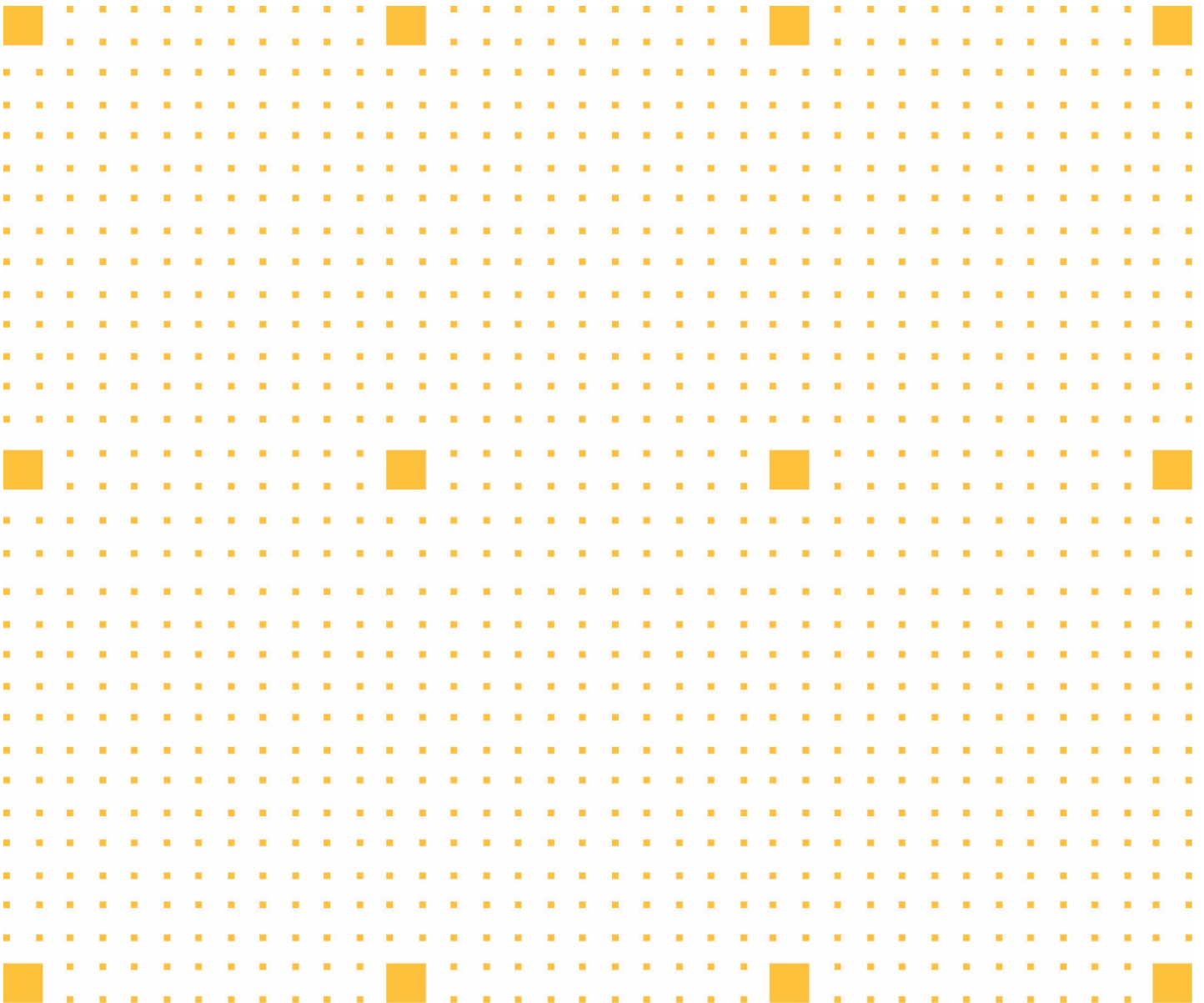


## Environmental Management Plan

Project: Honeysuckle City Campus Development – Stage 1A

Job No: SN96



Rev: 2 | May 2020

Uncontrolled Document in Hard Copy

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## 1.1 Review & Approval

Review			
Position	Name	Sign	Date
HY Authorised Person	Patrick Mc Allister		
Project Manager	Jonathan Russell		
Contracts Administrator	Michael Pratt		
Contracts Administrator	Peter Slavin		
Site Manager	Dale Reith		
Site Safety Officer	Dale Reith		
Site Engineer	Brianna Barnes		
Site Engineer	James Fearnley		
Foreman	Michael Stevens		
Leading Hand	Scott Windred		
Approval			
State HSE Manager	Peter Fay		
Construction Manager	Mick Parker		

## 1.2 Change Information

Change Information			
Revision	Description	Issued by	Issue date
2	Updated plan in relation to SSD conditions	JR	18/5/2020

## 2 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.
EMP	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
HCCD	Honeysuckle City Campus Development – Stage 1A
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
Site Safety Supervisor	Site Manager
SSC	Site Safety Coordinator
SSO	Site Safety Advisor
Principal	APP
SWMS	Safe Work Method Statement
TMP	Traffic Management Plan

## 3 Commitment & Policy

### 3.1 Scope & Application

The University of Newcastle Honeysuckle City Campus Development (HCCD) - Stage 1A project features construction of a 4 Storey, Cross-Laminated Timber structure with a precast concrete core and is primarily wrapped in a glass curtain wall facade. The ground level is of traditional slab-on-ground construction.

The development includes hard landscaping at ground level to unite the building with the public domain.

This EMP 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*”. It establishes 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.

### 3.2 EMP Interrelationship with PMP

This EMP forms part of Hansen Yuncken’s Environmental Management and interfaces with the company’s Quality & WHS Management Systems. Furthermore, this EPM is an integral part of Honeysuckle City Campus Development – Stage 1A PMP. The following plans referenced within this EMP 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 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, 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 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.

## 3.3 Policy & Objectives

The HY Environmental Policy Statement provides the framework for the development of this EMP (refer Appendix 7.1), 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 Environmental Management Plan is to:

- 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 Honeysuckle City Campus Development – Stage 1A Environmental impact assessment document 218153 (Ethos Urban)
- 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
- 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.

## 3.4 Targets

### 3.4.1 Objective: Reduce waste

**KPI:** Waste minimisation and recycling

**Target:** Recycle > 80% of construction waste

**Responsibility:** HY Site Manager

### 3.4.2 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

### 3.4.3 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

### 3.4.4 Objective: Conduct environmental site inspections to validate environmental conformance

**KPI:** Schedule and undertake regular site inspections

**Target:** > 90% of scheduled HSE inspections

**Responsibility:** HY Site Manager

### 3.4.5 Objective: Minimise and manage environmental complaints

**KPI:** Consult with impacted neighbours and promptly address all complaints

**Target:** ≤ 1 complaint per significant construction milestone

**Responsibility:** HY Site Manager

## 3.5 ESD Vision & Principles

The project provides an opportunity for HY to expand its practical and theoretical knowledge of ESD to a level that is considered 'best practice' status.

As such, the ESD vision and principles for HY 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.

## 3.6 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 observes the requirement, as set out in ISO 14001:2015.

### 3.6.1 Environmental Aspects & Impact

All activities related to the Honeysuckle City Campus Development – Stage 1A, which are enacted by or on behalf of Hansen Yuncken, are identified in the “Project HSE Risk Assessment” (attached in this EMP as Appendix 7.3). 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 Honeysuckle City Campus Development – Stage 1A are summarised in this EMP “Environmental Risk Register” (Section 4.3).

### 3.6.2 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 and any additional controls identified in a Work Method Statement, detailing the; steps involved, hazards, control measures and persons responsible. Furthermore, a Tool Box Talk will be completed, involving all workers responsible for completing the “Significant Risk” activity.

### 3.6.3 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 Honeysuckle City Campus Development – Stage 1A 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 Implementation

### 4.1 Environmental 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 (FM-CORP-HSE-001).

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 awareness is the responsibility of every person working on and associated with the project.

### 4.2 Site Specific Contact Details

Site Manager Details

Name: **Dale Reith**

24h Contact Number: 0407 626 127

### 4.3 Construction Hours

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

- Between 7am and 6pm; Monday to Fridays (inclusive)
- Between 8am and 1pm; Saturdays

In accordance with NSW Government Development consent no work shall be carried out on Sundays or public holidays, without explicit consent.

### 4.4 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.



## 4.5 Environmental Risk Register

Environmental Risk Register Summary & Responsibilities		
Environmental Issue	Risk to Project	Responsible Personnel
<p><b><u>Location &amp; Land use</u></b></p> <p>Commercial properties may be impacted with construction works due to construction noise, and dust</p>	HIGH	SM / PM
<p><b><u>Noise &amp; Vibration</u></b></p> <p>Construction of the development may result in short term impacts during the project due to the use of heavy machinery and plant as well as construction personnel and vehicle movements.</p>	HIGH	SM / PM
<p><b><u>Traffic &amp; Access</u></b></p> <p>During the 47 weeks of construction there will be impacts on the existing facility and the public roads surrounding the project from construction vehicles and deliveries for site.</p>	LOW	SM
<p><b><u>Air Quality</u></b></p> <p>During the earthworks, stage of the project there is a risk of poor air quality generated by the constructions works.</p>	LOW	SM / FM / S/C
<p><b><u>Soils, Erosion, &amp; Water Quality</u></b></p> <p>There is a risk of water pollution from the construction works caused by wind or water movement causing sediment and other materials leaving site.</p>	LOW	SM / FM S/C
<p><b><u>Terrestrial Flora &amp; Fauna</u></b></p> <p>The removal of trees during construction works poses minimal risk to landscaped species throughout the area.</p>	N/A	

Environmental Risk Register Summary & Responsibilities		
<p><b><u>Cultural Heritage</u></b></p> <p>It is unlikely that construction works will impact any undisturbed aboriginal artefacts due to the construction zone being in an existing site.</p>	LOW	PM
<p><b><u>Site Contamination</u></b></p> <p>There is a risk of contamination based on testing conducted prior to construction works commencing (There is a risk of unexpected finds being an existing site).</p>	LOW	SM / PM
<p><b><u>Waste Management</u></b></p> <p>The risk of the constructions works waste management is low/medium pending the results of existing materials onsite.</p>	LOW	SM
<p><b><u>Visual</u></b></p> <p>External Lighting (during construction phase) – Construction lighting will be in accordance with AS4282-1997 Control of the obtrusive effects of outdoor lighting. Where possible not lighting will be left on, and if required will follow above Australian Standard</p>	LOW	SM
<p><b><u>Socio-Economic</u></b></p> <p>There are no risks during construction.</p>	N/A	

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

## 4.6 Location and Land Use

### 4.6.1 Site Location

The site is situated in the centre of Newcastle, bound on four sides by Honeysuckle Dr, Worth Pl, Wright Ln and Settlement Way. The main build for the project is situated on Lot A1 (DP 1163346), with Lot A2 (DP 1163346) used for site accommodation, materials handlings and staging. The site to be occupied has an approximate size of 1,384sqm. The building footprint is 692sqm. Overall building height is 24.8m, roof RL 26.1.

There are several existing buildings adjacent to the site which are currently in operation. Special consideration is to be given to these facilities regarding noise, vibration and air pollution during the construction phase.

#### **4.6.2 Likely Impacts**

The construction works will be short term in nature and would not interfere with the current operation of the surrounding roads and neighbouring driveway access. All construction activities would be carried out with due diligence, duty of care and best management practices.

Noise, vibration and air pollution are all to be expected during the construction phase and are likely to affect adjacent residents. These issues are to be mitigated in accordance with the relevant management plans produced specifically for the project.

#### **4.6.3 Mitigation Strategies**

- The neighbouring landowners are to be consulted in regard to 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.
- Noise monitoring apparatus are to be installed on the site.
- Air quality monitoring apparatus are to be installed on the site.
- Vibration monitoring apparatus are to be installed on the site.
- Full time traffic control is to be employed for the site to ensure the impact on existing traffic conditions is mitigated.
- Shadecloth is to be installed to the site's perimeter fence to mitigate dust and air pollution. This is to be used in conjunction with traditional dust suppression (water spray etc.)

### **4.7 Noise and Vibration**

See Appendix 7.4 – Construction Noise and Vibration Management Plan Prepared by AECOM

#### **4.7.1 Likely Impacts**

Construction of the proposed development will result in short term noise impacts during the construction period. The predicted noise levels modelled show that the most stringent noise criterion (night time criterion) will be met with the implementation of the proposed mitigation measures for external mechanical plant and units (Chillers, exhaust fans, etc.) – as addressed in the Noise and Vibration Management Plan issued by AECOM.

There is no additional traffic associated with the project scope of works, therefore no noise impact associated with traffic is expected.

#### **4.7.2 Mitigation Strategies**

- Site construction noise will be managed in accordance Noise and Vibration Management Plan (NVMP) developed for this project. The NVMP is based on the proposed construction methodology, activities, durations and equipment type and numbers.
- Keep the community informed in relation to noise intensive activities in the immediate area.
- Provide consultation where prolonged or consecutive periods of construction works are planned.
- Construction activities shall be restricted to the SSD Approval conditions specified daytime construction hours (i.e. 7am to 6pm Monday to Friday, 8am to 1pm Saturday, no work on Sunday or public holidays). If it were deemed necessary to undertake work outside these hours, prior approval would be sought from the Council.
- Any noise complaint received will be investigated as soon as practicable. Any practicable and feasible measures to minimise noise will be identified and implemented if required.
- All possible steps to be taken to silence construction equipment where possible.
- Optimum siting of work areas, vehicle and plant parking areas, materials stockpiles and equipment storage areas in locations where potential acoustical impacts will be minimised.
- All plant and machinery used for the project shall be well maintained.

## 4.8 Traffic & Access

### 4.8.1 Likely Impacts

Construction of HCCD Stage 1A would occur over a 47-week period with some increase in traffic in the local area expected. Construction workers will be instructed to park in the on-site parking area provided. On-street parking would likely be possible along Honeysuckle Dr to the West of the site if required. The construction workforce would vary according to the work being carried out, the construction method and contractor's program.

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 with trucks entering and exiting the site. Whilst construction works may cause some inconvenience to local residents, any impacts would be minor, localised and short-term. The traffic flow in the immediate vicinity of the site is to be coordinated by full time traffic controllers. A construction Traffic Management Plan has been developed for the duration of the project and is attached to this EMP.

Construction vehicle routes have been developed with the aim to provide the shortest distances to/ from the Regional and State Road network, whilst minimising the impact of construction traffic on the local streets in the immediate vicinity. Alternative routes would not be used without specific prior approval from the relevant authorities. No trucks will be permitted to layover on approach to the construction sites without formal prior approval. Access to this site is anticipated to be primarily via Wright Ln, vehicles with a GVM greater than 23t are to be escorted via Wright Ln to Honeysuckle Dr, bypassing Settlement Way, which has a 23t load limit.

There is the potential that construction traffic travelling on Honeysuckle Dr in the immediate vicinity of the site may slow traffic flow temporarily. Due to the minor nature of the works the additional traffic load is unlikely to impose any significant additional load upon the existing road network within the site. There are no significant construction-related issues or impacts that would not be mitigated the Traffic Management Plan.

## 4.8.2 Mitigation Strategies

See Appendix 7.5 - Traffic Management Plan prepared by Gateshead Traffic Services

The Traffic Management Plan is to include measures to minimise traffic impacts ensure public safety and is to be prepared in accordance with:

- Traffic Control at Work Sites Manual (RTA, 2010)
- Australian Standard 1742.3 - 2002 Traffic Control Devices for Works on Roads.
- The TMP will be developed using a local traffic management company in consultation with NSW Roads & Maritime Services (RMS) and **Newcastle City Council**.
- The TMP will detail hours of operation, heavy vehicle volumes (numbers) and routes, construction staff parking, loading / unloading areas and site access arrangements, all temporary warning, guidance and information signage, and appropriate traffic control devices
- Notify surrounding land owners at least one week in advance of the works
- All vehicles accessing the sites will use the designated access roads
- All roads will be kept clean and free of dust and mud. Where material is tracked onto sealed road, it will be removed so that road pavements are kept safe and trafficable
- All vehicles transporting spoil onsite will be covered and filled to maximum capacity to minimise vehicle movements as required
- All roads, kerbs, gutters and footpaths damaged as a result of construction are to be restored to their pre-construction condition. A dilapidation report will be carried prior to construction
- A dedicated vehicle wash-down area will be established on site inclusive of vehicle shakedown pads (cattle grids) to remove any debris from wheels. Vehicle washdown area will have a pressure washer which will be utilised to mitigate the risk of vehicles tracing any sediment or other materials onto the roadway
- All traffic shall comply with all applicable traffic laws and regulations including speed limits. All construction vehicles shall comply with the speed limits set for the roads accessing the site

## 4.9 Air Quality & Dust Control

### 4.9.1 Likely Impacts

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

### 4.9.2 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 including the use of water carts will be adopted where required (i.e. on windy days when earthworks and vehicle movements are generating dust).
- 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.
- Shadecloth shall be installed on all perimeter fencing to ensure dust is contained to the site as much as possible.

## 4.10 Soil, Erosion & Water Quality

### 4.10.1 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

### 4.10.2 Mitigation Strategies

- Construction is to be undertaken in accordance with the Erosion and Sediment Control Plan.
- All erosion and sediment control devices shall be properly maintained for the duration of the work. All structures are to be inspected after rain events and sediment to be removed
- Any temporary stockpiles should be stabilised using sediment fencing or similar.
- All fuels and other hazardous liquids shall be stored and locked at designated fuel storage compounds
- All chemicals used for construction shall be stored and used in accordance with the relevant Safety Data Sheets.
- An emergency spill kit shall be kept at the construction compound.
- Workers are to be made aware of the provisions of Section 120 of the POEO Act with regards to water pollution
- Notification to the EPA in accordance with Part 5.7 of the POEO Act is to be undertaken where a pollution incident occurs
- All construction vehicles and equipment are to be maintained in designated areas away from watercourses
- Construction vehicles shall be appropriately cleaned of any soil or mud prior to leaving each works site at dedicated wash down bays
- “Clean” stormwater shall be diverted around the site where possible

- All existing stormwater pits and drains subject to HY construction works will be silt protected with geo-fabric and/or granular socks. Drains will be monitored and maintained by HY
- Stockpiles to be established at HY approved locations
- Sediment fences shall be installed at required locations at the perimeter of the site
- Stormwater shall be diverted to retention basins
- The location and details of permanent controls shall be included on the Site Layout Plan
- Erosion and sediment controls shall be inspected as part of the Site HSE Inspection
- Pre rainfall checklist to be undertaken on BIM360 field to ensure sediment and erosion control measures are sufficient prior to **forecast wet weather**
- Post rainfall checklist to be undertaken after **all wet weather events** to ensure controls were sufficient and sediment is cleaned out where necessary

## 4.11 Terrestrial Flora and Fauna

### 4.11.1 Likely Impacts

As the site has already been cleared and early works completed by others, impact by HY on Terrestrial Flora and Fauna is considered to be minimal. The following mitigation strategies are still however in place for the duration of the project.

### 4.11.2 Mitigation Strategies

- No vegetation removal or modification is to occur beyond the proposed works areas shown on the plans.
- Fireweed should be removed site prior to commencement of earth works
- Carry out landscaping in accordance with the landscape design
- Any areas of significant flora and fauna value which have been identified on the construction site will remain bunted/ flagged during construction.
- If any additional species are encountered the Site Manager shall arrange for works to be ceased in the area and contact the Superintendent for further directions.

## 4.12 Archaeology & Cultural Heritage

### 4.12.1 Likely Impacts

#### Aboriginal Archaeological Potential

Based on the Heritage Impact Statement prepared by Curio Projects Pty Ltd, the ACHAR has suggested that Aboriginal cultural material has a low potential to be present with a highly disturbed context. “The Stage 1A development works will have no potential to impact any intact or in situ Aboriginal archaeological deposits.”

#### Historical Archaeological Potential

As the location of the HCCD 1A project lies on reclaimed fill following reshaping of the harbour see: 5.2 *Phase 2 of historical use of the site*, it is determined that there is no potential for artefacts to be present on the site from either 'Phase 1' or 'Phase 2' 1810-1933.

However, there is low potential for discovery of artefacts from 'Phase 3' 1933-1990 during the area's time mainly as railyards.

From 1990 onward the site location has existed as vacant lots and carparks. Therefore, there is no potential for artefacts from this period.

"Overall it is considered there is low to no potential for a historical archaeological resource to be present within Lot A1 ... and would be unlikely to be of any archaeological significance."

## 4.12.2 Mitigation Strategies

- All workers (including contractors) should be made aware that it is illegal to harm an Aboriginal object or historic relics, and if a potential Aboriginal object or historic relic is encountered during activities, then all work at the site will cease and the OEH will be contacted to advise on the appropriate course of action to allow the Awabakal People to record and collect the identified item(s).
- All workers (including contractors) should be inducted concerning Aboriginal cultural heritage values
- In the event that known or suspected Aboriginal skeletal remains are encountered during the activity, the following procedure will be followed:
  - a. All work in the immediate vicinity will cease;
  - b. The find will be immediately reported to the work supervisor who will immediately advise the environment manager or other nominated senior staff member;
  - c. The environment manager or other nominated senior staff member will promptly notify the police and the state coroner (as required for all human remains discoveries);
  - d. The environment manager or other nominated senior staff member will contact the OEH for advice on identification of the skeletal material as aboriginal and management of the material; and
  - e. If the skeletal material is of aboriginal ancestral remains, the local aboriginal land council will be contacted and consultative arrangements will be made to discuss ongoing care of the remains.
  - f. The project team will take all necessary measures to protect the artefacts from being damaged or destroyed.
  - g. Works will not re-commence in the area until a written instruction from the superintendent is received.

## 4.13 Site Contamination

### 4.13.1 Contaminated Soil Risk Assessment

A Contaminated Land Management Plan and Unexpected Finds Protocol has been prepared by Coffey Services Australia Pty Ltd. and has been issued to HY, forming a part of the tender documents.



As soon as possible after possession of the site by HY, an assessment of actual or potential soil contamination and its impacts shall be undertaken using the Soil Contamination Assessment on BIM 360 Field.

The purpose of the assessment is to provoke whether HY should have an independent third party to provide recommendations or seek wider advice within the company so that the additional knowledge can reduce the risk profile of contaminated soil.

Projects which have the following criteria should fill in this form:

- Projects with a geotechnical report that nominates fill on bore logs
- Projects which do not have a geotechnical report but have a requirement for material to be exported off the site.

#### **4.13.2 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 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.

#### **4.13.3 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.

#### 4.13.4 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 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.

#### 4.13.5 Heavy Metal Contamination

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

#### 4.13.6 Mitigation Strategies

- In the event that 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.

#### 4.13.7 Unexpected Finds

A Contaminated Land Management Plan and Unexpected Finds Protocol has been prepared by Coffey Services Australia Pty Ltd. and has been issued to HY, forming a part of the tender documents.

Should a work activity identify any condition other than what can be expected, based on previously identified contaminants, all works shall stop in that area.

Unexpected conditions or finds are to be immediately reported to the Hansen Yuncken Site Manager.

This could include conditions such as:

- Possible asbestos containing material
- Discarded materials/chemicals/chemical storage vessels
- Unidentified changes to soil colour/odour or conditions

If something does not seem right, all works will be stopped in the area and further analysis will be undertaken by a suitably qualified person. Works will not commence until the relevant approval has been received, from which the location of the unexpected find will be added to the Contaminations report.

Unexpected Find shall be addressed in compliance with the Hansen Yuncken's Unexpected Finds protocol AND Coffey recommendations listed below:

##### Unexpected Finds Protocols - General

1. Immediately cease work and contact site foreman
2. Site Manager to evacuate immediate area and construct temporary barricading to prevent worker access to the unexpected substance(s) and install appropriate stormwater/sediment controls
3. Project Manager to notify the *Principal's Authorised Person* of the discovery and comply with all the directions of the *Principal's Authorised Person* or its nominee; and
  - a. Where the discovery is of actual or potential significance to the local aboriginal community;
    - i) Provide a reasonable opportunity for interested aboriginal parties to monitor all relevant activities;
    - ii) Ensure that all relevant items are recorded and managed in accordance with section 89A of the National Parks and Wildlife Act 1974 (NSW)

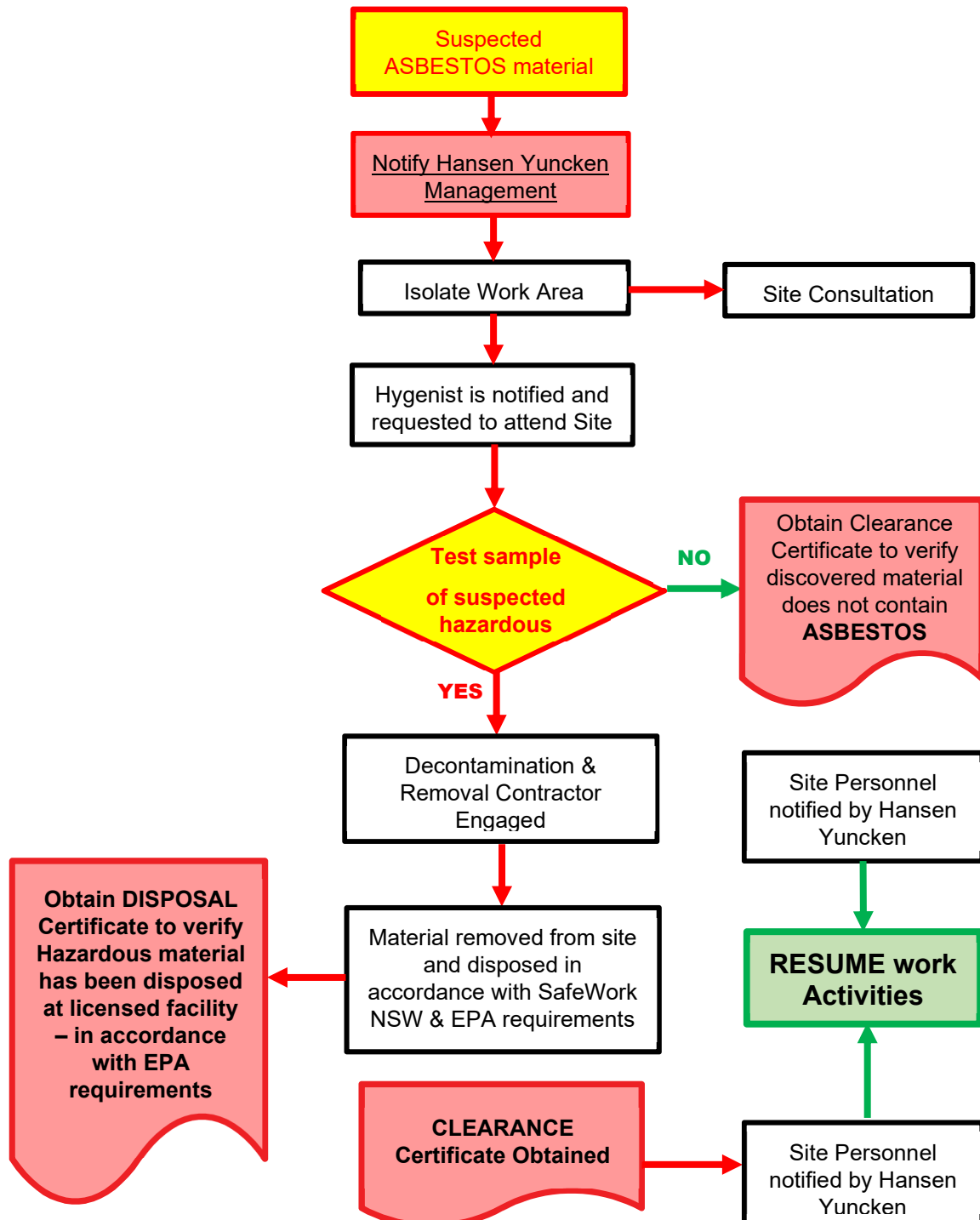
- iii) ensure that an Aboriginal Site Impact Recording (ASIR) form is completed and submitted to the AHIMS Register within 2 months after the relevant discovery
- 4. Photograph the find and mark the identified location using GPS
- 5. If substance assessed as presenting an unacceptable risk to human health evacuate site
- 6. If substance assessed as not presenting an unacceptable risk to human health Site foreman to retain safety barricades and environmental controls and continue work outside of vicinity
- 7. HY to notify the University HSW Representative and Engage specialist consultants as required
- 8. Toolbox to all site staff
- 9. Environmental consultant to supervise remediation and undertake validation/clearance as per the remediation/validation/clearance plan
- 10. Work is not to recommence until and investigation has been completed by a suitably qualified person in accordance with the Office of Environment and Heritage's guidelines, and directed to do so by the principal.
- 11. Site Foreman to remove barricades and environmental controls and continue work once approval has been given to do so.
- 12. Environmental consultant to submit assessment/validation/clearance to Project Manager for distribution to Client and appropriate regulatory authorities.

## Unexpected Finds Protocol - Asbestos

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 by the use of 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 off site, 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. WorkCover 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



## Unexpected Finds Protocol - Buried Structures

In the unlikely event that buried structures such as Underground Storage Tanks (USTs) are encountered during site works, the structure(s) and any associated pipe-work should be managed /removed as follows:

- a. Upon discovery of structure, the site foreman is to be notified and the area barricaded;
- b. Visual identification of the tank and associated pipe-work;
- c. Remove and dispose of the structure and associated pipe-work by a qualified contractor. In the case of an UST, the tank must be removed in accordance with Australian Institute of Petroleum (AIP) Code of Practice and Australian standards;
- d. Excavate and stockpile impacted materials (based on field observations) for classification;
- e. Validation of the remedial pit by a qualified environmental consultant for the contaminants of concern at the following sampling density:
  - i) Base of tank pit excavation - 1 sample per 25 m<sup>2</sup> (i.e. 5m x 5 m grid);
  - ii) Side of tank pit excavation - 1 sample per 10 linear metre (minimum of 1 sample per side) and 1 sample per 2m – 3m depth interval;
  - iii) Fuel feed lines/pipe-work - 1 sample per 10 linear metre and 2 - 3 depth interval; and
  - iv) QA/QC sampling and analysis in accordance with the Project Quality Management Plan.
- f. If required, “chase out” all of materials in the remediation pit identified to be impacted by petroleum/hydrocarbons and further validation sampling and analysis as required to assess appropriate removal of impacted materials;
- g. Waste classification and off-site disposal of impacted materials in accordance with Section 4.11.7 of the project Environmental Management Plan; and
- h. Inclusion of validation, waste classification and disposal documents (including landfill dockets and, in the case of USTs, tank and pipe work destruction certificates) in the validation report.

## Unexpected Finds Protocol - Volatile Contaminants

Based on the findings of the previous assessments, and noting the nature of the filling and soil encountered at the site the potential for the site being impacted by volatile contaminants would be extremely low.

In the highly unlikely event that significant quantities of volatile compounds are detected, then appropriate gas mitigation strategies may be required as per ANZECC (1999) Guidelines for the Assessment of On-site Containment of Contaminated Soil.

If impacts due to volatile contaminants are detected in the area to be capped, the nature and extent of the impacts of the volatile contaminants should be established as a first step before an appropriate remedial strategy.

## 4.14 Waste Management

Refer Waste Management Plan (PMP Section 15) for further details relating to the management and disposal of waste.

## 4.14.1 Waste Reduction

The main source of waste associated with the construction works would be demolished material (bricks, concrete, steel etc.) resulting from the demolition and refurbishment of existing buildings. 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 keep the amount of materials transferred to landfill from this project to the minimum possible amount.

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.

## 4.14.2 Non-Recyclable Waste

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

## 4.14.3 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.

## 4.14.4 Waste Reporting

Waste generation is monitored by HY on 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.

## 4.14.5 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.

Washout shall be captured using membranes or other suitable means and allowed to set.

Waste shall be placed in bins for disposal with site waste.



Excess concrete shall be returned to the concrete plant for disposal or re-use.

#### 4.14.6 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 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 undertaken by an appropriately licenced contractor as per WorkCover 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).

#### 4.15 Environmental Complaints

Complaints received regarding HY's Environmental Impacts or performance shall be recorded as Complaint in accordance with the [HSE Incident Procedure](#). Actions to be taken to address the complaint.

#### 4.16 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.

#### 4.17 Hazardous Materials

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

## 5 Measurement & Evaluation

### 5.1 Environmental Incidents & Emergencies

#### 5.1.1 Environmental Incidents

Incidents resulting in potential or actual environmental damage shall be reported and investigated in accordance with the [HSE Incident Procedure](#) and recorded on BIM360 using the HSE incident report

#### 5.1.2 Environmental Emergencies

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

##### **Asbestos Exposure**

In the event that 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.

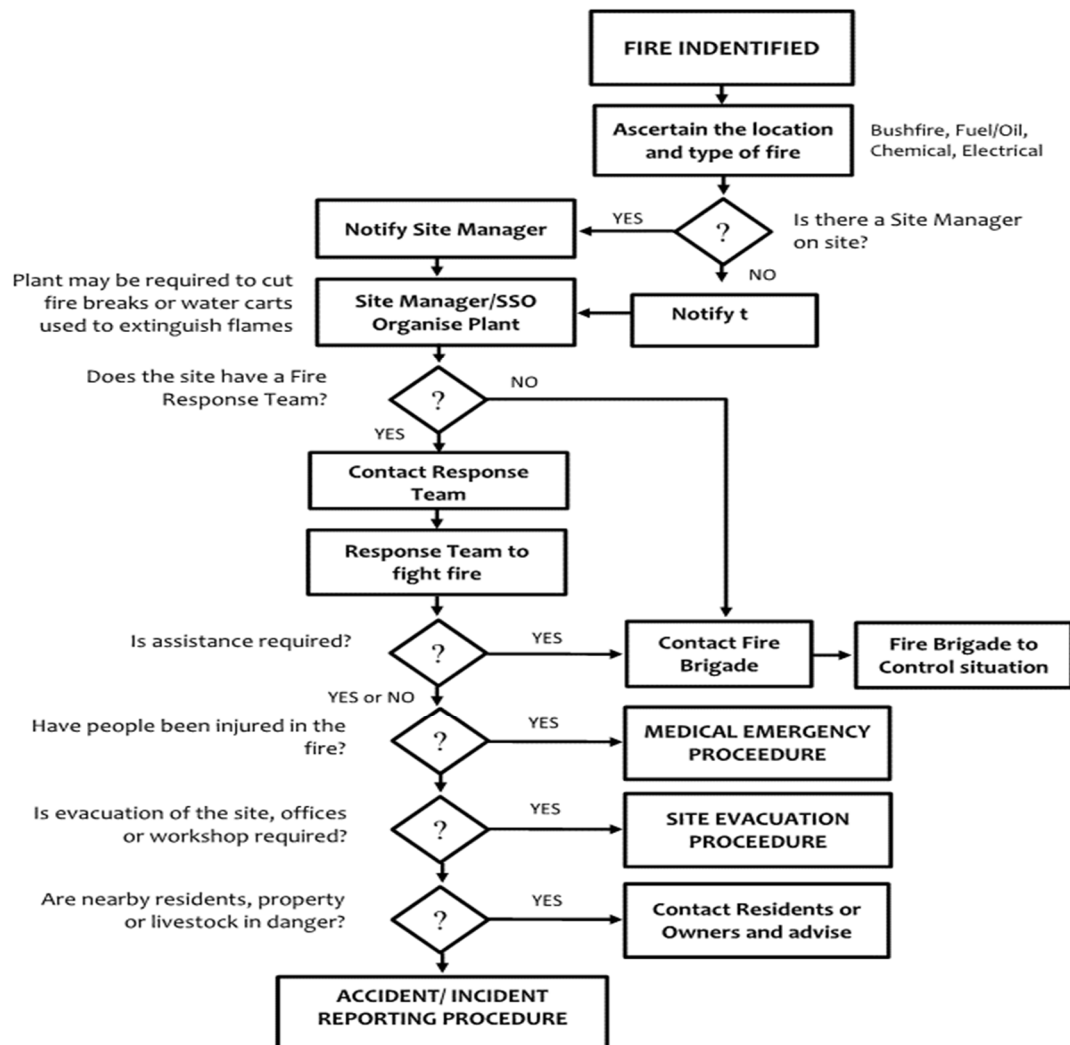
If the incident does not require an initial combat agency, or once the 000 call has been made, notify the HY Site Manager who will notify the relevant authorities in the following order. The 24-hour hotline for each authority is given when available:

**EPA Environment Line on 131 555**

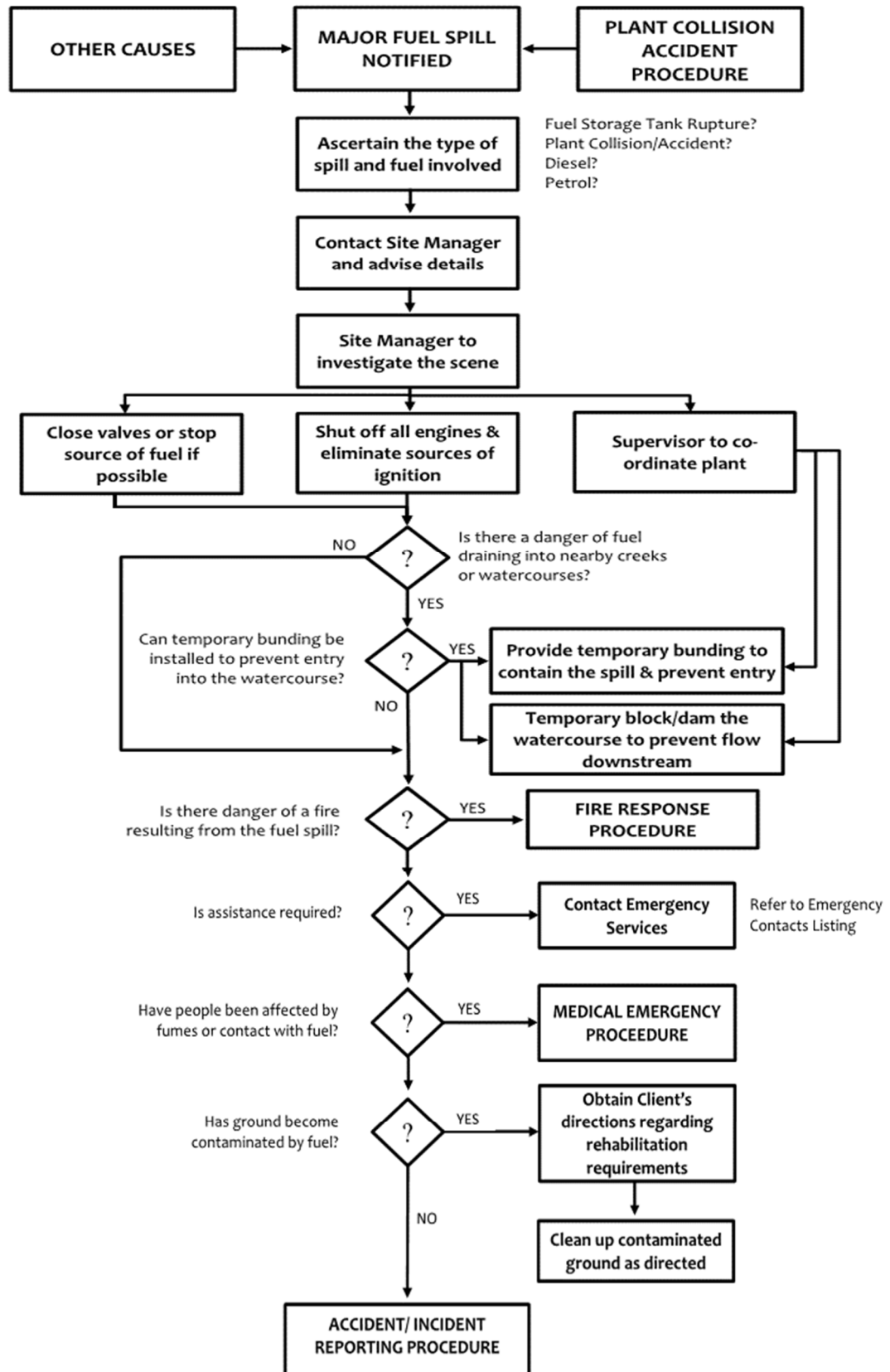
**Safework NSW Authority – phone 13 10 50 (Where appropriate)**

**Newcastle Council Telephone (02) 4974 2000**

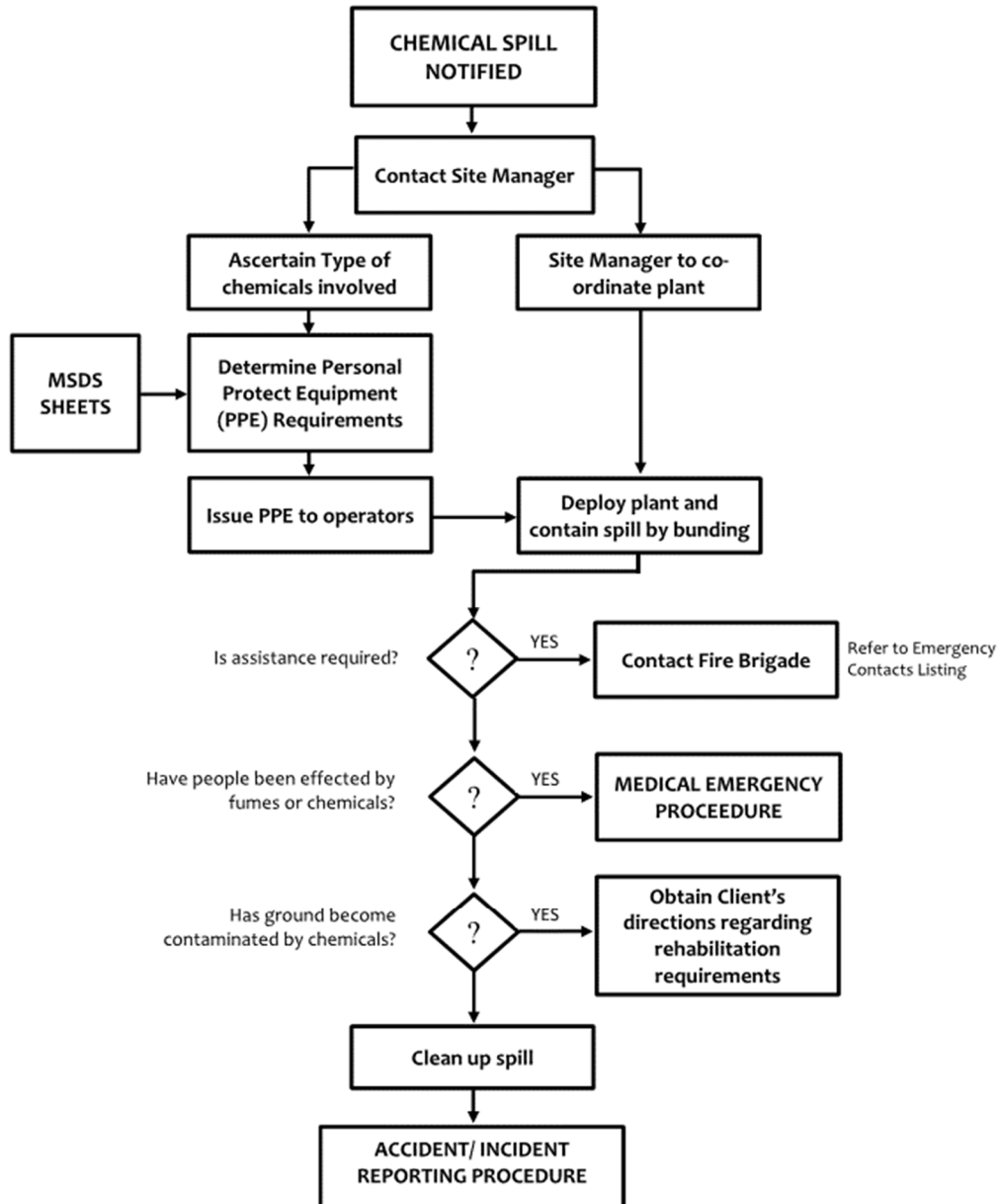
## Fire



## Major Fuel Spill



## Chemical Spill



## 5.2 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:

- Fortnightly site inspections,
- Monthly task observations,
- 3 monthly internal audits,

Independent Environmental Audits as required under the contract:

- Initial construction independent audit must be undertaken within eight weeks of the notified commencement date of construction; and
- A subsequent independent audit of construction must be undertaken no later than six months from the date of the initial audit noted above.

An Environmental Management Monthly Report is to be submitted with each claim for payment

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.

## 5.3 National Greenhouse & Energy Reporting (NGER)

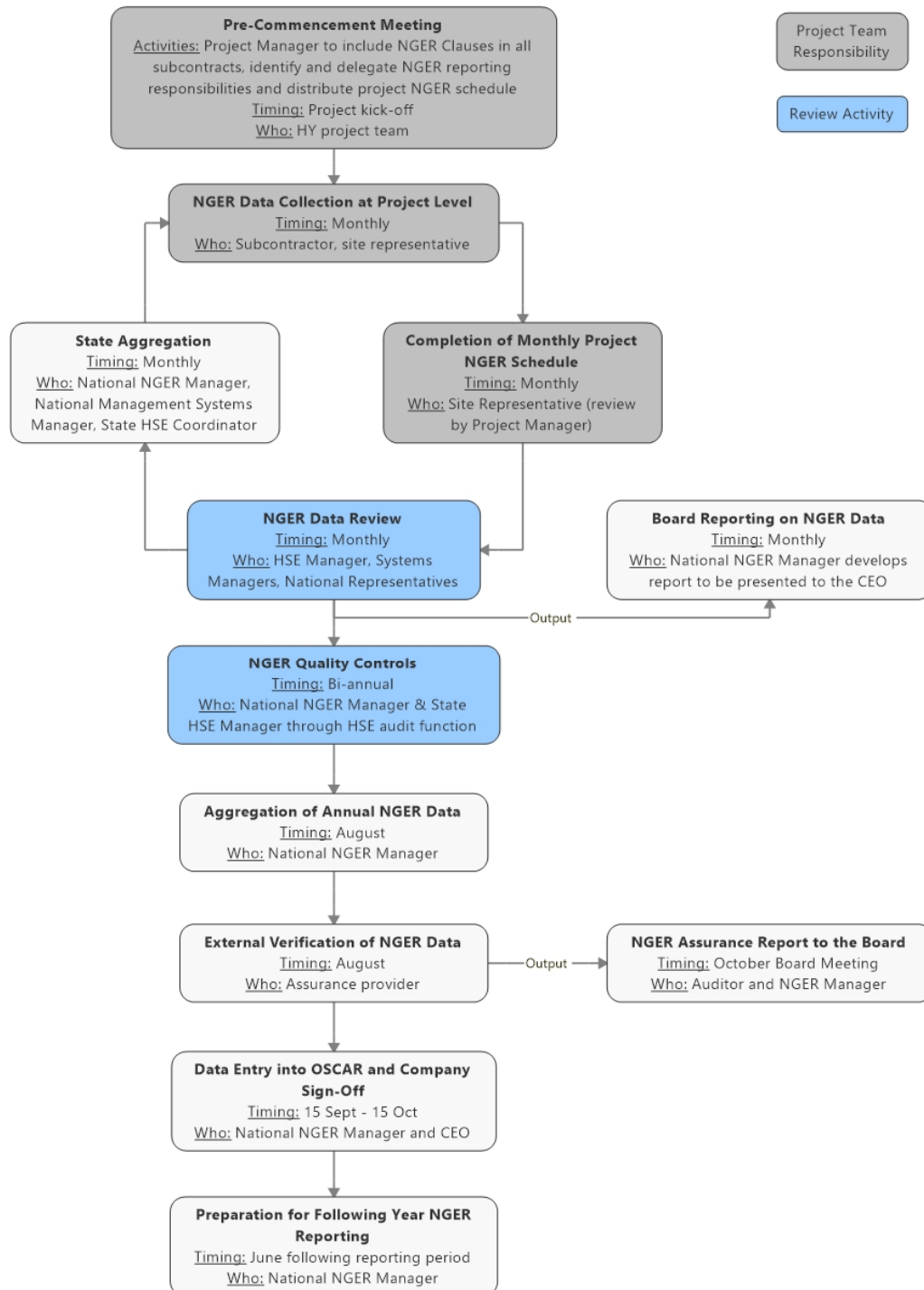
### 5.3.1 National Reporting Guidelines

The purpose of the National Greenhouse and Energy Reporting Guidelines is to help corporations understand their obligations under the National Greenhouse and Energy Reporting Act 2007 (the Act).

### 5.3.2 Reporting Thresholds

HY's has been assessed and determined to be below the corporate group reporting thresholds – detailed in the below table. Notwithstanding this, all natural gas and electricity consumption is recorded monthly on BIM360 Field and collated for national reporting. Furthermore, all site mobile plant and equipment fuel consumption is registered on BIM360 Field and incorporated in the HY greenhouse gases (CO<sub>2</sub>-e) annual report (NGER).

## 5.3.3 NGER Reporting process



## 5.3.4 NGER Data Collection

NGER data shall be collected and recorded on BIM360 Field using the Site Electricity and Natural Gas Usage Checklist

## 6 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)



## 7 Appendices

### 7.1 Hansen Yuncken Environmental Policy Statement

# HANSEN YUNCKEN

## ENVIRONMENT POLICY

Hansen Yuncken Pty Ltd is committed to providing a high quality environment in the building and construction industry, which meets the requirements and expectations of Clients, Statutory Authorities, Employees 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. Hansen Yuncken affirms its 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.

In achieving this Hansen Yuncken is committed to the implementation, maintenance and improvement of a Management System meeting the requirements of Australian and International Standard AS/NZS ISO 14001.

The National Executive Committee shall review Environmental objectives and set performance targets each year. State Managers, through their line management structure, are accountable for ensuring all employees and subcontractors achieve these objectives and targets.

The Company's Environmental performance shall be monitored against established performance targets and the results reported to the Board of Directors on the regular basis.

Hansen Yuncken affirm that they have a 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 acknowledges that environmental excellence can only be achieved and maintained by a clear unequivocal direction of all levels of management, stimulating a participative atmosphere and sense of pride in our environmental achievements by all employees and trade contractors, and through recognition by concerned groups in obtaining this.



Peter Salveson  
Chief Executive Officer  
May 2018

## 7.2 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  
ABN 38 063 384 056

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 85 102 935 195

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/certified-register](http://www.qcse.com.au/certified-register), and [www.jas-anz.org/our-directory/certified-organisations](http://www.jas-anz.org/our-directory/certified-organisations); it remains the property of QCSE Pty Ltd and must be returned upon request.

Certificate Number: 160052022  
Issue Date: 26 February 2019

Original Certification: 23 February 2010  
Expiry Date: 22 February 2022

*CASTONE*

Cheryl Stone  
Certification Manager




QMS/EMS Certified Company  
Licence Number: Q0160



[www.jas-anz.org/register](http://www.jas-anz.org/register)

## 7.3 Project HSE Risk Assessment



# PROJECT HSE RISK ASSESSMENT

This Project HSE Risk Assessment is to be used as a guide 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 status 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		RISK ASSESSMENT TABLE		Consequence						
PROJECT:	Honeysuckle City Campus Development Stage 1A				1	2	3	4	5		
JOB NO:	SN96				Likelihood	Significant	Major	Moderate	Minor	Insignificant	
ASSESSED BY:	Dale Reith				A	Very Likely	High	High	High	Medium	Medium
ASSESSMENT DATE:	- PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-WAY				B	Likely	High	High	Medium	Medium	Medium
					C	Possible	High	Medium	Medium	Medium	Low
					D	Remotely Possible	Medium	Medium	Medium	Low	Low
					E	Very Unlikely	Medium	Medium	Low	Low	Low
					NA	Not applicable	NA	NA	NA	NA	NA
	RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)								
HAZARD (Include additional project specific hazards as required)	L	C	Class	Legislation, Standards & Codes of Practice			Enter Details of Specific Controls Required				
Amenities											
Access	A	4	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				
Location and nature of workplace	A	4	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				
Housekeeping	A	4	Medium	NSW Code Of Practice: Managing the work Environment and Facilities			A full time cleaner is engaged to manage and maintain all amenities.				
Seating	A	4	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				
Lighting (Poor)	A	4	Medium	NSW Code Of Practice: Managing the work Environment and Facilities			Lighting is setup in all amenities for safe access				
Air Quality	A	4	Medium	NSW Code Of Practice: Managing the work Environment and Facilities			Windows, fans and airconditioning are installed to all site sheds				
Hot and Cold Environment	A	4	Medium	NSW Code Of Practice: Managing the work Environment and Facilities			Air conditioning installed to all lunch sheds				
Drinking water	A	4	Medium	NSW Code Of Practice: Managing the work Environment and Facilities			Bubble set up at lunch sheds and various locations throughout site				
Dining Facilities	A	4	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 sit down and have lunch				
Hand washing	A	4	Medium	NSW Code Of Practice: Managing the work Environment and Facilities			Warm water, soap and hand dryers are available in the toilets				
Shower Facilities	A	4	Medium	NSW Code Of Practice: Managing the work Environment and Facilities			Hot showers are provided on site				
Change Room	A	4	Medium	NSW Code Of Practice: Managing the work Environment and Facilities			Change rooms with benching and coat hooks are provided on site for workers to change clothes				
Air Quality											
Dust from plant & truck movements	C	4	Medium	UON HCCD 1A Site Layout Plan			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.				
Refuelling of plant and equipment	B	4	Medium	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				
Concrete cutting / coring	E	5	Low	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 be cleaned up immediately. Slurry to be cleaned up immediately				
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	A	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 HCCD 1A photo ID at all times and sign into the site attendance register on a Daily Basis after they have been inducted.				
Visitors entering site without Hansen Yuncken permission would be unaware of site hazards eg, asbestos, gas lines etc	C	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.				
Pedestrians/ workers walking around site being struck by vehicles/trucks/ plant moving around site	D	1	Medium	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.				
Public being struck by trucks entering and exiting site	D	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				
Subcontractors bringing vehicles onto site without Hansen Yuncken permission	B	4	Medium	UON HCCD 1A WHS Plan			All subcontractors must seek approval from the Hansen Yuncken Site Manager prior to bringing vehicles/ trucks onto site.				
Workers slipping/ tripping over on muddy/ uneven ground	c	3	Medium	UON HCCD 1A WHS 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.				
Vehicles becoming bogged or losing traction whilst entering/ exiting and driving around site	E	4	Low				Vehicles to be driven on solid ground only. No vehicles will be allowed to drive on muddy terrain				
Collisions between plant on site	E	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				
Too many vehicles parked on site creating restricted access around site	NA	4	NA				No Parking onsite. A designated area has been provided by Hansen Yuncken for Subcontractor or Visitor Parking.				

## PROJECT HSE RISK ASSESSMENT


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RELEVANT PROCEDURE:	Project HSE Risk Assessment		RISK ASSESSMENT TABLE		Consequence				
PROJECT:	Honeysuckle City Campus Development Stage 1A		Likelihood		1	2	3	4	5
JOB NO:	SN96		A	Very Likely	High	High	High	Medium	Medium
ASSESSED BY:	Dale Reith		B	Likely	High	High	Medium	Medium	Medium
ASSESSMENT DATE:	- PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-WAY		C	Possible	High	Medium	Medium	Medium	Low
			D	Remotely Possible	Medium	Medium	Medium	Low	Low
			E	Very Unlikely	Medium	Medium	Low	Low	Low
			NA	Not applicable	NA	NA	NA	NA	NA
	RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)						
HAZARD (Include additional project specific hazards as required)	L	C	Class	Legislation, Standards & Codes of Practice		Enter Details of Specific Controls Required			
Delivery vehicle drivers unaware of site hazards	A	4	Medium	NSW Code of Practice: Moving Plant On Construction Sites: 2004		<p>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.</p> <p>1. All delivery drivers must follow the directions of traffic controllers, traffic control devices and signage when entering the project from Wright lane Newcastle..</p> <p>2. Speed limits must be complied with.</p> <p>3. Delivery drivers will enter the site through Gate 1 and park up immediately inside the gate</p> <p>4. Delivery Drivers are to make contact with the company responsible for the delivery.</p> <p>5. The relevant trade supervisor will proceed to Gate 1 and escort the delivery driver to the Hansen Yuncken site office.</p> <p>6. Delivery drivers who have not previously been on site are to undertake the Delivery Driver induction.</p> <p>7. Delivery drivers who have previously been on site are to sign in as visitors at the gate house.</p> <p>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.</p> <p>9. Delivery drivers are expected to display the Delivery Driver Induction identification number where it is visible while on site.</p> <p>10. Delivery drivers are to be escorted at all times by the relevant subcontractor supervisor.</p> <p>DRIVERS ARE PROHIBITED TO DRIVE ANYWHERE ON SITE WITHOUT AN ESCORT</p> <p>11. Flashing lights or hazard lights are to be turned on whilst manoeuvring around site.</p> <p>12. All drivers MUST wear the following protective clothing:</p> <ul style="list-style-type: none"> <li>• Safety Footwear;</li> <li>• Hi-visibility clothing</li> <li>• Hard Hat;</li> <li>• Gloves (if manual handling is being undertaken).</li> </ul> <p>13. Delivery drivers must remain in the designated "Driver Safe Zone"</p> <p>14. After loading/unloading, all drivers must be escorted from the site by the relevant subcontractor supervisor.</p> <p>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.</p> <p>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</p>			
Delivery vehicle unloading in an unsafe area eg. in an area where there is mobile plant or pedestrians frequently moving past	C	2	Medium	W3 & 4 Site WHS Plan		<p>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.</p> <p>Delivery Driver Safe Zone</p> <p>Fence panels will be installed off the exclusion zone where the delivery driver will remain during loading/unloading activities.</p> <p>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.</p> <p>A "driver safe zone" sign will be attached to the barriers.</p>			

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RELEVANT PROCEDURE:	Project HSE Risk Assessment		RISK ASSESSMENT TABLE		Consequence				
PROJECT:	Honeysuckle City Campus Development Stage 1A		Likelihood		1	2	3	4	5
JOB NO:	SN96		A	Very Likely	High	High	High	Medium	Medium
ASSESSED BY:	Dale Reith		B	Likely	High	High	Medium	Medium	Medium
ASSESSMENT DATE:	- PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-WAY		C	Possible	High	Medium	Medium	Medium	Low
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			NA	Not applicable	NA	NA	NA	NA	NA
	RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)						
HAZARD (Include additional project specific hazards as required)	L	C	Class	Legislation, Standards & Codes of Practice		Enter Details of Specific Controls Required			
Asbestos									
Workers being exposed to the asbestos contaminated soil (ACM) at various locations around site	NA	3	NA	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 contractual obligations, under the direction and approval of DOJ, HY can engage JBS&G identify any areas that may potentially be deemed to contain asbestos contaminated soil or material on site. An unexpected finds protocol can be established that will also address the 'remedial action plan / strategy' to be adopted in such instance.			
Unidentified finds of asbestos	B	3	Medium	UON HCCD 1A WHS Plan		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			
Unidentified finds of asbestos	B	3	Medium	Code of Practice: How to manage and control asbestos in the workplace		Warning signage and red/white tape to be used to prevent unauthorised persons entering the area. Air monitors to be installed and all workers in the area must wear appropriate PPE as defined in SWMS.			
Unidentified finds of asbestos	B	3	Medium	Code of Practice: How to safely remove asbestos		Warning signage and red/white tape to be used to prevent unauthorised persons entering the area. Air monitors to be installed and all workers in the area must wear appropriate PPE as defined in SWMS.			
Unidentified finds of asbestos	B	3	Medium	NWHSC 2002 - 2005 Safe Removal of Asbestos		Warning signage and red/white tape to be used to prevent unauthorised persons entering the area. Air monitors to be installed and all workers in the area must wear appropriate PPE as defined in SWMS.			
Unidentified finds of asbestos	B	3	Medium	NWHSC 2018 - 2005 Management & Control of Asbestos		Warning signage and red/white tape to be used to prevent unauthorised persons entering the area. Air monitors to be installed and all workers in the area must wear appropriate PPE as defined in SWMS.			
Atmosphere - Contaminated/ Flammable									
Flammable fumes from fuel containers	A	4	Medium	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 Confined Spaces SWMS.			
Unsafe storage of fuel	C	4	Medium	AS/NZS 2430 Classification of hazardous areas		Fuel must be stored in ventilated cages. No fuel to be stored in shipping containers			
Fumes from spray sealer application to carpark slab	D	4	Low	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			
Biological Hazards									
Disease from unhygienic facilities and amenities	E	4	Low	NSW Code Of Practice: HIV and other blood-borne pathogens in the workplace UON HCCD 1A WHS Management Plan NSW: Code Of Practice: Work Place Amenities		A cleaner has been engaged by Hansen Yuncken to clean amenities on a weekly basis. Amenities to be kept clean and tidy at all times			
Bomb Threat									
Persons unaware of what to do in the event of an emergency	E	5	Low	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.			
Changes in design									
Changes in design could result in new hazards not being identified	D	4	Low	UON HCCD 1A WHS Plan		All design changes must be risk assessed by HY. Subcontractor SWMS will be reviewed by HY as required			
Craning & Hoisting Operations									
Persons/ other trades on site walking into the crane slew area may be struck by crane or load	B	1	High	AS 2550: Cranes, hoists & winches - Safe Use UON HCCD 1A WHS Plan		The work area around all cranes must be fully barricaded eg bunting and signposted to keep other workers clear.			
Slings or chains failing resulting in loss of load	A	1	High	AS 1418.1: Cranes, hoists and winches – General Requirements AS 4991 Lifting Devices UON HCCD 1A WHS Plan		Subcontractors must keep an up to date register of all chains and slings. All equipment must be visually checked daily prior to use.			
Crane outriggers sinking in ground resulting in crane rolling over	A	1	High	NWHSC 1010: National Standard for Plant UON HCCD 1A WHS 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.			
Crane striking structures whilst slewing	A	2	High	AS 1418.10(Int): Cranes, hoists and winches - Elevating work platforms UON HCCD 1A WHS Plan		Dogman and crane operator to constantly communicate with each other. Crane operator to take directions from dogman only.			



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RELEVANT PROCEDURE:	Project HSE Risk Assessment		RISK ASSESSMENT TABLE		Consequence				
PROJECT:	Honeysuckle City Campus Development Stage 1A		Likelihood		1	2	3	4	5
JOB NO:	SN96		A	Very Likely	High	High	High	Medium	Medium
ASSESSED BY:	Dale Reith		B	Likely	High	High	Medium	Medium	Medium
ASSESSMENT DATE:	- PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-WAY		C	Possible	High	Medium	Medium	Medium	Low
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			NA	Not applicable	NA	NA	NA	NA	NA
	RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)						
HAZARD (Include additional project specific hazards as required)	L	C	Class	Legislation, Standards & Codes of Practice		Enter Details of Specific Controls Required			
Concrete									
Concrete Pumping - overload formwork structure	A	2	High	NSW Code Of Practice: Pumping Concrete 1993		Spotter to be used when positioning boom over formwork			
Trip hazard after excess concrete has cured	A	4	Medium	Environmental Protection Act 1994		Back to plant policy for large amounts of excess concrete			
Slip hazard from excess water and slurry on the ground/ concrete washout	A	4	Medium	UON HCCD 1A WHS 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			
Slurry and wet concrete entering stormwater drains	B	5	Medium	UON HCCD 1A WHS 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.			
No designated washout area could result in truck drivers washing out wherever they please leaving the site messy and untidy	D	4	Low	UON HCCD 1A WHS 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			
Concrete cutting / coring - dust	B	4	Medium	UON HCCD 1A WHS 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 be cleaned up immediately. Slurry to be cleaned up immediately			
Strike PT cables whilst cutting concrete	B	4	Medium	UON HCCD 1A WHS Plan		Review As Constructed Drawings, consult Structural engineer and obtain permission to proceed. Enact Cutting and Coring Permit prior to any works commencing			
Confined Space									
Poor ventilation inside in-ground pits	C	4	Medium	NWHS 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 of pits is to be conducted as pit risers are installed to minimise the need to enter the pit afterwards			
Workers unable to easily enter and exit trenches	D	3	Medium	UON HCCD 1A WHS 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.			
Workers being overcome by fumes building up in open trenches	D	3	Medium	NSW WHS Regulation 2011: 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.			
Contaminated Soil									
Exposure to contaminated soil which has not been identified	C	3	Medium	AS 4482: Guide to the investigation & sampling of sites with potentially contaminated soil NSW Environment Operations Act 1997		All subcontractors that will excavate onsite to have a SWMS for 'unexpected finds'. All workers have been instructed at the site induction to stop work immediately and notify Hansen Yunken site staff whom will take action to make the area safe.			
Exposure to contaminated soil which has not been identified	C	3	Medium	UON HCCD 1A WHS Plan		An independent Environmental consultant ( ECS Pty Ltd ) has been engaged by HY, through RainbowGroup PTY LTD and whilst contaminated soil management is within Rainbow's scope, HY may engage ECS to identify any areas that may potentially deemed to contain asbestos contaminated soil or material on site. An unexpected finds protocol can be established that will also address the 'remedial action plan / strategy' to be adopted in such instance, should this fall outside the controls detailed in the project WHS Management Plan.			
Deliveries To Site									
Delivery vehicle drivers unaware of site hazards	A	4	Medium	NSW Code of Practice: Moving Plant On Construction Sites: 2004		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.			
Delivery vehicle unloading in an unsafe area eg. in an area where there is mobile plant or pedestrians frequently moving past	C	2	Medium	UON HCCD 1A Delivery Driver Brief UON HCCD 1A WHS 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.			
Pedestrians/ other workers in the area being struck by materials as they are being unloaded from the truck	A	4	Medium	UON HCCD 1A 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.			
Untrained delivery drivers using plant to unload goods	E	3	Low	UON HCCD 1A WHS Plan		SWMS must be in place for subcontractors using plant to unload their delivery			
Drugs & Alcohol									
Persons under the influence of drugs or alcohol are at high risk of injuring themselves or others	E	4	Low	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.			




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RELEVANT PROCEDURE:	Project HSE Risk Assessment				RISK ASSESSMENT TABLE		Consequence				
PROJECT:	Honeysuckle City Campus Development Stage 1A				Likelihood		1	2	3	4	5
JOB NO:	SN96				A	Very Likely	High	High	High	Medium	Medium
ASSESSED BY:	Dale Reith				B	Likely	High	High	Medium	Medium	Medium
ASSESSMENT DATE:	- PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-WAY				C	Possible	High	Medium	Medium	Medium	Low
					D	Remotely Possible	Medium	Medium	Medium	Low	Low
					E	Very Unlikely	Medium	Medium	Low	Low	Low
					NA	Not applicable	NA	NA	NA	NA	NA
	RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)								
HAZARD (Include additional project specific hazards as required)	L	C	Class	Legislation, Standards & Codes of Practice			Enter Details of Specific Controls Required				
Dust											
Disruption/ nuisance to neighbours and client	D	5	Low	NSW Code of Practice: Control Of Workplace Hazardous Substances			Shade cloth installation to site perimeter fence to contain all dust within the construction site.				
Eye injuries and respirable damage to workers	D	4	Low	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				
Dust from wall chasing	NA	4	NA	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				
Concrete cutting / coring	E	4	Low	AS/NZS 1716 Respiratory protection devices NSW Cutting & Drilling Concrete & Other Masonry Products 1996 UON HCCD 1A WHS 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 be cleaned up immediately. Slurry to be cleaned up immediately. HY Cutting and Coring permit in place.				
Electricity											
Electrocution from faulty/ damaged electrical equipment	D	1	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.				
Electrocution from faulty/ damaged Distribution boards	NA	1	NA	UON HCCD 1A WHS 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.				
Workers tripping on leads	C	4	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.				
Electrocution from temporary construction wiring being damaged	B	1	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.				
Working around energised live Substation	B	2	High	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.				
Workers piggy backing leads	C	3	Medium	AS 3012: Electrical Installations - Construction & Demolition Sites			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.				
				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							
Emergency Services Unavailability											
Injured person may not receive first aid treatment in a sufficient amount of time	E	3	Low	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 the site 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.				
Site Emergencies	B	3	Medium	WHS Regulation 2011			HY emergency response plan details actions to be taken for different types of emergencies				
Erosion/ Loss of Topsoil											
Sediment entering stormwater systems	E	4	Low	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 dams or tanks. The water must be flocced, 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.				
Erosion causing perimeter scaffolding to become unstable	NA	3	NA	UON HCCD 1A Environmental Management Plan			All perimeter scaffolding to be checked following significant rainfall and rectified by scaffolder as required.				







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			NA	Not applicable	NA	NA	NA	NA	NA
RISK ASSESSMENT			CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)						
HAZARD (Include additional project specific hazards as required)	L	C	Class	Legislation, Standards & Codes of Practice			Enter Details of Specific Controls Required		
Existing services									
Damage to existing services could cause major disruption to the client eg. live power, security cables etc.	D	3	Medium	NSW Code Of Practice: Excavation 2004 UON HCCD 1A WHS Plan			Subcontractors are available to repair services in the event they are damaged		
PLANT OPERATORS STRIKING UNDERGROUND SERVICES WHILST UNDERTAKING TRENCHING/ EXCAVATION WORKS	C	1	High	Ausgrid National Standard NS 156 - Working near or around underground cables UON HCCD 1A WHS 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		
Excavators digging trenches accidentally striking recently installed and charged up hydrant lines throughout the site	E	2	Medium	Jemena Guidelines Construction Activities Near & Over Jemena Gas Networks Assets UON HCCD 1A WHS Plan			A plan has been issued to all subcontractors notifying them of existing services		
Explosive Powered Tools									
Eye and hearing damage	E	4	Low	UON HCCD 1A WHS Plan			Eye and hearing protection must be worn. Workers must be closely supervised by their supervisor		
Excavations									
Excavation over 1.5m	C	3	Medium	NSW Code Of Practice: Excavation 2000			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		
Large stockpiles of spoil creating blind spots for plant operators and truck drivers	E	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.		
Trench collapse trapping workers	C	1	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.		
Plant eg. mobile crane set up too close to a trench could result in trench collapse and plant roll over	C	2	Medium	UON HCCD 1A WHS Plan			All plant must be set up clear of the zone of influence		
Plant outriggers sinking into ground resulting in plant roll over.	C	1	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 outriggers. 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.		
Open trenches restricting access for vehicles and pedestrians around site	C	4	Medium	NSW Dial 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.		
Building materials/ stockpiles stored near trench could result in trench collapse	C	3	Medium				Materials and equipment must not be stored within the 'zone of influence'		
Different trades working in the same area at the same time could strike each other with mobile plant	A	2	High				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		
Damage to existing buildings from vibrations caused by machinery	NA	4	NA				Vibration from earthworks to be monitored by HY and subcontractors		
Formwork									
Formwork collapse	B	1	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		
Fall from heights	A	1	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 steelers & 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. "PEN" or similar) and fasten securely.		
Cuts/ impalement on starter bars	B	3	Medium				Safety caps to be fitted to all starter bars wherever there is a risk that a person may fall on one.		
Fall prevention/ arrest equipment									
Failure of fall arrest equipment	B	1	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		


				<b>PROJECT HSE RISK ASSESSMENT</b> This Project HSE Risk Assessment is to be used as a guide 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 status 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				RISK ASSESSMENT TABLE		Consequence					
PROJECT:				Honeysuckle City Campus Development Stage 1A				Likelihood		1	2	3	4	5	
JOB NO:				SN96				A	Very Likely	High	High	High	Medium	Medium	
ASSESSED BY:				Dale Reith				B	Likely	High	High	Medium	Medium	Medium	
ASSESSMENT DATE:				- PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-WAY				C	Possible	High	Medium	Medium	Medium	Low	
								D	Remotely Possible	Medium	Medium	Medium	Low	Low	
								E	Very Unlikely	Medium	Medium	Low	Low	Low	
								NA	Not applicable	NA	NA	NA	NA	NA	
				RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)									
HAZARD (Include additional project specific hazards as required)				L	C	Class	Legislation, Standards & Codes of Practice				Enter Details of Specific Controls Required				
Fall from heights															
Workers falling into open trenches				C	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				
Workers falling into open penetrations (eg in-ground pits)				C	3	Medium	WHS Regulation 2011 Part 4.4 Falls				All penetrations to be covered with and secured and the wording "peno" or "do not remove" sprayed onto the plywood				
Workers falling from ladders				C	3	Medium	NSW Code Of Practice: Managing the risk of falls at workplaces				Ladders are to be 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				
Bricklayers falling from trestle scaffold				C	1	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				
Fall from scaffold				E	3	Low	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 trunnys. 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.				
Personnel falling into open trenches or off the edges of batters and excavations				D	3	Medium	UON HCCD 1A 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.				
Fall from mobile scaffold				B	3	Medium	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.				
Workers falling from heights				C	2	Medium	UON HCCD 1A WHS 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				
Falls into bored piers				B	2	High	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.				
Falling objects															
Pallets of blocks stacked too high could tip over and injure a person				A	4	Medium	Workcover Bricklayers guide				Pallets of blocks must be stacked on level ground no more than 2 pallets high				
Scaffold parts could fall/ be knocked off the deck and injure workers below				NA	2	NA	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				
Formwork and reo materials falling from deck onto persons below				B	2	High					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				
Building material and tools falling from scaffold decks				NA	2	NA	UON HCCD 1A WHS 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.				
Falling materials from EWP's				A	1	High	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				
Loose materials and rocks from walls of trenches falling onto workers within the trench				D	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				
Materials left behind after works finish eg. loose bolts, off cuts etc				B	1	High	AS/NZS 1801 Occupational protective helmets				Work areas at heights must be checked daily and loose items brought down to ground level.				
Fauna (protected or endangered species)															
Snakes and insects in long grass				B	3	Medium	Environmental Protection Act UON HCCD 1A Environmental Management Plan				Weeds and long grass alongside pedestrian pathways around the site are to be cut back with a whipper snipper				
Fire															
Chemical and fuel spills may cause a fire				E	1	Medium	UON HCCD 1A Emergency Response Plan				A,BE Powder type fire extinguishers are installed at several locations strategically placed around the site				
Sparks from hot works eg welding, grinding may cause a fire				D	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				
Flammable materials stored on site may ignite from hot works in the area				D	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.				
Fuel drums could catch on fire from sources of ignition				B	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				
Workers could be seriously injured whilst attempting to extinguish fire				E	1	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				
Time taken to obtain fire extinguisher in the event of an emergency				D	1	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				
Poor maintenance of fire extinguishers				E	1	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				
Breach of Total Fire Ban				NA	5	N/A	AS 1851 Maintenance of fire protection systems & equipment				Hansen Yuncken have applied 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				




## PROJECT HSE RISK ASSESSMENT

This Project HSE Risk Assessment is to be used as a guide 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 status 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		RISK ASSESSMENT TABLE		Consequence				
PROJECT:	Honeysuckle City Campus Development Stage 1A		Likelihood		1	2	3	4	5
JOB NO:	SN96		A	Very Likely	High	High	High	Medium	Medium
ASSESSED BY:	Dale Reith		B	Likely	High	High	Medium	Medium	Medium
ASSESSMENT DATE:	- PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-WAY		C	Possible	High	Medium	Medium	Medium	Low
			D	Remotely Possible	Medium	Medium	Medium	Low	Low
			E	Very Unlikely	Medium	Medium	Low	Low	Low
			NA	Not applicable	NA	NA	NA	NA	NA
	RISK ASSESSMENT			CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)					
HAZARD (Include additional project specific hazards as required)	L	C	Class	Legislation, Standards & Codes of Practice		Enter Details of Specific Controls Required			
First aid									
Persons unaware of what to do if an individual requires first aid	E	5	Low	WHS Regulation 2011		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.			
Injured person not receiving first aid treatment quickly enough due to the site being so large	D	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.			
It may not be possible to take the injured person to the first aid room because of the seriousness of their injuries	E	4	Low	First aid in the workplace: Code of Practice: July 2012		Access routes to be kept clear around site for emergency vehicles			
Inadequate first aid supply/s	E	3	Low	UON HCCD 1A WHS 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 .			
Inadequately trained first aiders/ insufficient number of first aiders	E	3	Low	UON HCCD 1A Emergency Response Plan		HY Site Foreman must have Apply First Aid type certification. HY Safety Officer must have Occupational First aid certificate			
Persons working alone unable to raise the alarm	E	3	Low	UON HCCD 1A 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			
Heart attack/ stroke	E	1	Medium	UON HCCD 1A Emergency Response Plan		Defibrillator to be kept in first aid room			
Number of buildings	E	5	Low	UON HCCD 1A Emergency Response Plan		5 - all easily accessible for pedestrians or vehicles			
Maximum Number of levels on each building	E	5	Low	UON HCCD 1A Emergency Response Plan		1 - All have internal stair access			
Time taken to walk to furthest point on site	D	4	Low	UON HCCD 1A Emergency Response Plan		6 minutes - from first aid room to furthest point on site			
Nearest Hospital	D	4	Low	UON HCCD 1A Emergency Response Plan		Blacktown Hospital			
Nearest Medical centre	D	4	Low	UON HCCD 1A Emergency Response Plan		Stanhope Gardens Medical centre			
Maximum time to medical service	D	4	Low	UON HCCD 1A Emergency Response Plan		1min			
Maximum number of workers	D	4	Low	UON HCCD 1A Emergency Response Plan		>100			
Number of other persons	E	4	Low	UON HCCD 1A Emergency Response Plan		Expected to have a maximum of 3-4 at any one time			
Site hours	E	5	Low	UON HCCD 1A 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 Yunccken is on site at all times			
Average hours worked by a worker	E	5	Low	UON HCCD 1A Emergency Response Plan		Workers generally work 8-9 hours per day			
Remote or isolated works	E	4	Low	UON HCCD 1A 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			
Types of injuries over the last 12 months	E	4	Low	UON HCCD 1A Emergency Response Plan		Majority of types of injuries include: cuts and abrasions, minor eye injuries, insect bites, sprains and strains, back injuries and dislocations			
Incidents not resulting in injury	E	5	Low	UON HCCD 1A 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			
Other	E	3	Low	UON HCCD 1A Emergency Response Plan		Occasionally workers have fallen ill (not work related) however these people are sent to a Doctor for further treatment			
Cuts and abrasions	C	4	Medium	UON HCCD 1A Emergency Response Plan		Type A first aid kit has contents for treating these types of injuries			
Sprains and strains	D	4	Low	UON HCCD 1A Emergency Response Plan		Ice packs and instant cold packs to be available			
Eye injuries	D	3	Medium	UON HCCD 1A Emergency Response Plan		Eye wash station to be set up in first aid room			
Burns	E	4	Low	UON HCCD 1A Emergency Response Plan		Burn cream and non adherent wound dressings			
Fractures	D	4	Low	UON HCCD 1A Emergency Response Plan		Type A first kit and a stretcher for moving injured workers			
Dislocations	D	4	Low	UON HCCD 1A Emergency Response Plan		Type A first aid kit has triangle slings			
Poisoning and toxic effect of substances	E	5	Low	UON HCCD 1A Emergency Response Plan		Safety data sheets available for all substances used. Oxy viva system to be kept in first aid room			
Heat stroke	D	4	Low	UON HCCD 1A Emergency Response Plan		Ice packs and cold water on standby. Subcontractors have been addressed at site induction to take breaks, work in shade wherever possible., job rotation etc			

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RELEVANT PROCEDURE:		Project HSE Risk Assessment				RISK ASSESSMENT TABLE		Consequence				
PROJECT:		Honeysuckle City Campus Development Stage 1A				Likelihood		1	2	3	4	5
JOB NO:		SN96				A	Very Likely	High	High	High	Medium	Medium
ASSESSED BY:		Dale Reith				B	Likely	High	High	Medium	Medium	Medium
ASSESSMENT DATE:		- PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-WAY				C	Possible	High	Medium	Medium	Medium	Low
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						NA	Not applicable	NA	NA	NA	NA	NA
		RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)								
HAZARD (Include additional project specific hazards as required)		L	C	Class	Legislation, Standards & Codes of Practice			Enter Details of Specific Controls Required				
Ground Collapse/poor ground												
Plant roll over from sinking in unstable ground conditions	C	3	Medium	UON HCCD 1A WHS 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					
Vehicles/ plant could become bogged in soft muddy ground	D	4	Low	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					
Pedestrian slip and trip hazards from muddy/ uneven ground	E	3	Low	UON HCCD 1A WHS 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					
Trucks and vehicles tracking mud and dirt onto road from muddy tyres	E	3	Low	UON HCCD 1A WHS Plan UON HCCD 1A Environmental Management Plan			Shaker grid installed at site entrance. High pressure water blaster to be used to wash tyres if required					
Pedestrians/ workers tripping over in deep wheel ruts left by plant movements	E	3	Low	UON HCCD 1A WHS Plan			Wheel ruts are to be bladed/ levelled out to minimise trip hazards around site					
Hazardous Chemicals												
Spillage of fuels and chemicals	C	3	Medium	AS 1940: The storage and handling of flammable and combustible liquids UON HCCD 1A Environmental Management Plan			A spill kit is kept in the site office. Any drums of fuel larger than 20 litres must be banded. All trades are to set up a hazardous substance storage area next to their site containers with signage erected 'no smoking', 'Danger Fuel Storage area' etc					
Unsafe storage of oxy acetylene equipment	C	3	Medium	AS 4332 The storage and handling of gases in cylinders UON HCCD 1A 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.					
Mix matched storage of hazardous substances could cause a chemical reaction	C	3	Medium	NWHSC 2017 - 2001 Storage & Handling of Dangerous Goods			Only substances of the same class can be stored together as per the Safety Data sheet for the products					
				AS 3780: The storage & handling of corrosive substances								
				NWHSC 2011: Preparation of Material Safety Data Sheets								
				UON HCCD 1A WHS Plan								
				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								
Heat stress												
Sun burn	D	4	Low	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.					
Hot temperatures may cause persons to become dehydrated resulting in illness, headaches, fainting etc	E	4	Low	NSW Hot & Cold Environments 2001			Air conditioned lunch sheds. Subcontractors to work in shaded area wherever possible.					
				NSW Code Of Practice: Managing the work Environment and Facilities								
				UON HCCD 1A WHS Plan								
Heavy lifting (over normal crane operation)												


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JOB NO:		SN96			A Very Likely		High	High	High	Medium	Medium
ASSESSED BY:		Dale Reith			B Likely		High	High	Medium	Medium	Medium
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					E Very Unlikely		Medium	Medium	Low	Low	Low
					NA Not applicable		NA	NA	NA	NA	NA
		RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)							
HAZARD (Include additional project specific hazards as required)		L	C	Class	Legislation, Standards & Codes of Practice		Enter Details of Specific Controls Required				
Manual handling injuries		E	4	Low	WHS Regulation 2011 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				
Back injuries		E	3	Low	UON HCCD 1A: WHS Plan		Bend knees, keep a straight back, don't twist				
Block and tackle use		NA	4	NA	NCOP for Manual Tasks 2007 National Standard for Manual Tasks - 2007 NCOP for the Prevention of Musculoskeletal Disorders Caused From Performing Manual Tasks		Use of block, tackle and slings is to be used in accordance with SWMS. Slings are to be wrapped around a solid structure only. Slings to be wrapped by dogman and riggers only				
					NSW Manual Handling Resource 2004						
					Code of Practice: Hazardous Manual Tasks						
Hot Works											
Sparks from welding, grinding or using oxy acetylene may cause a fire if flammable materials are in the area		C	4	Medium	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				
Fire and injury to others from persons using angle grinders		A	4	Medium	UON HCCD 1A: hot works permit		Conduct all grinding away from flammable materials and other workers in the area. Be aware of direction of flying sparks				
Welders flash to other trades		B	4	Medium	UON HCCD 1A: WHS Plan		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				
					Code Of Practice: Welding Processes						
Hygiene (poor)											
Unhygienic facilities could result in workers becoming ill and contracting diseases		D	4	Low	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				
Trades not putting rubbish and off cuts in bins provided creating trip hazards		D	4	Low	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				
Inadequate facilities for general site rubbish		D	4	Low	UON HCCD 1A: WHS Plan		Skip bins to be placed on site at various locations and changed over regularly				
Lifting Over Public/outside site											
Injury to pedestrians/ public		NA	4	NA	AS 1742.3-2009: Manual of uniform traffic control devices - Traffic control for works on roads UON HCCD 1A: WHS Plan UON HCCD 1A: 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 sought approval from the HY Site Manager				
Manual Handling											
Back injuries/sprains and strains		C	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.				
Cuts to hands		C	4	Medium	WHS Regulation 2011 Part 4.2 Hazardous Manual Tasks		Gloves to be worn for manual handling tasks as per Hansen Yuncken glove & clip policy				
					NSW Code Of Practice: Hazardous Manual Tasks						
					AS/INZS 2161 Occupational protective gloves						
					UON HCCD 1A: WHS Plan						

## PROJECT HSE RISK ASSESSMENT

This Project HSE Risk Assessment is to be used as a guide 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 status 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		RISK ASSESSMENT TABLE		Consequence						
PROJECT:	Honeysuckle City Campus Development Stage 1A				1	2	3	4	5		
JOB NO:	SN96				Likelihood	Significant	Major	Moderate	Minor	Insignificant	
ASSESSED BY:	Dale Reith				A	Very Likely	High	High	High	Medium	Medium
ASSESSMENT DATE:	- PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-WAY				B	Likely	High	High	Medium	Medium	Medium
					C	Possible	High	Medium	Medium	Medium	Low
					D	Remotely Possible	Medium	Medium	Medium	Low	Low
					E	Very Unlikely	Medium	Medium	Low	Low	Low
					NA	Not applicable	NA	NA	NA	NA	NA
	RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)								
HAZARD (Include additional project specific hazards as required)	L	C	Class	Legislation, Standards & Codes of Practice		Enter Details of Specific Controls Required					
Mobile Plant											
Mobile plant could strike a pedestrian worker on site	C	1	High	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 within the work areas of plant. People working within the work area of plant must be visible to the operator at all times.					
Mobile plant could crash into a structure or open trench	D	3	Medium	UON HCCD 1A WHS 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.					
Pedestrians/ workers being struck by mobile plant	C	1	High	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 contact 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.					
Plant roll over on unstable ground	E	3	Low	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 outriggers 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, frannas etc					
Possibility of scissor lift being driven off edge of concrete slab resulting in scissor lift tipping over	NA	2	NA	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					
Crushing Injury from scissor or boom lift	NA	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)					
Needle stick Injury											
Injured person could contract a disease	E	2	Medium	NSW Code Of Practice: HIV and other blood-borne pathogens in the workplace		Workers injured by needle stick to be sent to the nearest medical centre					
Workers unaware of what to do if a needle is found	E	4	Low	UON HCCD 1A WHS 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					
Inadequate disposal facilities for needles found on site	E	4	Low	NSW: Code Of Practice: Work Place Amenities		Sharps clean up kit to be kept in site office at all times					
Noise											
Hearing damage from general construction noise eg. power tool usage, jack hammering etc.	B	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					
Disruption to client and neighbours	D	5	Low	NWHSC 1007 - 2000 National Standard for Occupational Noise NWHSC 2009 - 2004 Noise Mgt & Protection of Hearing at Work		Notice of disruption to be issued to client if required. Work to be conducted within approved hours of DA contract only					
				AS/NZS 1269 Occupational noise management AS/NZS 1270 Acoustics - hearing protectors AS 2436 Guide to noise control on construction, maintenance & demolition sites							
				NSW Noise Management & Protection of Hearing at Work 1996							
				AS 2436: Guide to noise control on construction, maintenance & demolition sites							
				AS 2012: Acoustics – Measurement of Airborne Noise Emitted by Earthmoving Machinery & Agricultural Tractors							
				UON HCCD 1A WHS Plan							
				AS/NZS 1270: Acoustics - hearing protectors							
Overhead Power lines											
Power lines over main entry to site	NA	4	NA	UON HCCD 1A WHS Plan		All plant and workers must keep clear of overhead power lines as per Code Of Practice: Work near overhead power lines					
				NSW Code of Practice: Work near overhead power lines 2006							

<div>HANSENYUNCKEN</div>				<div>PROJECT HSE RISK ASSESSMENT</div> <div>This Project HSE Risk Assessment is to be used as a guide 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 status 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.</div>																	
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JOB NO:				SN96				A		Very Likely		High		High		High		Medium		Medium	
ASSESSED BY:				Dale Reith				B		Likely		High		High		Medium		Medium		Medium	
ASSESSMENT DATE:				- PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-WAY				C		Possible		High		Medium		Medium		Medium		Low	
								D		Remotely Possible		Medium		Medium		Medium		Low		Low	
								E		Very Unlikely		Medium		Medium		Low		Low		Low	
								NA		Not applicable		NA		NA		NA		NA		NA	
				RISK ASSESSMENT			CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)														
HAZARD (Include additional project specific hazards as required)				L	C	Class	Legislation, Standards & Codes of Practice				Enter Details of Specific Controls Required										
Plant & Equipment																					
Plant failure may cause serious injury to workers				D	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										
Poorly maintained ladders and scaffolding failing/ collapsing				D	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										
Use of damaged ladders				D	3	Medium	AS 4576: Guidelines for scaffolding				Ladders to be checked for damage weekly on the site safety walk										
Lifting gear failure				D	1	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.										
Scaffold collapse/ fall from scaffold				NA	1	NA	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.										
Multiple mobile plant interaction/ contact				D	1	Medium	UON HCCD 1A WHS Plan				Plant operators must communicate by way of 2 way radios, eye contact and spotters										
Vehicle and plant exhaust fumes				D	4	Low	HY ladder policy				Use of electric scissor lifts inside buildings only. All other diesel powered machines are used in open well ventilated areas										
Post Tensioning																					
Accidental drilling or cutting into PT cable				NA	2	NA					N/A this month. All subcontractors to obtain permit to cut concrete/ core. This permit will detail location of PT cables if applicable										
Plant & Equipment Washout																					
Water from cleaning plant and equipment creating a muddy/ slippery surface				D	4	Low	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										
Muddy and contaminated water entering stormwater system				D	4	Low	HY environmental management plan				Sediment control to be placed around the washout area										
Pressurised Gas Mains																					
Excavator buckets striking UNDERGROUND GAS LINES				D	1	Medium	NSW Code Of Practice: Excavation Work 2000				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										
							UON HCCD 1A WHS Plan														
							Jemena guidelines construction activities near and over Jemena has network assets														
Scaffold																					
Fall from heights over 2m				NA	1	NA	WHS Regulation 2011: Part 3.1 Managing risks to health and safety														
Fall from heights whilst forming up and pouring concrete				NA	3	NA	AS4576: Guidelines for scaffolding														
Insufficient safe means of access onto Ground Floor Slab from Basement Slab level				NA	5	NA	AS1576: Scaffold general requirements														
Insufficient egress from building in the event of an emergency				NA	5	NA	UON HCCD 1A WHS Plan														
Inadequate development of scaffold plan				NA	5	NA															
Possible scaffold overload resulting in scaffold collapse - materials and workers				NA	4	NA															
Scaffold sinking into soft ground compromising structural integrity				NA	3	NA															
Sediment and erosion control																					
Mud, dirt and sediment polluting stormwater systems				C	4	Medium	Environmental Protection Act 1994				HY Sediment Erosion Control plan Rev. 3										
Mud, dirt and sediment polluting stormwater systems				C	4	Medium	UON HCCD 1A 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										




## PROJECT HSE RISK ASSESSMENT

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RELEVANT PROCEDURE:	Project HSE Risk Assessment		RISK ASSESSMENT TABLE		Consequence				
PROJECT:	Honeysuckle City Campus Development Stage 1A		Likelihood		1	2	3	4	5
JOB NO:	SN96		A	Very Likely	High	High	High	Medium	Medium
ASSESSED BY:	Dale Reith		B	Likely	High	High	Medium	Medium	Medium
ASSESSMENT DATE:	- PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-WAY		C	Possible	High	Medium	Medium	Medium	Low
			D	Remotely Possible	Medium	Medium	Medium	Low	Low
			E	Very Unlikely	Medium	Medium	Low	Low	Low
			NA	Not applicable	NA	NA	NA	NA	NA
	RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)						
HAZARD (Include additional project specific hazards as required)	L	C	Class	Legislation, Standards & Codes of Practice		Enter Details of Specific Controls Required			
Site Lighting									
Sun glare restricting plant operators visibility	C	4	Medium	WHS Regulation 2011		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.			
Lighting (Poor)	NA	5	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			
Slips/Trips									
Workers slipping or tripping on rough/ uneven/ muddy/ slippery ground	C	3	Medium	AS/NZS 2210 Occupational protective footwear UON HCCD 1A WHS 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			
Structural Support									
Masonry walls collapsing in high winds	NA	1	NA	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			
Formwork collapse	NA	1	NA	AS 3850:Tilt Up Concrete Construction		Engineers sign off required to pouring of any concrete			
Precast concrete panel collapse if structural steel is inadequately braced	NA	1	NA	NSW Code of Practice: Formwork 1998		Structural steel must be signed off by engineer prior to installation of precast concrete panels			
Structural steel collapse	NA	1	NA	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			
Synthetic fibres									
Unsafe handling of roof insulation	NA	4	NA	NSW Code of Practice: Safe use of synthetic mineral fibres		Install roof insulation as per Safety Data Sheet and SWMS			
Temperature Extremes									
Dehydration	E	3	Low			Workers are encouraged to drink plenty of water. Water bubbler available at site lunch sheds			
Sunburn	C	3	Medium			Workers must wear a shirt on site. Singlets are not allowed. Sun cream is available to everyone and is kept in the site office			
Heat stress	E	3	Low			Workers are encouraged to work in the shade wherever possible and take regular breaks whenever required.			
Tilt -up or Precast Concrete Work									
Structural steel support collapse	A	1	High	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			
Injury to other workers/ trades	B	1	High	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			
Plant failure	B	1	High	National Code of Practice for Precast, Tilt Up and Concrete Elements in Building Construction 2008		All maintenance records and plant safety verification reports must be maintained and kept up to date			
Failure of lifting points on precast panels	C	1	High	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			
Concrete may not have cured to specified strength	C	2	Medium			HY precast panel installation checklist must be completed and all relevant documentation submitted, reviewed and approved by HY prior to installation of precast panels			
Crane roll over on unstable ground	B	1	High	AS 1418.1: Cranes, hoists and winches – General Requirements		Plant setup permit must be obtained by subcontractor prior to standing crane			
Exceed SWL of crane	B	2	High	AS 2321: Short link chain for lifting purposes		Work to SWL chart for crane at all times			
Lifting gear failure	A	3	High	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.			
Poor communication between crane operator and dogmen	C	3	Medium			Dogman and crane operator to constantly communicate with each other. Crane operator to take directions from dogman only.			





# PROJECT HSE RISK ASSESSMENT

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RELEVANT PROCEDURE:	Project HSE Risk Assessment		RISK ASSESSMENT TABLE		Consequence				
PROJECT:	Honeysuckle City Campus Development Stage 1A		Likelihood		1	2	3	4	5
JOB NO:	SN96		A	Very Likely	High	High	High	Medium	Medium
ASSESSED BY:	Dale Reith		B	Likely	High	High	Medium	Medium	Medium
ASSESSMENT DATE:	- PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-WAY		C	Possible	High	Medium	Medium	Medium	Low
			D	Remotely Possible	Medium	Medium	Medium	Low	Low
			E	Very Unlikely	Medium	Medium	Low	Low	Low
			NA	Not applicable	NA	NA	NA	NA	NA
			RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)				
HAZARD (Include additional project specific hazards as required)	L	C	Class	Legislation, Standards & Codes of Practice		Enter Details of Specific Controls Required			
Traffic Management									
Vehicles/ trucks speeding on site	B	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			
Vehicles parking and blocking access roads	B	4	Medium			Vehicles to be used for loading/unloading purposes only and are to be parked off site if not required for work purposes			
Blind spots creating collisions between vehicles	E	3	Low			Warning signs to be erected at blind spots			
Vehicle congestion on Birmingham Ave	A	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.			
Pedestrians entering site being struck by trucks and vehicles	A	2	High			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 separated through entry/ exit by way of concrete jersey kerbs			
Tree lopping									
Tree lopping	NA	4	NA			Area to be delineated and HRCW for falling from heights and Plant and Equipment			
Vehicle & plant exhaust fumes									
Workers overcome by exhaust fumes from plant	E	1	Medium	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			
Ventilation (poor)									
Workers overcome by fumes when using chemicals	E	1	Medium	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			
Violence									
Workers arguing and fighting	D	4	Low	Violence in the workplace guide 2002		Zero tolerance for fighting on site - instant dismissal			
Prisoners/Detainees inciting workers or vice versa	D	3	Medium	NSW Workplace Bullying 2008		All workers are instructed not to talk to the Prisoners at the site induction			
Waste Management/ Littering									
Inadequate bins on site to dispose of rubbish	E	3	Low	WHS Act/ Regulation 2011		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			
Bins attracting rodents	D	4	Low			Food scrap bins to be bagged and changed regularly			
Having to walk long distances to dispose of rubbish	D	4	Low			Numerous skip bins to be on site close to all work areas			
Workers littering the site with rubbish and off cuts instead of disposing of rubbish in bins provided	D	4	Low			Suspension/ improvement notices to be issued to subcontractors who leave the site untidy			
Water Contaminants									
Clean water around site becoming contaminated with mud	E	4	Low			Clean rain water is diverted around site by way of swales and sediment control			
Working at Height above 2m									
Workers dropping tools and material onto persons below	C	1	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.			
Scaffolders falling from heights during erection process	B	1	High	WHS Regulation 2011 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			
Perimeter scaffold collapse	NA	1	NA	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.			
Workers falling from roof	A	1	High	HY HSE procedure 9.46 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			
Mobile scaffold collapse	B	1	High	NSW Code of Practice: Managing the risk of falls at workplaces		\			
Workers falling from perimeter scaffold	NA	1	NA	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			
Fall from ladder	C	3	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.			
Fall from EWP/ boom lift	B	1	High	AS/NZS 1891 Industrial fall arrest systems & devices AS/NZS 4994 Temporary edge protection		W/P 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			

HANSENYUNCKEN

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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)						
HAZARD (Include additional project specific hazards as required)	L	C	Class	Legislation, Standards & Codes of Practice		Enter Details of Specific Controls Required			
Fall from scissor lift	B	1	High	NWHSC - Prevention of Falls in General Construction 2008		Timber or angle to be installed to the edge of concrete slabs to stop scissor lifts accidentally being driven off edge of slab. Scissor lift operators must have a EWPA yellow card or WP type ticket. Stabilizers and sole plates must be used for rough terrain scissors used on soft ground			
Inadequately installed roof perimeter handrail	B	1	High	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.			

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RELEVANT PROCEDURE:			Project HSE Risk Assessment			RISK ASSESSMENT TABLE		Consequence				
PROJECT:			Honeysuckle City Campus Development Stage 1A			Likelihood		1	2	3	4	5
JOB NO:			SN96			A	Very Likely	High	High	High	Medium	Medium
ASSESSED BY:			Dale Reith			B	Likely	High	High	Medium	Medium	Medium
ASSESSMENT DATE:			- PLEASE REFER ALSO TO HY RISK IDENTIFIER ON HY-WAY			C	Possible	High	Medium	Medium	Medium	Low
						D	Remotely Possible	Medium	Medium	Medium	Low	Low
						E	Very Unlikely	Medium	Medium	Low	Low	Low
						NA	Not applicable	NA	NA	NA	NA	NA
			RISK ASSESSMENT		CONTROLS (to be established in the following order of priority 1st=High Level Risks; 2nd = Medium Level Risks; 3rd = Low Level Risks)							
HAZARD (Include additional project specific hazards as required)			L	C	Class	Legislation, Standards & Codes of Practice			Enter Details of Specific Controls Required			
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			B	2	High	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.			
Bomb threat			E	4	Low	HY Procedure for Emergency Response			Procedure for bomb threats is part of the HY Emergency Response Plan			
Confined Space Rescue			E	3	Low	HY Procedure for Emergency Response			Procedure for confined space rescue is part of the HY Emergency Response Plan			
Cyclone			NA			HY Procedure for Emergency Response			N/A on the UON HCCD 1A Project			
Drowning			E	5	Low	HY Procedure for Emergency Response			Trenches are to be de-watered prior to any person working in around the area.			
Electric shock			D	1	Medium	HY Procedure for Defibrillators			Electric shock procedure detailed in the HY Emergency response plan			
Emergency services unavailability						HY Procedure for Emergency Response			N/A on the UON HCCD 1A Project.			
Fire			D	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			
First Aid (inadequate resources)			E	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 )			
Gas line contact or damage			D	2	Medium	HY Procedure for Emergency Response			Jemena contact details are part of the HY Emergency response plan			
Major rock fall/landslip			E	4	Low	HY Procedure for Emergency Response			Rockall procedure detailed in the HY Emergency response plan			
Major Fuel/Chemical Spill			E	3	Low	HY Procedure for Emergency Response			Fuel/ Chemical spill is part of the HY emergency response plan			
Medical Emergency			D	3	Medium	HY Procedure for Emergency Response			Medical emergency is part of the HY emergency response plan			
Overhead power line contact or arcing			NA	5	NA	HY Procedure for Emergency Response			Contact with overhead power lines is part of the HY emergency response plan			
Precast Panel Collapse			NA	1	NA	HY Procedure for Emergency Response			Precast panel collapse is part of the HY emergency response plan			
Structural failure/collapse			NA	1	NA	HY Procedure for Emergency Response			Structural collapse is part of the HY emergency response plan			
Trench collapse			D	1	Medium	HY Procedure for Emergency Response			Trench collapse is part of the HY emergency response plan			
Other: Riot inside UON HCCD 1A			E	1	Medium	HY Procedure for Emergency Response			Coordinate with staff from UON HCCD 1A . All contractor details for UON HCCD 1A are noted in the emergency response plan (refer to 2.4 Emergency Procedure Awareness in PMP)			

## 7.4 Construction Noise and Vibration Management Plan (AECOM)

# University of Newcastle - HCCD Stage 1A

## Construction Noise and Vibration Management Plan

**DRAFT**

## University of Newcastle - HCCD Stage 1A

### Construction Noise and Vibration Management Plan

Client: Hansen Yuncken Pty Ltd

ABN: 38 063 384 056

Prepared by

**AECOM Australia Pty Ltd**

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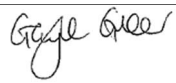
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Reviewed by    Gayle Greer

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			Name/Position	Signature
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# DRAFT

## 1.0 Introduction

### 1.1 Background

AECOM Australia Pty Ltd has been engaged by Hansen Yuncken Pty Ltd (HY) to prepare a Construction Noise and Vibration Management Plan (CNVMP) for the proposed construction of Building 1A at Honeysuckle City Campus Development (HCCD) located at 16B Honeysuckle Drive, Newcastle, NSW.

The purpose of this Construction Noise and Vibration Management Plan is to describe how impact associated with construction noise and vibration are managed throughout the duration of the project. Works are to be implemented in accordance with the management measures and strategies contained within this plan.

A construction noise and vibration impact assessment was undertaken previously and was detailed in the *University of Newcastle - HCCD Stage 1A - SSD Noise and Vibration Impact Assessment* dated 26 February 2020.

A glossary for acoustic terminology used within this report can be found in Appendix A.

### 1.2 Relevant guidelines

- *Interim Construction Noise Guideline* (ICNG), Department of Environment and Climate Change (DECC), 2009
- *Assessing Vibration: A Technical Guideline* (AVATG), Department of Environment and Conservation (DEC), 2006
- *NSW Road Noise Policy* (RNP), Department of Environment, Climate Change and Water (DECCW), 2011.

### 1.3 Site description and receivers

The site is part of the Honeysuckle City Campus of the University of Newcastle. It is bounded to the north, west and south by Honeysuckle Drive, Worth Place and Wright Lane respectively. It is bounded to the east by other parts of the HCCD.

Land use to the north of the site is predominantly residential with some commercial and tourism. The Honeysuckle Hotel is located beyond this, on the edge of the Hunter River. East of the site is the HCCD with residential, commercial, tourism and Newcastle Museum beyond. South of the site is also the HCCD with low to medium commercial and the NeW Space development on the other side of this. West of the site is predominantly residential and commercial developments.

The site location is shown in Figure 1.

**DRAFT****Figure 1 Site location****1.4 Proposed works**

HCCD Stage 1A comprises a new building on the Honeysuckle City Campus to accommodate the UoN School of Creative Industries (SOCl) and an Innovation Hub. These facilities will provide learning studios and flexible spaces for co-working, meetings and informal collaboration. HCCD Stage 1A includes:

- Design and construction of a single standing, multi-storey building on the corner of Worth Place and Honeysuckle Drive
- Space for the use of the Innovation Hub, SOCl and building fit out to make these spaces suitable for their uses
- Associated landscaping and infrastructure works.

The construction works would be undertaken in three main stages:

1. Site establishment and enabling works
2. Foundations
3. Frame and facade.

**1.5 Proposed construction hours**

The construction works are proposed to be scheduled during standard hours, which are as recommended in the ICNG as follows.

- Standard hours: 7 am to 6 pm Monday to Friday and 8 am to 1 pm Saturday;
- Out of hours: before 7 am and after 6 pm Monday to Friday, before 8 am and after 1 pm Saturday, and all Sunday and public holidays.

No work is generally expected to be required outside of standard hours.

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## 2.0 Noise criteria

Construction noise and vibration criteria were established in the *University of Newcastle - HCCD Stage 1A - SSD Noise and Vibration Impact Assessment* dated 26 February 2020 and have been reproduced in the following sections.

### 2.1 Noise management levels

The NSW Environment Protection Authority's (EPA) *Interim Construction Noise Guideline* (ICNG) is the principal guidance for the assessment and management of construction noise in NSW.

The project specific Noise Management Levels (NML) for residential receivers are summarised in Table 1.

**Table 1 Construction noise management levels – Residential receivers**

Residential receivers	Standard Hours NML $L_{Aeq}$ dB(A)	Highly Noise Affected Level $L_{Aeq}$ dB(A)
Honeysuckle development precinct	60	75

The NMLs for non-residential sensitive receivers located adjacent to the site are presented in Table 2.

**Table 2 Noise at sensitive land uses (other than residences) and commercial buildings**

Land Use	External noise levels, $L_{Aeq,15min}$ (applies when properties are in use)
Educational institutions	65 dB(A) <sup>1</sup>
Theatre	60 dB(A) <sup>1</sup>
Museum	65 dB(A) <sup>1</sup>
Commercial premises (including cafes, bars, restaurants, hotels and retail stores)	70 dB(A)

Notes:

1. Assumes an external to internal noise level reduction through a close window of 20 dB(A)

### 2.2 Maximum noise levels for plant and equipment

All plant and equipment used throughout the works should have an operating Sound Power Level less than or equal to those in Table 3.

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**Table 3 Equipment sound power levels**

Equipment	Maximum allowable Sound Power Level, dB(A)
Backhoe	104
Concrete truck	108
Concrete pump	108
Crane	105
Dump Truck	110
Excavator - large	107
General hand tools (electric)	102
Grader	110
Piling rig - rotary	111
Truck - large	107
Vibratory roller	108
Water Cart	107
Pneumatic jackhammer	113

## 2.3 Construction road traffic noise criteria

The noise from construction traffic on public roads is not covered by the ICNG. However the ICNG does refer to the Environmental Criteria for Road traffic Noise (ECRTN), now superseded by the NSW Road Noise Policy (RNP), for the assessment of noise arising from construction traffic on public roads.

To assess noise impacts from construction traffic, an initial screening test should be undertaken by evaluating whether existing road traffic noise levels would increase by more than 2 dB(A). Where the predicted noise increase is 2 dB(A) or less, then no further assessment is required. However, where the predicted noise level increase is greater than 2 dB(A), and the predicted road traffic noise level exceeds the road category specific criterion then noise mitigation should be considered for those receivers affected. An increase of up to 2 dB(A) represents a minor impact that is considered barely perceptible to the average person.

The RNP does not require assessment of noise impact to commercial or industrial receivers.

## 2.4 Construction vibration criteria

### 2.4.1 Structural damage

Vibration criteria for structural damage have been established with consideration to:

- British Standard BS 7385:1993 *Evaluation and Measurement for Vibration in Buildings – Part 2: Guide to Damage Levels from Ground Borne Vibration* for guidance on cosmetic damage to residential/commercial buildings
- German Standard DIN 4150-3:1999-02 *Structural Vibration – Part 3: Effects of vibration on structures* for guidance on cosmetic damage to heritage buildings.

BS 7385:1993 provides recommended maximum levels of vibration that are likely to cause residential/commercial building damage. These maximum levels are presented in Table 4.

**DRAFT****Table 4 Transient vibration guide for cosmetic damage (BS 7385:1993)**

Type of building	Peak component particle velocity in frequency range of predominant pulse <sup>1</sup>	
	4 Hz to 15 Hz	15 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
Reinforced or framed structures Industrial and heavy commercial buildings	50 mm/s at 4 Hz and above	

Notes:

1. Values referred to are at the base of the building

DIN 4150 provides guidance for recommended maximum levels of vibration for heritage structures that reduce the likelihood of building damage caused by vibration. These maximum levels are presented in Table 5.

**Table 5 Structural damage safe limits (DIN 4150) for building vibration (Vibration peak particle velocity)**

Type of structure	At foundation – Less than 10 Hz	At foundation – 10 Hz to 50 Hz	At foundation – 50 Hz to 100 Hz <sup>1</sup>	Vibration at the horizontal plane of the highest floor for all frequencies
Structures that because of their particular sensitivity to vibration, do not correspond to those listed in Lines 1 or 2 and have intrinsic value (e.g. buildings that are under a preservation order/heritage listed)	3 mm/s	3 to 8 mm/s	8 to 10 mm/s	8 mm/s

Notes:

1. At frequencies above 100 Hz, the values given in this column may be used as minimum values

**2.4.2 Human comfort**

The assessment of intermittent vibration outlined in the NSW EPA guideline *Assessing Vibration: A Technical Guideline* (AVTG) is based on Vibration Dose Values (VDVs). The VDV accumulates the vibration energy received over the daytime and night-time periods.

VDV criteria for intermittent vibration arising from construction activities are listed in Table 6. The VDV criteria are based on the likelihood that a person would comment adversely on the level of vibration over the entire assessment period.

**DRAFT****Table 6 VDV<sub>s</sub> for intermittent vibration with low probability of adverse comment (m/s<sup>1.75</sup>)**

Location	Daytime 7am – 10pm	Night-time 10pm – 7am
Residences	0.2 - 0.4	0.13 - 0.26
Offices, schools, educational institutions and places of worship	0.4 - 0.8	0.4 - 0.8

### 3.0 Noise and vibration management and mitigation strategies

#### 3.1 Project specific noise and vibration mitigation measures

The *University of Newcastle - HCCD Stage 1A - SSD Noise and Vibration Impact Assessment* noted that potential construction noise impacts within the vicinity of the project may be high, in some cases the construction noise levels may exceed 75 dB(A) at the nearest receivers.

Table 7 presents the recommended project specific mitigation measures.

**Table 7 Project specific noise mitigation measures**

Action required	Safeguard details
<b>Management measures</b>	
Implement community consultation measures	Periodic notification (monthly letterbox drop or equivalent), website, Project Infoline, Construction Response Line, email distribution list and community and stakeholder meetings.
Site inductions	All employees, contractors and subcontractors are to receive an environmental induction. The induction must include all relevant noise and vibration mitigation measures, construction hours, any limitations on high noise generating activities.
Behavioural practices	No swearing or unnecessary shouting or loud stereos/radios on site. No dropping of materials from height, throwing of metal items and slamming of doors. No excessive revving of plant and vehicle engines.
Monitoring	A noise monitoring program should be considered in accordance with the CNVMP.
Attended vibration measurements	Attended vibration measurements are recommended at the commencement of vibration generating activities to determine site specific minimum working distances.  Vibration intensive work should not proceed within the minimum working distances unless a permanent vibration monitoring system is installed approximately a metre from the building footprint, to warn operators (via flashing light, audible alarm, SMS etc.) when vibration levels are approaching the peak particle velocity objective.
Construction hours and scheduling	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. Consideration should be given to avoiding examination periods.



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Action required	Safeguard details
Construction respite period	<p>High noise and vibration generating activities (eg rock breaking) may only be carried out in continuous blocks, not exceeding three hours each, with a minimum respite period of one hour between each block.</p> <p>Respite periods would be negotiated with the community for construction activities expected to generate high levels of vibration.</p>
<b>Source controls</b>	
Equipment selection and maintenance	Use quieter and less vibration emitting construction methods where feasible and reasonable. Equipment would be regularly inspected and maintained to ensure it is in good working order.
Maximum noise levels	The noise levels of plant and equipment must have operating sound power levels compliant with Table 3.
Rental plant and equipment	Noise emissions should be considered as part of the selection process.
Use and siting of plant	<p>Avoid simultaneous operation of noisy plant within discernible range of a sensitive receiver.</p> <p>The offset distance between noisy plant and adjacent sensitive receivers is to be maximised.</p> <p>Plant used intermittently to be throttled down or shut down.</p> <p>Plant and vehicles to be turned off when not in use.</p> <p>Noise-emitting plant to be directed away from sensitive receivers.</p>
Plan works site and activities to minimise noise and vibration	Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site.
Non-tonal reversing alarms	Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out of hours work.
Minimise disturbance arising from delivery of goods to construction sites	<p>Loading and unloading of materials/deliveries is to occur as far as possible from sensitive receivers.</p> <p>Select site access points and roads as far as possible away from sensitive receivers.</p> <p>Dedicated loading/unloading areas to be shielded if close to sensitive receivers.</p> <p>Delivery vehicles to be fitted with straps rather than chains for unloading, wherever possible.</p>
Construction related traffic	<p>Schedule and route vehicle movements away from sensitive receivers and during less sensitive times.</p> <p>Limit the speed of vehicles and avoid the use of engine compression brakes.</p> <p>Maximise on-site storage capacity to reduce the need for truck movements during sensitive times.</p>

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Action required	Safeguard details
Silencers on Mobile Plant	Where possible reduce noise from mobile plant through additional fittings including: <ul style="list-style-type: none"> <li>Residential grade mufflers</li> <li>Damped hammers such as “City” Model Rammer Hammers</li> <li>Air parking brake engagement is silenced</li> </ul>
Alternative methods	The use of less vibration-intensive methods of construction or equipment is preferred where practical to reduce the potential for cosmetic damage. All equipment should be maintained and operated in an efficient manner, in accordance with manufacturer’s specifications, to reduce the potential for adverse vibration impacts
<b>Path controls</b>	
Shield stationary noise sources such as pumps, compressors, fans etc.	Stationary noise sources should be enclosed or shielded whilst ensuring that the occupational health and safety of workers is maintained.
Shield sensitive receivers from noisy activities	Use structures to shield residential receivers from noise such as site shed placement; earth bunds; fencing; erection of operational stage noise barriers (where practicable) and consideration of site topography when siting plant.

### 3.2 Community consultation and complaints handling

All residents and other sensitive receivers impacted by noise and/or vibration from the proposed works which is expected to exceed the NML/vibration criteria should be informed about the project prior to the commencement of the particular activity, with the highest consideration given to those that are predicted to be most affected as a result of the works.

The information provided to the residents/building occupants should include:

- programmed times and locations of construction work
- the hours of proposed works
- construction noise and vibration impact predictions
- construction noise and vibration mitigation measures being implemented on site.

Community consultation regarding construction noise and vibration should be detailed in a Community Liaison Plan for the construction of the project and should include a 24 hour hotline and complaints management process.



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## 4.0 Monitoring

### 4.1 Monitoring and reporting

A monitoring program should be developed and include recommendations to complete attended measurements at the commencement of construction stages and in response to any complaints. The sections below outline items to be considered for inclusion in the program.

### 4.2 Monitoring procedure

The measurements should be conducted in accordance with the procedures outlined in Australian Standard AS 1055 *Acoustics – Description and measurement of environmental noise* and in accordance with methods outlined in the NSW Noise Policy for Industry (NPfI). The following points should be followed when conducting noise monitoring:

- a field calibration should be conducted before and after measurements
- the sound level meters must be set to an A-weighting and Fast
- the sound level meters sample period should be set to 15 minutes
- the following descriptors should be measured as a minimum:  $L_{A1}$ ,  $L_{Aeq}$  and  $L_{A90}$
- measurements should be conducted a minimum of 3 metres from the nearest façade and/or solid fence/wall. If it is not possible to do this, corrections for façade reflection should be applied to the measurement results.

### 4.3 Monitoring of equipment procedure

In addition to the residential noise monitoring procedures described above, the following equipment measurements should be undertaken:

- noise emission levels of all critical items of mobile plant and equipment should be checked for compliance with noise limits appropriate to those items prior to the equipment going into regular service
- for equipment and mobile plant used for construction works,  $L_{Aeq}$  measurements should be taken at an appropriate distance, normally 7m and converted to a Sound Power Level
- an Equipment Noise Certificate, presenting relevant sound levels of the equipment tested, should be issued within the first week of the equipment commencing at the construction site.

The equipment sound power levels should be compared to the levels presented in Table 3. If noise checks on any equipment result in a prediction of non-compliance, noise mitigation strategies to achieve compliance should be developed.

### 4.4 Equipment

All acoustic instrumentation employed throughout the monitoring programme should comply with the requirements of AS IEC 61672.1-2004 *Electroacoustics - Sound level meters – Specifications*. All sound level meters must have current calibration certificate from a NATA accredited laboratory in accordance with NATA guidelines. Instrument calibration should be checked before and after each measurement survey, with the variation in calibrated levels not exceeding  $\pm 0.5$  dB.

### 4.5 Monitoring & reporting schedule

#### 4.5.1 Construction monitoring schedule

Table 8 below provides a preliminary monitoring schedule for construction.

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**Table 8 Construction noise monitoring schedule**

Schedule Day	Action
During first month of each construction stage	Complete one round of operator-attended 15 minute noise monitoring on separate days at closest noise sensitive receivers to the north, south, east and west.
	Carry out equipment noise level checks on all critical items of plant and issue Equipment Noise Certificates
During subsequent months of construction period	Carry out equipment noise level checks on any new (untested) items of critical plant and issue Equipment Noise Certificates

## 4.6 Reporting

### 4.6.1 Reporting details

The following information must be included in the quarterly reports:

- Field calibration results (before and after measurements);
- Measurement times and dates;
- Qualitative description of the noise environment during the measurements;
- $L_{A1}$ ,  $L_{Aeq}$  and  $L_{A90}$  levels;
- Meteorological conditions during the measurements; and
- Estimation of or recorded noise contribution from other major noise sources.

A summary of the results of the quarterly reports should be included in the annual environmental report.

### 4.6.2 Record keeping

The Site Environmental Officer shall establish and maintain a system of records which provides full documentation of all noise monitoring results, complaint handling and responses to non-compliances. The Site Environmental Officer shall establish and maintain procedures for the collection, indexing, filing, storage and maintenance of the records.

## 4.7 Roles and responsibilities

Roles for the CNVMP are consistent with the overarching CEMP. Responsibilities for the implementation of the CNVMP are summarised in Table 9.

**DRAFT****Table 9 Roles and Responsibilities**

<b>Role</b>	<b>Responsibilities</b>
Site Environmental Manager	<ul style="list-style-type: none"><li>• Overall implementation of the CNVMP</li><li>• Implement methodology for avoiding excessive noise emissions</li><li>• Authorise and confirm the implementation of mitigation measures</li></ul>
Site Environmental Manager	<ul style="list-style-type: none"><li>• Coordinate monitoring and compile reports</li><li>• Maintain internal records of monitoring</li><li>• Collate and maintain records of complaints, respond to complainant</li><li>• Identify Non Conformances</li><li>• Review and update the Noise Management Plan as required</li></ul>
Site Environmental Officer	<ul style="list-style-type: none"><li>• Undertake monitoring required by the CNVMP</li><li>• Communication with EPA, as required</li></ul>

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### 5.0 Complaints handling procedure

A complaint handling procedure should be developed and documented. The following section outlines items to be considered for inclusion in the procedure.

If complaints are received, an Environmental Incident Report Form should be completed to record details of the occurrence and actions taken. Where applicable, completed forms should detail the following:

- the date and time of the complaint
- the method by which the complaint was made
- any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect
- the nature of the complaint
- description of noise source that is the subject of complaint, duration of event
- location of complainant during time of incident, and general area in which the noise source was located
- identification of project related noise activities and locations that could have or are known to have contributed to the incident
- if known, identification of non-project related noise emission activities and location at time of incident
- meteorological conditions at the time of the incident
- the action taken in relation to the complaint
- any follow-up contact with the complainant
- if no action was taken, the reason why no action was taken.

All records are to be kept in a legible form, or in a form that can readily be reduced to a legible form and kept for at least 4 years after the complaint or event to which they relate took place.

The Site Environmental Officer will make available a report on complaints received to the relevant Government Agencies upon request. A summary will be included in the annual environmental report.

A response should be provided to the complainant within 24 hours. Corrective actions may involve supplementary monitoring to identify any non-compliances, and/or may involve modification of construction or operational techniques to avoid any recurrence or minimise impacts.

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## 6.0 Review and continual improvement

A regular review (quarterly) and update to the CNVMP shall be conducted taking into account:

- complaints regarding noise
- results of the community consultation
- any significant changes to operations
- changes in land use
- incidents related to noise emission exceedance.

The CNVMP should be viewed as a live document and updated as necessary.

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# Appendix A

## Glossary of Acoustic Terminology

**DRAFT****Appendix A Glossary of Acoustic Terminology**

The following is a brief description of acoustic terminology used in this report.

<i>Sound power level</i>	The total sound emitted by a source																						
<i>Sound pressure level</i>	The amount of sound at a specified point																						
<i>Decibel [dB]</i>	The measurement unit of sound																						
<i>A Weighted decibels [dB(A)]</i>	The A weighting is a frequency filter applied to measured noise levels to represent how humans hear sounds. The A-weighting filter emphasises frequencies in the speech range (between 1kHz and 4 kHz) which the human ear is most sensitive to, and places less emphasis on low frequencies at which the human ear is not so sensitive. When an overall sound level is A-weighted it is expressed in units of dB(A).																						
<i>Decibel scale</i>	<p>The decibel scale is logarithmic in order to produce a better representation of the response of the human ear. A 3 dB increase in the sound pressure level corresponds to a doubling in the sound energy. A 10 dB increase in the sound pressure level corresponds to a perceived doubling in volume. Examples of decibel levels of common sounds are as follows:</p> <table> <tr> <td>0dB(A)</td><td>Threshold of human hearing</td></tr> <tr> <td>30dB(A)</td><td>A quiet country park</td></tr> <tr> <td>40dB(A)</td><td>Whisper in a library</td></tr> <tr> <td>50dB(A)</td><td>Open office space</td></tr> <tr> <td>70dB(A)</td><td>Inside a car on a freeway</td></tr> <tr> <td>80dB(A)</td><td>Outboard motor</td></tr> <tr> <td>90dB(A)</td><td>Heavy truck pass-by</td></tr> <tr> <td>100dB(A)</td><td>Jackhammer/Subway train</td></tr> <tr> <td>110 dB(A)</td><td>Rock Concert</td></tr> <tr> <td>115dB(A)</td><td>Limit of sound permitted in industry</td></tr> <tr> <td>120dB(A)</td><td>747 take off at 250 metres</td></tr> </table>	0dB(A)	Threshold of human hearing	30dB(A)	A quiet country park	40dB(A)	Whisper in a library	50dB(A)	Open office space	70dB(A)	Inside a car on a freeway	80dB(A)	Outboard motor	90dB(A)	Heavy truck pass-by	100dB(A)	Jackhammer/Subway train	110 dB(A)	Rock Concert	115dB(A)	Limit of sound permitted in industry	120dB(A)	747 take off at 250 metres
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<i>Frequency [f]</i>	The repetition rate of the cycle measured in Hertz (Hz). The frequency corresponds to the pitch of the sound. A high frequency corresponds to a high pitched sound and a low frequency to a low pitched sound.																						
<i>Equivalent continuous sound level [<math>L_{eq}</math>]</i>	The constant sound level which, when occurring over the same period of time, would result in the receiver experiencing the same amount of sound energy.																						
$L_{max}$	The maximum sound pressure level measured over the measurement period																						
$L_{min}$	The minimum sound pressure level measured over the measurement period																						
$L_{10}$	The sound pressure level exceeded for 10 per cent of the measurement period. For 10 per cent of the measurement period it was louder than the $L_{10}$ .																						

# DRAFT

<i>L<sub>90</sub></i>	The sound pressure level exceeded for 90 per cent of the measurement period. For 90 per cent of the measurement period it was louder than the L <sub>90</sub> .
<i>Ambient noise</i>	The all-encompassing noise at a point composed of sound from all sources near and far.
<i>Background noise</i>	The underlying level of noise present in the ambient noise when extraneous noise (such as transient traffic and dogs barking) is removed. The L <sub>90</sub> sound pressure level is used to quantify background noise.
<i>Traffic noise</i>	The total noise resulting from road traffic. The L <sub>eq</sub> sound pressure level is used to quantify traffic noise.
<i>Day</i>	The period from 0700 to 1800 h Monday to Saturday and 0800 to 1800 h Sundays and Public Holidays.
<i>Evening</i>	The period from 1800 to 2200 h Monday to Sunday and Public Holidays.
<i>Night</i>	The period from 2200 to 0700 h Monday to Saturday and 2200 to 0800 h Sundays and Public Holidays.
<i>Assessment background level [ABL]</i>	The overall background level for each day, evening and night period for <b>each day</b> of the noise monitoring.
<i>Rating background level [RBL]</i>	The overall background level for each day, evening and night period for the <b>entire length</b> of noise monitoring.
<i>Weighted sound reduction index [R<sub>w</sub>]</i>	A single figure representation of the air-borne sound insulation of a partition based upon the R values for each frequency measured in a laboratory environment.

\*Definitions of a number of terms have been adapted from Australian Standard AS1633:1985 "Acoustics – Glossary of terms and related symbols", the EPA's *Noise Policy for Industry and Road Noise Policy*.

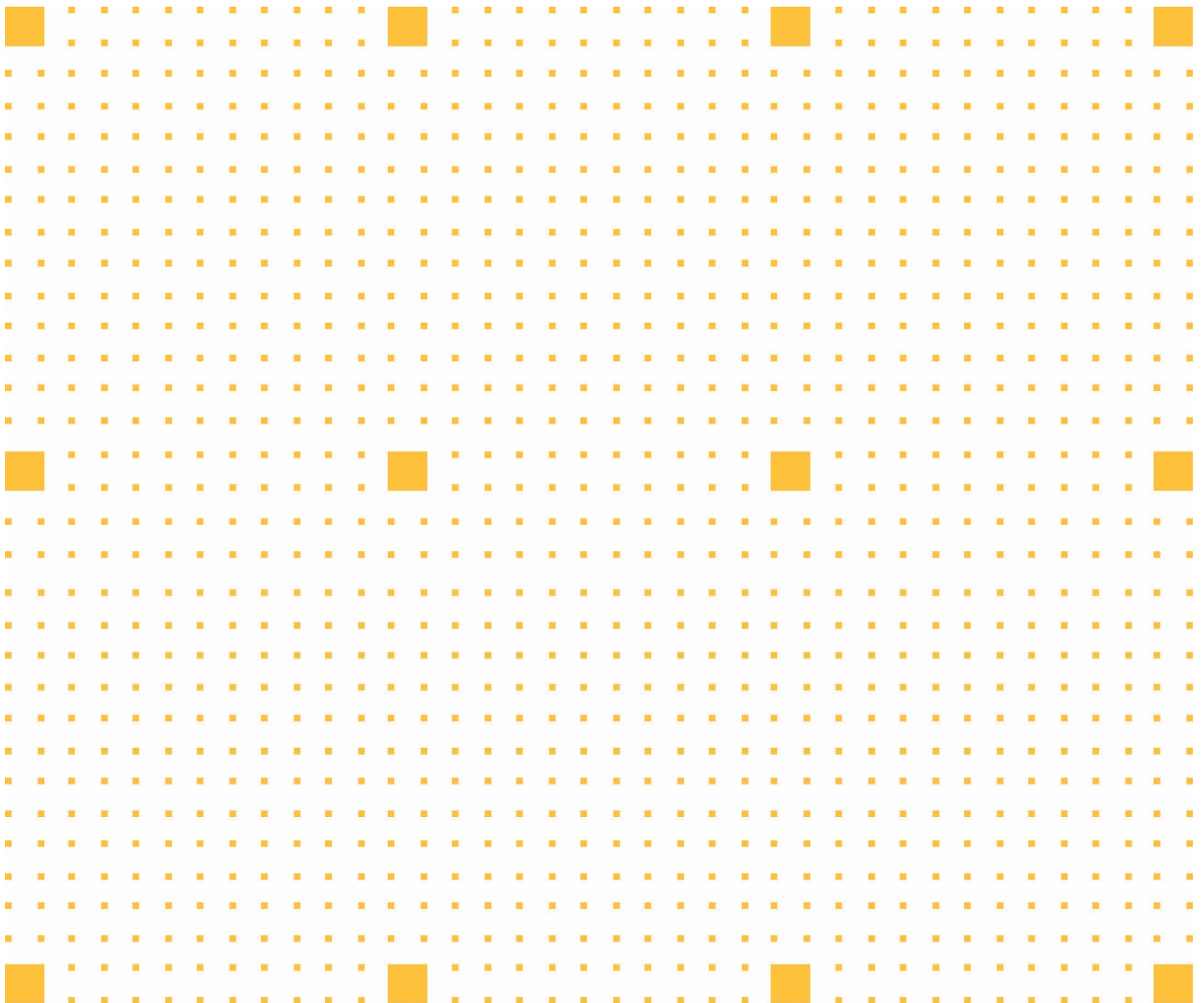


## 7.5 Construction Traffic Management Plan (GTS)

## Construction Traffic and Pedestrian Management Plan

Project: Honeysuckle City Campus Development – Stage 1A

Job No: SN96



Rev: 1 – Mar 2020

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## 1 Introduction

### 1.1 Review & Approval

Refer to Project Management Plan Responsibility Matrix for traffic management responsibility, input and approval

Position	Name	Sign	Date
<b>Review</b>			
Site Safety Officer	Dale Reith		
Site Manager	Dale Reith		
Project Manager	Jonathan Russell		
State HSE Manager	Peter Fay		
<b>Approval</b>			
State Construction Manager	Mick Parker		

### 1.2 Revision history

Rev.	Date	Description of amendments	Author	Checked

### 1.3 Definitions & Abbreviations

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

<b>CORP</b>	Hansen Yuncken Corporate
<b>HSE</b>	Health, Safety & Environment
<b>HY</b>	Hansen Yuncken Pty Ltd
<b>PLN</b>	HY Plan
<b>PPE</b>	Personal Protective Equipment
<b>PR</b>	Procedure
<b>S/C</b>	Subcontract(s) or Subcontractor(s) as the context requires

### 1.4 Legislation, Standards & Codes of Practice

Traffic shall be controlled in accordance with either of the following, depending on the contract or site conditions and requirements.

- **AS 1742.3** Manual for uniform traffic control devices, Part 3 – Traffic control devices for works on roads
- **SAA HB81.1 to HB81.6** Field guides for traffic control at works on roads. Part 1 to Part 6 cover various examples of work on different roads and under different conditions

## 2 Traffic and Pedestrian Management Plan Overview

### 2.1 Consultation and Expertise

Hansen Yuncken's CTPMP is to be employed in strict accordance with '*Honeysuckle City Campus Development Construction Traffic Management Plan Stage 1A*' ver03 dated 1/5/19 produced by SECA Solution and *Traffic Management Plan 0051736303* produced by Gateshead Traffic Solutions Pty. Ltd. (attached as appendix 4.2)

SECA solutions CTMP was produced in consultation relevant authorities including TfNSW, Newcastle Transport, Roads and Maritime Services.

Gateshead Traffic Solutions TMP was produced in consultation with local council.

### 2.2 Cumulative Impacts of Construction

The project is expected to have minor cumulative impact only on peak construction activity days. These are days of concrete pouring and delivery of precast concrete panel elements. This work commences on 27/07/20 and will be completed by 21/10/20. Following this period it is anticipated that the project will not have a cumulative impact on the immediate area.

### 2.3 Community Consultation and Notification

It is anticipated that the construction works will not disrupt current traffic conditions, particularly with respect to local bus routes.

Should a disruption be expected, relevant stakeholders will be notified either via email or letterbox drop, whichever is deemed more appropriate at the time.

## 3 Traffic Management Requirements

### 3.1 Hours of Construction

Construction hours are to be restricted to standard hours of construction consistent with the Interim Construction Noise Guideline.

- 07:00 – 18:00 Monday - Friday
- 08:00 – 13:00 Saturday

### 3.2 Proposed Work Zones

The project does not require any work zones to be implemented. All construction work is to be contained wholly within the site.

### 3.3 Anticipated Vehicle Movements and Peak Construction Activities

Due to the nature of the work the maximum number of trucks through the day could 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 larger deliveries via semi-trailers. These vehicles be able to manoeuvre within the site to exit in a forward direction.

The peak construction activities potentially impacting traffic are concrete pours. As the project features precast concrete and timber construction generally, pour days for bulk of the structure are expected to be maximum of 10 for the entire project. It is determined therefore that the project is unlikely to have any true impact on local traffic in the area.

Heavy rigid (non-articulated) vehicles delivering mass timber elements for the project are expected at maximum of 2 per week.

All heavy vehicles arriving to site will have access to the site, bearing no impact to the surrounding streets

### 3.4 Programme of Peak Construction Activities

- **Project Commence: 10/6/20**
- Concrete Core Works (precast and in-situ): 27/07/20 – 21/10/20
- Mass Timber Works: 26/10/20 – 7/12/20
- Façade Works: 7/11/20 – 24/12/20
- External Works: 8/12/20 – 6/02/21
- **Project Completion: 6/02/21**

### 3.5 Signs

The purpose of road signing or work site protection is:

- to provide a safe work area to work within; and
- to safely move traffic through, around and past a work site with minimum inconvenience.

### 3.6 Traffic Controllers

Only competent persons who possess the relevant state certification shall be appointed as traffic controllers and when a traffic management plan is to be implemented, they must possess the relevant

competency to implement, and or audit and design the traffic management plans dependent on the competencies obtained.

### 3.7 Signage Placement or Modification

HY Site Manager is responsible to ensure that the placement of temporary signs and their location is placed as per Traffic Control Plan by a qualified Traffic Controller.

Any worker setting up temporary traffic control or modifying permanent traffic controls or directing traffic must have signed a SWMS which has been reviewed by Hansen Yuncken.

The traffic controllers must be wearing the required PPE for the activity which is required to be nominated in the SWMS.

Any existing signs that do not apply shall be covered as per the approved traffic management plan.

### 3.8 Pedestrian Paths

Paths shall be safe and at least 1.2 metres wide.

### 3.9 Maintenance of Existing Traffic Flow

Existing traffic flows shall be maintained and only modified for short periods when other alternatives have been exhausted.

### 3.10 Site Access

The main entrance to the site shall be from **Wright Lane**. Warning signs will be placed along approximately 150m from the main entrance in both directions to warn traffic that vehicles will be crossing.

The access points into the site are indicated on the attached Traffic Control Plan along with Traffic Control Devices which will be put in place for the duration of the project and Temporary Traffic Control which will take place from time to time to bring in long or wide loads for items such as Structural Steel and Roof Sheet.

#### 3.10.1 Exiting Site

Vehicles under 23t GVM will exit the site via Wright Lane onto Settlement Way.

In accordance with SECA TMP, vehicles greater than 23t GVM shall exit the site via Wright Lane, returning to Honeysuckle Dr at Workshop Way. This is in accordance with Council approval of this TMP. This is to be conducted under ticketed traffic controller escort and approved council ROP only.

#### 3.10.2 Entering Site

All vehicles entering the site shall be done so under the control of ticketed traffic controllers.

#### 3.10.3 On Site Traffic Management

All on site traffic management will be managed through the Daily Pre Start Meetings.

### 3.11 Traffic Management Reporting and Effectiveness Monitoring

During the operation of a Traffic Guidance Scheme, a daily Traffic Management Report shall be completed using the *Traffic Management Report Checklist* in BIM360 or equivalent report by the Traffic



Management Subcontractor. The Subcontractors Traffic Management Report must be supplied to the Site Manager for future reference.

During the operation of a Traffic Guidance Scheme, daily routine tasks shall be undertaken in accordance with Appendix A of 1742.3;

- Before Work Starts.
- During Work Hours.
- Closing Down at the end of the day.
- After hours.

The effectiveness of the CTMP is to be reviewed weekly within the site team meetings. Any recommendations or concerns are to be addressed the following business day.

### 3.12 Special Deliveries

The project will not require any special deliveries to be coordinated i.e. long or wide loads requiring separate approval or escort.

## 4 APPENDICES

### 4.1 Site Layout Plan

Refer PMP appendix 06

### 4.2 Site Traffic Control Plan

*Traffic Management Plan 0051736303* produced by Gateshead Traffic Solutions Pty. Ltd



Traffic Management Plan

Hansen Yuncken

Newcastle University Site – Honeysuckle Dr - Newcastle

Plan prepared by Luke Bannister – Prepare a Work Zone Traffic Management Plan No:  
0051736303

Please Note: This management plan is for the exclusive use of Gateshead Traffic Solutions Pty Ltd & their client ONLY.

### Prevailing Site Conditions

The site is located at the corner of Honeysuckle Dr and Worth Pl - Newcastle. Wright Ln runs along the southern border of the site. Honeysuckle Dr is one lane in either direction, with kerbside parking on both sides of the road and separated by an island. Worth Pl and Wright lane are one lane in either direction, with no parking and separated by an island. The posted speed limit is 50km/h. Church St is owned and managed by the City of Newcastle.

### Development and Construction Details

During the construction process, vehicles will be able to enter and exit through a driveway in Wright Ln. The majority of works will be conducted on site. During large scale construction works, footpath remediation and various other deliveries and crane works, part of all roadways may be utilised to accommodate work and plant vehicles. A tower crane will be erected to facilitate these works. All these works will be under traffic management by qualified traffic controllers. See Traffic Control Plan below. Please note the parking on Honeysuckle Dr will not be inhibited for the majority of the works. The hours of construction are Monday to Friday – 0700 – 1800 and Saturday 0800 – 1300. All permits will be submitted to the City of Newcastle.

### Construction Vehicle Plan

Construction vehicle parking is available on site. Should on site parking not be available on site at certain times, vehicles will be able to drop off materials and tools on site, with vehicles be required to park outside the CBD. Workers are encouraged to use the public transport options available.

### Heavy Vehicles Exiting Site (greater than 23t GVM)

Vehicles with a GVM greater than 23t shall be escorted back to Honeysuckle Dr under traffic control via Wright Ln which is a one-way street. This is to be done only under an approved Newcastle City Council Road Occupancy Permit (ROP). Signage shall be in place prior to this escorted heavy vehicle movement. All other vehicles to exit via Settlement Way.

### Public Transport

There will be no disruption to public transport throughout the duration of the works.

### Emergency Vehicle Access

Emergency vehicles will not be inhibited and will be given priority through any traffic control sites.

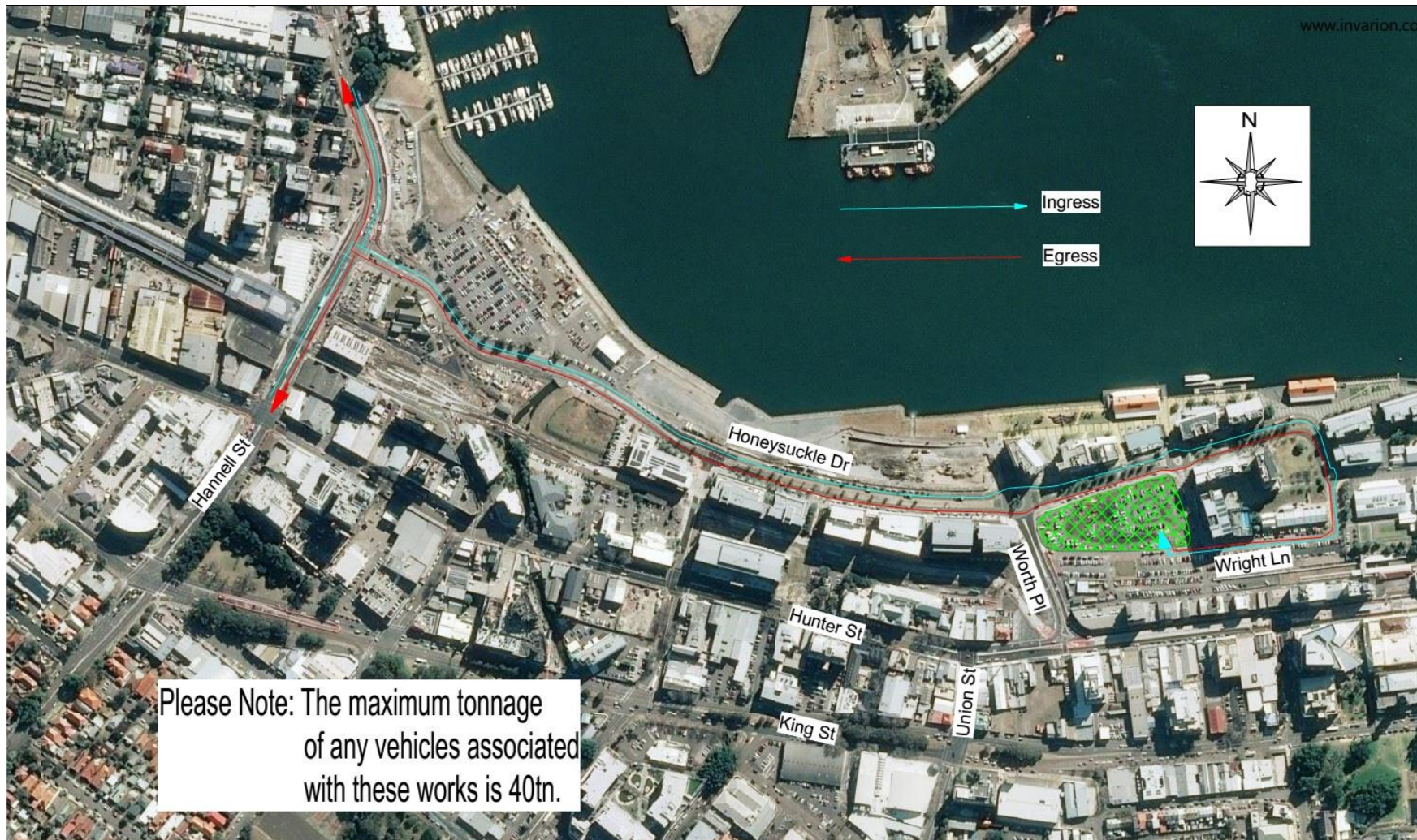
### Pedestrian Access

During the majority of the works, the footpath will be not be inhibited. Any works which inhibit pedestrians will be conducted under traffic management.

### Cyclist Access

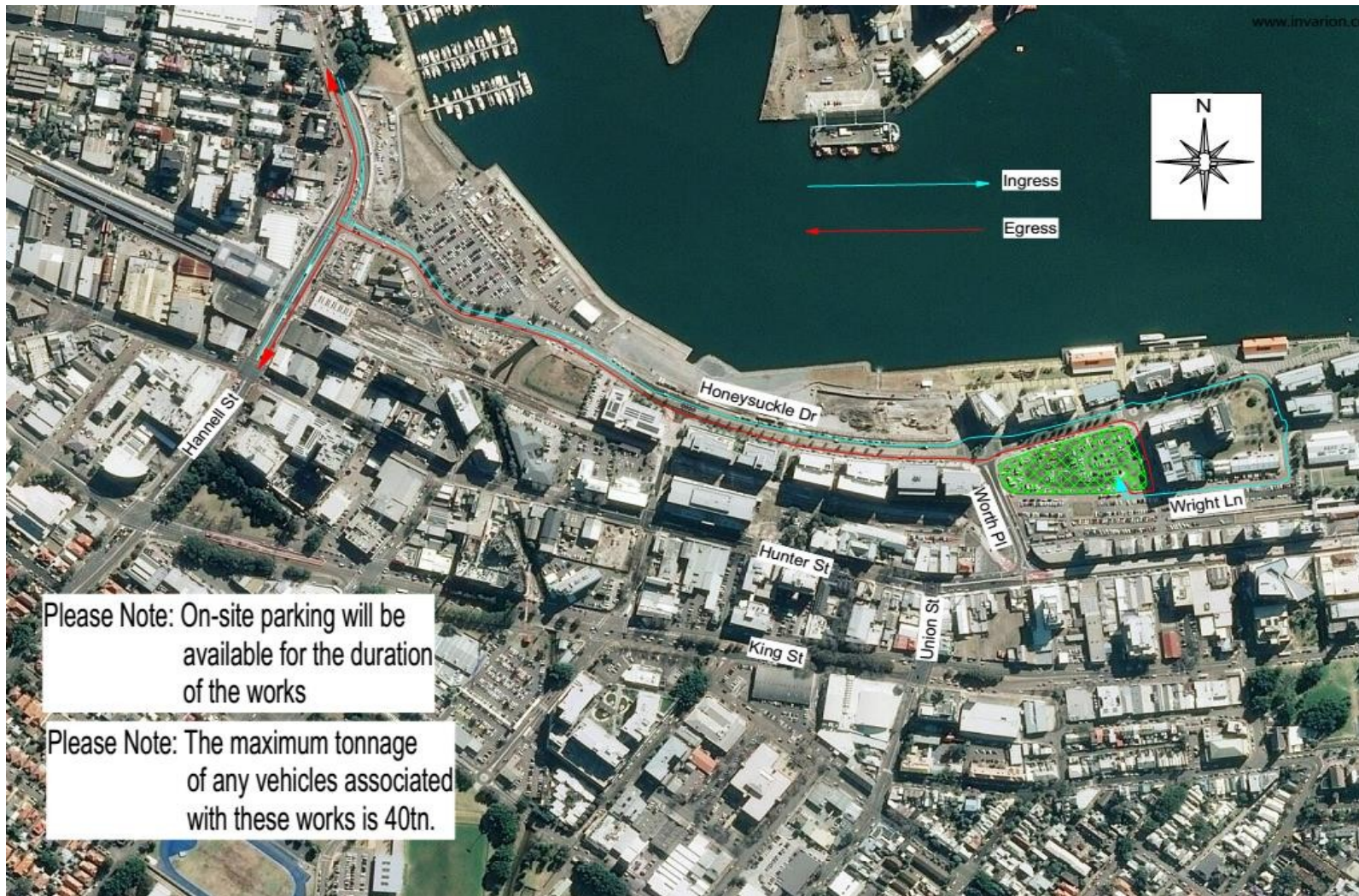
Cyclists will not be affected any differently than regular traffic.

Vehicle Routes >23t GVM





Vehicle Routes < 23t GVM





## Traffic Control Plans





Gateshead Traffic Solutions Pty Ltd  
PO Box 277  
Wickham  
NSW 2291

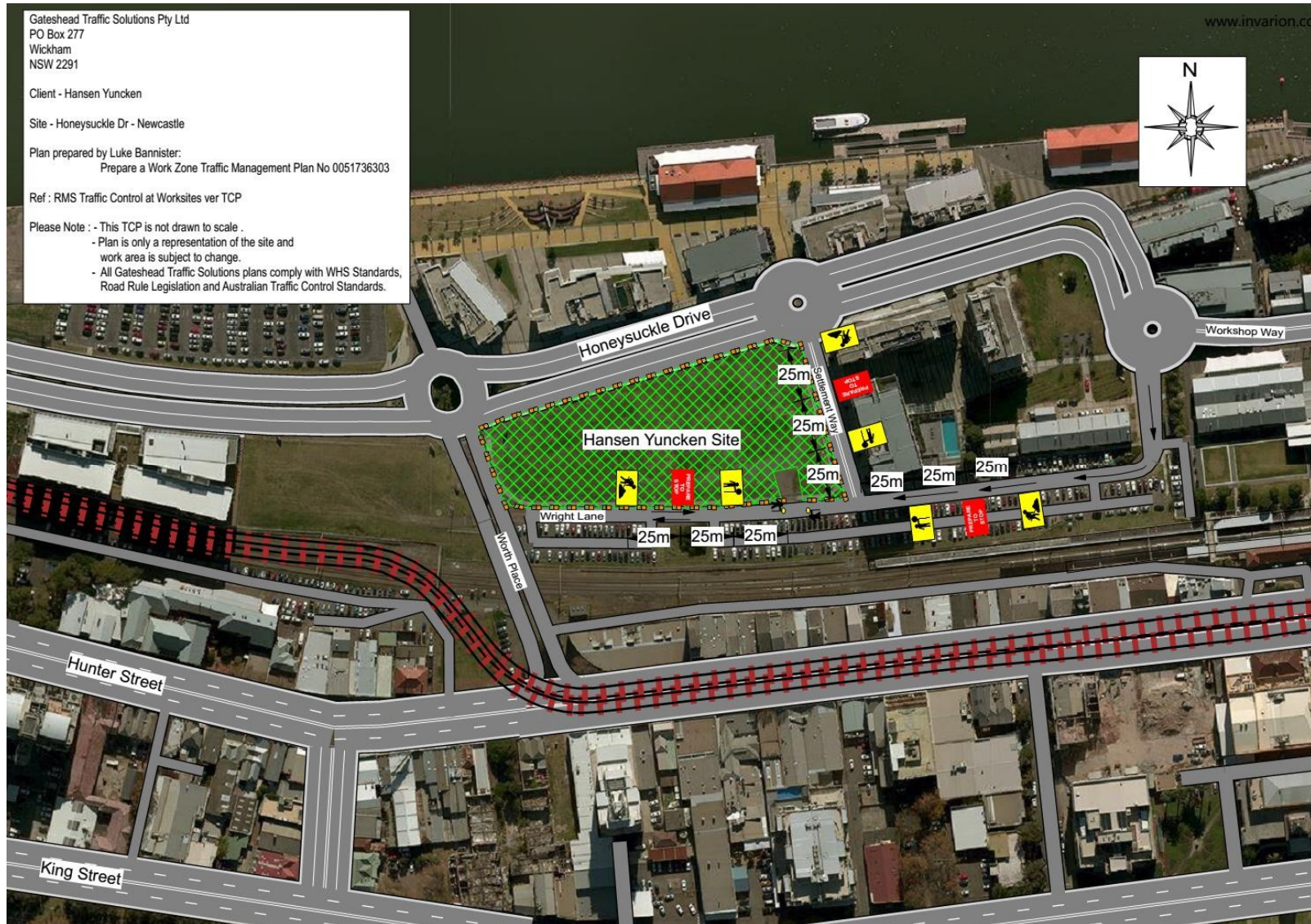
Client - Hansen Yuncken

Site - Honeysuckle Dr - Newcastle

Plan prepared by Luke Bannister:  
Prepare a Work Zone Traffic Management Plan No 0051736303

Ref : RMS Traffic Control at Worksites ver TCP

Please Note : - This TCP is not drawn to scale .  
- Plan is only a representation of the site and  
work area is subject to change.  
- All Gateshead Traffic Solutions plans comply with WHS Standards,  
Road Rule Legislation and Australian Traffic Control Standards.







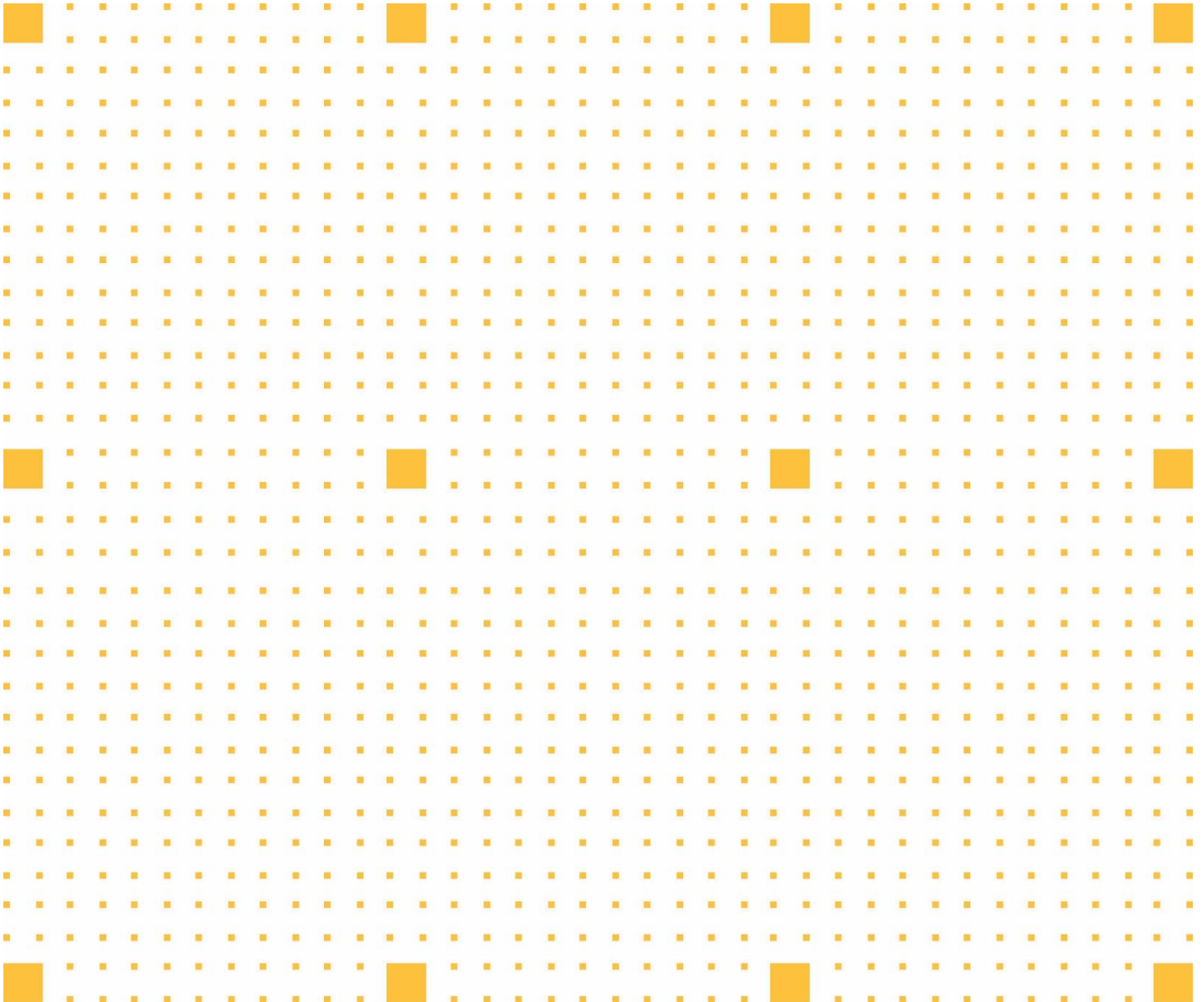
## 7.6 Construction Waste Management Plan



# Waste Management Plan

**Project: Honeysuckle City Campus Development – Stage 1A**

**Job No: SN965**



**Rev: A – Jan 2020**

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## 1 Document Information

### 1.1 Review and Approval

Position	Name	Sign	Date
Review			
Project Director	Pat McAllister		
Project Manager	Jonathan Russell		
Site Manager	Dale Reith		
Contracts Administrator	Michael Pratt		
Contracts Administrator	Peter Slavin		
Site Safety Officer	Dale Reith		
Site Engineer	Brianna Barnes		
Site Engineer	James Fearnly		
Foreman	Michael Stevens		
Approval			
Construction Manager	Mick Parker		
HSE Manager	Pater Fay		

### 1.2 Document Control

Revision	Description	Issued by	Issue date

## 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.

<b>EPA</b>	Environmental Protection Authority
<b>HY</b>	Hansen Yuncken
<b>WMP</b>	Waste Management Plan (this document)

## 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 applies to the lawful disposal of construction materials on “The Project” development during the construction period.

### 3.2 Scope of Works

The University of Newcastle Honeysuckle City Campus Development (HCCD) - Stage 1A project features construction of a 4 Storey, Cross-Laminated Timber structure with a precast concrete core and is primarily wrapped in a glass curtain wall facade. The ground level is of traditional slab-on-ground construction.

The development includes hard landscaping at ground level to unite the building with the public domain.

### 3.3 Objectives

The objectives of this plan is to identify, improve and monitor:

- 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 City of Newcastle; 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

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 <sup>3</sup>  |
| ■ Concrete        | 2.4 tonne per m <sup>3</sup>  |
| ■ Bricks / Blocks | 1.0 tonne per m <sup>3</sup>  |
| ■ Tiles           | 0.75 tonne per m <sup>3</sup> |
| ■ Steel           | 2- 4 tonne per m <sup>3</sup> |

## 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, and requirements of 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

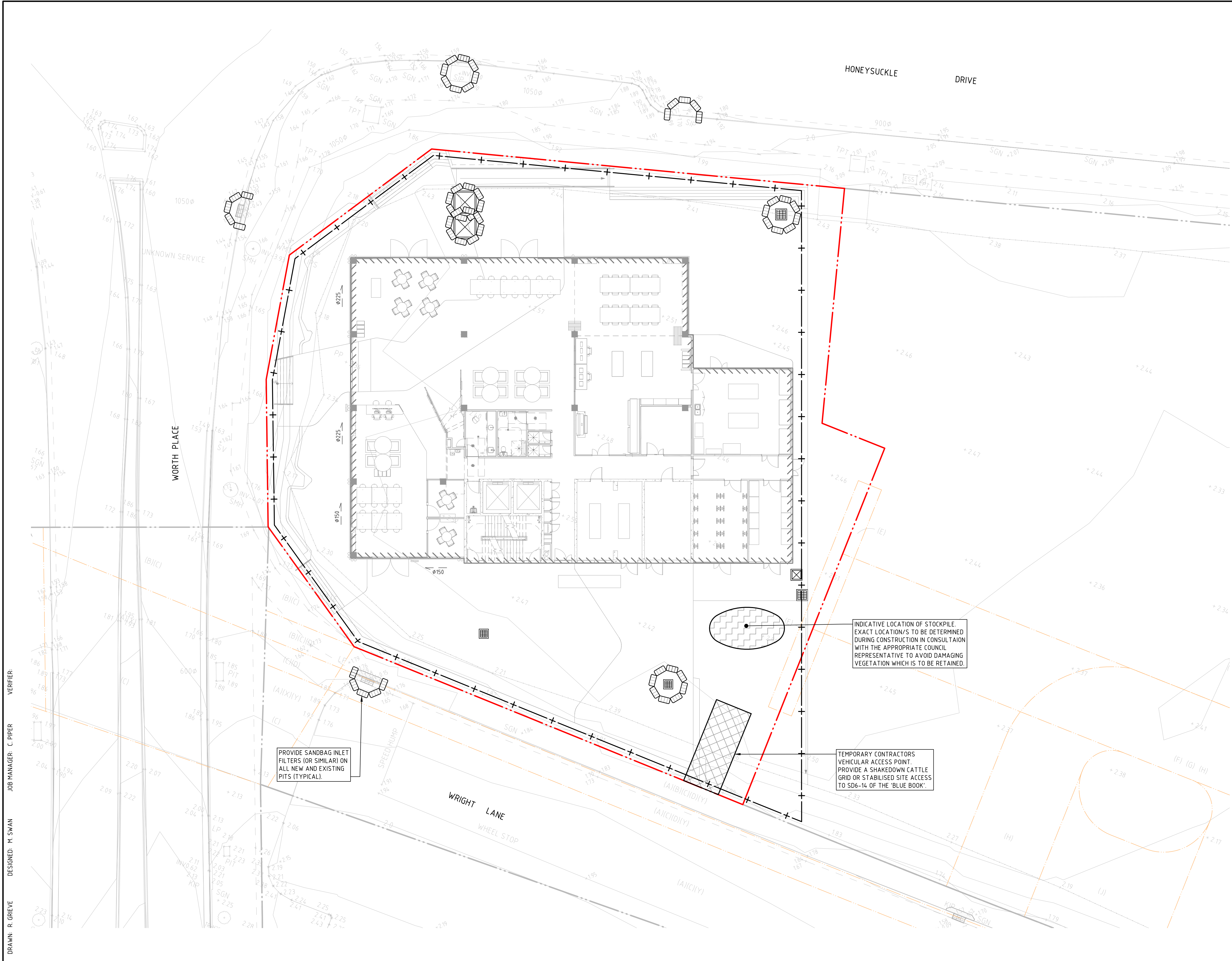
Waste Management Estimations					
Materials On-Site			Destination		
			Reuse & Recycling		Disposal
Type of Materials	Est. qty Total incl. Waste	Est. Wt. (t) Total incl. Waste	ON-SITE Specify proposed reuse or on site recycling methods	OFF-SITE Specify contractor and recycling outlet	Specify contractor and landfill site
Excavated Materials	-	-	N/A	Waste Management Contractor Recycling Centre Re-processed into recycled products (such fill recycled soil, sand, aggregates, road base) by crushing and screening	
Garden Organics	-	-	N/A	Waste Management Contractor Recycling Centre Re-processed into woodchip and mulch by shredding	
In-Situ Concrete (m3)	910	2186	N/A	Waste Management Contractor Recycling Centre Re-processed into recycled products (such fill sand, aggregates, road base) by crushing and screening	

Waste Management Estimations					
Materials On-Site			Destination		
			Reuse & Recycling		Disposal
Type of Materials	Est. qty Total incl. Waste	Est. Wt. (t) Total incl. Waste	ON-SITE Specify proposed reuse or on site recycling methods	OFF-SITE Specify contractor and recycling outlet	Specify contractor and landfill site
Steel Reinforcement		127t exc. mesh	N/A	Reinforcement Suppliers Recycling Service (Sell & Parker or similar)	
Non-structural Timber (m2)	133	-	N/A	Waste Management Contractor Recycling Centre Waste Management Contractor Recycling Centre Re-processed into woodchip and mulch by shredding	
Plasterboard (m2)	9340		N/A	Recycling service to be Established by Dry Wall Subcontractor	
Structural Steel (t)		1,869	N/A	Waste Management Contractor Recycling Centre Sorted and sent to recycling plant (Sell & Parker or similar)	

Waste Management Estimations					
Materials On-Site			Destination		
			Reuse & Recycling		Disposal
Type of Materials	Est. qty Total incl. Waste	Est. Wt. (t) Total incl. Waste	ON-SITE Specify proposed reuse or on site recycling methods	OFF-SITE Specify contractor and recycling outlet	Specify contractor and landfill site
Aluminium (l/m)	357,271		N/A	Waste Management Contractor Recycling Centre  Sorted and sent to recycling plant (Sell & Parker or similar)	
Ceramic Tiles (m2)	562	8.4	N/A	Waste Management Contractor Recycling Centre  Re-processed into recycled products (such fill recycled soil, sand, aggregates, road base) by crushing and screening	

## 7.7 Construction Soil and Water Management Plan





LEGEND

LOT BOUNDARY

EXISTING CONTOURS

SEDIMENT FENCE

SANDBAG SEDIMENT FILTER

STABILISED SITE ACCESS

STOCKPILE

EROSION AND SEDIMENTATION CONTROL NOTES:

1.

ALL EROSION AND SEDIMENTATION CONTROL MEASURES MUST BE APPROPRIATE FOR THE SEDIMENT TYPE(S) OF THE SOILS ON-SITE, IN ACCORDANCE WITH THE 'BLUE BOOK' (MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION LANDCOM, 2004), OR OTHER CURRENT RECOGNISED INDUSTRY STANDARDS FOR EROSION AND SEDIMENT CONTROL FOR AUSTRALIAN CONDITIONS. THIS INCLUDES SEDIMENT TRAPS AND LINING OF CHANNELS.

2.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING A DETAILED WRITTEN RECORD OF ALL EROSION AND SEDIMENT CONTROLS ON-SITE DURING THE CONSTRUCTION PERIOD. THIS RECORD SHALL BE UPDATED ON A DAILY BASIS AND SHALL CONTAIN DETAILS ON THE CONDITION OF CONTROLS AND ANY/ALL MAINTENANCE, CLEANING AND 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.

3.

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'.

4.

ESTABLISH ALL REQUIRED SEDIMENT FENCES IN ACCORDANCE WITH DETAIL SD6-8 OF THE 'BLUE BOOK'.

5.

INSTALL SEDIMENT FENCING, OR OTHER SEDIMENT CONTROL DEVICES, AROUND INDIVIDUAL BUILDING ZONES/AREAS AS REQUIRED AND AS DIRECTED BY THE SUPERINTENDENT OR APPROPRIATE COUNCIL OFFICER.

6.

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.

7.

THE CONTRACTOR SHALL ENSURE THAT ALL VEGETATION (TREE, SHRUB AND GROUND COVER) WHICH IS TO BE RETAINED SHALL BE PROTECTED DURING THE DURATION OF CONSTRUCTION.

8.

ALL VEGETATION TO BE REMOVED SHALL BE MULCHED ON-SITE AND SPREAD/STOCKPILED AS DIRECTED BY THE SUPERINTENDENT.

9.

STRIP TOPSOIL IN AREAS DESIGNATED FOR STRIPPING AND STOCKPILE FOR RE-USE AS REQUIRED. ANY SURPLUS MATERIAL SHALL BE SPREAD ON-SITE AS DIRECTED BY THE SUPERINTENDENT OR REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH EPA GUIDELINES.

10.

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).

11.

ENSURE STOCKPILES DO NOT EXCEED 2.0m HIGH. PROVIDE WIND AND RAIN EROSION PROTECTION AS REQUIRED IN ACCORDANCE WITH THE 'BLUE BOOK'.

12.

PROVIDE WATER TRUCKS OR SPRINKLER DEVICES DURING CONSTRUCTION AS REQUIRED TO SUPPRESS DUST.

13.

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.

14.

CONTRACTOR TO CHECK WEATHER FORECASTS AND ENSURE ADEQUATE EROSION AND SEDIMENT CONTROL MEASURES ARE IN PLACE PRIOR TO PREDICTED EXTREME RAINFALL EVENTS. TRENCHING AND EXCAVATIONS BELOW THE 1% AEP LEVEL TO BE TEMPORARILY FILLED IF AN EXTREME FLOOD EVENT IS PREDICTED. SIMILARLY, ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE FIRMLY IN PLACE TO ENSURE DO NOT BECOME UP-ROUTED BY FLOODWATERS.

DRAWN: R. GREVE  
DESIGNED: M. SWAN  
JOB MANAGER: C. PIPER  
VERIFIER:

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	ISSUED FOR REVIEW	MS		CP	26.03.20
2	ISSUED FOR TENDER	MS		CP	30.03.20

THE UNIVERSITY OF  
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AUSTRALIA

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ARCHITECT

EJE architecture

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PROJECT

16 HONEYSUCKLE DRIVE

DRAWING TITLE

CIVIL ENGINEERING PACKAGE

EROSION AND SEDIMENT CONTROL  
PLAN

JOB NUMBER

NL172724

DRAWING NUMBER

CV-101

REVISION

2

DRAWING SHEET SIZE = A1



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