HANSENYUNCKEN

Construction Environmental Management Plan (CEMP)

Project: UON Central Coast Campus

Address: 305 Mann Street Gosford NSW 2250

Job No: SN-109

Rev: 2 | September 2023

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1. Document Information

1.1 Review & Approval

Review			
Position	**Name**	**Sign**	**Date**
Project Manager	Robert Schmitzer		
Contracts Administrator	Patrick Fishburn		
Contracts Administrator	Peter Diab		
Site Manager	Dale Reith		
Foreman	Michael Stevens		
Foreman	Bevan Talbot		
Senior Project Engineer	Tim Everett		
Site Engineer	Jordan Watters		
Site Engineer	Joshua Hersant		
Approval			
Regional NSW Manager	Patrick McAllister		

1.2 Change Information

Change Information			
Revision	**Description**	**Issued by**	**Issue date**
0	Draft	PMc	11 Sep 23
1	For Issue to DPE	BB	14 Sep 23
2	Adjustments made to address Sydney Trains emergency access requirements.	BB	19 Sep 23

Definitions

The following definitions and abbreviations have been used in this Environmental Management Plan. Further definitions and abbreviations are provided in referenced procedures and plans.

BIM360 Field	Cloud based QHSE field management software application designed specifically for the construction industry.
CEMP	Construction Environmental Management Plan (this document)
EPA	State Environment Protection Authority
ESD	Ecologically Sustainable Development
HSE	Health, Safety & Environment
HY	Hansen Yuncken Pty Ltd
HYWAY	An information management platform developed by HY utilising Microsoft SharePoint
NC	Non-Conformance
NGER	National Greenhouse and Energy Reporting
NVMP	Noise and Vibration Management Plan
OEH	Office of Environment and Heritage
PLN	HY Plan
PMP	Project Management Plan
POEO	The Protection of the Environment Operations Act
PROJ	Project Management
REO	Regional Environmental Officer
RMS	Roads and Maritime Services
S/C	Subcontract(s) or Subcontractor(s) as the context requires
SM	Site Manager
SSC	Site Safety Coordinator
SSA	Site Safety Advisor
SWMS	Safe Work Method Statement
CTPMSP	Construction Traffic and Pedestrian Management Sub Plan
CNVMSP	Construction Noise & Vibration Management Sub Plan
CWMSP	Construction Waste Management Sub Plan
CSWMSP	Construction Soil & Water Management Sub Plan
ACHA	Aboriginal Cultural Heritage Assessment
TfNSW	Transport for NSW

Compliance with SSD-47749715 Conditions

For all SSD-47749715 Consent Conditions, refer to Appendix 9.

Condition ID	Requirement	Reference
B20	Management plans required under this consent must be prepared having regard to the relevant guidelines, including but not limited to, the Environmental Management Plan Guideline: Guideline for Infrastructure Projects (DPIE April 2020).	N/A
B21	Prior to the commencement of the relevant stage of works, 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:	N/A
B21(a)	a) Details of:	N/A
B21(a)(i)	(i) hours of work;	4.2.3
B21 (a)(ii)	(ii) 24-hour contact details of site manager;	4.2.4
B21 (a)(iii)	(iii) management of dust and odour to protect the amenity of the neighbourhood;	5.7
B21 (a)(iv)	(iv) stormwater control and discharge;	5.11.5
B21 (a)(v)	(v) measures to ensure that sediment and other materials are not tracked onto any roadway by vehicles leaving the site;	5.8.2
B21 (a)(i)	(i) external lighting in compliance with AS 4282-2019 Control of the obtrusive effects of outdoor lighting (Standards Australia, 1997);	5.17 Appendix 10
B21 (a)(ii)	(ii) detail the quantities of each waste type generated during construction and the proposed reuse, recycling, and disposal locations;	5.12.5 Appendix 6
B21 (b)	b) an unexpected finds protocol for contamination and an associated communications procedure to ensure that potentially contaminated material is appropriately managed;	5.11.8 Appendix 11
B21 (c)	c) an unexpected finds protocol for Aboriginal and non-Aboriginal heritage and an associated	5.11.8
B21 (d)	d) waste classification (for materials to be removed) and validation (for materials to remain) be undertaken to confirm the contamination status in those areas of the site;	5.12
B21 (e)	e) Construction Traffic and Pedestrian Management Sub-Plan	Appendix 4
B21 (f)	f) Construction Noise and Vibration Management Sub-Plan	Appendix 5
B21 (g)	g) Construction Waste Management Sub-Plan	Appendix 6
B21 (h)	h) Construction Soil and Water Management Sub-Plan	Appendix 7

Commitment & Policy

4.1 Scope & Application

The Construction Environmental Management Plan (CEMP) has been developed to demonstrate that the proposed Works will be executed in accordance with legislated safety and environmental requirements with minimal inconvenience to stakeholders including neighbours and the general public.

Hansen Yuncken, appointed as Principal Contractor in accordance with NSW WHS legislation, complies with the requirements detailed in this Construction Environmental Management Plan, as well as the requirements of any other legislation or statutory bodies.

A combination of offsite and onsite construction techniques will be used to deliver a high quality, future focused innovative, state of the art university building. Meeting the current and expanding university and community needs alongside complying with the requirements as detailed in the UoN technical design guidelines and to provide a high level of end user satisfaction.

This CEMP has been generated to satisfy the requirements of “ISO 14001:2015, Environmental management systems – Requirements with guidance for use” and the “NSW Government Environmental Management System Guidelines – 3rd edition” (see Appendix 2 for Hansen Yuncken’s accreditation).

This establishes the guidelines and controls for all HY activities that may impact the surrounding environment for the duration of the works, including but not limited to, air, water, land, natural resource use & waste, flora & fauna, and their respective interrelationship. Furthermore, it has been designed to embrace the environmental management requirements, both in terms of the Contract and generally, to demonstrate HY as an environmentally responsible organisation to the broader community.

In preparing this CEMP Hansen Yuncken consider that the intent of the Environmental Management Plan Guideline: Guideline for Infrastructure Projects (DPIE April 2020) has been met.

4.2 Project Description

The new University of Newcastle Central Coast Campus will support the University’s existing facilitates on the Central Coast, being the Central Coast Clinical School and Research Institute and Ourimbah Campus. The site currently houses a dilapidated building which used to be occupied by Mitre 10. Once completed, the Central Coast Campus will support the University’s Schools of Business, Humanities and Education along with Pathways and Academic Learning Support into the future.

The proposed six storey building will deliver a facility capable of housing up to 710 staff and students. A new access driveway is proposed off Hills Street along the Northern Boundary of the site and includes car parking, bus and private vehicle drop-off zones and delivery zones.

4.2.1 Site Layout Plan

Site accommodation will be established prior to construction works commencing. The main site amenities will be located on the Southern side of the site, adjacent to Beane St. The amenities will be set up in accordance with the applicable codes of practice. Figure 1 shows the proposed site layout of amenities. These amenities consist of;

- HY site office area and meeting rooms;
- Induction Room;
- First-aid room;
- Covered walkways;
- Male and female toilets;
- Lunch sheds; and
- Change rooms.

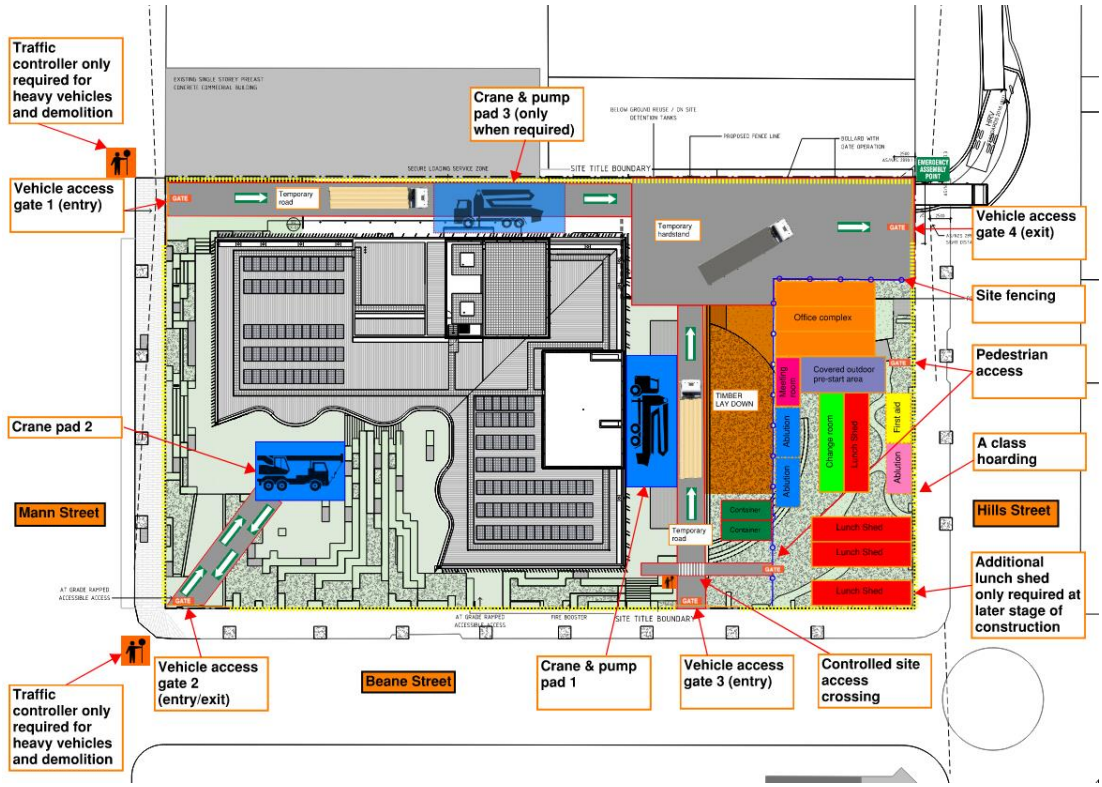


Figure 1: Site Layout Plan

4.2.2 Site Location Plan

The site is located in Gosford, and is bounded by Mann, Beane and Hills Streets. It is also adjacent the Pacific Highway; See figure 2 below.

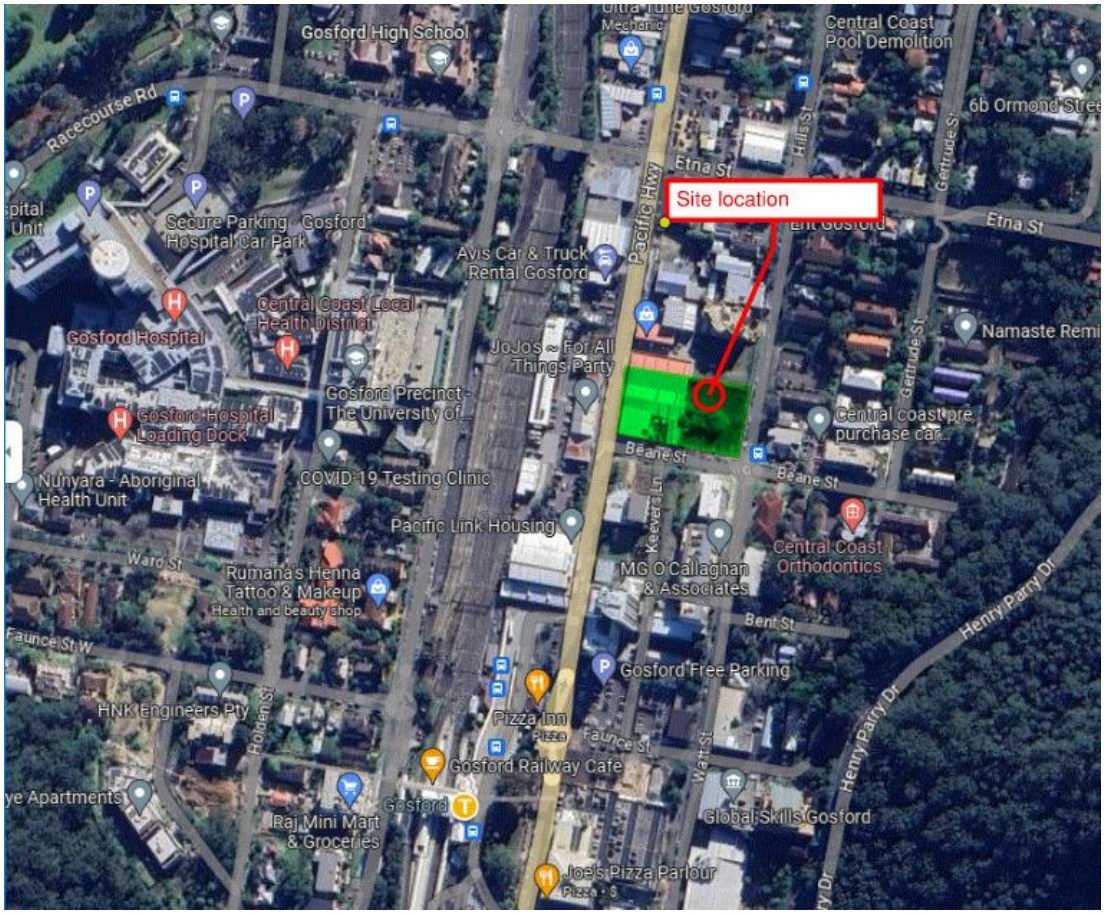


Figure 2: Site Location Plan

4.2.3 Hours of Work

The proposed hours of work for the project are as follows:

- Between 7am and 6pm, Mondays to Fridays inclusive; and
- Between 8am and 1pm, Saturdays.
- No work may be carried out on Sundays or public holidays.

The proposed hours align to *Condition C5 of SSD-47749715*

The proposed restricted hours of work for the project, provided that noise levels do not exceed the existing background noise level plus 5dB, which aligns with *Condition C5 of SSD-47749715*, are as follows:

- Between 6pm and 7pm, Mondays to Fridays inclusive; and
- Between 1pm and 4pm, Saturdays.

The proposed hours of work for the project for specific construction activities such as rock breaking, rock hammering, sheet piling, pile driving and similar activities, which align to *Condition C8 of SSD-47749715*, may be carried out only between the following hours:

- 9 am to 12 noon, Mondays to Fridays;
- 2 pm to 5 pm Mondays to Fridays; and
- 9 am to 12 noon, Saturdays.

As per *Condition C6 of SSD-47749715*, Construction activities may be undertaken outside of the hours outlined in *Conditions C5* if required:

- by the Police or a public authority for the delivery of vehicles, plant or materials; or
- in an emergency to avoid the loss of life, damage to property, or to prevent environmental harm; or
- where the works are inaudible at the nearest sensitive receivers; or
- where a variation is approved in advance in writing, by the Planning Secretary or his nominee, if appropriate justification is provided for the works.

4.2.4 24 Hour Contact Details of Site Manager

The 24-hour contact details for the project is as follows:

Robert Schmitzer (Project Manager)

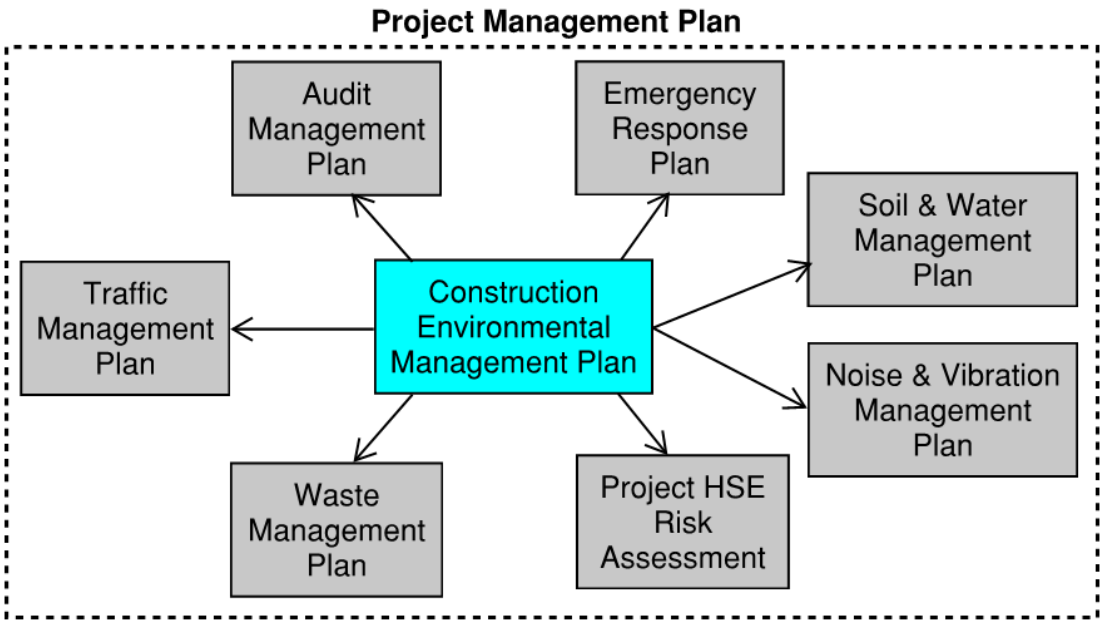
M: 0457 713 471

rschmitzer@hansenyuncken.com.au

4.3 CEMP Interrelationship with PMP

This CEMP forms part of Hansen Yuncken's Environmental Management and interfaces with the company's Quality & WHS Management Systems. Furthermore, this CEMP is an integral part of UON Central Coast Campus PMP. The following plans referenced within this CEMP form part of the overall PMP for the project and contribute to the environmental management procedures:

- **Project Site Induction** – Ensures all workers onsite are aware of the Construction Environmental Management Plan & also trains all workers onsite on the requirements for controlling dust & windblown debris, dirt & debris on public roads, protection of stormwater drains, tool & equipment washout, chemical spills, noise disturbance, waste collection & disposal of rubbish, food scraps & excess concrete.
- **Project HSE Risk Assessment** – Identifies what subcontractor onsite are impacted by or the risk of; air quality/dust, archaeology & cultural heritage, chemical spill, flora & fauna, littering, noise disturbance, stormwater contamination & watercourse pollution each month. This will be monitored through task observations scheduled for each month.
- **Noise & Vibration Management Plan** – Identifies mitigation methods to minimise the risk of noise & vibration to the workers onsite and the surrounding properties.
- **Traffic & Pedestrian Management Plan** – Summarises how construction and pedestrian traffic will be managed on the project to minimise the impact on the existing facility and the neighbours surrounding to the project.
- **Site Layout Plan** – Identifies the location of sediment controls, access routes, truck washout, location of site bins, spill kits, concrete washout.
- **Emergency Response Plan** – Outlines the process to manage the following environmental emergencies; asbestos exposure, water pollution, fire, major fuel spill & chemical spill
- **Audit Management Plan** – Describes the frequency of internal and external environmental audits and the process for closing out any non-conformances raised.



4.4 Policy & Objectives

The HY Environmental Policy Statement provides the framework for the development of this CEMP (refer Appendix 1), and details the company's commitment to "*providing a high quality environment, which meets the requirements and expectations of; Clients, Statutory Authorities, Employees and Community Groups*", through the application of "*sustainable development principles, to continually improve environmental performance in minimising impact on, and pollution of, the environment during the construction process"*.

The objective of the Construction Environmental Management Plan is to:

- Provide an EMP in accordance with the relevant guidelines, inclusive of but not limited to the Environmental Management Plan Guideline: Guideline for Infrastructure Projects (DPIE April 2020).
- Satisfy Client requirements related to environmental performance, set out in the Specification for the Works.
- Incorporate and provide mitigation strategies for environmental issues arising from site activities and as detailed in the UON Central Coast Campus Environmental impact assessment document (Environmental Impact Statement by Urbis)
- Encourage best practice environmental management through planning, commitment, and continuous improvement;
- Prevent and minimize adverse impacts on the environment;
- Identify the potential for, and respond to, environmental incidents and emergency situations and take corrective actions;
- Identify and control possible environmental hazards with the works and HY activities;
- Identify and protect any special environmental characteristics of the site including cultural heritage significance;
- Define roles and responsibilities and allocate the necessary resources
- Ensure environmental training and awareness programmes are provided to employees and subcontractors;
- Establish mechanisms to monitor, evaluate and report progress.

The HY Environment Policy commits the company to achieve the following goals:

- Develop and promote a culture of environmental leadership, responsibility, and continual improvement across the HY business;
- Audit, monitor and ensure compliance with environmental legislative and regulatory obligations and other environmental commitments;
- Utilise the resources of HY to lead the way in defining and achieving best environmental practice; and
- Demonstrate compliance with the conditions as set out in the Development Conditions of the SSD-47749715.
- Advance and disseminate environmental knowledge and applied environmental management through training, research, and engagement with the wider community.

A copy of the Environment Policy is contained within the PMP and displayed at the project / site office and induction sheds. HY recognises this implementation will involve effective training of personnel to ensure they fully understand their responsibilities to comply with and monitor the management system. In addition, all site workers are consulted on HY environmental policies & procedures through the following mechanisms; site induction, notice board, site inspections, prestart meetings, subcontractor meetings, team meetings, toolbox talks.

4.5 Targets

4.5.1 Objective: Comply with all environmental legislation

KPI: Number of identified breaches of State or Commonwealth Environmental legislation

Target: Nil for duration of project.

Responsibility: HY & Subcontractors

4.5.2 Objective: Minimise impacts on the environment

KPI: Number of significant environmental incidents causing serious harm to the environment

Target: Nil for duration of project.

Responsibility: HY & Subcontractors

4.5.3 Objective: Conduct environmental site inspections to validate environmental conformance

KPI: Schedule and undertake regular site inspections

Target: > 90% of scheduled HSE inspections

Responsibility: HY

4.5.4 Objective: Minimise and manage environmental complaints

KPI: Consult with impacted neighbours and promptly address all complaints

Target: ≤ 1 complaint per significant construction milestone

Responsibility: APP

4.6 ESD Vision & Principles

HY's Environmentally Sustainable Design (ESD) vision and principles involves:

- Identification and prioritisation of environmental risk based on AS/NZS ISO 31000:2009 and Guidelines HB158:2010, using qualitative likelihood vs. consequence methods.
- Development of management systems which build knowledge and capacity on environmental issues, principles and sustainable behaviours including training and communication.
- Reduced energy and water consumption as well as waste minimisation during the construction process.
- Environmental training and management of trade contractor's activities to ensure that the project ESD objectives are obtained.

- Efficient and effective use of natural resources in a way that maintains the ecological processes on which life depends
- Sustainable use of renewable energy resources.

HY's ESD vision and Principles align with the ESD objectives of the project which is targeting a certified 6 Star Green star rating through the consideration of key ESD strategies in design (as per the ESD Detailed Design ESD Report prepared by WSP). As such, this project provides an opportunity for HY to expand its practical and theoretical knowledge of ESD to a level that is considered 'industry leading' status.

4.7 Environmental Planning

In accordance with the contractual requirements, applicable legislation, and in keeping with proper environmental practices, Hansen Yuncken has instituted a methodology which is reflective of and observes the requirement, as set out in ISO 14001:2015.

4.7.1 Environmental Aspects & Impact

All activities related to the UON Central Coast Campus, which are enacted by or on behalf of Hansen Yuncken, are identified in the "Project HSE Risk Assessment" (refer Appendix 3). For each activity the environmental aspects and associated actual and potential impacts are identified as they relate to the following environmental elements:

- Location and Land Use;
- Noise & Vibration;
- Traffic and Access;
- Air Quality;
- Soils, Erosion and Water Quality;
- Terrestrial Flora and Fauna;
- Cultural Heritage;
- Site Contamination; and
- Waste Management.

Environmental impacts are detailed in the "Project HSE Risk Assessment" and assessed for significance by using the Risk Matrix. Each identified potential impact is rated (Risk rating) in relation to its predicted likelihood and consequence. Environmental Impacts as applicable to the UON Central Coast Campus are summarised in the "Environmental Risk Register" contained within this CEMP (Section 5.3).

4.7.2 Work Method Statements

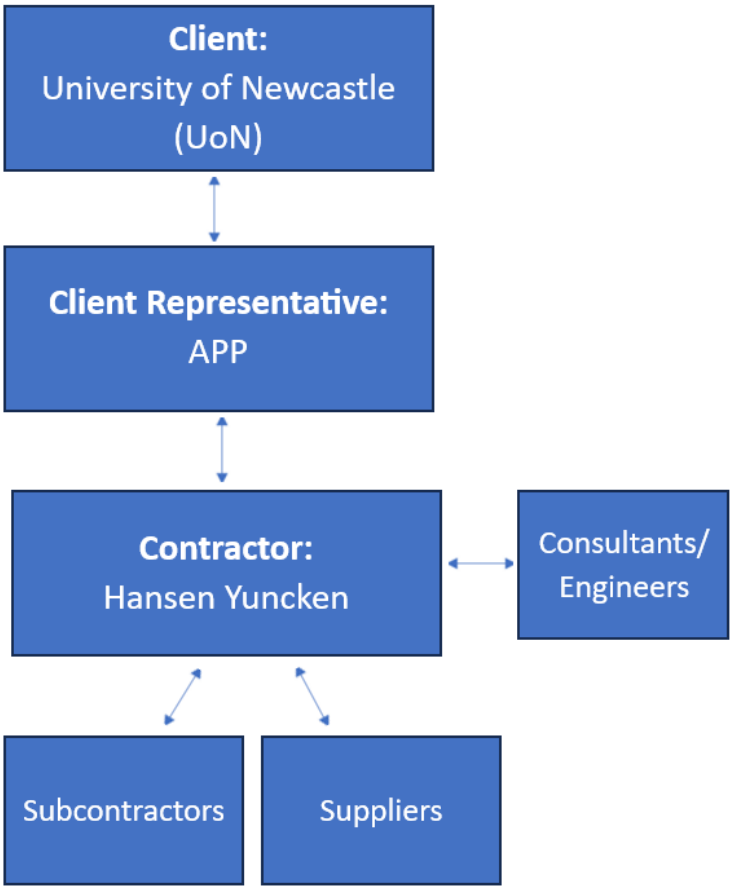
For each activity rated as a significant risk (i.e., Risk class >M/Medium) to the environment, a further Risk assessment is undertaken with the additional controls identified and contained within a Work Method Statement. This document details the; steps involved, hazards, control measures and persons responsible associated with the higher risk activity. A Toolbox talk is then completed with the relevant workers that will be completing the task to ensure that they comply with the Work Method Statement.

4.7.3 Legal Compliance and Other Requirements

Hansen Yuncken has developed a procedure ("Legislation Standards and Codes of Practice"), available on HYWAY to identify legal and other requirements that are applicable to the UON Central Coast Campus and to ensure the accessibility of the information. The procedure shall be referenced and is applicable to those activities and functions that have the potential to interact with the environment.
Furthermore (URL) links are supplied on HYWAY to regulatory body websites and relevant NSW legislation relevant to environmental aspects and management of the same.

4.8 Roles and Responsibilities

The below flow chart summarises the organisation structure for communication and reporting between Hansen Yuncken, it's suppliers/subcontractors and the principal.



Hansen Yuncken will collaborate with the project team to provide the following in ensuring we are achieving sustainable environmental management for the duration of the project:

- Engagement with project stakeholders including consultants and contractors
- Notifications and communications with adjacent property occupants and owners advising of the Works;
- Formal notices of road closures and related matters;
- Conveying enquiries and complaints regarding the works (including but not limited to traffic, dust and noise) to the client;
- Liaising with key stakeholders and local authorities regarding the works; and
- Environmental issues related to the works.

A summary of the roles and responsibility of each stakeholder with regards to environmental management for the project is summarised below:

- Client Representative – provides a medium of communication between the client and the contractor and is responsible for all community consultation and communication
- Contractor – responsible for delivering the project in accordance with the relevant legislation, including the enforcement of the CEMP for its subcontractors and suppliers.
- Consultants/Engineers – provide expert knowledge into the generation of aspects of the CEMP in line with industry standards and the relevant legislations.
- Subcontractor/Suppliers – responsible for abiding by the requirements of the CEMP when carrying out their contract works.

4.9 Environmental Hold Points

The below hold points relate to the environmental management of the UON Central Coast Campus project site as per the SSD-47749715:

- B51 (a) Prior to the commencement of the relevant stage of works, a Vegetation Management Plan must be submitted to the satisfaction of the Certifier and must Show the location of all proposed and existing water and sewer infrastructure across the site and within at least 20 m radius of the site. The location of such service lines shall be clear of the location of proposed street trees;
- C25: (Unexpected Finds Protocol – Aboriginal Heritage) In the event that surface disturbance identifies a new Aboriginal object, works must halt in the immediate area and shall only recommence with the written approval of the Planning Secretary.
- C26: (Unexpected Finds Protocol – Historic Heritage) If any unexpected archaeological relics are uncovered during the work, then works must cease immediately in that area and may only recommence with the written approval of the Planning Secretary.

Implementation

5.1 Environmental Training & Awareness

All HY and S/C employees shall receive an induction into the project in accordance with the Site Induction procedure including completing the Site Induction Record Form.

The induction shall include the requirements for the conduct of activities which have the potential for significant environmental impacts on the project which shall be outlined in the project specific Site Induction Handbook.

This document applies to all HY, and S/C employees, environmental training and awareness is the responsibility of every person working on and associated with the project.

The training and awareness program that has been developed to ensure personnel are adequately trained to competently fulfil their responsibilities under the EMP. The training and awareness program has been tailored to the roles of individuals to ensure personnel to ensure;

- They are aware of the key environmental aspects, impacts and risks, the conditions of consent and approved EMP.
- They are aware of relevant legislative responsibilities, including any penalties for failing to meet these responsibilities.
- They have the required skills and competence to perform the relevant environmental management, reporting, monitoring and community engagement functions of their role.

The environmental training and awareness program includes:

- site induction and toolbox talks.
- environmental incident and emergency response training.
- training in the implementation of environmental management measures.

5.2 Environmental Impacts of Subcontractor Activities

The environmental impacts of subcontractor activities shall be assessed during the S/C pre-award meeting in accordance with pre-award meeting procedure and the project HSE risk assessment. The general structure of the environmental management of the following risks is contained within this section of the report under the following structure:

- Likely Impacts – outlines the impacts of the environmental issues that have been assessed in the environmental risk register
- Mitigation Strategies – outline the procedures/actions that will be taken to minimise the possibility of the impacts outlined above from occurring.

5.3 Environmental Risk Register

Environmental Risk Register Summary & Responsibilities		
Environmental Issue	Risk to Project	Responsible Personnel
Location & Land use Residential and other properties may be impacted with construction works due to construction noise and dust	Low	PM
Noise & Vibration Construction of the development may result in short term impacts during the project due to the use of heavy machinery, drilling and plant as well as construction personnel and vehicle movements.	Low	PM / SM
Traffic & Access During construction there will be impacts to traffic on public roads surrounding the project from construction vehicles and deliveries for site.	Medium	PM / SM
Air Quality During the earthworks stage of the project, there is a risk of poor air quality generated by the construction works.	Low	SM
Soils, Erosion, & Water Quality There is a risk of soil leaving the site and potentially contaminating the stormwater system in the short-term during the earthworks stage of the project.	Low	SM
Terrestrial Flora & Fauna There are minimal amounts of trees and vegetation to be removed during construction works which poses minimal risk to any landscaped species of the area.	Low	PM / SM
Cultural Heritage It is unlikely that construction works will impact any undisturbed aboriginal artefacts given that an Aboriginal Cultural Heritage Assessment prepared by Urbis concludes that no Aboriginal heritage sites will be harmed by the proposed development.	Low	PM / SM

PM - Project Manager, SM - Site Manager, FM - Foreman, S/C – Subcontractor, PCA - Private Certifier

5.4 Location and Land Use

5.4.1 Site Location

The site is located at 305 Mann Street, Gosford. The site is formally described as Lots 1, 2, 4, 29, 30, 31 & 32 Section 1 DP 1591 Lot 1 – DP 911163, DP911164. The site covers an area of approximately 4675m2 and is situated within the Gosford Town Centre.

Existing structures and features at the site include a large warehouse (which housed the former Mitre 10 store) occupying the western portion, a central vegetated garden area and a concreted open car park that occupies the remainder of the Site. The concreted open car park and central garden area slope toward the north-west and are in poor condition with several cracks and vegetation growing throughout.

Immediately surrounding the development includes an industrial area housed to a number of small businesses along Mann Street as well as a medical centre to the north at the junction of Beane and Hills Street. Further south along showground road is Gosford transit train station.

5.4.2 Likely Impacts

The construction works would be short term in nature and construction activities would be carried out with due diligence, duty of care and best management practices. Given the location of residential and other properties in vicinity of the works area, some impacts associated with construction traffic, noise/vibration and dust are likely to affect adjacent residents. These likely impacts will be addressed below.

5.4.3 Mitigation Strategies

- The neighbouring landowners are to be consulted regarding the construction works, predicted program and any access requirements.
- Land disturbance during construction is to be limited to that required to undertake the construction works
- Construction works to be undertaken in consideration of adjacent vegetation
- Areas disturbed during construction to be returned to the pre-construction condition
- The consent approval stipulates working times to minimise the impact on the community being generally Monday to Friday 7am-6pm, Saturday 8am-1pm, no work on Sundays or public holidays.

5.5 Noise and Vibration

5.5.1 Likely Impacts

Construction of the proposed development will result in short term noise impacts during the construction period. The predicted noise levels during the construction phase have been identified in the project Construction Noise & Vibration Management Plan along with associated mitigation strategies provided to minimise these impacts (refer Appendix 5 for the Construction Noise & Vibration Management Plan), in accordance with *Condition B25 of SSD-47749715*.

5.5.2 Mitigation Strategies

Construction noise and vibration will generally be managed in line with the Construction Noise and Vibration Management Sub-Plan (CNVMP). Noise and vibration mitigation measures include:

- Implement best-practice general mitigation measures onsite, aimed at reducing the effects of construction noise and vibration, such as,
  - regular toolbox talks to reinforce the need to minimise noise and vibration,
  - regular identification of noisy activities and adoption of improvement techniques.
  - Restricting construction activities to the hours specified under *Conditions C5, C6 and C8 of SSD-47749715*.
  - Taking reasonable and feasible measures to minimise noise and vibration effects from plant and equipment where possible.
- Noise monitoring at the commencement of excavation and structural works to confirm measured levels are consistent with the predictions in the acoustic assessment, and to verify that the mitigation procedures are appropriate.
- Issue project updates to stakeholders on current and upcoming works, including advance warning of potential disruptions and noise intensive activities.
- Develop procedures for receiving and addressing complaints from affected stakeholders. Complaints to be investigated as soon as practicable and feasible measures to minimise noise will be implemented if required, in accordance with *Condition B25(d) of SSD-47749715*.

5.6 Traffic & Access

5.6.1 Likely Impacts

Construction of the new site facilities shall see some increase in traffic in the local area. The increased traffic is not predicted to have an impact on local traffic flow, and only a minor inconvenience to local road users is expected. Construction vehicle routes have been developed with the intention of minimising the impact of construction traffic on the local streets in the immediate vicinity. Access to site will primarily be via Beane Street and Hills Street. In accordance with *Conditions B22(c) and B22(d) of the SSD-47749715*, the management of construction traffic developed as a result of these works is outlined in the Construction Traffic and Pedestrian Management Plan (refer Appendix 4).

5.6.2 Mitigation Strategies

The Construction Traffic and Pedestrian Management Plan (CTPMP) details the measures and strategies to be undertaken during construction works to minimise the effects on the surrounding road network, and to ensure the safety and efficiency of the community, workers, and road users, including:

- Construction activities and deliveries shall be restricted to the hours dictated in the consent SSD-47749715.
- All vehicle drivers will need to comply with the Driver Code of Conduct (in accordance with *Condition B22 of SSD-47749715* and detailed within the CTPMSP).
- Access to site will primarily be via Beane Street and Hills Street.
- Wire mesh temporary fencing will be erected around the perimeter of the site and maintained for the duration of the project to keep out unauthorised persons, with access gates closed outside of construction hours.
- Traffic management shall be undertaken in accordance with the methodology outlined within the Traffic Guidance Scheme (Refer to Appendix 4).
- Traffic and non-vehicle related road users will be directed around the worksite in order to physically separate the road user from any hazards within the worksite.
- Deliveries will be scheduled to prevent queuing by ensuring adequate timeframes between trucks arriving and leave site.
- All vehicles transporting loose materials will have their loads covered or secured to prevent large items, excess dust or dirt particles depositing onto the road during travel to and from site. HY will monitor roads leading to and from the site and take necessary steps to rectify any road deposits caused by site vehicles.
- Public roads and access points will not be obstructed by any materials, vehicles, refuse skips or the like.
- Traffic Controllers will be used to supervise vehicle movements and for pedestrian and cyclist management when necessary, during construction activities.
- HY will induct all subcontractors to ensure that procedures are met for vehicles entering and exiting the construction site.

A risk assessment has also been conducted as part of the CTPMP identifying the hazards and risks associated with the works and to determine the controls required for the protection of road workers and road users.

5.7 Air Quality & Dust Control

In accordance with *Conditions B21 (a)(iii) & C20 of SSD-47749715*, repeated in part as follows; the Construction Environmental Management Plan (CEMP) must include, but is not limited to;

(iii) management of dust and odour to protect the amenity of the neighbourhood. This section of the CEMP addresses this condition, outlining the likely impacts of air quality and dust control for the various aspects of the construction works, along with the mitigation strategies that will be implemented to minimise these impacts on the neighbourhood.

5.7.1 Likely Impacts

The main impact of air quality during construction is expected to arise from the generation of airborne localised dust associated with earthworks. Given the proximity to neighbouring properties and existing buildings, there is the potential for impact by dust, particularly during windy conditions.

5.7.2 Mitigation Strategies

- Construction vehicles and equipment to be suitably serviced prior to commencement of construction activities and all necessary maintenance to be undertaken during the construction period to meet EPA air quality requirements.
- Excessive use of vehicles and powered construction equipment will be minimised where possible.
- All construction machinery will be turned off when not in use to minimise emissions where possible.
- Construction contractors to monitor dust generation progressively.
- Dust suppression methods will be adopted where required (i.e., on windy days when earthworks and vehicle movements are generating dust). Examples of dust suppression methods include:
  - water carts,
  - localised use of water to supress excavation activities as they are occurring to suppress dust, &
  - covering stockpiles.
- Any stockpiled spoil/fill will be protected to minimise dust generation to avoid sediment moving offsite.
- Vehicles transporting spoil from the site to be covered where required.
- The burning of waste materials will not be permitted on site.

5.7.3 Long Term Dust Mitigation

The site team will progressively assess the need to implement long term dust mitigation processes for site stockpiles that remain for longer periods of time. This will be reviewed in conjunction with site progress, programming, site conditions and weather conditions. If the requirement of long-term management is deemed necessary Hansen Yuncken will review and implement one or more strategies most appropriate to the area and monitor accordingly. Long Term Management strategies include:

- Covering stockpile in geofabric or similar.
- Seeding.
- Removal of Stockpile
- Localised use of water
- Surface stabilisation with sprayed system (i.e., Vital Bon-Matt P47-VR1)

5.8 Soil, Erosion & Water Quality

In accordance with *Condition B27 of SSD-47749715*, this section of the CEMP addresses the likely impacts associated with stormwater runoff and the mitigation strategies that will be implemented to ensure that these impacts are minimised. Furthermore, in accordance with *Condition B21(h)*, refer to Appendix 7 for the Construction Soil and Water Management Sub-Plan.

5.8.1 Likely Impacts

Earthworks and general ground disturbances associated with the site works may result in sediment and other materials leaving the site via wind or water movement. This may have the potential to result in the water pollution such as turbidity and nutrient inputs, should sediment wash into stormwater or natural drainage lines.

Aspects of the site identified as potentially impacting on water quality includes:

- Excavation for foundations and site levelling;
- Stockpiling and transportation of excess spoil; and
- General construction waste entering drainage lines.

5.8.2 Mitigation Strategies

Construction is to be undertaken in accordance with the Construction Soil and Water Management Sub-Plan, as per *Condition B27 of SSD-47749715*. Prior to earthworks commencing, erosion and sediment control measures will be implemented generally in accordance with the Construction Certificate drawings and the 'Blue Book'. Control measures, as per the Construction Soil and Water Management Sub-Plan, include:

- Temporary site security/safety fence to be constructed around the site, the site office area and the proposed sediment basin.
- Sediment fencing to be provided downstream of disturbed areas, including any topsoil stockpiles.

- Dust control measures including covering stockpiles, installing fence hessian and watering exposed areas,
- The construction of a temporary sediment basin designed to cater for a storm event up to and including the 1 per cent AEP storm event.
- Stabilised site access at the construction vehicle entry/exits.
- Stockpiled material to be located as far away as possible from any associated natural watercourses or temporary overland flow paths, with sediment fences installed to the downstream side of stockpiles and any embankment function.
- Erosion and sediment control devices shall be properly maintained for the duration of the work. Maintenance includes ensuring adequate settlement times or flocculation and pumping of clean water.
- Wet weather management - In the event of heavy rain, site inspections will be undertaken prior to work commencing, with inspections to focus on:
  - The suitability of pedestrian access to the amenities and into the construction work areas.
  - The suitability of access for plant and equipment.
  - The suitability of ground conditions for plant and equipment to operate.
  - Identifying the construction zones suitable for work to commence
  - Actions to remediate those areas not suitable for work to commence (e.g., de-watering, preparing ground conditions and access ways, etc.)

5.9 Archaeology & Cultural Heritage

5.9.1 Likely Impacts

An Aboriginal Cultural Heritage Assessment (ACHA) of the development site was completed by Urbis in April 2023 (refer Appendix 12). Historical archaeological deposits/relics are not anticipated to occur within the subject area, and thus the works will proceed in accordance with the recommendations of the HAIA prepared by Urbis (2022). Notwithstanding, the following recommended mitigation strategies will be implemented in the event of an unexpected find onsite. This should be read in conjunction with the 'unexpected finds protocol' outlined in Section 5.11.8.

5.9.2 Mitigation Strategies

- If suspected Aboriginal objects are located during works, works will cease in the affected area and an archaeologist will be called in to assess the finds. If the finds are found to be Aboriginal objects, the NSW Department of Planning, Industry and Environment (DPIE) and Heritage NSW will be notified.
- In the extremely unlikely event that human remains are found, works will immediately cease, and the NSW Police will be contacted. If the remains are suspected to be Aboriginal, the DPIE and Heritage NSW will also be contacted to assist in determining appropriate management.

- Should either of the events above occur, the project team will take all necessary measures to protect the artefacts from being damaged or destroyed. Work will not re-commence in the area until a written instruction from the superintendent is received.

5.10 TfNSW (Sydney Trains)

In accordance with SSDA Conditions (A32) Sydney Trains or Transport for NSW will be permitted to inspect the site of the development and all structures to enable it to consider whether those structures have been or are being constructed and maintained in accordance with the approved plans and the requirements of the consent.

5.10.1 Access

The ongoing ability for Rail Vehicles to access the rail corridor for maintenance and emergency situations is critical to the safety, integrity and operation of the rail network. To this end, all project plans and workforce inductions will reiterate the requirement to maintain clear access at all times to rail property and Sydney Trains' operational corridor.

5.10.2 Reports and Notices

The following additional measures will be implemented to address works near the rail network;

- Notice of in-ground works – HY to carry-out Dial Before You Dig to establish the existence and location of any rail services, provide geotechnical engineering reports and an Electrolysis Risk report on stray currents.
- Notice of use of cranes and machinery used for demolition and excavation works – HY to submit to Sydney Trains, plan showing all craneage and other aerial operations for the development as well as detail proposed machinery to be used during excavation/construction.
- If required by Sydney Trains, a Risk Assessment/Management Plan, and a detailed, Safe Work Method Statements (SWMS) for the proposed works, are to be submitted to Sydney Trains for review and comment on the impacts on its rail corridor.
- Prior to the commencement of the relevant stage of works, an acoustic report will be prepared and submitted to the Certifier and Council that demonstrates that the proposed development will comply with State Environmental Planning Policy (Transport and Infrastructure) 2021, and Development Near Rail Corridors and Busy Roads - Interim Guidelines.

5.11 Site Contamination

5.11.1 Contaminated Soil Risk Assessment

A preliminary contamination investigation has been conducted by Geotechnique, as part of the Environmental Impact Statement (EIS) process to assess whether contamination has the potential to exist on the site and to determine whether further investigation is needed. The subsequent report concluded that the site is considered suitable for the proposed use, with the following mitigation measures recommended:

- Development of a Construction Environmental Management plan, including an Unexpected Finds Protocol (refer Section 5.11.8 & Appendix 11).
- Should suspected asbestos containing materials be encountered on site, the affected area is to be fenced off and assessed by a licenced asbestos assessor.
- The fill material encountered beneath the site would be suitable for on-site reuse.
- Should any fill or stockpiled material be required to be disposed off-site, they must first be assessed in accordance with NSW EPA Waste Classification Guidelines Part 1 Classifying Waste (2014) and assigned a waste classification prior to off-site disposal.

The recommended measures will be implemented on the project where required. The Executive Summary from the Preliminary Site Investigation (Contamination) Report is provided at Appendix 8 for reference.

5.11.2 Identification of Contaminated Soil

During construction, it shall be necessary to monitor soil contamination levels (if any), dust levels and water runoff quality, to ensure that health and environmental standards are not compromised. This is especially important as contaminated soil may be excavated and transported around the site.

Upon discovery of contaminated soil, the HY Site Manager shall arrange for works to be ceased immediately in the area as per the Unexpected Finds Protocol and contact the Superintendent for further directions. Contaminated waste shall be collected, contained, stored, handled, and disposed of in accordance with relevant legislation and codes of practice.

5.11.3 Risk of Exposure

It is important to minimise the risk of exposure of construction personnel to soil contaminants by adopting appropriate site controls and industrial hygiene practices. Site controls may include:

- Defining certain areas as contaminated and restricting access to them;
- Appropriate signage;
- Training construction employees in industrial hygiene procedures;
- Keeping non-essential motor vehicles such as personal cars out of contaminated areas;
- Regular medical checks of construction personnel who are exposed to contaminated soils;

- Keeping stockpiles of contaminated material watered down to minimise dust generation in accordance with any water restriction requirements and ensure that runoff is not generated from excessive watering;
- Covering truck loads with tarpaulins and watering material when loading and unloading;
- Wheel washes for trucks and vehicle leaving the contaminated areas;
- Regular road sweeping and cleaning;
- Dust monitoring and adjustment of construction programs to accommodate high risk periods when conditions are windy or very dry; and
- Monitoring of concentrations of volatiles.

Industrial hygiene practices may include:

- Wearing long sleeved shirts and trousers or overalls to minimise dermal exposure;
- Wearing gloves when handling soils;
- Washing hands and faces before eating, drinking, or smoking;
- Leaving overalls at site for laundering;
- Showering and washing facilities; and
- Wearing respiratory equipment during times of high dust or volatile emissions.

5.11.4 Groundwater Management

A report on Geotechnical Investigation by Kleinfelder in December 2022 has been prepared as part of the EIS process, which considers groundwater conditions across the site. The report notes that groundwater was observed at an average depth of 3.2m depth across bore pits. The report concluded that a sum and pump method of groundwater control during construction will be adequate, as well as the retaining walls should be designed to resist appropriate hydraulic loadings

Based on the findings of the report, groundwater is not considered a risk to the site. Notwithstanding, the measures outlined in Section 5.11.5 will be adopted to mitigate the potential contamination of groundwater. Furthermore, the unexpected finds protocols outlined in Section 5.11.8 will be adopted if groundwater is encountered on site.

5.11.5 Release of Contaminants to Soil and Groundwater

Water spraying of stockpiles and of soils being loaded and unloaded from trucks, covering of truck loads with tarpaulins and other measures described in the previous section would minimise the potential for dust to be generated.

If heavily contaminated soil is placed in contact with clean soils, contaminants could be mobilized by rainwater or chemical / physical reactions and affect the clean soils to a limited extent. Similarly, there is a risk that contaminated soil is not clearly differentiated from clean soil and that mistakes could occur which cause the materials to be mixed or wrongly handled or disposed of. This shall be overcome by implementing a material tracking system for all contaminated soils and ensuring that construction staff are trained on how to use the system.

This shall involve documenting areas containing contaminated soil and putting signage near stockpiles that indicated the type of material present and its contamination status. It shall also require supervision and documentation of all movements of contaminated materials around the site.

Avoiding contact between stormwater and contaminated soils is difficult to achieve if larger areas of a site are being exposed within a short period, because it does not allow for minimizing the amount of soil that is uncovered or placed in temporary stockpiles.

Therefore, it is necessary to manage stormwater in such a way that it does not mobilize contaminants and transfer them to clean areas.

This may be achieved by:

- Covering stockpiles of contaminated soil;
- Placing stockpiles of contaminated soil on bitumen or other sealed areas;
- Installation of adequate bunding or other approved method to contain runoff;
- Collecting stormwater run-off from stockpile areas; and
- Analytical testing of collected stormwater prior to its release.

Erosion and sediment control procedures in accordance with the relevant Code of Practice may also be applied, but with the additional objective of keeping water that is exposed to contaminated soils separate from water that has only come into contact with clean soils.

Groundwater could potentially be impacted by contaminants mobilized from stockpiled contaminated soil or by buried material. Minimising runoff from stockpiles, as outlined above would reduce the risk to groundwater.

Land filling of contaminated material which is below the relevant criteria for soil contamination above the water table and capping the landfill area with low permeability material would minimise the risk of groundwater contamination from infiltration of stormwater into buried soils.

5.11.6 Heavy Metal Contamination

Any suspicious industrial wastes encountered will be immediately isolated to enable these assumptions to be confirmed by analytical testing.

5.11.7 Mitigation Strategies

If unexpected conditions are encountered during development work or between sampling locations which may pose a contamination risk, all works should stop, and an environmental consultant shall be engaged to inspect the site and address the issue.

5.11.8 Unexpected Finds

In accordance with *Conditions B21(b) and (c) of SSD-47749715*, unexpected finds protocols must be included within the CEMP to outline the process and associated communications procedure to be followed if unexpected contamination and/or Aboriginal heritage is found through the duration of the project. Unexpected Finds shall be addressed in compliance with the Hansen Yuncken's Unexpected Finds protocol listed below;

Unexpected Finds Protocols – Aboriginal Heritage

In accordance with *Condition C25 of SSD-47749715*, In the event that surface disturbance identifies a new Aboriginal object:

a) all works in the immediate area must halt to prevent any further impacts to the object(s); and contact the Site Manager.

b) Site Manager to construct temporary barricading to prevent worker access to the unexpected find.

c) Site team to contact Client and arrange inspection by a suitably qualified archaeologist, and registered Aboriginal representatives to determine the significance of the object(s);

d) Aboriginal Cultural Heritage consultant to undertake detailed inspection, sampling and analysis

e) If the findings assessed are presenting to be of Aboriginal Cultural Heritage significance, the following steps should be in accordance with the Aboriginal Cultural Heritage consultants' direction.

f) the site is to be registered in the Aboriginal Heritage Information Management System (AHIMS) managed by Heritage NSW, and the management outcome for the site is to be included in the information provided to AHIMS;

g) The DPIE and Heritage NSW will also be contacted in accordance with Section 5.10.2, EIS and ACHA requirements.

h) the Applicant must consult with Aboriginal community representatives, archaeologists and Heritage NSW, to develop and implement management strategies for all objects/sites; and

i) Works in that area will only recommence with the written approval of the Client/Planning Secretary and following confirmation that the findings assessed are not presenting to be of Aboriginal Cultural Heritage significance.

In accordance with *Condition C26 of SSD-47749715* If any unexpected archaeological relics are uncovered during works:

a) all works must cease immediately in that area and notice given to Heritage NSW and the Planning Secretary within two business days of the relics being uncovered;

b) depending on the possible significance of the relics, an archaeological assessment and management strategy may be required before further works can continue in that area, as determined in consultation with Heritage NSW; and

c) works may recommence only with the written approval of the Planning Secretary.

(i) All works will cease immediately in the area where the object(s) are found.

(ii) The Client will be contacted, and notice given to Heritage NSW and the Planning Secretary.

Depending on the possible significance of the relics, an archaeological assessment and management strategy may be required before further works can continue in that area as determined in consultation with Heritage NSW.

Works will only recommence in that area with the written approval of the Client/Planning Secretary.

Unexpected Finds Protocol – Asbestos and contamination

If asbestos is detected in unexpected areas prior to, or during, site development works the following 'Unexpected Finds Protocol' will apply:

a. Upon discovery of suspected asbestos containing material, the Site Manager is to be notified and the affected area closed off using barrier tape and warning signs. Warning signs shall be specific to Asbestos Hazards and shall comply with the AS1319-1994 – Safety Signs for the Occupational Environment.

b. An Occupational Hygienist is to be notified to inspect the area and confirm the presence of asbestos and to determine the extent of remediation works to be undertaken. A report detailing this information would be compiled by the Occupational Hygienist and provided to the Principal (or their representative) and the site manager.

c. The location of the identified asbestos material would be surveyed using sub-meter Differential Global Positioning System (DGPS).

d. If the impacted soil is to be disposed offsite, it should be classified in accordance with the DECCW's Waste Classification Guidelines (2008) and disposed of, as a minimum, as asbestos contaminated waste to a suitably licensed landfill. In dry and windy conditions, the stockpile would be lightly wetted and covered with plastic sheet whilst awaiting disposal.

e. All work associated with asbestos in soil would be undertaken by a contractor holding a class ASA Licence. SafeWork NSW must be notified 7 days in advance of any asbestos works.

f. Monitoring for airborne asbestos fibres is to be carried out during the soil excavation in asbestos contaminated materials.

g. Documentary evidence (weighbridge dockets) of correct disposal is to be provided to the Principal (or their representative).

h. At the completion of the excavation, a clearance inspection is to be carried out and written certification is to be provided by an Occupational Hygienist that the area is safe to be accessed and worked. If required, the filling material remaining in the inspected area can be covered/sealed by an appropriate physical barrier layer of non-asbestos containing material prior to sign–off.

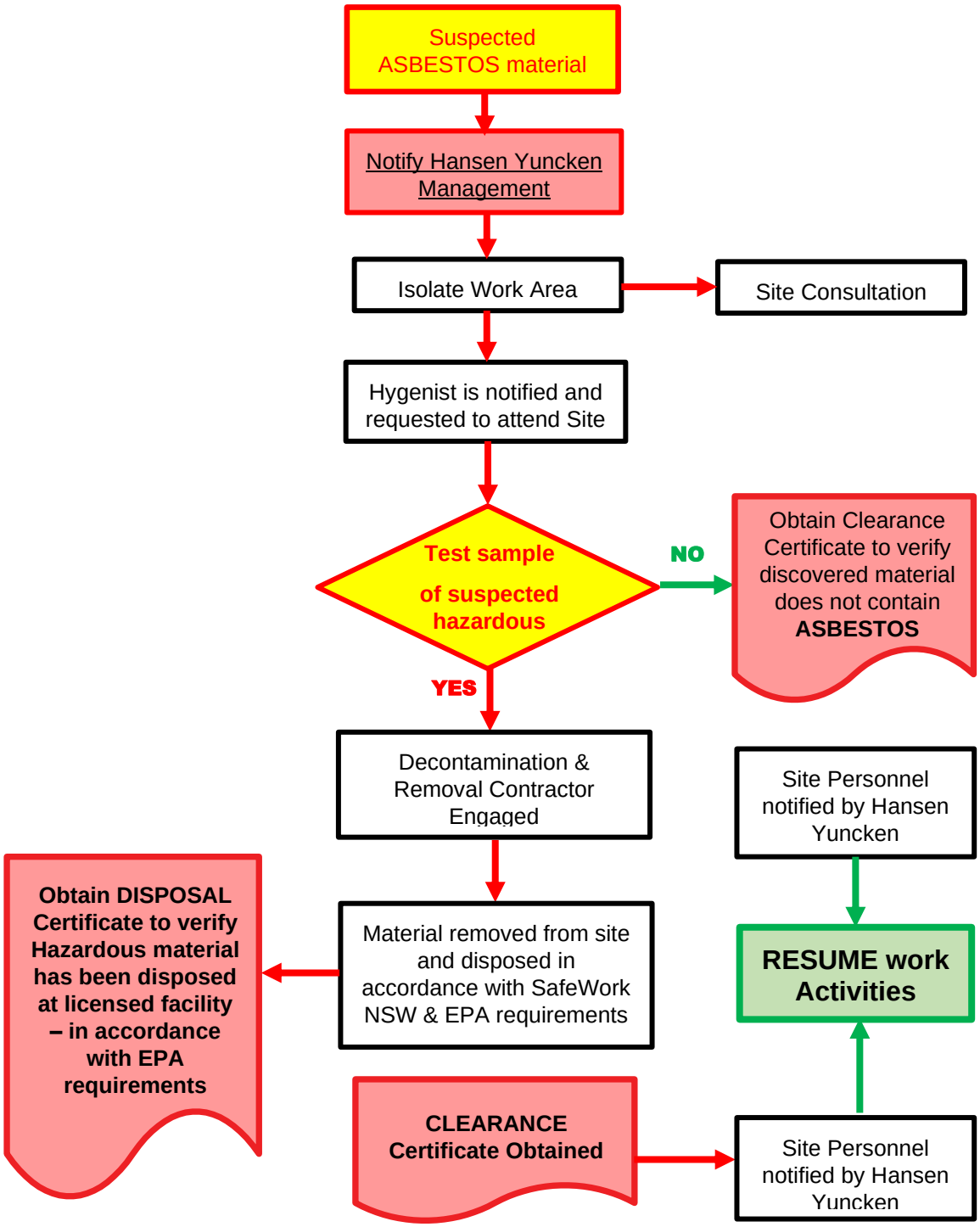
i. Validation samples would be collected from the remedial excavation to confirm the complete removal of the asbestos containing materials. If the asbestos pipes/conduits are uncovered, then sampling density would typically comprise one sample per 10-20 linear meter (depending on the length of the pipe). If asbestos debris are found, then the sampling density would typically comprise 1 sample per 5 metre x 5 metre grid.

j. The sampling locations should be surveyed using a sub-meter DGPS.

k. Details are to be recorded in the site record system.

l. Following clearance by an Occupational Hygienist, the area may be reopened for further excavation or construction work.

Unexpected Finds Protocol - ASBESTOS



5.12 Waste Management

In accordance with *Condition B26 of SSD-47749715*, the Construction Waste Management Plan (CWMP) has been completed for the project and is contained within (Appendix 6). The CWMP contains detailed information regarding the types, estimated quantities, and proposed treatment methods of different waste types throughout the project. Waste management requirements to be adhered to on the project include:

- Maintaining obstruction free access routes between work site and waste storage area, and for waste collection vehicles.
- All waste not being reused on site will be removed during, or at the completion of the construction stage.
- Waste to be collected during hours of approved construction work.
- All vehicles entering or leaving site will be required to have their loads covered.
- The site will be left clear of waste and debris at completion of works.

In accordance with *Condition B26(a),* the waste classification for the project is contained within Appendix 6. Detailed information regarding the treatment and allocation of waste for the duration of the project is contained within the CWMSP.

5.12.1 Waste Reduction

It is likely that some excess building materials will be produced due to the construction work such as miscellaneous waste associated with packaging and transport of plant and equipment and various other manufactured items forming part of the augmentation works. Waste generated as a result of construction will be minimised, recycled, reused, or recovered, where practical.

HY has accepted the challenge to reduce waste on construction projects, particularly in materials transferred to landfill.

The strategy for reducing the waste on the project will be made up of three strategies as detailed below in order of priority. The prime objective is to minimise the amount of materials transferred to landfill from this project.

1. Reduce the amount of waste material produced on the project by ensuring that only enough materials required to perform the works are ordered.
2. Any excess materials from particular work areas are to be retained and incorporated into other work areas where practical.
3. Encourage “just in time” delivery of construction materials (minimum storage on site) to reduce the potential of loss / waste due to damage prior to usage.

5.12.2 Waste Generation – Fill Material

Excavated Natural Material (ENM) generated during earthworks will be retained and reused on site where possible. In accordance with the Construction Waste Management Sub-Plan (Appendix 6) and the Kleinfelder Report on Preliminary Site Investigation (Contamination) (Appendix 8), fill material required to be disposed off-site will first be assessed and assigned a waste classification prior to off-site disposal.

Please refer to the Remedial Action Plan for the site on strategy for reuse and disposal of soil.

5.12.3 Non-Recyclable Waste

Non-recyclable waste will be disposed of at an EPA approved landfill or transfer station.

5.12.4 Waste Collection & Disposal

Appropriate waste bins are to be provided by HY and made available to all S/C

All S/C shall be directed to place waste in the bins provided. This shall be included in the Site Induction.

Waste collection points are nominated on the Site Layout Plan.

HY Have engaged Tiger Waste who will provide a recycling service for the construction waste streams on site. Hy have engaged Suez for co-mingle waste from the site offices/accommodation. HY confirm that there will be no temporary stockpiling of material waste on site.

Waste collection and disposal is in accordance with *Condition B18(b) of SSD-47749715*

5.12.5 Waste Reporting

Waste generation is monitored by HY on a monthly basis to ensure that the company's waste reduction objectives are achieved. Waste disposal quantities are monitored monthly by HY to ensure compliance.

The Project Administrator shall record waste disposal data on BIM360 Field using the waste record checklist.

Waste quantities from the PMR shall be entered into the State HSE Database for analysis and reporting against HY Waste reduction targets.

5.12.6 Concrete Waste & Washout

Concrete trucks and pumps shall be washed out at designated locations as shown on the site layout plan. Washout of concrete pumps and AGI's in other areas will not be permitted.

The rinse water is captured by the membrane placed in the base of the wash out bay. The water evaporates leaving aggregate, sand and cement in the membrane.

On completion of the concrete activities, the remaining concrete waste is removed and placed in concrete / masonry bins and the membrane is placed into plastic bins. Waste shall be placed in bins for disposal with site waste.

5.12.7 Mitigation Strategies

- Accurate written records are to be kept such as:
  - Who transported the waste (company name, ABN, vehicle registration and driver details, date and time of transport, description of waste)
  - Copies of waste dockets/receipts for the waste facility (date and time of delivery, name and address of the facility, it's ABN, contact person).
- The construction contractor is to ensure that waste generated by the works is transported to a place that can lawfully accept it as per Section 143 of the *Protection of the Environment Operations Act* 1997.
- The removal of any asbestos containing material if found is only to be undertaken by an appropriately licenced contractor as per SafeWork NSW requirements and current guidelines.
- All waste, including excess spoil be recycled where practicable
- Trucks transporting spoil off site to be covered.
- The EPA is to be notified immediately of any pollution incidents or harm to the environment (as defined under Part 5.7 of the POEO Act).

5.13 Visual

The project has minimal visual impact to neighbouring properties. The visual impact has been assessed through the SSDA within the Environmental Impact Statement (EIS).

5.14 Environmental Complaints

Complaints received regarding HY's Environmental Impacts or performance shall be recorded as a complaint in accordance with Hansen Yuncken's. Actions are then to be taken to address the complaint.

5.15 Fuel & Chemical Spills

Response to major fuel spills shall be implemented in accordance with the fuel spill procedure in the Emergency Response Plan. The requirements for storage of large fuel and chemical quantities are not expected for this project.

A spill kit shall be located adjacent to fuel and chemical storage and dispensing areas.

5.16 Hazardous Materials

Hazardous materials shall be controlled in accordance with Hazardous Materials procedures.

5.17 External Lighting

In accordance with *Condition B21(vi) of SSD-47749715*, the external lighting to the proposed UON Central Coast Campus complies with AS1158.3.1:2005 – Lighting for Roads and Public Spaces and AS4282-2019 – Control of the Obstructive Effects of Outdoor Lighting. A copy of this certificate verifying the compliance with these Australian Standards is provided at Appendix 10.

5.18 Community Consultation and Complaints Handling

In accordance with *Condition B15(a) (vi) of SSD-47749715*, community consultation and complaints handling is primarily the responsibility of the Client. Hansen Yuncken will provide assistance where possible to ensure that the client is complying with the requirements of the Community Communication Strategy developed for the UON Central Coast Campus in accordance with *Condition B9 of SSD-47749715*. Also refer to the Communications & Engagement Management Plan.

5.18.1 Community Consultation

Community consultation is primarily the responsibility of the client. Hansen Yuncken will ensure that the relevant strategies/outcomes are incorporated within the relevant management plans and construction process where possible. The client will use a number of tools and techniques to keep stakeholders and the local community involved.

5.18.2 Complaints Handling

Hansen Yuncken will provide assistance through the complaints handling process. During the project delivery phase, a complaint is defined as in regard to construction impacts – *such as* – safety, dust, noise, traffic, congestion, loss of parking, contamination, loss of amenity, hours of work, property damage, property access, service disruption, conduct or behaviour of construction workers or other environmental impacts. If a complaint is made directly to Hansen Yuncken, it will be redirected to the correct UoN communication channels:

Upon receipt of the complaint, Hansen Yuncken will endeavour to close out the complaint in a timely manner. The complaint will be logged to ensure that the impact of future construction works that may impact the community in a similar manner are minimised. Any complaints received will be advised as appropriate or form part of the monthly reporting.

Measurement & Evaluation

6.1 Environmental Incidents & Emergencies

6.1.1 Environmental Incidents

Incidents resulting in potential or actual environmental damage shall be reported and investigated in accordance with the Hansen Yuncken's HSE Incident Procedure and recorded on BIM360 using the HSE incident report

6.1.2 Environmental Emergencies

Preparation for and response to the environmental impacts of emergency events shall be conducted in accordance with Hansen Yuncken's project Emergency Response Plan (ERP). The environmental impacts controlled in the ERP are;

Asbestos Exposure

If during works, personnel become accidentally exposed to asbestos, the following procedures shall be followed:

1. Personnel in the immediate affected area shall cease work and immediately go to the emergency showers on site.
2. All contaminated clothing is to be removed and placed into a thick plastic bag. The plastic bag must then be tightly sealed and labelled as "Asbestos Contaminated Clothing".
3. Personnel are to immediately decontaminate themselves in a shower and a clean set of clothes to be re-issued.
4. Asbestos contaminated clothing is to be industrially cleaned or disposed of appropriately

Water Pollution

An incident involving actual or potential harm to human or environmental health must be reported immediately to the EPA.

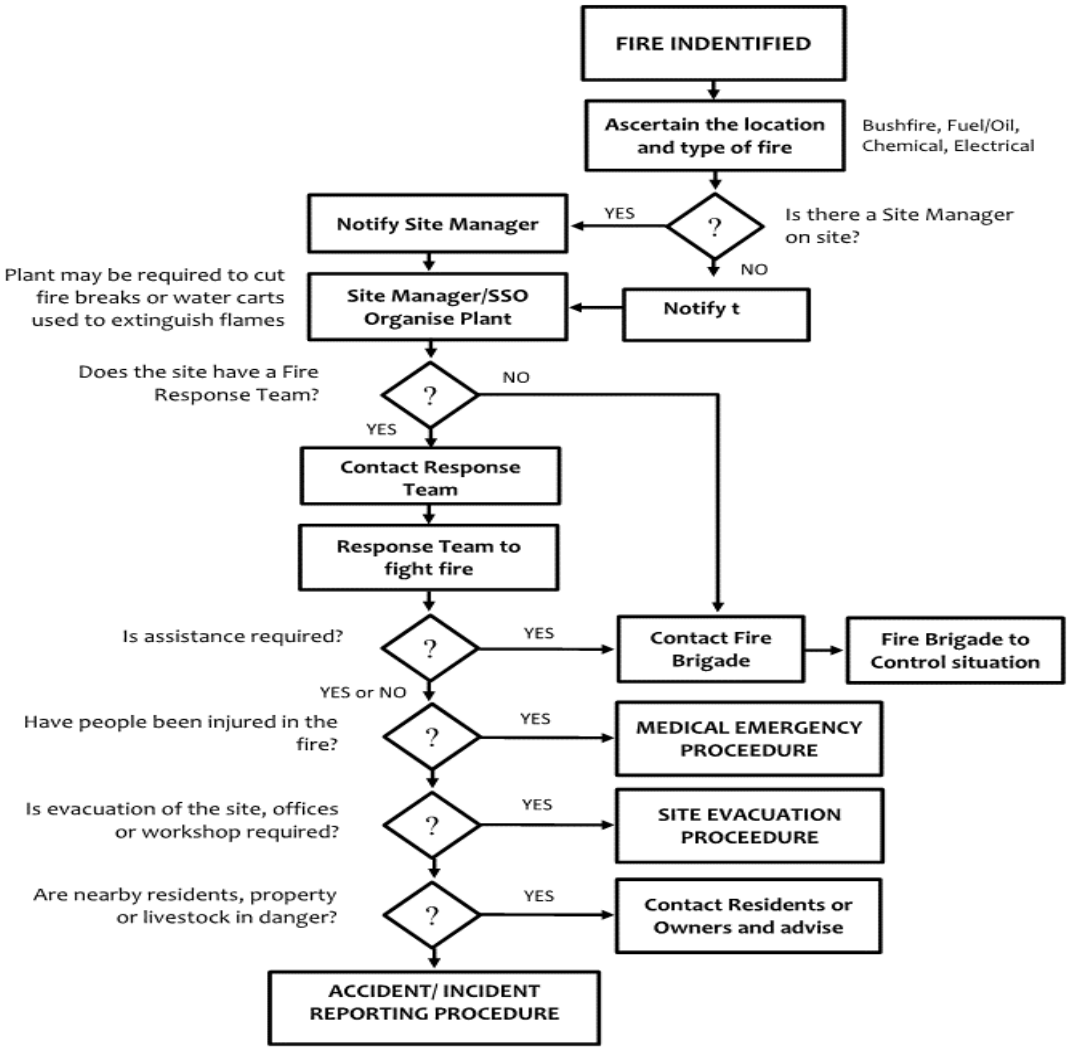
Firstly, call 000 if the incident presents an immediate threat to human health or property. Fire and Rescue NSW, the NSW Police and the NSW Ambulance Service are the first responders, as they are responsible for controlling and containing incidents.

If the incident does not require an initial combat agency, or once the 000 call has been made, notify the HY Site Manager who will notify the relevant authorities in the following order. The 24-hour hotline for each authority is given when available:

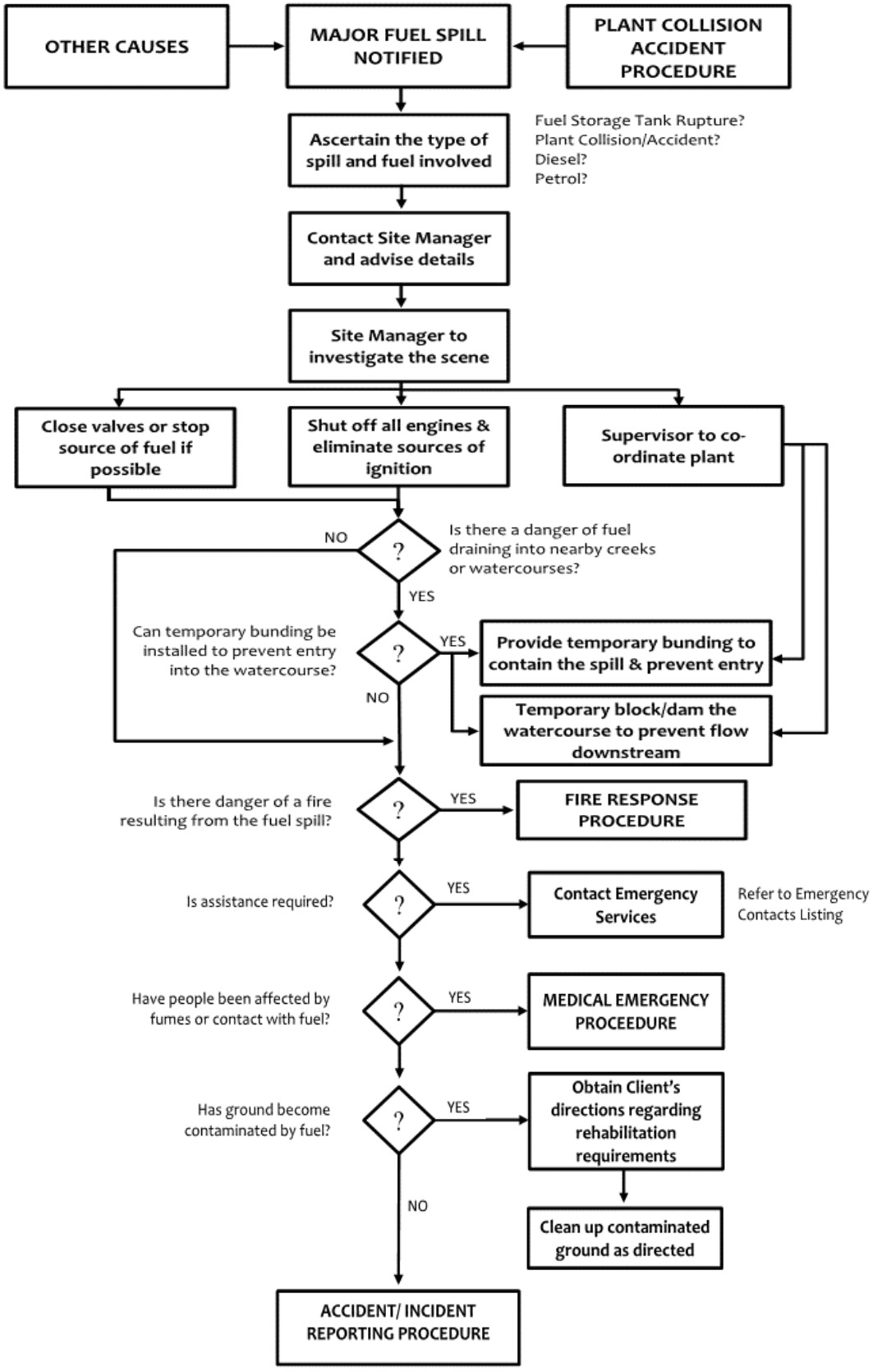
EPA Environment Line on 131 555

SafeWork NSW Authority – phone 13 10 50 (Where appropriate)

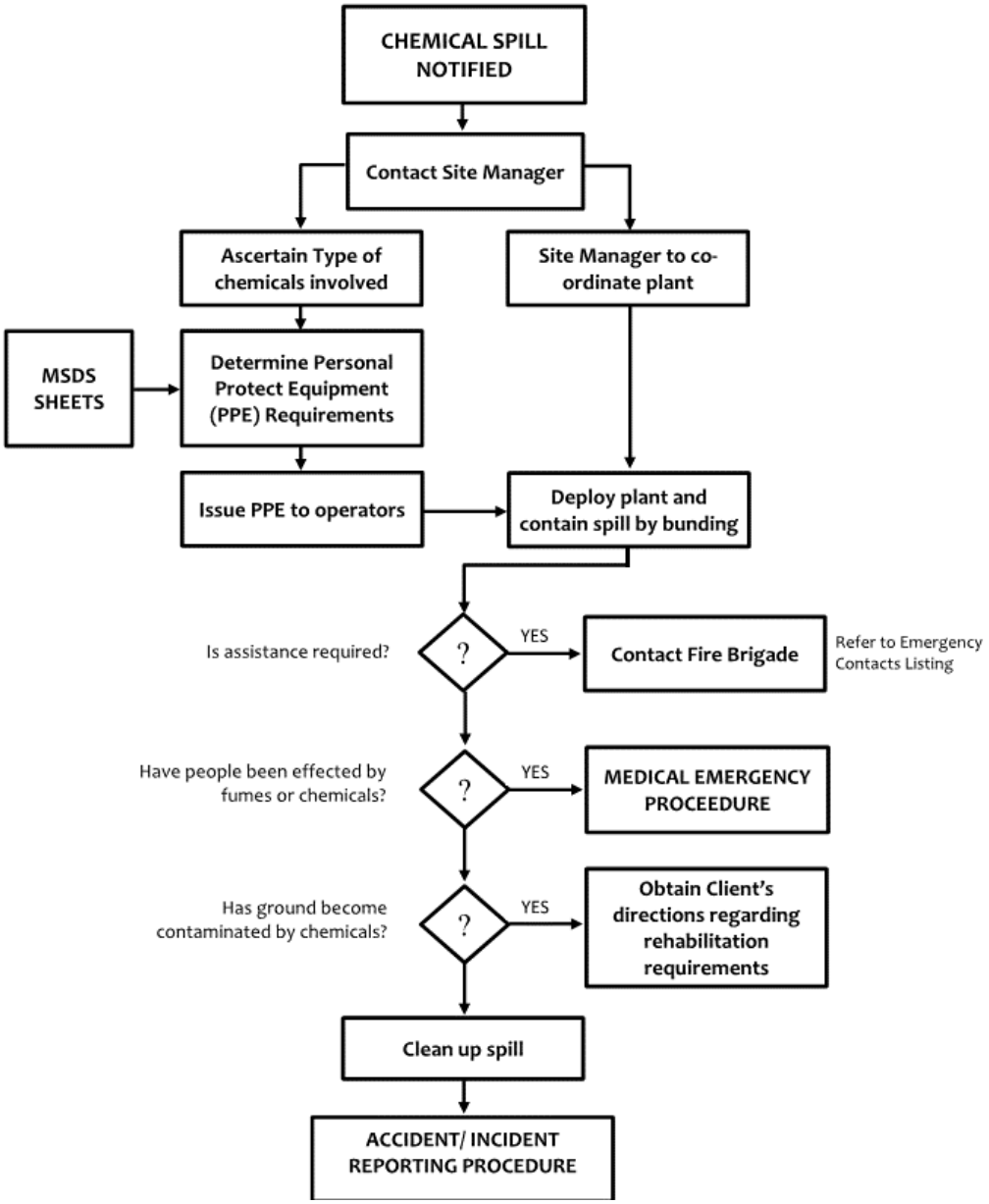
Fire


FIRE INDENTIFIED
Ascertain the location and type of fire
Bushfire, Fuel/Oil, Chemical, Electrical
Is there a Site Manager on site?
YES
NO
Notify Site Manager
Notify t
Site Manager/SSO Organise Plant
Plant may be required to cut fire breaks or water carts used to extinguish flames
Does the site have a Fire Response Team?
NO
YES
Contact Response Team
Response Team to fight fire
Is assistance required?
YES
Contact Fire Brigade
Fire Brigade to Control situation
YES or NO
Have people been injured in the fire?
YES
MEDICAL EMERGENCY PROCEEDURE
Is evacuation of the site, offices or workshop required?
YES
SITE EVACUATION PROCEEDURE
Are nearby residents, property or livestock in danger?
YES
Contact Residents or Owners and advise
ACCIDENT/ INCIDENT REPORTING PROCEDURE

Major Fuel Spill



Chemical Spill



6.2 Environmental Inspections & Audits

Inspections & audits of the site including environmental controls shall be conducted in accordance with the procedure for Site HSE Inspections & the project Audit Management Plan. The following inspections will be conducted onsite throughout the time on the project:

- Weekly site inspections,
- Monthly task observations,
- Geosyntec 6 monthly independent audits, and
- External audits in line with the contract requirements and as required under *Condition A26 of SSD-47749715*

6.2.1 Non-Conformances

Where an item has been assessed as Non-Conformance (NC) during any internal inspection an issue shall be raised in BIM360 Field to bring the activity or process into compliance with requirements. The issue(s) shall be recorded in BIM360 Field and allocated to the relevant contractor/subcontractor.

The independent consultant in writing shall raise all items assessed as non-conformance during external audits and HY will address all issues and close out within the time frame advised.

HY shall ensure that product/ works which does not conform to specified requirements are identified and controlled to prevent its unintended use or delivery. A nonconformance shall be raised when:

- Works/products not meeting specified requirements are identified; and/or
- Works have not been inspected or tested in accordance with specified requirements (frequency, method, authority); and/or
- A systematic and/or repeated omission/error that may result in a time or cost implication to the project.

If the Non-Conformance (NC) is determined to be a Non-Compliance (in accordance with the definition outlined in SSD-47749715) then *Conditions A29-A33* shall be followed.

6.2.2 Reporting & Corrective Actions

All nonconformities will result in corrective action being undertaken. The significance of nonconformities shall be evaluated in terms of their impact on:

- operating costs,
- cost of nonconformity and its correction,
- product performance,
- regulatory requirements,
- client satisfaction, and
- any other risks

HY project management shall undertake the following actions to investigate the causes of nonconformities specific to the project in order to prevent recurrence.

- identify nonconformities that relate to products, QMS processes, resources, subcontractors and outsourced work, and client complaints;
- review and determine the causes of nonconformities using problem solving tools such as the root cause analysis process - Process Workflow flowchart - to determine the underlying root cause(s) of the nonconformity;
- evaluate the need for corrective action to minimise the occurrence of identified nonconformities;
- determine and implement the corrective action needed; and
- monitor the corrective actions taken and record the results to determine if further improvement is necessary to get it right.
- Notification procedures in accordance with *Condition A30 of SSD-47749715*.

Actions taken to eliminate the cause of nonconformity must flow from the root cause analysis and may involve changes to product, process, resources, methods, equipment, etc. or any combination of these. Records of the actions taken, and follow-up activities shall be monitored and maintained by the project to ensure timely completion of any open corrective action. Corrective action records shall be monitored on an ongoing basis for any recurrence of the nonconformity where corrective action was taken.

Communication and reporting channels will generally be in accordance with section 4.8. Notwithstanding, HY will provide appropriate notification to APP and UoN as described below:

- Site conditions –
  - If the Contractor becomes aware of Adverse Site Conditions, the Contractor will notify the Principal in writing as soon as possible and in any event within 7 days after becoming aware of the Adverse Site Conditions. Where practicable, the notification should be given before the Adverse Site Conditions are disturbed. The notification must include details of:
    1. the Site Conditions the Contractor claims are Adverse Site Conditions,
    2. the reasons why the Contractor claims that the Site Conditions are Adverse Site Conditions, including any information supporting the contention,
    3. the effect on the works,
    4. the effect on achieving completion,
    5. the additional work and resources involved and the Contractor's estimate of its entitlement to any adjustment to the contract price, and
    6. any other matters the contractor considers relevant.
- Notify the Principal immediately upon discovering any damaged services or services that obstruct the works and are not shown in the principal's documents.
- WHS –
  - The Contractor is to notify the Principal and Project Manager of an incident that has occurred onsite by submitting a high-level written correspondence within the same day of occurrence and follow up with a detailed final report within 48 hours of occurrence of any incident.
  - Notify the Principal of any notifiable incident and any incident requiring medical treatment or involving lost time as soon as reasonably practicable after the incident. Provide a written report to the Principal within 24 hours after the incident, giving details of the incident and evidence that requirements of the WHS Act have been met.
  - Immediately notify the Principal of any Prohibition, Improvement, Non-disturbance, or Penalty Notice issued by SafeWork NSW for any work under the contract.

- Hazardous substances discovered unexpectedly on the site –
  - If any nominated hazardous substance is discovered unexpectedly on the site, the Contractor must suspend all work that may result in exposure to the substance and notify the Principal immediately of the type of substance and its location.
  - Not less than 7 days prior to starting any asbestos removal work, notify the local office of SafeWork NSW and the Principal of the intention to carry out that work.
- Environmental Management –
  - Immediately notify the Principal of any pollution incident that may cause material harm to the environment, providing evidence that notification requirements of the POEO Act have been met, where applicable.

The client is responsible for all appropriate notifications to DPIE.

6.3 Environmental Management Plan (EMP) Review

The EMP will be regularly reviewed as part of a continual improvement process to ensure it remains current and relevant to the project.

HY's standard EMP review timeframe is 6 monthly. Additional triggers for review include;

- an incident (as defined by the conditions of consent);
- any non-compliance with the conditions of consent or other legal requirement;
- any non-conformance with any other environmental requirements;
- audit findings (internal, external and/or independent);
- project modifications approved by the consent or approval authority;
- changes to legislative requirements;

If this EMP is revised in any consequential way, it will be submitted to the Department for assessment and approval in accordance with the requirements of any relevant conditions of consent. If a revised EMP is submitted to the Department Hansen Yuncken will provide a summary of the changes made and the circumstance/s that triggered the review and revision.

References

Environmental Planning and Assessment Act 1979 No 203

Environmental Planning and Assessment Regulation 2000

Protection of the Environment Operations Act 1997 (NSW)

Protection of the Environment Operations (General) Regulation 2009

ISO 14001; 2015 Environmental management systems - Requirements with guidance for use

AS/NZS ISO 31000:2009 Risk management – Principles and guidelines

HB158:2010 Delivering assurance based on ISO 31000:2009 – Risk management – Principles and guidelines

NSW Government Environmental Management System Guidelines (edition 3 - August 2013)

NSW Government Environmental Management Plan Guideline (April 2020)

Appendices

8.1 Appendix 1 - Hansen Yuncken Environmental Policy Statement

HANSENYUNCKEN

ENVIRONMENT POLICY

At Hansen Yuncken we mitigate our impact as much as reasonably practical to protect the environment during our operation in the building and construction industry, which meets the requirements and expectations of Clients, Statutory Authorities, Employees and Community Groups.

We affirm our legal obligation to comply with relevant environmental legislation, standards and codes of practice as the minimum level of performance and a professional obligation to acknowledge the views of Environmental and Community Groups.

Hansen Yuncken recognises that impacts on the environment in the building and construction industry relate not only to the process of construction but also to the design and subsequent use of the buildings constructed. We affirm our commitment to applying sustainable development principles to all facets of the building and construction process and to continually improve our performance in minimising the impact on, and pollution of, the environment during the construction process.

The Business Performance Committee shall review environmental objectives and set performance targets each year to ensure continual improvement through our 2020/23 Health Safety Environment & Quality (HSEQ) Strategic Plan. State Managers, through their line management structure, are accountable for ensuring all workers achieve these objectives and targets.

The Environment Business Function Workgroup shall monitor compliance with this policy and performance against our objectives and targets and this shall be reported to the CEO and Board of Directors on a regular basis.

In achieving this Hansen Yuncken is committed to the implementation, maintenance and improvement of a Management System complying with:

- ISO 14001:2015 Environment Management Systems

Hansen Yuncken acknowledge that environmental excellence can only be achieved and maintained through clear direction by all levels of management and commitment to continual improvement.

Training, education and awareness are critical to Hansen Yuncken's success in environmental management. Communicating and fostering a collaborative relationship with our workers results in advancement and further pride in our environmental achievements by all workers and stakeholders

Peter Salveson
Chief Executive Officer
January 2022

Page 1 of 1

8.2 Appendix 2 - Environmental Management Accreditation - ISO14001

CERTIFICATE OF REGISTRATION

Hansen Yuncken Pty Ltd

SCP, Building 1, Level 3, 75-85 O'Riordan Street, Alexandria NSW 2015 Australia
Suite 12/125 Bull Street, Newcastle West NSW 2302 Australia
and transient sites

complies with the requirements of

ISO 9001:2015
Quality Management Systems – Requirements
and
ISO 14001:2015
Environmental Management Systems – Requirements with guidance for use

for the following capability:

This registration covers the Quality and Environmental Management Systems for the provision of project management and the design and construction of commercial, industrial and institutional buildings and civil engineering works.

Registered by:
Quality Control Services (Environmental) Pty Ltd
ABN 16 994 323 622
10 Rosina Street Woodcroft South Australia 5162 Australia

This certificate is subject to the Terms and Conditions for Certification, and relevant program rules. Currency of certification can be validated at www.qcse.com.au and www.jas-anz.org/ase-directory/certified-organisations; it remains the property of QCSE Pty Ltd and must be returned upon request.

Certificate Number: 160052025
Issue Date: 11 February 2022

Original Certification: 23 February 2010
Expiry Date: 22 February 2025

cAStone

Cheryl Stone
Certification Manager

QMS/EMS Certified Company
Licence Number: Q0160

8.3 Appendix 3 - HSE Project Risk Assessment

As attached.

HANSENYUNCKEN

PROJECT HSE RISK ASSESSMENT

This Project HSE Risk Assessment is to beused as aguide when completing the monthly Project High Risk Identification assessment on HYWAY Site Management Dashboard in accordance with the Project HSE Risk Assessment procedure and should be conducted at the time of Construction programme statusing to assess hazards and risks for next month. Hazards with residual risk from the Design WHS Risk Assessment (if applicable) are also to be considered.

RELEVANT PROCEDURE:	Project HSE Risk Assessment
PROJECT:	UON Central Coast Campus
JOB NO:	SN109
ASSESSED BY:	Robert Schmitzer, Dale Reith
ASSESSMENT DATE:	14-Sep-23

RISK ASSESSMENT TABLE

		Consequence				
		1	2	3	4	5
	Likelihood	Insignificant	Minor	Moderate	Major	Significant
5	Very Likely	Medium	High	High	High	High
4	Likely	Medium	Medium	High	High	High
3	Possible	Low	Medium	Medium	High	High
2	Remotely Possible	Low	Medium	Medium	Medium	High
1	Very Unlikely	Low	Low	Low	Medium	Medium

	RISK ASSESSMENT			CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)		RESIDUAL RISK ASSESSMENT		
HAZARD (Include additional project specific hazards as required)	**L**	**C**	**Class**	**Legislation, Standards & Codes of Practice**	**Enter Details of Specific Controls Required**	**L**	**C**	**Class**
Amenities								
Access	4	1	Medium	NSW Code Of Practice: Managing the work Environment and Facilities	Wide concrete footpaths have been installed for safe access to all amenities in the compound area. The compound area is fenced off to protect workers from moving plant, trucks and vehicles	2	1	Low
Location and nature of workplace	3	2	Medium	NSW Code Of Practice: Managing the work Environment and Facilities	All amenities are set up in a compound area at the main entry to site making it easy for access and egress in emergency situations	1	2	Low
Housekeeping	3	2	Medium	NSW Code Of Practice: Managing the work Environment and Facilities	A full time cleaner is engaged to manage and maintain all amenities.	1	2	Low
Seating	2	2	Medium	NSW Code Of Practice: Managing the work Environment and Facilities	Sufficient seating is in place for all workers to rest, take breaks and eat lunch	1	2	Low
Lighting (Poor)	3	2	Medium	NSW Code Of Practice: Managing the work Environment and Facilities	Lighting is setup in all amentities for safe access	1	2	Low
Air Quality	3	2	Medium	NSW Code Of Practice: Managing the work Environment and Facilities	Windows, fans and airconditioning are installed to all site sheds	1	2	Low
Hot and Cold Environment	2	2	Medium	NSW Code Of Practice: Managing the work Environment and Facilities	Air conditioning installed to all lunch sheds, bubblers at each working level	1	2	Low
Drinking water	3	2	Medium	NSW Code Of Practice: Managing the work Environment and Facilities	Bubbler set up at lunch sheds and varoius locations throughout site	1	2	Low
Dining Facilities	3	2	Medium	NSW Code Of Practice: Managing the work Environment and Facilities	Clean and tidy tables are available in all lunch sheds. There is sufficient space for all workers to site down and have lunch	1	2	Low
Hand washing	3	2	Medium	NSW Code Of Practice: Managing the work Environment and Facilities	Warm water, soap and hand dryers are available in the toilets	1	2	Low
Shower Facilities	3	2	Medium	NSW Code Of Practice: Managing the work Environment and Facilities	Hot showers are provided on site	1	2	Low
Change Room	3	2	Medium	NSW Code Of Practice: Managing the work Environment and Facilities	Change rooms with benching and coat hooks are proivded on site for workers to change clothes	1	2	Low
Air Quality								
Dust from plant & truck movements	5	4	Medium	Environmental MangementPlan	Water cart to conduct regular laps of the site spraying water on the ground to keep dust settled particularly where there is high plant and truck movements. Temporary water has been installed at several locations around site.	2	4	Medium
Refuelling of plant and equipment	4	4	High	AS/NZS 1715 Selection, use and maintenance of respiratory protective devices AS/NZS 1716 Respiratory protection devices	All refuelling is to be conducted in well ventilated areas only. Refuelling to be conducted clear of any hot works on site such as grinding, welding etc	2	4	Medium
Concrete cutting / coring	3	5	High	NSW Cutting & Drilling Concrete & Other Masonry Products 1996	Water must be used to minimise dust. Demolition saws take preference over dry cutting with a masonry blade on an angle grinder. Rubble to cleaned up immediately. Slurry to be cleaned up immediately	1	5	Medium
Access/ Egress and movements around site								
Workers entering site without Hansen Yuncken permission would be unaware of any specific site hazards eg, asbestos, gas lines, high risk construction work etc	3	2	High	NSW Code Of Practice: Consultation, coordination and cooperation	All workers must be site inducted by Hansen Yuncken prior to entering site. This is clearly marked on the contact details sign at the main entry to site. Subcontractors must give Hansen Yuncken site staff sufficient notice prior to workers attending site to be site inducted. All workers on site to display a HY UON CCC photo ID at all times and sign into the site attendance register on a Daily Basis after they have been Inducted.	1	2	Low
Visitors entering site without Hansen Yuncken permission would be unaware of site hazards eg, asbestos, gas lines etc	3	5	Low	NSW Code Of Practice: Consultation, coordination and cooperation	All visitors must sign in at the site office prior to entering site. Signs have been erected clearly stating this. Visitors must display a ID card and be escorted by an inducted guide at all times. Visitors entering site must have approval from the Site Manager.	1	5	Medium
Pedestrians/ workers walking around site being struck by vehicles/trucks/ plant moving around site	2	1	Low	NSW Code of Practice: Moving Plant On Construction Sites	Bunted/fenced off pedestrian pathways have been erected on site to keep pedestrians clear of areas where there are high movements of vehicles/ trucks and plant. All subcontractors using moving plant must have a HRCW SWMS which details how to protect other workers in the area from being struck by the plant. All plant must have a flashing light, horn and reversing beeper. Vehicles/ trucks must turn their flashing lights on. There is a 10km/h speed limit on site. All workers have been told at the site induction to be aware of moving plant on site and keep clear whenever possible. Only workers who are involved with the task are to be in the vicinity of the plant. HY have instructed all subcontractors to train their workers through pre-start meetings on how to approach moving plant and equipment. Haul roads for plant and vehicles are to be maintained. Pedestrians are to avoid walking on haul road whenever possible. Plant operators are to keep reversing to a minimum. Pedestrians that need to approach moving plant are to do so from the front of the machine and are to gain the operators attention by waving arms and yelling out to the operator. No person is to approach the machine until the operator has stopped moving the machine and signalled that it is safe to approach. Spotters working with machines must always stand in an area where they are visible to the operator. A site spotter/ delineation plan has been proposed to and approved by the site safety committee. This plan states areas where a spotter is mandatory for all plant and vehicle movements. This plan is posted on the site notice board.	1	1	Low
Public being struck by trucks entering and exiting site	2	3	Medium	NSW Code Of Practice: How to manage work health and safety risks	Traffic control is in place managing vehicle and pedestrian movements at main entry to site	1	3	Low
Subcontractors bringing vehicles onto site without Hansen Yuncken permission	4	4	High	Work Health and Safety Management Plan	All subcontractors must seek approval from the Hansen Yuncken Site Manager prior to bringing vehicles/ trucks onto site.	2	4	Medium
Workers slipping/ tripping over on muddy/ uneven ground	3	3	Medium	Work Health and Safety Management Plan	Pedestrian pathways have been constructed to minimise slip and trip hazards. Wheel ruts, eroded ground, muddy haul roads and pathways are to be bladed back to solid ground as required. On rain days the foreman & safety committee (when established) is to walk the site prior to work commencing and determine which areas are safe for work and which areas are no go zones.	1	3	Low
Vehicles becoming bogged or losing traction whilst entering/ exiting and driving around site	1	4	Medium		Vehicles to be driven on solid ground only. No vehicles will be allowed to drive on muddy terrain	1	4	Medium
Collisions between plant on site	1	3	Low		Sufficient distance to be kept between all plant on site. Flashing light, horn and reversing beeper must be working. Plant and vehicles to stay on haul roads whenever possible. Site speed limit is 10km/h	1	3	Low
Too many vehicles parked on site creating restricted access around site	NA	4	#N/A		No Parking onsite. A designated area has been provided by Hansen Yuncken for Subcontractor or Visitor Parking.	NA	4	#N/A

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PROJECT HSE RISK ASSESSMENT

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RELEVANT PROCEDURE:	Project HSE Risk Assessment
PROJECT:	UON Central Coast Campus
JOB NO:	SN109
ASSESSED BY:	Robert Schmitzer, Dale Reith
ASSESSMENT DATE:	14-Sep-23

RISK ASSESSMENT TABLE

		Consequence				
		1	2	3	4	5
	Likelihood	Insignificant	Minor	Moderate	Major	Significant
5	Very Likely	Medium	High	High	High	High
4	Likely	Medium	Medium	High	High	High
3	Possible	Low	Medium	Medium	High	High
2	Remotely Possible	Low	Medium	Medium	Medium	High
1	Very Unlikely	Low	Low	Low	Medium	Medium

	RISK ASSESSMENT			CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)		RESIDUAL RISK ASSESSMENT		
HAZARD (Include additional project specific hazards as required)	**L**	**C**	**Class**	**Legislation, Standards & Codes of Practice**	**Enter Details of Specific Controls Required**	**L**	**C**	**Class**
Delivery vehicle drivers unaware of site hazards	3	4	Medium	NSW Code of Practice: managing risks of plant in the workplace	All delivery drivers must complete a 'delivery driver induction' prior to entering site. A delivery driver induction is an abridged induction similar to a visitors induction. 1.All delivery drivers must follow the directions of traffic controllers, traffic control devices and signage when entering the project from Wright lane Newcastle.. 2.Speed limits must be complied with. 3.Delivery drivers will enter the site through Gate 1 and park up immediately inside the gate 4.Delivery Drivers are to make contact with the company responsible for the delivery. 5.The relevant trade supervisor will proceed to Gate 1 and escort the delivery driver to the Hansen Yuncken site office. 6.Delivery drivers who have not previously been on site are to undertake the Delivery Driver induction. 7.Delivery drivers who have previously been on site are to sign in as visitors at the gate house. 8.Delivery drivers will be issued with a Delivery Driver Induction identification number that is used to indicate that their access/egress is authorised and controlled by Hansen Yuncken. 9.Delivery drivers are expected to display the Delivery Driver Induction identification number where it is visible while on site. 10.Delivery drivers are to be escorted at all times by the relevant subcontractor supervisor. DRIVERS ARE PROHIBITED TO DRIVE ANYWHERE ON SITE WITHOUT AN ESCORT 11.Flashing lights or hazard lights are to be turned on whilst manoeuvring around site. 12.All drivers MUST wear the following protective clothing: • Safety Footwear; • Hi-visibility clothing • Hard Hat; • Gloves (if manual handling is being undertaken). 13.Delivery drivers must remain in the designated "Driver Safe Zone" 14.After loading/unloading, all drivers must be escorted from the site by the relevant subcontractor supervisor. 15.Failure to follow any of the site rules and requirements of this delivery process will result in the driver being removed from site immediately and will prohibit the driver from accessing site until they have been re-inducted into the process. IF ANY OF THE ABOVE PROCEDURES ARE NOT COMPLIED WITH, YOUR DELIVERY DRIVER WILL NOT BE PERMITTED TO UNLOAD AND WILL BE ASKED TO LEAVE SITE UNTIL THEY COMPLY! YUCKEN/SUBCONTRACTOR SUPERVISOR DAILY PRESTART MEETING THE DELIVERY WILL NOT BE GIVEN PERMISSION TO ENTER SITE	1	4	Medium
Delivery vehicle unloading in an unsafe area eg. in an area where there is mobile plant or pedestrians frequently moving past	3	2	Medium	Site Work Health and Safety Management Plan	The subcontractor supervisor must have good communication with the delivery driver and escort him to the work area where the delivery is to be unloaded. The s/c supervisor must take charge and assist the driver to unload materials from the truck. Exclusion zones to keep people clear of loading/unloading areas will consist of bollards, flagging and with Danger Loading/unloading area – no go zone signage. Delivery Driver Safe Zone Fence panels will be installed off the exclusion zone where the delivery driver will remain during loading/unloading activities. This driver safe zone must be on the same side of the vehicle where mobile plant is operating so the operator has line of sight with the delivery driver at all times. A "driver safe zone" sign will be attached to the barriers.	1	2	Low

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PROJECT HSE RISK ASSESSMENT

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RISK ASSESSMENT TABLE

	Likelihood	Consequence 1 Insignificant	2 Minor	3 Moderate	4 Major	5 Significant
5	Very Likely	Medium	High	High	High	High
4	Likely	Medium	Medium	High	High	High
3	Possible	Low	Medium	Medium	High	High
2	Remotely Possible	Low	Medium	Medium	Medium	High
1	Very Unlikely	Low	Low	Low	Medium	Medium

	RISK ASSESSMENT			CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)		RESIDUAL RISK ASSESSMENT		
HAZARD (Include additional project specific hazards as required)	**L**	**C**	**Class**	**Legislation, Standards & Codes of Practice**	**Enter Details of Specific Controls Required**	**L**	**C**	**Class**
Asbestos								
Workers being exposed to the asbestos contaminated soil (ACM) at various locations around site	NA	3	#N/A	Working with asbestos guide 2008	An independent Environmental consultant (JBS&G) has been engaged by HY and whilst the contamination scope is outside of HY's contractural obligations, under the direction and approval of DOJ, HY can engage JBS&G identify any areas that may potentially deemd to contain asbestos contaminated soil or material on site. An unexpedted finds protocol can be established that will also address the 'remedial action plan / strategy' to be adopted in such instance.	NA	3	#N/A
Unidentified finds of asbestos	3	3	Medium	Work Health and Safety Management Plan Code of Practice: How to manage and control asbestos in the workplace Code of Practice: How to safely remove asbestos NWHSC 2002 - 2005 Safe Removal of Asbestos NWHSC 2018 - 2005 Management & Control of Asbestos	If asbestos is found stop work immediately and notify HY site staff immediately whom will arrange for the asbestos to be removed safely. Area to be closed off with bunting/ red white tape and warning signage	2	3	Medium
Atmosphere - Contaminated/ Flammable								
Flammable fumes from fuel containers	3	4	High	NSW Code of Practice: Storage and Handling of Dangerous Goods	Fuel to be stored in fuel storage areas only. Fuel drums are to be placed back in the fuel storage area after refuelling has been completed. No refuelling near any hot works being undertaken. All subcontractors must have a 'refuelling SWMS'	2	4	Medium
Unsafe storage of fuel	3	4	High	AS/NZS 2430 Classification of hazardous areas	Fuel must be stored in ventilated cages. No fuel to be stored in shipping containers	2	4	Medium
Fumes from spray selear application to carpark slab	2	4	Medium	AS1318 Use of colour for the marking of physical hazards and the identification of certain equipment in industry	Applicators must wear mask whilst spray painting. Warning signage to be erected and all other personnel not involved with the task are to be clear of the area	1	4	Medium
Biological Hazards								
Disease from unhygienic facilities and amenities	1	4	Medium	NSW Code Of Practice: HIV and other blood-born pathogens in the workplace WHS Management Plan NSW: Code Of Practice: Work Place Amenities	A cleaner has been engaged by Hansen Yuncken to clean amenities. Amenities to be kept clean and tidy at all times	1	4	Medium
Bomb Threat								
Persons unaware of what to do in the event of an emergency	1	5	Medium	HY Emergency Response Plan AS 2293 Emergency escape lighting and exit signs for buildings AS 3745: 2002 Emergency Control Organisation and Procedures For Buildings, Structures and Workplaces	Emergency response procedure is explained to all workers at the site induction. HY to practice fire drills every 6 months to ensure the system is working.	1	5	Medium
Changes in design								
Changes in design could result in new hazards not being identified	1	4	Medium	Work Health and Safety Management Plan	All design changes must be risk assessed by HY. Refer Safety in Deisgn Schedule. Subcontractor SWMS will be reviewed by HY as required	1	4	Medium
Craning & Hoisting Operations								
Persons/ other trades on site walking into the crane slew area may be struck by crane or load	2	4	Medium	AS 2550: Cranes, hoists & winches - Safe Use Work Health and Safety Management Plan	The work area around all cranes must be fully barricaded eg bunting and signposted to keep other workers clear.	1	4	Medium
Slings or chains failing resulting in loss of load	1	4	Medium	AS 1418.1: Cranes, hoists and winches – General Requirements AS 4991 Lifting Devices Work Health and Safety Management Plan	Subcontractors must keep an up to date register of all chains and slings. All equipment must be visually checked daily prior to use.	1	4	Medium
Crane out riggers sinking in ground resulting in crane rolling over	2	4	Medium	NWork Health and Safety ManagementC 1010: National Standard for Plant Work Health and Safety Management Plan	Subcontractor SWMS to detail craning and hoisting operations. Subcontractor to communicate with HY staff and obtain a plant setup permit prior to setting up cranes to ensure outriggers are not set up over underground services or in unstable ground conditions.	1	4	Medium
Crane striking structures whilst slewing	3	4	High	AS 1418.10(Int): Cranes, hoists and winches - Elevating work platforms Work Health and Safety Management Plan	Dogman and crane operator to constantly communicate with each other. Crane operator to take directions from dogman only.	1	4	Medium

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PROJECT HSE RISK ASSESSMENT

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3	Possible	Low	Medium	Medium	High	High
2	Remotely Possible	Low	Medium	Medium	Medium	High
1	Very Unlikely	Low	Low	Low	Medium	Medium

	RISK ASSESSMENT			CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)		RESIDUAL RISK ASSESSMENT		
HAZARD (Include additional project specific hazards as required)	**L**	**C**	**Class**	**Legislation, Standards & Codes of Practice**	**Enter Details of Specific Controls Required**	**L**	**C**	**Class**
Concrete								
Concrete Pumping - overload formwork structure	3	4	High	NSW Code Of Practice: Pumping Concrete 1993	Spotter to be used when positioning boom over formwork	2	4	Medium
Trip hazard after excess concrete has cured	2	4	Medium	Environmental Protection Act 1994	Back to plant policy for large amounts of excess concrete	1	4	Medium
Slip hazard from excess water and slurry on the ground/ concrete washout	3	4	High	Work Health and Safety Management Plan	Concrete washout to be set up in area where water will not run over pedestrian pathways. Generally plastic is rolled out on the ground. The hopper is washed out onto the plastic, the concrete cures then is placed in a skip bin the following day	1	4	Medium
Slurry and wet concrete entering stormwater drains	2	5	High	Work Health and Safety Management Plan	The concrete washout area will constantly move on site to suite site conditions. The HY site foreman will determine where the wash out area will be on the day of any concrete pours.	1	5	Medium
No designated washout area could result in truck drivers washing out wherever they please leaving the site messy and untidy	2	4	Medium	Work Health and Safety Management Plan	Excess concrete from washing out the pump is to be placed onto plastic, allowed to set then placed into the skip bin with a telehandler	1	4	Medium
Concrete cutting / coring - dust	4	4	High	Work Health and Safety Management Plan	Water must be used to minimise dust. Demolition saws take preference over dry cutting with a masonry blade on an angle grinder. Rubble to cleaned up immediately. Slurry to be cleaned up immediately	2	4	Medium
Confined Space								
Poor ventilation inside in-ground pits	3	4	High	NWHSC 1009: Safe Working in a Confined Space AS 2865: Confined Spaces NSW Code of Practice: Confined spaces	No chemicals are to be used inside in-ground pits. Close supervision of all men working inside pits at all times. Lid to be kept open at all times. Sparging up of pits is to be conducted as pit risers are installed to minimise the need to enter the pit afterwards	1	4	Medium
Workers unable to easily enter and exit trenches	2	3	Medium	Work Health and Safety Management Plan	All trenches over 1.5m must be benched at 1:1 at a maximum of 1.5m or battered at 45 degrees. A ramp or steps must be cut into the trench for easy pedestrian access.	1	3	Low
Workers being overcome by fumes building up in open trenches	2	3	Medium	NSW WHS Regulation 2017: Part 4.3 Confined spaces	All open trenching has good ventilation. Refuelling does not occur inside open trenches. Oxy acetylene equipment is kept clear of open trenching.	1	3	Low
Contaminated Soil								
Exposure to contaminated soil which has not been identified	3	3	Medium	AS 4482: Guide to the investigation & sampling of sites with potentially contaminated soil NSW Environment Operations Act 1997 Work Health and Safety Management Plan	An unexpected finds protocol has been established for the site and included in Induction. .	1	3	Low
Deliveries To Site								
Delivery vehicle drivers unaware of site hazards	3	4	High	NSW Code of Practice: Moving Plant On Construction Sites: 2004	All delivery drivers must complete a 'delivery driver induction' immediately upon entering site. Signage indicating requirement.	1	4	Medium
Delivery vehicle unloading in an unsafe area eg. in an area where there is mobile plant or pedestrians frequently moving past	3	2	Medium	Delivery Driver Brief Work Health and Safety Management Plan	The subcontractor supervisor must have good communication with the delivery driver and escort him to the work area where the delivery is to be unloaded. The s/c supervisor must take charge and assist the driver to unload materials from the truck.	2	2	Medium
Pedestrians/ other workers in the area being struck by materials as they are being unloaded from the truck	3	4	High	Traffic Management Plan	All delivery drivers are told at the 'delivery driver induction' to be aware of any pedestrians/ other workers in the area. Delivery drivers must ensure they have enough space to unload/ load materials from trucks safely. If they have any problems they must notify HY staff immediately whom will assist the driver to undertake their task safely. Subcontractors must manage and supervise their deliveries on site. Subcontractors must spot the driver whilst materials are being unloaded and warn other workers in the area to keep well clear.	1	4	Medium
Untrained delivery drivers using plant to unload goods	1	3	Low	Work Health and Safety Management Plan	SWMS must be in place for subcontractors using plant to unload their delivery	1	3	Low
Drugs & Alcohol								
Persons under the influence of drugs or alcohol are at high risk of injuring themselves or others	1	4	Medium	Alcohol and other drugs in the workplace guide - 2006	Persons assumed to be under the influence of drugs or alcohol will be stopped from working immediately. Their employer will be notified who will investigate and take appropriate action as per their drug and alcohol policy.	1	4	Medium

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PROJECT:	UON Central Coast Campus
JOB NO:	SN109
ASSESSED BY:	Robert Schmitzer, Dale Reith
ASSESSMENT DATE:	14-Sep-23

RISK ASSESSMENT TABLE

	Likelihood	Consequence 1	2	3	4	5
		Insignificant	Minor	Moderate	Major	Significant
5	Very Likely	Medium	High	High	High	High
4	Likely	Medium	Medium	High	High	High
3	Possible	Low	Medium	Medium	High	High
2	Remotely Possible	Low	Medium	Medium	Medium	High
1	Very Unlikely	Low	Low	Low	Medium	Medium

	RISK ASSESSMENT			CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)		RESIDUAL RISK ASSESSMENT		
HAZARD (Include additional project specific hazards as required)	**L**	**C**	**Class**	**Legislation, Standards & Codes of Practice**	**Enter Details of Specific Controls Required**	**L**	**C**	**Class**
Dust								
Disruption/ nuisance to neighbours and client	2	3	Medium	NSW Code of Practice: Control Of Workplace Hazardous Substances	Shade cloth installation to site perimeter fence to contain all dust within the construction site.	2	3	Medium
Eye injuries and respirable damage to workers	2	4	Medium	AS/NZS 1336 Recommended practices for occupational eye protection	Water carts and hoses used to keep dust to a minimum. Plant and trucks to move at low speeds to keep dust settled. Eye protection to be worn for any task that creates large amounts of dust	1	4	Medium
Dust from wall chasing	NA	4	#N/A	AS/NZS 1715 Selection, use and maintenance of respiratory protective devices	Dust must be minimised whilst wall chasing by way of vacuum system. Workers must wear dust mask whilst wall chasing. Rooms are to be swept frequently to minimise dust	1	4	Medium
Concrete cutting / coring	1	4	Medium	AS/NZS 1716 Respiratory protection devices NSW Cutting & Drilling Concrete & Other Masonry Products 1996 Work Health and Safety Management Plan	Water must be used to minimise dust. Demolition saws take preference over dry cutting with a masonry blade on an angle grinder. Rubble to cleaned up immediately. Slurry to be cleaned up immediately . HY Cutting amnd Coring permit in place.	1	4	Medium
Electricity								
Electrocution from faulty/ damaged electrical equipment	2	4	Medium	AS/NZS 3017: Electrical installations - Testing & inspection guidelines	All power tools/ leads must be visually checked daily and tested and tagged monthly. Damaged leads and power tools are not to be used on site. Lead are to be elevated off the ground to minimise risk of electrical leads being damaged.	1	4	Medium
Electrocution from faulty/ damaged Distribution boards	3	4	High	Work Health and Safety Management Plan	HY DB Board checklist to be completed for all DB boards. All temporary distribution boards will be inspected, tested and tagged monthly. All RCD's to be padlocked and only reset by a qualified electrician.	1	4	Medium
Workers tripping on leads	3	3	Medium	AS/NZS 3199 Approval & test specification for cord extension sets	All power leads must be elevated off the ground. A maximum of 5m may be on the ground for general movements in the area whilst using the power tool.	1	3	Low
Electrocution from temporary construction wiring being damaged	3	4	High	NSW Low Voltage Electrical Work 2002	All temporary construction must be labelled with 'yellow temporary construction wiring tape'. All temporary construction wiring will be inspected and recorded on the site HSE inspection report weekly.	1	4	Medium
Working around energised live Substation	1	4	Medium	AS/NZS 3000: Electrical Installations	All subcontractors conducting excavation works must obtain a permit to dig from HY site staff. A plan with existing underground services must be attached to the permit to dig.	1	4	Medium
Workers piggy backing leads	2	3	Medium	AS 3012: Electrical Installations - Construction & Demolition Sites AS 3190: Approval & test specification - Residual current devices AS/NZS 3001 Electrical installations - Relocatable premises and their site installations NSW: Code Of Practice: Electrical Practices for Construction Work AS3760: 2010 In-service safety inspection and testing of electrical equipment NSW Code Of Practice: Electrical Practices for Construction Work 2007	Portable generators must be used if electrical leads cant reach from the DB board to the work area so a power source is close to the work area.	1	4	Medium
Emergency Services Unavailability								
Injured person may not receive first aid treatment in a sufficient amount of time	2	3	Medium	WHS Act 2011 Code of Practice: First Aid HY emergency response plan	Emergency contact details are displayed on the site safety notice board in the lunch shed and in the first aid room. All HY site staff have senior first aid training.There are 2 type A first aid kits in thesite office. One is portable and one is fixed to the wall. There is a defibrillator in the HY site office. The first aid facilities have been setup in accordance with Code Of Practice: First Aid taking into account the number of workers on site, response times and types of injuries which may occur on site.	1	3	Low
Site Emergencies	3	3	Medium	WHS Regulation 2017	HY emergency response plan details actions to be taken for different types of emergencies	2	3	Medium
Erosion/ Loss of Topsoil								
Sediment entering stormwater systems	2	3	Medium	Environmental Protection Act 1994	All stormwater pits to be covered with sediment control fabric. Sediment barrier to be erected around the low perimeter of site perimeter fencing in accordance with the site sediment control plan. Sediment control to be inspected weekly and recorded on the site HSE inspection report. All de-watering of site must be pumped into damns or tanks. The water must be flocked, tested and approved by HY prior to being pumped into the existing stormwater system. Permit to discharge required to any release into the SW system.	1	3	Low
Erosion causing perimeter scaffolding to become unstable	1	3	Low	Environmental Management Plan	All perimeter scaffolding to be checked following significant rainfall and rectified by scaffolder as required.	1	3	Low

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5	Very Likely	Medium	High	High	High	High
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3	Possible	Low	Medium	Medium	High	High
2	Remotely Possible	Low	Medium	Medium	Medium	High
1	Very Unlikely	Low	Low	Low	Medium	Medium

HAZARD (Include additional project specific hazards as required)	RISK ASSESSMENT L	C	Class	CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks) Legislation, Standards & Codes of Practice	Enter Details of Specific Controls Required	RESIDUAL RISK ASSESSMENT L	C	Class
Existing services								
Damage to existing services could cause major disruption to the client eg. live power, security cables etc.	2	3	Medium	NSW Code Of Practice: Excavation 2004 Work Health and Safety Management Plan	Subcontractors are available to repair services in the event they are damaged	1	3	Low
PLANT OPERATORS STRIKING UNDERGROUND SERVICES WHILST UNDERTAKING TRENCHING/ EXCAVATION WORKS	3	4	High	Ausgrid National Standard NS 156 - Working near or around underground cables Work Health and Safety Management Plan	A permit to dig system is in place on this site. All known existing services have been marked up on the site plans. Pot holing and hand digging must occur when working around existing services. Striking existing underground services has been listed as a hazard on all subcontractor SWMS involving excavation works	1	4	Medium
Excavators digging trenches accidently striking recently installed and charged up hydrant lines throughout the site	1	2	Low	Jemena Guidelines Construction Activities Near & Over Jemena Gas Networks Assets Work Health and Safety Management Plan	A plan has been issued to all subcontractors notifying them of existing services, which is updated with site installation works.	1	2	Low
Explosive Powered Tools								
Eye and hearing damage	2	4	Medium	Work Health and Safety Management Plan	Eye and hearing protection must be worn. Workers must be closely supervised by their supervisor	1	4	Medium
Excavations								
Excavation over 1.5m	3	3	Medium	NSW Code Of Practice: Excavation Work	All trenches over 1.5m must be benched at 1:1 at a maximum of 1.5m or battered at 45 degrees unless stated otherwise by a geotechnical engineers report. A ramp or steps must be cut into the trench for easy pedestrian access.Shoring boxes to be used for trenches greater than 1.5 m deep if benching is not possible	1	3	Low
Large stockpiles of spoil creating blind spots for plant operators and truck drivers	1	3	Low	NSW Code Of Practice: Moving Plant On Construction Sites 2004	Plant operators must neatly stockpile all spoil and limit the height of the stockpile to maintain good vision. Plant operators are to avoid stockpiling spoil next to bends on haul roads.	1	3	Low
Trench collapse trapping workers	3	4	High	AS 2763 Vibration and shock - hand transmitted vibration - guidelines for measurement and assessment of human exposure	Any trenching in unstable ground is to be benched/ battered. If the excavation reaches rock or shale and benching/ battering is not practical geotechnical engineers signoff is required. A ramp must also be cut into the end of trench for emergency access/ egress.	1	4	Medium
Plant eg. mobile crane set up too close to a trench could result in trench collapse and plant roll over	3	2	Medium	Work Health and Safety Management Plan	All plant must be set up clear of the zone of influence	1	4	Medium
Plant outriggers sinking into ground resulting in plant roll over.	3	4	High	AS 3798 Guidelines on earthworks for commercial & residential developments	Plant must only be set up on solid ground and sufficient pig sty packing/ sole plates placed underneath out riggers. Sole plates are to be used underneath EWP stabilizers if the ground is soft. Ground conditions to be constantly checked during and after rain fall.	1	4	Medium
Open trenches restricting access for vehicles and pedestrians around site	3	4	High	Before U Dig Legislation	Pedestrian / vehicle/ plant access must be kept clear at all times around site. Alternative access routes are to be set up prior to trenching across pathways and roadways.	1	4	Medium
Building materials/ stockpiles stored near trench could result in trench collapse	3	3	Medium		Materials and equipment must not be stored within the 'zone of influence'	1	3	Low
Different trades working in the same area at the same time could strike each other with mobile plant	3	2	Medium		Daily pre-starts and SWMS detail how to work around moving plant on site including plant used by other trades eg. spotters, barricade the work area, signage etc	1	2	Low
Damage to existing buildings from vibrations caused by machinery	1	4	Medium	Noise and Vibration Mnt Plan	Background DB monitored. Non vibratory rollers used.	1	4	Medium
Formwork								
Formwork collapse	3	4	High	Code of Practice: Formwork	Formwork must be certified by a qualified engineer that it is structurally sound and able to safely support loads that may be applied by the concrete pour, workers, reinforcement & crane lifted loads. Once engineer's inspection complete ensure any additional back propping is installed if required. Place plant and materials on formwork and falsework only where allowed for by the design and when the structure or deck is sufficiently constructed so it is able to bear the load	1	4	Medium
Fall from heights	3	4	High		Spread first section of joist on beam from intermediate work platform and only access the deck to start laying ply once the joist are down and handrail is in place. Use scaffold to gain access to deck to start laying plywood When you sheet up to 1.8m from end of joist lay next section of joist NEVER sheet to the end of the joist even if there is a catch deck in place Lay joist across bearers fixed at a spacing of 450 maximum to prevent any possibility of falls while construction of the deck. Establish working areas for steelfixers & other trades. A 'formwork only' zone should be maintained behind the leading edge. This zone should be clearly demarcated by signage and a barrier. Protect open penetrations with edge protection (e.g. handrails) or cover securely. Cast5in metal mesh with a small aperture (e.g. 50 x 50 mm mesh size or smaller) for small penetrations. Paint ply covers with appropriate warnings (e.g. "PENO" or similar) and fasten securely.	2	4	Medium
Cuts/ impalement on starter bars	3	4	High		Safety caps to be fitted to all starter bars wherever there is a risk that a person may fall on one.	1	4	Medium
Fall prevention/ arrest equipment								
Failure of fall arrest equipment	2	5	High	HY emergency response plan AS/NZS 1891: Industrial fall arrest systems and devices	All safety harnesses and lanyards must be visually checked daily. Safety harness is the last form of control and other forms of fall protection should be used such as perimeter scaffolding, EWP, handrails etc Maintenance and inspection records in subcontractor safety management plans to be kept up to date Roof anchor points must be certified prior to use Rescue procedure for rescuing persons in fall arrest must be developed prior to persons using safety harnesses	1	5	Medium

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	RISK ASSESSMENT			CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)		RESIDUAL RISK ASSESSMENT		
HAZARD (Include additional project specific hazards as required)	L	C	Class	Legislation, Standards & Codes of Practice	Enter Details of Specific Controls Required	L	C	Class
Fall from heights								
Workers falling into open trenches	3	3	Medium	AS 1418.1: Cranes, hoists and winches – General Requirements	All open trenches must be bunted off at least 1m from the edge of the trench. Where there are high movements of pedestrians an plant then a solid barrier such as a temporary mesh	1	3	Low
Workers falling into open penetrations (eg in-ground pits)	3	3	Medium	WHS Regulation 2017 Part 4.4 Falls	All penetrations to be covered with and secured and the wording "peno" or "do not remove" sprayed onto the plywood	1	3	Low
Workers falling from ladders	3	3	Medium	NSW Code Of Practice: Managing the risk of falls at workplaces	Ladders are to used in accordance with the HY ladder policy. Ladders are the last resort for height access and other means of height access should be used eg EWP's, mobile scaffolding, platform ladders etc. Standard A frame ladders can be used but only for short duration works or tight restricted spaces such as small rooms where a scissor lift will not fit. Ladders with 4 steps or less are not permitted on site	1	3	Low
Bricklayers falling from trestle scaffold	4	4	High	AS 4576: Guidelines for scaffolding	Bricklayers must install a handrail to the scaffold and a ladder for safe access/egress. Trestle scaffold must be set up correctly on solid ground	2	4	Medium
Fall from scaffold	1	4	Medium	AS 1576: Scaffold general requirements	Modular stairs to be installed at the same time as decks are installed for safe access to each deck. Handrails must be installed from deck below prior to accessing the deck above. Ends must be closed off with trannys. Scaffolder will erect 'danger scaffold incomplete' signage until the scaffold is ready for use and a handover certificate has been issued to HY. All trades have been made aware not to alter the scaffold under any circumstance.	1	4	Medium
Personnel falling into open trenches or off the edges of batters and excavations	2	4	Medium	Emergency Response Plan	All open trenches and along the top edge of batters must be bunted off at least 1m from the edge of the trench. Deep trenching must be benched every 1.5m so that a person can only fall a maximum of 1.5m.	1	4	Medium
Fall from mobile scaffold	3	4	High	Scaffold erection guide (comes with scaffold)	All mobile scaffolding must be built as per the manufacturers instructions. Handrails and midrails must be in place. Any scaffold where a person can fall more than 4m must be erected by a licenced scaffolder.	1	4	Medium
Workers falling from heights	3	4	High	Work Health and Safety Management Plan	Roof access permit must be obtained by the roofer prior to accessing the roof. Perimeter scaffold or handrail must be in place for fall protection. Safety mesh must be installed correctly as per Code Of Practice: Safe Work On Roofs: Part 1	2	4	Medium
Falls into bored piers	1	3	Low	AS/NZS 1892 Portable Ladders	Bored piers must be fully covered with plywood or mesh to eliminate risk of workers falling into the hole. Deep excavation signs are to be erected and the are fully bunted off. Best practice is to fill the hole with concrete as soon as possible.	1	3	Low
Falling objects								
Pallets of blocks stacked too high could tip over and injure a person	1	4	Medium	Workcover Bricklayers guide	Pallets of blocks must be stacked on level ground no more than 2 pallets high	1	4	Medium
Scaffold parts could fall/ be knocked off the deck and injure workers below	3	3	Medium	AS 1576: Scaffold general requirements	All excess scaffold material must remain on the ground. No excess scaffold material is to be left lying on scaffold decks	2	3	Medium
Formwork and reo materials falling from deck onto persons below	3	3	Medium		All FRP materials must be stacked neatly clear from edge of deck. If this is not possible then kick boards must be put in place	1	3	Low
Building material and tools falling from scaffold decks	3	3	Medium	Work Health and Safety Management Plan	Edge boards to be fitted to all scaffold decks. Materials stored on scaffolding is to be kept to a minimum and removed from decks daily. If possible do not store materials on scaffold at all.	1	3	Low
Falling materials from EWP's	2	3	Medium	AS/NZS 2210 Occupational protective footwear	No worker is to walk underneath an elevated EWP. All EWP operation must have a spotter or the area must be fully barricaded off with red/white tape, bunting or flagging or signage in place	1	3	Low
Loose materials and rocks from walls of trenches falling onto workers within the trench	2	3	Medium	AS/NZS 1800 Occupational protective helmets - Selection, care & use	N/A this month. No access to any open trenches for workers unless the walls of the trench are stable. Geotech sign off required for trenching over 1.5m	1	3	Low
Materials left behind after works finish eg. loose bolts, off cuts etc	4	2	Medium	AS/NZS 1801 Occupational protective helmets	Work areas at heights must be checked daily and loose items brought down to ground level.	1	2	Low
Falling Glass Panels	3	3	Medium		Glass Panel suction units to have 2 separate suction motors on each unit.	1	2	Low
Fauna (protected or endangered species)								
Snakes and insects in long grass	2	3	Medium	Environmental Protection Act Environmental Management Plan	Weeds and long grass alongside pedestrian pathways around the site are to be cut back with a wipper snipper	1	3	Low
Fire								
Chemical and fuel spills may cause a fire	1	3	Low	Emergency Response Plan	A;BE Powder type fire extinguishers are installed at several locations strategically placed around the site	1	3	Low
Sparks from hot works eg welding, grinding may cause a fire	2	3	Medium	AS 2444: Portable fire extinguishers & fire blankets - selection and location AS/NZS 1850 Portable fire extinguishers - Classification, rating and performance testing	All subcontractors must obtain a hot works permit from HY staff. The permit will detail any controls required for undertaking the task	1	3	Low
Flammable materials stored on site may ignite from hot works in the area	2	2	Medium	NSW Code of Practice: Control Of Workplace Hazardous Substances	Hazardous materials must be stored in cool, dry areas away from ignition sources and flammable material signage installed.	1	2	Low
Fuel drums could catch on fire from sources of ignition	2	4	Medium	AS 3745 Emergency control organisation and procedures for buildings, structures and workplaces	Fuel drums are to be put away when not in use in a storage cage in a well ventilated area	1	4	Medium
Workers could be seriously injured whilst attempting to extinguish fire	1	4	Medium	AS 2444 Portable fire extinguishers and blankets - Selection & location	All workers are told at site induction not to place themselves at risk and not to try and fight the fire	1	4	Medium
Time taken to obtain fire extinguisher in the event of an emergency	2	3	Medium	AS/NZS 1841 Portable fire extinguishers	Fire extinguishers are places strategically around site for easy/ fast access. Locations of fire extinguishers are on the site layout plan	1	3	Low
Poor maintenance of fire extinguishers	1	4	Medium	AS 2375 Guide to the selection, care & use of clothing for protection against heat & fire	Fire extinguishers are to be tagged every 6 months by a competent person	1	4	Medium
Breach of Total Fire Ban	1	5	N/A	AS 1851 Maintenance of fire protection systems & equipment	Hansen Yuncken have appiplied to the local Fire Brigade in writing for an exemption. This has been approved as per Schedule 14 (D) of the NSW Government Gazette No. 11	1	5	Medium

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First aid								
Persons unaware of what to do if an individual requires first aid	1	4	Medium	WHS Regulation 2017	Emergency response plan posted on site notice board. All workers explained of the location of the first aid room and contact details for site first aiders.	1	4	Medium
Injured person not receiving first aid treatment quickly enough due to the site being so large	2	3	Medium	Work injury management and workers compensation act 1988	Site staff to communicate by way of mobile phones and 2 way radios. A first aid room is set up in the HY compound area. Within the first aid room is a fixed type A kit and portable type A kit for rapid response.	1	3	Low
It may not be possible to take the injured person to the first aid room because of the seriousness of their injuries	1	4	Medium	First aid in the workplace: Code of Practice: July 2012	Access routes to be kept clear around site for emergency vehicles	1	4	Medium
Inadequate first aid supply's	1	3	Low	Work Health and Safety Management Plan	First aid room to be set up with portable and fixed first type A first aid kits, stretcher, defibrillator, ice packs, sun cream, eye wash and examination couch as per Code of Practice: First Aid .	1	3	Low
Inadequately trained first aiders/ insufficient number of first aiders	1	3	Low	Emergency Response Plan	HY Site Foreman must have Apply First Aid type certification. HY Safety Officer must have Occupational First aid certificate	1	3	Low
Persons working alone unable to raise the alarm	1	3	Low	Emergency Response Plan	No person is to work alone. There must be another person in the area at all times. This is told to all workers at site induction	1	3	Low
Heart attack/ stroke	2	4	Medium	Emergency Response Plan	Defibrillator to be kept in first aid room	1	4	Medium
Maximum number of workers	2	4	Medium	Emergency Response Plan	>100	1	4	Medium
Number of other persons	1	4	Medium	Emergency Response Plan	Expected to have a maximum of 3-4 at any one time	1	4	Medium
Site hours	1	3	Low	Emergency Response Plan	7:00am - 6:00pm Monday - Friday 8:00am - 1:00pm Saturday. No Works on Sundays or Public Holidays. A first aid qualified person from Hansen Yuncken is on site at all times	1	4	Medium
Average hours worked by a worker	1	3	Low	Emergency Response Plan	Workers generally work 8-9 hours per day	1	4	Medium
Remote or isolated works	1	3	Low	Emergency Response Plan	Workers are not permitted to work alone. There must be atleast 2 workers in the same area at all times. Due to the nature of the site it is unlikely any worker will be isolated or work alone	1	4	Medium
Incidents not resulting in injury	1	2	Low	Emergency Response Plan	Incidents have occurred where excavator operators have struck existing live underground electrical cables - defibrillator will be required in the event persons are electrocuted	1	4	Medium
Cuts and abrasions	1	2	Low	Emergency Response Plan	Type A first aid kit has contents for treating these types of injuries	1	4	Medium
Sprains and strains	1	2	Low	Emergency Response Plan	Ice packs and instant cold packs to be available	1	4	Medium
Eye injuries	2	4	Medium	Emergency Response Plan	Eye wash station to be set up in first aid room	1	4	Medium
Burns	2	4	Medium	Emergency Response Plan	Burn cream and non adherent wound dressings	1	4	Medium
Fractures	2	4	Medium	Emergency Response Plan	Type A first kit and a stretcher for moving injured workers	1	4	Medium
Dislocations	2	4	Medium	Emergency Response Plan	Type A first aid kit has triangle slings	1	4	Medium
Poisoning and toxic effect of substances	1	5	Medium	Emergency Response Plan	Safety data sheets available for all substances used. Oxy viva system to be kept in first aid room	1	4	Medium
Heat stroke	2	4	Medium	Emergency Response Plan	Ice packs and cold water on standby. Subcontractors have been addressed at side induction to take breaks, work in shade wherever possible., job rotation etc	1	4	Medium

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PROJECT HSE RISK ASSESSMENT

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PROJECT:	UON Central Coast Campus
JOB NO:	SN109
ASSESSED BY:	Robert Schmitzer, Dale Reith
ASSESSMENT DATE:	14-Sep-23

RISK ASSESSMENT TABLE

		Consequence				
		1	2	3	4	5
	Likelihood	Insignificant	Minor	Moderate	Major	Significant
5	Very Likely	Medium	High	High	High	High
4	Likely	Medium	Medium	High	High	High
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2	Remotely Possible	Low	Medium	Medium	Medium	High
1	Very Unlikely	Low	Low	Low	Medium	Medium

	RISK ASSESSMENT			CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)		RESIDUAL RISK ASSESSMENT		
HAZARD (Include additional project specific hazards as required)	**L**	**C**	**Class**	**Legislation, Standards & Codes of Practice**	**Enter Details of Specific Controls Required**	**L**	**C**	**Class**
Ground Collapse/poor ground								
Plant roll over from sinking in unstable ground conditions	3	3	Medium	Work Health and Safety Management Plan	Subcontractors to complete a plant risk assessment prior to operating plant. Plant will not be operated in unstable ground conditions. If the ground is too soft or uneven then the ground will be bladed back to solid ground prior to plant operating on it. All subcontractors must obtain a HY plant setup permit prior to operating plant with outriggers. Concrete boom pumps and mobile cranes must obtain a geotechnical engineers report stating the ground is stable and able to take the weight of the crane and load being lifted. Site to be inspected by the Site Manager and HSR following heavy rain prior to work commencing the next day	1	3	Low
Vehicles/ plant could become bogged in soft muddy ground	2	4	Medium	National Standard For Plant: 10:10 (1994)	Temporary roadways have been rolled and compacted to keep ground stable, No plant to work on unstable ground accessed in wet weather prestart to be conducted after each inclement weather event	1	4	Medium
Pedestrian slip and trip hazards from muddy/ uneven ground	1	3	Low	Work Health and Safety Management Plan	Crusher dust has been spread over pedestrian pathways to minimise slip and trip hazards. Plant is to be used to blade back ruts and muddy ground to minimise slip and trip hazards for workers in the area particularly on rain days	1	3	Low
Trucks and vehicles tracking mud and dirt onto road from muddy tyres	1	3	Low	Work Health and Safety Management Plan Environmental Management Plan	Shaker grid installed at site entrance. High pressure water blaster to be used to wash tyres if required	1	3	Low
Pedestrians/ workers tripping over in deep wheel ruts left by plant movements	1	3	Low	Work Health and Safety Management Plan	Wheel ruts are to be bladed/ levelled out to minimise trip hazards around site	1	3	Low
Silica								
Exposure to Silica Dust	3	4		Safework Australia Guide Working with silica and silica containing products PDF & DOC	SC High Risk Construction Work Safe Work Method Statements Identify silica containing products through safety data sheets and product labels, Safety Data Sheets for Silica containing products shall be registered as an item of Equipment in BIM360 in accordance with the Plant &Equipment procedure, Ensure silca containing products have a current safey data sheet, Utilise products that are ordered to size and don't require cutting; such as pre-cast Utilise alternate products that don't contain silica; such as substituting ilmenite, garnet or staurolite for sand in abrasive blasting; using aluminium polishing powders instead of silica powders; processes can be substituted (e.g. using prilled solids rather than powders; changing from dry to wet processes; vacuuming rather than sweeping). Utilise dust supression systems, Install air filtering systems to machinery, Utilise local exhaust ventilation, Erect specialised cutting rooms, Use HEPA filter vacuum's for cleaning. Display warning signs of silica dust, Conduct health surveillance if continually exposed. Wear disposable clothing, Wear respiratory protective equipment with the correct filter and fit.	2	4	Medium
Hazardous Chemicals								
Spillage of fuels and chemicals	3	3	Medium	AS 1940: The storage and handling of flammable and combustible liquids Environmental Management Plan	A spill kit is kept in the site office. Any drums of fuel larger than 20 litres must be bunded. All trades are to set up a hazardous substance storage are next to their site containers with signage erected 'no smoking', 'Danger Fuel Storage area' etc	1	3	Low
Unsafe storage of oxy acetylene equipment	3	3	Medium	AS 4332 The storage and handling of gases in cylinders Environmental Management Plan	Oxygen and acetylene bottles are to be stored in separate ventilated cages 3m apart at the end of each day and appropriate warning signage erected.	1	3	Low
Mix matched storage of hazardous substances could cause a chemical reaction	3	3	Medium	NWHSC 2017 - 2001 Storage & Handling of Dangerous Goods AS 3780: The storage & handling of corrosive substances NWHSC 2011: Preparation of Material Safety Data Sheets Work Health and Safety ManagementPlan NSW Code of Practice: Control Of Workplace Hazardous Substances NWHSC 1015 - 2001 Storage & Handling of Dangerous Goods NWHSC 2011 - 2003 Preparation of Material Safety Data Sheets NWHSC 2007 - 1994 Control of Workplace Hazardous Substances NWHSC 2012 - 1994 Labelling of Workplace Hazardous Substances NWHSC 2014 - 1995 Carcinogenic Substances	Only substances of the same class can be stored together as per the Safety Data sheet for the products	1	3	Low
Heat stress								
Sun burn	2	4	Medium	NSW Code Of Practice Work in hot or cold environments 2001	Sun cream is available in the site office. Singlets are banned. Workers are encouraged at the site induction to wear long sleeve pants and shirts.	1	4	Medium
Hot temperatures may cause persons to become dehydrated resulting in illness, headaches, fainting etc	1	4	Medium	NSW Hot & Cold Environments 2001 NSW Code Of Practice: Managing the work Environment and Facilities WHS Plan	Air conditioned lunch sheds. Subcontractors to work in shaded area wherever possible.	1	4	Medium
Heavy lifting (over normal crane operation)								

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1	Very Unlikely	Low	Low	Low	Medium	Medium

	RISK ASSESSMENT			CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)		RESIDUAL RISK ASSESSMENT		
HAZARD (Include additional project specific hazards as required)	**L**	**C**	**Class**	**Legislation, Standards & Codes of Practice**	**Enter Details of Specific Controls Required**	**L**	**C**	**Class**
Manual handling injuries	1	4	Medium	WHS Regulation 2017 Part 4.2 Hazardous Manual Tasks	Team lifts for heavy items. Subcontractors SWMS must list manual handling as a hazard and controls put in place. Mechanical lifts wherever possible	1	4	Medium
Back injuries	3	3	Medium	Work Health and Safety Management Plan	Bend knees, keep a straight back, don't twist	2	3	Medium
Block and tackle use	1	2	Low	NCOP for Manual Tasks 2007 National Standard for Manual Tasks - 2007 NCOP for the Prevention of Musculoskeletal Disorders Caused From Performing Manual Tasks NSW Manual Handling Resource 2004	Use of block, tackle and slings is to be used in accordance with SWMS. Slings are to wrapped around a solid structure only. Slings to be wrapped by dogman and riggers only	1	2	Low
Hot Works								
Sparks from welding, grinding or using oxy acetylene may cause a fire if flammable materials are in the area	3	4	High	AS 1674: Safety in welding and allied processes	A hot works permit must be obtained by the subcontractor.. All sources of ignition to be removed from the area prior to hot works occurring	1	4	Medium
Fire and injury to others from persons using angle grinders	2	4	Medium	HY hot works permit	Conduct all grinding away from flammable materials and other workers I the area. Be ware of direction of flying sparks	1	4	Medium
Welders flash to other trades	3	4	High	Work Health and Safety Management Plan Code Of Practice: Welding Processes	Welding screens and warning signage must be erected to protect other trades from welders flash if others are within a 10m radius of the work area	1	4	Medium
Hygiene (poor)								
Unhygienic facilities could result in workers becoming ill and contracting diseases	2	4	Medium	NSW Code Of Practice: Managing the work environment and facilities	A cleaner has been engaged by Hansen Yuncken to clean amenities on a daily basis. All amenities to be kept clean and rubbish bins emptied daily	1	4	Medium
Trades not putting rubbish and off cuts in bins provided creating trip hazards	2	4	Medium	NSW Code Of Practice: Amenities for construction work 1997	Improvement notices to be issued to subcontractors who do not keep the site neat and tidy	1	4	Medium
Inadequate facilities for general site rubbish	2	4	Medium	Work Health and Safety Management Plan	Skip bins to be placed on site at various locations and changed over regularly	1	4	Medium
Lifting Over Public/outside site								
Injury to pedestrians/ public	2	4	Medium	AS 1742.3-2009: Manual of uniform traffic control devices - Traffic control for works on roads Work Health and Safety Management Plan Traffic Management Plan Road Management Act 2004	No lifting of building materials outside of the construction fence unless traffic control and diversions are in place and the subcontractor has seeked approval from the HY Site Manager	1	4	Medium
Manual Handling								
Back injuries/sprains and strains	3	3	Medium	HY Glove and clip policy	Team lifts for heavy items. Mechanical aids eg. telehandler to be used wherever possible. Building material to be dropped off as close to the work area as possible to minimise carrying distance.	1	4	Medium
Cuts to hands	3	4	High	WHS Regulation 2017 Part 4.2 Hazardous Manual Tasks NSW Code Of Practice: Hazardous Manual Tasks AS/NZS 2161 Occupational protective gloves Work Health and Safety Management Plan	SWMS to be followed for all major cutting tasks Workers to be trained in use of tools as per Verification of Competency Gloves to be worn for manual handling tasks as per Hansen Yuncken glove & clip policy	1	4	Medium

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	RISK ASSESSMENT			CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)		RESIDUAL RISK ASSESSMENT		
HAZARD (Include additional project specific hazards as required)	**L**	**C**	**Class**	**Legislation, Standards & Codes of Practice**	**Enter Details of Specific Controls Required**	**L**	**C**	**Class**
Mobile Plant								
Mobile plant could strike a pedestrian worker on site	3	1	Low	NWHSC 1010: National Standard for Plant	All trades are warned of moving plant at the site induction. High vis vests are to be worn at all times. All workers on site must keep well clear of plant on site and gain the operators attention prior to approaching any plant. Only workers involved with the task are to be with in the work areas of plant. People working within the work area of plant must be visible to the operator at all times.	1	4	Medium
Mobile plant could crash into a structure or open trench	2	3	Medium	Work Health and Safety Management Plan	Trained, experienced, qualified workers to operate plant only. Plant operator competency statement to be issued to HY for any plant which does not require a legislated ticket.	1	4	Medium
Pedestrians/ workers being struck by mobile plant	3	1	Low	AS 2294 Earth moving machinery - Protective Structures AS 4602 High Visibility Safety Garments	A combination of controls must be put into place and detailed in sub contractors SWMS eg. barricade the area, erect signage, use a spotter etc. Bunted off pedestrian pathways have been erected on site to keep pedestrians clear of areas where there are high movements of vehicles/ trucks and plant. All subcontractors using moving plant must have a SWMS which details how to protect other workers in the area from being struck by the plant. All plant must have a flashing light, horn and reversing beeper. Vehicles/ trucks must turn their flashing lights on. There is a 10km/h speed limit on site. All workers have been told at the site induction to be aware of moving plant on site and keep clear whenever possible. Only workers who are involved with the task are to be in the vicinity of the plant. HY have instructed all subcontractors to train their workers through pre-start meetings on how to approach moving plant and equipment. Access routes for plant and vehicles are to be maintained. Pedestrians are to walk along the side of access routes whenever possible. Plant operators are to keep reversing to a minimum. Pedestrians that need to approach moving plant are to do so from the front of the machine and are to gain the operators attention by making verbal conatct and eye contact with the operator. No person is to approach the machine until the operator has stopped moving the machine and signalled that it is safe to approach. Spotters working with machines must always stand in an area where they are visible to the operator.	1	4	Medium
Plant roll over on unstable ground	2	3	Medium	Model Code of Practice - Managing the Risks of Plant in the Workplace	Plant operator and HY site staff must assess conditions and determine if the ground is stable for plant. If the plant has out riggers then they must be fully extended. Subcontractors must obtain a 'plant setup permit' from Hansen Yuncken prior to setting up any plant with outriggers eg. concrete boom pumps, cranes, frainnas etc	1	4	Medium
Possibility of scissor lift being driven off edge of concrete slab resulting in scissor lift tipping over	3	2	Medium	Model Code of Practice - Managing the Risks of Plant in the Workplace	A timber bump stop must be installed to the edge of the slab whenever EWP's are used close to the edge of a slab	1	4	Medium
Crushing Injury from scissor or boom lift	3	1	High	Model Code of Practice - Managing the Risks of Plant in the Workplace	Provide onsite training, Instruction and supervision Pre starts and Toolbox talks to be done as consultation with person's affected by the controls outlined. Only person's with EWP ticket to operate Scissor Lift No Person to work isolated or alone on an EWP 2 person team as a minimum , whilst using a EWP, 1 person to spot and also assist with task All Personnel to be trained by a qualified person from the hire company on the specific EWP, as not all EWP's are the same. Prior to use, completion of a logbook check is to be done All faults are to be immediately reported to supervisor and machine is to be tagged out Personnel using EWP must be aware of the emergency response protocol of that specific EWP Person operating scissor lift must be able to communicate clearly to spotter/work partner(team)	1	4	Medium
Needle stick Injury								
Injured person could contract a disease	1	2	Low	NSW Code Of Practice: HIV and other blood-born pathogens in the workplace	Workers injured by needle stick to be sent to the nearest medical centre	1	4	Medium
Workers unaware of what to if a needle is found	1	4	Medium	Work Health and Safety Management Plan	Workers to be told at site induction that if they find a needle on site they are not to touch it and report it to HY staff immediately	1	4	Medium
Inadequate disposal facilities for needles found on site	1	4	Medium	NSW: Code Of Practice: Work Place Amenities	Sharps clean up kit to be kept in site office at all times	1	4	Medium
Noise								
Hearing damage from general construction noise eg. power tool usage, jack hammering etc.	3	3	Medium	AS/ANZ 1269: Occupational Noise Management	Hearing protection to be worn when using power tools or loud equipment. Signage to be erected to warn other trades of excessive noise. A noise monitor is available in the site office. The noise monitor is available for use on site safety walks	2	4	Medium
Disruption to client and neighbours	2	5	High	NWHSC 1007 - 2000 National Standard for Occupational Noise NWHSC 2009 - 2004 Noise Mgt & Protection of Hearing at Work Work Health and Safety Management Plan	Notice of disruption to be issued to client if required. Work to be conducted within approved hours of DA contract only	1	4	Medium
Overhead Power lines								
Power lines over main entry to site	NA	4	#N/A	Work Health and Safety Management Plan NSW Code of Practice: Work near overhead power lines 2006	All plant and workers must keep clear of overhead power lines as per Code Of Practice: Work near overhead power lines	NA	4	#N/A

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HAZARD (Include additional project specific hazards as required)	**L**	**C**	**Class**	**Legislation, Standards & Codes of Practice**	**Enter Details of Specific Controls Required**	**L**	**C**	**Class**
Plant & Equipment								
Plant failure may cause serious injury to workers	2	3	Medium	NWHSC 1010: National Standard for Plant	HY plant verification reports to be completed for all plant. Maintenance records to be submitted to HY as evidence machine is safe for operation. Plant risk assessments to be conducted for all high risk work. Plant operators must conduct pre-start safety inspections of their machine daily and report faults to their supervisors	1	4	Medium
Poorly maintained ladders and scaffolding failing/ collapsing	2	3	Medium	AS/NZS 1892: Portable Ladders	No timber ladder on HY sites. Ladders must be in good condition. Electricians must use fibre glass ladders. All workers are aware of the HY ladder policy posted on the wall in the lunch shed. Extension ladders must be tied off at the top landing. Scaffolding to be visually checked daily and full inspection monthly or after adverse weather	1	4	Medium
Use of damaged ladders	2	3	Medium	AS 4576: Guidelines for scaffolding	Ladders to be checked for damage weekly on the site safety walk	1	4	Medium
Lifting gear failure	2	3	Medium	AS/NZS 4994: Temporary edge protection	All lifting gear: soft slings, lifting chains must be visually checked daily prior to use for damage. Damaged lifting gear is to be withdrawn from service.	1	4	Medium
Scaffold collapse/ fall from scaffold	2	5	High	AS/NZS 1891.1 2007 Industrial fall arrest systems - harnesses and ancillary equipment	Scaffold handover certificate to be issued to HY prior to anyone accessing the scaffold. Scaffold to be inspected minimum monthly and after heavy rain. Scaffold will also be inspected on weekly safety walks. Mobile scaffolds to be built as per manufacturers instructions. Scaffold where a person can fall more than 4m must be erected by a licenced scaffolder. No person is to alter the scaffold what so ever. Any issues with scaffold is to be reported to the Site Manager immediately.	1	5	Medium
Multiple mobile plant interaction/ contact	2	1	Low	Work Health and Safety Management Plan	Plant operators must communicate by way of 2 way radios, eye contact and spotters	1	4	Medium
Vehicle and plant exhaust fumes	2	3	Medium	HY ladder policy	Use of electric scissor lifts onside buildings only. All other diesel powered machines are used in open well ventilated areas	1	3	Low
Post Tensioning								
Accidental drilling or cutting into PT cable	NA	2	#N/A		N/A this month. All subcontractors to0 obtain permit to cut concrete/ core. This permit will detail location of PT cables if applicable	NA	4	#N/A
Plant & Equipment Washout								
Water from cleaning plant and equipment creating a muddy/ slippery surface	2	4	Medium	Environmental Protection Act 1994	Washout area to be determined on a daily basis as the site changes. The wash out area must not allow water to flow over pedestrian foot paths	1	4	Medium
Muddy and contaminated water entering stormwater system	2	4	Medium	HY environmental management plan	Sediment control to be placed around the washout area	1	4	Medium
Pressurised Gas Mains								
Excavator buckets striking UNDERGROUND GAS LINES	2	1	Low	NSW Code Of Practice: Excavation Work 2000 Work Health and Safety Management Plan	A permit to dig system is in place on this site. All known existing services have been marked up on the site plans. Pot holing must occur when working around existing services. Only toothless buckets are to be used when digging in the vicinity of gas lines. Striking existing underground services has been listed as a hazard on all subcontractor SWMS involving excavation works	1	4	Medium
Scaffold								
Fall from heights over 2m	2	4	Medium	WHS Regulation 2017: Part 3.1 Managing risks to health and safety		1	4	Medium
Fall from heights whilst forming up and pouring concrete	2	4	Medium	AS4576: Guidelines for scaffolding		1	4	Medium
Insufficient safe means of access onto Ground Floor Slab from Basement Slab level	1	5	Medium	AS1576: Scaffold general requirements		1	4	Medium
Insufficient egress from building in the event of an emergency	1	5	Medium	Work Health and Safety Management Plan		1	4	Medium
Inadequate development of scaffold plan	1	4	Medium			1	4	Medium
Possible scaffold overload resulting in scaffold collapse - materials and workers	2	4	Medium			1	4	Medium
Scaffold sinking into soft ground compromising structural integrity	3	3	Medium			2	3	Medium
Sediment and erosion control								
Mud, dirt and sediment polluting stormwater systems	3	3	Medium	Environmental Protection Act 1994	HY Sediment Erosion Control plan Rev. 3	1	3	Low
Mud, dirt and sediment polluting stormwater systems	3	3	Medium	Environmental Management Plan	Silt barriers to be installed around low areas of site to catch all rain fall. All stormwater pits to be covered in silt control. All vehicles tyres must be washed clean of mud prior to leaving site. Silt socks to be placed in front of stormwater drains in gutters. Inspections to be carried out weekly by HY using the Site HSE inspection report	1	3	Low

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HAZARD (Include additional project specific hazards as required)	**L**	**C**	**Class**	**Legislation, Standards & Codes of Practice**	**Enter Details of Specific Controls Required**	**L**	**C**	**Class**
Site Lighting								
Sun glare restricting plant operators visibility	1	2	Low	WHS Regulation 2017	Sunglasses to be worn by plant operators as required. Certain tasks may also be conducted at different times of the day to stop the sun becoming an issue.	1	3	Low
Lighting (Poor)	1	2	NA	NSW Code Of Practice: Managing the work Environment and Facilities	Ensure that task area has adequate natural light and if natural light is not adequate provide artificial lighting	1	2	Low
Slips/Trips								
Workers slipping or tripping on rough/ uneven/ muddy/ slippery ground	3	3	Medium	AS/NZS 2210 Occupational protective footwear Work Health and Safety Management Plan	Pedestrian pathways to be kept clear of rubbish and material. Safe access around site to be maintained at all times. Gravel/ crusher dust to be placed on slippery/ muddy surfaces. Blading back of ruts and muddy ground conditions to be conducted as required. Bunted off pedestrian pathways are installed around main access routes throughout site for safe pedestrian access, this way people can use the pathway then branch out to their specific work area with minimal risk of slipping over in muddy conditions	1	3	Low
Structural Support								
Masonry walls collapsing in high winds	NA	1	#N/A	National Code of Practice for Precast, Tilt Up and Concrete Elements in Building Construction 2008	Masonry walls must be adequately braced with timbers every 2m until core filled	NA	4	#N/A
Formwork collapse	2	4	Medium	AS 3850:Tilt Up Concrete Construction	Engineers sign off required to pouring of any concrete	1	4	Medium
Precast concrete panel collapse if structural steel is inadequately braced	2	4	Medium	NSW Code of Practice: Formwork 1998	Structural steel must be signed off by engineer prior to installation of precast concrete panels	1	4	Medium
Structural steel collapse	2	4	Medium	AS 4991: Lifting devices	Structural steel must be erected by qualified dogmen and riggers. Subcontractor must submit ITP's to Hansen Yuncken. Hansen Yuncken to complete QC Compliance audit report: Structural Steel checklist	1	4	Medium
Synthetic fibres								
Unsafe handling of roof insulation	1	4	Medium	NSW Code of Practice: Safe use of synthetic mineral fibres	Install roof insulation as per Safety Data Sheet and SWMS	1	4	Medium
Temperature Extremes								
Dehydration	1	3	Low		Workers are encouraged to drink plenty of water. Water bubbler available at site lunch sheds	1	3	Low
Sunburn	3	3	Medium		Workers must wear are shirt on site. Singlets are not allowed. Sun cream is available to everyone and is kept in the site office	1	3	Low
Heat stress	1	3	Low		Workers are encouraged to work in the shade wherever possible and take regular breaks whenever required.	1	3	Low
Tilt –up or Precast Concrete Work								
Structural steel support collapse	1	5	Medium	AS 3850:Tilt Up Concrete Construction	HY precast panel installation checklist must be completed and all relevant documentation submitted, reviewed and approved by HY prior to installation of precast panels	1	5	Medium
Injury to other workers/ trades	1	5	Medium	AS 4991: Lifting devices	Precast panel installation must be closely monitored by HY Management and conducted in accordance with SWMS . The work area around the crane must be clearly closed off to other trades with bunting, flagging or red/white tape. Spotters must be used to	1	5	Medium
Plant failure	1	4	Medium	National Code of Practice for Precast, Tilt Up and Concrete Elements in Building Construction 2008	All maintenance records and plant safety verification reports must maintained and kept up to date	1	4	Medium
Failure of lifting points on precast panels	1	5	Medium	AS 2550: Cranes, hoists & winches - Safe Use	Subcontractor ITP's must be submitted and reviewed by HY prior to erection of precast panels , engineered lifting points used to install precast. Lifting gear register in place	1	5	Medium
Concrete may not have cured to specified strength	1	3	Low		HY precast panel installation checklist must be completed and all relevant documentation submitted, reviewed and approved by HY prior to installation of precast panels	1	3	Low
Crane roll over on unstable ground	1	4	Medium	AS 1418.1: Cranes, hoists and winches – General Requirements	Plant setup permit must be obtained by subcontractor prior to standing crane	1	4	Medium
Exceed SWL of crane	1	2	Low	AS 2321: Short link chain for lifting purposes	Work to SWL chart for crane at all times	1	2	Low
Lifting gear failure	2	3	Medium	National Code of Practice for Precast, Tilt Up and Concrete Elements in Building Construction 2008	Riggers must inspect all lifting gear prior to use. Damaged lifting equipment must not be used. Lifting gear registers and certificates must be issued to HY prior to use.	1	3	Low
Poor communication between crane operator and dogmen	2	3	Medium		Dogman and crane operator to constantly communicate with each other. Crane operator to take directions from dogman only.	1	3	Low

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PROJECT HSE RISK ASSESSMENT

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RELEVANT PROCEDURE:	Project HSE Risk Assessment
PROJECT:	UON Central Coast Campus
JOB NO:	SN109
ASSESSED BY:	Robert Schmitzer, Dale Reith
ASSESSMENT DATE:	14-Sep-23

RISK ASSESSMENT TABLE

		Consequence				
		1	2	3	4	5
	Likelihood	Insignificant	Minor	Moderate	Major	Significant
5	Very Likely	Medium	High	High	High	High
4	Likely	Medium	Medium	High	High	High
3	Possible	Low	Medium	Medium	High	High
2	Remotely Possible	Low	Medium	Medium	Medium	High
1	Very Unlikely	Low	Low	Low	Medium	Medium

	RISK ASSESSMENT			CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)		RESIDUAL RISK ASSESSMENT		
HAZARD (Include additional project specific hazards as required)	**L**	**C**	**Class**	**Legislation, Standards & Codes of Practice**	**Enter Details of Specific Controls Required**	**L**	**C**	**Class**
Traffic Management								
Vehicles/ trucks speeding on site	3	3	Medium	AS 1742.3-2009: Manual of uniform traffic control devices - Traffic control for works on roads	10km/h speed limits signs are erected around site. Drivers must give way to pedestrians. Delivery driver inductions for all drivers entering site. Hazard or flashing lights must be turned on	2	3	Medium
Vehicles parking and blocking access roads	3	4	High		Vehicles to be used for loading/unloading purposes only and are to be parked off site if not required for work purposes	2	3	Medium
Blind spots creating collisions between vehicles	1	3	Low		Warning signs to be erected at blind spots	1	4	Medium
Vehicle congestion on entrance to site	2	4	Medium		Traffic control is in place at Birmingham Ave. A traffic controller is in place full time at the entry to site to coordinate all delivery drivers, trucks and vehicles coming onto site.	2	4	Medium
Pedestrians entering site being struck by trucks and vehicles	3	2	Medium		A fenced off pathway with signage has been installed along the driveway from the street to the site office to keep all pedestrians off the road used by plant and trucks. Pedestrians and vehicles have been seperated theough entry/ exit by way of concrete jersy kerbs	2	2	Medium
Tree lopping								
Tree lopping	NA	4	#N/A		Area to be delimeated and HRCW for falling from heights and Plant and Equipment	NA	4	#N/A
Vehicle & plant exhaust fumes								
Workers overcome by exhaust fumes from plant	1	1	Low	NSW Code of Practice: Control Of Workplace Hazardous Substances	Plant to be operated in open areas with good ventilation only. Electric scissor lifts to be used inside buildings only. No petrol/ diesel powered equipment used inside buildings	1	1	Low
Ventilation (poor)								
Workers overcome by fumes when using chemicals	1	1	Low	NSW Code of Practice: Control Of Workplace Hazardous Substances AS/NZS 1715 Selection, use and maintenance of respiratory protective devices AS/NZS 1716 Respiratory protective devices	MSDS to be read and understood by all workers prior to work commencing	1	1	Low
Violence								
Workers arguing and fighting	2	4	Medium	Violence in the workplace guide 2002	Zero tolerance for fighting on site - instant dismissal	1	4	Medium
Prisioners/Detainees inciting workers or vice versa	2	3	Medium	NSW Workplace Bullying 2008	All workers are instructed not to talk to the Prisioners at the site induction	1	3	Low
Waste Management/ Littering								
Inadequate bins on site to dispose of rubbish	1	3	Low	NSW WHS Act/ Regulation	Skip bins to be placed at various locations around site which are easy to access. Bins for food scraps are to be placed at the front of all lunch sheds	1	4	Medium
Bins attracting rodents	2	4	Medium		Food scrap bins to be bagged and changed regularly	1	4	Medium
Having to walk long distances to dispose of rubbish	2	4	Medium		Numerous skip bins to be on site close to all work areas	1	4	Medium
Workers littering the site with rubbish and off cuts instead of disposing of rubbish in bins provided	2	4	Medium		Suspension/ improvement notices to be issued to subcontractors who leave the site untidy	1	4	Medium
Water Contaminants								
Clean water around site becoming contaminated with mud	1	4	Medium		Clean rain water is diverted around site by way of swales and sediment control	1	4	Medium
Working at Height above 2m								
Workers dropping tools and material onto persons below	2	4	High	NSW Code of practice: Safe work on roofs part 1	"Danger workers above" signage to be erected. If there are other trades in the immediate area then red/white tape will be erected to create an exclusion zone.	1	4	Medium
Scaffolders falling from heights during erection process	2	4	Medium	WHS Regulation 2017 Part 4.4 Falls	Install handrail, mid-rails and toe-boards where scaffolders are working from deck below while building using the approved control methods such as the 1m rule or Advanced guardrail systems	1	4	Medium
Perimeter scaffold collapse	NA	4	#N/A	AS 4576: 1995 Guidelines for scaffolding	Check and confirm the suitability of the subgrade prior to basing out the scaffolding Confirm areas where trenches have been laid Visually check ground for stability, use sole boards where required or get others to compact areas Do not allow scaffold to exceed 4.0 m in height without being tied to the structure and braced or stabilised to an approved design Do not allow standards to be erected and left unsupported Each standard will be braced in a minimum of two directions. A brace is defined as a ledger or transom Scaffolds from which a person can fall more than 4 metres must be constructed and certified by a licensed scaffolder. Secure materials at height & isolate area below where there is risk of falling objects causing injury to persons below. No scaffold alterations are to be undertaken except by licensed scaffolder. Close off access to incomplete scaffolds, for example, install tube barricades and warning signs "Scaffold Incomplete" Ensure all scaffold is checked and secure before issuing handover docket and attaching Scafftag.	1	4	Medium
Workers falling from roof	2	4	Medium	HY procedure Working at height	Roof access permit must be obtained by the workers prior to accessing the roof. Perimeter scaffold or handrail must be in place for fall protection. Safety mesh must be installed correctly as per Code Of Practice: Safe Work On Roofs: Part 1	1	4	Medium
Mobile scaffold collapse	2	4	Medium	NSW Code of Practice: Managing the risk of falls at workplaces	\	1	4	Medium
Workers falling from perimeter scaffold	2	4	Medium	AS 1577 Scaffold Planks	Perimeter scaffolds to be inspected weekly using the site HSE inspection report. All workers are advised at site induction strictly not to alter any scaffolding	1	4	Medium
Fall from ladder	2	4	Medium	AS/NZS 4488 Industrial rope access systems - Selection, use & maintenance	Ladders must be used in accordance with HY ladder policy. An Aconex has been issued on ladder use to all subcontractors. EWP's, mobile scaffold and platform ladders take first preference over standard A frame ladders.	1	4	Medium
Fall from EWP/ boom lift	2	4	Medium	AS/NZS 1891 Industrial fall arrest systems & devices AS/NZS 4994 Temporary edge protection	WP ticket required to operate boom lift >11m .. EWPAA yellow car required for EWP <11m. Ground conditions to be checked prior to operation. Harnesses and lanyards must be maintained and kept in good condition	1	4	Medium
Fall from scissor lift	2	4	Medium	NWHSC - Prevention of Falls in General Construction 2008	Timber or angle to be installed to the edge of concrete slabs to stop scissor lifts accidently being driven off edge of slab. Scissor lift operators must have a EWPAA yellow card or WP type ticket. Stabilizers and sole plates must be used for rough terrain scissors used on soft ground	1	4	Medium
Inadequately installed roof perimeter handrail	2	3	Medium	NSW Identification Tool for Aluminium Mobile Scaffolds 2008	Installation certificate must be issued to HY prior to any worker accessing roof. Installation manual to be available on site so it can be confirmed the handrail has been installed as per the manufacturers specifications.	1	3	Low
Covid 19								
Spread of Covid 19	2	3	Medium	NSW Government Covid 19 Guidelines	Comply with HY Covid 19 Management Plan Comply with HY CovidSafe Plan	1	3	Low
Potential Emergencies - preparation for and response to potential emergency events assessed high or medium risk to be defined in the Emergency Response Plan								
Arrested fall in a harness	2	2	Medium	HY Procedure for Emergency Response	All subcontractors using harnesses in boom lifts must have a rescue procedure as part of their SWMS. Generally rescue will be by using the ground controls at the base of the machine or by using a second boom lift to retrieve the suspended casualty.	1	4	Medium
Bomb threat	1	4	Medium	HY Procedure for Emergency Response	Procedure for bomb threats is part of the HY Emergency Response Plan	1	4	Medium
Confined Space Rescue	1	3	Low	HY Procedure for Emergency Response	Procedure for confined space rescue is part of the HY Emergency Response Plan	1	4	Medium
Drowning	1	5	Medium	HY Procedure for Emergency Response	Trenches are to be de-watered prior to any person working in around the area.	1	5	Medium

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PROJECT:	UON Central Coast Campus
JOB NO:	SN109
ASSESSED BY:	Robert Schmitzer, Dale Reith
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RISK ASSESSMENT TABLE

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3	Possible	Low	Medium	Medium	High	High
2	Remotely Possible	Low	Medium	Medium	Medium	High
1	Very Unlikely	Low	Low	Low	Medium	Medium

	RISK ASSESSMENT			CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)		RESIDUAL RISK ASSESSMENT		
HAZARD (Include additional project specific hazards as required)	**L**	**C**	**Class**	**Legislation, Standards & Codes of Practice**	**Enter Details of Specific Controls Required**	**L**	**C**	**Class**
Electric shock	2	4	Medium	HY Procedure for Defibrillators	Electric shock procedure detailed in the HY Emergency response plan	1	4	Medium
Emergency services unavailability	1	1	Low	HY Procedure for Emergency Response	N/A	1	1	Low
Fire	2	2	Medium	AS 3745 Emergency control organisation and procedures for buildings, structures and workplaces AS/NZS 1221 Fire hose reels AS/NZS 1841 Portable fire extinguishers AS/NZS 1850 Portable fire extinguishers - Classification, rating and performance testing AS 1851 Maintenance of fire protection systems & equipment AS 2375 Guide to the selection, care & use of clothing for protection against heat & fire AS 2444 Portable fire extinguishers and blankets - Selection & location	Fire procedure detailed in the HY emergency response plan	1	2	Low
First Aid (inadequate resources)	1	3	Low	HY Procedure for Emergency Response	First aid room to be set up with portable and fixed first type A first aid kits, stretcher, defibrillator, ice packs, sun cream, eye wash and examination couch as per Code of Practice: First Aid . (Refer to first aid assessment)	1	3	Low
Gas line contact or damage	2	2	Medium	HY Procedure for Emergency Response	Jemena contact details are part of the HY Emergency response plan	1	2	Low
Major rock fall/landslip	1	4	Medium	HY Procedure for Emergency Response	Rockall procedure detailed in the HY Emergency response plan	1	4	Medium
Major Fuel/Chemical Spill	1	3	Low	HY Procedure for Emergency Response	Fuel/ Chemical spill is part of the HY emergency response plan	1	3	Low
Medical Emergency	2	3	Medium	HY Procedure for Emergency Response	Medical emergency is part of the HY emergency response plan	1	3	Low
Overhead power line contact or arcing	2	5	High	HY Procedure for Emergency Response	Contact with overhead power lines is part of the HY emergency response plan	1	5	Medium
Precast Panel Collapse	2	4	Medium	HY Procedure for Emergency Response	Precast panel collapse is part of the HY emergency response plan	1	4	Medium
Structural failure/collapse	2	4	Medium	HY Procedure for Emergency Response	Structural collapse is part of the HY emergency response plan	1	4	Medium
Trench collapse	2	4	Medium	HY Procedure for Emergency Response	Trench collapse is part of the HY emergency response plan	1	4	Medium

8.4 Appendix 4 - Construction Traffic and Pedestrian Management Sub-plan (CTPMSP) (DRAFT)

As attached.

Gosford City Campus Development

Hansen Yunken

Construction Pedestrian and Traffic Management Plan

October 2023

SECA solution

Mann Street/Beane Street/Hills Street

Construction Traffic Management Plan

Author: Cathy Thomas/Lachlan Thomas

Client: Hansen Yunken

Issue: Ver02/5.10.2023

Reference: P2765

5 October 2023

Quality Review and Document History

Version	Date	Description	Prepared By	Checked By
Ver01	13/12/22	Preliminary	C. Thomas	S. Morgan
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1 Introduction

Seca Solution Pty Ltd has been commissioned by Hansen Yuncken on behalf of the University of Newcastle to prepare a Construction Traffic Management Plan for Stage 1 of the approved Gosford City Campus Development (GCCD) as a condition of consent for the project.

The Construction Pedestrian and Traffic Management Plan (CPTMP) is to ensure traffic and pedestrian issues can be safely and efficiently managed during the construction activities on site.

The subject site, zoned B4, has previously operated as a Mitre 10 Hardware store with a shopfront on Mann Street and a large hardstand area off Hills Street to the rear.

The concept for the campus provides teaching accommodation, and space to suit an Innovation Centre along with Community engagement. The development will provide a building fostering collaboration in the areas of education and entrepreneurial endeavour.

The work is in two stages, stage one being demolition of the existing structure, and stage two being construction of the new building.

The site is located within the Gosford CBD on the corner of Mann Street, Beane Street and Hills Street with frontage to both Mann Street and Beane Street and access to Hills Street (Figure 1-1). The construction site includes the subject site and adjacent land which has frontage to Hills Street and Beane Street

The location of the site is shown below in Figure 1-1.

1.1 Existing Road Network and Local Characteristics

The major road through the locality is **Mann Street,** which forms part of the Pacific Highway which in turn forms part of the regional road network and to the north of the site, from its intersection with Henry Parry Drive, forms part of HW10. In the immediate vicinity of the site Mann Street is an unclassified regional road. Council is therefore the road authority.

Mann Street provides a single lane of travel in each direction in the immediate vicinity of the subject site, with timed parking on street permitted for much of its length. There is no central median, allowing vehicles to turn right in and out of numerous existing developments along this length of Mann Street. It operates under the posted speed limit of 60 km/h. There are footways to both sides of the road and there are signal controlled intersections at key locations along the length of the road that allow incorporate pedestrian crossings on Mann Street.

Mann Street operates as a main corridor for bus services accessing the rail and bus interchange south of the site.

Mann Street connects with Beane Street adjacent to the subject site at a T-intersection with Mann Street having priority. Beane Street is a local street providing access to various business sites and to the east to the local established housing area.

Parking controls on Beane Street include an area along the site frontage which provides for bus layovers.

Figure 1-1 – Site Location

To the east of the site is Hills Street which connects with Beane Street via a 4-way roundabout. Hills Street connects with Watt Street to the south and runs in a north-south direction parallel to Mann Street, allowing for alternative access routes to connect with the centre of Gosford to the south of the site.

To the north Hills Street connects with Etna Street via a 4-way roundabout. Etna Street then connects with Mann Street via a 4-way signalcontrolled intersection. The fourth leg of the intersection is Racecourse Road that connects over the nearby railway line and provides access to Gosford Hospital and a connection further south-west of the location with the Central Coast Highway.

Parking is restricted at the immediate approach to the traffic signals at Mann Street to ensure maximum capacity for vehicles approaching the signals.

Pedestrian facilities are well developed in the Gosford city centre with footpaths along all boundaries of the site. Pedestrian demands are not however significant along the site frontages with the main attractions (shops and transportation) being south of the site while the Gosford Hospital is to the west. Pedestrian demands across the site frontage on Mann Street were 27 pedestrians two way in the AM peak (8.15-9.15) and 20 in the PM peak (3.30-4.30pm)

There are no mid-block pedestrian crossings along Mann Street however there are splitter islands with pedestrian refuges at the roundabout intersection of Mann Street and Faunce Street south of the site in the vicinity of the railway station and bus interchange. There is also an overhead pedestrian bridge 50m south of this intersection.

The signalised intersection of Mann Street and Racecourse Road to the north of the site provides pedestrian phases on 3 of the 4 legs allowing for safe pedestrian movements at this intersection and full connectivity.

Figure 1-2 Aerial image of subject site within context of road frontages

1.2 Traffic Volumes and Road Operation

Two way flows on Mann Street were collected in March 2023 and summarised below:

- 812vph split 413 southbound (51%) in the morning peak; and
- 826 vph split 510 northbound (62%) in the in the afternoon peak

This data is similar to data collected by Seca Solution in 2015 which determined the two-way flows on Mann Street (south of Etna Street) were:

- 864vph split 505 southbound (58%) in the morning peak; and
- 968 vph split 559 northbound (58%) in the in the afternoon peak

Traffic flows on Beane Street and Hills Street are significantly less.

The intersection of Mann Street and Racecourse Road / Etna Street creates some delays and congestion for drivers, but the queues for each approach clear on most cycles of the green phase.

There is a very high demand for the right turn southbound on Mann Street turning into Racecourse Road and the reverse left turn movement. The delays for these turning movements are exacerbated by the single lane of travel over the railway line and the operation of the roundabout of Racecourse Road and Showground Road. This is a single lane roundabout with restricted visibility and vehicle movement through this roundabout are slow, leading to queues back to Mann Street.

2 Construction Activities

2.1 Methodology

The development requires the demolition of the existing building on site and the construction of the new building (Stage 1) on the site western side of the site. The site historically operated as a Mitre 10 Hardware store with heavy vehicles movements associated with deliveries and purchases from the access on Hills Street as well as secondary accesses on Beane Street.

Stage one will see the demolition of the existing structure, commencing with the removal of the existing awning on Mann Street using temporary scaffold on the footpath. Duration of the awning removal is expected to take up to three days. To allow for awning works, a temporary lane closure and pedestrian detour will be required to ensure safety for the public. Following removal of the awning, demolition of the remainder of the building will be undertaken from within the site.

Stage two will see construction of the building take place from within the site. The building is a mixture of timber and concrete construction. Concrete pumping pads will be constructed within the site, with concrete pumping activities being wholly contained within the subject site.

Access to the site shall primarily be from Beane Street, with construction vehicles entering in a forward direction, and exiting onto Hills Street. A secondary site access will be established on Mann Street and will only operate when deliveries cannot be accomplished using the Beane Street access.

The works include the modification of sewer services within Beane Street. These shall be subject to a separate application to Council inclusive of a task specific CTMP once a subcontractor has been appointed.

2.2 Timing

Works are expected to commence in late 2023 and take approximately 18 months to complete.

2.3 Working Hours

Construction hours would be between 7:00am and 6:00pm Monday to Friday and 8.00 AM to 1.00 PM on a Saturday. No construction work is to be carried out on a Sunday or public holiday. No construction work contributing to unacceptable noise levels or major deliveries are scheduled outside of the weekdays in line with EPA Guidelines.

Work may be undertaken outside these hours where the following occurs:

- The delivery of fill or material may occur outside these hours if required by the Police or other authorities.
- Council providing permission for working out of hours;
- It is required in an emergency to avoid loss of life, damage to property and / or to prevent environmental harm;
- The work is approved from the Construction Noise and Vibration Management Plan;
- Residents likely to be affected by the works are notified of the timing and duration of these works at least 48 hours prior to the commencement of the works.

2.4 Construction staff numbers

Peak demand levels could be in the order of 140 construction workers based on site during the construction stage. Whilst parking may be available on site, construction staff shall be encouraged to share travel arrangements or travel to the site by bus or train when possible. During the earlier stages of the construction work the staff levels will be lower and they will gradually ramp up over the project timeframe to the peak of 140 staff.

3 Traffic Management Assessment

The proposed traffic management measures allow for access direct off Beane Street and Mann Street as required. The majority of heavy vehicles are expected to approach the site from the west given the industrial sites at Somersby with less from the north. Some heavy vehicles may also approach from the east including concrete deliveries sourced from Kincumber.

Demolition waste will be transferred to the north.

Heavy vehicle movements, including deliveries are anticipated primarily from the west and north with suitable routes along:

- Pacific Motorway / Central Coast Highway/Racecourse Road/ Etna Street/Mann Street
- Pacific Highway/ Mann Street/ Etna Street/Hills Street

Concrete deliveries will approach from the east via Henry Parry Drive / Etna Street / Mann Street / Beane Street.

Truck movements to and from the site are as shown in Figure 3-1.

During the 18 months of work on site there will be a maximum of 140 people working on site. The site is located within the Gosford CBD and allows for good connection to the public transport routes in the locality which will offer the opportunity for construction staff to travel by public transport rather than drive. Light vehicles movements may approach and depart from various routes, reducing the impact on any single road or intersection. The impact of this additional traffic on Hills Street would be acceptable being in the order of 60 vph in the AM peak north of the site (60% of demands) as a worst-case scenario and less to the south.

Due to the nature of the work the maximum number of trucks through the day may be 5 vehicles per hour associated with concrete pours and delivery of material to the site. These trucks will typically be a heavy rigid vehicle, with a length of 12.5 metres with some larger deliveries via semi-trailers. These vehicles be able to manoeuvre through the site to enter and exit in a forward direction.

There will be no general public vehicles within the site during the construction works.

Pedestrian movements are low being 27 two way in the AM peak on Mann Street and significantly less on other frontages and currently occur on the footpaths opposite and adjacent to the subject site. The proposed works are anticipated to be primarily contained within the site with minimal impact on these pedestrian pathways. A pedestrian detour is provided for during the awning removal. Pedestrian signage may be required during public domain and access construction.

Except during peak times (concrete pours) the truck numbers associated with the construction work would be comparable to the traffic originally associated with the use of the site as a hardware store, which historically used the hardstand to the rear of the site with access off Hills Street provided for large truck deliveries and pick ups by customers. It is considered that the movement of vehicles in and out of the site for construction works can safely occur with minimal delays to pedestrians and in a safe manner. If access for heavy vehicles is required from Mann Street these should be encouraged to be left in movements only to reduce the demand for heavy vehicles through the city centre and reduce delays associated with right turning vehicles into the site during the peak periods. No limitation on truck access times is considered appropriate for the project.

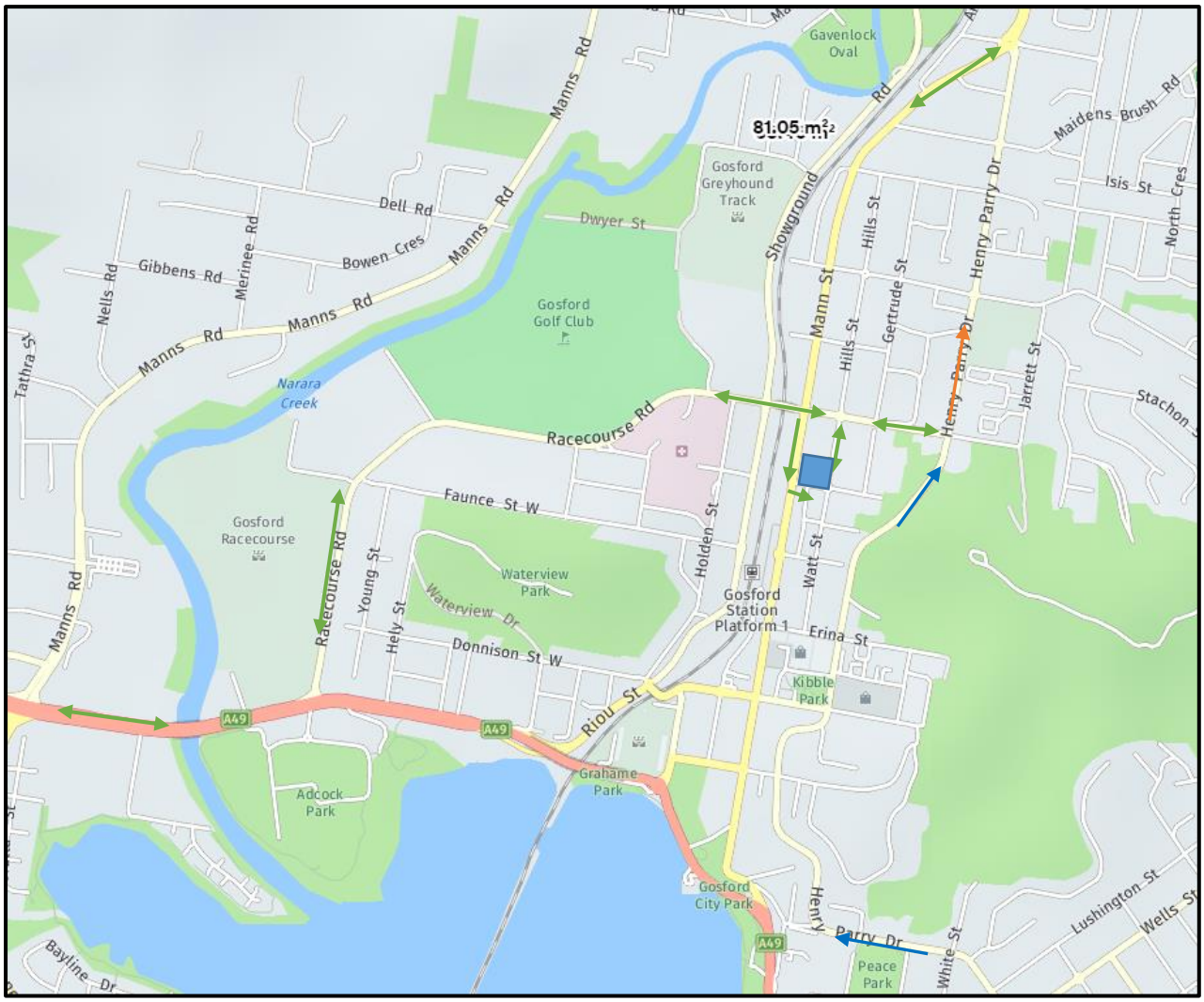
By directing the majority of vehicles to access via Beane Street there will be minimal impact upon public transport services. There is no requirement for diversions.

The access routes primarily utilise arterial roads with adequate capacity to accommodate these movements.

There will be minimal impact for emergency vehicles, heavy vehicles, cyclists with no diversions required.

Given the timeframe of the works, the lack of detours or impacts anticipated on the local roads and the location of the works zones primarily within the site it is anticipated there will be minimal impact upon development within the locality of the site.

There will be minimal impact upon adjoining Council areas. Traffic routes in and out of the locality will be along the arterial road network which will experience minimal impacts due to the works.



Inbound/outbound vehicles

Inbound heavy vehicles

Outbound heavy vehicles

Figure 3-1 Vehicle Movements associated with Construction Works to the subject site ( )

4 Traffic Guidance Scheme

4.1 General

A TGS has been prepared to meet the requirements of the Traffic Control at Work Sites Manual (TCAWS 6.1). The plans cover the access and egress requirements to and from the site and the safe passage of vehicles in and out of the subject site via Beane Street and Hills Street during the construction works. A second plan has been prepared which details controls to be implemented when access from Mann Street is required.

An additional plan details controls to be implemented during demolition works associated with the awning and is to be operated in conjunction with the general access plan.

At all times the TCAWS guidelines must be adhered to. Please refer to the guidelines for traffic control matters not listed in this report.

Any OSOM vehicle movements shall be subject to a separate, task specific risk assessment & Traffic Guidance Scheme/Traffic Control Plan.

4.2 Existing traffic conditions on Mann Street and Hills Street

- 60km/hr speed limit on Mann Street, 50km/h on Hills Street and Beane Street;
- Peak AM period traffic in the order of 500 vehicles per hour one-way southbound adjacent to site and 410 vehicles per hour one-way southbound in the PM. Daily movements southbound approximately 4,600 vehicles per day
- Access is from Beane Street with a secondary access from Mann Street with egress to Hills Street
- No restrictions to access to adjacent properties are to be created by the works.

4.3 Cyclists and Pedestrians

There are footpaths for pedestrians along the Project Site boundary on both sides of Mann Street as well as on Hills Street and Beane Street. A pedestrian detour will be required during the demolition phase to enable removal of the existing awning.

Pedestrian demands on East side of Mann St

- Morning Peak (8:15am - 9:15am) 27 pedestrian two-way
- Afternoon Peak (3:30pm - 4:30pm) 20 pedestrian two-way

No detours required for cyclists in this area.

4.4 General Traffic Control Considerations

The factors to be considered in preparing this TGS are:

- During the construction, all heavy vehicles will access the site off Beane Street (left turn in) or Mann Street (left turn in)
- Parking is generally available within the locality of the subject site in parking stations. Site is well located for access via public transport for staff.
- Loading/delivery shall be completed within the subject site.
- There will be no change to the speed zone during the duration of the construction works
- Pedestrian and cyclist considerations – there is no change to the existing situation for cyclists. Footpath closures shall be required for pedestrians during the awning demolition phase.
- Location of machines/personnel on-site relative to roadway;

- Access to/from Work Site;
- Timing of works, and
- Safety of road users and site personnel.

The TCAWS manual recommends safety barriers are considered if:

- The location will continue to be a work area for longer than two weeks. (Applicable)
- Traffic speeds are likely to be greater than 80 km/hr. (Not applicable)
- AADT exceeds 5000 vehicles for traffic lane nearest the works. (Not Applicable)
- The work area is less than 3 metres clear of traffic on straights (less on tight curves) (Applicable)
- Personnel do not have other protection, such as operating plant. (Not Applicable)

Construction Works are expected to take around 18 months to complete.

The local speed zone limits of 60 km/hr is considered generally acceptable as the construction works are contained within the site and the site personnel will be protected by construction fencing.

A reduced speed zone (40km/hr) along Mann Street is recommended during the awning demolition.

4.5 Traffic Control – Signage and Line Marking

The TGS shall provide Work Site definition. General signage are included due to the nature of the passing traffic and the location and nature of the works.

All signs shall be permanently mounted and shall be operational at all times.

A copy of the TGS must be on site at all times during the demolition and construction stages.

4.6 Daily Checklist

In accordance with the Roads and Traffic Authority of New South Wales 'Traffic Control at Worksites' guidelines, the site foreman / manager should complete a daily traffic control checklist and this checklist should be filed for future reference.

4.7 Contractors Contact Details

Project Manager: Robert Schmitzer

Mobile: 0457 713 471

E-mail rschmitzer@hansenyuncken.com.au

4.8 TGS Approval

This TGS will be submitted to the road authority for review and approval.

Details for lodging this TGS and the Construction Traffic Management Plan are:

Central Coast Council:

91-99 Mann Street, Gosford
PO Box 20
Wyong NSW 2259
Phone: (02) 1300 463 954

Transport for NSW (Road and Maritime Services):

Road Occupancy Unit (ROU) Hunter
1300 656 371
road.access@rms.nsw.gov.au

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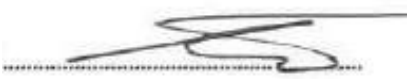

Lachlan Thomas

Traffic Control Work -Prepare a Work Zone TCT1021869

Cathy Thomas

Traffic Control Work -Prepare a Work Zone TCT0012545

Director

Sean Morgan (TCT0066674)

Director

Appendix A. Traffic Guidance Scheme

Design Notes:
- Workers to monitor driveway to ensure pedestrian safety when vehicles exiting.

DIAL BEFORE YOU DIG
www.1100.com.au

Date: 4-10-2023 **Author:** Lachlan Thomas **Project:** P2765 - University of Newcastle - Mann Street, Gosford

Comments:
P2765 - University of Newcastle - Mann Street, Gosford - Delivery Works

Work Zone Signage - Long Term Works
Vehicle Access

Approved by Lachlan Thomas PWZTMP - TCT1021869

DO NOT SCALE

North

SECAsolution

Design Notes:
- Short term works only
- TGS to be used in conjunction with Sheet 1 for delivery works.
- Vehicles to exit via Hills Street.

DIAL BEFORE YOU DIG
www.1100.com.au

Date: 4-10-2023 **Author:** Lachlan Thomas **Project:** P2765 - University of Newcastle - Mann Street, Gosford

Comments:
P2765 - University of Newcastle - Mann Street, Gosford - Mann Street access

Work Zone Signage - Short Term Works
Vehicle Access

Approved by Lachlan Thomas PWZTMP - TCT1021869

DO NOT SCALE

North

SECAsolution

Legend

- Beware Turning Traffic
- Jersey
- R4-1 (60) SPEED LIMIT 60
- R4-212 (40) SPEED LIMIT 40 ROAD WORK
- R5-40 (L) NO PARKING (L)
- R5-40 (R) NO PARKING (R)
- R5-40 NO PARKING
- Site Fence
- T8-2 (L) PEDESTRIANS LEFT
- T8-2 (R) PEDESTRIANS RIGHT
- Work Area

Design Notes:
- Must maintain minimum 3m travel lane southbound.
- Maintain 1.2m clearance from pedestrian barrier to site boundary.
- To be used in conjunction with Sheet 1, vehicle access TGS.

DIAL BEFORE YOU DIG
www.1100.com.au

Date: 4-10-2023 **Author:** Lachlan Thomas **Project:** P2765 - University of Newcastle - Mann Street, Gosford

Comments:
P2765 - University of Newcastle - Mann Street, Gosford - Awning Demolition

Work Zone Signage - Long Term Works
Awning Demolition

Approved by Lachlan Thomas PWZTMP - TCT1021869

DO NOT SCALE

North

SECAsolution

8.5 Appendix 5 - Construction Noise and Vibration Management Sub-plan (CNVMSP)

TO BE ISSUED

RAPT CONSULTING

Construction Noise and Vibration Management Plan – UON Central Coast Campus

Prepared for

Hansen Yunken Pty Ltd

October 2023

Relationships Attention Professional Trust

Document Details

Construction Noise and Vibration Management Plan – University of Newcastle Central Coast Campus Gosford, NSW.

Prepared For:

Hansen Yunken

Prepared By:

RAPT Consulting

18&19 / 10 Kenrick Street

The Junction, NSW 2291

ABN: 30330220290

www.raptconsulting.com.au

Document ID	Rev No.	Author		Date
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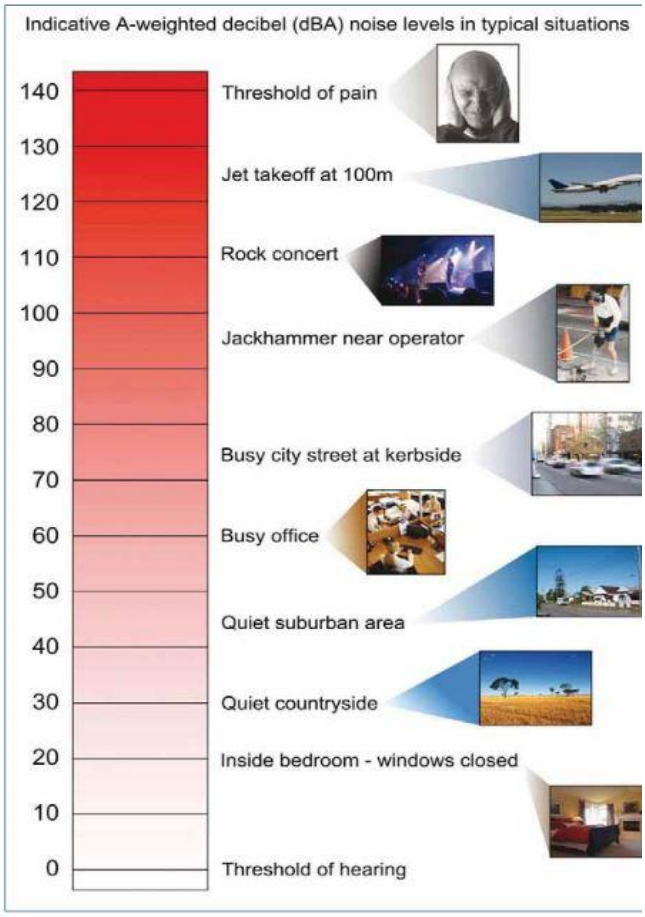
Glossary of Acoustic Terms

Term	Definition
dB	Decibel is the unit used for expressing the sound pressure level (SPL) or power level (SWL) in acoustics. The picture below indicates typical noise levels from common noise sources. 
dB(A)	Frequency weighting filter used to measure 'A-weighted' sound pressure levels, which conforms approximately to the human ear response, as our hearing is less sensitive at very low and very high frequencies.
$L_{Aeq(period)}$	Equivalent sound pressure level: the steady sound level that, over a specified period of time, would produce the same energy equivalence as the fluctuating sound level actually occurring.
$L_{A10(period)}$	The sound pressure level that is exceeded for 10% of the measurement period.
$L_{A90(period)}$	The sound pressure level that is exceeded for 90% of the measurement period.
L_{Amax}	The maximum sound level recorded during the measurement period.
Noise sensitive receiver	• An area or place potentially affected by noise which includes: • A residential dwelling.

	• An educational institution, library, childcare centre or kindergarten. • A hospital, surgery or other medical institution. • An active (e.g. sports field, golf course) or passive (e.g. national park) recreational area. • Commercial or industrial premises. • A place of worship.
Rating Background Level (RBL)	The overall single-figure background level representing each assessment period (day/evening/night) over the whole monitoring period.
Feasible and Reasonable (Noise Policy for Industry Definition)	**Feasible** mitigation measure is a noise mitigation measure that can be engineered and is practical to build and/or implement, given project constraints such as safety, maintenance and reliability requirements. Selecting **Reasonable** measures from those that are feasible involves judging whether the overall noise benefits outweigh the overall adverse social, economic and environmental effects, including the cost of the mitigation measure. To make a judgement, consider the following: • Noise impacts • Noise mitigation benefits • Cost effectiveness of noise mitigation • Community views.
Sound power level (SWL)	The sound power level of a noise source is the sound energy emitted by the source. Notated as SWL, sound power levels are typically presented in dB(A).

1. Introduction

1.1 Background

RAPT Consulting has been engaged to prepare a construction noise and vibration management plan (CNVMP) on behalf of Hansen Yunken as part of their project at the University of Newcastle (UON) Central Coast Campus (CCC).

Condition B25 of the approval states a Construction Noise and Vibration Management Plan (CNVMP) is required as shown in Figure 1-1.

B25. A Construction Noise and Vibration Management Sub-Plan must be submitted to the Planning Secretary for approval and 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 the 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 a complaints management system implemented for the duration of construction;

(e) 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 **B21.**

(f) is to predict noise and vibration at the nearest receivers based on the proposed plant.

(g) the efficacy of sound blankets or hoarding around the construction site is to be investigated as a noise barrier to protect the amenity of adjacent and nearby receivers.

(h) impacted receivers are to be consulted regarding the nature and timing of the works, including predicted noise and vibration impacts at their property and the mitigation measures that will be adopted, noting that the project hours of work will overlap with hours of occupation for both residential and commercial premises, and noting that the programme/s of works should seek to create the least possible disruption to the community.

(i) nearby receivers are also to be provided with a site contact for the lodgement of any noise or vibration complaints.

(j) Investigation of any complaints received and measurements to be undertaken and compared with predictions made in the CNVMP. If the measurements are not in accordance with those predictions, additional reasonable and feasible mitigation measures are to be investigated.

(k) plant selected with consideration of the sound and vibration output. Selected plant will not be any larger than that required to undertake the activity.

(l) sound barriers (either, plywood hording or sound barrier mats hung from site fencing) will be erected around the site perimeter and extend to at least 1.8 m above ground level.

Figure 1-1 Condition B25 CNVMP Requirements

1.2 Purpose of this plan

This CNVMP has been prepared in response to the requirements outlined in Section 1.1.

This CNVMP should be read in conjunction with the Construction Management Plan and other management plans.

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

1.3 Objectives

The primary objective of this plan is to comply with the noise and vibration requirements of the Contract and to ensure that no works significantly impact on local background noise and vibration levels.

The objective of the CNVMP can be summarised as follows:

- Ensure that construction works do not significantly impact background noise levels around the site, and that applicable guidelines and regulations are met
- Identification and management of critical locations for noise and vibration levels in neighbouring properties
- Ensure all equipment operates within the applicable noise levels
- Ensure that construction works do not cause sufficient vibration to damage surrounding buildings and comply with the applicable guidelines and regulations
- Cooperative and responsive management principles.

2. Legislation and Guidelines

2.1 Legislation

Key environmental legislation relating to noise and vibration management includes:

- Protection of the Environment Operations Act (1997)
- Environment Planning and Assessment Act (1979)
- Local Government Act (1993)
- Protection of the Environment Operations (Noise Control) Regulation 1999 NSW EPA Environmental Noise Control Manual

2.2 Guidelines and Standards

The key references relevant to noise and vibration management of project include:

- DIN 1999, DIN 4150: Part 3 – 1999 Effects of vibration on structures, DIN, Germany
- EPA Interim Construction Noise Guideline
- DEC 2006, Assessing vibration – a technical guideline, Department of Environment and Conservation, Sydney NSW
- DECC 2009, Interim Construction Noise Guideline, NSW Department of Environment and Climate Change, Sydney NSW
- RTA 2001, Environmental Noise Measurement Manual, Roads and Traffic Authority, Sydney NSW
- EPA 2017 Noise Policy for Industry
- AS 1055 Parts 1 to 3 Acoustics: Description and management of environmental noise;
- AS 2659 Sound level metres
- AS 2659.1 Guide to the use of sound measuring equipment
- AS 2072 Acoustics: Methods for measurement of traffic noise.

3. Communication

Following the completion and implementation of an approved CNVMP, there are several key measures, which will be undertaken by the site team to ensure effective and positive communication with all affected parties.

3.1 Ongoing Cooperative Management

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

The project team pro-actively manage the project by focusing closely on planning, programming, forecasting and monitoring activities. This focus minimises the potential for problems to occur. The team will continue to develop contingency plans to address the possibility of problems actually arising. This approach is fundamental to the successful delivery of the project.

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

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

3.2 Response Management

While noise and vibration management and mitigation measures will assist in meeting project objectives, it is understood the potential exists for concerns from affected parties throughout different stages of the project.

Efficiently and effectively providing comprehensive response management procedures for each individual concern throughout the project will be fundamental to complete the works to the satisfaction of all parties.

An obligation exists to quickly and adequately act on concerns if and when they arise. it is the site responsibility to effectively close out these issues and concerns regardless of liability, ensuring affected parties are completely satisfied in a timely manner to the best of our ability.

3.3 Forecasting and Notification

A key communication tool is the provision of ongoing forecasting and early notification of activities to potentially affected parties. This provides early warning of the stages of the projects, provides an opportunity for review and comment by affected parties and helps

outside parties generally understand the construction process and why certain activities occur.

By providing this open form of communication affected parties have a higher level of understanding of the works and it encourages feedback into other party's activities, which may affect scheduled works or change for whatever reason. Through early warning site management can assist in re-programming works to suit the requirements of the affected party without affecting the overall construction programme. Early warning and notifications both ways is necessary for the ongoing success of the project.

3.4 Contractor Management

The site team will ensure the CNVMP will be a contract document for its contractors, notably civil works, and will be further developed and amended in conjunction with leading contractors. Site management will listen to their concerns and innovations with consideration to the requirements of the contract to ensure an effective balance of community management, environmental management and onsite production.

Site Management will ensure that the noise and vibration requirements and plans are;

- Contract documents for all contractors
- An integral part of individual project site inductions
- Monitored daily through site environmental hazard sheets
- Adequate site management resources throughout all project phases
- An assessment criteria for the selection of contractors
- Are continually updated throughout the course of the works as required

The transfer of knowledge and requirements, while maintaining overall project responsibility, will be integral to ensuring effective site management. Site management recognise this communication link with site contractors is important to maintaining effective overall management of the project to the satisfaction of all affected parties.

4. Noise and Vibration Guidelines

4.1 Site and Surrounding Area

The site and surrounding area including nearest receptors and noise monitoring location is shown in Figures 4-1 and 4-2 .

Figure 4-1 Site Location and Nearest Receptors.

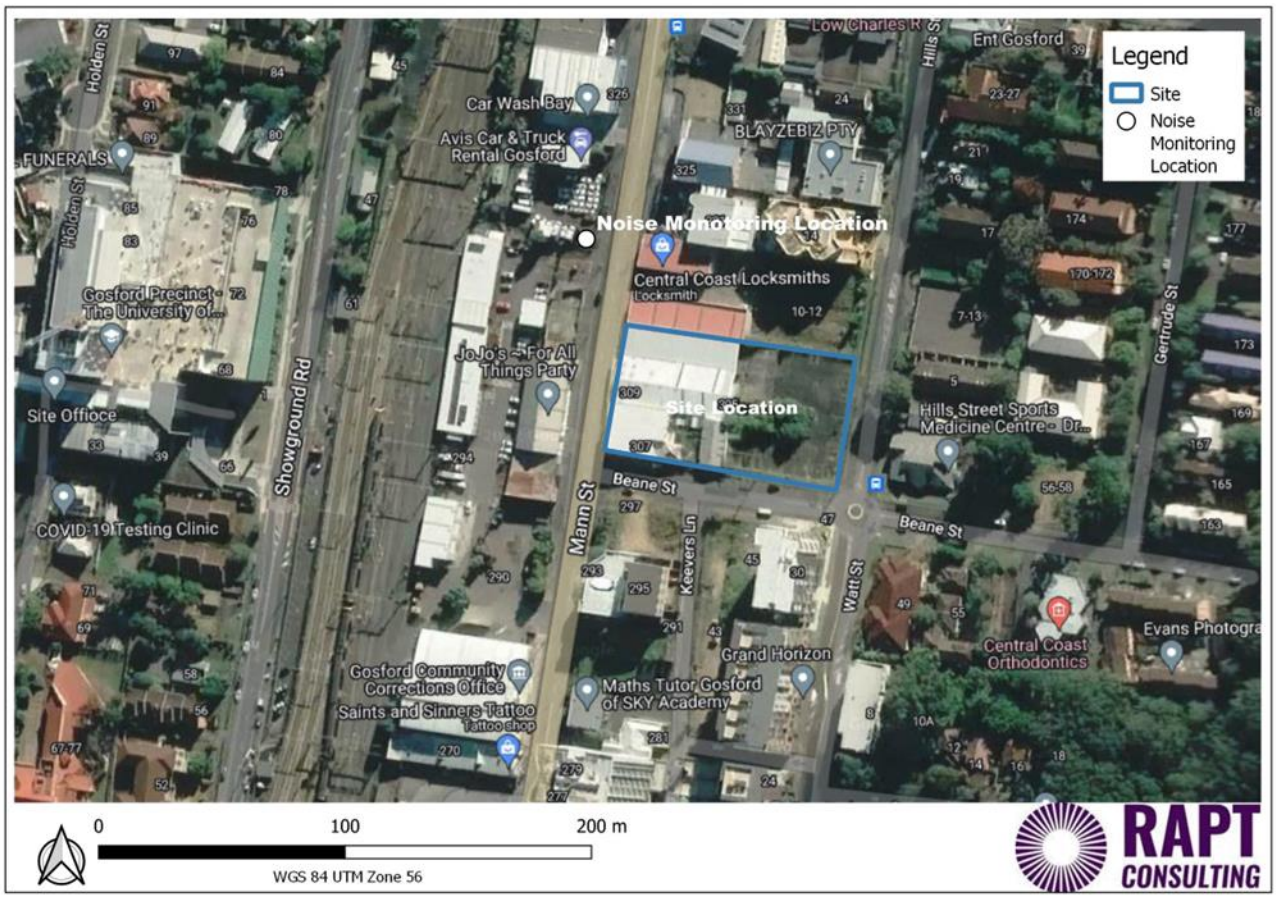


Figure 4-2 Site and Noise Monitoring Location

4.2 Construction Noise

Construction noise is assessed with consideration to DECCW Interim Construction Noise Guidelines (ICNG) (July 2009). The INCG is a non-mandatory guideline that is usually referred to by local councils and other NSW government entities when construction / demolition works require development approval. The ICNG recommend standard hours for construction activity as detailed in Table 4-1.

Table 4-1 ICNG Recommended Construction Hours

Work type	Recommended standard hours of work
Normal construction	Monday to Friday: 7 am to 6 pm. Saturday: 8 am to 1 pm. No work on Sundays or Public Holidays.
Blasting	Monday to Friday: 9 am to 5 pm. Saturday: 9 am to 1 pm. No work on Sundays or Public Holidays.

The ICNG provides noise management levels for construction noise at residential and other potentially sensitive receivers. These management levels are to be calculated based on the adopted rating background level (RBL) at nearby locations, as shown in Table 4-2.

Table 4-2 Recommended Construction Noise Management Levels

Period	Management Level $L_{Aeq(15\ min)}$
Residential Recommended standard hours	Noise affected level: RBL + 10 Highly noise affected level: 75 dB(A)
Residential Outside recommended standard hours	Noise affected level: RBL + 5 Highly noise affected level: 75 dB(A)
Classrooms at schools and other educational institutions	Internal Noise Level 45 dB(A) (applies when properties are being used) Outdoor Noise Level 55 dB(A) (assumes 10dB(A) loss through an open window
Hospital wards and operating theatres	Internal Noise Level 45 dB(A) (applies when properties are being used) Outdoor Noise Level 55 dB(A) (assumes 10dB(A) loss through an open window
Places of worship	Internal Noise Level 45 dB(A) (applies when properties are being used)
Active recreation areas (characterised by sporting activities and activities which generate their own noise or focus for participants, making them less sensitive to external noise intrusion)	External noise level 65 dB(A)
Industrial Premises	External noise level 75 dB(A)
Offices, retail outlets	External noise level 70 dB(A)
Passive recreation areas (characterised by contemplative activities that generate little noise and where benefits are compromised by external noise intrusion, for example, reading, meditation)	External noise level 60 dB(A)

The above levels apply at the boundary of the most affected residences / offices or within 30m from the residence where the property boundary is more than 30 m from the residence.

The *noise affected level* represents the point above which there may be some community reaction to noise. Where the *noise affected level* is exceeded all feasible and reasonable work practices to minimise noise should be applied and all potentially impacted residents should be informed of the nature of the works, expected noise levels, duration of works and a

method of contact. The *noise affected level* is the background noise level plus 10 dB(A) during recommended standard hours and the background noise level plus 5 dB(A) outside of recommended standard hours.

The *highly noise affected level* represents the point above which there may be strong community reaction to noise and is set at 75 dB(A). Where noise is above this level, the relevant authority may require respite periods by restricting the hours when the subject noisy activities can occur, considering:

- Times identified by the community when they are less sensitive to noise (such as mid-morning or mid-afternoon for works near residences).
- If the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.

As part of the development application, noise monitoring was undertaken by RAPT Consulting *2222408_221201 Environmental Acoustic Assessment UON Gosford, NSW* from 21 to 27 July 2022. The noise monitoring location is shown in Figure 4-2 taken from the abovementioned report.

It is understood works required for the proposal would be undertaken during standard construction hours. However, construction noise management levels (NML's) for standard and out of hours situations are provided for completeness. NML's for residential receivers have been derived, as shown in Table 4-3.

Table 4-3 Construction Noise Management Levels dB(A) Leq(15min)

Period	RBL L_{A90}, dB(A)	Standard hours noise management levels, $L_{Aeq,15min}$, dB(A)	Out-of-hours noise management levels, $L_{Aeq,15min}$, dB(A)
Day[1]	51	61	56
Evening[1]	42	-	47
Night[1]	36	-	41

Note 1 Day: 7:00 to 18:00 Monday to Saturday and 8:00 to 18:00 Sundays & Public Holidays, Evening: 18:00 to 22:00 Monday to Sunday & Public Holidays , Night: 22:00 to 7:00 Monday to Saturday and 22:00 to 8:00 Sundays & Public Holidays

4.3 Vibration Guidelines

Vibration during construction and operational activity is expected to primarily originate from trucks and machinery during stages of construction and activities. All piling will utilise non-percussive techniques. RAPT Consulting also understand that blasting and heavy ground impact activities is not expected to occur during the works.

4.3.1 Human Exposure

Vibration goals were sourced from the DECCW's *Assessing Vibration: a technical guideline*, which is based on guidelines contained in British Standard (BS) 6472–1992, *Evaluation of human exposure to vibration in buildings (1–80 Hz).*

Intermittent vibration is assessed using the vibration dose value (VDV), fully described in BS 6472 – 1992. Acceptable values of vibration dose are presented in Table 4-4.

Table 4-4 Acceptable Vibration Values for Intermittent Vibration ($m/s^{1.75}$)

Location	Daytime [1]		Night-time [1]	
	Preferred value	Maximum value	Preferred value	Maximum value
Critical areas [2]	0.10	0.20	0.10	0.20
Residences	0.20	0.40	0.13	0.26
Offices, schools, educational institutions and places of worship	0.40	0.80	0.40	0.80
Workshops	0.80	1.60	0.80	1.60

4.4 Building Damage

Currently, there is no Australian Standard that sets the criteria for the assessment of building damage caused by vibration. Guidance of limiting vibration values is attained from reference to the following International Standards and Guidelines:

- British Standard BS7385.2 - 1993 *Evaluation and Measurement for Vibration in Buildings*, Part 2 - Guide to damage levels from ground borne vibration; and
- German Standard DIN 4150-3: 1999-02 Structural Vibration – Part 3: *Effects of vibration on structures*.

BS7385.2 – 1993 is utilised in this case in the assessment of potential building damage resulting from ground borne vibration produced by the proposed activity.

The recommended Peak Particle Velocity (PPV) guidelines for the possibility of vibration induced building damage are derived from the minimum vibration levels above which any damage has previously been encountered and are presented in Table 4-5.

Table 4-5 Transient Vibration Guideline Values for Potential Building - Cosmetic Damage

Building Type	Peak component particle velocity in frequency range of predominant pulse	
	4 Hz to 15 Hz	15 Hz and above
Reinforced or framed structures. Industrial and heavy commercial buildings	50 mm/s at 4 Hz and above	
Unreinforced or light framed structures. Residential or light commercial type buildings.	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above

Unlike noise which travels through air, the transmission of vibration is highly dependent on substratum conditions between the source/s and receiver. Also dissimilar to noise travelling through air, vibration levels diminish quickly over distance, thus an adverse impact from vibration on the broader community is not typically expected. Vibration during works is considered an intermittent source associated with two main types of impact; disturbance at receivers and potential architectural/structural damage to buildings. Generally, if disturbance issues are controlled, there is limited potential for structural damage to buildings.

5. Acoustic Assessment

5.1 Construction Noise

A construction noise assessment was undertaken by RAPT Consulting in report *2222408_221201 Environmental Acoustic Assessment UON Gosford, NSW.* Results of the construction noise assessment are reproduced in this section.

While it is unknown at this stage what specific plant and equipment are planned to be used, generally the typical construction activity on the proposal will be in the form of construction of the buildings. Other equipment may be used however it is anticipated that they would produce similar noise emissions. Therefore, an assumed construction sequence would be:

- Excavation/Site preparation.
- Construction of building.

Table 5-1 provides general plant and machinery data that has been used to predict noise levels at the neighbouring properties. The noisiest data has been chosen for each piece of plant/machinery to present a reasonable worst-case scenario.

Table 5-1 Plant and Equipment Noise Levels

Plant Item	Activity Noise Level L_{Aeq} @ 10m	DEFRA Construction Noise Database	Anticipated Usage %
Excavation			
Dozer	80	Table 2 Ref 10	50
Tracked Excavator	79	Table 2 Ref 14	50
Articulated Dump Truck	74	Table 2 Ref 32	50
Roller	73	Table 2 Ref 38	50
Building			
Concrete Pump & Cement Mixer	67	Table 4 Ref 24	50
Poker Vibrator	69	Table 4 Ref 34	50
Mobile Telescopic Crane	67	Table 4 Ref 36	50
Diesel Generator	61	Table 4 Ref 75	90

Note 2 The sound power levels for the individual plant items are worst-case levels representative of the equipment operating at maximum capacity. In practice, not all plant items would operate at maximum capacity at the same time and therefore the estimated usage has been adjusted to reflect this. This adjustment is consistent with RAPT Consulting experience on similar projects.

It is understood the proposed work would be undertaken during standard work hours:

- Monday to Friday, 7am to 6pm
- Saturday, 8am to 1pm
- No works on public holidays.

Construction Operations

Acoustic modelling was undertaken using Bruel and Kjaer's "Predictor" to predict the effects of construction noise. Predictor is a computer program for the calculation, assessment and prognosis of noise propagation. Predictor calculates environmental noise propagation according to ISO 9613-2, "Acoustics – Attenuation of sound during propagation outdoors". the method predicts the sound pressure level under meteorological conditions favourable to propagation from sources of known sound emission. These conditions are for downwind propagation or equivalently under a well developed moderate ground based temperature inversion.' Terrain topography, ground absorption, atmospheric absorption and relevant shielding objects are taken into account in the calculations.

Construction noise levels have been predicted based on the potential construction noise levels provided in Table 5-1. These noise levels represent different equipment noise levels and give an idea how noise levels may change across the proposal area with different activities being undertaken.

The magnitude of off-site noise impact associated with construction would be dependent upon several factors:

- The intensity of construction activities
- The location of construction activities
- The type of equipment used
- Intervening terrain, and
- The prevailing weather conditions.

In addition, construction machinery would likely move about the study area, variously altering the directivity of the noise source with respect to individual receivers and their distances. Noise levels at sensitive receivers can be significantly lower than the worst-case scenario when the construction works move to a more distant location in the work area. An example of this is shown in Figure 5-1.

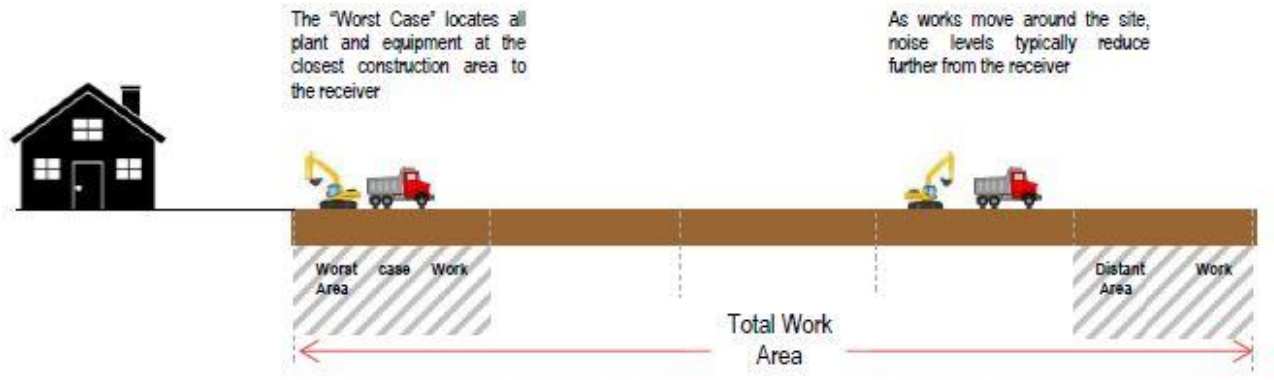


Figure 5-1 Example of Differing Work Areas

During any given period, the machinery items to be used in the study area would operate at maximum sound power levels for only brief stages. At other times, the machinery may produce lower sound levels while carrying out activities not requiring full power. It is highly unlikely that all construction equipment would be operating at their maximum sound power levels at any one time. Finally, certain types of construction machinery would be present in the study area for only brief periods during construction. Therefore, the modelled construction noise results are considered to represent a worst-case scenario. four scenarios were assessed, one for excavation and one for building to the west of the site and one for the excavation and building to the east of the site.

Other key assumptions and inputs in the model include:

- topographical information was obtained from NSW Government Spatial Services
- all cleared areas were modelled considering a conservative ground factor of 0.0 to account for hard surfaces
- all receivers were modelled at 1.5 metres above the ground surface

Construction noise assessment results

Noise levels were predicted to each assessed receptor assuming receiver heights of 1.5m above ground level for typical construction activities. Table 5-3 summarises the maximum predicted noise level from each of the construction scenarios at identified residential receptors. Predicted exceedances of NML's are highlighted in RED.

Table 5-2 Predicted Construction Noise Levels dB(A) LAeq(15min)

Receiver	Excavation East	Build East	Excavation West	Build West	Standard Hours NML	Highly Affected Noise Level
R1	58	47	65	55	61	75

Receiver	Excavation East	Build East	Excavation West	Build West	Standard Hours NML	Highly Affected Noise Level
R2	65	54	65	55	61	75
R3	64	53	60	50	61	75
R4	62	52	60	50	61	75
R5	50	38	54	43	70	-
R6	49	41	51	40	70	-
R7	69	58	64	54	70	-
R8	70	59	64	54	70	-
R9	61	51	58	49	61	75
R10	64	54	61	51	61	75
R11	63	52	58	47	70	-
R12	72	62	46	35	70	-
R13	55	44	57	45	70	-
R14	65	55	46	36	61	75
R15	63	53	34	24	61	75
R16	39	29	43	33	70	-
R17	52	41	43	34	70	-

Receiver	Excavation East	Build East	Excavation West	Build West	Standard Hours NML	Highly Affected Noise Level
R18	45	34	43	34	70	-
R19	64	53	72	61	70	-
R20	61	51	65	54	70	-
R21	45	34	51	41	55	-
R22	49	38	46	35	61	75
R23	37	26	62	52	70	-

The results of the construction assessment indicate compliance with all NML's with the exception of excavation works in the east and west of the site at limited receivers as shown in Table 5-3. Figure 5-1 also shows how construction moves about a site, sometimes being closer and other times being further away from a receptor. This greatly reduces the viability of using items such as barriers at the perimeter of the site as for a barrier to be effective, it needs to be as close to the noise source as possible. The highly affected noise level is also expected to be complied with in all situations.

5.2 Vibration Sources

The relationship between vibration and the probability of causing human annoyance or damage to structures is complex. This complexity is mostly due to the magnitude of the vibration source, the particular ground conditions between the source and receiver, the foundation-to-footing interaction and the large range of structures that exist in terms of design (e.g. dimensions, materials, type and quality of construction and footing conditions). The intensity, duration, frequency content and number of occurrences of vibration, are all important aspects in both the annoyances caused and the strains induced in structures.

Energy from construction equipment is transmitted into the ground and transformed into vibrations, which attenuates with distance. The magnitude and attenuation of ground vibration is dependent on the following:

- The efficiency of the energy transfer mechanism of the equipment (i.e. impulsive reciprocating, rolling or rotating equipment)
- The Frequency content

- The impact medium stiffness
- The type of wave (surface or body)
- The ground type and topography.

Due to the above factors, there is inherent variability in ground vibration predictions without site-specific measurement data. Due to the nature of the works, the vibration risk is low.

The NSW RMS Publication Construction Noise and Vibration Guideline provides guidance for ground vibration and minimum safe working distances. Table 5-2 outlines recommended safe working distances for vibration intensive plant from sensitive receivers.

Table 5-3 Minimum Working Distances from Sensitive Receivers

Plant Item	Rating / Description	Minimum Distance Cosmetic Damage		Minimum Distance Human Response (NSW EPA Guideline)
		Residential and Light Commercial (BS 7385)	Heritage Items (DIN 4150, Group 3)	
Vibratory Roller	<50 kN (1-2 tonne)	5m	11m	15m to 20m
	<100 kN (2-4 tonne)	6m	13m	20m
	<200 kN (4-6 tonne)	12m	15m	40m
	<300kN (7-13 tonne)	15m	31m	100m
	>300kN (13-18 tonne)	20m	40m	100m
	>300kN (>18 tonne)	25m	50m	100m
Small Hydraulic Hammer	300kg (5 to 12 t excavator)	2m	5m	7m
Medium Hydraulic Hammer	900kg (12 to 18 t excavator)	7m	15m	23m
Large Hydraulic Hammer	1600kg (18 to 34 t excavator)	22m	44m	73m
Vibratory Pile Driver	Sheet Piles	2m to 20m	5m to 40m	20m
Pile Boring	≤ 800mm	2m (nominal)	5m	4m
Jack Hammer	Hand Held	1m (nominal)	3m	2m

The minimum working distances are indicative and will vary depending on the particular item of plant and local geotechnical conditions.

Based on distances from the proposal to nearest receivers and items of plant to be used, vibration goals are expected to be met. However, it is recommended Table 5-2 be used as a guide when selecting vibration generating plant and equipment.

6. Mitigation Measures

The following noise mitigation measures will be adopted to minimise any potential noise and vibration impacts for the project.

Table 6-1 Noise and Vibration Mitigation Measures

Action Required	Applies to	Details
Management Measures		
Working Hours	Airborne Noise Ground –borne noise & vibration	Ensure strict compliance with construction hours. This requirement to be communicated to all staff through inductions and toolbox meetings.
Out of Hours Works	Airborne Noise Ground –borne noise & vibration	Where work is required to be conducted outside normal construction hours, the out-of-hours works protocol shall be followed to minimise the impact
Site Induction	Airborne Noise Ground –borne noise & vibration	All employee, contractors and subcontractors are to receive an environmental induction. The induction must at least include: • All relevant project specific and standard noise and vibration mitigation measures • Relevant licence and approval conditions • Permissible hours of work • Any limitations on high noise generating activities • Location of nearest sensitive receivers • Construction employee parking areas • Designated loading/unloading areas and procedures • Site opening/closing times • Environmental incident procedures
Behavioral Practices	Airborne Noise	No swearing or unnecessary shouting or loud radios on site.

Action Required	Applies to	Details
		No dropping of materials from height, throwing of metal items and slamming of doors
Education	Airborne Noise Ground –borne noise & vibration	Provide education of supervisors, operators and sub-contractors on the need to minimise noise through Toolbox meetings and on-site coaching
Noise Monitoring	Airborne Noise Ground –borne noise & vibration	A noise monitoring program is implemented in accordance with this plan any approval and licence conditions. In the event of noise complaints during operations, noise monitoring will be undertaken. A report will be prepared comparing noise results against noise management measures. If noise management levels are exceeded while monitoring, site management will be notified to make adjustments to ensure compliance.
Vibration Monitoring	Vibration	A vibration monitoring program is implemented in accordance with this plan any approval and licence conditions
Consultation	Airborne Noise Ground –borne noise & vibration	A Community and Stakeholder Manager shall to be appointed by the contractor prior to the commencement of any works. The Manager will provide information to neighbours before and during construction to advise of expected noisy works, the duration of the works and what is being done to minimise the noise. A community telephone number and email address will be established for consultation purposes. Community notifications will be prepared and distributed at least 7 days prior to commencement of any works.
Noise & vibration complaints	Airborne Noise Ground –borne noise & vibration	A protocol will be developed for handling noise and vibration complaints that

Action Required	Applies to	Details
		includes recording, reporting and acting on complaints.
Planning		
Dilapidation Survey	Vibration	Prior to commencement of works, undertake a dilapidation survey to detail the current structural condition of the site and adjoining areas, including all existing fences, adjoining buildings, infrastructure, roads, crossovers etc.
Construction hours and scheduling	Airborne Noise Ground –borne noise & vibration	Where feasible and reasonable, construction should be carried out during the standard daytime working hours. Work generating high noise and/or vibration levels should be scheduled during less sensitive time periods and higher levels of neighbourhood noise.
Maximise Shielding	Airborne Noise	Use temporary site buildings and materials stockpiles as noise barriers Where possible, schedule construction of permanent walls so they can be used as early as possible
Equipment selection	Airborne Noise Ground –borne noise & vibration	Use quieter and less vibration emitting construction methods where feasible. Ensure all fixed plant at the work sites is appropriately selected, and where necessary, fitted with silencers, acoustical enclosures and other noise attenuation measures where practicable.
Equipment Placement	Airborne Noise Ground –borne noise & vibration	Position noisy plant and equipment as far apart as is practicable from each other and consider whether orientation and location of the plant can reduce noise impacts at sensitive receivers.
Vehicle Movements	Airborne Noise Ground –borne noise & vibration	Arrange work sites to avoid or minimise truck movements, and ensure vehicles enter and exit work sites in a forward direction.
Reversing Alarms	Airborne Noise	Avoid the use of reversing alarms by designing the site layout to avoid reversing.

Action Required	Applies to	Details
		Where possible, install non-tonal and / or automatically adjusting reversing alarms on site equipment
Maximum noise levels	Airborne Noise	The noise levels of plant and equipment must have operating Sound Power or Sound Pressure levels complaint with the criteria set in OEH guidelines.
Construction		
Rock Breaking	Airborne Noise Ground –borne noise & vibration	Reduce the use of rock-hammering where feasible and use alternative measures such as rock-saws and rippers where possible.
Equipment selection	Airborne Noise Ground –borne noise & vibration	Select appropriate sized equipment for the task, such as vibratory compactors and rock excavation equipment.
Equipment Maintenance	Airborne Noise Ground –borne noise & vibration	Regular maintenance and testing of all plant and equipment onsite to ensure they continue to meet the noise and vibration criteria
Equipment Operation	Airborne Noise Ground –borne noise & vibration	Ensure equipment is operated in the correct manner and adequately maintained - including replacement of engine covers, repair of defective silencing equipment, tightening of rattling components, repair of leakages in air lines and shutting down equipment not in use
Work Methods	Airborne Noise Ground –borne noise & vibration	Careful selection of all work methods to be used on the project to ensure they meet the noise and vibration criteria.
Site Entrances	Airborne Noise Ground –borne noise & vibration	The site entry and egress points will be set as far from receivers as practical and will be designed to distribute the movements rather than directing all movements through a single gate.
Relief Periods	Airborne Noise Ground –borne noise & vibration	Provide periods of relief when practical during noise intensive activities such as rock breaking.

Action Required	Applies to	Details
Noisy fabrication works	Airborne Noise	Carry out noisy fabrication work at another site (for example, within enclosed factory premises) and then transport to site.
Generators/ compressors	Airborne Noise	Use only silenced generators and compressors
Vehicle queuing	Airborne Noise Ground –borne noise & vibration	Prevent vehicles and plant queuing and idling outside the site, particularly prior to the construction start time.
Vehicle maintenance	Airborne Noise	Ensure that equipment is operated in the correct manner including repair of defective mufflers, tightening/correction of rattling parts and components and repair of leakages in compressed airlines.
Auditing and Monitoring		
Noise Monitoring	Airborne Noise Ground –borne noise & vibration	Undertake regular monitoring of overall noise levels at sensitive receivers to check for compliance. Where non-compliances are identified, modify work practices to achieve compliance.
Vibration Monitoring	Vibration	Undertake vibration monitoring during works at sensitive receivers to check for compliance. Where non-compliances are identified, modify work practices to achieve compliance.
Community Consultation	Airborne Noise Ground –borne noise & vibration	Undertake community consultation and respond to complaints in accordance with project procedures

7. Site Specific Management and Mitigation Measures

7.1 Management Measures

Management of Noise and Vibration issues rest in the first instance with the Project Manager. Working closely with the Site Manager and their team the Project Manager will ensure resources and support is available to allow the Site Manager to effectively management of all aspects of this Noise and Vibration Plan and its resulting requirements.

7.2 Planning

Planning for control of Noise and Vibration is the key to successful outcomes. With proper planning in place many potential problems resulting in complaints can be averted thus maintaining confidence with stakeholders that all possible measures are in place.

Where potential problems are anticipated following the planning and risk review process site management will communicate outcomes and potential problems to the stakeholders concerned to avoid surprises.

Examples of planning measures are as follows:

- Careful selection of all work methods to be used on the project to ensure they meet the noise and vibration criteria.
- Where practicable, increase the use of offsite manufactured elements in the design to eliminate site manufacturing.
- Create dedicated truck routes for heavy vehicles. It will be important to establish and agree early in the project approved truck routes, not just for close neighbours, but for the community as a whole. The preferred strategy is to choose a route that minimises disruption to neighbours and the community and enforce it throughout the works.
- Investigate the efficacy of sound blankets or hoarding around the construction site as a noise barrier to protect the amenity of adjacent and nearby receivers.

7.3 Plant and Equipment

- Careful selection of all plant and equipment to be used on the project to ensure they meet the noise and vibration criteria.
- Regular maintenance and testing of all plant and equipment onsite to ensure they continue to meet the noise and vibration criteria.
- Where identified, set up anti vibration pads for any vibrating plant and other temporary plant and equipment.

7.4 Management

In addition to noise and vibration mitigation, site management will establish an emergency contact point for any complaints, should there be an immediate issue, which requires

immediate action. This will enable the public to make a direct phone call to the site manager to stop a work area or address a problem should the need arise.

8. Successful Management of Noise and Vibration

In summary the overall process to be implemented includes:

- Understand the project and contract requirements
- Identify the specific project risks and sensitive locations and provide a detailed risk assessment for each location in specific relation to noise and vibration requirements
- Set clear criteria and guidelines prior to works commencing
- Further develop the Noise and Vibration Management Plan in conjunction with affected parties throughout the course of the works
- Management the implementation of the plan through the allocation of appropriate resources and ensuring the requirements of the plan are transferred to all contractors and site workers
- Provide ongoing cooperative management throughout all phases of the project. Understand that it is our obligation, regardless of contractual requirements, to act in a cooperative manner at all times with all affected parties and stakeholders
- Provide adequate response management for any issue.
- Provide adequate contractor management to ensure common guidelines and restrictions with the managing contractor requirements. Actively monitor the contractors on the project in a detailed and regular fashion through site and contractual management
- Allocate sufficient overall site management resources in all facets of the project to ensure issues are understood, allow correct forecasting and planning, allow adequate consultation and communication, comprehensive daily management and adequate response management
- Implement project monitoring in response to concerns or complaints and provide constant feedback to monitoring data as required
- Implement comprehensive physical mitigation measures in plant and equipment used and construction techniques
- Draw on existing experience on noise and vibration sensitive sites, and experience and methods used in similar confined sites with nearby sensitive receivers.
- Understand site obligations to be cooperative, responsive and constantly adjust processes to suit affected parties, stakeholders and the greater community
- In accordance with the project conditions, approval will be sought to complete any out of hour's works – if required.

9. Training

In addition to other training requirements inductions are required and are to address:

- Sensitivity of the site and proximity to sensitive receivers
- Awareness of noise and vibration created during construction and the requirement to operate equipment is in the quietest possible manner in consideration of surrounding residents / land uses
- Strict adherence to the approved hours of operation
- Delivery hours and locations
- Notification of the Project Manager/Site Supervisor of any works likely to cause significantly high vibration / noise emissions

10. Limitations

The purpose of the CNVMP is to provide an independent set of management measures for the University of Newcastle Central Coast Campus project located at Gosford, NSW.

It is not the intention of the plan to cover every element of the acoustic environment, but rather to conduct the plan with consideration to the prescribed work scope.

It is the nature of environmental assessments that all variations in environmental conditions cannot be assessed and all uncertainty concerning the conditions of the ambient environment cannot be eliminated. Professional judgement must be exercised in the investigation and interpretation of observations.

In preparing this CNVMP, current guidelines for noise and vibration were referred to. This work has been conducted in good faith with RAPT Consulting's understanding of the client's brief and the generally accepted consulting practice.

No other warranty, expressed or implied, is made as to the information and professional advice included in this report. It is not intended for other parties or other uses.

11. The Author

This plan has been prepared by Gregory Collins of RAPT Consulting. Greg is a member of the Australian Acoustical Society and has over 29 years' experience in a wide range of Acoustics and Air Quality projects. Having previously been the Air and Noise Technical Service line leader and The Global Environmental Technical Sector Leader for international professional service firms, Greg has a reputation for technical excellence, combined with innovative, cost effective solutions for clients. Greg has provided environmental management, assessment and monitoring services for noise and air parameters across a range of sectors including transport, utilities, industry and resources. Greg has significant experience in the assessment of noise and air quality from establishment of goals to calculation, modelling and control of impacts. Greg's noise and air project experience includes; transportation infrastructure including road, rail and port developments, mining, power generation infrastructure from large coal fired power stations and smaller gas fired generators through to power transmission networks and suburban substation facilities, assessment and control from industrial premises, impact and management from construction activities, land use planning and residential and commercial noise control in building design.

8.6 Appendix 6 - Construction Waste Management Sub-Plan (CWMSP)

As attached.

HANSENYUNCKEN

Waste Management Plan

Project: University of Newcastle, Central Coast Campus

Job No: SN109

Rev: 1 – Sept 2023

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Uncontrolled Document in Hard Copy

Hansen Yuncken would like to acknowledge the KURING-GAI people as the traditional custodians of the land where this project is located.

We honour elders; past, present and emerging whose knowledge and wisdom has and will ensure continuation of cultures and traditional practices.

HANSENYUNCKEN

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HANSENYUNCKEN

1 Document Information

1.1 Review and Approval

Position	Name	Sign	Date
Review			
Project Manager	Robert Schmitzer		
Contracts Administrator	Patrick Fishburn		
Contracts Administrator	Peter Diab		
Site Manager	Dale Reith		
Foreman	Michael Stevens		
Foreman	Bevan Talbot		
Senior Project Engineer	Tim Everett		
Site Engineer	Jordan Watters		
Site Engineer	Joshua Hersant		
Approval			
Regional NSW Manager	Patrick McAllister		
HSE Manager	Pater Fay		

1.2 Document Control

Revision	Description	Issued by	Issue date
2	Template Updated for Rebrand	PC	31/07/2018
3	Update to reflect UON CCC Project	TH	14/09/2023

2 Definitions

The following definitions and abbreviations have been used in this Waste Management Plan. Further definitions and abbreviations are provided in referenced procedures and plans.

EPA	Environmental Protection Authority
HY	Hansen Yuncken
WMP	Waste Management Plan (this document)
UON	University of Newcastle
CCC	Central Coast Campus
CLT	Cross-laminated Timber

3 Commitment & Policy

3.1 Purpose

To manage the construction waste including the re – use, recycle and dispose of all excavated material and other wastes generated on construction site.

This Plan has been prepared in accordance with Central Coast Council “Waste Resource Management Strategy”. This plan applies to the lawful disposal of construction materials on “The Project” development during the construction period.

3.2 Scope of Works

The construction scope of works for the UON CCC project are as follows:

- Demolition of the existing Mitre 10 building and attached carpark/ hardstand;
- Earthworks to prepare the site and basement;
- Temporary works;
- Excavation and foundation preparation:
- Piling;
- Inground services;
- Reinforced concrete foundations;
- Pre-cast concrete core structures;
- CLT structure;
- Façade – curtainwall;
- Fit-out – inclusive of public areas, teaching, common and workspaces;
- Landscaping works;
- Surrounding verge works as required;
- 6 Star Green Star accreditation;
- Building services including mechanical, electrical, hydraulic and vertical transport;
- FF&E; and
- Commissioning.

3.3 Objectives

The objectives of this plan correspond with those set out in the Central Coast Council "Waste Resource Management Strategy".i.e.:

- Waste minimisation and resource recovery –
  - To avoid waste through design and ordering correct material quantities.
  - To encourage improved environmental outcomes through increased source separation of materials.
  - To ensure more efficient management of waste and recyclable materials.
  - To maximise reuse and recycling of building construction materials, household generated waste and industrial commercial waste.
- Access – to ensure waste systems are easy to use and that collection vehicles are able to access buildings to remove waste safely and easily;
- Safety – to ensure safe practices for storage, handling and collection of waste and recycling;
- Pollution prevention – to prevent stormwater pollution that may occur as a result of poor waste storage and management practices;
- Ecologically Sustainable Development (ESD) – to promote the principles of ESD through resource recovery and recycling leading to a reduction in the consumption of finite natural resources;
- Hygiene – to ensure health and amenity for residents, visitors, and workers in the Central Coast; and
- Noise minimisation – to minimise noise during use by residents and collection of waste and recyclables.

4 Construction Waste

During construction it is anticipated that a variety of waste will be generated consistent with project scope and size. The major waste streams to be expected from the project are:

- Excavation:
  - General Spoil/Fill – landfill
  - Natural Material (VENM) – Recyclable
- Construction:
  - Concrete – Recyclable
  - Plastics – Recyclable
  - Timber – Recyclable
  - Glass – Recyclable
  - Metal – Recyclable
  - Tiles – Recyclable
  - General Waste – landfill

Hansen Yuncken's goal for building waste management is primarily the reduction of waste generated during construction activities. Waste reduction is the responsibility of all trades on site, as it relates to materials procurement, handling, storage and use. Waste generated during construction will be reused (where possible), recycled or disposed to landfill.

4.1 General Waste Management Strategies

Waste management activities are to be in accordance with:

- "Hansen Yuncken" Project Environmental Management plan; and
- Central Coast Council's "Waste Resource Management Strategy".

The main goal in construction will be to reduce the total volume of waste produced, which is to be achieved by effective materials procurement, management, and supply.

"Hansen Yuncken" shall focus on minimising waste by implementing the following:

4.1.1 Reducing Organic Waste

Organic waste consists of the following:

- Pruning and clippings
- Vegetation clearance
- Tree trunks and large branches from land clearance
- Weeds, leaf litter, mulch

To counter the amount of organic waste that will be encountered, it shall be chipped, mulched, composted and reused on site or sent to an off-site compost facility wherever possible.

4.1.2 Reducing solid waste

Solid waste consists of the following:

- Packaging from site materials
- Excess materials, unused products
- Soil from excavations
- Sediment retained in sediment traps

To counter the amount of solid waste that will be encountered, HY shall endeavour to:

- Buy materials with minimum packaging.
- Not over-order.
- Stockpile and reuse it on site.
- Recycle it off site or return to the supplier

4.1.3 Reducing liquid waste

Liquid waste can consist of the following:

- Site clean up
- Wash down areas
- Brick/tile /concrete cutting waste
- Dust control waste

To counter liquid waste, HY shall only discharge clean water into the stormwater. Where possible HY shall avoid generating any dirty water and when encountered, shall attempt to use such grey water for irrigation or as a means of suppressing dust.

HY shall also ensure that any waste stored for reuse, recycling or disposal cannot be washed or blown away.

4.1.4 Waste Minimisation

Major subcontractors will be encouraged to submit waste minimisation details including the following:

- Practical measures associated with their works to prevent waste entering the site
- Waste resulting from their work which can be recycled are to be actively managed as part of their waste reduction plan
- Alternative products containing recycled materials that could be utilised in their works which conform and meet the design specification
- Ordering the right quantities of materials and prefabrication of materials where possible
- Minimising site disturbance and to limit unnecessary excavation
- Careful sourcing separation of off-cuts to facilitate re-use, resale or efficient recycling

In order to reduce waste on site during the construction stage, all HY personnel and sub-contractors will be instructed to perform the following:

- Order materials to size
- Don't over-order
- Order pre-cut or prefabricated materials (where appropriate)
- Reduce packaging at source—buy materials with minimal packaging
- Separate reusable or recyclable materials from waste
- No rubbish is to be buried or burned on sit
- A designated concrete wash down area will be established on site for concrete trucks and pumps. Such an area will be adequately signed and designed so that any excess drainage from the area will be contained within the site boundaries
- Bins to be inspected regularly

4.1.5 Site Bin System

A site waste bin system will be achieved through the use of sealed bins for putrescible waste, separate portable bins for recyclable materials and non-recyclable waste materials.

Additional bins will be provided where practical to further separate waste between different recyclable materials.

Materials collected for recycling include:

- Glass
- Concrete, bricks and tiles
- Timber
- Aluminium
- Steel and other metals
- Plastic
- Plasterboard
- Paper, cardboard

The subcontractors will be responsible for the daily cleaning of their respective work areas and for placing all their waste in the nominated waste bins.

4.1.6 Packaging

All suppliers of building materials will be encouraged to nominate packaging minimisation and reuse initiatives. Bulk handling and reusable transport containers will be encouraged.

4.1.7 Waste Quantities:

The quantity of potential waste material is estimated by:

- Quantifying materials for the project
- Applying waste margins allowed in ordering materials
- Copying these amounts of waste into the waste management plan.

Normal waste percentages applicable to our work include:

- Timber 5 - 7%
- Plasterboard 5 - 15%
- Concrete 3%
- Bricks / Blocks 5%
- Tiles 5 – 10%

Conversion to volume of waste materials:

- Timber 0.5 tonne per m^3
- Concrete 2.4 tonne per m^3
- Bricks / Blocks 1.0 tonne per m^3
- Tiles 0.75 tonne per m^3
- Steel 2- 4 tonne per m^3

4.1.8 Waste Management

Waste will be separated and / or stored onsite for re-use and recycling – where applicable.

Site operations will ensure minimal waste creation and maximum reuse and recycling by:

- Staff training
- Employment of a specialised waste Management contractor
- Recycled materials used in construction
- Waste management requirements stipulated in sub-contracts
- On-going checks by site supervisors
- Separate area or bins set aside for sorted waste
- Clear signage of waste areas.

4.1.9 Training and Consultation

Waste minimisation will be part of the site environmental awareness program that will be incorporated into the site induction program.

The responsibility to ensure that waste materials go into the correct bins will be with everyone on site.

4.1.10 Measure of Performance

A waste management contractor shall be involved in the project to ensure effective planning for waste management.

The Waste Management Contractor will coordinate waste recycling, measurement, recovery and disposal. HY shall ensure 80% or more (by mass) of all construction waste generated on this project is reused or recycled.

4.1.11 Monitoring

The Waste Management Contractor will be responsible for providing monthly reports to the Site Manager. These reports will measure the number and size of bins, waste type in each bin, total tonnage / cubic metres generated and total tonnage / cubic metres recycled.

Waste reports will be collated and uploaded onto HYway via BIM360 Field monthly waste reports. Cumulative summaries of generated waste and recycling statistics are readily available and auditable.

Regular project audits shall be conducted to ensure their compliance with this plan, standards, Central Coast Council requirements and the contract.

4.1.12 Corrective Actions

Where a subcontractor has caused a bin to be contaminated unduly, the Site Manager will be advised, by a non-conformance report procedure. All corrective actions taken by the subcontractor shall be monitored and recorded against the non-conformance procedure, all of which shall be at the cost of the offending subcontractor.

4.1.13 Disposal

Dispose of waste to landfill will be as a last resort only. Landfill sites or waste transfer stations will require correct handling for dusty or hazardous waste and offer discounts for sorted wastes such as brick, metal and timber.

Records of disposals shall be kept on site. Any disposal of waste that is deemed hazardous shall be disposed of by approved EPA hazardous disposal unit

5 Waste Management Details

5.1 Demolition Waste Volumes

Material	Volume (m3)	*Tonnes (t)	**Appx. Percentage Recovered
Excavation Material	3769	3769	99.8%
Green waste	30	4.5	80%
Bricks	1250	1500	100%
Tiles	60	60	100%
Concrete	665	997.5	100%
Timber	26	4.94	33%
Plasterboard	20	4	50%
Metals	46.7	23.35	100%
Asbestos	1	0.31	0%
Other waste	N/A	N/A	0%
Totals	**5867.7**	**6363.6**	

Figure 1 extracted from "CONSTRUCTION & DEMOLITION WASTE MANAGEMENT PLAN, produced by Elephants Foot Consulting

5.1.1 Management of demolition materials

			How Waste will be Managed			
Type of Material	**Less than 10m³**	**Estimated Tonnage**	**Reuse On-Site**	**Recycle**	**Landfill**	**Estimated Tonnage of Material Diverted from Landfill**
Excavation Material	☐	3769	☒	☒	☐	3759.6
Green Waste	☐	4.5	☒	☒	☒	3.6
Bricks	☐	1500	☐	☒	☐	1500.0
Tiles	☐	60	☐	☒	☐	60.0
Concrete	☐	997.5	☒	☒	☐	997.5
Timber	☐	4.94	☒	☒	☐	1.6
Plasterboard	☐	4	☐	☒	☒	2.0
Metals	☐	23.35	☐	☒	☐	23.35
Asbestos	☐	0.31	☐	☐	☒	0.0
Other Waste	☐	N/A	☐	☒	☒	0.0
	Total	**6363.6**			**Total**	**6347.7**
					Total Diversion of Waste from Landfill (Minimum 80%)	**99.7%**

Figure 2 extracted from "CONSTRUCTION & DEMOLITION WASTE MANAGEMENT PLAN, produced by Elephants Foot Consulting

5.2 Construction Waste Volumes

Material	Volume (m3)	*Tonnes (t)	**Approx. Percentage Recovered
Excavation Material	N/A	N/A	99.8%
Green waste	N/A	N/A	80%
Bricks	22.7	27.2	100%
Tiles	2.7	2.7	100%
Concrete	69.65	104.5	100%
Timber	93.24	17.7	33%
Plasterboard	12	2.4	50%
Metals	46.7	23.35	100%
Other waste	N/A	N/A	0%
Totals	**246.99**	**177.9**	

Figure 3 extracted from "CONSTRUCTION & DEMOLITION WASTE MANAGEMENT PLAN, produced by Elephants Foot Consulting

5.2.1 Management of construction waste materials

			How Waste will be Managed			
Type of Material	**Less than 10m³**	**Estimated Tonnage**	**Reuse On-Site**	**Recycle**	**Landfill**	**Estimated Tonnage of Material Diverted from Landfill**
Bricks	☐	27.2	☐	☒	☐	27.2
Tiles	☐	2.7	☐	☒	☐	2.7
Concrete	☐	104.5	☒	☒	☐	104.5
Timber	☐	17.7	☐	☒	☒	5.8
Plasterboard	☐	2.4	☐	☒	☒	1.2
Metals	☐	23.35	☐	☒	☐	23.35
	Total	**246.99**			**Total**	**164.8**
					Total Diversion of Waste from Landfill (Minimum 80%)	**92.7%**

Figure 4 extracted from "CONSTRUCTION & DEMOLITION WASTE MANAGEMENT PLAN, produced by Elephants Foot Consulting

5.3 Recycling facility directory

	Business Name	Suburb	Distance (km)
Excavation Material	Kincumber Quarry	Kincumber	4.2
	Economy Waste Group	West Gosford	13
	Woy Woy Waste Management Facility	Woy Woy	13.5
Green waste	Woy Woy Waste Management Facility	Woy Woy	13.5
	EBH Environmental	Berkeley Vale	15.3
	North Wyong Recycling	Wyong	22.1
Bricks	Kincumber Quarry	Kincumber	4.2
	Economy Waste Group	West Gosford	13
	Recycling Concrete Products	West Gosford	11.8
Tiles	Kincumber Quarry	Kincumber	4.2
	Economy Waste Group	West Gosford	13
	Recycling Concrete Products	West Gosford	11.8
Concrete	Kincumber Quarry	Kincumber	4.2
	Economy Waste Group	West Gosford	13
	Recycling Concrete Products	West Gosford	11.8
Timber	Economy Waste Group	West Gosford	11
	Woy Woy Waste Management Facility	Woy Woy	13.5
	EBH Environmental	Berkeley Vale	15.3
Plasterboard	Economy Waste Group	West Gosford	13
	EBH Environmental	Berkeley Vale	15.3
	Kimbriki Resource Recovery Centre	Ingleside	31
Metals	Sims Metal Management	Gosford	10.8
	InfraBuild Recycling	Lisarow	10.9
	Woy Woy Waste Management Facility	Woy Woy	13.5

Figure 5 extracted from "CONSTRUCTION & DEMOLITION WASTE MANAGEMENT PLAN, produced by Elephants Foot Consulting

8.7 Appendix 7 - Construction Soil and Water Management Sub-plan (CSWMSP)

As attached.

NORTHROP

CIVIL ENGINEERING REPORT: CONSTRUCTION SOIL & WATER MANAGEMENT PLAN

University of Newcastle Central Coast Campus

305 Mann Street, Gosford

PREPARED FOR
Hansen Yuncken Pty Ltd
Suite 12/125 Bull Street,
Newcastle West NSW 2302
PO Box 2200, Dangar NSW 2309

Ref: MB221453-CSWMSP
Rev: 2

Date: 18.09.23

Civil Engineering Report: Construction Soil & Water Management Plan

Revision Schedule

Date	Revision	Issue	Prepared By	Approved By
15.09.23	1	Draft	J.Carraro	D.Holland
18.09.23	2	Final	J.Carraro	D.Holland

Northrop Consulting Engineers Pty Ltd

ACN 064 775 088 | ABN 81 094 433 100

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1. General

1.1 Introduction

Northrop Consulting Engineers Pty Ltd (Northrop) have been engaged by Hansen Yuncken to prepare the Civil Engineering design and documentation in support of a Construction Certificate for the proposed University of Newcastle Central Coast Campus, 305 Mann Street, Gosford.

This report covers the works shown on the Northrop Drawing Package required for pre-construction, in relation to soil and water management for the site, in particular including:

- Erosion and Sediment control.

1.2 Related Reports and Documents

This report is to be read in conjunction with the following reports and documents:

1. Detailed Design Phase Civil Documentation prepared by Northrop:
   - C_GOA_DWG_C31.1[6] Soil & Water Management Plan
   - C_GOA_DWG_C31.2[5] Soil & Water Management Details
2. NSW Department of Planning and Environment, "Managing Urban Stormwater Soil & Construction" 2004 (Blue Book)
3. Central Coast Council's Engineering Design Specifications

1.3 SSD Requirements

The project has obtained development approval through an SSDA. The table below demonstrates SSDA conditions which have been addressed in this report.

Condition	Conditions Requirements	Document/Sub-Plan Reference
B27	The Applicant must prepare a Construction Soil and Water Management 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;	Refer Appendix C
	(b) describe all erosion and sediment controls to be implemented during construction, as a minimum, in accordance with *Managing Urban Stormwater: Soils & Construction* (4th edition, Landcom 2004), commonly referred to as the 'Blue Book';	Refer Section 2
	(c) include an Acid Sulfate Soils Management Plan, if required, including measures for the management, handling, treatment and disposal of acid sulfate soils, including monitoring of water quality at acid sulfate soils treatment areas;	Refer Section 3.1
	(d) 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);	Refer Section 2.3

Condition	Conditions Requirements	Document/Sub-Plan Reference
	(e) details of all off-Site flows from the Site; and	Refer Section 3.1
	(f) describe the measures that must be implemented to manage stormwater and flood flows for small and large sized events, including, but not limited to 1 in 1-year ARI, 1 in 5-year ARI and 1 in 100-year ARI [flood prone sites]).	Refer Section 3.1

1.4 The Development

The subject site is located within the suburb of Gosford in the Central Coast Council Local Government Area (LGA).

The subject site is contained within lots 1, 2, 4, 29, 30, 31 and 32 DP 1591 along with lot 1 DP 911163 and lot 1 DP 911164. The site is bound by two existing commercial lots to the North, Hill Street to the east, Beane Street to the South and Mann Street to the west.

Figure 1 shows the development extent as well as the locality of the site in its current state.

Figure 1: Aerial Image (SIX Maps)

The total site area is 4,672 m^2 with topography falling from southeast to northwest with surface levels that range between RL14.13m to RL22.26m AHD and slopes in the range of 8%.

Based on geotechnical investigations performed on the site, the soil profile consists of a layer fill material over silty clays over rock.

The lot in its current state is an existing commercial development (Mitre 10) that consists of a building, carpark, and small landscape areas.

2. Erosion and Sediment Control

The objectives of the erosion and sediment control for the development site are to ensure:

- Adequate erosion and sediment control measures are applied prior to the commencement of construction and are maintained throughout construction; and
- Construction site runoff is appropriately treated in accordance with Central Coast Council's requirements.

As part of the works, the erosion and sedimentation control will be constructed in accordance with Council requirements and "Managing Urban Stormwater Soil & Construction" 2004 (Blue Book) prepared by Landcom, prior to any earthworks commencing on site.

2.1 Sediment Basin

Calculations to determine if a Sediment Basin is required for the development have been based on available geotechnical information regarding soil types and through the use of the Soils and Construction Volume 1 Manual.

Upon completion of the sediment basin calculations based on the Soils and Construction Volume 1 Manual, a basin is not required. Due to the nature of the development further assessment of the site to determine if a basin would be required was conducted. As outlined above in '1.4 The Development' the site slope is minimal, with a consistent natural topography and is relatively small to implement a basin. These reduce the risk of sediment leaving the site, therefore there is no benefit of a sediment basin for this development.

The sediment basin calculations are summarised in the table below.

SEDIMENT BASIN SIZING CALCULATION

THE SITE IS LOCATED WITHIN THE GOSFORD-LAKE MACQUARIE SOIL LANDSCAPE AND PRIMARILY CONSISTS OF CLAYS, WHICH HAS THE FOLLOWING PROPERTIES (IN ACCORDANCE WITH TABLE C17 OF THE 'BLUE BOOK').

SITE PARAMETERS	
CONSTRAINT	VALUE
SEDIMENT TYPE	D
SOIL HYDROLOGY GROUP	D
K = SOIL ERODIBILITY (K-FACTOR)	0.030
R = RAINFALL EROSIVITY (R-FACTOR)	2569
S = 2 YEAR, 6 HOUR STORM INTENSITY	10.87mm/hr (GOSFORD)
LS = SLOPE LENGTH/GRADIENT	2.37 (100m SLOPE @ 8% GRADE)
P = EROSION CONTROL PRACTICE (P-FACTOR)	1.3 (TYPICAL)
C = GROUND COVER (C-FACTOR)	1.0 (0% GRASS COVER)
A = DISTURBED AREA	0.467 Ha
SOIL LOSS (m^3/yr)	$85.35m^3/Yr$
SOIL LOSS (RUSLE METHOD) (tonnes/ha/yr)	237 tonnes/Ha/Yr
EROSION HAZARD (TABLE 4.2 BLUE BOOK)	LOW-MODERATE
TOTAL SITE RUN-OFF IS LESS THAN $150m^3/Yr$. BASIN/TANKS NOT REQUIRED.	

2.2 Sediment and Erosion Control Measures

Prior to any earthworks commencing on site, sediment and erosion control measures shall be implemented generally in accordance with the Construction Certificate drawings and the “Blue Book”. The measures shown on the drawings are intended to be a minimum treatment only as the contractor will be required to modify and stage the erosion and sedimentation control measures to suit the construction program, sequencing, and techniques. These measures will include:

- A temporary site security/safety fence is to be constructed around the site and the site office area.
- Sediment fencing provided downstream of disturbed areas, including any topsoil stockpiles.
- Dust control measures including covering stockpiles, installing fence hessian and watering exposed areas.
- Placement of hay bales or mesh and gravel inlet filters around and along proposed catch drains and around stormwater inlet pits;
- Stabilised site access at the construction vehicle entry/exits.

Any stockpiled material, including topsoil, shall be located as far away as possible from any associated natural watercourses or temporary overland flow paths. Sediment fences shall be installed to the downstream side of stockpiles and any embankment formation. All stockpiles and embankment formations shall be stabilised by hydroseeding or hydro mulching on formation.

2.3 Wet Weather Management

In circumstances of heavy rain sufficient to affect site access and ground conditions the Site Manager and Site HSE Committee representative should complete a site inspection before work commences. The inspection needs to focus on.

- The suitability of pedestrian access to the amenities and into the construction work areas
- The suitability of access for plant and equipment
- The suitability of ground conditions for plant and equipment to operate
- Nominate the construction zones suitable for work to commence
- Actions to remediate those areas not suitable for work to commence (de-water; prepare ground conditions and access ways etc.)

It is noted that the storage of equipment during wet weather will be placed in areas to not prohibit or disrupt operation of the sediment and soil erosion control measures.

Refer Appendix A, Northrop’s drawings outline wet weather management through providing stabilised temporary site access.

3. Further Commentary

3.1 SSD Conditions

The Department of Planning has provided Conditions of Consent for the proposed development at 305 Mann Street, Gosford. Conditions associated with the Construction Soil and Water Management Plan have been provided below with further commentary for consideration by Central Coast Council and the Certifying Authority.

B27. The Applicant must prepare a Construction Soil and Water Management Plan (CSWMSP) which must address, but not be limited to, the following:

(a) be prepared by a suitably qualified expert, in consultation with Council;

(b) describe all erosion and sediment controls to be implemented during construction, as a minimum, in accordance with *Managing Urban Stormwater: Soils & Construction* (4th edition, Landcom 2004) commonly referred to as the 'Blue Book';

(c) include an Acid Sulfate Soils Management Plan, if required, including measures for the management, handling, treatment and disposal of acid sulfate soils, including monitoring of water quality at acid sulfate soils treatment areas;

(d) 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);

(e) details of all off-site flows from the site; and

(f) 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.

Northrop Commentary

The following comments have been provided with respect to Condition B27 for consideration by Central Coast Council and the Certifying Authority.

Northrop Commentary

(a) Please refer to the CV of the designer and email consultation with Council provided in Appendix B and C.

(b) Please refer to Section 2 of this report and associated Civil Engineering drawings as listed:
- C_GOA_DWG_C31.1[6] Soil & Water Management Plan
- C_GOA_DWG_C31.2[5] Soil & Water Management Details

(c) Based on section 2.7 Acid Sulphate Soils, of Kleinfelder's Geotechnical investigation Report, document number NCA22R147463, rev 2, 9 December 2022, Acid Sulphate Soils are not considered to be an issue for consent.

(d) Please refer to section 2 of the report. Specifically, our sediment and erosion control plan includes measures such as treatment for stockpiles and stabilised site access.

(e) Once stormwater has passed through the sediment and erosion control measures, clean water is to be discharged to existing Council owned stormwater infrastructure and conveyed away from the site. Mitigation of off-site flows are provided such as sandbags and filters over stormwater pits

(f) Please refer to Section 2 of this report and associated Civil Engineering drawings as listed:

- C_GOA_DWG_C31.1[6] Soil & Water Management Plan
- C_GOA_DWG_C31.2[5] Soil & Water Management Details

The erosion and sediment control plans have been designed in accordance with the requirements of NSW Department of Planning and Environment Manual, “Managing Urban Stormwater Soil & Construction” 2004 (Blue Book) and Central Coast Council’s Engineering Design Specifications. Measures include stormwater pit filters, Sandbags and temporary site access.

Surface flows generated during storm events up to the 1 in 10-year storm event are treated by the sediment and erosion control measures implemented on site. Storm events greater than the 1 in 10 year will overwhelm temporary control measures which are not typically sized to cater for such events in the Blue Book. Flows from larger events will flow to Mann Street.

A review of Central Coast Council’s online mapping system indicates the site is not impacted by flooding for the 1% AEP. Therefore, the site is not flood prone. The site is also bound by local roads on three boundaries, which convey stormwater around the site preventing upstream stormwater from entering the site.

Appendix A – Soil & Water Management Plans

PROVIDE COMBINED SITE/SILT FENCE 'SILTMASTER' OR SIMILAR, INSTALLED IN ACCORDANCE WITH DETAIL SD6-8 OF THE BLUEBOOK.

PROVIDE TEMPORARY CONTRACTORS VEHICULAR ACCESS POINT. CONSTRUCT A STABILIZED SITE ACCESS IN ACCORDANCE WITH DETAIL SD6-14 OF THE BLUE BOOK, OR ALTERNATIVELY PROVIDE A SHAKEDOWN CATTLE GRID' AT THE ENTRANCE POINT TO REDUCE THE LIKELIHOOD OF SEDIMENT BEING TRAFFICKED OFF-SITE.

PROVIDE PIT PROTECTION INSTALLED IN ACCORDANCE WITH DETAILS SD6-11 OR SD6-12 (AS APPROPRIATE) OF THE BLUE BOOK (TYPICAL)

DENOTES SANDBAG or GEOTEXTILE SOCK FILLED WITH NO FINES GRAVEL PLACED IN INVERT OF GUTTER OR ALONG EDGE OF BITUMEN @ 20m CTS

DENOTES INDICATIVE LOCATION OF STOCKPILE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH DETAIL SD4-1 OF THE BLUE BOOK

LEGEND

- DENOTES SITE BOUNDARY LINE
- DENOTES COMBINED SITE/SILT FENCE 'SILTMASTER' OR SIMILAR, INSTALLED IN ACCORDANCE WITH DETAIL SD6-8 OF THE BLUEBOOK.
- DENOTES TEMPORARY CONTRACTORS VEHICULAR ACCESS POINT. CONSTRUCT A STABILISED SITE ACCESS IN ACCORDANCE WITH DETAIL SD6-14 OF THE BLUE BOOK OR PROVIDE A SHAKEDOWN CATTLE GRID AT ENTRANCE POINT TO REDUCE LIKELIHOOD OF SEDIMENT BEING TRAFFICKED OFF-SITE
- DENOTES GEOTEXTILE INLET FILTER INSTALLED IN ACCORDANCE WITH DETAIL SD6-12 OF THE BLUE BOOK
- INDICATES MESH & GRAVEL INLET FILTER INSTALLED IN ACCORDANCE WITH DETAILS SD6-11 OF THE BLUE BOOK
- DENOTES SANDBAG or GEOTEXTILE SOCK FILLED WITH NO FINES GRAVEL PLACED IN INVERT OF GUTTER OR ALONG EDGE OF BITUMEN
- DENOTES INDICATIVE LOCATION OF STOCKPILE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH DETAIL SD4-1 OF THE BLUE BOOK

SEDIMENT & EROSION CONTROL NOTES

1. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH RELEVANT ORDINANCES AND REGULATIONS; NOTE IN PARTICULAR THE REQUIREMENTS OF LANDCOMS MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION' (THE 'BLUE BOOK').
2. INSTALL SEDIMENT PROTECTION FILTERS ON ALL NEW AND EXISTING STORMWATER INLET PITS IN ACCORDANCE WITH EITHER THE MESH AND GRAVEL INLET FILTER DETAIL SD6-11 OR THE GEOTEXTILE INLET FILTER DETAIL SD6-12 OF THE 'BLUE BOOK'.
3. ESTABLISH ALL REQUIRED SEDIMENT FENCES IN ACCORDANCE WITH DETAIL SD6-8 OF THE 'BLUE BOOK'.
4. INSTALL SEDIMENT FENCING AROUND INDIVIDUAL BUILDING ZONES/AREAS AS REQUIRED AND AS DIRECTED BY THE SUPERINTENDENT.
5. ALL TRENCHES INCLUDING ALL SERVICE TRENCHES AND SWALE EXCAVATION SHALL BE SIDE-CAST TO THE HIGH SIDE AND CLOSED AT THE END OF EACH DAYS WORK.
6. THE CONTRACTOR SHALL ENSURE THAT ALL VEGETATION (TREE, SHRUB & GROUND COVER) WHICH IS TO BE RETAINED SHALL BE PROTECTED DURING THE DURATION OF CONSTRUCTION. REFER ARCHITECTS PLANS FOR TREES TO BE KEPT.
7. ALL VEGETATION TO BE REMOVED SHALL BE MULCHED ONSITE AND SPREAD/STOCKPILED AS DIRECTED BY THE SUPERINTENDENT.
8. STRIP TOPSOIL IN AREAS DESIGNATED FOR STRIPPING AND STOCKPILE FOR RE-USE AS REQUIRED. ANY SURPLUS MATERIAL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH EPA GUIDELINES.
9. CONSTRUCT AND MAINTAIN ALL MATERIAL STOCKPILES IN ACCORDANCE WITH DETAIL SD4-1 OF THE 'BLUE BOOK' (INCLUDING CUT-OFF SWALES TO THE HIGH SIDE AND SEDIMENT FENCES TO THE LOW SIDE).
10. ENSURE STOCKPILES DO NOT EXCEED 2.0m HIGH. PROVIDE WIND AND RAIN EROSION PROTECTION AS REQUIRED IN ACCORDANCE WITH THE 'BLUE BOOK'.
11. PROVIDE WATER TRUCKS OR SPRINKLER DEVICES DURING CONSTRUCTION AS REQUIRED TO SUPPRESS DUST.
12. ONCE CUT/FILL OPERATIONS HAVE BEEN FINALIZED ALL DISTURBED AREAS THAT ARE NOT BEING WORKED ON SHALL BE RE-VEGETATED AS SOON AS IS PRACTICAL.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING A DETAILED WRITTEN RECORD OF ALL EROSION & SEDIMENT CONTROLS ON-SITE DURING THE CONSTRUCTION PERIOD. THIS RECORD SHALL BE UPDATED ON A DAILY BASIS & SHALL CONTAIN DETAILS ON THE CONDITION OF CONTROLS AND ANY/ ALL MAINTENANCE, CLEANING & BREACHES. THIS RECORD SHALL BE KEPT ON-SITE AT ALL TIMES AND SHALL BE MADE AVAILABLE FOR INSPECTION BY THE PRINCIPAL CERTIFYING AUTHORITY AND THE SUPERINTENDENT DURING NORMAL WORKING HOURS.

THE CONTRACTOR SHALL ENSURE COUNCIL ASSETS AND THE UTILITIES ARE PROTECTED AT ALL TIMES. ANY AND ALL DAMAGES TO COUNCIL ASSETS AND/OR UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR TO THE SPECIFICATION OF COUNCIL AND THE UTILITIES AUTHORITY AND AT NO COST TO THE PRINCIPAL OR NORTHROP CONSULTING ENGINEERS.

SEDIMENT BASIN SIZING CALCULATION

THE SITE IS LOCATED WITHIN THE GOSFORD-LAKE MACQUARIE SOIL LANDSCAPE AND PRIMARILY CONSISTS OF CLAYS, WHICH HAS THE FOLLOWING PROPERTIES (IN ACCORDANCE WITH TABLE C17 OF THE 'BLUE BOOK').

SITE PARAMETERS	
CONSTRAINT	VALUE
SEDIMENT TYPE	D
SOIL HYDROLOGY GROUP	D
K = SOIL ERODIBILITY (K-FACTOR)	0.030
R = RAINFALL EROSIVITY (R-FACTOR)	2569
S = 2 YEAR, 6 HOUR STORM INTENSITY	10.87mm/hr (GOSFORD)
LS = SLOPE LENGTH/GRADIENT	2.37 (100m SLOPE @ 8% GRADE)
P = EROSION CONTROL PRACTICE (P-FACTOR)	1.3 (TYPICAL)
C = GROUND COVER (C-FACTOR)	1.0 (0% GRASS COVER)
A = DISTURBED AREA	0.467 Ha
SOIL LOSS (m^3/yr)	85.35m^3/Yr
SOIL LOSS (RUSLE METHOD) (tonnes/ha/yr)	237 tonnes/Ha/Yr
EROSION HAZARD (TABLE 4.2 BLUE BOOK)	LOW-MODERATE
TOTAL SITE RUN-OFF IS LESS THAN 150m^3/Yr. BASIN/TANKS NOT REQUIRED.	

NOTE THAT ORIGINAL DRAWING IS IN COLOUR

DIAL BEFORE YOU DIG www.1100.com.au

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	FOR INFORMATION DESIGN DEVELOPMENT	KT			31.03.23
2	50% DESIGN DEVELOPMENT	TS			14.04.23
3	90% DESIGN DEVELOPMENT	TS			02.05.23
4	FOR TENDER	TS		DH	12.05.23
5	REVISED FOR TENDER	TS			24.05.23
6	CONSTRUCTION CERTIFICATE	TS		DH	16.06.23

CLIENT: THE UNIVERSITY OF NEWCASTLE AUSTRALIA

DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED

ARCHITECT: lyons

ALL SETOUT TO ARCHITECT'S DRAWINGS. DIMENSIONS TO BE VERIFIED WITH THE ARCHITECT AND ON SITE BEFORE MAKING SHOP DRAWINGS OR COMMENCING WORK. NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.

PLANS 1:200@A1 0 2 4 6 8 10m

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Email centralcoast@northrop.com.au ABN 81 094 433 100

PROJECT: UNIVERSITY OF NEWCASTLE PROPOSED CENTRAL COAST CAMPUS 305 MANN ST

DRAWING TITLE: INTERNAL CIVIL WORKS SOIL & WATER MANAGEMENT PLAN

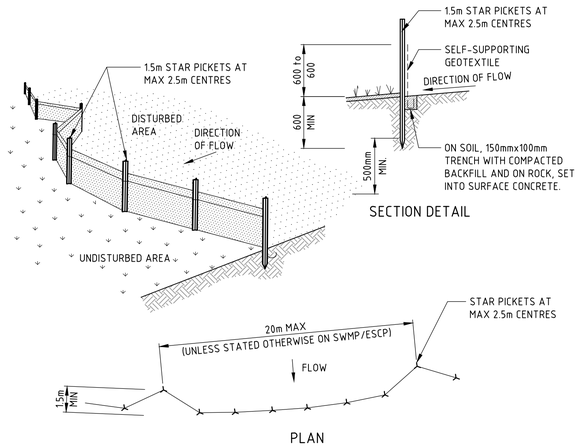
JOB NUMBER: MB221453

DRAWING NUMBER: C_GOA_DWG_ C31.1

REVISION: 6

DRAWING SHEET SIZE = A1

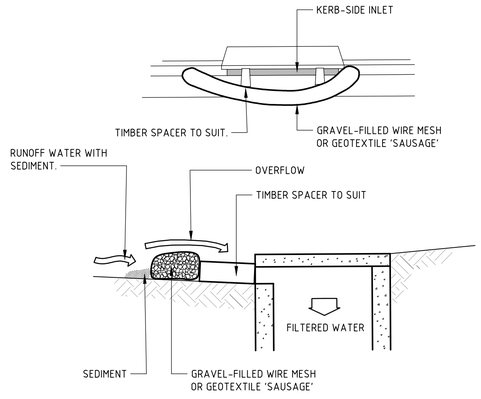
DRAWN: TIMOTHY SMALL | DESIGNED: JAKE CARRARO | JOB MANAGER: DANIEL HOLLAND | VERIFIER



CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.
2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
3. DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND AT 2.5 METRE INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

SEDIMENT FENCE (SD 6-8)

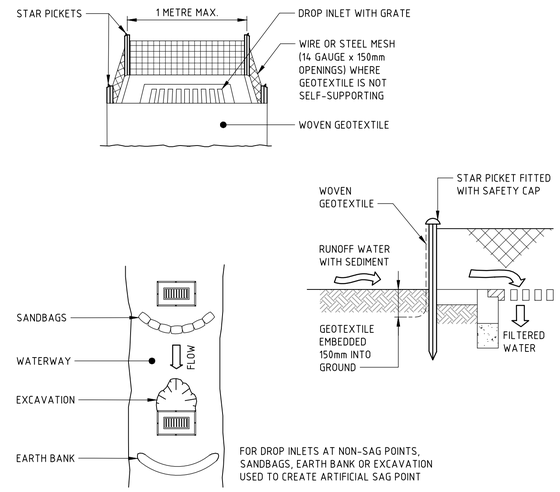


NOTE:THIS PRACTICE ONLY TO BE USED WHERE SPECIFIED IN APPROVED SWMP/ESCP.

CONSTRUCTION NOTES

1. INSTALL FILTERS TO KERB INLETS ONLY AT SAG POINTS.
2. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT AND FILL IT WITH 25mm TO 50mm GRAVEL.
3. FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150mm HIGH x 400mm WIDE.
4. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET. MAINTAIN THE OPENING WITH SPACER BLOCKS.
5. FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BYPASSING THE FILTER.
6. SANDBAGS FILLED WITH GRAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDING THEY ARE PLACED SO THAT THEY FIRMLY ABUT EACH OTHER AND SEDIMENT-LADEN WATERS CANNOT PASS BETWEEN.

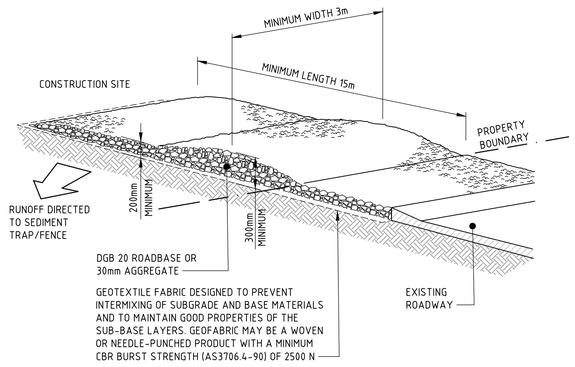
MESH AND GRAVEL INLET FILTER (SD 6-11)



CONSTRUCTION NOTES

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
2. FOLLOW STANDARD DRAWING 6-7 AND STANDARD DRAWING 6-8 FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOFABRIC. REDUCE THE PICKET SPACING TO 1 METRE CENTRES.
3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
4. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

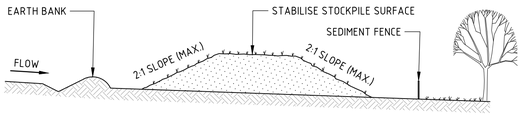
GEOTEXTILE INLET FILTER (SD 6-12)



CONSTRUCTION NOTES

1. STRIP THE TOPSOIL, LEVEL THE SITE AND COMPACT THE SUBGRADE.
2. COVER THE AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
3. CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE.
4. ENSURE THE STRUCTURE IS AT LEAST 15 METRES LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3 METRES WIDE.
5. WHERE A SEDIMENT FENCE JOINS ONTO THE STABILISED ACCESS, CONSTRUCT A HUMP IN THE STABILISED ACCESS TO DIVERT WATER TO THE SEDIMENT FENCE.

STABILISED SITE ACCESS (SD 6-14)



CONSTRUCTION NOTES

1. PLACE STOCKPILES MORE THAN 2m (PREFERABLY 5m) FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT.
4. WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESCP OR SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
5. CONSTRUCT EARTH BANKS (STANDARD DRAWING 5-5) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES (STANDARD DRAWING 6-8) 1 TO 2m DOWNSLOPE.

STOCKPILES (SD 4-1)

DRAWN TIMOTHY SMALL DESIGNED JAKE CARRARO JOB MANAGER DANIEL HOLLAND VERIFIER

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	FOR INFORMATION DESIGN DEVELOPMENT	KT			31.03.23
2	50% DESIGN DEVELOPMENT	TS			14.04.23
3	90% DESIGN DEVELOPMENT	TS			02.05.23
4	FOR TENDER	TS		DH	12.05.23
5	CONSTRUCTION CERTIFICATE	TS		DH	16.06.23

CLIENT: THE UNIVERSITY OF NEWCASTLE AUSTRALIA

DRAWING NOT TO BE USED FOR CONSTRUCTION UNLESS VERIFICATION SIGNATURE HAS BEEN ADDED

ARCHITECT: lyons

ALL SETOUT TO ARCHITECT'S DRAWINGS, DIMENSIONS TO BE VERIFIED WITH THE ARCHITECT AND ON SITE BEFORE MAKING SHOP DRAWINGS OR COMMENCING WORK.
NORTHROP ACCEPTS NO RESPONSIBILITY FOR THE USABILITY, COMPLETENESS OR SCALE OF DRAWINGS TRANSFERRED ELECTRONICALLY.

NORTHROP
Central Coast
Suite 4, 257-259 Central Coast Hwy, Erina NSW 2250
Ph (02) 4365 1668 Fax (02) 4367 6555
Email centralcoast@northrop.com.au ABN 81 094 433 100

PROJECT: UNIVERSITY OF NEWCASTLE
PROPOSED CENTRAL COAST CAMPUS
305 MANN ST

DRAWING TITLE: INTERNAL CIVIL WORKS
SOIL & WATER MANAGEMENT
DETAILS

JOB NUMBER: MB221453

DRAWING NUMBER: C_GOA_DWG_ C31.2

REVISION: 5

DRAWING SHEET SIZE = A1

Appendix B – COUNCIL CONSULTATION

RE: University of Newcastle - Soil and Water Management Plan Consultation

Jake Carraro
To adam.mularczyk@centralcoast.nsw.gov.au
Cc Daniel Holland

Reply | Reply All | Forward

Mon 18/09/2023 4:29 PM

MB221453_Construction Soil and Water Management Plan (1).pdf
3 MB

Hello Adam,

As discussed below, please see attached draft Soil and Water Management Plan for the University of Newcastle, Central Coast Capus project, for consultation.

Please review and provide any comments on the plan.

If you have any questions, please be in contact.

Regards,

Jake Carraro
Civil Engineer

Northrop Consulting Engineers
T (02) 4365 1668 M 0402 186 461
Suite 4, 257-259 Central Coast Highway Erina NSW 2250
www.northrop.com.au

Appendix C – CV

Daniel Holland
BEng (Civil) Hons, Dip Civil, CPEng, NER

Principal, Civil Engineer

Daniel joined Northrop in 2007 after graduating with honours from the University of Newcastle.

Originally, Daniel worked with Northrop as a structural engineer. Following an opportunity to work on a multi-million-dollar project as a site civil engineer, Daniel focused his attention on starting our Central Coast Civil section; a section that he still manages today and continues to grow and expand with

A Principal of Northrop, Daniel's hands-on experience throughout his career has given him a unique ability to understand a client's needs, navigate the authority requirements, and develop tailored civil engineering solutions to overcome even the most complex of challenges in a cost-effective and practical manner.

Project Experience

Education
- Meadowbank Education Precinct
- Hunter River Community School, Metford
- Lakes Grammar Anglican School
- Gilroy Catholic College
- Rouse Hill Anglican College

Aged Care
- Casurina Grove, Hamlyn Terrace
- Aged Care Community Housing, Wadalba
- Peninsula Village, Umina
- Rosehill Aged Care Facility Redevelopment
- Uniting Aged Care, Bateau Bay

Health
- Gosford Private Hospital Redevelopment
- Gosford Hospital Mental Health Unit
- Tuggerah Lakes Private Hospital
- Jarrett Street Medical Centre
- Brisbane Water Private Hospital

Industrial
- Livpac Lisarow
- 7 Palm Tree Close, Wyong
- Advantage Avenue, Morisset
- Sanitarium Health & Wellbeing

Hospitality/Clubs
- Central Coast Leagues Club
- Gosford RSL Club
- Shelly Beach Golf Club
- Davistown RSL
- Mingara Club

Community/Recreational
- Adcock Park Redevelopment, Gosford
- Mt. Penang Parklands Redevelopment
- Crusaders Group Camp, Lake Macquarie
- Soldiers and Shelly Beach Surf Clubs

Structural Engineering
- Soldiers and Shelly Beach Surf Club
- Bunnings West Gosford
- Morisset Event Space
- Imperial Shopping Centre Gosford
- Council Drainage Culvert Upgrades

Commercial/Offices
- Bunnings Warehouses (various locations).
- Saddles Café/Restaurant
- Various service stations
- Woolworths Woolgoolga, Wadalba, Lisarow
- Coles Lisarow
- Department of Finance Building, Gosford

Residential Houses
- 115 Avoca Drive, Avoca Beach
- Ravello Apartments, Point Frederick
- Bonython Tower, Gosford
- Albany Apartment York St, East Gosford
- Newcastle East End Redevelopment

Sub-Division
- Kings Estate, Terrigal
- Saratoga Road, Davistown
- Reads Road, Wamberal
- Narara Creek Road, Narara
- Tudibaring Parade, Macmasters Beach

8.8 Appendix 8 - Executive Summary from Preliminary Site Investigation (Contamination) Report

As attached.

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Standards Australia

LANDCOM

PROPOSED RESIDENTIAL & COMMERCIAL REDEVELOPMENT

**LOTS 1, 2, 4, 29-32 SECTION 1 IN DP1591,
LOT 1 IN DP911163 & LOT 1 IN DP911164
CORNER OF MANN & BEANE STREETS
GOSFORD**

STAGE 2 CONTAMINATION ASSESSMENT

REPORT NO 10060/1-AC 6 FEBRUARY 2004

Lemko Place, Penrith NSW 2750 . PO Box 880, Penrith NSW 2751
DX Penrith 8032 Telephone (02) 4722 2700 Facsimile (02) 4722 2777

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ABN 64 002 841 063

Job No: 10060/1
Our Ref: 10060/1-AC

6 February 2004

Landcom
c/- Fitzwalter Group Pty Limited
633 Harris Street
ULTIMO NSW 2007

Attention: Mr S Cain,

Dear Sir

re: **Proposed Residential & Commercial Redevelopment**
Lots 1, 2, 4, 29-32 Section 1 in DP1591
Lot 1 in DP911163 & Lot 1 in DP911164
Corner of Mann & Beane Streets, Gosford
Stage 2 Contamination Assessment

Please find herewith three copies of our *Stage 2 Contamination Assessment* report, with regard to the proposed residential redevelopment of the above site.

The purpose of this assessment was to supplement the preliminary contamination assessment, through appropriate sampling and testing, in order to determine whether the site presents or potentially presents, a risk of harm to human health and/or the environment, either presently or under the conditions of future redevelopment, as a result of any past and/or present activities within the site and/or the neighbouring properties.

The scope of work included site reconnaissance, review of the preliminary contamination assessment report, representative sampling and testing and preparation of this report.

Reference should be made to Section 11.0 of the report for the conclusion, recommendations and limitations of this assessment.

Should you have any questions relating to this report, please do not hesitate to contact the undersigned.

Yours faithfully
GEOTECHNIQUE PTY LTD

P. Gorman

PAUL GORMAN
Principal Environmental Engineer

Lemko Place, Penrith NSW 2750 PO Box 880, Penrith NSW 2751
Telephone (02) 4722 2700 Facsimile (02) 4722 2777
e-mail: info@geotech.com.au www.geotech.com.au

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ABN 64 002 841 063

EXECUTIVE SUMMARY

This executive summary presents a synopsis of a Stage 2 Contamination Assessment carried out for the proposed future residential and commercial redevelopment of a parcel of land currently registered as Lots 1, 2, 4, 29, 30, 31 & 32 Section 1 in DP1591, Lot 1 in DP911163, and Lot 1 in DP911164, located at the corner of Mann & Beane Streets, Gosford, as indicated on Figure 1 (page 1 of the report).

The objective of this assessment was to supplement the preliminary contamination assessment, through appropriate sampling and testing, in order to determine whether the site presents or potentially presents, a risk of harm to human health and/or the environment, either presently or under the conditions of future redevelopment, as a result of any past and/or present activities within the site and/or the neighbouring properties.

In order to achieve the objective of this assessment, the scope of work included a review of the Preliminary Contamination Assessment report prepared by Geotechnique, a site inspection, soil sampling, laboratory testing and preparation of this report.

The site is rectangular in shape, with frontages to Mann Street of about 52 metres (m) and to Beane Street of about 90m. The total site area is about 4,675 square metres. At the time of carrying out the field work for this assessment (20 January 2004), the site was operating as a Mitre 10 Hardware store, with the main features including warehouse structures, a nursery area and open concrete covered car parking.

There were no visual indicators of potential contamination, such as ash particles, asbestos sheeting/pieces, fuel bowsers, breather pipes, storage tanks, unusual odours, soil discolouration, petroleum hydrocarbon staining, or vegetation die-back observed within the ground surface of the site.

The Preliminary Contamination Assessment undertaken by Geotechnique identified environmental concerns relating to the nursery area and potentially imported fill.

A sampling and testing plan was implemented, in accordance with current EPA guidelines, to address the environmental concerns mentioned above.

The Threshold Levels adopted for the assessment of chemical contaminants were the available Provisional Phytotoxicity-Based Investigation Levels (PPBIL), the available Health-Based Investigation Levels (HBIL) for residential development with accessible soils and residential development with minimal soil access, the suggested Levels in the EPA service station guidelines and the Netherlands Intervention Levels.

All laboratory data and/or data sets were found to satisfy the criteria for stating that the analytes selected are either not present, or present in the soils at concentrations that do not pose a risk of hazard to human health or the environment (i.e. less than the threshold levels adopted).

Based on this Stage 2 Contamination Assessment and the Preliminary Contamination Assessment, it is concluded that the site does not present a risk of harm to human health or the environment and is therefore suitable for residential redevelopment.

GEOTECHNIQUE PTY LTD

P. Gorman

Lemko Place, Penrith NSW 2750 . PO Box 880, Penrith NSW 2751
DX Penrith 8032 Telephone (02) 4722 2700 Facsimile (02) 4722 2777

8.9 Appendix 9 - SSDA Compliance Conditions

As attached.

Development Consent

Section 4.16 of the Environmental Planning and Assessment Act 1979

As delegate of the Minister for Planning, I approve the Development Application referred to in Schedule 1, subject to the conditions in Schedule 2.

These conditions are required to:

- prevent, minimise, or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the development

Keiran Thomas
Director
Regional Assessments

Sydney 28 July 2023

SCHEDULE 1

Application No.:	SSD-47749715
Applicant:	The University of Newcastle
Consent Authority:	Minister for Planning
Site:	305 Mann Street, Gosford Lots 1, 2, 4, 29, 30, 31 and 32 in Deposited Plan 1591, Lot 1 in Deposited Plan 911163, and Lot 1 in Deposited Plan 911164
Development:	Demolition of all existing buildings, site preparation, bulk earthworks, augmentation and connection of new services infrastructure, and the construction and operation of a four-storey educational building, retail/café, associated basement vehicle and bicycle parking and public open space.

DEFINITIONS

Advisory Notes	Advisory information relating to the consent but do not form a part of this consent
Applicant	University of Newcastle, or any person carrying out any development to which this consent applies
Application	The development application and the accompanying drawings, plans and documentation described at condition A2
BCA	Building Code of Australia
Certifier / Certifying Authority	A person who is authorised by or under Part 6 of the EP&A Act to issue Part 6 certificates
Construction	Any works, including earth and building works
Council	Central Coast Council
DAP	Gosford Design Advisory Panel
Department	NSW Department of Planning and Environment
Development	The development described in the EIS and RTS including the works and activities comprising construction, operation and post commencement of use, as modified by the conditions of this consent
Environment	Includes all aspects of the surroundings of humans, whether affecting any human as an individual or in his or her social groupings
EPA	NSW Environment Protection Authority
EP&A Act	Environmental Planning and Assessment Act 1979
EP&A Regulation	Environmental Planning and Assessment Regulation 2021
Environmental Impact Statement / EIS	Environmental Impact Statement prepared by Urbis, rev Final, dated 18 January 2023
Feasible	Means what is possible and practical in the circumstances
GFA	Gross floor area
Incident	An occurrence or set of circumstances that causes, or threatens to cause material harm and which may or may not be or cause a non-compliance ***Note**: "material harm" is defined in this consent*
Land	Has the same meaning as the definition of the term in section 1.4 of the EP&A Act
Material harm	Is harm that: (a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial; or (b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment)
Minister	NSW Minister for Planning
Mitigation	Activities associated with reducing the impacts of the development prior to or during those impacts occurring
Non-compliance	An occurrence, set of circumstances or development that is a breach of this consent
Operation	The carrying out of the approved purpose of the development upon completion of construction.
Planning Secretary	Planning Secretary under the EP&A Act, or nominee

Reasonable	Means applying judgement in arriving at a decision, taking into account: mitigation, benefits, costs of mitigation versus benefits provided, community views, and the nature and extent of potential improvements
Rehabilitation	The restoration of land disturbed by the development to a good condition, to ensure it is safe, stable and non-polluting.
Response to Submissions / RTS	Response to Submissions report and attachments, prepared by Metroplan Services and dated 11 January 2023
Site	The site as described at Schedule 1
TfNSW	Transport for NSW

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SCHEDULE 2

PART A – ADMINISTRATIVE CONDITIONS

Obligation To Minimise Harm To The Environment

A1. In addition to meeting the specific performance measures and criteria in this consent, all reasonable and feasible measures must be implemented to prevent, and, if prevention is not reasonable and feasible, minimise any material harm to the environment that may result from the construction and operation of the development.

Terms of Consent

A2. The development may only be carried out:

(a) in compliance with the conditions of this consent;

(b) in accordance with all written directions of the Planning Secretary;

(c) generally in accordance with the Environmental Impact Statement and Response to Submissions;

(d) in accordance with the approved plans in the table below (except where modified by the conditions of this consent):

Survey Plan prepared by ADW Johnson			
Drawing No.	**Revision**	**Title**	**Date**
190852-DET-001-A (page 1 of 9)	1	Detail and Contour Survey upon Lots 1,2,4,29,30,31&32 IN DP 1519 & LOT 1 DP 911163 & LOT 1 DP 911164	16.09.2022
190852-DET-001-A (page 2 of 9)	1	Detail and Contour Survey upon Lots 1,2,4,29,30,31&32 IN DP 1519 & LOT 1 DP 911163 & LOT 1 DP 911164	16.09.2022
190852-DET-001-A (page 3 of 9)	1	Detail and Contour Survey upon Lots 1,2,4,29,30,31&32 IN DP 1519 & LOT 1 DP 911163 & LOT 1 DP 911164	16.09.2022
190852-DET-001-A (page 4 of 9)	1	Detail and Contour Survey upon Lots 1,2,4,29,30,31&32 IN DP 1519 & LOT 1 DP 911163 & LOT 1 DP 911164	16.09.2022
190852-DET-001-A (page 5 of 9)	1	Detail and Contour Survey upon Lots 1,2,4,29,30,31&32 IN DP 1519 & LOT 1 DP 911163 & LOT 1 DP 911164	16.09.2022
190852-DET-001-A (page 6 of 9)	1	Detail and Contour Survey upon Lots 1,2,4,29,30,31&32 IN DP 1519 & LOT 1 DP 911163 & LOT 1 DP 911164	16.09.2022
190852-DET-001-A (page 7 of 9)	1	Detail and Contour Survey upon Lots 1,2,4,29,30,31&32 IN DP 1519 & LOT 1 DP 911163 & LOT 1 DP 911164	16.09.2022
190852-DET-001-A (page 8 of 9)	1	Detail and Contour Survey upon Lots 1,2,4,29,30,31&32 IN DP 1519 & LOT 1 DP 911163 & LOT 1 DP 911164	16.09.2022
190852-DET-001-A (page 9 of 9)	1	Detail and Contour Survey upon Lots 1,2,4,29,30,31&32 IN DP 1519 & LOT 1 DP 911163 & LOT 1 DP 911164	16.09.2022
Architectural Plans prepared by Lyons Architecture			
Drawing No.	**Revision**	**Title**	**Date**
DA-A-1001	4	SITE PLAN	16.01.2023
DA-A-3000	6	CONTEXT PLAN - GROUND LEVEL	12.07.2023
DA-A-3001	5	CONTEXT PLAN - LEVEL 01	28.06.2023
DA-A-3002	4	PLAN - LEVEL 02	16.01.2023

DA-A-3003	4	PLAN - LEVEL 03	16.01.2023
DA-A-3004	4	PLAN - LEVEL 04	16.01.2023
DA-A-3100	4	AREA PLANS - GROSS FLOOR AREA(DCP)	16.01.2023
DA-A-4000	4	BUILDING ELEVATIONS	16.01.2023
DA-A-4500	4	BUILDING SECTIONS	16.01.2023
DA-A-5001	2	SOLAR ACCESS ANALYSIS (EXISTING) - WINTER SOLSTICE (JUNE 21) 9AM	16.01.2023
DA-A-5002	1	SOLAR ACCESS ANALYSIS (EXISTING) - WINTER SOLSTICE (JUNE 21) 10AM	16.01.2023
DA-A-5003	1	SOLAR ACCESS ANALYSIS (EXISTING) - WINTER SOLSTICE (JUNE 21) 11AM	16.01.2023
DA-A-5004	1	SOLAR ACCESS ANALYSIS (EXISTING) - WINTER SOLSTICE (JUNE 21) 12PM	16.01.2023
DA-A-5005	2	SOLAR ACCESS ANALYSIS (EXISTING) - WINTER SOLSTICE (JUNE 21) 1PM	16.01.2023
DA-A-5006	1	SOLAR ACCESS ANALYSIS (EXISTING) - WINTER SOLSTICE (JUNE 21) 2PM	16.01.2023
DA-A-5007	1	SOLAR ACCESS ANALYSIS (EXISTING) - WINTER SOLSTICE (JUNE 21) 3PM	16.01.2023
DA-A-5008	2	SOLAR ACCESS ANALYSIS - WINTER SOLSTICE (JUNE 21) 9AM	16.01.2023
DA-A-5009	1	SOLAR ACCESS ANALYSIS - WINTER SOLSTICE (JUNE 21) 10AM	16.01.2023
DA-A-5010	1	SOLAR ACCESS ANALYSIS - WINTER SOLSTICE (JUNE 21) 11AM	16.01.2023
DA-A-5011	1	SOLAR ACCESS ANALYSIS - WINTER SOLSTICE (JUNE 21) 12PM	16.01.2023
DA-A-5012	2	SOLAR ACCESS ANALYSIS - WINTER SOLSTICE (JUNE 21) 1PM	16.01.2023
DA-A-5013	1	SOLAR ACCESS ANALYSIS - WINTER SOLSTICE (JUNE 21) 2PM	16.01.2023
DA-A-5014	1	SOLAR ACCESS ANALYSIS - WINTER SOLSTICE (JUNE 21) 3PM	16.01.2023
DA-A-5015	2	SOLAR ACCESS ANALYSIS (EXISTING) - SUMMER SOLSTICE (DECEMBER 21) 9AM	16.01.2023
DA-A-5016	1	SOLAR ACCESS ANALYSIS (EXISTING) - SUMMER SOLSTICE (DECEMBER 21) 10AM	16.01.2023
DA-A-5017	1	SOLAR ACCESS ANALYSIS (EXISTING) - SUMMER SOLSTICE (DECEMBER 21) 11AM	16.01.2023
DA-A-5018	1	SOLAR ACCESS ANALYSIS (EXISTING) - SUMMER SOLSTICE (DECEMBER 21) 12PM	16.01.2023
DA-A-5019	2	SOLAR ACCESS ANALYSIS (EXISTING) - SUMMER SOLSTICE (DECEMBER 21) 1PM	16.01.2023
DA-A-5020	1	SOLAR ACCESS ANALYSIS (EXISTING) - SUMMER SOLSTICE (DECEMBER 21) 2PM	16.01.2023
DA-A-5021	1	SOLAR ACCESS ANALYSIS (EXISTING) - SUMMER SOLSTICE (DECEMBER 21) 3PM	16.01.2023
DA-A-5022	2	SOLAR ACCESS ANALYSIS - SUMMER SOLSTICE (DECEMBER 21) 9AM	16.01.2023
DA-A-5023	1	SOLAR ACCESS ANALYSIS - SUMMER SOLSTICE (DECEMBER 21) 10AM	16.01.2023
DA-A-5024	1	SOLAR ACCESS ANALYSIS - SUMMER SOLSTICE (DECEMBER 21) 11AM	16.01.2023
DA-A-5025	1	SOLAR ACCESS ANALYSIS - SUMMER SOLSTICE (DECEMBER 21) 12PM	16.01.2023

DA-A-5026	2	SOLAR ACCESS ANALYSIS - SUMMER SOLSTICE (DECEMBER 21) 1PM	16.01.2023
DA-A-5027	1	SOLAR ACCESS ANALYSIS - SUMMER SOLSTICE (DECEMBER 21) 2PM	16.01.2023
DA-A-5028	1	SOLAR ACCESS ANALYSIS - SUMMER SOLSTICE (DECEMBER 21) 3PM	16.01.2023
DA-A-5029	2	SOLAR ACCESS ANALYSIS (EXISTING) - EQUINOX (MARCH 21 / SEPTEMBER 21) 9AM	16.01.2023
DA-A-5030	1	SOLAR ACCESS ANALYSIS (EXISTING) - EQUINOX (MARCH 21 / SEPTEMBER 21) 10AM	16.01.2023
DA-A-5031	1	SOLAR ACCESS ANALYSIS (EXISTING) - EQUINOX (MARCH 21 / SEPTEMBER 21) 11AM	16.01.2023
DA-A-5032	1	SOLAR ACCESS ANALYSIS (EXISTING) - EQUINOX (MARCH 21 / SEPTEMBER 21) 12PM	16.01.2023
DA-A-5033	2	SOLAR ACCESS ANALYSIS (EXISTING) - EQUINOX (MARCH 21 / SEPTEMBER 21) 1PM	16.01.2023
DA-A-5034	1	SOLAR ACCESS ANALYSIS (EXISTING) - EQUINOX (MARCH 21 / SEPTEMBER 21) 2PM	16.01.2023
DA-A-5035	1	SOLAR ACCESS ANALYSIS (EXISTING) - EQUINOX (MARCH 21 / SEPTEMBER 21) 3PM	16.01.2023
DA-A-5036	2	SOLAR ACCESS ANALYSIS - EQUINOX (MARCH 21 / SEPTEMBER 21) 9AM	16.01.2023
DA-A-5037	1	SOLAR ACCESS ANALYSIS - EQUINOX (MARCH 21 / SEPTEMBER 21) 10AM	16.01.2023
DA-A-5038	1	SOLAR ACCESS ANALYSIS - EQUINOX (MARCH 21 / SEPTEMBER 21) 11AM	16.01.2023
DA-A-5039	1	SOLAR ACCESS ANALYSIS - EQUINOX (MARCH 21 / SEPTEMBER 21) 12PM	16.01.2023
DA-A-5040	2	SOLAR ACCESS ANALYSIS - EQUINOX (MARCH 21 / SEPTEMBER 21) 1PM	16.01.2023
DA-A-5041	1	SOLAR ACCESS ANALYSIS - EQUINOX (MARCH 21 / SEPTEMBER 21) 2PM	16.01.2023
DA-A-5042	1	SOLAR ACCESS ANALYSIS - EQUINOX (MARCH 21 / SEPTEMBER 21) 3PM	16.01.2023
A_GOA_DWG_A3100	T1	FLOOR PLAN - GROUND LEVEL	17.05.2023
A_GOA_DWG_A6020	T1	RLS - GROUND - END OF TRIP LOCKERS	17.05.2023
A_GOA_DWG_A6022	T1	RLS - GROUND - END OF TRIP BIKE STORE	17.05.2023
Landscape Drawings prepared by McGregor Coxall			
Drawing No.	**Revision**	**Title**	**Date**
LD-SSDA-0A	C	Cover Page	20.12.2022
LD-SSDA-0B	C	Planting Schedule	20.12.2022
LD-SSDA-0C	C	Key Plan	20.12.2022
LD-SSDA-11	C	GA Site Plan	20.12.2022
LD-SSDA-101	C	Material & Finishes Plan – GF & L1	20.12.2022
LD-SSDA-201	C	Sections – Sheet 01	20.12.2022
LD-SSDA-202	C	Sections – Sheet 02	20.12.2022
Internal Civil Woks prepared by Northrop			
Drawing No.	**Revision**	**Title**	**Date**

C1.1	A	Cover Sheet	02.12.2022
C2.1	A	Soil & Water Management Plan	02.12.2022
C2.2	A	Soil & Water Management Details	02.12.2022
C3.1	A	Bulk Earthworks Plan	02.12.2022
C4.1	A	Concept Civil Works and Water Cycle Management & Levels Plan	02.12.2022
C4.10	A	Long Sections – Sheet 1	02.12.2022
C4.11	A	Long Sections – Sheet 2	02.12.2022
C10.1	A	Civil Details – Sheet 1	02.12.2022
C15.1	A	Vehicle Swept Path Plan	02.12.2022
C33.2	5	Internal Civil Works and Water Cycle Management & Levels Plan – Sheet 2	24.05.2023
C35.6	1	Civil Details Sheet 6	24.05.2023

(f) generally in accordance with the following documents:

(i) Aboriginal Cultural heritage Assessment prepared by Urbis, report no. RTS Amendments – 26/4/2023, dated 26 April 2023

(ii) Access Report prepared by Lindsay Perry Access, rev 3, dated 1 December 2022

(iii) Acid Sulphate Soil Management Plan, ref. NCA23R153886, prepared by Kleinfelder, dated 22 May 2023

(iv) Archaeological Research Design & Excavation Methodology prepared by Urbis, report no. RTS Response – 26/4/2023, dated 26 April 2023

(v) CPTED Report, prepared by James Marshall & Co, dated December 2022

(vi) Dewatering Management Plan, ref. NCA23R153933, prepared by Kleinfelder, dated 24 May 2023

(vii) Environmental Acoustic Assessment prepared by Rapt Consulting, rev 0, dated 1 December 2022

(viii) Preliminary Arboricultural Report prepared by Active Green Services, dated November 2022

(ix) Building Code of Australia Capability Statement prepared by Blackett Maguire and Goldsmith, dated 21 December 2022

(x) Environmental Impact Statement prepared by Urbis, rev Final, dated 18 January 2023

(xi) Ecological Sustainable Design Statement prepared by WSP, rev 2, dated 19 December 2022

(xii) Geotechnical Investigations Report prepared by Kleinfelder, rev 2, dated 8 December 2022

(xiii) Green Travel Plan prepared by SECA Solution, ref. P2437, rev 3, dated 14 December 2022

(xiv) Hazardous Materials Survey, prepared by ESP Environmental Safety Professionals, ref. J47098_305 Mann St Gosford_HMS_FINAL, dated 13 December 2022

(xv) Heritage Impact Statement prepared by Urbis, report no. 02, dated 1 December 2022

(xvi) Historical Archaeological Impact Assessment prepared by Urbis, report no. D01 – Issued 13th December 2022

(xvii) Detailed Site Investigation prepared by Kleinfelder, rev 2, dated 15 December 2022

(xviii) Submissions Report prepared by Urbis, dated 31 May 2023

(xix) Response to Submissions letter prepared by Urbis, ref. P0041532_CentralCoastCampus_RTSCoverLetter, dated 26 April 2023

(xx) Response to Submissions letter prepared by SECA Solution, ref. P2437 UoN Gosford Campus DoP RFI, dated 30 May 2023

(xxi) Parking and Transport Assessment prepared by SECA Solution, ref. P2437, rev 3, dated 27 April 2023

(xxii) Infrastructure Report prepared by ADP Consulting, rev 2, dated 2 December 2022

(xxiii) Pedestrian Wind Environment Statement, ref. WH334-02F01(REV0)- WE REPORT.DOCX, rev. 0, dated 20 April 2023

(xxiv) Visual Impact Assessment prepared by Terras Landscape Architecture, rev D, dated 20 December 2022

(xxv) Construction and Demolition Waste Management Plan, rev C, dated 6 February 2023

(xxvi) Operational Waste Management Plan, rev. C, dated 6 February 2023

A3. Consistent with the requirements in this consent, the Planning Secretary may make written directions to the Applicant in relation to:

(a) the content of any strategy, study, system, plan, program, review, audit, notification, report or correspondence submitted under or otherwise made in relation to this consent, including those that are required to be, and have been, approved by the Planning Secretary;

(b) any reports, reviews or audits commissioned by the Planning Secretary regarding compliance with this approval; and

(c) the implementation of any actions or measures contained in any such document referred to in A3(a) above.

A4. The conditions of this consent and directions of the Planning Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document listed in condition **A2**. In the event of an inconsistency, ambiguity or conflict between any of the documents listed in this consent, the most recent document prevails to the extent of the inconsistency, ambiguity or conflict.

Limits of Consent

A5. This consent will lapse five years from the date of consent unless work is physically commenced.

Signage

A6. This consent does not authorise signage except for signage associated with way-finding, parking, safety and the like.

Prescribed Conditions

A7. The Applicant must comply with all relevant prescribed conditions of development consent under Part 4, Division 2 of the EP&A Regulation.

Planning Secretary as Moderator

A8. In the event of a dispute between the Applicant and a public authority, in relation to an applicable requirement in this approval or relevant matter relating to the Development, either party may refer the matter to the Planning Secretary for resolution. The Planning Secretary's resolution of the matter must be binding on the parties.

Evidence of Consultation

A9. Unless otherwise agreed by the Planning Secretary, where conditions of this consent require consultation with an identified party, the Applicant must:

(a) consult with the relevant party prior to submitting the subject document for information or approval; and

(b) provide details of the consultation undertaken including:

(i) the outcome of that consultation, matters resolved and unresolved; and

(ii) details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved.

Staging

A10. The project may be constructed and operated in stages. Where compliance with conditions is required to be staged due to staged construction or operation, a Staging Report (for either or both construction and operation as the case may be) must be prepared and submitted to the satisfaction of the Planning Secretary. The Staging Report must be submitted to the Planning Secretary no later than one month before the commencement of construction of the first of the proposed stages of construction (or if only staged operation is proposed, one month before the commencement of operation of the first of the proposed stages of operation).

A11. A Staging Report prepared in accordance with condition **A10** must:

(a) if staged construction is proposed, set out how the construction of the whole of the project will be staged, including details of work and other activities to be carried out in each stage and the general timing of when construction of each stage will commence and finish;

(b) if staged operation is proposed, set out how the operation of the whole of the project will be staged, including details of work and other activities to be carried out in each stage and the general timing of when operation of each stage will commence and finish (if relevant);

(c) specify how compliance with conditions will be achieved across and between each of the stages of the project; and

(d) set out mechanisms for managing any cumulative impacts arising from the proposed staging.

A12. Where a Staging Report is required, the project must be staged in accordance with the Staging Report, as approved by the Planning Secretary.

A13. Where construction or operation is being staged in accordance with a Staging Report, the terms of this consent that apply or are relevant to the works or activities to be carried out in a specific stage must be complied with at the relevant time for that stage as identified in the Staging Report.

Combining and Updating Strategies, Plans or Programs

A14. The Applicant may:

(a) prepare and submit any strategy, plan (including management plan, architectural or design plan) or program required by this consent on a staged basis (if a clear description is provided as to the specific stage and scope of the development to which the strategy, plan (including management plan, architectural or design plan) or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan (including management plan, architectural or design plan) or program);

(b) combine any strategy, plan (including management plan, architectural or design plan), or program required by this consent (if a clear relationship is demonstrated between the strategies, plans, including management plan, architectural or design plan) or programs that are proposed to be combined); and

(c) update any strategy, plan (including management plan, architectural or design plan), or program required by this consent (to ensure the strategies, plans, including management plan, architectural or design plan), or programs required under this consent are updated on a regular basis and incorporate additional measures or amendments to improve the environmental performance of the development.

A15. Any strategy, plan or program prepared in accordance with condition **A14**, where previously approved by the Planning Secretary under this consent, must be re-submitted to the satisfaction of the Planning Secretary.

A16. If the Planning Secretary agrees or directs, a strategy, plan (including management plan, architectural or design plan), or program, may be staged or updated without consultation being undertaken with all parties required to be consulted in the relevant condition in this consent.

A17. Updated strategies, plans (including management plan, architectural or design plan), or programs, supersede their previous versions and must be implemented in accordance with the relevant condition(s) which require(s) the strategy, plan, program or drawing.

External Walls and Cladding

A18. The external walls of all buildings including additions to existing buildings must comply with the relevant requirements of the BCA.

External Materials

A19. The external colours, materials and finishes of the buildings must be consistent with the approved plans referenced in condition **A2**. Any minor changes to the colour and finish of approved external materials may be approved by the Certifier, provided that:

(a) the alternative colour/material is of a similar tone/shade and finish to the approved, external colours/building materials;

(b) the quality and durability of any alternative material is the same standard as the approved, external building materials; and

(c) a copy of any approved changes to the external colours and/or building materials is provided to the Planning Secretary for information.

Applicability of Guidelines

A20. References in the conditions of this consent, to any guideline, protocol, Australian Standard, or policy, are to such guidelines, protocols, Standards or policies in the form as at the date of this consent.

A21. Consistent with the conditions of this consent and without altering any limits or criteria in this consent, the Planning Secretary may, when issuing directions under this consent in respect of ongoing monitoring and management obligations, require compliance with an updated or revised version of such a guideline, protocol, Standard or policy, or a replacement of them.

Monitoring and Environmental Audits

A22. Any condition of this consent that requires the carrying out of monitoring or an environmental audit, whether directly or by way of a plan, strategy or program, is taken to be a condition requiring monitoring or an environmental audit under Division 9.4 of Part 9 of the EP&A Act. This includes conditions in respect of incident notification, reporting and response, non-compliance notification and independent auditing.

***Note**: For the purposes of this condition, as set out in the EP&A Act, "monitoring" is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an "environmental audit" is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.*

Access to Information

A23. At least 48 hours before the commencement of construction and until the completion of all works under this consent, or such other time as agreed by the Planning Secretary, the Applicant must:

(a) make the following information and documents (as they are obtained or approved) publicly available on its website:

(i) the documents referred to in condition **A2** of this consent;

(ii) all current statutory approvals for the development;

(iii) all approved strategies, plans and programs required under the conditions of this consent;

(iv) regular reporting on the environmental performance of the development in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent;

(v) a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;

(vi) a summary of the current stage and progress of the development;

(vii) contact details to enquire about the development or to make a complaint;

(viii) a complaints register, updated monthly;

(ix) audit reports prepared as part of any independent audit of the development and the Applicant's response to the recommendations in any audit report;

(x) any other matter required by the Planning Secretary; and

(b) keep such information up to date, to the satisfaction of the Planning Secretary.

Compliance

A24. The Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development.

Incident Notification, Reporting and Response

A25. The Applicant must notify the Planning Secretary in writing to compliance@planning.nsw,gov.au, immediately after they become aware of any incident. The notification must identify the development (including the development application number and the name of the development, if it has one) and set out the location and nature of the incident.

A26. Subsequent notification must be given, and reports submitted in accordance with the requirements set out in **Appendix 2**.

Non-Compliance Notification

A27. The Applicant must notify the Planning Secretary in writing to compliance@planning.nsw.gov.au, within seven days after they become aware of any non-compliance. The Certifier must also notify the Planning Secretary in writing to compliance@planning.nsw.gov.au, within seven days after they identify any non-compliance.

A28. The notifications must identify the development and its application number, the condition of consent with which the development is non-compliant, the way in which it does not comply, the reasons for the non-compliance (if known), and the actions which have been, or will be, undertaken to address the non-compliance.

A29. A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

Revision of Strategies, Plans and Programs

A30. Within three months of

(a) the submission of an incident report under conditions **A25** and **A26**. or

(b) the approval of any modification of the conditions of this consent, or

(c) the issue of a direction of the Planning Secretary under condition **A2** which requires a review,

the strategies, plans and programs required under this consent must be reviewed, and the Planning Secretary and the Certifier must be notified in writing that a review is being carried out.

A31. If necessary, to either, improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans, programs or drawings required under this consent must be revised, to the satisfaction of the Planning Secretary or Certifier (but only where previously approved by the Certifier and if the condition allows). Where revisions are required, the revised document must be submitted to the Planning Secretary and / or Certifier for approval and / or information (where relevant) within six weeks of the completion of the review

Note: *This is to ensure strategies, plans and programs are updated on a regular basis and incorporate any recommended measures to improve the environmental performance of the development.*

TfNSW (Sydney Trains)

A32. Sydney Trains or Transport for NSW, and persons authorised by those entities for the purpose of this condition, must be permitted to inspect the site of the development and all structures to enable it to consider whether those structures have been or are being constructed and maintained in accordance with the approved plans and the requirements of this consent, on giving reasonable notice to the principal contractor for the development or the owner or occupier of the part of the site to which access is sought.

A33. Copies of any certificates, drawings, approvals/certification, or documents endorsed by, given to, or issued by Sydney Trains or TAHE (Transport Asset Holding Entity) must be submitted to Council for its records prior to the commencement of construction or prior to occupation, as relevant.

A34. The Applicant must ensure that at all times they have a representative (which has been notified to Sydney Trains in writing), who:

- oversees the carrying out of the Applicant's obligations under the conditions of this consent and in accordance with correspondence issued by Sydney Trains;
- acts as the authorised representative of the Applicant; and
- is available (or has a delegate notified in writing to Sydney Trains who is available) on a 7 day a week basis to liaise with the representative of Sydney Trains, as notified to the Applicant.

A35. Without in any way limiting the operation of any other condition of this consent, the Applicant must, during demolition, excavation and construction works, consult in good faith with Sydney Trains in relation to the carrying out of the development works and must respond or provide documentation as soon as practicable to any queries raised by Sydney Trains in relation to the works.

A36. Where a condition of consent requires consultation with Sydney Trains, the Applicant shall forward all requests and/or documentation to the relevant Sydney Trains External Interface Management team. In this instance the relevant interface team is North Interface, and they can be contacted via email on North_Interface@transport.nsw.gov.au.

PART B – PRIOR TO COMMENCEMENT OF CONSTRUCTION OR WORKS

Amendments to Plans

B1. Prior to the commencement of the relevant stage of works, amended architectural- and landscape-plans must be submitted to the satisfaction of the Certifier that:

(a) Retain the fencing immediately around the kiosk substation but set back other gate & fence at least one vehicle-length from the Hill St boundary;
(b) Include height or openness to any new north side fencing that provides necessary visibility between vehicles exiting the site and the footpath;
(c) Provide 15 bicycle parking spaces (whether they be covered or uncovered) within reasonable proximity of that ramped access from the street and building entry at either Mann Street or Beane Street in accordance with condition **B43(a)(ii)**; and
(d) Reflect the heritage interpretation plan and public art strategy approved by the Planning Secretary under condition **B44**.

Development ----

B2. Prior to the commencement of works, a payment of a levy of 1% of the proposed cost of carrying out the development, excluding the following items from the cost of the development for the purposes of calculating the levy in accordance with section 208(4) of the EP& A Regulation, must be paid to Council under section 7.12 of the EP&A Act (former Section 94A) unless otherwise agreed by the Planning Secretary:

(a) Project management
(b) Fittings & furnishings
(c) Education Building fitments
(d) FF&E / Audio Visual
(e) Enabling access by disabled persons
(f) Energy & water efficiency measures
(g) External Works excluding areas not open to the public
(h) Hard landscaping comprising paving, decking, pergola, seating walls, walls, stairs, streetscape, miscellaneous and sundries but excluding driveway, fencing and substation enclosure
(i) Soft landscaping

B3. Works must not commence unless Council or the Planning Secretary have confirmed in writing, that all required contributions have been paid.

Special Infrastructure Contributions

B4. The Applicant must obtain a determination from the Planning Secretary as to whether a special infrastructure contribution is required to be made under the *Environmental Planning and Assessment (Special Infrastructure Contribution – Gosford City Centre) Determination 2018* (2018 Determination). The Applicant must do so before the time by which, a special infrastructure contribution, if made as a monetary contribution, would have to be paid under the 2018 Determination.

If the Planning Secretary determines that a special infrastructure contribution is required to be made under the 2018 Determination, the Applicant must make a contribution in accordance with that Determination (as in force at the date of this consent).

A person may not commence works in relation to development the subject of this consent unless the person provides, in connection with the application, written evidence from the Department of Planning and Environment that the special infrastructure contribution for the development (or that part of the development for which the certificate is sought) has been made, or that arrangements are in force for the making of the contribution.

In this condition*:*

developer *means the person having the benefit of this development consent, and*

Planning Secretary *means the Secretary of the Department of Planning and Environment.*

More information

A request for assessment by the Department of Planning and Environment, of the amount of the special infrastructure contribution required under this condition, can be made through the NSW Planning Portal (https://www.planning.nsw.gov.au/Plans-for-your-area/Infrastructure-funding/Special-Infrastructure-Contributions). Refer to https://www.planningportal.nsw.gov.au/applicant-resources – Our Applicant

Services – Special Infrastructure Contributions (SIC) for how to submit an SIC request through the Portal, and refer to https://www.planning.nsw.gov.au/Plans-for-your-area/Infrastructure-funding/Special-Infrastructure-Contributions/Gosford-City-Centre-SIC for further information on SICs and Gosford City Centre. Please refer queries to SIContributions@planning.nsw.gov.au.

Security Deposit/s

B5. The following deposit must be provided to Council as security for making good any damage caused to the roadway, footway, verge or any public place; and as security for completing any public work and for remedying any defect on such public works, in accordance with section 4.17 of the EP&A Act:

(a) $50,000 – Damage / Civil Works Security Deposit

The deposit may be provided by way of cash, cheque, credit card payment or another way agreed by Council and is refundable upon a satisfactory inspection by Council upon the completion of civil works and confirmation that there has been no damage to Council's infrastructure.

The Applicant shall advise Council in writing and/or through photographs of any signs of existing damage to the roadway, footway, or verge prior to the commencement of any building/demolition works.

Notification of Commencement

B6. The Applicant must notify the Planning Secretary in writing, of the dates of the intended commencement of construction and operation, at least 48 hours before those dates.

B7. If the construction or operation of the development is to be staged, the Applicant must notify the Planning Secretary, in writing at least 48 hours before the commencement of each stage, of the date of commencement and the development to be carried out in that stage.

Building Code of Australia Compliance

B8. The proposed works must comply with the applicable Performance Requirements of the BCA to achieve and maintain acceptable standards of structural sufficiency, safety (including fire safety), health and amenity, for the ongoing benefit of the community. Compliance with the Performance Requirements can only be achieved by:

(a) compliance with the Deemed to Satisfy Provisions of the BCA; or

(b) Performance Solution which demonstrates:

(i) compliance with all relevant Performance Requirements of the BCA or

(ii) the solution is at least equivalent to the Deemed to Satisfy Provisions; or

(c) a combination of **B8 (a) and (b)** above.

B9. A certification issued by a suitably qualified person is to be provided to the Crown prior to commencement of any building work on the site.

***Note**: Where the proponent of building works is the Crown, the building work must comply with the BCA under s6.28 of the Act prior to commencement of works.*

S6.28 of the EP&A Act states:

(2) Crown building work cannot be commenced unless the Crown building work is certified by or on behalf of the Crown to comply with the technical provisions of the State's building laws in force as at:

(a) the date of the invitation for tenders to carry out the Crown building work, or

(b) in the absence of tenders, the date on which the Crown building work commences, except as provided by this section.

Therefore, a suitably qualified person needs to certify that the crown building works comply as required by s6.28 prior to commencement of Crown building works. There is no format required for such a certification.

Certified Drawings

B10. Prior to the commencement of the relevant stage of works, the Applicant must submit to the satisfaction of the Certifier, structural drawings prepared and signed by a suitably qualified, practising Structural Engineer which demonstrate compliance with this consent.

B11. Plans certified in accordance with section 6.16 of the EP&A Act are to be submitted to the Certifier and the Department prior to commencement of each stage of the works and shall include details as required by any of the following conditions.

Demolition

B12. Prior to the commencement of the relevant stage of works, demolition work plans required by *AS 2601-2001 The demolition of structures (Standards Australia, 2001)*, accompanied by a written statement from a suitably qualified person that the proposals contained in the work plan comply with the safety requirements of the Standard, must be submitted to the Certifier and Planning Secretary.

External Walls and Cladding

B13. Prior to the commencement of the relevant stage of works, the Applicant must provide the Certifier with documented evidence that the products and systems proposed for use, or used in the construction of external walls, including finishes and claddings, such as synthetic or aluminium composite panels, comply with the requirements of the BCA.

B14. The Applicant must provide a copy of the documentation given to the Certifier under condition **B13**, to the Planning Secretary, within seven days after the Certifier accepts it.

Protection of Public Infrastructure

B15. Prior to the commencement of works, the Applicant must:

(a) consult with the relevant owner and provider of services which are likely to be affected by the development, to make suitable arrangements for access to, diversion, protection, and support of the affected infrastructure;

(b) prepare a dilapidation report identifying (including by photographs) the condition (including existing damage) of all public infrastructure in the vicinity of the site (including roads, kerb, gutters, footpaths, driveways, street trees, street signs and street signs); and

(c) submit a copy of the dilapidation report to the Planning Secretary, Certifier and Council, prior to the issue of the Section 138 Roads Act Works approval under condition **B48**.

The Applicant may update the dilapidation report and submit it to the Council or the Planning Secretary for approval, prior to the commencement of works. The report will be used by Council or the Planning Secretary to establish damage to public infrastructure resulting from the development works.

Pre-Construction Dilapidation Report

B16. Prior to the commencement of works, the Applicant must submit a pre-commencement dilapidation report to Council and the Certifier. The report must provide an accurate record of the existing condition of adjoining private properties and Council assets that are likely to be impacted by the proposed works.

Pre-Construction Survey – Adjoining Properties

B17. Prior to the commencement of any works, the Applicant must offer a pre-construction survey to the owners of buildings which are likely to be impacted by the development.

B18. Where the offer of a pre-construction survey is accepted (under condition **B17**) the Applicant must arrange for a survey to be undertaken by a suitably qualified and experienced expert, prior to the commencement of vibration generating works which could impact on the buildings identified.

B19. Prior to the commencement of any vibration generating works which could impact on the buildings surveyed under condition **B18**, the Applicant must:

(a) provide a copy of the relevant survey to the owner of each building surveyed, in the form of a Pre-Construction Survey Report;

(b) submit a copy of the Pre-Construction Survey Report to the Certifier; and

(c) provide a copy of the Pre-Construction Survey Report to the Planning Secretary when requested.

Environmental Management Plan Requirements

B20. Management plans required under this consent must be prepared having regard to the relevant guidelines, including but not limited to, the *Environmental Management Plan Guideline: Guideline for Infrastructure Projects (DPIE April 2020)*.

***Note**:*

- *The Environmental Management Plan Guideline is available on the Planning Portal at: https://www.planningportal.nsw.gov.au/major-projects/assessment/post-approval*
- *The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans*

Construction Environmental Management Plan

B21. Prior to the commencement of the relevant stage of works, 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;

(ii) 24-hour contact details of site manager;

(iii) management of dust and odour to protect the amenity of the neighbourhood;

(iv) stormwater control and discharge;

(v) measures to ensure that sediment and other materials are not tracked onto any roadway by vehicles leaving the site;

(vi) external lighting in compliance with *AS* 4282-2019 *Control of the obtrusive effects of outdoor lighting* (Standards Australia, 1997);

(viii) detail the quantities of each waste type generated during construction and the proposed reuse, recycling and disposal locations;

(b) an unexpected finds protocol for contamination and an associated communications procedure to ensure that potentially contaminated material is appropriately managed;

(c) an unexpected finds protocol for Aboriginal and non-Aboriginal heritage and an associated communications procedure;

(d) waste classification (for materials to be removed) and validation (for materials to remain) be undertaken to confirm the contamination status in those areas of the site;

(e) Construction Traffic and Pedestrian Management Sub-Plan (see condition **B22**);

(f) Construction Noise and Vibration Management Sub-Plan (see condition **B25**);

(g) Construction Waste Management Sub-Plan (see condition **B26**); and

(h) Construction Soil and Water Management Sub-Plan (see condition **B27**).

The Applicant must not commence construction of the development until the CEMP is approved by the by the Planning Secretary.

B22. A Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP) must be submitted to Council for approval, be prepared to achieve the objective of ensuring safety and efficiency of the road and pedestrian network, and address, but not be limited to, the following:

(a) be prepared by a suitably qualified and experienced person(s), who has Roads and Maritime Service accreditation for preparing and implementing traffic management plans at work sites;
(b) be prepared in consultation with Council;
(c) describe the proposed construction works and the traffic impacts on the local area;
(d) detail the measures that are to be implemented to ensure road safety and network efficiency during construction in consideration of potential impacts on general traffic, cyclists and pedestrians and bus services; and
(e) detail heavy vehicle routes, access and parking arrangements.
(f) ingress and egress of construction related vehicles to the development site.
(g) details of the various vehicle lengths that will be used during construction, and the frequency of their movements.
(h) use of swept path diagrams to demonstrate how heavy vehicles enter, circulate and exit the site or Works Zone in a forward direction.
(i) deliveries to the site, including loading / unloading materials and requirements for work zones along the road frontage to the development site. A Plan is to be included that shows where vehicles will stand to load and unload, where construction plant will stand, location of storage areas for

equipment, materials and waste, locations of Work Zones (if required), and location of cranes (if required).
(j) Works Zones if heavy vehicles cannot enter or exit the site in a forward direction.
(k) control of pedestrian and vehicular traffic where pre-construction routes are affected.
(l) Temporary Road Closures.

Refer to Advice Note **AN7** for further information.

B23. Where the plan under condition **B22** identifies that the travel paths of pedestrians and vehicular traffic are proposed to be interrupted or diverted for any construction activity related to works inside the development site, an application must be made to Council for a Road Occupancy Licence. Implementation of traffic management plans that address interruption or diversion of pedestrian and/or vehicular traffic must take place only following receipt of a Road Occupancy Licence from Council (or the Roads and Maritime Service where the works or diversions are on a classified road).

B24. Where a dedicated delivery vehicle loading and unloading zone is required along the road frontage of the development site, a Works Zone Application must be lodged and approved by Council. A minimum of 3 months is required to allow Traffic Committee endorsement and Council approval.

B25. A Construction Noise and Vibration Management Sub-Plan must be submitted to the Planning Secretary for approval and 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 the 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 a complaints management system implemented for the duration of construction;

(e) 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 **B21.**

(f) is to predict noise and vibration at the nearest receivers based on the proposed plant.

(g) the efficacy of sound blankets or hoarding around the construction site is to be investigated as a noise barrier to protect the amenity of adjacent and nearby receivers.

(h) impacted receivers are to be consulted regarding the nature and timing of the works, including predicted noise and vibration impacts at their property and the mitigation measures that will be adopted, noting that the project hours of work will overlap with hours of occupation for both residential and commercial premises, and noting that the programme/s of works should seek to create the least possible disruption to the community.

(i) nearby receivers are also to be provided with a site contact for the lodgement of any noise or vibration complaints.

(j) Investigation of any complaints received and measurements to be undertaken and compared with predictions made in the CNVMP. If the measurements are not in accordance with those predictions, additional reasonable and feasible mitigation measures are to be investigated.

(k) plant selected with consideration of the sound and vibration output. Selected plant will not be any larger than that required to undertake the activity.

(l) sound barriers (either, plywood hording or sound barrier mats hung from site fencing) will be erected around the site perimeter and extend to at least 1.8 m above ground level.

B26. A Construction Waste Management Sub-Plan (CWMSP) must address, but not be limited to, the procedures for the management of waste, comprising:

(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;

(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.

B27. The Applicant must prepare a Construction Soil and Water Management Plan (CSWMSP) which must address, but not be limited to, the following:

(a) be prepared by a suitably qualified expert, in consultation with Council;

(b) describe all erosion and sediment controls to be implemented during construction, as a minimum, in accordance with *Managing Urban Stormwater: Soils & Construction* (4th edition, Landcom 2004), commonly referred to as the, 'Blue Book';

(c) include an Acid Sulfate Soils Management Plan, if required, including measures for the management, handling, treatment and disposal of acid sulfate soils, including monitoring of water quality at acid sulfate soils treatment areas;

(d) provide a plan of how all construction works will be managed in wet-weather events (i.e., storage of equipment, stabilisation of the Site);

(e) details of all off-site flows from the Site; and

(f) describe the measures that must be implemented to manage stormwater and flood flows for small and large sized events, including, but not limited to, the 1 in 5-year ARI and 1 in 100-year ARI.

Groundwater Take, Licensing and Dewatering

B28. Prior to the commencement of the relevant stage of works, the Applicant must obtain a Water Access Licence (WAL) under the *Water Management Act 2000* (NSW), unless an exemption applies under the *Water Management (General) Regulation 2018* (NSW). Details of the WAL or exemption, are to be submitted to the Certifier. Refer to Advice Note **AN12** for further information.

B29. Prior to the commencement of works, the Applicant must submit a Dewatering Management Plan prepared by a suitably qualified person(s), which included the following:

(a) The assumptions leading to the calculations that support the reported estimated volume of groundwater take;

(b) Excavation depths;

(c) Size of the excavation relative to the starting and finishing water table levels required to facilitate construction activities;

(d) Details of the design and construction of the work, including those which:

(i) limit the on-going take of groundwater following completion of construction to less than the Water Access Licence obtained by the proponent, or 3ML/yr if an exemption applies. This may require the structure to be fully watertight for the anticipated life of the building. Waterproofing of below-ground levels must be sufficiently extensive to incorporate adequate provision for unforeseen high water table elevations to prevent potential future inundation;

(ii) prevent obstruction to groundwater flow, by using sufficient permanent drainage beneath and around the outside of the watertight structure to ensure that any groundwater mounding shall not be greater than 10 % above the pre-development level; and

(iii) prevent any elevated water table from rising to within 1.0 m below the natural ground surface.

(e) A Construction Monitoring Programme, including that:

(i) sets staged cumulative performance targets for the volume of de-watering extracted using the estimated groundwater dewatering take reported at the development application stage;

(ii) presents the trigger action and response procedure (TARP), inclusive of agency notification should the performance targets be breached;

(iii) commits to the re-assessment of the predicted take for both, during and post construction phases, should the predicted groundwater dewatering volume be exceeded during the construction phase within 28 days; and

(iv) ensures that the TARP documents the process for mitigation options to ensure post-construction take will be less than 3 ML/yr, or if it will exceed 3ML, necessary water access licences are obtained before the 3ML limit is exceeded.

Operational Waste Storage and Processing

B30. Prior to the commencement of works which include the operational waste storage and processing area/s, the Applicant must:

(a) where waste removal will be undertaken by Council, obtain agreement from Council for the design of the operational waste storage area/s; and

(b) where waste removal will be undertaken by a third party, provide evidence to the Certifier that the design of the waste storage area/s:

(i) is constructed using solid, non-combustible materials;

(ii) includes a cold water supply with a hose through a centralised mixing valve; and

(iii) is naturally ventilated, or an air handling exhaust system is in place.

Shoring for Adjoining Public Land

B31. Where shoring will be located on, or will support Council/public property, engineering details of the shoring are to be prepared by an appropriately qualified, practising structural engineer. Those details are to include the proposed shoring devices, the extent of encroachment, and the method of removal and de-stressing of the shoring elements. A copy of those details must be provided to Planning Secretary and Council for information. The Applicant must comply with all of the recommendations made by the qualified, practising structural engineer.

B32. Council and public property adjoining the construction site, must be fully supported at all times during all demolition, excavation and construction works. Details of any required shoring, propping and anchoring devices adjoining Council and public property, are to be prepared by a qualified structural or geotechnical engineer. Those details must be provided to the satisfaction of the Certifier. A copy of those details must be forwarded to the Planning Secretary and Council for information, prior to any work being commenced.

Site Stability, Excavation and Construction Work

B33. A report must be obtained from a suitability qualified and experienced professional engineer/s, submitted to the Certifier and include the following details :

(a) geotechnical details which confirm the suitability and stability of the site for the development, and relevant design and construction requirements to be implemented to ensure the stability and adequacy of the development and adjacent land;
(b) details of the proposed methods of excavation and support for the adjoining land (including any public place) and buildings;
(c) details which demonstrate that the proposed methods of excavation, support and construction are suitable for the site and will not result in any damage to adjoining premises, buildings or any public place, as a result of the works and any associated vibration;
(d) adjoining land, and buildings located upon adjoining land must always be adequately supported throughout the demolition, excavation and building work;
(e) written approval must be obtained from the owners of adjoining land to install any ground or rock anchors underneath adjoining premises (including any public roadway or public place).

Soil and Water

B34. Prior to the commencement of construction, the Applicant must:

(a) install erosion and sediment controls on the site to manage wet weather events; and

(b) divert existing, clean surface water around operational areas of the site. Prior to the commencement of construction, erosion and sediment controls must be installed and maintained, , in accordance with, as a minimum, *Managing Urban Stormwater: Soils & Construction* (4th edition, Landcom 2004), commonly referred to as the 'Blue Book'.

Flood Management

B35. Prior to the commencement of the relevant stage of works, the Applicant must submit evidence to the Certifier that all floor levels will be no lower than the 1% Annual Exceedance Probability flood, plus 500 mm of freeboard.

B36. Prior to the commencement of the relevant stage of works, the Applicant must submit evidence to the Certifier that any structures below the 1% Annual Exceedance Probability, plus 500mm of freeboard, will be constructed from flood compatible building components.

Stormwater Management System

B37. Prior to the commencement of the relevant stage of works, the Applicant must design an operational stormwater management system for the development and submit it to the Certifier for approval. The system must:

(a) be designed by a suitably qualified and experienced person(s);

(b) be generally in accordance with the conceptual design in the EIS;

(c) be in accordance with applicable Australian Standards;

(d) ensure that the system capacity has been designed in accordance with *Australian Rainfall and Runoff* (Engineers Australia, 2016), and *Managing Urban Stormwater: Council Handbook* (EPA, 1997) guidelines; and

(e) be designed not to exceed the capacity of the Central Coast Highway, or local stormwater drainage system.

Building Over Sewer

B38. Prior to the commencement of any work involving building over and/or adjacent to sewer mains, the Applicant must submit engineering details, prepared and certified by a practising structural engineer, which comply with Council's *Building Over or Adjacent to Sewer and Water Main Guidelines*, to Council's Water Assessment Team for approval. Plan assessment fees apply.

Contamination

B39. Prior to the commencement of works, an Unexpected Contamination Finds Protocol (UFP) shall be prepared by a suitably qualified and experienced expert. The protocol should include detailed procedures for identifying and dealing with unexpected contamination, asbestos and other unexpected finds. The Applicant is to ensure that the protocol includes details of who will be responsible for implementing the it and the roles and responsibilities of all responsible parties. The Applicant must implement the UFP for the duration of works.

B40. Details demonstrating compliance with the requirements of condition **B39** must be submitted to the Planning Secretary for Approval. The Applicant must not commence works until the UDF is approved by the Planning Secretary. A copy of the approval of the documentation required by condition **B39** must be submitted to the Certifier.

Groundwater

B41. Prior to the commencement of the relevant stage of works, the Applicant must, either:

(a) Obtain approval from the local water authority to discharge groundwater extracted during any dewatering activities during works to the sewer network; or
(b) Submit details, including a supporting report prepared by a suitably qualified expert, of arrangements to pump and treat groundwater extracted during any dewatering activities during works prior to discharge, to the Planning Secretary for Approval.

***Note**:* Refer to the *Detailed Site Investigation, ref. 20232408.001A*, dated 15 December 2022, prepared by Kleinfelder for further information.

Car Parking and Service Vehicle Layout

B42. Prior to the commencement of works involving car parking and service vehicle parking / loading / unloading areas, evidence must be submitted to the Certifier, that the operational access and parking arrangements comply with the following requirements:

(a) all vehicles can enter and leave the Site in a forward direction;
(b) twenty four on-site car parking spaces are included for use during operation of the development, and designed in accordance with the latest versions of AS 2890.1 and AS 2890.6;
(c) the swept path of the longest vehicle entering and exiting the Site in association with the new work, as well as manoeuvrability through the Site, are in accordance with the latest version of *AS 2890.2*;
(d) there is no conflict between swept paths and building features, including with respect to any boom gate or other gates, waste collection vehicle access and other service vehicle access;
(e) the safety of vehicles and pedestrians accessing adjoining properties, where shared vehicle and pedestrian access occurs, has been addressed; and
(f) access driveways (including, but not limited to, ramp grades, ramp width and height clearances) incorporate suitable profile over the footway, and comply with Council's *Standard Vehicle Entrance Designs* and the requirements of *AS2890.1*.

B43. Prior to the commencement of the relevant stage of works, the following design details for the secure bicycle parking and motorcycle parking, must be submitted to the Certifier for approval:

(a) the provision of a minimum of 69 bicycle parking spaces, comprising the provision of a minimum of:

(i) 54 bicycle parking spaces within the basement; and

(ii) 15 bicycle parking spaces (whether covered or uncovered) within reasonable proximity of ramped access from the street and building entry at, either, Mann Street or Beane Street;

(b) the provision of a minimum of one (1) motorcycle space within the basement;
(c) compliance of the layout, design and security of bicycle facilities with the minimum requirements of the latest version of *AS 2890.3:2015 Parking facilities – Bicycle parking*; and
(d) the provision of end-of-trip facilities for students and staff.

Heritage Interpretation and Public Art

B44. Prior to the commencement of the relevant stage of works, the Applicant must submit to the Planning Secretary for approval, a heritage interpretation plan that includes the re-use of materials, and a public art strategy, prepared by suitably qualified person(s), both of which reflect the heritage significance of the Mann Street part of the site. The Applicant must not commence works until the heritage interpretation plan and public art strategy are approved by the Planning Secretary. The Applicant must submit a copy of the Secretary's approval of the heritage interpretation plan and public art strategy to the Certifier.

Building Materials

B45. The building materials used on the facades of the buildings, must have a maximum, normal specular reflectivity of visible light of 20 per cent, and be designed so as not to result in glare that causes any discomfort, or threatens the safety of pedestrians or drivers. A report/statement demonstrating compliance with those requirements, must be submitted to the satisfaction of the Certifier, prior to the commencement of any construction which involves above ground façade works.

Disability Access

B46. The following instruments describe building standards relevant to promoting accessibility for persons with a disability:

(a) the *Disability Discrimination Act 1992* (Cth);

(b) the *Disability (Access to Premises – Buildings) Standards 2010*; and

(c) the BCA,

(together, the 'relevant provisions').

Prior to the commencement of the relevant stage of works, the Applicant must provide the Certifier with appropriate plans and specifications which demonstrate: compliance with the above instruments; and that the works proposed as part of the Development will comply with the relevant provisions, in accordance with the approved use, of housing for people with a disability.

Safer by Design

B47. Prior to the commencement of the relevant stage of works, the Applicant must provide plans to the satisfaction of the Certifier, to implement the following Crime Prevention Through Environmental Design (CPTED) principles and strategies, to minimise the opportunities for crime:

(a) provide adequate lighting to common areas as required under *Australian Standard AS 1158: Lighting for roads and public spaces;*

(c) design of landscaping, adjacent to mailboxes and footpaths, must not provide concealment opportunities for criminal activity;

(d) design the development to avoid foot holes or natural ladders, to minimise unlawful access to the premises;

(e) provide signage within the development, to identify all facilities, entry / exit points and direct movement within it;

(f) install a system of Closed Circuit Television of a type, and in locations on the site, which will record high-quality images of all public areas on the site; and

(g) the recommendations contained in Section 5 of the CPTED Report, prepared by James Marshall & Co, dated December 2022, referenced in condition **A2(f)(v).**

Public Domain Works

B48. Prior to the commencement of the relevant stage of works, the Applicant must lodge a separate application and obtain consent from Council, for any works within the road reserve pursuant to section

138 of the *Roads Act 1993* (NSW). The Applicant must obtain consent, or other satisfactory arrangements confirmed in writing, from Council for each relevant stage.

Ecologically Sustainable Development

B49. Prior to the commencement of the relevant stage of works, the Applicant must provide details to the satisfaction of the Certifier, of ecologically sustainable development (ESD) measures implemented on the site, including, but not limited to:

(a) high performance glazing;
(b) passive solar heating and cooling principles;
(c) energy efficient heating, cooling and ventilation systems;
(d) efficient artificial lighting systems;
(e) time switch controls and motion sensors;
(f) energy efficient appliances with higher energy stars (within 1 star of the highest energy efficient rating available on the market); and
(g) adhesives, sealants, flooring and paint products that contain low or no Volatile Organic Compounds (VOCs) and engineered timber products to contain low or no formaldehyde.

Water Efficiency

B50. Prior to the commencement of the relevant stage of works, the following details must be submitted for the approval of the Certifier:

(a) All toilets installed within the development must be of water efficient, dual flush capacity or vacuum design with at least a 4-star rating under the Water Efficiency and Labelling Scheme (WELS).

(b) All taps, shower heads, hoses and fittings installed must be water efficient with at least a 4-star rating under the WELS, or a AAA+ rating, where available.

Landscaping

B51. Prior to the commencement of the relevant stage of works, a Vegetation Management Plan must be submitted to the satisfaction of the Certifier. The Vegetation Management Plan must:

(a) Includes tree planting that complies with required offsets as specified by relevant authorities and Services/Civil Engineer;

(b) Show the location of all proposed and existing water and sewer infrastructure across the site and within at least 20 m radius of the site. The location of such service lines shall be clear of the location of proposed street trees;

(c) Show that all trees planted will be a minimum 45 litre container size;

(d) Show that all trees/shrubs planted will be installed in accordance with Council's requirements;

(e) Identify that all trees are to be grown in accordance with AS2303:2015 (Tree stock for landscape use);

(f) Include post-transplantation aftercare maintenance and duration of the maintenance; and.

(g) Include a maintenance schedule with regular maintenance checks, weed removal, replacement planting, and other maintenance to ensure ongoing maintenance in the life of the landscaping in perpetuity.

B52. Prior to the commencement of the relevant stage of works, a Vegetation Management Plan demonstrating compliance with the requirements of condition **B51** and, in particular, **B51(b)**, must be submitted to Council for approval with respect to **B51(b)**. The Applicant must not commence works until Council provide written confirmation that **B51(b)** has been satisfied.

TfNSW (Sydney Trains)

B53. Prior to the commencement of the relevant stage of works, the Applicant shall undertake a Dial Before You Dig search to establish the existence and location of any rail services. Persons performing the Dial Before You Dig search, shall use equipment that will not have any impact on rail services and signalling. Should rail services be identified within the subject development site, the Applicant must discuss with Sydney Trains as to whether these services are to be relocated or incorporated within the development site.

B54. Prior to the commencement of the relevant stage of works, an acoustic report must be prepared and submitted to the Certifier and Council. The acoustic report must demonstrate that the proposed development will comply with *State Environmental Planning Policy (Transport and Infrastructure) 2021,*

and *Development Near Rail Corridors and Busy Roads - Interim Guidelines*. The Principal Certifying Authority must ensure that all of the measures and recommendations of the acoustic report are incorporated into the construction drawings and documentation prior to the commencement of construction.

B55. Prior to the commencement of construction, the Applicant is to engage an electrolysis expert to prepare an Electrolysis Risk report on stray currents. The Applicant must incorporate all of the measures recommended in the Electrolysis Risk report into the development, in order to control any risk. A copy of the report is to be provided to the Certifier prior to construction. The Certifier must ensure that the recommendations of the electrolysis report are incorporated in the construction drawings and documentation prior to the commencement of construction.

B56. The design, installation and use of lights, signs, and reflective materials, whether permanent or temporary, which are (or, from which, reflected light might be) visible from the rail corridor, must limit glare and reflectivity to the satisfaction of the rail operator. Relevant construction must not commence until the Applicant has received written confirmation from Sydney Trains which confirms that this condition has been satisfied.

B57. If required by Sydney Trains, prior to the commencement of construction, a Risk Assessment/Management Plan, and a detailed, Safe Work Method Statements (SWMS) for the proposed works, are to be submitted to Sydney Trains for review and comment on the impacts on its rail corridor. Construction must not commence until written confirmation has been received from Sydney Trains confirming that this condition has been satisfied.

B58. Prior to relevant construction, the Applicant must submit to Sydney Trains, a plan showing all craneage and other aerial operations for the development, which complies with all of Sydney Trains' requirements. If required by Sydney Trains, the Applicant must amend the plan showing all craneage and other aerial operations, in order to comply with all Sydney Trains' requirements. Relevant construction must not commence until written confirmation has been received from Sydney Trains confirming that this condition has been satisfied or, if no response has been received from Sydney Trains, until at least 21 days have passed since the submission of the SWMS to Sydney Trains.

B59. Prior to the commencement of the relevant stage of works, the following, final version rail specific items must be submitted to Sydney Trains for review, comment, and written endorsement:

(a) Machinery to be used during excavation/construction; and

(b) Demolition, excavation, and construction methodology and staging.

Relevant construction must not commence until the Principal Certifying Authority has received written confirmation from Sydney Trains that this condition has been complied with.

B60. Prior to the commencement of construction, if required, the Applicant is to contact Sydney Trains External Interface Management team, to determine the need for public liability insurance cover. If insurance cover is deemed necessary, it must be for a sum as determined by Sydney Trains, and not contain any exclusion for works on, or near, the rail corridor and rail infrastructure. The insurance must be maintained for the duration as specified by Sydney Trains. The Applicant must contact Sydney Trains External Interface Management team to ascertain the level of insurance required for the Development. Prior to the commencement of construction, the Certifier must witness written evidence of the insurance and Sydney Trains' written advice to the Applicant on the level of insurance which is required.

B61. If required, prior to the commencement of construction the Applicant is to contact Sydney Trains External Interface Management team to determine the need for the lodgement of a Bond or Bank Guarantee for the duration of the works. The Bond/Bank Guarantee shall be for the sum determined by Sydney Trains. Prior to the commencement of construction, the Principal Certifying Authority must witness written advice from Sydney Trains which confirms the lodgement of the Bond/Bank Guarantee.

B62. The Applicant must provide a Geotechnical Engineering report to Sydney Trains for review by its Geotechnical section prior to the commencement of the relevant stage of works. The report must demonstrate that the development will have no negative impact on the rail corridor, or the integrity of the infrastructure due to its loading and ground deformation, and contain structural design details/analysis for review by Sydney Trains. The report must address the Development's potential impact from demolition and excavation, and demolition, and excavationinduced vibration in rail facilities, and loadings on Sydney Trains Facilities.

B63. No metal ladders, tapes, and plant, machinery, or conductive material are to be used within six horizontal metres of any live electrical equipment. This applies to the train pantographs and catenary,

contact and pull-off wires of the adjacent tracks, and any aerial power supplies within, or adjacent to, the rail corridor.

B64. If required by Sydney Trains, prior to the commencement of the relevant stage of works, or at any time during the excavation and construction period deemed necessary by Sydney Trains, a joint inspection of the rail infrastructure and property in the vicinity of the project, must be carried out by representatives from Sydney Trains and the Applicant. Those dilapidation surveys must establish the extent of any existing damage and enable observation of any deterioration during construction. The Applicant must submit a detailed dilapidation report to Sydney Trains within 10 days following the undertaking of the joint inspection, unless otherwise notified by Sydney Trains.

PART C – DURING CONSTRUCTION OR WORKS

Site Notice

C1. A site notice(s) must be prominently displayed at the boundaries of the site during construction, for the purpose of informing the public of project details, and must satisfy the following requirements:

(a) minimum dimensions of the site notice(s) must be 841 mm x 594 mm (A1), with any text on the site notice(s) to be a minimum of 30-point type size;

(b) the site notice(s) must be durable and weatherproof, and displayed throughout the construction period;

(c) the approved hours of work, the name of the builder, Certifier, structural engineer, site/ project manager, the responsible managing company (if any), its address and 24-hour contact phone number for any inquiries, including construction/noise complaints, must be displayed on the site notice(s); and

(d) the site notice(s) must be mounted at eye level on the perimeter hoardings/fencing, and state that unauthorised entry to the site is not permitted.

Operation of Plant and Equipment

C2. All construction plant and equipment used on site must be maintained in a proper and efficient condition and operated in a proper and efficient manner. Works, including the operation of all plant and equipment, are not to give rise to any offensive noise, as defined under the *Protection of the Environment Operations Act 1997 (NSW)I* or the *Noise Policy for Industry* (2017, NSW EPA).

Approved Plans to be On-Site

C3. A copy of the approved and certified plans, specifications and documents incorporating conditions of approval and certification shall be kept on the Site at all times, and be readily available for perusal by any officer of the Department, Council or the Certifier.

Demolition

C4. Demolition work must comply with the demolition work plans required by *Australian Standard AS 2601-2001 The demolition of structures* (Standards Australia, 2001), and endorsed by a suitably qualified person as required by condition **B12**.

Construction Hours

C5. Construction, including the delivery of materials to and from the site, may be carried out only between the following hours:

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

(b) 8 am and 1 pm, Saturdays.

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

C6. Construction activities may be undertaken outside of the hours specified in condition **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) 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 practical afterwards.

C8. Rock breaking, rock hammering, sheet piling, pile driving and similar activities may be carried out only between the following hours:

(a) 9 am to 12 noon, Mondays to Fridays;

(b) 2 pm to 5 pm Mondays to Fridays; and

(c) 9 am to 12 noon, Saturdays.

Crane Construction

C9. Mobile cranes must use aviation lighting similar to the standards in NSW Health *GL2020_014 Guidelines for Hospital HLS in NSW* if they operate at night or in low visibility.

Implementation of Management Plans

C10. The Applicant must carry out the construction of the development in accordance with the approved CEMP (including Sub-Plans).

Hoarding Requirements

C11. The following hoarding requirements must be complied with:

(a) no third party advertising, unless associated with State or Commonwealth Funding of the development or development deeds (such as logos of such associated stakeholders), is permitted to be displayed on the subject hoarding/ fencing; and

(b) the construction site manager must be responsible for the removal of all graffiti from any construction hoardings or the like within the construction area, within 48 hours of the application of graffiti.

No Obstruction of Public Way

C12. The public way (outside of any approved construction works zone) must not be obstructed by any materials, vehicles, refuse, skips, or the like, under any circumstances.

Construction Traffic and Pedestrian Management Sub-Plan

C13. The CTPMSP must be reviewed and updated during construction of the development, to address any changing site conditions. A copy of the CTPMSP must be held on site at all times and be made available to Council and the Planning Secretary upon request.

Construction Noise Limits

C14. The development must be constructed to achieve the construction noise management levels detailed in the Interim Construction Noise Guideline (DECC, 2009). All feasible and reasonable noise mitigation measures must be implemented, and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the management and mitigation measures identified in the approved Construction Noise and Vibration Management Plan.

C15. The Applicant must ensure construction vehicles (including concrete agitator trucks) do not arrive at the site, or surrounding residential precincts, outside of the construction hours of work required by condition **C5**.

C16. The Applicant must implement, where practicable and without compromising the safety of construction staff or members of the public, the use of 'quackers' (or comparable technology), to ensure noise impacts on surrounding noise sensitive receivers are minimised.

Vibration Criteria

C17. 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).

C18. 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 **C17**.

C19. The limits in conditions **C17** and **C18** apply, unless otherwise outlined in a Construction Noise and Vibration Management Plan, approved as part of the CEMP, and required by condition **B25** of this consent.

Air Quality

C20. During construction, the Applicant must ensure that all reasonable steps are taken to minimise dust generated during all works authorised by this consent, including but not limited to, the following:

(a) activities are carried out in a manner that minimises dust, including emission of windblown, or traffic generated dust;

(b) all trucks entering or leaving the site with loads, have their loads covered;

(c) trucks associated with the development do not track dirt onto the public road network;

(d) public roads in the vicinity of the Site used by trucks are kept clean; and

(e) land stabilisation works are carried out progressively on site to minimise exposed surfaces.

Imported Fill

C21. The Applicant must:

(a) ensure that only VENM, ENM, or other material that meets the requirements of a relevant order and exemption issued by the EPA, is brought onto the site;

(b) keep accurate records of the volume and type of fill to be used; and

(c) make those records available to the Certifier upon request.

Disposal of Seepage and Stormwater

C22. Adequate provisions must be made to collect and discharge stormwater drainage during construction of the development to the satisfaction of the Certifier. The prior written approval of Council must be obtained to connect or discharge site stormwater to Council's stormwater drainage system or street gutter.

Dewatering Completion Report

C23. Following completion of the dewatering activity, and any monitoring required under the approved Monitoring Programme, the applicant must submit a completion report to DPE Water. Refer to **B29(e)** for further information.

Emergency Management

C24. The Applicant must prepare and implement awareness training for employees and contractors, including locations of assembly points and evacuation routes, for the duration of construction.

Unexpected Finds Protocol – Aboriginal Heritage

C25. In the event that surface disturbance identifies a new Aboriginal object:

(a) all works in the immediate area must halt to prevent any further impacts to the object(s);

(b) a suitably qualified archaeologist, and registered Aboriginal representatives must be contacted to determine the significance of the objects;

(c) the site is to be registered in the Aboriginal Heritage Information Management System (AHIMS) managed by Heritage NSW, and the management outcome for the site is to be included in the information provided to AHIMS;

(d) the Applicant must consult with Aboriginal community representatives, archaeologists and Heritage NSW, to develop and implement management strategies for all objects/sites; and

(e) works shall recommence only with the written approval of the Planning Secretary.

Unexpected Finds Protocol – Historic Heritage

C26. If any unexpected archaeological relics are uncovered during works:

(a) all works must cease immediately in that area and notice given to Heritage NSW and the Planning Secretary within two business days of the relics being uncovered;

(b) depending on the possible significance of the relics, an archaeological assessment and management strategy may be required before further works can continue in that area, as determined in consultation with Heritage NSW; and

(c) works may recommence only with the written approval of the Planning Secretary.

Waste Storage and Processing

C27. All waste generated during construction must be secured and maintained within designated waste storage areas on the site, at all times and must not leave the site onto neighbouring public or private properties.

C28. All waste generated during construction must be assessed, classified and managed in accordance with the *Waste Classification Guidelines Part 1: Classifying Waste (EPA, 2014)*.

C29. The Applicant must ensure that concrete waste and rinse water are not disposed of on the site, and are prevented from entering any natural or artificial watercourse.

C30. The Applicant must record the quantities of each waste type generated during construction, and the proposed reuse, recycling and disposal locations, for the duration of construction.

C31. The Applicant must ensure that the removal of hazardous materials, particularly the method of containment and control of emission of fibres to the air, and disposal at an approved waste disposal facility, are in accordance with the requirements of the relevant legislation, codes, standards and guidelines.

Shoring and Adequacy of Adjoining Properties

C32. If development involves excavation that extends below the level of the base of the footings of a building on adjoining land, the Applicant must, at their own expense:

(a) Protect and support the adjoining premises from possible damage from the excavation; and

(b) Where necessary, underpin the adjoining premises to prevent any such damage.

TFNSW (Sydney Trains)

C33. The Applicant/Developer shall not, at any stage, block the corridor access gate on Mann Street; and should make provision for easy and ongoing 24 hour access by rail vehicles, plant, and equipment to support maintenance and emergency activities.

C34. Sydney Trains advises there is a High Voltage Aerial Transmission Line (11kV & 66kV) opposite the Site. The proposed development should note the requirements of the following electrical standards/guidelines:

i. ISSC 20 – *Guideline for the Management of Activities within Electricity Easements and Close to Electricity Infrastructure*.

ii. The Safe Approach Distances (SADs) in the Sydney Trains Document titled “SMS-06-GD-0268 – Working Around Electrical Equipment”.

iii. “WorkCover Code of Practice – Work near Overhead Power Lines (The Code)”

In addition, all landscaping must be in accordance with the Sydney Trains High Voltage Powerline Tree Management Plan.

PART D – PRIOR TO OCCUPATION OR COMMENCEMENT OF USE

Notification of Occupation

D1. At least one month before commencement of operation, the date of commencement of the operation of the Development must be notified to the Planning Secretary in writing. If the operation of the Development is to be staged, the Planning Secretary must be notified in writing at least one month before the commencement of each stage, of the date of commencement and the development to be carried out in that stage.

Works as Executed Plans

D2. Prior to occupation, works-as-executed drawings signed by a registered surveyor, demonstrating that the stormwater drainage and finished ground levels have been constructed as approved, and that all works have been carried out within the property boundaries, must be submitted to the Certifier.

Digital Model

D3. A digital model of the development must be submitted to Council, for approval, for inclusion in Council's 3D model for the Gosford City Centre, prior to occupation and operation of the development. The development must not commence occupation or operation until Council provides written confirmation that the digital model is satisfactory.

Stormwater Drainage Design Plan(s)

D4. Prior to occupation, an Operation and Maintenance Plan (OMP) prepared by a Practicing Professional Engineer, or Registered Surveyor experienced in the design of stormwater drainage systems is to be submitted to the satisfaction of the Certifier, with evidence of compliance with the OMP. The OMP must ensure the proposed stormwater quality measures remain effective and contain the following:

(a) maintenance schedule of all stormwater quality treatment devices;
(b) record and reporting details;
(c) relevant contact information; and
(d) Work Health and Safety requirements.

External Walls and Cladding

D5. Prior to commencement of operation, the Applicant must provide the Certifier with documented evidence that the products and systems used in the construction of external walls, including finishes and claddings, such as synthetic or aluminium composite panels, comply with the requirements of the BCA.

D6. The Applicant must provide a copy of the documentation given to the Certifier under condition **D5**, to the Planning Secretary, within seven days after the Certifier accepts it.

Developer Contributions

D7. Prior to occupation, the Certifier must provide a copy of the documentation to the Planning Secretary which confirms that there are no outstanding infrastructure contributions or levies.

Prior to occupation, the Certifieris required to obtain a document from: Council confirming the payment of infrastructure contributions; and the Department, confirming the payment of the Special Infrastructure Contributions.

Post-Construction Dilapidation Report

D8. Prior to commencement of operation, the Applicant must engage a suitably qualified person to prepare a post-construction dilapidation report at the completion of construction. The report is to:

(a) ascertain whether the construction created any structural damage to adjoining buildings or infrastructure;

(b) ascertain whether the construction created any damage to heritage items in the vicinity of the site;

(c) be submitted to the Certifier, who, in ascertaining whether adverse structural damage has occurred to adjoining buildings or infrastructure, must:

(i) compare the post-construction dilapidation report with the pre-construction dilapidation report required by conditions **B16** and **D8**; and

(ii) have written confirmation from the relevant authority, that there is no adverse structural damage to the authority's infrastructure and roads.

(d) be forwarded to Council for information.

Repair of Public Infrastructure

D9. Unless the Applicant and the applicable authority agree otherwise, the Applicant must:

(a) remove any redundant existing vehicular crossing (or section thereof), at no cost to Council;

(b) relocate, or pay the full costs associated with relocating any infrastructure that needs to be relocated as a result of the development; and

(c) repair, immediately, to the satisfaction of Council, or pay the full costs associated with repairing, any public infrastructure, including, but not limited to, all public footways, foot paving, kerbs, gutters and road pavement, damaged by the carrying out of the development.

***Note**: This condition does not apply to any damage to roads otherwise addressed by contributions required by condition **B5** of this consent.*

Protection of Property

D10. Unless the Applicant and the applicable owner agree otherwise, the Applicant must repair, or pay the full costs associated with repairing, any property damaged as a result of the carrying out of the development.

Utilities and Services

D11. Prior to the occupation:

(a) a section 305 application under the *Water Management Act 2000 (NSW)* must be submitted; and
(b) a compliance certificate under the section 307 of the *Water Management Act 2000 (NSW)* must be obtained from Council and submitted to the Certifier.

D12. Prior to the occupation, written advice shall be obtained from the relevant wastewater disposal authority, electricity supply authority, an approved telecommunications carrier and an approved gas carrier (where relevant), stating that satisfactory arrangements have been made to ensure provision of adequate services to each approved lot.

Roadworks and Access

D13. Prior to occupation, the Applicant must complete the construction of all proposed driveways, car parking and service vehicle parking / loading / unloading areas to the satisfaction the Certifier.

Redundant Driveways

D14. Prior to occupation, the Applicant must remove any redundant driveways on Beane Street and Hill Street and replace them with new kerb, gutter and concrete footpath and turf, as appropriate, at a grade of a maximum of 2%.

Car Parking, Service Vehicles and Bicycle Parking Arrangements

D15. Prior to occupation, or other timeframe agreed to in writing by the Planning Secretary, evidence must be submitted to the satisfaction of the Certifier, which demonstrates that:

(a) the car-parking, service vehicle areas and bicycle parking facilities comply with condition **B1**;

(b) way-finding signage and signage identifying the location of staff car parking has been installed;

(c) appropriate pedestrian and cyclist advisory signs, including way-finding signage that directs cyclists from footpaths to designated bicycle parking areas, have been provided;

(d) all works/regulatory signposting associated with the proposed development have been undertaken at no cost to the relevant roads authority; and

(e) The bicycle parking spaces are located in easy to access, well lit areas which incorporate passive surveillance.

Parking and Signage

D16. All parking and loading bays are to be permanently marked on the pavement surface, with loading bays and parking facilities clearly indicated by signs, prior to occupation.

D17. The vehicular entrance and exit driveways and the direction of traffic movement within the site, are to be clearly indicated by means of reflective signs and pavement markings. The traffic and parking signs,

line markings and required traffic and safety devices, as indicated in the approved architectural plans and traffic report, are to be completed prior to occupation.

Building Code of Australia (BCA) Compliance

D18. Prior to commencement of occupation, or use of the whole, or any part of a new building:

(a) evidence must be provided to the satisfaction of the Certifier, that the proposed works have been completed in accordance with the Building Code of Australia (BCA) and conditions **B8** and **B10**; and
(b) a BCA Completion Statement must be completed by an appropriately qualified person appointed by the Crown and submitted to the Certifier.

Structural Inspection Certificate

D19. Prior to the commencement of occupation of the relevant parts of any new or refurbished buildings, a Structural Inspection Certificate, or a Compliance Certificate must be submitted to the Certifier. A copy of the Certificate, with an electronic set of final drawings (contact the approval authority for specific electronic format), must be submitted to the Certifier and the Council, after:

(a) the site has been periodically inspected and the Certifier is satisfied that the structural works are deemed to comply with the final design drawings; and

(b) the drawings listed on the Inspection Certificate have been checked against those listed on the final Design Certificate/s.

Fire Safety Certification

D20. Prior to commencement of occupation, a Fire Safety Certificate must be obtained for all of the Essential Fire or Other Safety Measures forming part of this consent; and be prominently displayed in the building. A copy of the Fire Safety Certificate must be submitted to the relevant authority and Council.

Mechanical Ventilation

D21. Prior to occupation, the Applicant must provide evidence prepared by a suitably qualified person(s) to the satisfaction of the Certifier, that the installation and performance of the mechanical ventilation systems comply with:

(a) the BCA and AS1668.1, *AS 1668.2-2012 The use of air-conditioning in buildings – Mechanical ventilation in buildings*, *AS3666 – Microbial Control of Air Handling and Water Systems of Building*, and other relevant codes to ensure adequate levels of health and amenity to the occupants of the building and to ensure environment protection; and

(b) any dispensation granted by Fire and Rescue NSW.

Screening

D22. All external items of air conditioning plant must be screened or positioned in such a manner so as not to detract from the visual presentation of the building.

Warm Water Systems and Cooling Systems

D23. The installation of warm water systems and water cooling systems (as defined under the Public Health Act 2010 (NSW)) must comply with the *Public Health Act 2010 (NSW), Public Health Regulation 2012 (NSW), Part 1 (or Part 3, if a Performance-based water cooling system) of AS/NZS 3666.2:2011 Air handling and water systems of buildings – Microbial control – Operation and maintenance, and the NSW Health Code of Practice for the Control of Legionnaires' Disease*.

Water Safety Signage

D24. Prior to occupation or operation, 'Do not drink' signage on non-potable water used for toilet flushing, and new hose taps and irrigation systems for landscaped areas, must be installed within the site.

Compliance with Food Code

D25. Prior to occupation or operation of the relevant parts of the development, the Applicant is to obtain a certificate from a suitably qualified tradesperson, certifying that the café and its kitchen, food storage and food preparation areas have been fitted in accordance with the *AS 4674 Design, construction and fit-out of food premises*, and provide evidence, to the satisfaction of the Certifier, of receipt of the certificate.

Industry Engagement Space

D26. Prior to the commencement of occupation or operation, to ensure that there is no long-term tenure of no change or presentation of a disused space, the Applicant must prepare and maintain a display strategy and programme for the glazed frontage of the Industry Engagement Space at Mann Street which maintains the display of activity and interest to the street.

Outdoor Lighting

D27. Prior to occupation, the Applicant must submit evidence, from a suitably qualified practitioner, to the Certifier, which demonstrates that installed lighting associated with the development, achieves the objective of minimising light spillage to any adjoining or adjacent sensitive receivers, and:

(a) provides at least 20 lux at ground level to pathways;

(b) complies with the latest version of AS 4282-2019 - Control of the obtrusive effects of outdoor lighting (Standards Australia, 1997); and

(c) has been mounted, screened and directed in such a manner that it avoids glare for pedestrians and does not create a nuisance to surrounding properties or the public road network

Landscaping

D28. Prior to the commencement of operation, landscaping of the site must be completed in accordance with landscape plan(s) listed in condition **A2,** as amended by any conditions of this consent .

D29. Prior to the commencement of operation, the Applicant must provide the Certifier with written certification from a suitably qualified Landscape Architect/Designer certifying that landscaping has been implemented in accordance with the approved landscape plan(s) listed in condition **A2**, as amended by any conditions of this consent.

D30. Prior to the commencement of operation, the Applicant must provide the Certifier with a Plan of Management prepared by a suitably qualified person(s) for the rain gardens treatments within the site.

Safer by Design

D31. Prior to the commencement of occupation or operation, the Applicant must provide to the satisfaction of the Certifier, evidence that the development has implemented the CPTED strategies outlined in condition **B47**.

PART E – DURING OCCUPATION

Operation of Plant and Equipment

E1. All plant and equipment used on site must be maintained in a proper and efficient condition and operated in a proper and efficient manner. The use and occupation of the premises, including all plant and equipment installed thereon, is not to give rise to any offensive noise, as defined under the *Protection of the Environment Operations Act 1997 (NSW).*

Warm Water Systems and Cooling Systems

E2. The operation and maintenance of warm water systems and water cooling systems (as defined under the *Public Health Act 2010 (NSW))* must comply with the *Public Health Act 2010 (NSW), Public Health Regulation 2012 (NSW), Part 2 (or Part 3 if a Performance-based water cooling system) of AS/NZS 3666.2:2011 Air handling and water systems of buildings – Microbial control – Operation and maintenance, and the NSW Health Code of Practice for the Control of Legionnaires' Disease*.

Unobstructed Driveways and Parking Areas

E3. All driveways, footways and parking areas must be unobstructed at all times. Driveways, footways and car spaces must not be used for the manufacture, storage or display of goods, materials, refuse, skips or any other equipment. They must be used solely for vehicular and/or pedestrian access and the parking of vehicles associated with the use of the premises.

Green Travel Plan

E4. The Green Travel Plan prepared by SECA Solution, ref. P2437, rev 3, dated 14 December 2022 and referenced in condition **A2(f)(xiii)** must be implemented, reviewed and if necessary updated annually unless otherwise agreed by the Planning Secretary.

Street Level Façade

E5. No opaque glass, film or security roller doors are permitted at any time on any part of the façade that faces the public domain at street level.

Landscaping

E6. The Applicant must maintain the landscaping and vegetation on the site in accordance with the approved Vegetation Management Plan required by condition **B51** for the duration of occupation of the development.

Student and Staff Numbers

E7. Unless otherwise agreed in writing by the Planning Secretary, the maximum number of occupants in the building is 710.

Groundwater Take Reporting Arrangements

E8. If a non-watertight basement is constructed, then, metering, recording and reporting of annual water take from below-ground levels must be completed in compliance with section 21(6) of the *Water Management (General) Regulation 201*8 (NSW).

APPENDIX 1 – ADVISORY NOTES

General

AN1. All licences, permits, approvals and consents as required by law, must be obtained and maintained, as required, for the development. No condition of this consent removes any obligation to obtain, renew or comply with such licences, permits, approvals and consents.

Long Service Levy

AN2. For work costing $250,000 or more, a Long Service Levy must be paid. For further information, please contact the Long Service Payments Corporation Helpline on telephone 131 441.

Legal Notices

AN3. Any advice or notice to the consent authority must be served on the Planning Secretary.

Utilities and Services

AN4. Prior to the construction of any utility works associated with the development, the Applicant must obtain relevant approvals from service providers.

Road Design and Traffic Facilities

AN5. All roads and traffic facilities must be designed to meet the requirements of Council or TfNSW (whichever is applicable). The necessary permits and approvals from the relevant road authority must be obtained prior to the commencement of road or pavement construction works.

AN6. Any application to Council for a Section 138 Roads Act Works Approval for all works required within the road reserve is to be lodged using an *Application for Subdivision Works Certificate or Construction Certificate, Roads Act Works Approval and other Development related Civil Works* form available from Council. The application is to be accompanied by detailed design drawings, reports and other documentation prepared by a suitably experienced qualified professional in accordance with Council's Civil Works Specifications. Fees, in accordance with Council's Fees and Charges, will be invoiced to the Applicant following lodgement of the application. Fees must be paid prior to Council commencing assessment of the application.

Design drawings, reports and documentation will be required to address the following works within the road reserve:

(a) The reconstruction of kerb and guttering, subsurface pavement drainage, pedestrian ramps, service utility adjustment or relocation and road shoulder pavement including sealing across the Mann, Beane and Hills Street frontages of the site.
(b) Construction of full width footpath for the full street frontage of the development in Mann, Beane and Hills Streets designed in accordance with Councils Gosford CBD Streetscape Design Guidelines prepared by Oculus Landscape Architecture Design 2011.
(c) Construction of a commercial vehicle access crossings that has a width to accommodate the service vehicle turning paths within Mann and Hills Streets.
(d) Removal of all redundant vehicle gutter crossings / laybacks and replacement with kerb.
(e) Replacement of all damaged kerb and gutter with new kerb and gutter.
(f) Construction of any works required to transition the new works into existing infrastructure and the surrounding land formation.
(g) Construction of a storm water drainage connection from the development site to connect into Council's piped storm water drainage system within the Mann Street.
***Note**: The connection EKI shall be reconstructed to accommodate the new connection.*
(h) Road pavement designs. An Investigation and Design report prepared by a practising Geotechnical Engineer must be provided. The pavement design thickness must be determined in compliance with Council's Civil design and Construction Specifications.

The design is to be certified by a registered practising Civil or Structural engineer as being in accordance with Australian Standards.

Road Occupancy Licence

AN7. A Road Occupancy Licence must be obtained from the relevant road authority for any works which impact on traffic flows during construction activities.

SafeWork Requirements

AN8. To protect the safety of work personnel and the public, the work site must be adequately secured to prevent access by unauthorised personnel; and work must be conducted at all times in accordance with relevant SafeWork requirements.

Hoarding Requirements

AN9. The Applicant must submit a hoarding application to Council for the installation of any hoardings over Council footways or road reserves.

Handling of Asbestos

AN10. The Applicant must consult with SafeWork NSW concerning the handling of any asbestos waste that may be encountered during construction. The requirements of the Protection of the Environment Operations (Waste) Regulation 2014 (NSW), particularly, Part 7 – 'Transportation and management of asbestos waste', must be complied with.

Fire Safety Certificate

AN11. The owner must submit to Council, an Annual Fire Safety Statement, every 12 months after the final Safety Certificate is issued. The certificate must be on, or to the effect of, Council's Fire Safety Statement.

Water Licensing and Exemption Requirements

AN12. This project includes excavation activities required for the construction of a building, road or infrastructure, which is item 2(c) in Clause 7 of the *Water Management (General) Regulation 2018*.

A Water Access Licence (WAL) is legislatively required under the WMA for groundwater take above 3ML/year. If the take of groundwater is greater than 3ML per year, further impact assessment will be required. As such, the applicant should consider the Guidelines for Groundwater Documentation for SSD/SSI Projects (2022) and the Minimum requirements for building site groundwater investigations and reporting (2022) to ensure the documentation required is fit for purpose.

Alternately, If the take is less than or equal to 3ML of water per year for any aquifer interference activities listed in Clause 7 of Schedule 4 of the *Water Management (General) Regulation 2018*, an exemption may apply.

Under the exemption, a person can take up to 3 ML of groundwater through an aquifer interference activity per authorised project per water year (July – June) without needing to obtain a WAL. DPE Water notes that there are requirements for an exemption, such as:

1. the water is not taken for consumption or supply;
2. the person claiming the exemption keeps a record of the water taken under the exemption and provides this to the Minister within 28 days of the end of the water year; and
3. the records are kept for 5 years.

Further information on these requirements and other information on exemptions can be found on: https://water.dpie.nsw.gov.au/licensing-and-trade/licensing/groundwater-wal-exemptions. Please note that an exemption application form and a specific FAQ on 'WAL exemptions – 3ML or less of groundwater' is provided at this website as well as a form to report and record water take under an exemption.

APPENDIX 2 – WRITTEN INCIDENT NOTIFICATION AND REPORTING REQUIREMENTS

Written Incident Notification Requirements

1. A written incident notification addressing the requirements set out below must be emailed to the Planning Secretary via compliance@planning.nsw.gov.au within seven days after the Applicant becomes aware of an incident. Notification is required to be given even if the Applicant fails to give the notification required under Conditions **A25, A26, A27, A28** or **A29**, having given such notification, subsequently forms the view that an incident has not occurred.

2. Written notification of an incident must:
   (a) identify the development and application number;
   (b) provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
   (c) identify how the incident was detected;
   (d) identify when the applicant became aware of the incident;
   (e) identify any actual or potential non-compliance with conditions of consent;
   (f) describe what immediate steps were taken in relation to the incident;
   (g) identify further action(s) that will be taken in relation to the incident; and
   (h) identify a project contact for further communication regarding the incident.

3. Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, the Applicant must provide the Planning Secretary, and any relevant public authorities (as determined by the Planning Secretary), with a detailed report of the incident addressing all requirements below, and such further reports as may be requested.

4. The Incident Report must include:
   (a) a summary of the incident;
   (b) outcomes of an incident investigation, including identification of the cause of the incident;
   (c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
   (d) details of any communication with other stakeholders regarding the incident.

8.10 Appendix 10 - External Lighting Compliance

ADP Consulting : Engineering

ABN 81 139 719 529
adpconsulting.com.au

13 October 2023

Hansen Yunken
Suite 12/125 Bull Street
Newcastle NSW 2302
Attention: Tim Everett

Revision: 1

Dear Tim,

SYD2223: – University of Newcastle Central Coast Campus Gosford, NSW 2250
Building Services – Electrical Design Statement

Pursuant to the provisions of Clause A2.2 of the National Construction Code of Australia (NCC), we hereby certify that the above design is in accordance with the normal engineering practice and meets the requirements of AS/NZS 4282 - 2019 Control of the Obtrusive Effects of Outdoor Lighting.

PLANS

Drawing Number	*Drawing Title*	*Revision*
EL000	COVER SHEET & DRAWING INDEX	T2
EL001	LEGEND OF SYMBOLS & GENERAL NOTES	T2
EL002	LIGHTING SCHEDULE	T2
EL010	SITE PLAN	T2
EL300	GROUND FLOOR - LIGHTING AND FIRE ALARM LAYOUT	T3
EL301	LEVEL 01 - LIGHTING AND FIRE ALARM LAYOUT	T4
EL302	LEVEL 02 - LIGHTING AND FIRE ALARM LAYOUT	T3
EL303	LEVEL 03 - LIGHTING AND FIRE ALARM LAYOUT	T3
EL304	LEVEL 03 - LIGHTING AND FIRE ALARM LAYOUT	T2

This statement does not include existing services that remain and are outside the scope of this project, or builder's temporary works.

This statement is not a 'compliance certificate' as defined under the NSW Environmental Planning and Assessment Act 1979 and shall not remove from any other contracted party any contractual obligations, liabilities, or any other requirements to be provided for the project.

Yours sincerely

Brian Calcutt
Associate Director

Full Name: Brian Guy Calcutt

Qualifications and Registrations

- BEng (Elec)
- MIE Aust, CPEng, NER, APEC Engineer IntPE (Aus)

Business Address: Level 6 / 33 Erskine Stret, Sydney NSW 2000

Business Telephone No: 02 8043 7808

Email: b.calcutt@adpconsulting.com.au

Name of Employer: ADP Consulting Pty Ltd

C.C. Lyons Architects Attention; James Wilson

8.11 Appendix 11 - Unexpected Finds Protocol

As attached.

UNEXPECTED FINDS PROTOCOL

University of Newcastle Gosford Campus, 305 Mann Street Gosford

20232408

31 August 2023

KLEINFELDER
Bright People. Right Solutions.

Suite 3, 240-244 Pacific Highway,
Charlestown, NSW 2290

Phone: +61 2 4949 5200

Unexpected Finds Protocol

University of Newcastle Gosford Campus, 305 Mann Street Gosford

Kleinfelder Project: 20232408

Kleinfelder Document: **NCA23R156331**

Prepared for:
University of Newcastle

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www.uon.edu.au

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Suite 3, 240-244 Pacific Highway, Charlestown, NSW 2290
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1.0	Draft	31 August 2023
Prepared	Reviewed	Endorsed
		
Megan Mathews	Regin Orquiza	Adam Marshall

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APPENDICES

Appendix A – Figures

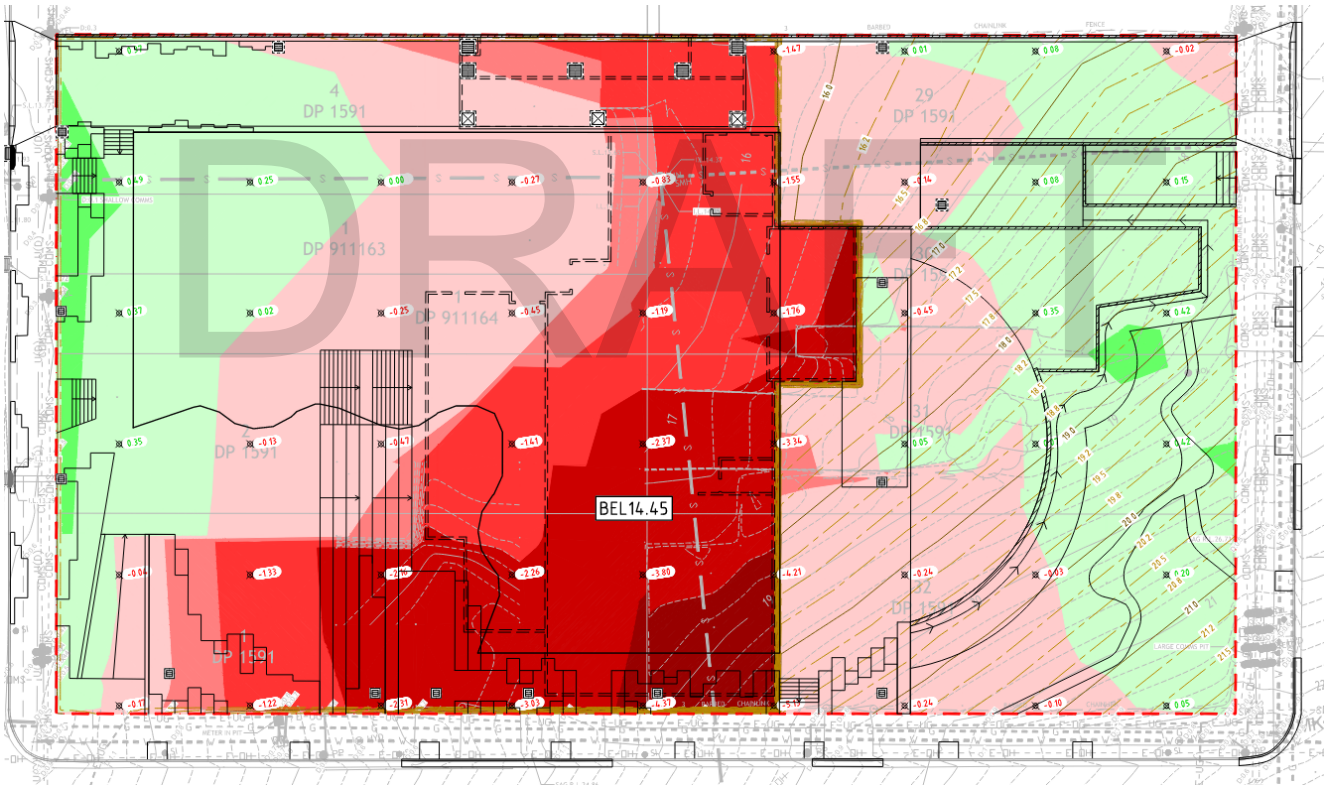
1 INTRODUCTION

Kleinfelder Australia Pty Ltd (Kleinfelder) was commissioned by The University of Newcastle (UoN) to prepare an Unexpected Finds Protocol (UFP) at 305 Mann Street, Gosford (herein referred to as 'the Site'). The Site layout is presented in **Figure 1, Appendix A.**

It is understood that UoN is seeking to redevelop the Site into the Central Coast Campus of the University of Newcastle. Consent is sought for the proposal as a State Significant Development (SSD-47749715). The UFP is required to establish and document the management procedures that protect unidentified heritage aspects of the site, deal with unknown buried structures and allow the mitigation of potential environmental and health impacts associated with unexpected contamination issues during construction works.

1.1 PROPOSED DEVELOPMENT

Kleinfelder understands that the proposed structure comprises a four-storey educational establishment building on the western portion of the site, retail, on-site parking, and publicly accessible open space along the western, southern, and eastern parts of the site. The building is to have an underground carpark level and therefore significant excavation of soils will be required, along with the construction of retaining walls. The proposed earthworks plan is shown in **Figure 1-1** below:



Surface Analysis: Elevation Ranges				
Number	Color	Minimum Elevation (m)	Maximum Elevation (m)	Volume (m3)
1		-6.000	-4.000	38.8
2		-4.000	-2.000	691.8
3		-2.000	-1.000	925.9
4		-1.000	-0.500	678.4
5		-0.500	0.000	1084.8
6		0.000	0.500	349.4
7		0.500	1.000	3.2
8		1.000	1.500	0.0

Figure 1-1: Proposed Earthworks Plan

2 SITE CHARACTERISATION

2.1 SITE LOCATION

The Site is located at 305 Mann Street, Gosford 2308, approximately 90 km southwest of Newcastle. A summary of the Site details is outlined in **Table 2-1**: Site Details.

Table 2-1: Site Details

Site Name	Former Mitre 10 Warehouse
Site Address	305 Mann Street, Gosford, NSW 2308
Current Title Identification	• Lots 1, 2, 4, 29, 30, 31 & 32. • Section 1 – DP 1591 • Lot 1 – DP 911163, DP 911164
Local Council	Central Coast Council
Site Zoning	B4 – Mixed Use
Site Owner	University of Newcastle
Current Site Use	Vacant commercial premises (most recent past operation as a Mitre 10 hardware store).
Proposed Site Use	UoN campus, consistent with current zoning (B4 Mixed Use).

2.2 SITE FEATURES

The Site covers an area of approximately 4675 m^2. Structures and features at the Site include a large warehouse (which housed the former Mitre 10 store) occupying the western portion, a central vegetated garden area and a concreted open car park that occupies the remainder of the Site.

The concreted open car park and central garden area slope toward the north-west and are in poor condition with several cracks and vegetation growing throughout.

Given that the Site has been previously developed and fill materials were encountered during intrusive investigation, there is the possibility of encountering unexpected fill materials during the Client's development.

2.3 SURROUNDING LAND USE

Adjacent, surrounding land use comprises:

- **North** – Numerous commercial businesses are located northwards along Mann Street, zoned as Mixed Use (B4). Approximately 150 m north-east and 180 m north-west are residential properties, zoned as General Residential (R1). The Gosford Golf Club is located approximately 400 m north-west, within a Public Recreation (RE1) planning zone.
- **East** – Variable zoning including Mixed Use (B4), General Residential (R1) and Public Recreation (RE1) are present directly east. Further east is the Rumbalara Reserve located approximately 170 m from Site.
- **South** – Mixed Use (B4) zoning continues south of the Site for approximately 250 m, with Commercial Core (B3) zoning beyond. Hotel Gosford, Woolworths and Chemist Warehouse are all located along Mann Street within 500 m of the Site.
- **West** – A rail infrastructure facility, within an Infrastructure (SP2) planning zone, runs north-south approximately 50m west of the Site, adjacent to Showground Road. Central Coast Local Health District and Gosford Hospital are located 100m west of the Site, zoned as Infrastructure (SP2). South of the hospital is residential housing, zoned as General Residential (R1), with Gosford High Waterview Park located approximately 500 m south-west under Public Recreation (RE1) zoning.

3 UNEXPECTED FINDS

3.1 DEFINITION

An unexpected find is defined as potential contaminated soil or groundwater, any unexpected archaeological discovery, underground structures such as storage tanks or asbestos containing material encountered on the Site that were not previously identified in the Geotechnical or Detailed Site Investigation works, or during pre-construction investigations.

3.2 TYPES

A non-exhaustive list of the types of unexpected finds that may be encountered during construction work on the Site is presented in **Table 3-1** below:

Table 3-1: Identifiable Characteristics of Unexpected Finds

Potential Unexpected Find	Observable Characteristics	Type of Contaminant/Dangers
Heritage / Archaeological	Aboriginal stone artefacts, engraved rocks, scarred trees, etc. Artefact scatters such as clustering of broken and complete bottles, glass, ceramics, animal or skeletal remains and clay pipes, etc Remains of other infrastructure including stone culverts, sandstone, bluestone or brick buildings, etc.	Damage to potential cultural heritage value
Petroleum hydrocarbons	Oily/hydrocarbon odour, dark staining, sheen on water	TRH, BTEX, PAH, lead, vapours
Buried dry waste materials	Wood, plastic, metal fragments, building rubble etc.	Asbestos, heavy metals
Buried or surface bonded Asbestos-Containing Material (ACM), asbestos fines/friable asbestos	Building waste/pipes, insulation, textured coatings, vinyl tiles	Asbestos
Buried organic materials	Decomposed plant matter	Ammonia, sulphates, phosphates, methane, carbon dioxide, hydrogen sulphide
Structures containing possible hazardous materials	Buried storage tanks, septic tanks, wells, basements, pipelines, odourous fill, visually impacted groundwater etc.	Petroleum vapour, methane, carbon dioxide, hydrogen sulphide, TPH, BTEX, PAH, lead, asbestos. Biological waste. Voids.
Ash or slag deposits	Light weight, grey/white sand and gravel-sized particles, often vesicular	PAH, heavy metals, alkaline leachates. Buried concrete impacts.
Landfill	Domestic, clinical, putrescible waste along with other waste types mentioned in this table	Heavy metals, acids, ammonia, sulfides, sharps
Unusual odours	Sweet odours, rotting odours, oily odours etc.	Various
Per- and polyfluoralkyl substances (PFAS)	Foaming in waters with little agitation	PFAS

Potential Unexpected Find	Observable Characteristics	Type of Contaminant/Dangers
Acid Soils	Black, red/yellow/orange mottled discolouration, organic odour.	Buried concrete impacts, possible acidic runoff.
Buried drums	Metal or plastic drums containing unknown potentially hazardous substances. Drums should not be opened to inspect contents until a qualified hazmat contractor has been engaged to assess potential risks	Various

4 PROTOCOL

4.1 ROLES AND RESPONSIBILITIES

Project roles and responsibilities for the implementation of this UFP and compliance with safety, environmental, legal and other requirements are documented in **Table 4-1**. Review and coaching of this UFP shall be included as part of the Principal Contractor's (PC) site induction procedure.

Table 4-1: Roles and Responsibilities

Roles	Environmental Responsibilities
Site Owner	UoN or their delegate Project Manager shall review and endorse this UFP prior to implementation of the works.
PC Project Director	The PC Project Director (PD) shall: ▪ Review and sign off on the UFP; and ▪ Undertake an inspection audit of the project activities to measure compliance with the UFP.
PC Project Manager	The PC Project Manager (PM) shall: ▪ Comply with the relevant conditions of statutory approvals; ▪ Ensure all unexpected finds are reported to the Site Owner and other stakeholders (as appropriate); ▪ Ensure all protection and mitigation works comply with relevant regulatory requirements; and ▪ Ensure the Environmental Manager or Health, Safety and Environmental (HSE) Manger or Site Manager briefs all Site staff and sub-contractors on the UFP.
PC Site Manager	The PC Site Manager shall: ▪ Implement the UFP at the Site; and ▪ Ensure all personnel are inducted and aware of this UFP the relevant procedures and their roles.
PC Environmental Manager (or HSE Manger) or delegate	The Contractors Environmental Manager or HSE Manager or delegate shall: ▪ Respond to reports of unexpected finds and ensure the procedures are implemented and the Project Manager is informed; ▪ Undertake corrective actions in response to the recommendations of the contaminated land specialistspecialist or asbestos hygienist or surveyor or heritage / archaeology consultant; ▪ Keep a written record of the unexpected find, actions taken and outcomes and provide this to the Site Owner; and ▪ Monitor and review compliance.
All Site Staff and Sub-contractors	▪ All workers on Site have the right and responsibility to identify potentially unexpected finds. Site personnel are to notify the Site Managerof unexpected finds, who will then contact the Environmental Manager / HSE Manager or delegate who will be responsible for evaluation of the unexpected find.

4.2 MANAGEMENT

Where unexpected finds occur or are suspected, works will be temporarily suspended in the affected area. The PC Project manager shall notify the Site Owner (UoN) and/or their delegate in writing of the nature, extent, and proposed management of each unexpected find within twenty-four hours of discovery.

Due to the variability in the nature and extent of an unexpected finds, it is not possible to define specific remedial strategies for potential contamination, managing archaeological finds or unanticipated buried structures; however, the procedure described in **Section 4.4** details a process for identifying and evaluating feasible options to manage an unexpected find.

4.3 TRAINING

As stated in **Section 4.1**, all personnel on Site have the right to identify unexpected finds. In order for this to be carried out effectively, all personnel will be made aware of and trained in the recognition of potential unexpected finds. Training shall be undertaken as part of the general site induction and refreshed at toolbox talks. Personnel must be able to identify the following:

- Visual and olfactory indicators of a contaminated soil and of groundwater;
- Asbestos and ACM;
- Buried drums, tanks, structures and services;
- Fill;
- Waste as fill; and
- Potential artefacts.

It should be noted that the Site has the possibility of acid-producing soils. The Environmental Manager (or HSE Manager) will be responsible for making the Site Manager aware of the nature of these soils prior to construction activities.

4.4 PROCEDURE

In the event that a person on Site identifies an unexpected find, the PC shall undertake the actions presented in **Table 4-2** below:

Table 4-2: Unexpected Finds Procedure

Step	Description	Action
1A	Potential contamination/hazard is encountered during Site works	Cease work in the potentially impacted area, clear the area of personnel and assess the potential immediate risk to health/environment as soon as it is safe to do so. Assess if evacuation or assistance of emergency services is required and action by calling 000 as appropriate.
1B	Potential heritage or archaeological material is encountered during Site works	Cease work in the potentially impacted area and make safe, clear the area of personnel and protect from disturbance. Do not tamper or attempt to remove the find.
2	Health, safety and environmental management	Delineate an exclusion zone using the appropriate barriers and signage. Ensure that control measures are in place, if safe to do so:: Odours/volatile compounds: odour suppression, no flames/sparks. signage; • Potential ACM: cover with weighted plastic sheeting or geofabric if practicable, otherwise use dust suppression as appropriate; and • Potential heritage / archaeological material: cover area with tarps to preserve the finding. Buried structures or utilities: Make the area safe from potential collapse, prevent uncontrolled spillage or leakage, for utilities related hazards contact the relevant utility provider.

Step	Description	Action
3	Assess the unexpected find	Communicate the nature of any encountered hazards and requireprecautions and management measures to all site personnel. If necessary, due to the nature of the hazard, extend communications and precautionary measures to adjacent site users. Engage a relevant specialist, dependent upon the nature of the hazard. **For contamination:** a contaminated land specialist and/or an asbestos hygienist or licensed asbestos assessor should be engaged, as appropriate. A contaminated land specialist should provide: • A preliminary assessment of the nature of the suspected contamination and supply immediate management controls as needed • Advise what further assessment &/or remediation works are required in conjunction with EMP and other management plans • Undertake a targeted site investigation if necessary to sample and analyse contaminated media. Potential or confirmed contamination will be characterised with consideration of ASC NEPM (NEPC 2013) and soil material will be classified in accordance with the Waste Classification Guidelines (NSW EPA 2014). An asbestos hygienist or licensed asbestos assessor should provide: • A preliminary assessment of the nature of the suspected asbestos and supply immediate management and monitoring controls as needed; • Advise what further assessment &/or remediation works are required in conjunction with an environmental management plan (EMP) and other management plans; and • Undertake sampling and testing as necessary to identify and analyse the suspected asbestos containing material. **For archaeological finds:** Engage a heritage / archaeology consultant, as appropriate. A heritage / archaeology consultant should provide: • A preliminary assessment of the nature of the suspected artefacts / and supply immediate management controls as needed; • Advise what further assessment &/or remediation works are required in conjunction with a cultural heritage management plan (CHMP) and other management plans; and • Undertake a site survey, monitoring, heritage interpretation, investigation or analysis if necessary. **For buried structures:** For stability/collapse risk and/or potential impacts on proposed foundations (due to voids, or need to remove structures) a structural engineer and/or geotechnical engineer should be consulted. For historical structures, a heritage/archaeological specialist may also be required once the area has been made safe. **For utilities:** Contact the appropriate utility provider.

Step	Description	Action
4	Management/mitigation action and reporting	Implement necessary management &/or mitigation measures based on the recommendations of the specilaists engaged during Step 3 by the contaminated land specialist or asbestos hygienist or licensed asbestos assessor or heritage / archaeology consultants or structural/geotechnical specialist or utility provider in aid of allowing construction to recommence with minimal impact to health and the environment. Record details of the unexpected find and the actions undertaken, including but not limited to the following: • Location, nature and extent of unexpected find; • Scope, methodology and results of any investigation; • Scope, methodology and outcomes from any remedial activities completed; • Results of any validation sampling or clearance certificates necessary; • Implemented changes to risk control measures; and • Notify the Site owner (UoN), local council (Central Coast Council) and NSW EPA as appropriate.
5	Recommence works	All relevant information and recommendations will be provided to the Site Manager by the contaminated land specialist or asbestos hygienist or surveyor or heritage consultants. Once mitigation/remediation works have been completed, validated by sampling and it is safe to do so, construction works on the affected area may recommence.
6	Monitor	Inspections to allow for monitoring will be carried out as necessary by the Environmental Manager (or HSE manager) or delegate to ensure effectiveness of the management/mitigation action.

4.5 AUDITING

Internal and external audit requirements will be carried out as outlined within the Contractors EMP.

4.6 NON-CONFORMANCE

Non-conformances will be managed as outlined in the Contractors EMP.

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5 REFERENCES

- Archaeological Assessment Guidelines, Department of Urban Affairs and Planning, September 1996.
- Australian Standard – AS 1726-2017 Geotechnical Site Investigation. Contaminated Land Management Act 1997 (CLM Act, 1997).
- Heads of the Environment Protection Authority (HEPA), 2020. *Per- and Poly-fluoroalkyl Substances (PFAS) National Environmental Management Plan*, revision 2, as published February 2020 (PFAS NEMP, 2020).
- Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia, Department of Water and Environmental Regulation, 2021
- Heritage Act 1977.
- Historical Archaeology Code of Practice, Department of Planning, December 2006.
- Kleinfelder, Central Coast Campus Geotechnical Investigation Report, 305 Mann Street Gosford, NCA22R147463, December 2022.
- Kleinfelder, Central Coast Campus - Detailed Site Investigation, 305 Mann Street, Gosford NSW, NCA22R14011, December 2022.
- National Acid Sulfate Soils Guidance: National acid sulfate soils sampling and identification manual and National acid sulfate soils identification and laboratory methods manual, Department of Agriculture and Water Resources, 2018.National Environment Protection Council (NEPC), 1999. *National Environment Protection (Assessment of Site Contamination) Measure,* 1999 as amended in May 2013 (NEPM, 2013).
- NSW EPA, 2020. Consultants Reporting on Contaminated Land, Contaminated Land Guidelines, as revised May 2020.
  NSW EPA, 2017. Contaminated Land Management – Guidelines for the NSW Site Auditor Scheme (3rd Edition), as published October 2017.
- NSW Acid Sulfate Soils Manual (Stone et al., 1998).
- Protection of the Environment Operations (Waste) Regulations 2014.
- The National Acid Sulphate Soils Guidance, 'Guidance for the dewatering of acid sulphate spoils in shallow groundwater environments, June 2018, Department of Agriculture and Water Resources.
- National Strategy for the Management of Coastal ASS, 2000, Department of Agriculture and Water Resources.
- Work Health and Safety Act 2011Work Health and Safety Regulations 2017

APPENDIX A – FIGURES

Legend

- Site Boundary
- Primary Road
- Local Road

Metres
0 2.5 5 10 15 20

N

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PROJECT REFERENCE:	20232408
DATE DRAWN:	18/08/2023 Version 1
DRAWN BY:	StChan
DATA SOURCE:	LPI - 2009 Nearmap - 2023

Site Outline

University of Newcastle
Geotechnical Investigation
UoN Gosford campus
305 Mann Street, Gosford, 2308

FIGURE:

1

J:\00 CLIENT FILES\124163_University_Of_Newcastle\20232408_UON_GosfordCampus\Mapping\230818_Geotechnical_Fig01_Locality.mxd

8.12 Appendix 12 - Aboriginal Cultural Heritage Assessment

As attached.

URBIS

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26 April 2023

Corey O'Driscoll
Senior Assessment Officer
Via email: corey.odriscoll@environment.nsw.gov.au

Dear Corey,

UNIVERSITY OF NEWCASTLE - CENTRAL COAST CAMPUS - RESPONSE TO SUBMISSIONS

INTRODUCTION

Urbis have prepared this letter in response to the Submission received by Heritage NSW (HNSW) to State Significant Development Application (SSDA) SSD-47749715. This SSDA provides for the redevelopment of the site at of 305 Mann Street, Gosford, NSW, within the Central Coast Local Government Area (LGA) (hereafter referred to as 'the subject area') including the demolition of existing structures, excavation and bulk earthworks for site levelling, and construction of a new educational building on the western portion of the subject area with provision of open public space to the east. Response was received by HNSW on 27th March 2023, with the current letter addressing the queries from HNSW.

RESPONSE TO SUBMISSIONS

Urbis understand that in preparing their submission, HNSW have referred to the Environmental Impact Statement (EIS) prepared by Urbis (2023) and as part of the EIS, the Aboriginal Cultural Heritage Assessment Report (ACHAR) prepared by Urbis (2022). We would also like to draw attention to the Historical Archaeological Impact Assessment (HAIA) prepared by Urbis (2022), and the Archaeological Research Design and Excavation Methodology (ARD&EM) prepared by Urbis (2022) for the subject area, which have been considered in providing our response.

Urbis have considered the submission provided by HNSW and provide the following response to queries, as detailed in Table 1.

Table 1 – Response to submissions.

Comment	Urbis Response	Amendment in Reports
Please update Heritage NSW's Departmental details in the ACHAR from Department of Premier and Cabinet to the Department of Planning and Environment.	Noted. This amendment has been actioned.	Across the ACHA
Please clarify why the only newspaper advertisement was placed in the Koori Mail and not the local newspaper as per Section 4.1.3 of the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW).	The public notice was placed in the KooriMail as opposed to the local newspaper on the basis of several considerations. Urbis note that a number of local newspapers are not publishing to full capacity or delivering as a result of the ongoing impact of the Covid-19 crisis. This required us to adapt our approach for this stage of consultation. We publish public notices in satisfaction of Stage 1.3 of the Consultation Requirements in the KooriMail as this is an Aboriginal owned newspaper which has high circulation and readership within the Aboriginal community across New South Wales (c.100,000+ readers per fortnight). Resultingly, we found that registrations for projects has increased correlating with our publications in the KooriMail. We also assert that publishing in an Aboriginal owned newspaper is in accordance with the ethos of the ACHA process and assists in supporting regional Aboriginal businesses. We have had feedback on other projects that RAPs are supportive of the public notice placed in the KooriMail.	Not applicable.

Comment	Urbis Response	Amendment in Reports
Heritage NSW recommends that all assessment should be undertaken prior to the approval of impacts to Aboriginal cultural heritage to establish the cultural significance of sites and inform the EIS. Without adequate and complete assessment, including recommended test excavation, it cannot be demonstrated that more places of significance or places which may further enhance the significance of the known Aboriginal cultural heritage in the area will not be found. *However, Heritage NSW does understand that for the reasons specified including the nature of the site, test excavations are proposed to be conducted post project approval, in accordance with the measures outlined in the Aboriginal Cultural Heritage Management Plan (ACHMP).*	Urbis concur that under normal circumstances, the undertaking of excavation prior to approval is the most appropriate course of action. However, we affirm that due to site conditions that is not possible on the current site, as acknowledged. This has been confirmed with Registered Aboriginal Parties prior to submission of the reports/SSDA at the site visit and Stage 4 review.	Not Applicable.
Mechanical archaeological excavation should be limited to removal of fill and/or known culturally sterile sediments. All excavation of potential archaeological deposit should be undertaken by hand excavation methods.	We confirm that mechanical excavation will be limited to the removal of hardstand and fill, and natural soils will be subject to hand excavation. Mechanical excavation will be monitored and ceased should natural soils be encountered as per the methodology. The existing structure will be demolished to slab with careful removal of the foundations using	Clarified in ARD Section 4.5.

Comment	Urbis Response	Amendment in Reports
Please provide further details on how the removal of the existing structure and hardstand will be managed in relation to not impacting the potential archaeological deposit.	mechanical excavation under the supervision of a qualified archaeologist. Mechanical excavation will be monitored and ceased should natural soils be encountered.	
Please provide further information on how finds of historical significance are identified, especially if they are found associated with Aboriginal cultural heritage.	Historical archaeological deposits/relics are not anticipated to occur within the subject area, and thus the works will proceed in accordance with the recommendations of the HAIA prepared by Urbis (2022). This includes an Unexpected Finds Procedure, as well as an archaeological induction. Excavation will be undertaken by suitably qualified archaeologists, with the ability to recognise historically significant deposits. Should historically significant deposits be identified during the excavation works, physical works will stop, the relevant area secured, HNSW will be notified through the submission of a Section 146 notification and an updated methodology provided to manage these unexpected finds.	Not applicable, addressed in HAIA and ARD.
Please provide further details on triggers for the expansion and cessation of excavation units based on the artefactual material identified during excavation and expected depth of works.	Excavation units will be expanded where a significant number of objects, exceptional objects, or cultural layers are identified. For this purpose, a significant number of objects will be subject to the site conditions and context. It will typically be understood to be >10 objects, however if objects are only identified in a small number of test pits, this number may be revised down to the test pits with the highest frequency of objects. Excavation will be ceased on the identification of culturally sterile layers, of	Clarified in Section 4.5 of ARD & EM.

Comment	Urbis Response	Amendment in Reports
	the end of the deposit (i.e where objects are no longer occurring), which is anticipated to occur at depths of approximately 0.5-1.3m on the basis of geotechnical investigations.	
o The excavation methodology should include provisions for the expansion of excavation units to enable shoring, benching, and/or stepping of excavation units to allow for safe working conditions beyond 1.5 m below the surface.	Provision for benching of excavation units will be included in the ARD&EM as requested. The excavation will also be undertaken under a Safe Work Method Statement (as per Section 4.13.1 of the ARD&EM), which provides information regarding safe work practices and mitigation of risk.	Clarified in Sections 4.5, 4.6 and 4.13.1 of the ARD & EM.
o The ACHAR must include provisions for the conservation and avoidance of highly significant Aboriginal Cultural heritage that may be identified during the test excavations	As per section 8.2 of the ACHA, “Further recommendations on the basis of the findings of the field investigations should be made within the post excavation report, including in relation to the management or interpretation any Aboriginal objects identified.” This could include options for in-situ retention of significant deposits. Urbis have added a clarifying sentence within this section for the avoidance of doubt.	Additional sentence added in Section 8.2 of ACHA.

CONCLUSIONS

Urbis assert that the amendments made to the report and responses provided above should satisfy the questions raised by HNSW, and this matter should now be considered closed with no further concerns relating to Aboriginal or European heritage. We note that the changes are insubstantial and do not warrant further consultation with Registered Aboriginal Parties (RAPs) in the form of re-submission of the report for Stage 4 – Review of Draft Cultural Heritage Assessment Report.

If you have any further queries, please don't hesitate to contact the undersigned.

Yours sincerely,

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