excavation/construction operations on site at potentially affected receivers. However, the total vibration emissions are to be limited with real-time alarm notification given to the plant operators to ensure that the vibration limits are not exceeded. Based on feedback from the real-time monitoring system, the plant operators will be able to modify their operations to ensure the vibrations are kept within acceptable limits.

7.1.1 Vibration Monitoring Download

Downloading of the vibration logger will be conducted on a regular basis. In the event exceedance of vibration criteria or alarms occur, downloading of the logger will be conducted more frequently. Results obtained from the vibration monitor will be presented in a graph format and will be forwarded to the client for review. It is proposed that reports are provided fortnightly with any exceedance in the vibration criteria reported as detailed in this report.

7.1.2 Vibration Monitoring Reports

A fortnightly report will be submitted to the client via email summarising the vibration events. The vibration exceedance of limit is recorded the report shall be submitted within 24 hours. Complete results of the continuous vibration logging will be presented in fortnightly reports including graphs of collected data.

8 SPECIFIC NOISE CONTROLS

While operation during normal hours does not require the implementation of site specific controls, the following management controls should be considered to minimise impacts. In addition, general physical controls can be implemented if operation outside normal hours is to be undertaken or that actual noise levels emitted exceed the typical levels adopted in this assessment.

8.1 STATIC PLANT

If required, additional noise reduction can be achieved by erecting solid barriers around static plant such as diesel generators and any stationary concrete pumps.

The use of electric powered tower crane means that enclosing of crane motors or fitting of exhaust mufflers is not required. Adopting quieter plant is effective in reducing the noise emitted from its operation.

8.2 ACOUSTIC BARRIERS

The placement of barriers at the source is generally only effective for static plant (i.e. diesel generators). Equipment which is on the move or working in rough or undulating terrain cannot be effectively attenuated by placing barriers at the source. Barriers can also be placed between the source and the receiver.

The degree of noise reduction provided by barriers is dependent on the amount by which line of sight can be blocked by the barrier. If the receiver is totally shielded from the noise source reductions of up to 15 dB(A) can be affected. Where only partial obstruction of line of sight occurs, noise reductions of 5 to 8 dB(A) may be achieved. Where no line of sight is obstructed by the barrier, generally no noise reduction will occur.

Screens around work areas will provide no material benefit for multi storey receivers as these will overlook screening.

8.3 OTHER ACTIVITIES

In the event of complaint, noise management techniques identified in this report should be employed to minimise the level of noise impact if management levels are found to be exceeded. This may include additional community consultation and re-scheduling of loud construction processes.

Notwithstanding above, general management techniques and acoustic treatments are included in Section 8.4 which may be implemented on a case-by-case basis to reduce noise emissions to surrounding receivers.

8.4 GENERAL RECOMMENDATIONS

Other noise management practices which may be adopted are discussed below. In addition, notification, reporting and complaints handling procedures should be adopted as recommended in this report.

8.4.1 Treatment of Specific Equipment

Where construction process or appliances are noisy, the use of silencing devices may be possible. These may take the form of engine shrouding, or special industrial silencers fitted to exhausts.

8.4.2 Material Handling

The installation of rubber matting over material handling areas can reduce the sound of impacts due to material being dropped by up to 20 dB(A).

8.4.3 Selection of Alternate Appliance or Process

Where a particular activity or construction appliance is found to generate excessive noise levels, it may be possible to select an alternative approach or appliance. For example; the use of a hydraulic hammer on certain areas of the site may potentially generate high levels of noise. By carrying out this activity by use of bulldozers ripping and/or milling machines lower levels of noise will result.

8.4.4 Establishment of Site Practices

This involves the formulation of work practices to reduce noise generation. This includes locating fixed plant items as far as possible from residents as well as rotating plant and equipment to provide respite to receivers. Construction vehicles accessing the site should not queue in residential streets and should only use the designated construction vehicle routes. Loading of these vehicles should occur as far as possible from any sensitive receiver.

8.4.5 Management Training

All site managers should be aware of noise and vibration limits, applicable control measures and methods. They should ensure that all agreed noise and vibration measures are carried out by employees and sub-contractors.

A copy of the Noise Management Plan is to be available to contractors, and site inductions should detail the site contact in the event of noise complaints.

8.4.6 Noise Monitoring

Noise monitoring is to be undertaken to determine the effectiveness of measures which are been implemented, whilst the results of monitoring can be used to devise further control measures.

Attended noise measurements can be undertaken at key stages (i.e; piling, first major concrete pour) when particularly noise generating activities are undertaken or specific items of plant are in operation.

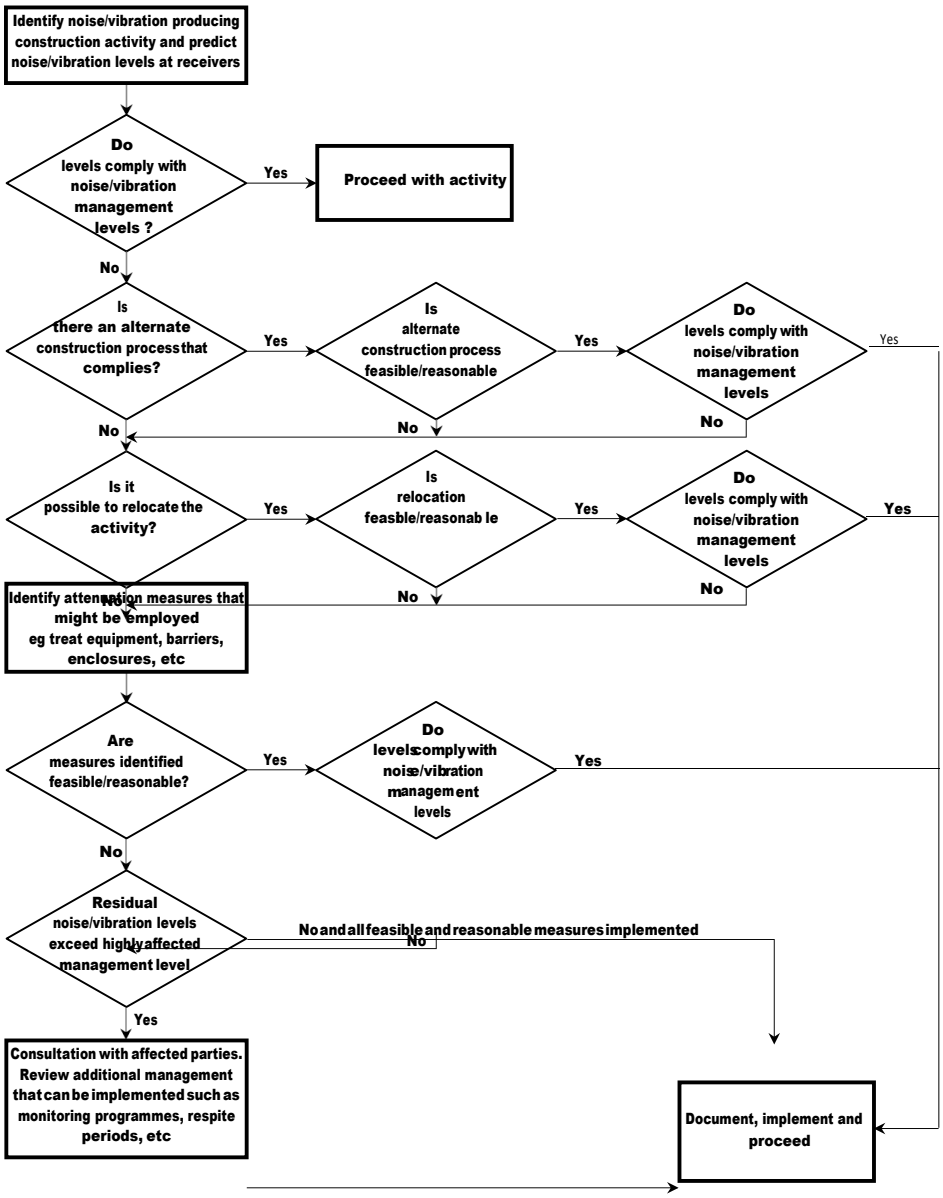
Attended noise measurements are to be conducted in accordance with Australian Standard AS1055: 2018 *'Acoustics- Description and measurement of environmental noise',* and should include the following:

- Type 1 or 2 sound meter (calibrated)
- Use of appropriate noise descriptor (in this case, $L_{eq(15min)}$).
- Detail of measurement position and proximity to reflecting surface if any (building or similar). Measurement positions will typically be a residential property boundary.

Monitoring should not be conducted under adverse weather conditions. The conditions applying at the time of the measurements should be indicated in the reporting.

8.5 CONTROL OF CONSTRUCTION NOISE AND VIBRATION – PROCEDURAL STEPS

Theflowchartpresentedbelowillustratestheprocessthatshouldbefollowedinassessingconstructionactivities.



8.6 DEALING WITH OFFENSIVE NOISE LEVELS

Should ongoing complaints of excessive noise occur, immediate measures shall be undertaken to investigate the complaint, the cause of noise exceedances and identify the required changes to work practices.

The effectiveness of any changes shall be verified before continuing. Documentation and training of site staff shall occur to ensure the practices that produced the exceedances are not repeated.

All complaints or offensive noise received should be fully investigated and reported to management. The complainant should also be notified of the results and actions arising from the investigation.

The investigation of offensive noise shall involve where applicable:

- noise measurements at the affected receiver.
- an investigation of the activities occurring at the time of the incident.
- inspection of the activity to determine whether any undue noise is being emitted by equipment.
- Whether work practices were being carried out either within established guidelines or outside these guidelines.

Where an item of plant is found to be emitting excessive noise, the cause is to be rectified as soon as possible. Where work practices within established guidelines are found to result in excessive noise being generated then the guidelines should be modified to reduce noise emissions to acceptable levels. Where guidelines are not being followed, the additional training and counselling of employees should be carried out.

Measurement or other methods shall validate the results of any corrective actions arising from a complaint where applicable.

9 COMMUNITY INTERACTION AND COMPLAINTS HANDLING

9.1 ESTABLISHMENT OF DIRECT COMMUNICATION WITH AFFECTED PARTIES

Consent Condition B17 states the following with respect to community interaction:

The Construction Noise and Vibration Management Sub-Plan must address, but not be limited to, the following:

a) be prepared by a suitably qualified and experienced noise expert;
b) describe procedures for achieving the noise management levels in EPA's Interim Construction Noise Guideline (DECC, 2009);
c) describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers;
d) include strategies that have been developed with the community for managing high noise generating works;
e) describe the community consultation undertaken to develop the strategies in condition B17(d);
f) include a complaints management system that would be implemented for the duration of the construction; and
g) include a program to monitor and report on the impacts and environmental performance of the development and the effectiveness of the implemented management measures in accordance with the requirements of condition B14

Consultation Requirements under the SSDA Conditions

Condition B17 states that the Plan should be prepared in consultation with the relevant government organisations and surrounding stakeholders. These include:

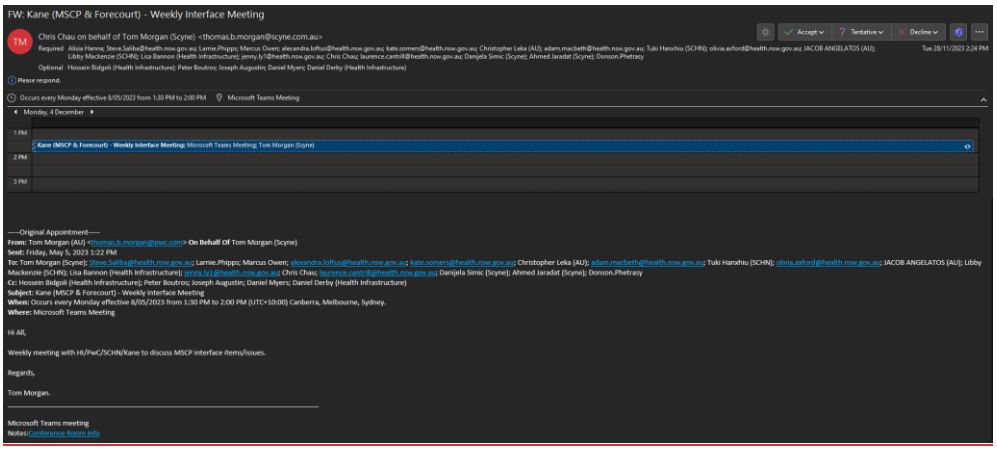
- NSW Health
    - Western Sydney Local Health District (WSLHD) and Westmead Adult's Hospital.
    - Sydney Children's Hospital Network (SCHN).
- Kids Research Institute (KRI);
- Children's Medical Research Institute (CMRI).

Ongoing consultation

Ongoing consultation with key hospital stakeholders, particularly SCHN and WSLHD, containing noise and/or vibration sensitive equipment will continue throughout the construction of the project.

A complaint procedure will also be implemented where stakeholder complaints are tracked weekly and reported back to the principal during weekly contractor and interface meetings.

Below is a screenshot of the Interface Meetings that are held weekly:


FW: Kane (MSCP & Forecourt) - Weekly Interface Meeting

Chris Chau on behalf of Tom Morgan (Scyne) <thomas.b.morgan@scyne.com.au>

Required Alisia Hanna; Steve.Saliba@health.nsw.gov.au; Larnie.Phipps; Marcus Owen; alexandra.loftus@health.nsw.gov.au; kate.somers@health.nsw.gov.au; Christopher Leka (AU); adam.macbeth@health.nsw.gov.au; Tuki Hanohiu (SCHN); olivia.axford@health.nsw.gov.au; JACOB ANGELATOS (AU); Libby Mackenzie (SCHN); Lisa Bannon (Health Infrastructure); jenny.ly1@health.nsw.gov.au; Chris Chau; laurence.cantrill@health.nsw.gov.au; Danijela Simic (Scyne); Ahmed Jaradat (Scyne); Donson.Phetrasy

Optional Hossein Bidgoli (Health Infrastructure); Peter Boutros; Joseph Augustin; Daniel Myers; Daniel Derby (Health Infrastructure)

Tue 28/11/2023 2:24 PM

Please respond.

Occurs every Monday effective 8/05/2023 from 1:30 PM to 2:00 PM Microsoft Teams Meeting

Monday, 4 December

1 PM

Kane (MSCP & Forecourt) - Weekly Interface Meeting; Microsoft Teams Meeting; Tom Morgan (Scyne)

2 PM

3 PM

-----Original Appointment-----

From: Tom Morgan (AU) <thomas.b.morgan@pwc.com> **On Behalf Of** Tom Morgan (Scyne)

Sent: Friday, May 5, 2023 1:22 PM

To: Tom Morgan (Scyne); Steve.Saliba@health.nsw.gov.au; Larnie.Phipps; Marcus Owen; alexandra.loftus@health.nsw.gov.au; kate.somers@health.nsw.gov.au; Christopher Leka (AU); adam.macbeth@health.nsw.gov.au; Tuki Hanohiu (SCHN); olivia.axford@health.nsw.gov.au; JACOB ANGELATOS (AU); Libby Mackenzie (SCHN); Lisa Bannon (Health Infrastructure); jenny.ly1@health.nsw.gov.au; Chris Chau; laurence.cantrill@health.nsw.gov.au; Danijela Simic (Scyne); Ahmed Jaradat (Scyne); Donson.Phetrasy

Cc: Hossein Bidgoli (Health Infrastructure); Peter Boutros; Joseph Augustin; Daniel Myers; Daniel Derby (Health Infrastructure)

Subject: Kane (MSCP & Forecourt) - Weekly Interface Meeting

When: Occurs every Monday effective 8/05/2023 from 1:30 PM to 2:00 PM (UTC+10:00) Canberra, Melbourne, Sydney.

Where: Microsoft Teams Meeting

Hi All,

Weekly meeting with HI/PwC/SCHN/Kane to discuss MSCP interface items/issues.

Regards,

Tom Morgan.

Microsoft Teams meeting

Notes:Conference Room Info

These complaints, whether it be from the community members or from hospital stakeholders, will be tracked in KANE's Community Contacts and Complaints Register. The complaints register can be viewed in Appendix B

9.2 DEALING WITH COMPLAINTS

Should ongoing complaints of excessive noise or vibration occur, immediate measures shall be undertaken to investigate the complaint, the cause of the exceedances and identify the required changes to work practices. In the case of exceedances of the vibration limits all work potentially producing vibration shall cease until the exceedance is investigated.

The effectiveness of any changes shall be verified before continuing. Documentation and training of site staff shall occur to ensure the practices that produced the exceedances are not repeated.

If a noise complaint is received the complaint should be recorded on a Noise Complaint Form. The complaint form should list:

- The name and address of the complainant (if provided);
- The time and date the complaint was received;
- The nature of the complaint and the time and date the noise was heard;
- The name of the employee who received the complaint;
- Actions taken to investigate the complaint, and a summary of the results of the investigation;
- Required remedial action, if required;
- Validation of the remedial action; and
- Setup vibration monitoring system at the location represents the nearest vibration receiver location with alarm device which can inform the project manager on site if the vibration exceedance happened.
- Summary of feedback to the complainant.

A permanent register of complaints should be held.

All complaints received should be fully investigated and reported to management. The complainant should also be notified of the results and actions arising from the investigation.

The investigation of a complaint shall involve where applicable;

- noise measurements at the affected receiver;
- an investigation of the activities occurring at the time of the incident;
- inspection of the activity to determine whether any undue noise is being emitted by equipment; and
- Whether work practices were being carried out either within established guidelines or outside these guidelines.

Where an item of plant is found to be emitting excessive noise, the cause is to be rectified as soon as possible. Where work practices within established guidelines are found to result in excessive noise being generated then the guidelines should be modified so as to reduce noise emissions to acceptable levels. Where guidelines are not being followed, the additional training and counselling of employees should be carried out.

Measurement or other methods shall validate the results of any corrective actions arising from a complaint where applicable.

10 CONTINGENCY PLANS

Where non-compliances or noise complaints are raised the following methodology will be implemented.

1. Determine the offending plant/equipment/process.
2. Locate the plant/equipment/process further away from the affected receiver(s) if possible.
3. Implement additional acoustic treatment in the form of localised barriers, silencers etc. where practical.
4. Selecting alternative equipment/processes where practical
5. Setup noise monitoring devices at locations represent nearest noise receivers and provide noise data for each complain time period. Analysis is required and determine suitable noise mitigation measures.

Complaints associated with noise and vibration generated by site activities shall be recorded on a Noise Complaint Form. The person(s) responsible for complaint handling and contact details for receiving of complaints shall be established on site prior to construction works commencing. A sign shall be displayed at the site indicating the Site Manager to the general public and their contact telephone number.

11 CONCLUSION

This document presents a noise and vibration management plan for construction activities proposed at Westmead Children's Hospital Forecourt.

The principal issues which addressed in this report are:

- Specific activities that will be conducted and the associated noise/vibration sources;
- Identification of potentially affected noise/ vibration sensitive receivers;
- The development, hours of work and excavation period;
- The construction noise and vibration requirements specified in development conditions of consent.
- Noise/ vibration response procedures;
- Assessment of potential noise/ vibration from the proposed construction activities; and
- Contingency plans to be implemented in the event of non-compliances and/or noise complaints.

The assessment of noise and vibration indicates that construction actives associated with the project development may generate noise levels that will require some additional management only if carried out outside of hours. Notwithstanding, adoption of the controls detailed in Section 8 of this report and adherence to the requirements of development consent will ensure that noise impacts will be minimised at all times.

Vibration goals have also been set in this report to minimise structural damage risk for existing structures close to the project site and to protect human comfort in line with the requirements of the consent.

Noting the above, we find the construction noise and vibration management requirements of development consent B17 to be satisfied.

Please contact us should you have any further queries. Yours faithfully,

Acoustic Logic Pty Ltd
Ross Ferraro

APPENDIX A

CURRICULUM VITAE

Ross Ferraro
Project Engineer

Qualifications

Master of Architectural Science (Audio & Acoustics), USYD 2020

Outline of Experience

Beginning at AL in 2020, Ross has developed experience in a variety of areas of noise and vibration measurement and assessment. Since working at AL, Ross has been involved in the investigation, design, construction, inspection and certification/compliance testing of acoustic impacts from environmental noise, building design, operational noise and mechanical noise. Ross has extensive experience in the usage and application of statutory codes and requirements of acoustic design in buildings and mechanical systems. Ross' areas of expertise include:

Spatial planning of development (room layouts, wall design etc)
Acoustic control of mechanical systems (ventilation systems, air-conditioning etc). Acoustic design of reverberant noise in critical spaces (seminar rooms, theatres). Environmental noise modelling and assessment as required for consent authorities. Review of external noise impacts (traffic, rail).
Review of acoustic impact of helicopters/helipads.

Project Experience

A sample of projects Ross has been or is currently involved with as a Project Engineer include:

Residential/ Hotel/ Mixed-Use Projects

The Ribbon, Darling Harbour 77
Market Street, Sydney
Riverwood Estate SSD, Riverwood
Tallawong Station Precinct, Rouse Hill 5-7
Charles Street, Parramatta
26 Mann Street, Gosford
Scape Student Accommodation, Kengsington
Scape Student Accommodation, Kingsford
Carter Street, Lidcombe
128 Bunnerong Road, Pagewood

Commercial Projects

55 George Street, Sydney
One Eden Park Drive, North Ryde
Coles CFC, Horsely Business Park
Bondi Junction RSL
St Mary's Leagues Club
Toongabbie Sports Club
Castle Hill RSL

Ross Ferraro
Project Engineer

Healthcare, Research, Educational and Aged-Care Facilities

University of Sydney Biomedical Accelerator University of Sydney Dubbo Medical Teaching Facility Children's Medical Research Institute, Westmead Westmead Hospital Central Acute Services Building Westmead Innovation Centre
Westmead Innovation Quarter
Western Sydney University, Bankstown Campus Hornsby Ku-Ring-Gai Hospital
Blacktown Hospital Edmondson Park Public School
Millthorpe Public School, Orange
Bletchington Public School, Orange
Picton High School
Opal Aged Care, Toongabbie
Opal Aged Care, Carlingford

VICTOR FATTORETTO
Managing Director

Qualifications

Bachelor of Mechanical Engineering (Hons, Class1) (1982)

Member of the Australian Acoustical Society (M.A.A.S) Member of Institution of Engineers, Australia
Member of Australian Building Codes Board External Noise Project

1994-Current	Director, Acoustic Logic Consultancy
1992 to 1994	Associate Director, Renzo Tonin and Associates
1989 to 1992	Project Engineer, Renzo Tonin and Associates 1981
to 1989	Engineer, NSW Public Works Department

Outline of Experience

Between 1981 and 1989 Victor was employed with the NSW Public Works Department as a professional engineer. His work involved the investigation, design and construction supervision of mechanical services (air conditioning, ventilation heating, solar design) for new and existing public buildings throughout the state as well as acoustics.

Victor joined Renzo Tonin and Associates, a Sydney-based acoustics and vibration consultancy, in 1989 as a project engineer, and was made an associate director of the firm in 1992. In 1994 he became a director of Acoustic Logic Consultancy.

Victor's areas of expertise include:

Building acoustics and building services noise control
Environmental noise modelling and assessment Vibration
isolation and structural dynamics
Traffic noise prediction
Helicopter & aircraft noise
Industrial Noise Control

Project Experience

Victor has undertaken a vast number of noise assessments and designs for a variety of projects. Some of these are listed below.

Star Event Centre and Hotel
Trinity Grammar Masterplan
Sydney Olympics
Eastern Distributor
710 George Street Residential Project
Canterbury, Liverpool, Campbelltown and Camden Hospitals
Mirvac Residential Developments Milsons Point and Rhodes
Shepherds Bay Residential precinct
AGL Site Mortlake redevelopment
Australand Residential Development Balmain, Waverton and Discovery Point

APPENDIX B – NOISE REGISTER

NOISE MONITORING RESULTS - FORECOURT ENABLING WORKS

	DATE	TIME	MONITOR ID	SITE	BUILDING	ROOM	READING (dB)	TOLERANCE (dB)	EXCEEDANCE (%)	POSITIVE OR FALSE	CAUSE
EXAMPLE	3/04/2023	1:00PM	87818F	FC	Hospital Loc 1	Store	50.5	>47	1.074468085	Positive	Structural Steel Installation

~~sultancy~~

Formatted: Left: 0.49 cm, Right: 0.85 cm, Top: 0.74 cm, Bottom: 1.45 cm, Width: 29.7 cm, Height: 21.01 cm

Formatted: Font: (Default) +Body (Calibri), Bold

KANE

WASTE MANAGEMENT PLAN

CHILDRENS HOSPITAL WESTMEAD – FORECOURT & RETAIL POD CONTRACT NUMBER: HI 21359

23/08/2023

CHANGE HISTORY

ISSUE	CHANGE TYPE	AMENDMENT SUMMARY	AUTHOR	DATE
01	For Approval	First Issue	PB	26/06/2023
02	For Approval	PCA Review	CC	23/08/2023
03				
04				
05				
06				
07				

TABLE OF CONTENTS

1.0 INTRODUCTION

This Waste Management Plan is relevant to the development of the CHW Forecourt & Retail Pod located on the junction of Hawkesbury Road and Hainsworth Way, Westmead. The works include the following;

- The design and construction of all elements as per the principal's documentation that includes but not limited to relevant standards, BCA, HI Engineering Services Guidelines and HI Forecourt & Retail Pod Guidance Notes
- Transition from the Combined Civils works handover site conditions to the Forecourt Contractor
- Construction of a structural steel canopy
- Construction of a retail pod (cold-shell)
- Construction of a landscaped area including security, lighting, grassed area, mounds, battering and planting in and around the site, ensuring the new and existing areas tie in together
- Construction of the playground areas
- Provision of improved pedestrian access, signage and lighting around the site during and after construction. Ensure all temporary and permanent pedestrian pathways are DDA / BCA compliant
- Associated building services including but not limited to electrical, hydraulic, fire protection and the like
- Landscaping and signage to the items and make good landscaping where applicable
- Establishing a safe surrounding environment at the interfaces, and continuity of healthcare services, air quality, vibration management, acoustic controls, overland flow, fire egress and maintenance routes. (high risk workshops will be required prior to new work types to ascertain tooling and methodology appropriateness)

The Key Participants in the design and delivery of the MSCP project includes:

Principal	Health Infrastructure
User Group	Sydney Children's Hospital Network (SCHN)
Project Manager (Client)	Price Waterhouse Cooper (PwC)

The objective of this Waste Management Plan (WMP) is to outline measures to classify and dispose of all waste generated from the project during the Construction Phase and to ensure that resources are used efficiently in an attempt to minimise waste volumes. The processes detailed within this plan will ensure that waste will be correctly managed in line with the relevant Legislative requirements as well as the guidelines and priorities set out by the NSW Environment Protection Authority (EPA). Effective Waste Management is considered a communal responsibility, although specific responsibilities have been defined to ensure active implementation of Waste Management Procedures.

The management of Waste associated with the Operations of the completed facility are considered to be at the discretion of the End User Group and will therefore not be addressed within this Waste Management Plan.

The Conditions of Consent relevant to this CWMP are listed in Tables 1. A cross reference is also included to indicate where the condition is addressed in this Plan or other Project management documents

Table 1: Forecourt SSDA Conditions of Consent relating to this CWMP:

SSDA No.	Condition of Consent	Document Reference
B18	(a) the recording of quantities, classification (for materials to be removed) and validation (for materials to remain) of each type of waste generated during construction and proposed use for materials to remain; NSW Government 15 The Children's Hospital at Westmead – PSB Department of Planning, Industry and Environment (SSD-10349252) (b) information regarding the recycling and disposal locations; and (c) confirmation of the contamination status of the development areas of the site based on the validation results.	(a) Page 11 (b) Page 15 (c) Confirmed – Page 16

2.0 LEGISLATION / STANDARDS / GUIDELINES

NSW Protection of the Environment Operations Act, 1997 (POEO Act);

NSW Protection of the Environment Operations (Waste) Regulation 1996;

NSW Waste Avoidance and Resource Recovery Act 2001;

NSW Waste Minimisation and Management Act 1995;

Office Environment & Heritage (OEH) Waste Classification Guidelines: Part 1 Classifying Wastes (DECC 2009a)

The strategies employed to minimise waste on-site will parallel the approach to Waste depicted in the EPA Waste Management Hierarchy:

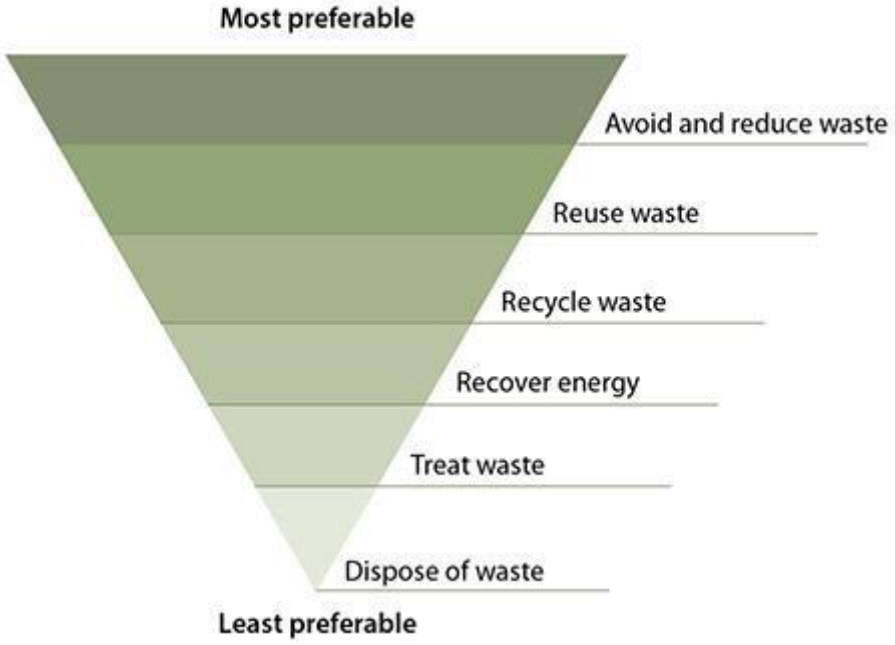


Figure 1: Waste Management Hierarchy. Sourced from EPA

SSDA Conditions:

a) *the recording of quantities, classification (for materials to be removed) and validation (for materials to remain) of each type of waste generated during construction and proposed use for materials to remain;*

b) *information regarding the recycling and disposal locations; and*

c) *confirmation of the contamination status of the development areas of the site based on the validation results.*

3.0 PROCESS

Waste creation during the completion of construction works shall consist of a) Building material waste b) general waste from staff engaged during the creation of the facility.

During the construction phase, key waste sources include:

- green waste from vegetation clearance;
- asphalt and concrete waste;
- liquid wastes such as oils and used chemicals from equipment maintenance domestic waste from site personnel including food scraps, glass and plastic bottles, paper and plastic containers;
- site sewage and other wastewater run-off including water utilised for dust suppression.

Generally, activities identified to facilitate the reduction of waste creation include:

- Utilise separate re-cycling bins
- Where practical use “prefabrication” rather than “in-situ materials”
- Ensure materials are recycled where practical.
- Monitor waste disposal.
- Ensure adequate site bins are available to control waste.

The management of waste will be conducted in accordance with the process illustrated in Table 1.

ACTIONS	RESPONSIBILITY
Appropriate Training All personnel are to receive the project Environmental induction and ongoing waste management awareness and training via tool box talks on a regular basis.	**Environment Manager**
Assessment of Onsite Situation ‣ Identify waste streams and approximate quantities prior to commencement of works. ‣ Identify management measures to reduce, reuse, recover, and recycle in preference to disposing to a licenced landfill. ‣ Advise Environment Manager prior to generating new waste streams. ‣ Refer to Table 1 for waste stream types and disposal locations already identified.	**Site Foreman** **Project Engineer** **Environment Manager**

Waste Management Onsite
• Waste storage facilities/stockpile locations to be established prior to works commencing and identified on the Environmental Control Map.
• Waste storage facilities/stockpile locations to be appropriately signposted e.g. recyclables, steel, concrete, general waste.
• The waste hierarchy of avoid, reduce, reuse and recycle to be employed throughout the project. Examples to be employed on site include:
  ○ Alternative products with recycled content and/or lower embodied energy will be investigated, especially paper, landscaping and concrete products;
  ○ Beneficial reuse will occur on site where feasible to do so;
  ○ Possible offsite crushing and screening will be explored to create a potential reusable product;
  ○ Topsoil will be stockpiled for later reuse in site rehabilitation, where possible.
• Material sent offsite will be classified by an appropriately qualified professional in accordance with the Waste Classification Procedure and OEH's Waste Classification Guidelines: Part 1 Classifying Wastes (DECC 2009a).
	Site Foreman
	Superintendent
	Project Engineer
	Environment Manager

Monitoring and Recording • A waste tracking form is to be used for all materials that require off-site disposal. • Monitoring of waste management practices to be recorded using the **Weekly Environmental Inspection Checklist.** • Monitoring of goals and limits in regards to waste management will be completed by the Environment Manager. • Any actions from inspections to be assigned to the foreman for the area and recorded using the **Environmental Inspection Actions Form.** • Any observations will be kept in a site diary and significant issues are to be raised with the Environmental Manager.	**Site Foreman** **Project Engineer** **Environment Manager**

Table 1: Onsite Waste Management Actions and Responsibilities

4.0 MANAGEMENT

- Waste management and reuse strategies will be considered and implemented where practical and cost-effective. On-site reuse opportunities will be maximised, with efforts made to implement reuse and recycling initiatives. Examples to be employed on site include:
    - Beneficial reuse of spoil as fill where practicable for backfilling, access roads and retaining wall construction at fill locations;
    - Possible offsite crushing and screening will be explored to create a potential reusable product;
    - Topsoil will be stockpiled for later reuse in site rehabilitation, where possible;
    - Where available, and of appropriate chemical and biological quality, stormwater, recycled water or other sources of water shall be used in preference to potable water for construction activities, including concrete mixing and dust control.
- Material sent offsite will be classified by an appropriately qualified professional in accordance with the Waste Classification Procedure and OEH's Waste Classification Guidelines: Part 1 Classifying Wastes (DECC 2009a).
- Table 1 lists the waste generating aspects and identifies the range of solid, hazardous, special and liquid wastes that are likely to be generated by construction. Table 1 also outlines the proposed reuse, recycling or disposal method.
- Staff will be inducted on the principles of waste management and resource use requirements while working on site.
- Waste generated outside the site shall not be received at the site for storage, treatment, processing, reprocessing or disposal on site, except as expressly permitted under the POEO Act, if a licence is required for that waste type.
- Mitigation and management measures for waste impacts during construction are outlined in Table 2.

WASTE	CLASSIFICATION	POTENTIAL RECOVERY/REUSE	DISPOSAL (ALL TRACKED)
Green waste from clearing and grubbing of vegetation	General Solid Waste (Non Putrescible)	• Green waste would be reused as mulch onsite or provided to local schools for landscaping.	• Clear and grub sub-contractor would remove timber and excess mulch to appropriately approved facilities.
Virgin Excavated Natural Material (VENM) – residual soil and shales	General Solid Waste (Non Putrescible)	• Where possible, all suitable fill materials would be used on site in a cut to fill operation.	• Wherever possible, VENM would be used on the project and excess material would be transferred to appropriately approved sites requiring VENM.
Excavated Natural Material (ENM)	General Solid Waste (Non Putrescible) – Resource Recovery Exemption	• Where possible, all suitable fill materials would be used on site in a cut to fill operation.	• Wherever possible, ENM would be used on the project and excess material would be transferred to appropriately approved sites requiring ENM.
Mixed Spoil	General Solid Waste (Non Putrescible)	• Where possible, all suitable fill materials would be used on site in a cut to fill operation.	• Mixed unsuitable spoil would be transferred to appropriately approved waste facilities.
Demolition concrete and bitumen	General Solid Waste (Non Putrescible)	• Stockpiled and transported to recycling centre and recycled for project construction activities.	• Nil. Valuable recourse.
Building rubble and structural element demolition materials	General Solid Waste (Non Putrescible)	• Collected in designated collection areas and reused as much as practically possible.	• Mixed unsuitable materials would be transferred to appropriately approved waste facilities.
Waste metals	General Solid Waste (Non Putrescible)	• Stockpiled and transported to recycling centre.	• Nil. Valuable recourse.
Liquid wastes – potholing slurries, site sewage, potholing, paint.	Liquid Waste	• Liquid waste would be clearly identified and stored separate from other waste materials for selective disposal.	• Liquid waste would be stored so as to prevent or control accidental releases to air, soil, and water resources in the area. • A licensed waste collection contractor would collect the liquid wastes generated on site and dispose to appropriately approved liquid waste facilities.
General office waste – paper, cardboard, used printer cartridges.	General Solid Waste (Non Putrescible)	• Office waste such as paper, cardboard boxes, comingled wastes (Cans, plastic bottles etc) and used printer cartridges would be recycled.	• Food wastes and non recyclables will be sent to landfill.
Asbestos or Asbestos Containing Material	Special Waste	• None currently identified	• A licensed waste collection contractor would collect the liquid wastes generated on site and dispose to appropriately approved special waste facilities.

Table 2: Construction Waste and Management

NO		MITIGATION MEASURE	TIMING	RESPONSIBILITY	TOOL
General					
1.		The 'waste hierarchy' will be maximised during construction and incorporated into work programs, purchase strategies and site inductions, and will be assessed quarterly to identify opportunities for improvement.	Pre-construction and construction	Environmental Manager	Site Inductions / Toolbox Talks
2.		Excavated material would be reused on-site, as far as practically possible.	Construction	Project Engineer	Site Inductions / Toolbox Talks
3.		Cleared vegetation will be reused on-site, as far as practically possible.	Construction	Project Engineer	Site Inductions / Toolbox Talks
4.		All liquid and/or non-liquid waste generated on the site from will be assessed and classified in accordance with Waste Classification Guidelines (DECC, 2008), as described in the **Waste Classification Procedure**.	Construction	Project Engineer	Site Inductions / Toolbox Talks / Waste Classification Procedure
5.		Waste disposal will be in accordance with the POEO Act. Wastes that are unable to be reused or recycled will be disposed of off-site at an appropriately licensed waste management facility, following classification.	Construction	Project Engineer	Site Inductions / Toolbox Talks / Waste Classification Procedure / Waste Tracking Form / Waste Register
6.		A section 143 notice under the POEO Act will be completed by both the project and the relevant property owner, should off-site disposal of construction waste material or VENM onto private property be deemed necessary.	Construction	Project Engineer / Environmental Manager	Section 143 Notice
7.		Waste generated outside the site shall not be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by the project's EPL.	Construction	Project Engineer	Site Inductions / Toolbox Talks
8.		Waste segregation and separation will be promoted to facilitate reuse and recycling as a priority of the waste management program as follows: – waste segregation at the worksites - all waste materials will be separated onsite into dedicated bins/areas where practicable for either reuse onsite or collection by a waste contractor; and – waste separation off-site - all wastes will be deposited into one bin where space is not available on the worksite(s) and the waste will be sorted by a waste contractor.	Construction	Environmental Manager	Site Inductions / Toolbox Talks
9.		Recycled material will be considered for use in rail construction where feasible and reasonable in accordance with the NSW Government's WRAPP.	Construction	Construction Manager	Site Inductions / Toolbox Talks
10.		Where available, and of appropriate chemical and biological quality, stormwater, recycled water or other water sources will be used in preference to potable water for construction activities, including concrete mixing and dust control.	Construction	Construction Manager	Site Inductions / Toolbox Talks / Permit to Pump
11.		A procurement approach will be adopted to reduce waste at the higher end of the waste hierarchy. During the procurement process, alternative products with recycled content and/or lower embodied energy will be investigated,	Pre-Construction	Environmental Manager	Site Inductions / Toolbox Talks

NO		MITIGATION MEASURE	TIMING	RESPONSIBILITY	TOOL
		especially paper, landscaping and concrete products. These products will be preferred where they meet all required specifications, are fit-for-purpose, can meet supply requirements and are cost neutral.			
Tracking					
12.		Tracking of waste generation trends by type and amount of waste generated to be recorded on the **Waste Register**.	Construction	Environmental Manager	Toolbox Talks
13.		All waste collected for disposal and/or recycling, including amounts, date and time and details, and location of disposal to be recorded on the **Waste Register**.	Construction	Environmental Manager	Toolbox Talks / Waste Register
Transportation					
14.		On-site and off-site transportation of waste would be conducted so as to prevent or minimise spills, releases and exposures to employees and the public.	Construction	Project Engineer	Site Inductions / Toolbox Talks
15.		All trucks transporting wastes off-site will be appropriately licensed to carry the waste and will have load covers installed.	Construction	Project Engineer	Site Inductions / Toolbox Talks
Monitoring					
16.		Monitoring and reporting requirements to be undertaken including regular visual inspections of waste storage collection and storage areas for evidence of accidental releases and to verify that wastes are properly labelled and stored.	Construction	Environmental Co-ordinator	Site Inductions / Toolbox Talks / Weekly Environmental Inspection Checklist
Hazardous Waste					
17.		Any hazardous waste generated on-site, as classified in accordance with **Waste Classification Procedure**, will be disposed of in accordance with the DECCW Guidelines.	Construction	Project Engineer	Waste Classification Procedure
18.		Special management actions for any hazardous waste discovered, generated or procured on-site shall be implemented, including as appropriate: – storage in closed, bunded containers; – secondary containment systems available and to be at least 110 percent of the largest storage container, or 25 percent of the total storage capacity (whichever is greater), in that specific location; – information to be made readily available on chemical compatibility to employees, including labelling each container to identify its contents; – hazardous waste storage areas to be clearly identified (label) and demarcated, including documentation of the location on a facility map or site plan; and – spill response and emergency plans to be prepared to address accidental release of hazardous materials.	Construction	Construction Manager	Site Inductions / Toolbox Talks / Weekly Environmental Inspection Checklist

Table 3: Mitigation Measures

5.0 MONITORING AND REPORTING

- A waste tracking form is to be used for all materials that require off-site disposal. A copy of the waste tracking form (including dockets and receipts) will be retained to record the date of waste removal, and identify the waste transport contractor and destination of the wastes from the worksite.
- Monitoring, inspection and reporting shall be undertaken including monitoring tools, monitoring frequencies, inspection records, tracking of actions, communication of outcomes and accountabilities.
- The following wastes are subject to special monitoring and reporting requirements by OEH under the waste tracking system:
    - hazardous non-liquid waste (e.g. batteries);
    - industrial non-liquid waste; and
    - liquid wastes including non-recyclable oils, fuels, chemicals and paint.
- The Weekly Environmental Inspection Checklist will be used to ensure that all environmental aspects are reviewed during inspection of the project.
- Regular inspections will also be undertaken to assess environmental compliance against regulatory requirements.
- Biannual reporting (within the first two weeks in January and July) will be provided to Health Infrastructure ("HI") on the amount of material generated and amount recycled.
- Actions arising from the inspections will be recorded on the Environmental Inspection Actions Form and each action will be allocated to the foreman for the work area.

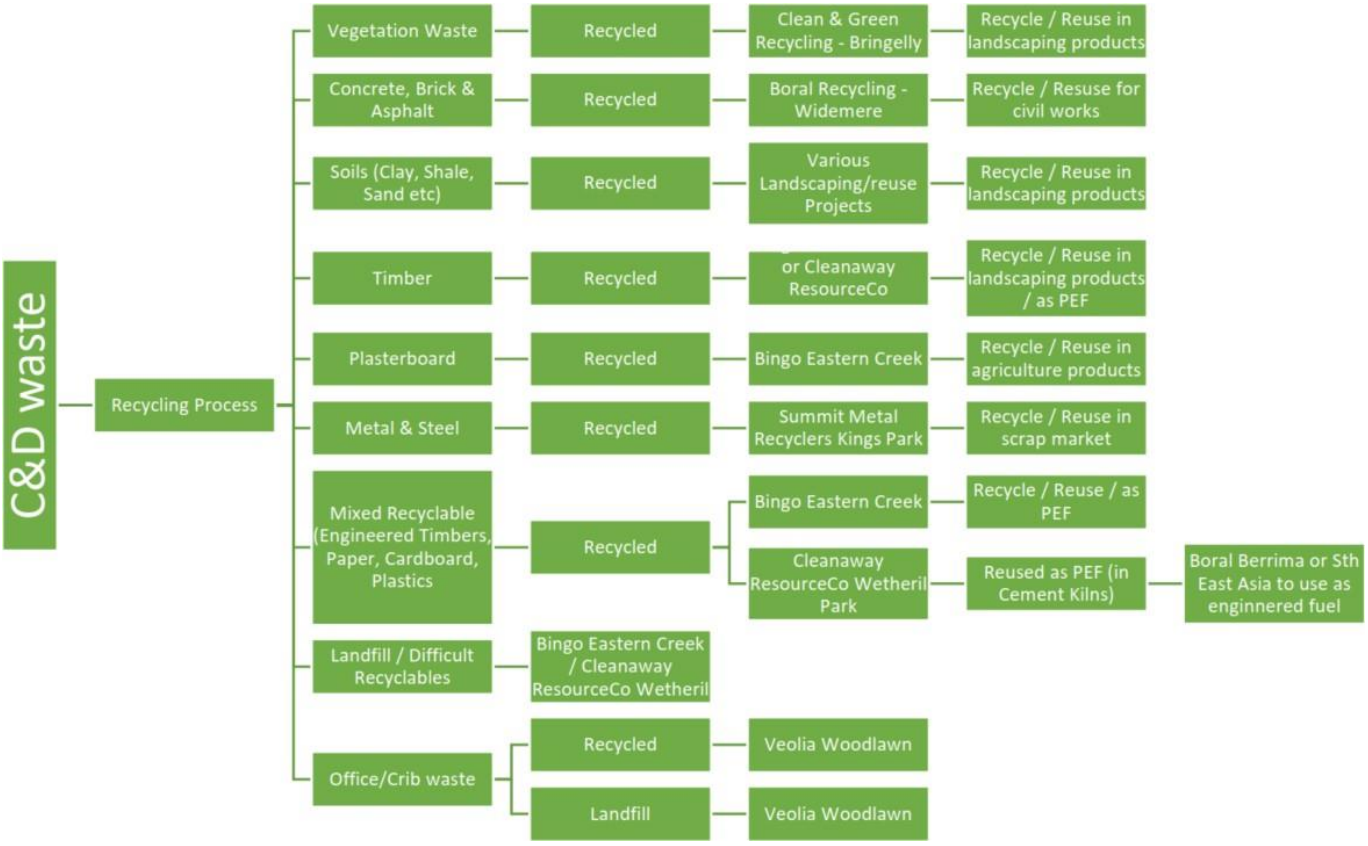
6.0 RECYCLING AND DISPOSAL LOCATIONS

The primary recycling facilities proposed are:

Bingo Recycling Centres

- 3-5 Duck Street, Auburn NSW 2144
- Honeycomb Drive, Eastern Creek NSW 2766
- 37-51 Violet Street, Revesby NSW 2212
- 35 Wentworth St, Greenacre NSW 2190

The proposed recycling process and respective disposal locations are indicated below:



7.0 SUSTAINABILITY

Kane is committed to achieving Green Star credit 22 (construction & demolition waste), which requires demolition and construction waste contractors to provide a Compliance Verification Summary (CVS) and provide monthly reporting confirming >90% waste has been diverted from landfill.

8.0 Site Clearance Certificate

Ford Civil Contracting has been engaged to complete Stage 3 – Forecourt Early works which includes validation of the site. Please refer below for clearance certificate.

JBS&G 64702/152367
L06 (Asbestos Clearance Report - CHW Stage 2 - Forecourt Redevelopment) Rev A

31 May 2023

Michael Ghattas
Project Manager
Ford Civil Contracting Pty Ltd
Via email: Michael.Ghattas@fordcivil.com.au

Asbestos Clearance Report – Children's Hospital Westmead (CHW) Stage 2 Forecourt Redevelopment, Hawkesbury Road, Westmead NSW

Dear Michael,

1. Introduction & Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Ford Civil Contracting Pty Ltd (FCC, the client) to undertake an asbestos clearance inspection of accessible ground surfaces following the completion of asbestos removal works associated with bonded asbestos fragments removal, within the Children's Hospital at Westmead (CHW) Forecourt Redevelopment site located on Hawkesbury Road, Westmead NSW (the site). The site comprised a generally flat and open parcel of land within the central portion of the site.

Previous environmental investigations (JBS&G 2022[1]/2023a[2]) have been undertaken at the site and identified bonded (non-friable) asbestos in the mound located within the central portion of the site. As there were no detections or observations of asbestos within the clay fill layer below the topsoil layer within the mound in the central portion of the site during the previous investigations, the clay fill layer below the topsoil was not anticipated to be impacted with asbestos.

Following bulk excavation of the mound in the central portion of the site, no visible asbestos was observed at the time of excavation. Following a subsequent storm event, bonded asbestos fragments were observed on the ground surface in a number of areas in the location of the former central mound. A ground surface 'emu-pick' was completed by the licensed asbestos removal contractor to remove visible asbestos hazards and high visibility geofabric marker layer was installed within footing excavation areas in the central portion of the site. The clearance area comprised the accessible ground surface of the central portion of the site following removal of the bonded asbestos fragments and installation of the high visibility geofabric layer as shown on **Attachment 2 – Figure 1**.

Details of the ground surface clearance area, removal works, and clearance inspection are provided in the following sections.

1 *Detailed Site Investigation, The Children's Hospital at Westmead Forecourt, Stage 2 Redevelopment, Hawkesbury Road, Westmead NSW*. JBS&G Australia Pty Ltd, 3 May 2022, Rev 1 (JBS&G 2022)
2 *Westmead Children's Hospital, Forecourt Upgrades, Hawkesbury Road, Westmead NSW – Topsoil in-situ Waste Classification*. JBS&G Australia Pty Ltd, 9 March 2023, Rev A (JBS&G 2023a)

2. Site and Clearance Area Details

Client Site Contact Details	
Client Name	Ford Civil Contracting Pty Ltd
Client Contact	Michael Ghattas – 0437 633 876
Site and Clearance Area	
Site Address/Location	Hawkesbury Road, Westmead NSW
Description of Clearance Area	Accessible ground surfaces associated with the central portion of the site (refer **Attachment 2 – Figure 1**)

3. Licensed Asbestos Contractor Details

Asbestos Removal Works Details	
Date Removal Works Carried Out	29 May 2023
Licensed Asbestos Contractors & Licence(s) Held	Ford Civil Contracting Pty Ltd (AD211162)
Brief Description of Removal Works	A ground surface 'emu-pick' was completed by the asbestos removal contractor to remove visible asbestos hazards and high visibility geofabric marker layer was installed in the footing excavation areas in the central portion of the site.

4. Asbestos Removal Works Documentation

Documentation/Action	Yes/No	Comments
Do we have a copy of the Asbestos Removal Control Plan?	No	
Do we have a copy of the SafeWork NSW Asbestos Removal Permit?	Yes	See **Attachment 4**
Were asbestos removal works completed in accordance with the above and requirements of SafeWork NSW's *Code of Practice – How to Safely Remove Asbestos* (2022)?	Yes	JBS&G supervised all asbestos removal works. All works were completed to a satisfactory standard.
Was Air Monitoring completed during the asbestos removal works?	Yes	Air monitoring was completed during all asbestos removal activities and were deemed satisfactory with all reported results less than 0.01 fibres/mL. See **Attachment 5**

5. Clearance Inspection Details

JBS&G Clearance Inspection Details	
Date of clearance inspection	29 May 2023
JBS&G Licensed Asbestos Assessor (LAA)	Michael Le (LAA 001533)

JBS&G Clearance Inspection Details	
Asbestos Works and Clearance Inspection Methodology	Following advice from the asbestos removal contractor that removal works were complete and the high visibility geofabric marker layer was installed in the footing excavation areas in the central portion of the site, accessible visible ground surfaces within the clearance area were inspected on perpendicular transects spaced at 1 m intervals by the supervising JBS&G LAA. The JBS&G LAA inspected all areas of asbestos removal undertaken within the removal area as detailed in **Section 2** and shown on **Attachment 2 – Figure 1.**
Exclusions	The clearance does not apply to any inaccessible areas, ground surfaces that could not be readily inspected, or to the sub-surface within the designated areas. Refer to **Attachment 1 – Limitations**.

6. Clearance Inspection Results

Visual Clearance Outcome/Action	Yes/No	Comments
Following visual inspection of accessible ground surfaces within the site area noted above, was any visible ACM observed?	No	Photo Log included as **Attachment 3**
Were any ground surfaces in the area not able to be inspected?	No	
Is ongoing asbestos management required in the cleared area?	Yes	The geofabric lining must be appropriately secured and is required to be inspected regularly to ensure it is encapsulating the underlying asbestos hazard. Asbestos hazards must be managed in accordance with the site Asbestos Management Plan (AMP, JBS&G 2023b[3])
Can the cleared area be re-occupied?	Yes	Based on the results of the clearance inspection, control air monitoring and installation of the geofabric lining, the asbestos removal area is deemed suitable to be re-occupied under non-asbestos controlled conditions.
Is any additional information attached?	No	

7. Conclusions

Based on the information presented herein, and subject to the **Limitations** in **Attachment 1**, JBS&G conclude that:

- At the time of inspection, no residual visible bonded asbestos fragments were observed to the ground surface in the asbestos removal area, or vicinity of the area;
- Airborne asbestos fibre monitoring completed during the asbestos removal works showed that the airborne asbestos fibre levels were less than 0.01 fibres/mL during all asbestos removal activities; and
- The designated asbestos removal area is suitable to be re-occupied under non-asbestos controlled conditions.

In the event that suspected asbestos or other potential contaminants are encountered subsequent to this advice, works should cease, and JBS&G should be contacted.

[3] *Asbestos Management Plan, Forecourt Redevelopment, The Children's Hospital at Westmead (CHW), Westmead NSW*. JBS&G Australia Pty Ltd, 3 April 2023, Rev B (JBS&G 2023b)

Should you require clarification, please contact the undersigned on 02 8245 0300 or by email MLe@jbsg.com.au.

Yours sincerely:

Michael Le
Environmental Consultant /
Occupational Hygienist
SafeWork NSW Licensed Asbestos Assessor
(LAA 001533)
JBS&G Australia Pty Ltd

Reviewed/Approved by:

Michael Samuel
Senior Associate
SafeWork NSW Licensed Asbestos Assessor
(LAA 000157)
JBS&G Australia Pty Ltd

Attachments:

1) Limitations
2) Figures
3) Photo Log
4) Asbestos Removal Permit
5) Air Monitoring Reports

Attachment 1 – Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties. JBS&G accepts no liability for incomplete or inaccurate information provided to JBS&G by the client or other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in the type of assessment works being reviewed, and should not be used for any other purpose beyond which it was intended.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced in part or without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties except at their sole risk after making their own enquiries.

Conclusions arising from the review and assessment of data are based on the scope of work considered appropriate based on the regulatory requirements and relevant codes of practice. Within the limitations of the scope of services, the work reported herein has been performed in a professional manner in accordance with generally accepted industry standards and using a degree of skill and care ordinarily exercised by members of its profession.

No sampling or laboratory analyses were undertaken as part of the investigations undertaken, as described herein, which was limited to inspection of visible and accessible ground surfaces only in the designated area.

Changes to the surface conditions may occur subsequent to the investigations described herein, through natural processes such as rain, surface water runoff and wind, through the intentional or accidental disturbance of ground surfaces such as vehicle and pedestrian movement, excavation or failure of sediment and erosion controls, and/or through addition of materials/contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the status of the site, and it is limited to the scope defined herein. Should additional information become available regarding conditions at the site, JBS&G reserves the right to review the report in the context of the additional information. This may require JBS&G undertaking further inspection, and possible sampling, analysis and reporting to verify additional information. Such additional works will only be completed following mutual written agreement between JBS&G and the client.

Attachment 2 – Figures

Legend:

- Approximate Site Boundary
- Approximate Asbestos Clearance Area

JBS&G

Job No: 64702	
Client Ford Civil Contracting Pty Ltd	
Version: L06 Rev A	Date: 31/05/202
Drawn By: ML	Checked By: MS
Approximate Scale	
Coor. Sys. GDA 1994 MGA Zone 56	

CHW – Stage 2
Forecourt Redevelopment
Hawkesbury Road, Westmead NSW

ASBESTOS CLEARANCE AREA

FIGURE: 1

File Name: 54235_02
Reference: Near Map - http://www.nearmap.com.au/

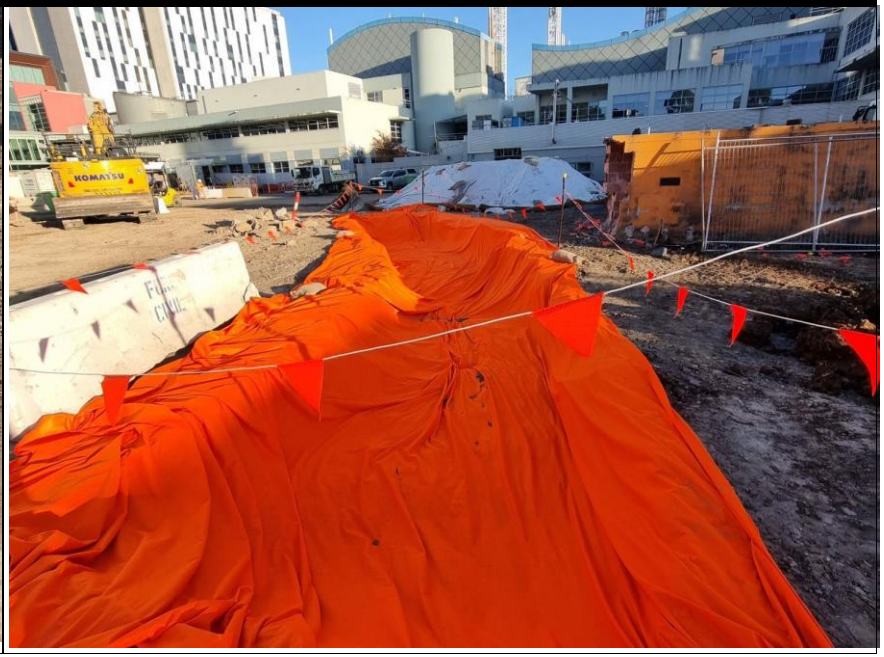
Attachment 3 – Photo Log

PHOTO 1 – EASTERN PORTION OF CLEARANCE AREA

PHOTO 2 – NORTHERN PORTION OF CLEARANCE AREA

PHOTO 3 – WESTERN PORTION OF CLEARANCE AREA

PHOTO 4 – INSTALLED GEOFABRIC MARKER LAYER IN FOOTING AREA



JBS&G

Job No: 64702

Client: Ford Civil

Version: L06 Rev A	Date:31/05/2023
Drawn By: ML	Checked By:MS

Not to Scale

Coord. Sys n/a

CHW – Stage 2
Forecourt Redevelopment
Hawkesbury Road, Westmead NSW

Photo log

ATTACHMENT 3

Attachment 4 – Asbestos Removal Permit

Notice of intent to remove non-friable asbestos

Notification number: 940R-00374637-01 **Date of notice:** 23/03/2023 **Notification status:** Accepted

LICENCE DETAILS

Asbestos removal licence number: 211162 Expiry date: 3/10/2027

Licence holder name: Ford Civil Contracting Pty Ltd

Class(es): Class A / ASA/ Class B / ASB

Registered business name: Ford Civil Contracting Pty Ltd

A.B.N: 24002542814

Daytime contact number: 0295974122

WORK/ SITE DETAILS

Proposed work start date: 29/03/2023 Proposed work finish date: 30/04/2023

Site name: Westmead Children'S Hospital, Proposed Forecourt Upgrade

Site address: 211 Hawkesbury Road (Opposite Hainsworth Street) Westmead NSW 2145

Site owner: Health Infrastructure Telephone: 0437633876

Approximate quantity of asbestos: 6,400 (square metres)

Detail location of asbestos on site: Bonded Asbestos Fragments In Soil Matrix Within The Westmead Hospital Forecourt Footprint

Details of removal including Fencing, Barriers, Signage, Water, 200 µm plastic, method used to enclose the removal area:

CLEARANCE CERTIFICATE PROVIDER

Competent person: Telephone:

Licensed asbestos assessor: Michael Le Number: LAA001533 Telephone: 0447 878 768

SUPERVISOR/ WORKER DETAILS

Number of workers for this removal work: 6

Number of workers who have successfully completed relevant competency unit: 6

Supervisor	DOB	Competency	Telephone
MR Steven Franks	25/05/1966	ASA	0452 577 519
MR Danny Khal	08/01/1991	ASA	0409 212 374
MR Zachary Langford Hudson	16/08/1986	ASA	0448 423 747
MR Miguel Canas	26/12/1978	ASA	0421 029 279
MR Lawrence Albert John Saliba	10/11/1966	DE2 ASA	0408 653 267

All work is to be carried out in accordance with the *Work Health and Safety Regulation 2017* and the associated codes of practice.
This notification to remove asbestos is required by clause 466 of the *Work Health and Safety Regulation 2017.*
See Section 268 of the *Work Health and Safety Act 2011* for offences relating to the giving of false or misleading information under the Act or the Regulation.

Attachment 5 – Air Monitoring Reports

SAFE WORK & ENVIRONMENTS

NATA
WORLD RECOGNISED ACCREDITATION
Accredited for compliance with ISO/IEC 17025 - Testing

CONTROL AIR MONITORING FOR ASBESTOS FIBRES RESULTS

29 May 2023

Attention: Miguel Canas
Company: Ford Civil Contracting Pty Ltd
Email: miguel.canas@fordcivil.com.au
Address: 9 Hattersley Street, Arncliffe NSW 2205

SWE Report Reference: S111802.13-AAM1.v1-29/05/2023
Site Address: Westmead Hospital - Forecourt
Sampling Date: 29/05/2023
Sample Analysis Date: 29/05/2023
Period of Sampling: 29/05/2023 07:30 AM - 29/05/2023 02:48 PM
Scope of Work: Air Monitoring during civil works of asbestos impacted soils
SWE Laboratory: Suite 15, 103 Majors Bay Road, Concord NSW 2137

Accreditation number: 17092 **Site number:** 18665

1. Introduction: Control monitoring for airborne asbestos fibres was undertaken by Safe Work and Environments Pty Ltd (SWE) is used to verify the effectiveness of control measures implemented to prevent fibre release as a result of asbestos removal/related work.

2. Methods: Airborne asbestos fibre monitoring was carried out in accordance with the Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres, 2nd Edition [NOHSC:3003 (2005)] and SWE's In-House Method 2 – Volume Measurement, Calibration and Standardisation. Analysis of collected filter membrane samples was performed in accordance with NOHSC:3003 (2005) and SWE's In-House Method 1 – Asbestos Fibre Count and Mount.

3. Results:

SWE REF.	LOCATION OF SAMPLE	FIBRES/ FIELDS	CONCENTRATION (FIBRES/mL)
S111802.13/S410/290523	South	0.0/100	<0.01
S111802.13/S834/290523	West end adjacent decontamination unit	0.0/100	<0.01
S111802.13/S706/290523	East end adjacent bus stop	0.0/100	<0.01
S111802.13/S941/290523	North end opposite hospital entry	0.0/100	<0.01
S111802.13/S029/290523	Field Blank	0.0/100	NA

4. Conclusion: All air monitoring analytical results reported on in this report are below the lowest detectable level of 0.01 fibres/mL of air.

Analysed and reported by:

Rune Knoph
Approved Issuer of Reports

Safe Work and Environments Pty Ltd 88127010995
Suite 15, 103 Majors Bay Road, Concord NSW 2137
Phone: 02 8757 3611
Email: info@swe.com.au

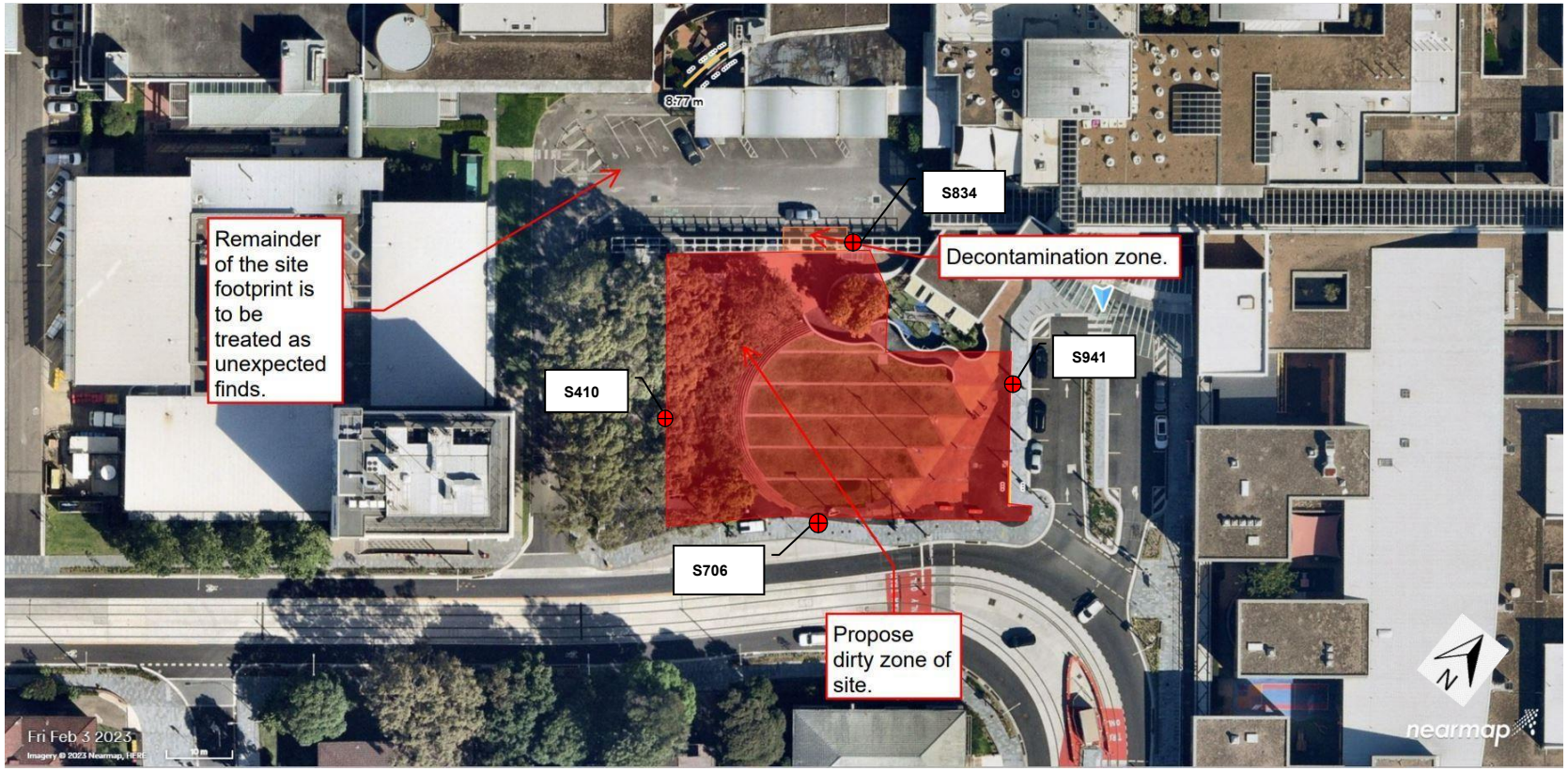
SAFE WORK & ENVIRONMENTS

NATA WORLD RECOGNISED ACCREDITATION

CONTROL AIR MONITORING FOR ASBESTOS FIBRES RESULTS

29 May 2023

APPENDIX A – MONITOR LOCATIONS



Safe Work and Environments Pty Ltd 88127010995
Suite 15, 103 Majors Bay Road, Concord NSW 2137
Phone: 02 8757 3611
Email: enquiries@swe.com.au

KANE

CONSTRUCTION SOIL WATER MANAGEMENT PLAN

CHILDRENS HOSPITAL WESTMEAD – FORECOURT & RETAIL POD CONTRACT NUMBER: HI 21359

23/08/2023

CHANGE HISTORY

ISSUE	CHANGE TYPE	AMENDMENT SUMMARY	AUTHOR	DATE
01	For Approval	PCA Review	CC	23/08/2023
02				
03				
04				
05				
06				
07				

TABLE OF CONTENTS

1.0 INTRODUCTION

This Construction Soil and Water Management Sub-Plan (CSWMSP or Plan) forms part of the Construction Environmental Management Plan (CEMP) for the Children's Hospital Westmead - Stage 3 Forecourt Works (the Project). This CSWMSP has been prepared to address the requirements of the State Significant Development Applications (SSDA 10349252) conditions of consent.

The works include the following;

- The design and construction of all elements as per the principal's documentation that includes but not limited to relevant standards, BCA, HI Engineering Services Guidelines and HI Forecourt & Retail Pod Guidance Notes
- Transition from the Combined Civils works handover site conditions to the Forecourt Contractor
- Construction of a structural steel canopy
- Construction of a retail pod (cold-shell)
- Construction of a landscaped area including security, lighting, grassed area, mounds, battering and planting in and around the site, ensuring the new and existing areas tie in together
- Construction of the playground areas
- Provision of improved pedestrian access, signage and lighting around the site during and after construction. Ensure all temporary and permanent pedestrian pathways are DDA / BCA compliant
- Associated building services including but not limited to electrical, hydraulic, fire protection and the like
- Landscaping and signage to the items and make good landscaping where applicable
- Establishing a safe surrounding environment at the interfaces, and continuity of healthcare services, air quality, vibration management, acoustic controls, overland flow, fire egress and maintenance routes. (high risk workshops will be required prior to new work types to ascertain tooling and methodology appropriateness)

The Key Participants in the design and delivery of the MSCP project includes:

Principal	Health Infrastructure
User Group	Sydney Children's Hospital Network (SCHN)
Project Manager (Client)	Price Waterhouse Cooper (PwC)

The Forecourt Works will be carried out along Hawkesbury Road, as Hawkesbury Rd is the main emergency route for the adults and children's emergency departments, this plan has been developed to minimise the disruptions during the Forecourt works construction and ensure priority is given to emergency vehicles at all times.

The scope of this sub plan will address the following:

- The legislative framework specific to soil and water related issues
- Procedures that will be implemented to ensure that there are no adverse impacts on the environment, in particular to soil and water
- Procedures for monitoring, checking and implementing corrective actions should there be any foreseen or undesirable impacts

The extent of the proposed works is presented in Figure 1 below

2 Purpose & Objections

2.1 Purpose

The purpose of this CSWMSP is to describe how impacts on soil and water will be minimised and managed during the construction of the Project.

2.2 Objectives

The key objective of the CSWMSP is to ensure that soil and water impacts during the construction of the Project are minimised and are within the scope permitted by the planning approval.

To achieve these objectives, Kane Constructions Pty Ltd will undertake the following:

- Ensure full compliance with relevant legislative requirements and Conditions of Consent
- Meet environmental protection licence water quality discharge parameters for all planned basin discharges (i.e., those within design capacity)
- Manage downstream water quality impacts attributable to the project (i.e. maintain water waterway health by avoiding the introduction of nutrients, sediment and chemicals outside of that permitted by the environmental protection licence and/or ANZECC guidelines)
- No impact on public roads from mud/soil particles being tracked from the construction site
- Spoil stockpiles appropriately managed and positioned away from watercourses/drainage lines/stormwater drains
- Reuse and recycle water to achieve water savings
- Management of known and unanticipated contaminated material in accordance with the CEMP
- Appropriate management and storage of fuels, chemicals and hazardous liquids to prevent accidental spills/leaks
- Water material not suitable for reuse and recycling to be managed in accordance with the CEMP
- Ensure training on best practice soil and water management is provided to all construction personnel through site inductions

3 Environmental Requirements

3.1 Relevant Legislation & Guidelines

3.1.1 Legislation & Regulatory Requirements

Identified regulatory requirements are:

- Protection of the Environment Operations Act (NSW 1997)
- Protection of the Environment Operations (General) Regulation (NSW 2009)
- Protection of the Environment Operations (Waste) Regulation (NSW 2005)
- Contaminated Land Management Act (NSW Department of Environment and Climate Change (DECC) (NSW 1997)
- Environmentally hazardous chemicals Act (NSW 1985)
- Soil Conservation Act, (DWE) (NSW 1938)

3.1.2 Guidelines

The main guidelines, specifications and policy documents relevant to this Plan include:

- Acid Sulfate Soil Manual (ASSMAC 1998)
- Acid Sulfate Soil and Rock – Victorian Environmental Protection Authority Publication 655.1 – July 2009
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC and ARMCANZ 2000)
- Department of Environmental and Conservation (DEC): Bunding & Spill Management. Insert to the Environment Protection Manual for Authorised Officers – Technical section “Bu” November 1997
- Managing Urban Stormwater: Soils and Construction. Landcom, (4th Edition) March 2004 (reprinted 2006) (the “Blue Book”). Volume 1 and Volume 2
- Volume 2A Installation of Services (DECCW 2008)
- Volume 2C Unsealed Road (DECCW 2008)
- Volume 2D Main Roads Construction (DECCW 2008)
- Fairfull, S. and Witheridge, G. (2003) Why do Fish Need to Cross the Road? Fill Passage
- Requirements for Waterway Crossings. NSW Fisheries
- Policy Guidelines for Fish Habitat Conservation and Management (2013 Update), NSW Department of Primary Industries (DPI) Fisheries
- Transport for NSW’s Water Discharge and Reuse Guideline (7TP-SD-024/3.0)
- Transport for NSW’s Guide to Environmental Control Map (3TP-SD-015/8.0)
- Environmental Best Management Practice Guideline for Concreting Contractors (DEC, 2004)

3.2 SSDA Conditions of Approval

The Conditions of Consent relevant to this CSWMSP are listed in Tables 1. A cross reference is also included to indicate where the condition is addressed in this Plan or other Project management documents.

Table 1: Forecourt SSDA Conditions of Consent relating to this CSWMSP

SSDA No.	Condition of Consent	Document Reference
B19	The applicant must prepare a Construction Soil and Water Management Sub-Plan (CSWMSP) and the plan must address, but not be limited to the following: a) be prepared by a suitably qualified expert, in consultation with Council; b) measures to ensure that sediment and other materials are not tracked onto the roadway by vehicles leaving the site; c) describe all erosion and sediment controls to be implemented during construction, including as a minimum, measures in accordance with the publication Managing Urban Stormwater: Soils & Construction (4th edition, Landcom 2004) commonly referred to as the 'Blue Book'; d) include an acid Sulfate Soils Management Plan, if required, including measures for management, handling, treatment and disposal of Acid Sulfate Soils, including monitoring water quality at acid sulfate soils treatment areas; e) direct all sediment laden water in overland flow away from the leachate management system and prevent cross-contamination of clean and sediment or leachate laden water; f) provide a plan of how all construction works will be managed in a wet-weather events (i.e. storage of equipment, stabilisation of the site); g) detail all off-site flows from the site; and h) describe the measures that must be implemented to manage stormwater and flood flows for small and large sized events, including, but not limited to 1 in 5- year ARI and 1 in 100-year ARI	Section 4 Section 5 Section 6 Section 7 CEMP Section 9

4 Consultation

The following section summaries the consultation undertaken as part of developing the CSWMSP.

4.1 Consultation Requirements under the SSDA Conditions

Forecourt Condition B19 states that the Plan should be prepared in consultation with the relevant government organisations and surrounding stakeholders. These include:

- City of Parramatta Council;
- NSW Health
    - Western Sydney Local Health District (WSLHD) and Westmead Adult's Hospital;
    - Sydney Children's Hospital Network (SCHN) and Children's Hospital Westmead (CHW);

5 Existing Environment

5.1 Topography and soil characteristics

The project lies within the Parramatta River catchment which encompasses an area of approximately 297 square kilometres. Figure 2 depicts the waterways within the project area. The Parramatta River Catchment is made up of 29 sub-catchments, and is largely referred to as the Upper and Lower Parramatta River. The Upper Parramatta River refers to the freshwater section of the river, and is controlled by a series of weirs including Kiosk Weir and Upstream Weir in Parramatta Park, Marsden Weir and Charles Street Weir in the Paramatta CBD which defines the tidal boundary with the lower Paramatta River. The headwaters of the Paramatta River are formed in the upper catchment by the confluence of Toongabbie Creek and Darling Mills Creek. The Lower Parramatta River, which refers to the river downstream of the weir is tidally influenced and drains to Sydney Harbour approximately 30 kilometres downstream of Charles Street.

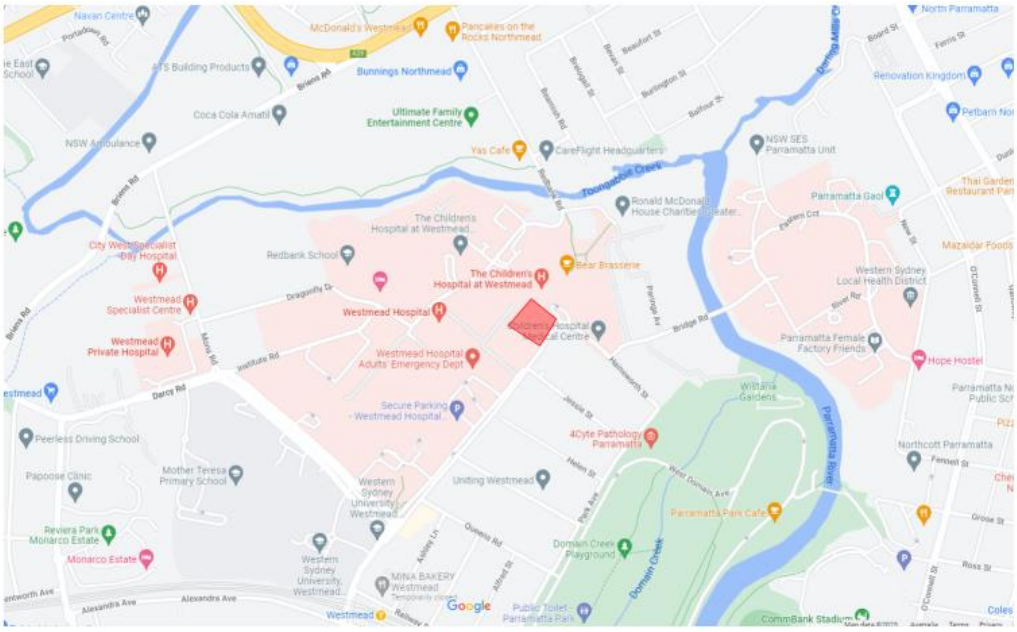


Figure 2: Waterways within project area

5.1.1 Regional Geology

The Penrith 1:100,000 Geological Series Sheet 9030 indicates that the site is underlain by Hawkesbury Sandstone, but close to a geological contact with the overlying Ashfield Shale to the south-west. Noting that this profile does not account for any filling or in-situ weathering that has occurred at the site.

5.1.2 Acid Sulfate Soils (ASS)

The Australian Soil Resource Information System (ASRIS, 2017) provides online access to publicly available information on soil and land resources across Australia. ASRIS provides a national map of available ASS mapping that is classified with a nationally consistent legend that includes risk assessment criteria and correlations between Australian and International Soil Classification Systems.

The ASRIS ASS map was consulted to determine the presence and risk of ASS in the Project area. The probability of ASS within the project area was classified as Low Probability of occurrence. A review of the Parramatta LEP indicates that the site is located on the western boundary of ASS risk Class 5 area.

The site has also been assessed and no indicators of ASS or potential ASS (PASS) were observed in any of the sample locations. Regardless, the site will be managed for any acid sulfate soil (ASS) and potential acid sulfate soil (PASS), in accordance with the 1998 Acid Sulfate Soils Manual.

5.1.3 Contaminated Land

Contamination is defined as the presence of a substance, at a concentration above which the substance is normally present and poses a risk to human health or the environment. A Remediation Action Plan (RAP) was prepared by JBS&G for each site prior to the commencement of construction ('The Multi-storey Car Park at The Children's Hospital at Westmead Stage 2 Redevelopment RAP, 56200/131434 (Rev 0), dated 16 June 2021' and 'The Children's Hospital at Westmead Stage 2 Redevelopment, Paediatric Services Building, 56200/133598 (Rev 0), dated 29 July 2021') If required, additional pre-classification of material in excavation areas not covered by this RAP will occur prior to construction.

Given the findings of the RAP and the history of the site, it is assumed that contaminated material / land may also be encountered during excavation in areas not previously identified during the pre-classification as being contaminated and will be managed as per the procedure in the Asbestos Remediation Control Plan (ARCP).

Contaminated material will be taken directly from site to appropriately licensed landfill sites. A record of waste disposal is to be obtained to record proper safe disposal of the material where possible.

5.1.4 Soil Salinity

Surface water and groundwater can dissolve and mobilise salts and cause their accumulation in other areas. Excessive concentrations of salt in such areas can affect plant growth, soil chemistry and cause weakening and degradation of construction materials such as masonry, concrete and bitumen. The assessment of salinity potential along the area was carried out using the map of the salinity potential in western Sydney (NSW Department of Infrastructure, Planning and Natural Resources 2002). The majority of the alignment occurs in areas of moderate salinity potential. Salinity is not expected to impact the enabling works so no further assessment will be completed at this stage.

5.2 Surface Water

The Parramatta River catchment has undergone significant development, comprising of a variety of land uses including residential, commercial, industrial, environmental protection, education, open space and recreation services, transport and communications (Cardno, 2008). Once heavily industrialised, the catchment is known to contain contaminated sediments, with high concentrations typically associated with point sources (e.g., former industrial sites at Homebush Bay) or where creeks and stormwater outlets enter the estuary in the upper

reaches of embayment's (Cardno, 2008). Toongabbie Creek is a third order stream, that is part of the Parramatta River Catchment. Toongabbie creek flows east reaching its confluence with the Darling Mills Creek to form the Parramatta River. The course of the creek is 9km long. It has been subject to significant urbanisation and modification. The Forecourt site is 200m from Toongabbie Creek.

5.2.1 Surface Water Quality Monitoring

The project involves improvements to road infrastructure within the hospital network including improvements to the stormwater drainage at both sites.

Surface water (run off) is currently collected by inlet pits which convey flows into in-ground drainage pipes. During construction additional sediment controls will be installed at these inlet pits to ensure any run off following a rain event is filtered prior to entering the drainage system.

As the majority of the works will be below grade, the excavation will likely collect rainfall and overland flow rather than allowing its release. Stormwater captured within the site during small rain events will be stored and re-used on site by first pumping the water into a sediment tank, treating it and then pumping it into a water cart for use as dust suppression. However, during larger rain events where re-use may not be an option, it will either be removed from site using a sucker truck and disposed of at a licensed facility or it will be pumped into a sediment tank, treated and tested prior to discharging it into the stormwater system. Stormwater runoff will occur from other disturbed areas of the site and these will be managed through erosion and sediment control and other mitigation measures outlined in this CSWMSP.

Construction activities will be subject to ongoing review. Progressive Erosion and Sediment Control Plans will be implemented and regularly checked as part of the inspection process by the Project Team to mitigate the impacts of forecasted weather events. Inclement weather is likely to impact the site works as well as placing increased pressure on construction water quality control measures.

Due to its scale and approach proposed to manage stormwater discharge and runoff from the site, this Project is not likely to have measurable impacts on Toongabbie Creek or the downstream Parramatta River. Overland flow of clean water that enters the site from external sources and has not been further contaminated within the property or water that has originated from the site that cannot be further treated will, where practical, be carried through the site without becoming contaminated. Sediment controls will be installed around the perimeter of site to ensure that upstream (i.e. clean) surface water is diverted around the site.

Kane will ensure that any clean water/runoff does not come into contact with any possible leachate. Leachate is a widely used term in the environmental sciences where it has the specific meaning of a liquid that has dissolved or entrained environmentally harmful substances that may then enter the environment. It is most commonly used in the context of land-filling of putrescible or industrial waste. Any water stored on site will be pumped into a sediment tank, this will allow the sediment to drop out of the water column or be treated with a flocculant. Once treated it will be tested for:

- Measuring the turbidity, a NTU reading of 1 or less
- Ph levels required between 6.5 to 8.5

- Total Suspended Solids to greater than 50mg/L2

Once the water has met the defined criteria, it must sit for at least 1hr prior to discharge. All testing and discharge results must be recorded.

Stored ‘dirty water’ where practical will be pumped on site and used as dust suppression in lieu of discharge into the stormwater system.

5.3 Ground Water

It is expected that two groundwater systems exist within the project area including a shallow groundwater system located in the alluvial, fill and shallow weathered sandstone and shale units. The second regional groundwater unit is expected to exist within the deeper confined Hawkesbury Sandstone.

5.3.1 Groundwater Controls

Groundwater seepage was encountered during the geotechnical investigations. It was measured within the wells below the base of any such excavations and is not expected to be an issue for these sites. However, some perched water may be encountered trapped within the fill, but if that is the case it should drain quickly and be able to be controlled using gravity drainage.

As such, it is not expected that specific controls for groundwater would be required as excavations associated with the Forecourt site are expected to be too shallow to intercept the groundwater table. Therefore, Water Access Licences will not be required.

5.4 Rainfall

The annual rainfall and monthly distribution for Parramatta in 2022 is provided in Table 3 below:

Site information

- **Site name:** PARRAMATTA NORTH (MASONS DRIVE)
- **Site number:** 066124
- **Latitude:** 33.79 °S **Longitude:** 151.02 °E
- **Elevation:** 55 m
- **Commenced:** 1965 **Status:** Open
- **Latest available data:** 18 Jan 2023

Table 3 – Annual Rainfall Data for Parramatta

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean rainfall (mm)	101.5	128.4	124.7	88.1	66.9	89.3	50.8	55.5	50.2	70.1	83.7	71.7	984.9
Decile 5 (median) rainfall (mm)	89.4	107.3	94.9	54.3	45.0	62.4	33.8	32.0	35.6	49.2	67.6	65.2	977.4
Mean number of days of rain ≥ 1 mm	9.1	9.3	10.1	7.1	6.9	7.5	5.6	5.2	5.9	7.6	8.6	7.7	90.6

5.5 Flooding

Flood risk to the main project areas is not affected by the City of Parramatta flood modelling, due to the existing topography and stormwater drainage systems. Riverine flooding from the catchment area should not affect the Forecourt area.

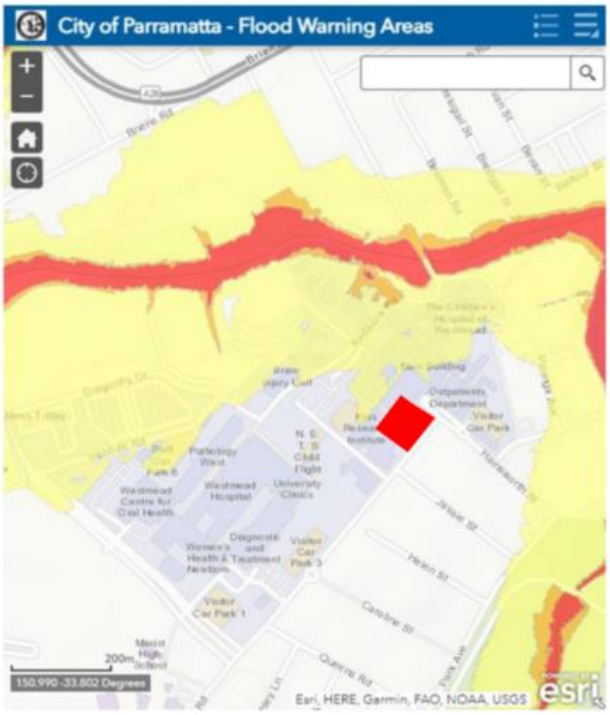


Figure 3: Extract from City Parramatta website to illustrate flooding extents at 1:100 years

Flood risk areas explained (Back to top)

Risk area	Common description	Technical description
High risk area	• Frequent flooding is common • Near the main river and creeks where water flows during a flood, including overflow from drainage • This area will see the fastest flowing and deepest water and cause a significant risk to life	High hazard flood area within the 1% annual exceedance probability (AEP) (1:100)
Medium risk area	• Frequent flooding will be rare • Where the flood water goes once the creek/river areas overflow • In rare floods these areas have the potential for deep and fast flowing water	Medium and low hazard area in the 1% AEP (1:100)
Low risk area	• Flooding is extremely rare • Generally, away from the river or creek and higher up • If a flood affects these areas it will cover a large area with dangerous water in many places	Area from the 1% AEP (1:100) up to the Probable Maximum Flood
Everywhere else	Not expected to flood but there still could be local incidents water running off the land and of street drainage not coping with rainfall amounts.	Area outside the Probable Maximum Flood. There may still be isolated impacts from local overland flow.

Figure 4: Extract from City Parramatta website definitions

5.5.1 Preparation of the site for wet-weather events

In preparation for wet weather events, Kane will undertake the following measures to minimise the impact of any flooding/ponding to the Works and to the wider public:

- Locate any plant and equipment to high ground, clear of known areas of flooding/ponding
- Cover any open trench excavations in the roadway with suitably sized steel plates
- Inspect and repair any damaged sections of sediment controls or flood diversion barriers
- Where feasible, place flood diversion barriers or construct bunds to protect any open excavations
- Inspect existing surface water inlet pits and remove any materials that could result in a blockage

Should it also be anticipated that the wet weather could lead to a flood event, Kane will also implement the following measures:

- Turn-off electricity, secure generators and gas cylinders

- Ensure any stockpiles are located above the 1 in 20 year flood level
- Secure any chemicals/fuels and re-located to areas outside of the 1% AEP or areas of known
- ponding/overland flow
- Transport amenities wastewater offsite to a licensed disposal facility

For additional information on the preparation and management of flood events, reference should be made to the Flood Emergency Response Sub Plan submitted as an appendix to the CEMP.

6 Environmental aspects and impacts

6.1 Construction activities

Key aspects of the Project that may result in adverse impacts to soils and water include:

- Demolition
- Earthworks including excavation, site clearance and tree removal
- Movement of heavy vehicles on unstable ground
- Construction in contaminated land
- Stormwater drainage
- Service trenching
- Water use
- Compound operations including fuel and chemical storage and handling
- Noxious weed treatment including herbicide spraying

6.2 Impacts

The potential for impacts on soil and water will depend on a number of factors. Primarily impacts will be dependent on the nature, extent and magnitude of construction activities and their interaction with the natural environment. Potential impacts attributable to construction might include:

- Exposure of soils during vegetation clearing and earthworks, creating the potential for mobilisation and off-site movement of eroded sediments and pollutants
- Decline in water quality and visual amenity, and generation of turbidity following rainfall events
- Damage to ancillary facilities (including flood damage) that could result in an export of pollutants to receiving waters
- Disturbance of contaminants from excavations.
- Contamination of soils, and surface and groundwater from accidental spills or oil leaks that could pollute receiving waterbodies.

- Soil loss from the stockpiling of spoil and topsoil due to the effects of wind or water in the absence of suitable stabilisation and management measures.

6.3 Controls

6.3.1 Erosion and sediment controls

Soil and water management works include all measures to control erosion and sediment installed to prevent pollution of water ways. This includes sediment filters, drains, ponds, basins, stormwater run-off and run-off controls, site stabilisation works, temporary water crossings and vehicular access controls.

The following control measures will be considered to minimise erosion. This is further detailed on pages 18 -25 of the CEMP.

- Land clearance should be kept to a minimum;
- Clearing areas of highly erodible soils and steep slopes which are prone to water and wind erosion should be avoided wherever possible;
- The interval between clearing and re-vegetation should be kept to an absolute minimum. Revegetate progressively as each section of works is completed;
- Keep vehicles to well-marked and graded access roads;
- Wheel washes/cattle grids to be installed at vehicle exit points where applicable;
- Divert clean storm water by small levees away from those parts of site where the soil is exposed;
- Storm water drainage is to exit the site via a sedimentation control installation such as silt fencing or sedimentation basins/tanks/ponds. When sedimentation traps are up to 1/3 full of silt, the silt should be removed;
- Timber, logs and rubbish should be removed from site so soil removal and re spreading should not be interfered with;
- All excavated material should be temporarily stockpiled on the high side of the trench for periods less than 1 month;
- Where practicable, all trenches should be backfilled at the end of the working day;
- Areas should be rehabilitated progressively to reduce the potential for sediments to flow into waterways;
- Machine activity to be kept away from drainage lines unless absolutely necessary and then machine activity is to be kept to an absolute minimum;
- All works being undertaken will be carried out within the confines of the approved Site boundaries (EPL were defined by client);
- Construction plant and machinery is to remain within the construction site for the duration of the contract thus limiting the transfer of mud from the site and also the transportation of weeds;
- All drainage channels carrying storm water runoff are to be stabilised;

- Earth berms constructed in front of silt fences to reduce velocity of water striking fences

6.3.2 Water quality management

Various controls that will be implemented around the construction site in order to maintain water quality are as follows:

- Proper receptacles provided for waste oils and emergency clean up materials at hand. Fuel storage areas imperviously bunded to 110% of the largest drum's storage volume;
- All fuel and oil storage areas are bunded;
- Plant and equipment inspected daily through Daily Plant Inspections to ensure there are no leakages of fuel, oil and hydraulic fluid;
- Re-fuelling will not occur in the vicinity of waterways (unless absolutely necessary e.g. piling equipment);

When concrete is delivered to the site, cleaning out of concrete truck agitators will be conducted at designated areas. These areas will be cleaned up on completion of the works, and the concrete will be incorporated in the fill or disposed of at an inert waste landfill site.

6.3.3 Dewatering of Work Sites

The following control measures will be considered to ensure that dewatering operations do not result in turbid water entering natural waterways.

- Re-use of rain water for site activities i.e., dust mitigation, wheel wash
- De-water by pumping water, wherever practicable on to vegetated areas of sufficient width to
- remove suspended soil or to sediment control devices.

7 Compliance management

7.1 Roles and responsibilities

Kane's Project Team's organisational structure and overall roles and responsibilities are outlined in Section 2.3 of the CEMP.

Noting that this document is to be peer reviewed by a suitably qualified expert, in consultation with Council prior to the commencement of earthworks.

7.2 Training

Kane and its subcontractors will undergo site induction training which will include information relating to soil and water management issues. The induction training will address elements related to soil and water management including:

- Existence and requirements of this sub-plan
- Relevant legislation
- Roles and responsibilities for soil and water management
- Requirement of ESCPs for each project site
- Water quality management and protection measures
- Groundwater seepage issues
- Procedure to be implemented in the event of an unexpected discovery of contaminated land/PASS
- Erosion and sediment control maintenance
- Dust suppression
- Prevention of sediment tracking

Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in soil and water management. This will include:

- Erosion and sediment control installation methodology
- Dewatering procedures and considerations
- Preparedness for high rainfall events
- Emergency response measures in high rainfall events
- Lessons learnt from incidents and other event e.g. high rainfall / flooding
- Spill incident response and reporting
- Hazardous material storage requirements
- Identification of potentially contaminated spoil and fill material.

7.3 Monitoring and inspection

Regular monitoring and inspections will be undertaken prior to, during and following construction. The following monitoring and inspections will be undertaken by the Project Team:

- Daily and weekly inspections at active, exposed work sites to analyse environmental risk of erosion, sedimentation and water quality issues and to evaluate the effectiveness of erosion and sediment controls measures
- Rainfall inspections will be conducted after receiving >10mm over a 24hr period at active, exposed work sites to evaluate the effectiveness of erosion and sediment controls measures in accordance with Section 9.1 of the CEMP.
- Inspections would also be undertaken of Erosion and Sediment Controls prior to any shut down of greater than 48 hours.

Requirements and responsibilities in relation to inspections are documented in Section 10 of the CEMP.

7.4 Auditing and reporting

Environmental Inspections will be undertaken in accordance with Section 10 of the CEMP. These will be undertaken daily and weekly as well as prior to and following rainfall. Action lists generated in these inspections will be distributed to relevant site personnel.

Internal audits will be undertaken to assess the effectiveness of environmental measures, compliance with this sub plan, conditions of consent and other relevant approvals, licences and guidelines.

8 Review and improvement

8.1 Continuous improvement

Continuous improvement of this plan will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of soil and water management
- Determine the cause or causes of non-conformances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any nonconformances and deficiencies
- Verify the effectiveness of the corrective and preventative actions
- Document any changes in procedures resulting from processes improvement
- Make comparisons with objectives and targets

8.2 CSWMSP update and amendment

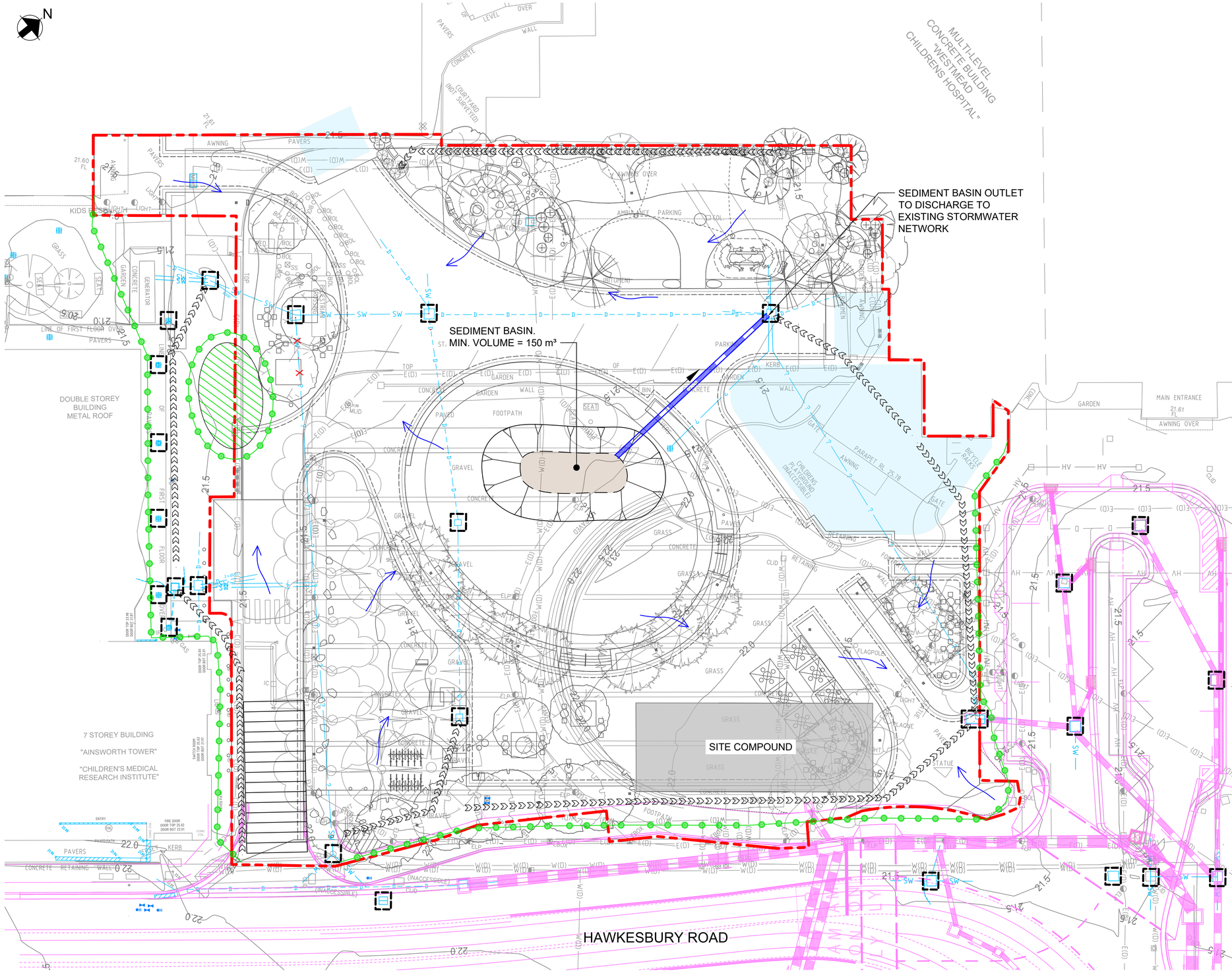
As this CSWMSP is a living document, if changes to the construction staging or process are required this document will be updated to encompass the changes.

Only the Project Manager (in consultation with the HSEQ Manager) can amend this CSWMSP. A copy of the updated plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure.

8.3 CSWMSP peer review

The CSWMSP is a living document, as such the initial document has been peer reviewed by a suitably qualified and experienced soil and water expert. A copy of this review and subsequent endorsement have been included as Appendix B.

Appendix A – Environmental Control Maps



NOTES:

1. FOR GENERAL NOTES REFER TO DRG No. CHW-ARP-CV-DG-KP-00-XX006.
2. FOR GENERAL LEGEND REFER TO DRG No. CHW-ARP-CV-DG-KP-00-XX011.
3. FOR EROSION AND SEDIMENT CONTROL DETAILS REFER TO DRG No. CHW-ARP-CV-DG-KP-00-XX191.
4. IT IS THE CONSTRUCTION CONTRACTOR'S RESPONSIBILITY TO DEVELOP AND ADAPT THIS ESCP TO SUIT THE SITE CONDITIONS, CONSTRUCTION STAGING AND ANY REQUIREMENTS OF CoPC AND OTHER RELEVANT AUTHORITIES. THE ESCP HAS BEEN PREPARED TO BE USED AS A GUIDE ONLY. CHANGES MAY MATERIALISE FOR SEVERAL REASONS INCLUDING ONGOING DESIGN DEVELOPMENT, CONSTRUCTION METHODOLOGY AND THE SEQUENCING OF WORKS.
5. MANAGEMENT AND STAGING OF PERMANENT AND TEMPORARY ESCP STORMWATER IS SUBJECT TO THE CONTRACTOR METHODOLOGY TO ENSURE THE MAXIMUM AMOUNT OF THE SITE CATCHMENT AREA IS DIRECTED TO SEDIMENT BASINS BEFORE DISCHARGING TO THE EXISTING STORMWATER NETWORK.
6. THE CONTRACTOR IS TO VERIFY THE LOCATION AND DEPTH OF IN-GROUND SERVICES BEFORE DISTURBING GROUND FOR ESCP WORKS. EXISTING IN-GROUND UTILITIES INDICATED ON THIS DRAWING ARE BASED ON LTS LOCKLEY'S SURVEY AND ARUP ACCEPTS NO RESPONSIBILITY FOR ITS ACCURACY.
7. THE CONTRACTOR IS RESPONSIBLE FOR ANY AND ALL NECESSARY PROTECTIVE/DIVERSIONARY WORKS FOR THE ESCP TOGETHER WITH ASSOCIATED APPROVALS WHICH SHOULD BE AGREED PRIOR TO WORKS COMMENCEMENT THE CONTRACTOR SHALL FAMILIARISE THEMSELVES WITH THE LOCAL STORMWATER FLOODING CONDITIONS AND RISKS PRIOR TO COMMENCING WORKS ON SITE. AN APPROPRIATE FLOOD RISK MANAGEMENT PLAN SHALL BE DEVELOPED FOR EACH STAGE OF THE PROJECT TO MINIMISE THE RISK OF FLOODING INJURING SITE STAFF OR MEMBERS OF THE PUBLIC, DAMAGING WORKS OR PLANT OR CARRYING MATERIALS OR DEBRIS DOWNSTREAM INTO THE EXISTING STORMWATER NETWORK. THE PROPOSED SYSTEMS MUST BE REVIEWED AND APPROVED BY HEALTH INFRASTRUCTURE PRIOR TO COMMENCEMENT.
8. SEDIMENT BASINS ARE PROPOSED FOR CONSTRUCTION PHASE ONLY AND ARE TO BE REMOVED UPON COMPLETION OF WORKS.

LEGEND

- TEMPORARY CONSTRUCTION EXIT
- SEDIMENT FENCE
- SEDIMENT TRAP
- FABRIC STOCKING KERB INLET
- STOCKPILE
- OVERLAND FLOW
- SEDIMENT BASIN
- DIVERSION BANK AND CHANNEL EXISTING
- STORMWATER - DETECTED

CONSTRUCTION DESIGN

Scales: 0 5 10m — A1 / A3 1:200 / 1:400

Design Model Version

Issue	Date	By	Chkd	Appd
A	10/03/23	DT	TT	AC
	FOR CONSTRUCTION			
1	18/02/22	MM	TT	AC
	TENDER ISSUE			

Client: NSW Government Health Infrastructure

Engineering Certification (CEng)
Name: .....
Signature: ..... Date: .....

Job Title: CHILDREN'S HOSPITAL WESTMEAD KIDS PARK (FORECOURT)

Scale at A1: 1:200m

Discipline: CIVIL

ARUP
Arup, Level 5, 151 Clarence St
Sydney, NSW, 2000
Tel +61 (02) 9320 9320 Fax +61 (02) 9320 9321
www.arup.com
CONSULT AUSTRALIA Member Firm
Arup Pty Ltd ABN 18 000 966 165

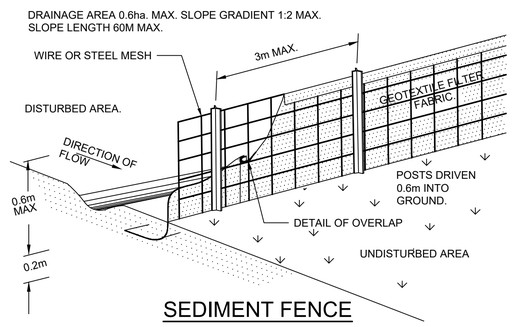
Drawing Title: EROSION AND SEDIMENT CONTROL PLAN (ESCP)

Drawing Status: **FOR CONSTRUCTION DESIGN**

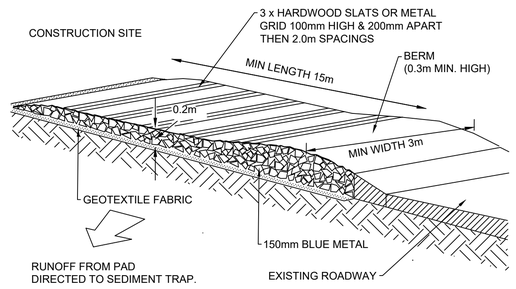
Job No	Drawing No	Issue
271985-00	CHW-ARP-CV-DG-KP-00-XX100	A

Do not scale

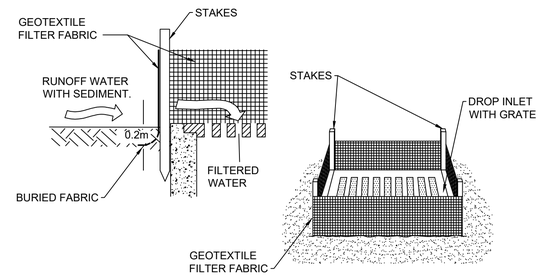
DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR



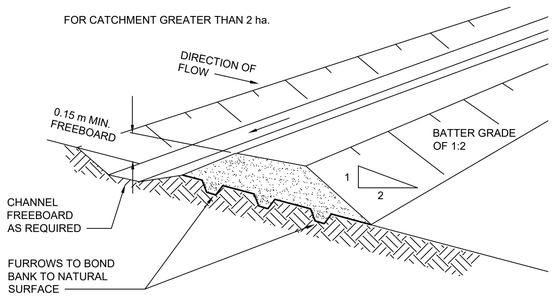
SEDIMENT FENCE



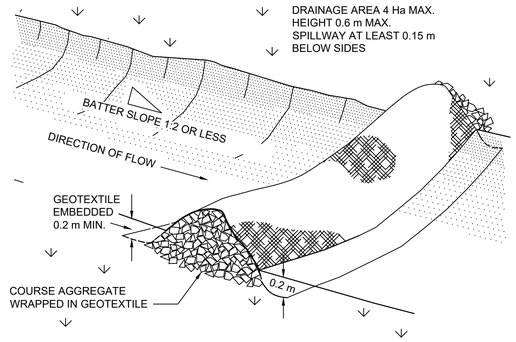
TEMPORARY CONSTRUCTION EXIT



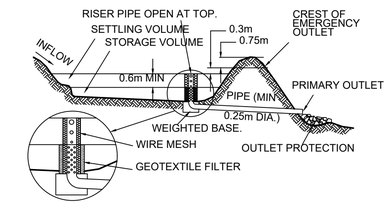
GEOTEXTILE FILTER FABRIC DROP INLET SEDIMENT TRAP



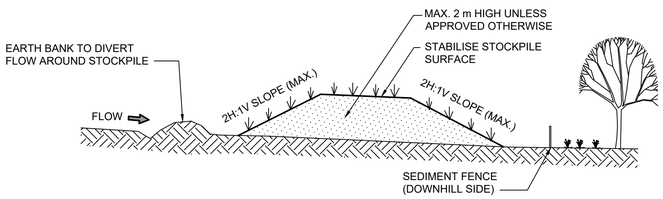
DIVERSION BANK AND CHANNEL



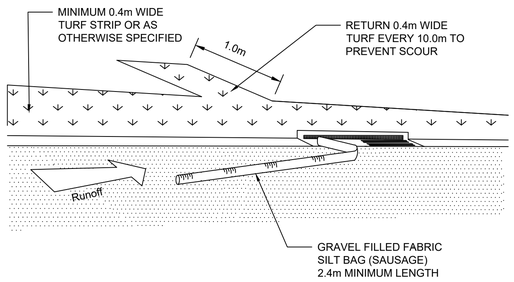
ROCK CHECK DAM



CROSS SECTION OF TYPICAL SEDIMENT BASIN



STOCKPILE



FABRIC STOCKING KERB INLET SEDIMENT TRAP

CONSTRUCTION DESIGN

Scales

Design Model Version

Issue	Date	By	Chkd	Appd
A	10/03/23	DT	TT	AC
	FOR CONSTRUCTION			
1	18/02/22	MM	TT	AC
	TENDER ISSUE			

Client: NSW GOVERNMENT Health Infrastructure

Engineering Certification (CEng)
Name: .....
Signature: ..... Date: .....

Job Title: CHILDREN'S HOSPITAL WESTMEAD KIDS PARK (FORECOURT)

Scale at A1: NOT TO SCALE

Discipline: CIVIL

ARUP
Arup, Level 5, 151 Clarence St
Sydney, NSW, 2000
Tel +61 (02) 9320 9320 Fax +61 (02) 9320 9321
www.arup.com
CONSULT AUSTRALIA Member Firm
Arup Pty Ltd
ABN 18 000 966 165

Drawing Title: EROSION AND SEDIMENT CONTROL DETAILS (ESCP)

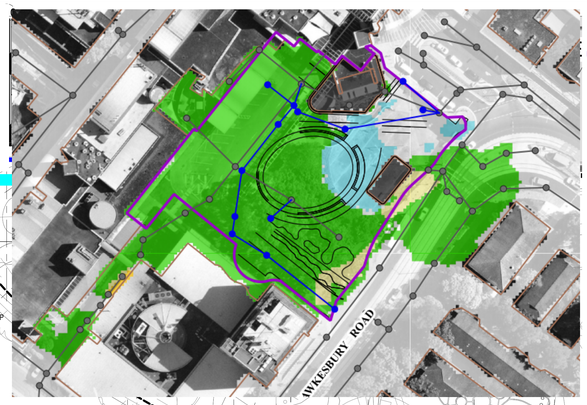
Drawing Status: **FOR CONSTRUCTION DESIGN**

Job No	Drawing No	Issue
271985-00	CHW-ARP-CV-DG-KP-00-XX191	A

Do not scale

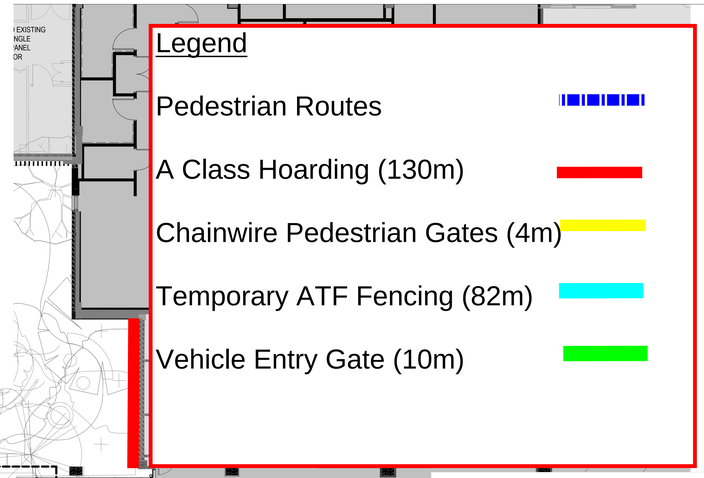
DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

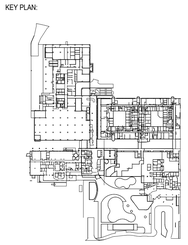
FORECOURT SITE ESTABLISHMENT AND EVACUATION PLAN
REV 3
20/07/2023



Legend
- Site Boundary
- Buildings
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes
- Proposed Kids Park Design Strings

Change in Flood Level (m)
- <= 0.010
- -0.010 - +0.010
- +0.010 - +0.050
- +0.050 - +0.200
- > +0.200
- No Longer Flooded
- Newly flooded





FLOOD PROCEDURE

In the event of a flooding event the following procedure will occur from Kane Management:

- Nurse call alarms will sound across site
- All staff and workers are to muster at the usual emergency evacuation mustering point
- Kane will coordinate with the Westmead Children's Hospital to determine next course of action
- In the event of a 1/100 flood event and emergency, the area marked at the centre of the village green is the mustering point

- PLEASE NOTE THAT HAWKESBURY ROAD FLOODS BEFORE THE ALLOCATED SAFETY ZONE

Appendix B – CV of Author

CHRIS CHAU
PROJECT MANAGER

QUALIFICATIONS

+ Bachelor of Civil Engineering (Construction Management)
+ Bachelor of Environmental Engineering
+ Certificate IV n Building and Construction

Skilled in negotiating, writing, and interpreting contractual agreements, Chris ensures that each and every project he is on is delivered to the highest of standards. Chris achieves this by making certain that all stakeholders fulfil their specific directives and adhere to the standards outlined in the contract.

Over the years, Chris' construction industry experience has primarily involved design and construct projects for Government departments; including the community, rail, health and education sectors.

Chris has proven his unwavering commitment to all the projects he has worked on. Chris' ability to assess situations and communicate at a continuous high level is a skill that he administers to all his projects. This is demonstrated through his developed relationships with subcontractors, who provide a holistic approach to meet the requirements of the client.

PROJECT RESPONSIBILITIES

As Project Manager, Chris is responsible for procurement,administration and associated document control of the Head Contract andsubcontracts while also providing coordination and engineering supportto the site management team.

- 8 years industry experience
- Understanding of best practice and Work Health & Safety within the built environment
- Outstanding stakeholder management and client relationships
- Knowledgeable of all WHS systems, processes, policies and procedures
- Highly skilled in procurement, administration and document control

PROJECT EXPERIENCE

NSW Rugby Union Centre of Excellence	$14M
Lindfield Village Green	$26M
Liverpool Catholic Club, Food Services Building	$38M
The Hume Apartments	$19M
Paramedic Response Centre (SAMIS), Caringbah	$5M
Uniting Care, Aged Care Haberfield	$11M
SWSI TAFE, Wetherill Park	$8M
Sydney Trains, Belmore Disaster Recovery Centre	$5M
Sydney Trains, Granville Centre of Excellence	$3M
Sydney Trains, Lifts and Escalator Upgrade, Ashfield and Blacktown	$2M
Health Share, Bankstown Hospital Kitchen Upgrade	$1M

Liverpool Catholic Club

The Hume Apartments

Lindfield Village Green

Paramedic Response Centre, Caringbah

Appendix C – Council Email

Chris Chau

From: Paul Sartor <PSartor@cityofparramatta.nsw.gov.au>
Sent: Friday, 25 August 2023 8:44 AM
To: Chris Chau
Cc: Joseph Augustin; Peter Boutros
Subject: RE: 2504 Westmead Childrens' Hospital Forecourt - Soil and Water Management Plan

Hi Chris,

Condition B19 does not require the sign off or review by Council, this would be a matter for your principal certifier to review. No further action is required from us.

Council only needs to be involved for conditions that state review or sign off by Council.

Kind Regards

Paul Sartor
Senior Development Assessment Officer | City Significant Development

(02) 9806 5740

City of Parramatta
126 Church Street, Parramatta NSW 2150
PO Box 32, Parramatta, NSW 2124
cityofparramatta.nsw.gov.au

From: Chris Chau <cchau@kane.com.au>
Sent: Thursday, 24 August 2023 7:36 PM
To: Paul Sartor <PSartor@cityofparramatta.nsw.gov.au>
Cc: Joseph Augustin <jaugustin@kane.com.au>; Peter Boutros <pboutros@kane.com.au>
Subject: RE: 2504 Westmead Childrens' Hospital Forecourt - Soil and Water Management Plan

Hi Paul,

This is for Condition B19.

FLOOD EMERGENCY RESPONSE PLAN

CHILDRENS HOSPITAL WESTMEAD – FORECOURT & RETAIL POD CONTRACT NUMBER: HI 21359

23/08/2023

CHANGE HISTORY

ISSUE	CHANGE TYPE	AMENDMENT SUMMARY	AUTHOR	DATE
01	For Approval	PCA Review	CC	23/08/2023
02				
03				
04				
05				
06				
07				

TABLE OF CONTENTS

1.0 INTRODUCTION

Context

This Flood Emergency Response Sub Plan (CWMSP or Plan) forms part of the Construction Environmental Management Plan (CEMP) for the Children's Hospital Westmead - Stage 2 Enabling Works (the Project).

Project & Scope Description

Kane Constructions has been awarded the Contract for the Children's Hospital Westmead - Stage 2 Forecourt works.

The Forecourt incorporates the design finalisation and construction of the following elements:

Design finalisation and construction of the Forecourt (KIDSPARK) and incorporating the following:

- Construction of several hospital building entryways and internal building refurbishment works;
- Construction of new landscape areas consisting of a central oval, an Aboriginal Meeting Place, playgrounds, pedestrian footpaths and communal gardens; and
- Canopy and Retail Pod

Scope of the Sub-Plan

This Flood Emergency Response Sub Plan (FERSP) has been developed to manage flood impacts and emergency response measures during the construction stage.

The scope of this sub plan will address the following:

- Provisions of the Floodplain Risk Management Guidelines (EESG)
- Procedures that will be implemented for flood warning and notifications
- Procedures for monitoring, checking and implementing corrective actions should there be any issues.

The extent of the proposed works is presented in Figure 1 below.

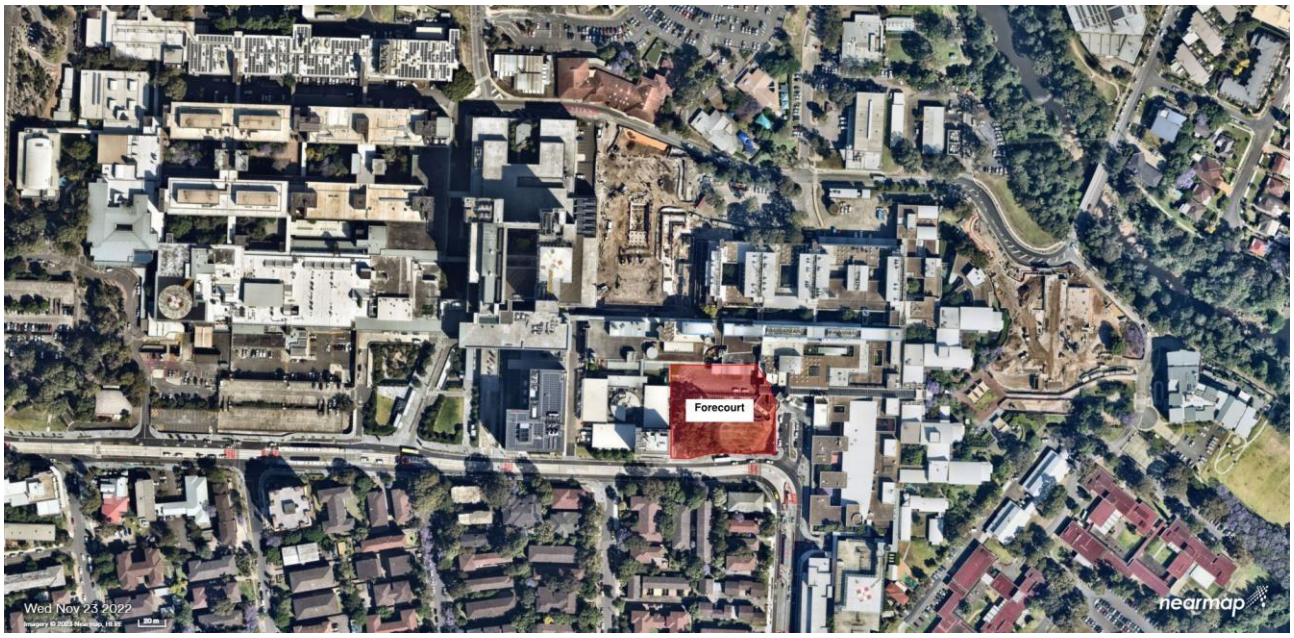


Figure 1: Extent of Works

Environmental Management Systems Overview

The environmental management system overview is described in section 1.5 of the CEMP.

Purpose & Objectives

The purpose of this Plan is to address potential flood risks at the Forecourt and address the emergency response for the construction phase of the Project.

Objectives

The following targets have been established for the management of flooding and hydrology impacts during construction of the project:

- Ensure full compliance with the relevant legislative requirements, SSDA conditions and environmental mitigation measures addressed in this plan
- Follow correct procedures for monitoring, preparation and evacuation of construction areas prior to a flood event
- Minimise and manage construction impacts on flooding to avoid significant impacts to people and property adjacent to or on PSB/MSCP sites
- Minimise and manage construction impacts on hydrology and flooding from works within its Floodplain

Environmental Requirements
Relevant Legislation & Guidelines

Legislation & Regulatory Requirements

The Flood Emergency Response Sub-Plan has been prepared in regard to:

- EP&A Act;
- Protection of the Environment Operations Act 1997 (POEO Act);
- Water Management Act 2000 (WM Act); and
- Water Act 1912 (Water Act).
- State Emergency and Rescue Management Act 1989 (SERM Act). The Act is relevant to the project as flooding poses a risk / threat to property and the environment.
- State Emergency Service Act 1989. The Act relates to the protection of persons from dangers to their safety and health, and to protect property from destruction or damage, arising from floods, storms and tsunamis.

Guidelines

The main guidelines, specifications and policy documents relevant to this Plan include:

- Floodplain Risk Management Guidelines (EESG)
- Australian Rainfall & Runoff (AR&R2019 Guidelines)
- Flood Emergency Management Strategy for Westmead Health Precinct by SCHN

SSDA Conditions of Approval

The Conditions of Consent relevant to this FERSP are listed in Table 1 below. A cross reference is also included to indicate where the condition is addressed in this Plan or other Project management documents. All risks were assessed in the Environmental Risk Register, which is included as Section 15.3 (Attachment 3) of the CEMP.

Table 1: PSB SSDA Conditions of Consent relating to this FERSP

SSDA No.	Condition of Consent	Document Reference
B20	The Flood Emergency Response Sub-Plan (FERSP) must address, but not be limited to, the following: (a) be prepared by a suitably qualified and experienced person(s) (b) address the provisions of the Floodplain Risk Management Guidelines (EESG) (c) include details of: (i) the flood emergency responses for both construction phases of the development; (ii) predicted flood levels; (iii) flood warning time and flood notification; (iv) assembly points and evacuation routes; (v) evacuation and refuge protocols; and (vi) awareness training for employees and contractors, and users/visitors.	Section 4 Section 5

Flooding Conditions

The following section describes the existing flood regime within the project areas and are based on the information contained in ''CHW-ARP-CV-RP-KP-91-XX012 KIDS WAY Flood Impact Assessment''.

Forecourt

The Forecourt site is mainly impacted by overland flow flood events, with the exception of the PMF. Mapping of these flood events are included in Appendix A and B for reference.

The following provides a summary of the existing flood behaviours and subsequent hazards.

Table 3: Summary of existing flood behaviour and hazards.

	5% AEP	1% AEP	PMF
Flood Depth (m)	0.14	0.16	Overland: 1
Flood level (m AHD)	21.10	21.12	21.76
Time to peak flood levels	Overland: 30 mins	Overland: 120 mins	Overland: 60 mins
Hazard category based on AR&R2019 Guidelines	H1 - safe flow conditions for people and vehicles	H1 - safe flow conditions for people and vehicles	H3 - flow conditions are unsafe for all vehicles children and the elderly

Emergency response and evacuation

There is a flood emergency management strategy in place for the Westmead Health Precinct by the SCHN which is coordinated with other relevant authorities including (and not limited to) NSW Health, NSW Police, Transport NSW, State Emergency Service (SES) and the Bureau of Meteorology (BoM).

There is also a Parramatta Local Emergency Plan (EMPLAN), dated September 2018, which covers the whole of the City of Parramatta. The EMPLAN identifies the SES as the Combat Agency for flooding – the agency identified to control the response to flood emergencies.

The current emergency response strategy outlined in the EMPLAN shall be retained during construction. However, pending the severity of the forecast, the site will be shut down in anticipation of flooding.

The following process, as detailed in Sections 5.1 – 5.4 and is summarised in Figure 2 below, should be followed in the event heavy rainfall is forecasted

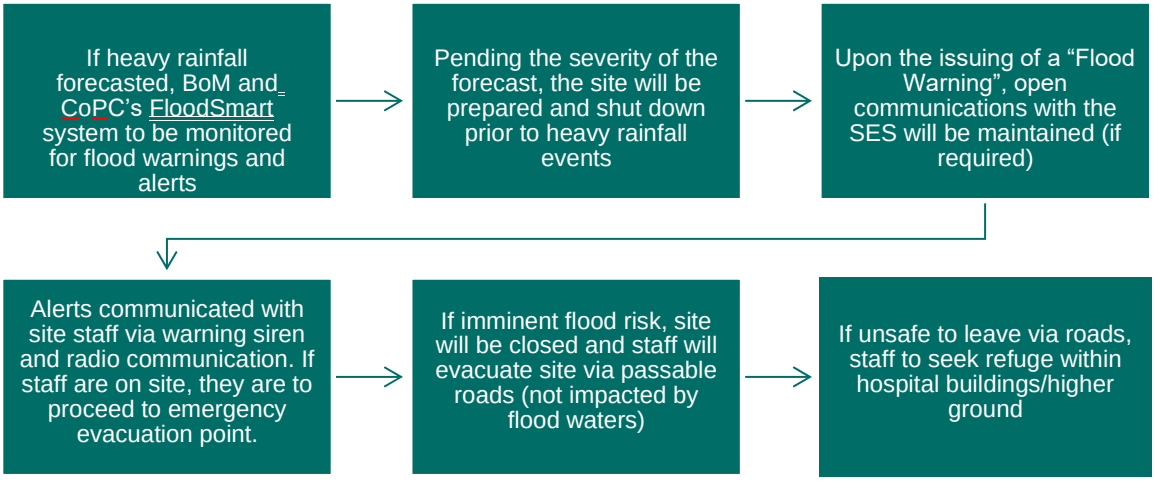


Figure 2: Flood Warning and Emergency Response

Measures to be implemented prior to a flooding event

Monitor flood warning services

KANE shall monitor BoM forecast heavy rainfall events in order to allow sufficient time to vacate and prepare the site prior to the commencement of heavy rainfall.

Monitoring shall be undertaken at regular intervals with increased frequency in the lead up to and during periods of heavy rainfall.

KANE will also sign up to Council's FloodSmart system in order to receive notification warnings of impending flooding of the CBD and upstream catchment areas to the west of the CBD.

Preparation of the site

In preparing for an anticipated flood event, KANE will undertake the following measures to minimise the impact of any flooding/ponding water to the Works and to the wider public:

- Turn-off electricity, secure generators, and gas cylinders
- Ensure any stockpiles are located above the 5% AEP, are covered and surrounded by sediment fences.
- Secure any chemicals/fuels and re-located to areas outside of the 1% AEP or areas of known ponding/overland flow
- Locate any plant and equipment to high ground, clear of known areas of flooding/ponding
- Cover any open trench excavations in the roadway with suitably sized steel plates
- Inspect and repair any damaged sections of flood diversion barriers
- Where feasible, place flood diversion barriers to protect any open excavations
- Transport amenities wastewater offsite to a licensed disposal facility

- Inspect existing surface water inlet pits and remove any materials that could result in a blockage.

Should a flood warning be in place for the region, KANE management will conduct a risk assessment as to whether the site should remain open or be closed for the safety of their staff.

Measures to be implemented during a flooding event

The SES is the designated agency for dealing with floods and is responsible for coordinating the evacuation and welfare of affected communities (SES Act 1989; EMPLAN, 2018). In response to a flood event, SES will operate a 24 hours a day, 7 days a week "Operations Centre" to manage the Emergency Assistance telephone number (132 500) and co-ordinate their activities.

Upon the issuing of a "Flood Warning", KANE senior management (Project Manager, HSEQ Manager and Site Manager) will continuously monitor BoM Flood Warning Service and maintain open communications with the SES (if required).

KANE will then communicate the flood potential to the construction staff.

Where KANE senior management deem there to be an immediate flood risk, or when SES and BOM declare an imminent flood the site shall be closed. KANE will communicate the site closure via warning siren and verbal communications to the staff. Construction staff shall evacuate the site to safe areas; areas known to be clear of the 1% AEP, via passable roads. These are shown in Appendix B and D of this plan and will be communicated to staff on the Emergency Evacuation Plan.

No attempt should be made to enter or cross any flood waters. If it is deemed unsafe to leave via roads, staff to seek refuge within hospital buildings/higher ground.

KANE shall maintain open communication with SES during flood event (if required). They may attend site and assume control at their discretion. Only once Health Infrastructure, SCHN and KANE deem it safe to return, shall the site be declared reopen. Once staff return, flood damage shall be assessed and remediated.

Flood Recovery

A flood event during the construction phase could cause considerable damage to property and the environment. If the site is properly prepared for the flood event, then damage could be minimised.

The following list of actions should be considered when returning to site:

- Wait until authorities have declared the area safe before entering
- Access roads to site may have been damaged during the flood event so drive carefully and approach the site safely
- Check power boxes and electrical equipment on site. These may have been inundated and require a qualified electrician to check for damage
- Do not turn power back on until all electrical equipment on site has been checked and certified by a qualified electrician
- Check the structural integrity of all buildings on site by a suitably qualified professional.
- Buildings on site will be of a temporary nature so may not be designed to withstand extreme flood flows and depths. Even if floodwaters have not entered the buildings check foundations for erosion
- Check to see if any equipment has been moved by flood waters and relocate equipment back to a safe position/location
- Check material stockpiles for erosion and losses

- Inspect existing stormwater drainage systems removing any debris that may have collected in inlet pits or along the kerb and gutter line. Any sediment shall be removed from site and not deposited into the stormwater system
- Check water and waste water systems on site. Water systems may need to be flushed or repaired following the flood event. Clean up any ponded water around site to prevent the spread of waterborne disease
- Prepare an incident report on the flood event. Include information on how the site was evacuated and document the resulting flood depths and damage to the site
- KANE Project Manager to re-open site only when it is deemed safe to continue work.
- Check the structural integrity of all trenches that were inundated with flood water. Do not enter or dewater any trenches before the trench is deemed safe.

Communication and notification

Timely and accurate warning information is vital during emergencies and is integral to minimising panic and ensuring suitable actions can be taken to minimise risk to life and property.

Communication and the distribution of information to site personnel leading up to, and throughout a flood event, must be implemented. The timing and responsibility of these actions is summarised in Table 3 below.

Following any decision to evacuate, site personnel and emergencies services will be notified of the following:

- The decision to evacuate
- Type of evacuation (full, partial or shelter in place)
- The stages of withdrawal (if applicable)
- Evacuation routes and any heavy or oversized equipment to be removed from site;
- Location of any open excavations and details of preparation works undertaken;
- Location of any potential hazardous materials and how these have been secured or protected.

When	What	By Who
Prior to Flooding	Assemble Emergency Kit (incl. first aid) & conduct monthly checks of supplies	Site Safety Advisor (Caitlyn Butchart)
	Coordinate Excavation Drills (every 3 months)	Site Supervisor (Aaron Nash) Site Safety Advisor (Caitlyn Butchart)
	Sign up to and monitor City of Parramatta Council FloodSmart system	Project Engineer (Rafael Guintu)
	Monitor weather situation at 4pm every afternoon	Site Supervisor (Aaron Nash)
	Consideration of site closure pending severity of forecast	Project Manager (Michael Ghattas) Site Supervisor (Aaron Nash) HSEQ Manager (Lawrence Saliba)
	Inductions for new staff to include flood risk associated with the subject site and evacuation procedure	Site Safety Advisor (Caitlyn Butchart)
Evacuation	Consideration of evacuation following text from FloodSmart and/or warning from BoM	Project Manager (Michael Ghattas) Site Supervisor (Aaron Nash) HSEQ Manager (Lawrence Saliba)
	Make decision to evacuate and notify client (HI) and Police/SES if required	Project Manager (Michael Ghattas)

	Communicate decision to evacuate and proceed to emergency assembly point	Site Supervisor (Aaron Nash) and Site Foreman
	Contact Westmead Children's Hospital to confirm they can accept all persons on site	Project Manager (Michael Ghattas)
	Leave signage notifying responders attending site that evacuation has been undertaken	Site Safety Advisor (Caitlyn Butchart)
	If possible, return home and wait out the storm	All
	If unsafe to return home, evacuate to Westmead Children's Hospital where Shelter-in-Place policy is adopted	All
On Site Refuge	Communicate decision to remain on-site and organise seating and lighting. Maintain regular communication with staff and facility users.	Project Manager (Michael Ghattas) Site Supervisor (Aaron Nash)
	Notify Police/SES of decision to seek refuge on site	Project Manager (Michael Ghattas)
	Wait it out at nominated refuge point	All
	If stranded on-site and water inundates floor level, call 000 immediately	All
After a Flood	Check all services, stability of excavations and structural stability of buildings and amenities	Project Manager (Michael Ghattas) Site Supervisor (Aaron Nash) Qualified personnel
	Communicate decision to return to operation	Site Supervisor (Aaron Nash) and Site Foreman

Table 3: Flood Response Actions Summary

When heavy rainfall is being experienced and throughout the implementation of this FERSP, communication and consultation with KANE senior management and the organisations stipulated in Table 4 must be undertaken as required.

Table 4: External Flood Emergency Contacts

Organisation Contact	Number	Website
Bureau of Meteorology (BOM)	1300 659 218	www.bom.gov.au/nsw/warnings
State Emergency Services (SES)	132 500	www.ses.nsw.gov.au
NSW Police (Parramatta Station) NSW Police (Wentworthville Station)	02 9633 0799 02 9688 8499	www.police.nsw.gov.au
NSW Fire and Rescue (Parramatta Station) NSW Fire and Rescue (Wentworthville Station)	02 9895 4620 000 (In emergency) 02 9631 0908	www.fire.nsw.gov.au
Westmead Hospital Emergency Department	02 8890 5555 000 (In emergency)	www.westmeademergency.org
City of Parramatta Council	02 9806 5050	www.parracity.nsw.gov.au
Kane Constructions Chris Chau (Project Manager) Shane Reilly (Site Manager) Andrew Campbell (Construction Manager)	02 9597 4122 0421 390 381 0423 737 227 0408 892 810	www.kane.com.au

Compliance management

Roles and responsibilities

KANE's Project Team's organisational structure and overall roles and responsibilities are outlined in Section 2.3 of the CEMP.

Training

KANE and its subcontractors will undergo site induction training which will include information relating to flooding and emergency response. Emergency response procedures and measures will also be communicated to visitors on their arrival (visitors induction). The induction training will address elements related to flood management including:

- Detailing the warning system that will be implemented in the event of a flood event
- Defining evacuation routes at each stage of the construction works

Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in flood management. This will include:

- Flood control measures/devices
- Preparedness for high rainfall events
- Emergency response measures in high rainfall events including protecting open excavations and relocating plant and equipment
- Lessons learnt from incidents and other event e.g. high rainfall / flooding

Monitoring and inspection

Regular monitoring and inspections will be undertaken prior to, during and following construction. The following monitoring and inspections will be undertaken by the Project Team:

- Rainfall inspections will be conducted after receiving >10mm over a 24hr period at active, exposed work sites to evaluate controls and the readiness for potential flood events.
- In the event of predicted heavy rainfall, KANE shall monitor BoM and SES sources of information
- Effectiveness of project team's response to be audited and reviewed by senior management following flood event.

Requirements and responsibilities in relation to inspections are documented in Section 10 of the CEMP.

6.3 Auditing and reporting

Environmental Inspections will be undertaken in accordance with Section 10 of the CEMP. These will be undertaken daily and weekly as well as prior to and following rainfall. Action lists generated in these inspections will be distributed to relevant site personnel.

Internal audits will be undertaken to assess the effectiveness of environmental measures, compliance with this sub plan, conditions of consent and other relevant approvals, licences and guidelines.

Review and improvement

Continuous improvement

Continuous improvement of this plan will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of flood management and emergency preparedness
- Determine the cause or causes of non-conformances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non- conformances and deficiencies
- Verify the effectiveness of the corrective and preventative actions
- Document any changes in procedures resulting from processes improvement
- Make comparisons with objectives and targets

FERSP update and amendment

As this FERSP is a living document, if changes to the construction staging or process are required this document will be updated to encompass the changes.

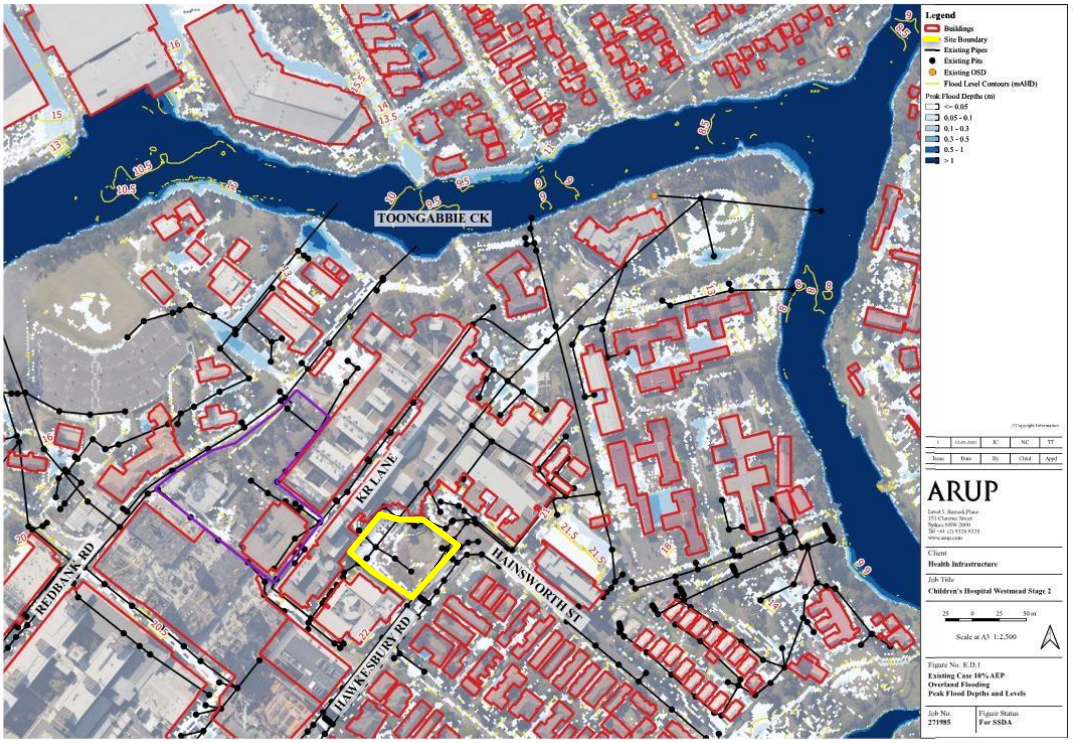
Only the Project Manager (in consultation with the HSEQ Manager) can amend this FERSP.

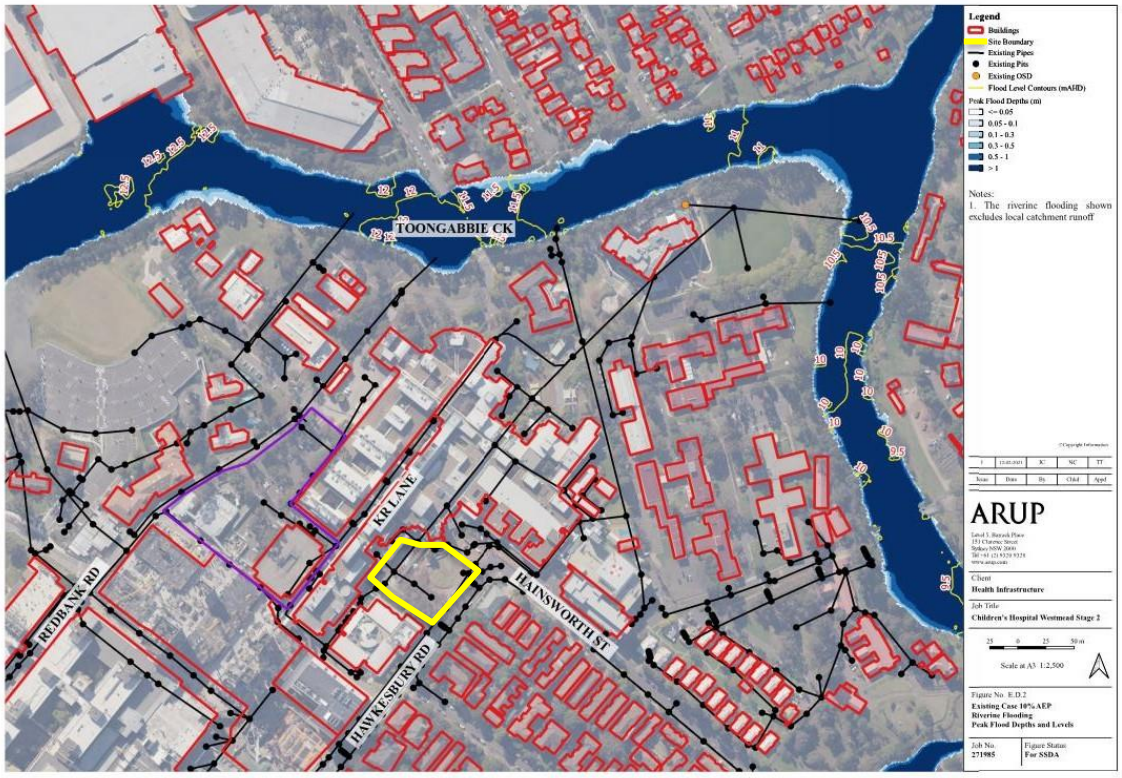
A copy of the updated plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure.

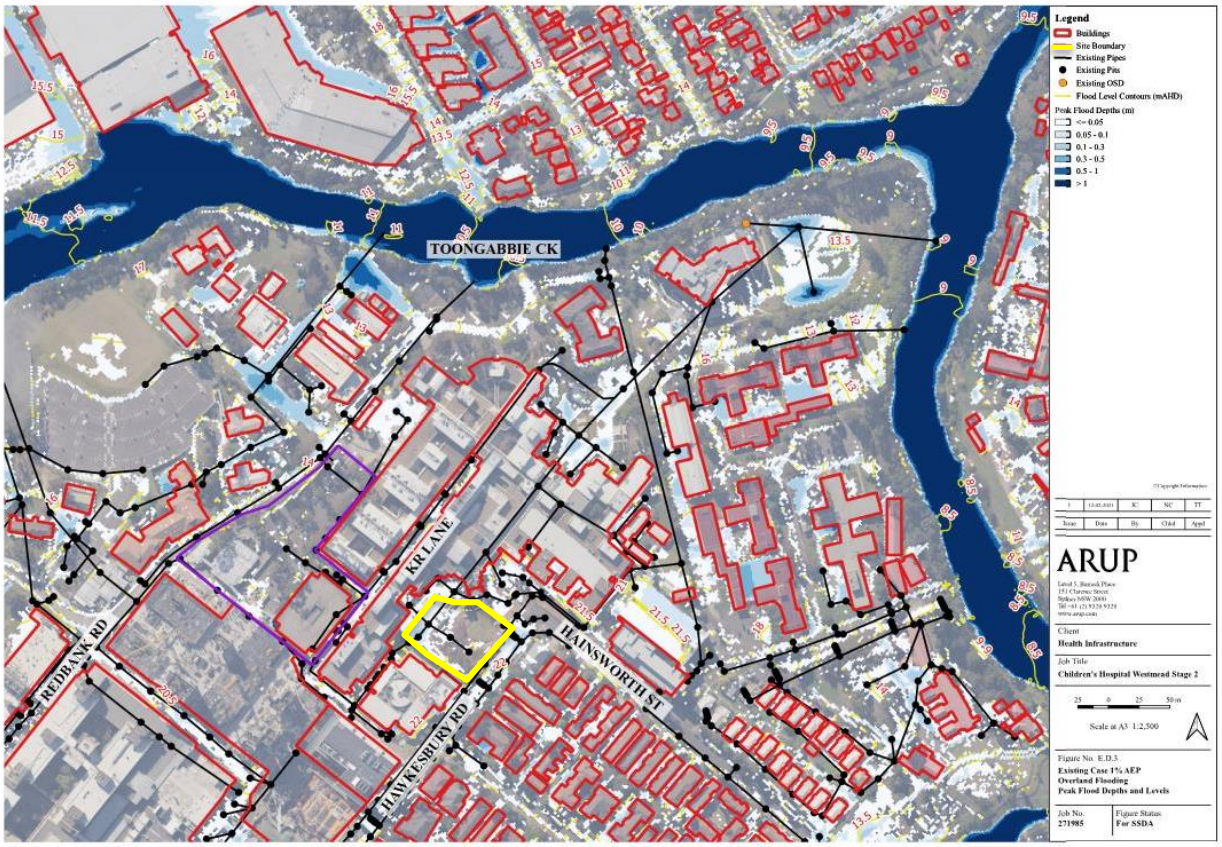
FERSP peer review

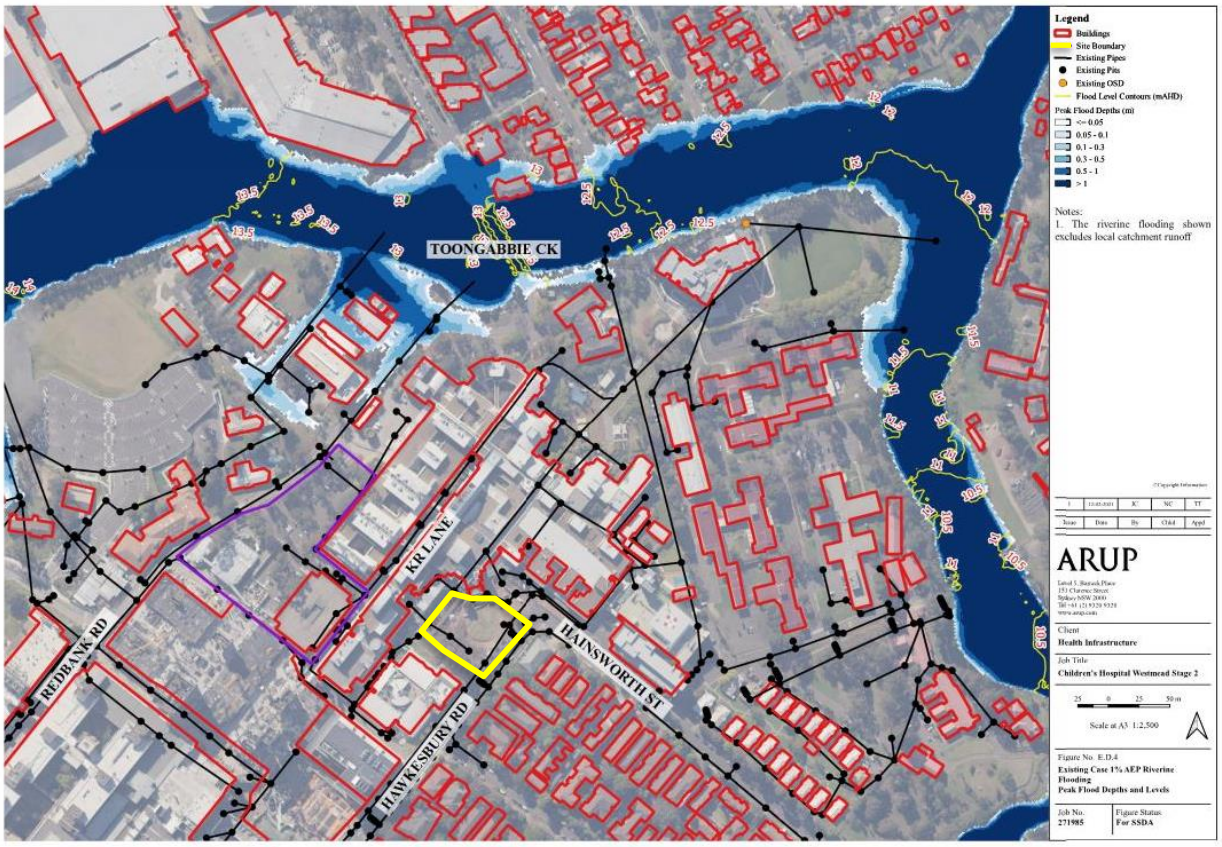
The CNVMSP is a living document, as such the initial document has been peer reviewed by a suitable qualified and experienced flood expert. A copy of this review and subsequent endorsement have been included as Appendix C.

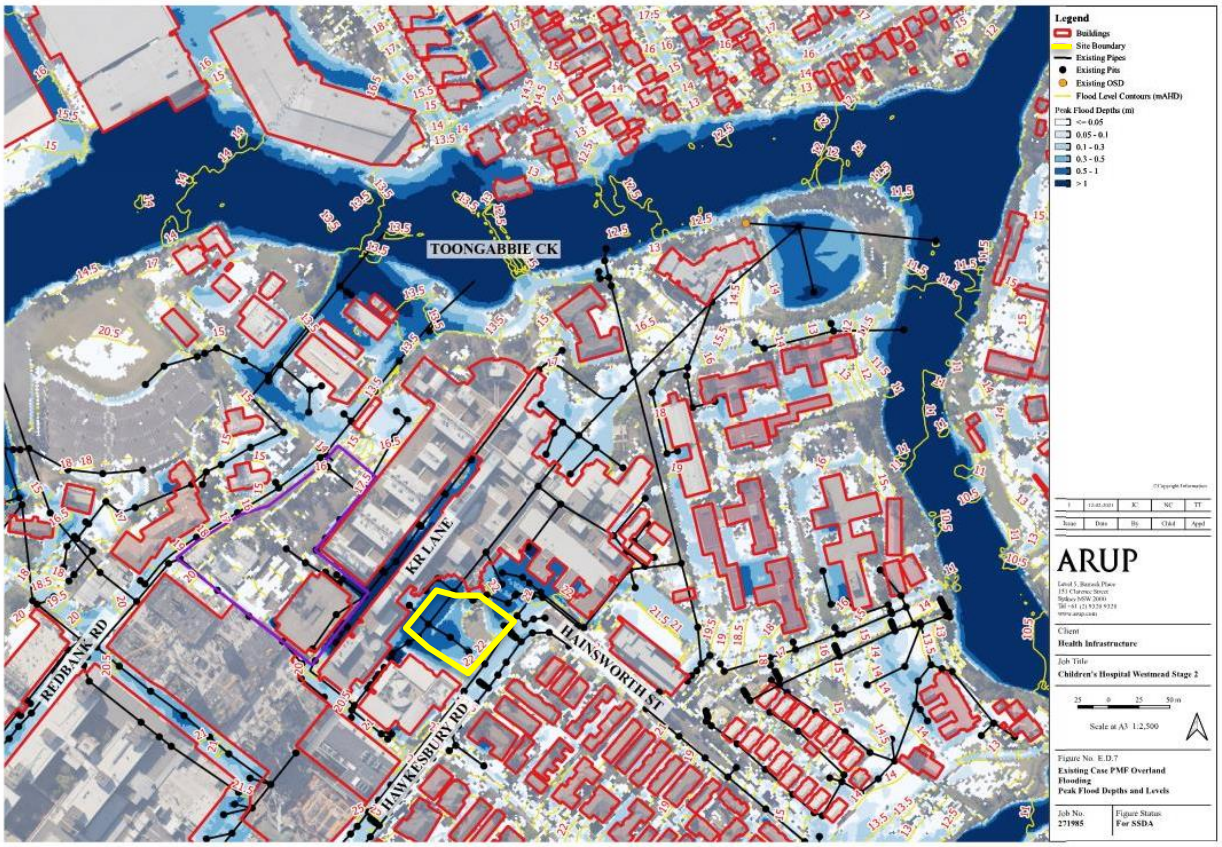
Appendix A – Peak Flood Depths & Levels (10% AEP, 1% AEP and PMF Flood Cases)

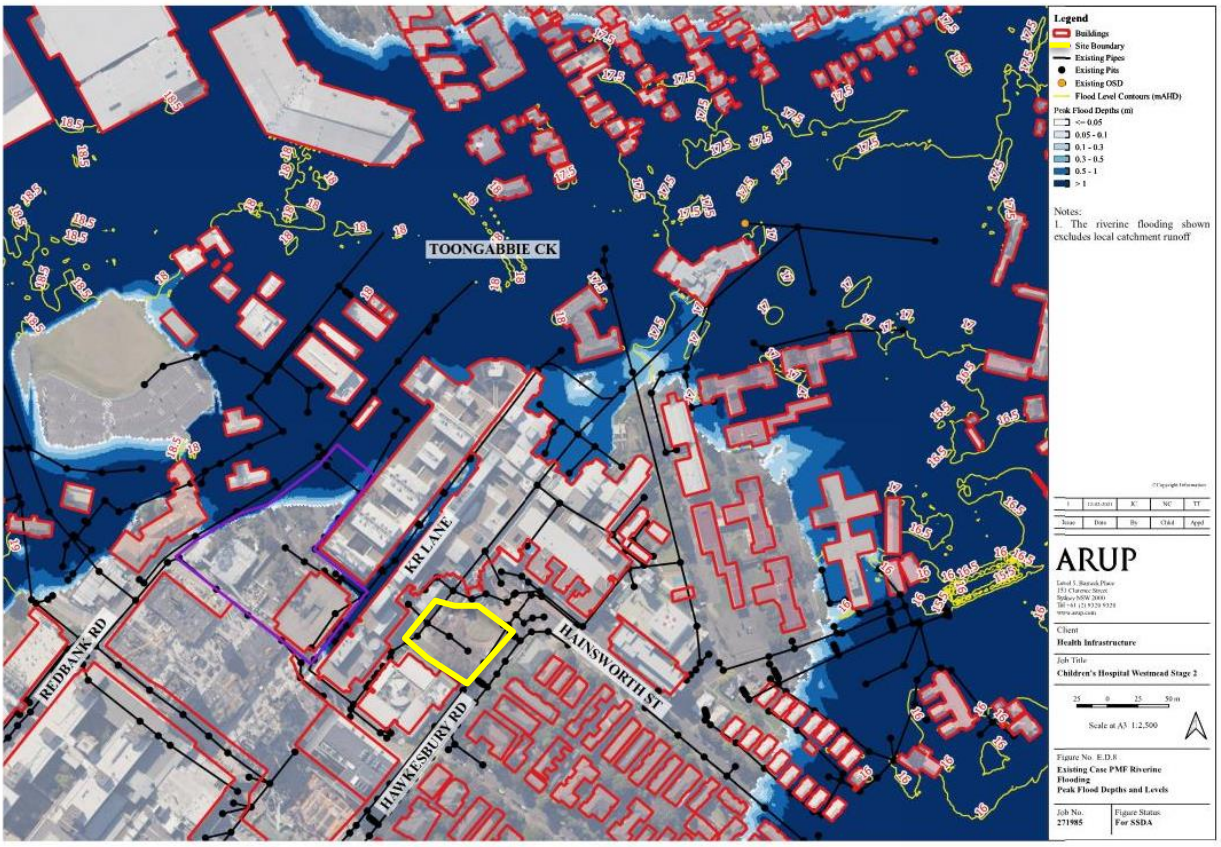




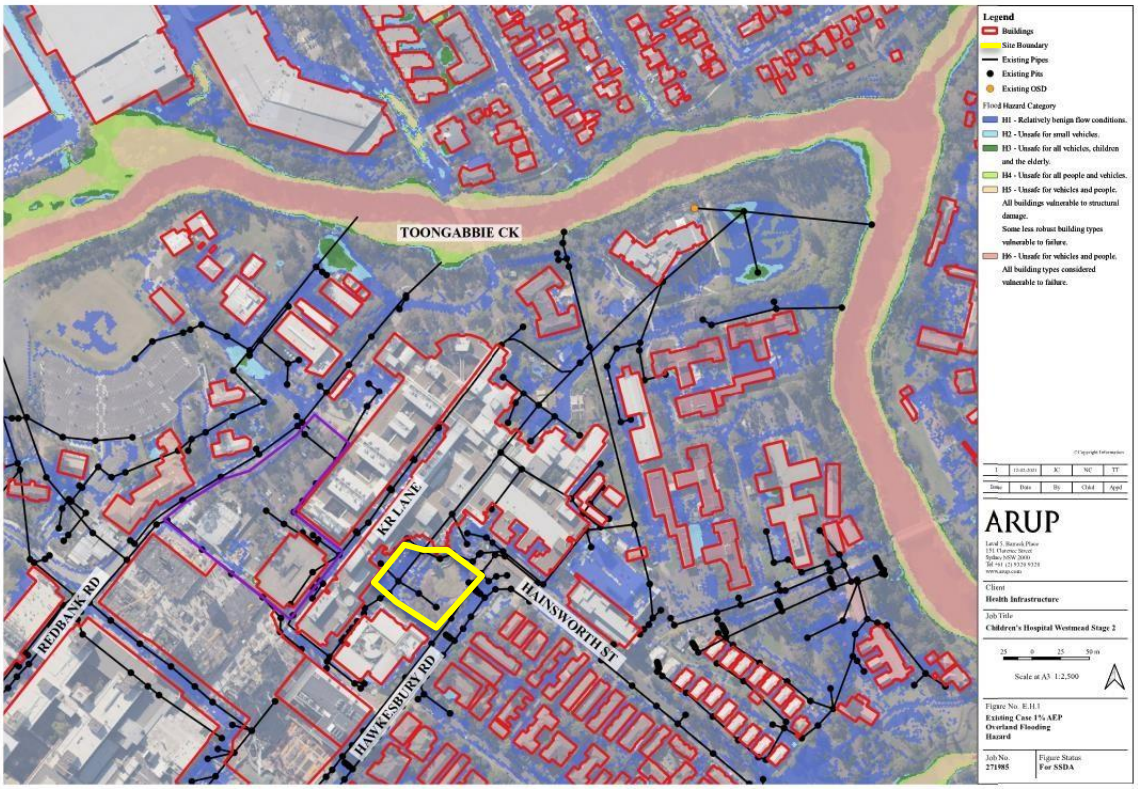

TOONGABBIE CK
KR LANE
HAINSWORTH ST
HAWKESBURY RD
REDBANK RD
Legend
Buildings
Site Boundary
Existing Pipes
Existing Pits
Existing OSD
Flood Level Contours (mAHD)
Peak Flood Depths (m)
<= 0.05
0.05 - 0.1
0.1 - 0.3
0.3 - 0.5
0.5 - 1
> 1
ARUP
Client
Health Infrastructure
Job Title
Children's Hospital Westmead Stage 2
Scale at A3 1:2,500
Figure No. E.D.3
Existing Case 1% AEP
Overland Flooding
Peak Flood Depths and Levels
Job No.
271985
Figure Status
For SSDA

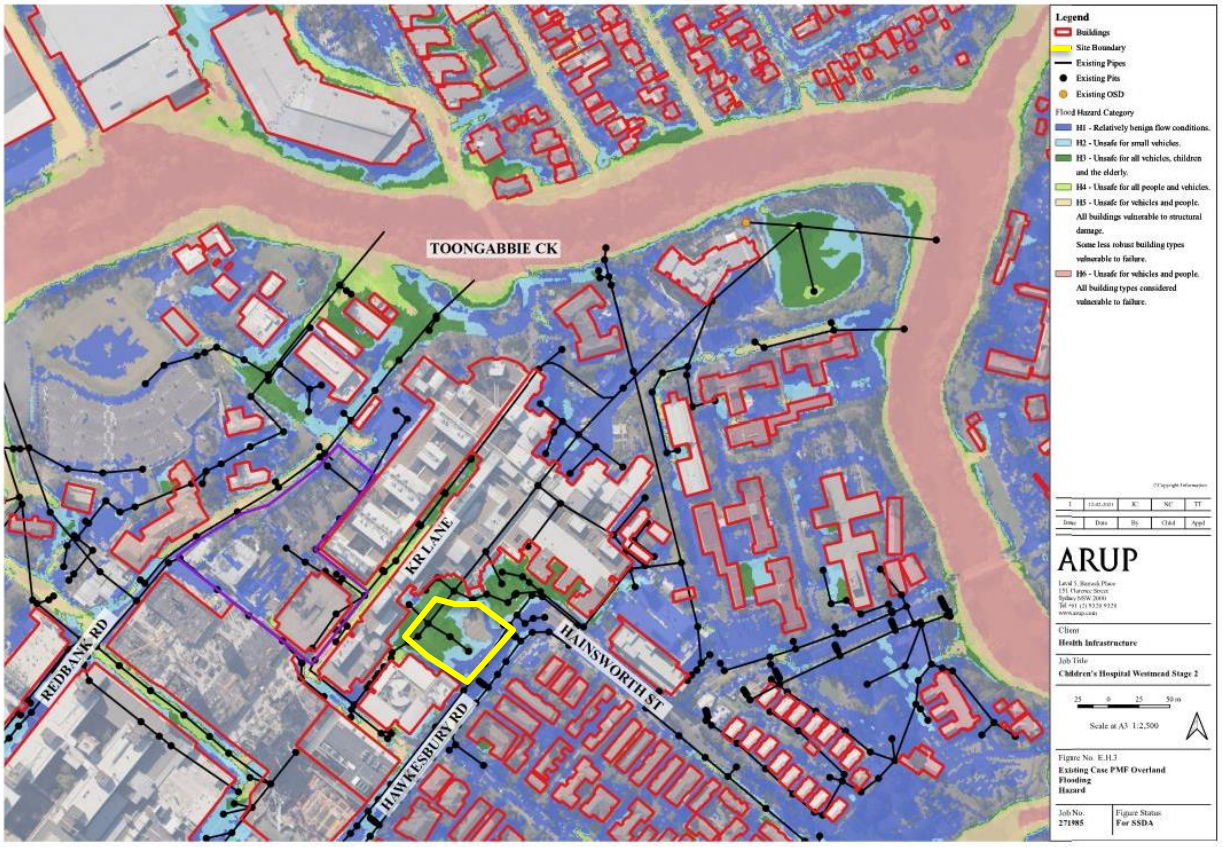

TOONGABBIE CK
KR LANE
HAINSWORTH ST
HAWKESBURY RD
REDBANK RD
Legend
Buildings
Site Boundary
Existing Pipes
Existing Pits
Existing OSD
Flood Level Contours (mAHD)
Peak Flood Depths (m)
<= 0.05
0.05 - 0.1
0.1 - 0.3
0.3 - 0.5
0.5 - 1
> 1
Notes:
1. The riverine flooding shown excludes local catchment runoff
ARUP
Client
Health Infrastructure
Job Title
Children's Hospital Westmead Stage 2
Scale at A3 1:2,500
Figure No. E.D.4
Existing Case 1% AEP Riverine Flooding
Peak Flood Depths and Levels
Job No.
271985
Figure Status
For SSDA


TOONGABBIE CK
KR LANE
REDBANK RD
HAINSWORTH ST
HAWKESBURY RD
Legend
Buildings
Site Boundary
Existing Pipes
Existing Pits
Existing OSD
Flood Level Contours (mAHD)
Peak Flood Depths (m)
<= 0.05
0.05 - 0.1
0.1 - 0.3
0.3 - 0.5
0.5 - 1
> 1
ARUP
Client
Health Infrastructure
Job Title
Children's Hospital Westmead Stage 2
Scale at A3 1:2,500
Figure No. E.D.7
Existing Case PMF Overland Flooding
Peak Flood Depths and Levels
Job No.
271985
Figure Status
For SSDA


TOONGABBIE CK
KR LANE
REDBANK RD
HAINSWORTH ST
HAWKESBURY RD
Legend
Buildings
Site Boundary
Existing Pipes
Existing Pits
Existing OSD
Flood Level Contours (mAHD)
Peak Flood Depths (m)
<= 0.05
0.05 - 0.1
0.1 - 0.3
0.3 - 0.5
0.5 - 1
> 1
Notes:
1. The riverine flooding shown excludes local catchment runoff
ARUP
Client
Health Infrastructure
Job Title
Children's Hospital Westmead Stage 2
Scale at A3 1:2,500
Figure No. E.D.8
Existing Case PMF Riverine Flooding
Peak Flood Depths and Levels
Job No.
271985
Figure Status
For SSDA

Appendix B – PSB Flood Hazards (1% AEP and PMF Flood Cases)




TOONGABBIE CK
K R LANE
REDBANK RD
HAINSWORTH ST
HAWKESBURY RD
Legend
Buildings
Site Boundary
Existing Pipes
Existing Pits
Existing OSD
Flood Hazard Category
H1 - Relatively benign flow conditions.
H2 - Unsafe for small vehicles.
H3 - Unsafe for all vehicles, children and the elderly.
H4 - Unsafe for all people and vehicles.
H5 - Unsafe for vehicles and people. All buildings vulnerable to structural damage. Some less robust building types vulnerable to failure.
H6 - Unsafe for vehicles and people. All building types considered vulnerable to failure.
ARUP
Client
Health Infrastructure
Job Title
Children's Hospital Westmead Stage 2
Scale at A3 1:2,500
Figure No. E.H.3
Existing Case PMF Overland Flooding Hazard
Job No.
271985
Figure Status
For SSDA


TOONGABBIE CK
K R LANE
REDBANK RD
HAINSWORTH ST
HAWKESBURY RD
Legend
Buildings
Site Boundary
Existing Pipes
Existing Pits
Existing OSD
Flood Hazard Category
H1 - Relatively benign flow conditions.
H2 - Unsafe for small vehicles.
H3 - Unsafe for all vehicles, children and the elderly.
H4 - Unsafe for all people and vehicles.
H5 - Unsafe for vehicles and people. All buildings vulnerable to structural damage. Some less robust building types vulnerable to failure.
H6 - Unsafe for vehicles and people. All building types considered vulnerable to failure.
Notes:
1. The riverine flooding shown excludes local catchment runoff
ARUP
Client
Health Infrastructure
Job Title
Children's Hospital Westmead Stage 2
Scale at A3 1:2,500
Figure No. E.H.4
Existing Case PMF Riverine Flooding Hazard
Job No.
271985
Figure Status
For SSDA

Appendix C – Peer review

Michael.Ghattas

From: Sarah Ford <SFord@northrop.com.au>
Sent: Monday, 13 March 2023 1:41 PM
To: Michael.Ghattas; Benjamin Lawrence; Angus Brien
Cc: Mathew Richards; Danielle.Simpson; Rafael Guintu
Subject: RE: CHW Stage 2 Enabling Works - Peer Review of Environmental Plans - FERSP & Soil and Water Management

Some people who received this message don't often get email from sford@northrop.com.au. Learn why this is important

Hi Michael,

Northrop believe both the CSWMSP and FERSP generally satisfy the condition of consent.

Please advise should you require anything further.

Thanks

Sarah Ford
Civil Engineer

Northrop Consulting Engineers Pty Ltd
T 02 9241 4188
D 02 9156 3007
E SFord@northrop.com.au
L11, 345 George Street Sydney NSW 2000
www.northrop.com.au

NORTHROP Follow us on LinkedIn

From: Benjamin Lawrence <BLawrence@northrop.com.au>
Sent: Monday, 13 March 2023 11:00 AM
To: Sarah Ford <SFord@northrop.com.au>
Subject: FW: CHW Stage 2 Enabling Works - Peer Review of Environmental Plans - FERSP & Soil and Water Management

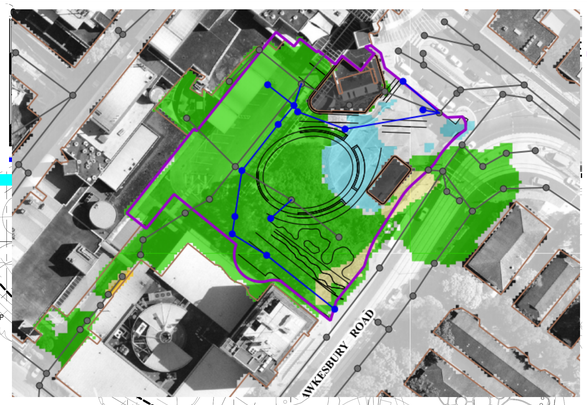
Benjamin Lawrence
Senior Civil and Environmental Engineer | Team Leader

Northrop Consulting Engineers Pty Ltd

1

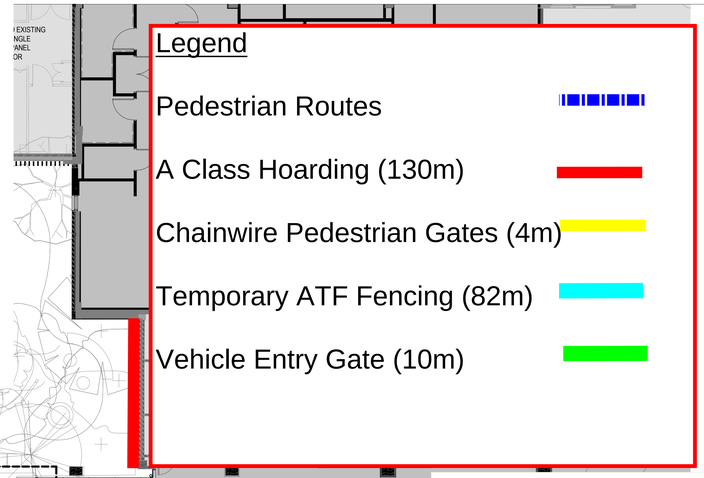
APPENDIX D – Evacuation Routes

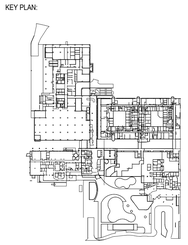
FORECOURT SITE ESTABLISHMENT AND EVACUATION PLAN
REV 3
20/07/2023



Legend
- Site Boundary
- Buildings
- Existing Pits
- Existing Pipes
- Proposed Pits
- Proposed Pipes
- Proposed Kids Park Design Strings

Change in Flood Level (m)
- <= 0.010
- -0.010 - +0.010
- +0.010 - +0.050
- +0.050 - +0.200
- > +0.200
- No Longer Flooded
- Newly flooded





FLOOD PROCEDURE

In the event of a flooding event the following procedure will occur from Kane Management:

- Nurse call alarms will sound across site
- All staff and workers are to muster at the usual emergency evacuation mustering point
- Kane will coordinate with the Westmead Children's Hospital to determine next course of action
- In the event of a 1/100 flood event and emergency, the area marked at the centre of the village green is the mustering point

- PLEASE NOTE THAT HAWKESBURY ROAD FLOODS BEFORE THE ALLOCATED SAFETY ZONE

Appendix E – CV of Author

CHRIS CHAU
PROJECT MANAGER

QUALIFICATIONS

+ Bachelor of Civil Engineering (Construction Management)
+ Bachelor of Environmental Engineering
+ Certificate IV n Building and Construction

Skilled in negotiating, writing, and interpreting contractual agreements, Chris ensures that each and every project he is on is delivered to the highest of standards. Chris achieves this by making certain that all stakeholders fulfil their specific directives and adhere to the standards outlined in the contract.

Over the years, Chris' construction industry experience has primarily involved design and construct projects for Government departments; including the community, rail, health and education sectors.

Chris has proven his unwavering commitment to all the projects he has worked on. Chris' ability to assess situations and communicate at a continuous high level is a skill that he administers to all his projects. This is demonstrated through his developed relationships with subcontractors, who provide a holistic approach to meet the requirements of the client.

PROJECT RESPONSIBILITIES

As Project Manager, Chris is responsible for procurement,administration and associated document control of the Head Contract andsubcontracts while also providing coordination and engineering supportto the site management team.

- 8 years industry experience
- Understanding of best practice and Work Health & Safety within the built environment
- Outstanding stakeholder management and client relationships
- Knowledgeable of all WHS systems, processes, policies and procedures
- Highly skilled in procurement, administration and document control

PROJECT EXPERIENCE

NSW Rugby Union Centre of Excellence	$14M
Lindfield Village Green	$26M
Liverpool Catholic Club, Food Services Building	$38M
The Hume Apartments	$19M
Paramedic Response Centre (SAMIS), Caringbah	$5M
Uniting Care, Aged Care Haberfield	$11M
SWSI TAFE, Wetherill Park	$8M
Sydney Trains, Belmore Disaster Recovery Centre	$5M
Sydney Trains, Granville Centre of Excellence	$3M
Sydney Trains, Lifts and Escalator Upgrade, Ashfield and Blacktown	$2M
Health Share, Bankstown Hospital Kitchen Upgrade	$1M

Liverpool Catholic Club

The Hume Apartments

Lindfield Village Green

Paramedic Response Centre, Caringbah