Construction Environmental Management Plan (CEMP)

Project: New Primary School in Epping

Job No: SC134

Rev: 6 | Nov 2021

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Hansen Yuncken would like to acknowledge the Wallumedegal people as the traditional custodians of the land where the project is located. We honour elders past, present and emerging whose knowledge and wisdom has and will ensure the continuation of cultures and traditional practices.

EMP Preparation Checklist (Condition B13)

Use the checklist below to help develop an EMP that contains all the required information. The checklist should be completed and supplied to the Department with the EMP. One checklist should be submitted for each EMP.

Requirement	Plan Reference	Yes/No/Not Applicable
Document preparation and endorsement		
Has the EMP been prepared in consultation with all relevant stakeholders as per the requirements of the conditions of consent? (Section 4.1)	**Appendix.5** CPTMSP – 4 Traffic Management plan **Appendix.6** CNVMSP – 6 Noise and Vibration Management Plan **Appendix.7** CSWMSP – Attachment 3 SI Consultation Form	Yes
Have the views of the relevant stakeholders been taken into consideration? Have appropriate amendments been made to the EMP and does the EMP clearly identify the location of any changes? (Section 4.1)	**Appendix.5** CPTMSP – 4.1 Traffic Management Planning Process **Appendix.6** CNVMSP – Appendix C Community Consultant Summary Report **Appendix.7** CSWMSP – Attachment 3 SI Consultation Form	Yes
Has the EMP been internally approved by an authorised representative of the proponent or contractor? (Section 4.2)	**1.2** Change Information **Appendix.5** CPTMSP – Document Control **Appendix.6** CNVMSP – Document Control **Appendix.7** CSWMSP – Document Control **Appendix.8** CWMSP – Document Control **Appendix 16** BMSP – Document Control	Yes
Version and content		
Does the EMP describe the proponent's Environmental Management System (EMS) (if any), and identify how the EMP relates to other documents required by the conditions of consent? (Section 3.5.1)	**4.3** EMP Interrelationship with PMP	Yes
Does the EMP include the required general content and version control information? (Section 3.1)	**1.2** Change Information **Appendix.5** CPTMSP – Document Control **Appendix.6** CNVMSP – Document Control **Appendix.7** CSWMSP – Document Control **Appendix.8** CWMSP – Document Control **Appendix.16** BMSP – Document Control	Yes
Does the EMP have an introduction that describes the project, scope of works, site location and any staging or timing considerations? (Section 3.2)	**4.1** Scope & Application **4.2** Project Description **4.2.1** Hours of Work **Appendix 5.** CPTMSP – 1.1 Project Summary **Appendix.6** CNVMSP – 1 Introduction **Appendix.7** CSWMSP – 1.1 Site Locality ,1.2 Development Proposal **Appendix.8** CWMSP – 2 Project	Yes

	Description, 3 Project Location, 6.2 Construction Waste Management Equipment, Bin Sizes and Collection Frequency **Appendix.13** Site Layout Plan and Staging Plan **Appendix.16** BMSP – 1 Introduction	
Does the EMP reference the project description? (Section 3.3)	**4.2** Project Description	Yes
Does the EMP reference a Community and Stakeholder Engagement Plan (or similar) or include community and stakeholder engagement actions (if required)? (Section 3.4)	**5.18.1** Community Consultation **Appendix.5** CPTMSP – 4.20 Method of Communicating Traffic Changes **Appendix.6** CNVMSP – 6.5 SINSW Complaints Management Process	Yes
Have all other relevant approvals been identified? Has appropriate information been provided regarding how each approval is relevant? (Section 4)	**Appendix.5** CPTMSP – 1.3 Compliance with Conditions of Consent, 4.25 CPTMP Approval, Monitoring and Review, 5 TSG Confirmation and Approval **Appendix.6** CNVMSP – 1.2 SSD Compliance **Appendix.7** CSWMSP – Attachment 3 SI Consultation Form **Appendix.8** CWMSP – 5.2 SSD Condition … Requirements, 6.4 Onsite Waste Management Requirements. **Appendix.16** BMSP – 1 Introduction	Yes
Has the environmental management structure and responsibilities been included? (Section 3.5.2)	**4.8** Roles and Responsibilities **5.3** Environmental Risk Register	Yes
Does the EMP include processes for training of project personnel and identify how training and awareness needs will be identified? (Section 3.5.3)	**5.1** Environmental Awareness **Appendix.5** CPTMSP – 4.17 Staff Induction **Appendix.6** CNVMSP – 6.2.1 General Comments **Appendix.16** BMSP – 2.7 Staff Training	Yes
Does the EMP clearly identify the relevant legal and compliance requirements that relate to the EMP? (Section 3.5.3)	**4.7.3** Legal Compliance and Other Requirements **Appendix.5** CPTMSP – 4.1 Traffic Management Planning Process, 4.5 General Requirements **Appendix.6** CNVMSP – 4 Noise and Vibration Criteria **Appendix.7** CSWMSP – 1.3 Design Standards, Policies and Guidelines, 2 Construction Soil and Water Management **Appendix.8** CWMSP – 5 NSW Legislative Requirements and Guidelines **Appendix.16** BMSP – 3 References	Yes

Does the EMP include all the conditions of consent to be addressed by the EMP and identify where in the EMP each requirement has been addressed? (Section 3.5.13)	**3** Compliance with SSD Conditions **Appendix.5** CPTMSP – 1.3 Compliance with Conditions of Consent **Appendix.6** CNVMSP – 1.2 SSD Compliance **Appendix.7** CSWMSP – 1.4 Compliance with Conditions of Consent **Appendix.8** CWMSP – 5.2 SSDA Condition B14e and B17a,b,c Requirement **Appendix.16** BMSP – 1 Introduction	Yes
Have all relevant guidelines, policies and standards been identified, including details of how they are relevant? (Section 3.5)	**4.7.3** Legal Compliance and Other Requirements **Appendix.5** CPTMSP – 4.1 Traffic Management Planning Process 4.5 General Requirements **Appendix.6** CNVMSP – 4 Noise and Vibration Criteria **Appendix.7** CSWMSP – 1.3 Design Standards, Policies and Guidelines **Appendix.8** CWMSP – 5 NSW Legislative Requirements and Guidelines **Appendix.16** BMSP – 2.3 Water Quality Control, 2.4 Impacts of Noise	Yes
Is the process that will be adopted to identify and analyse the environmental risks included? (Section 3.5.5)	**6** Measurement & Evaluation **Appendix.5** CPTMSP – 4.23 Hazard and Risk Identification **Appendix.6** CNVMSP – 4 Noise and Vibration Criteria, 5 Noise and Vibration Assessment **Appendix.7** CSWMSP – 2 Construction Soil and Water Management **Appendix.16** BMSP – 2 Impact Mitigation and Minimisation	Yes
Have all the environmental management measures in the EIA been directly reproduced into the EMP? (Section 3.5.7)	Refer to attached management plans	yes
Have any additional environmental management measures been included in the EMP? (Section 3.5.7)	**6** Measurement & Evaluation **Appendix.5** CPTMSP – 4.15 Plant/ Equipment Measurement, 4.16 Spoil Management **Appendix.6** CNVMSP – 6.2 Site Specific Noise Mitigation Measures, 6.3 Vibration Mitigation Measures, 6.8 General Mitigation Measures **Appendix.7** CSWMSP – 2.5 Off-site flow management **Appendix.8** CWMSP – 6.4 On-site Waste Management Requirements **Appendix.16** BMSP – 2 Impact Mitigation and Minimisation	Yes
Have environmental management measures been written in committed language? (Section 3.5.7)	**5** Implementation	Yes

Have project environmental management measures, including hold points, been identified and included? (Section 3.5.6)	**5.3** Environmental Risk Register	Yes
Are relevant details of environmental monitoring that will be carried out included? (Section 3.5.8)	**5.5.1** Tools and Noise Monitoring Procedures **5.12.5** Waste Reporting **Appendix.5** CPTMSP – 4.25 CPTMP Approval, Monitoring and Review **Appendix.6** CNVMSP – 6.2.2 Noise Monitoring, 6.3.2 Vibration Monitoring **Appendix.7** CSWMSP – 2.3 Soil and Water Management Plan, Attachment 1 Sediment and Erosion Control Plans **Appendix.8** CWMP – 7 Waste Management Plan Application **Appendix.16** BMSP – 2.5 Control Air Quality, 2.12 Management of Pest Animals and Predatory Species	Yes
Have the components of any environmental monitoring programs been incorporated? (Section 3.5.8)	**Appendix.5** CPTMSP - 4.25 CPTMP Approval, Monitoring and Review **Appendix.7** CSWMSP – 2.3 Soil and Water Management Plan **Appendix.8** CWMP – 7 Waste Management Plan Application **Appendix.16** BMSP – 2.5 Control Air Quality, 2.12 Management of Pest Animals and Predatory Species	Yes
Are environmental inspections included? (Section 3.5.9)	**6.2** Environmental Inspections & Audits	Yes
Does the EMP document all relevant compliance monitoring and reporting requirements for the project? (Section 3.5.12 and 3.5.13)	**6.2.2** Reporting & Corrective Actions	Yes
Does the EMP describe the types of plans or maps (such as environmental control maps) that will be used to assist with the management of environmental matters on site? (Section 3.5.10)	**Appendix.5** CPTMSP – 3 Existing Transport Facilities, Attachment 1 Swept Path Assessment, Attachment 2 Traffic Guidance Scheme, Attachment 3 Drivers Code of Conduct. **Appendix.6** CNVMSP – 1.1 Site Layout and Development Overview, Figure 1 Site Map **Appendix.7** CSWMSP – Attachment 1 Sediment and Erosion Control Plans **Appendix.8** CWMSP – Appendix.A Recycling Area and Site's Access and Egress, Appendix.B HBM Survey **Appendix.16** BMSP – 1 Introductions	Yes
Does the EMP list environmental management documents? (Section 3.5.11)	**Appendix.2** EMA **Appendix.4** HSE Project Risk Assessment **Appendix.9** Waste Classification **Appendix.11** External Lighting Compliance **Appendix.12** SIE Summary **Appendix.14** Covid Management Plan	Yes
Is an auditing program referenced? (Section 3.5.13)	**Appendix.15** HY HSE Audit	Yes

Does the EMP include the incident notification and reporting protocols that comply with the relevant conditions of consent? (Section 3.5.15)	**6.1** Environmental Incidents & Emergencies	Yes
Does the EMP identify the project role/position that is responsible for deciding whether an occurrence is an incident? (Section 3.5.15)	**4.8** Roles and Responsibilities	Yes
Does the EMP describe a corrective and preventative action process that addresses the requirements? (Section 3.5.16)	**6.2.2** Reporting & Corrective Actions	Yes
Does the EMP include details of a review and revision process that complies with the requirements? (Section 3.6)	**4.4** Policy and Objectives	Yes

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1 Document Information

1.1 Review & Approval

Review			
Position	**Name**	**Sign**	**Date**
Snr Contract Administrator	Nanda Gopan		30/11
Contracts Administrator	Jerry Nguyen		30/11/21
Services Engineer	Nicholas Ko		
Project Manager	Dylan Screpis		30/11
Site Manager	Andrew Baker		30/11
Project Engineer	Harrison Jones		30/11/21
Site Engineer	Lee Moran		
Cadet	Daniel Markovic		30/11/21
Foreman 1	Paul Tane		
Foreman 2	Andrew Hauber		
Approval			
State HSE Manager	Peter Fay		
Construction Manager	Dean Marcon		

1.2 Change Information

Change Information			
Revision	**Description**	**Issued by**	**Issue date**
2	Issued for Review	D.Screpis	Sep 2021
3	Issued with Consent Conditions	D.Screpis	Sep 2021
4	Revised	D.Screpis	Oct 2021
5	Revised	D.Screpis	Oct 2021
6	Final	H.Jones	Nov 2021

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
CF	New Primary School in Epping
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
SWMS	Safe Work Method Statement
TMP	Traffic Management Plan

3 Compliance with SSD Conditions

Condition ID	Requirement	Reference
B14	Prior to the commencement of demolition, removal of buildings or construction, the Applicant must submit a Construction Environmental Management Plan (CEMP) to the Certifier and provide a copy to the Planning Secretary for information. The CEMP must include, but not be limited to, the following;	
B14(a)	(a) Details of:	
B14(a)i)	(i) hours of work	4.2.1
B14(a)ii)	(ii) 24-hour contact details of site manager	4.2.2
B14(a)iii)	(iii) management of dust and odour to protect the amenity of the neighbourhood	5.7
B14(a)iv)	(iv) external lighting in compliance with AS 4282-2019 Control of the obtrusive effects of outdoor lighting	5.17 A.11
B14(a)v)	(v) community consultation and complaints handling as set out in the Community Communication Strategy required by condition B9	5.18
B14(b)	(b) An unexpected finds protocol for Aboriginal and non-Aboriginal heritage and associated communications procedure	5.11.8
B14(c)	(c) Construction Traffic and Pedestrian Management Sub-Plan (see condition B15)	A.5
B14(d)	(d) Construction Noise and Vibration Management Sub-Plan (see condition B16)	A.6
B14(e)	(e) Construction Waste Management Sub-Plan (see condition B17)	A.8
B14(f)	(f) Construction Soil and Water Management Sub-Plan (see condition B18); and	A.7
B14(g)	(g) Biodiversity Management Sub-Plan (see condition B19)	A.16

For all SSD Conditions, refer to appendix A.10.

4 Commitment & Policy

4.1 Scope & Application

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

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

The proposed development includes the design and construction of a Core 35 Public School inclusive of; teaching spaces, ancillary & sport spaces, hall, library, administration spaces, canteen, special programs spaces and unique areas.

A combination of offsite and onsite construction techniques will be used to deliver a high quality, future focused innovative, state of the art school. Meeting the current and future school and community needs whilst complying with the requirements as detailed in the Educational Facilities Standards and Guidelines (EFSG) and providing a high level of end user satisfaction.

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.

4.2 Project Description

The proposed development is for the establishment of a new K-6 Public School, master planned to cater for up to 1,000 students. Works include:

Demolition of existing structures associated with the former use of the site as a TAFE campus;

Construction of new buildings on the eastern and central portions of the site. The works are proposed to be undertaken in stages. Facilities which will generally include:

Home bases (classrooms) suitable for a school population of 1,000 students;

Administration and staff areas:

Hall and canteen;

Library;

COLA;

Special education unit; and

Special programs area.

Play spaces in various locations;

Accessible paths linking the school facilities; and

A staff car park accessed from Second Avenue.

The proposal will also require potential remediation of the land and tree/vegetation removal. The works are proposed to be undertaken in stages. The application will be lodged as a concept development application. The application will also seek approval for the Stage 1 works. The Stage 1 works will provide a total of 25 home bases and associated facilities together with a hall and canteen, administration facilities and play spaces. Car parking for the Stage 1 development will also be provided.

4.2.1 Hours of Work

The proposed hours of work for the project, align to Condition B12(a)i) and C4 of SSD 9250948, and are as follows:

Monday–Friday – 7am – 6pm
Saturday – 8am – 1pm
Sunday – Nil

The proposed restricted hours of work for the project, provided that noise levels do not exceed the existing background noise level plus 5dB, which aligns to Condition C5 of SSD 9250948, are as follows

Monday–Friday – 6pm – 7pm
Saturday – 1pm – 4pm

The proposed hours of work for the project for specific construction activities such as rock breaking, rock hammering, sheet piling, pile driving and similar activities, which align to Condition C8 of SSD 9250948, are as follows:

Monday–Friday – 9am – 12pm & 2pm – 5pm
Saturday – 9pm – 12pm

4.2.2 24 Hour Contact Details

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

Dylan Screpis - Project Manager
M: 0427 697 352
DScrepis@hansenyuncken.com.au

Andrew Baker – Site Manager
M: 0401 141 509
ABaker@hansenyucnken.com.au

The given contact details are in accordance with Condition B12(a)ii) of SSD 8873789.

4.3 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 the New Primary School in Epping 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.

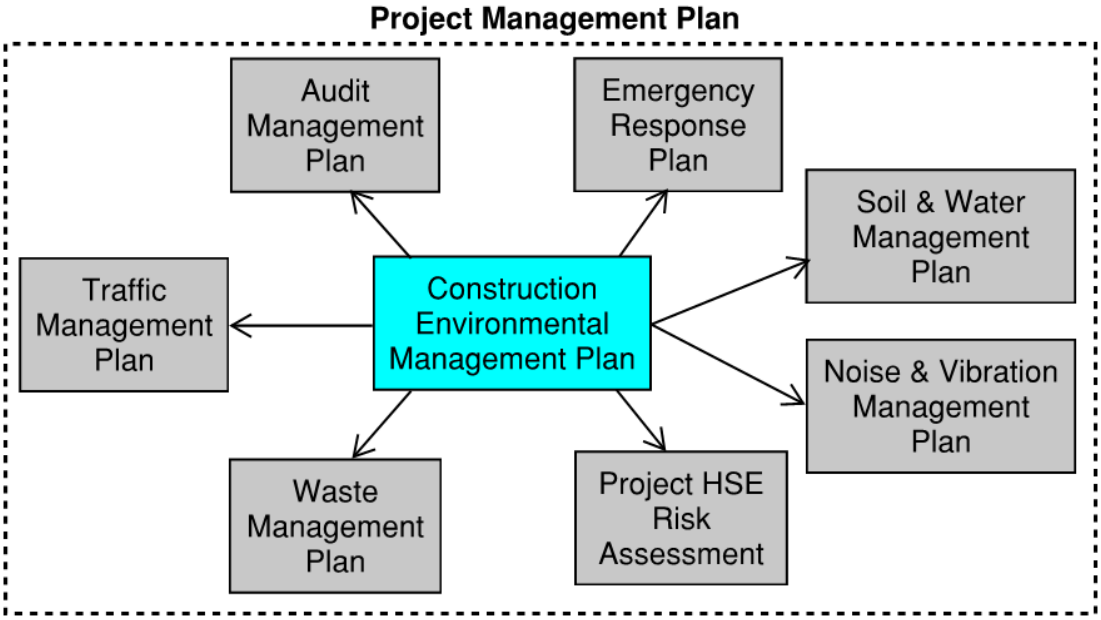
Noise & Vibration Management Plan – Identifies mitigation methods to minimise the risk of noise & vibration to the workers onsite and the surrounding properties.

Traffic & Pedestrian Management Plan – Summarises how construction and pedestrian traffic will be managed on the project to minimise the impact on the existing facility and the neighbours surrounding to the project.

Site Layout Plan – Identifies the location of sediment controls, access routes, truck washout, location of site bins, spill kits, concrete washout.

Emergency Response Plan – Outlines the process to manage the following environmental emergencies; asbestos exposure, water pollution, fire, major fuel spill & chemical spill

Audit Management Plan – Describes the frequency of internal and external environmental audits and the process for closing out any non-conformances raised.



4.4 Policy & Objectives

The HY Environmental Policy Statement provides the framework for the development of this EMP (refer Appendix A.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 New Primary School in Epping Environmental impact assessment document (Environmental Impact Statement SSD 8873789)

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.

4.5 Targets

4.5.1 Objective: Comply with all environmental legislation

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

Target: Nil for duration of project.

Responsibility: HY & Subcontractors

4.5.2 Objective: Minimise impacts on the environment

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

Target: Nil for duration of project.

Responsibility: HY & Subcontractors

4.5.3 Objective: Conduct environmental site inspections to validate environmental conformance

KPI: Schedule and undertake regular site inspections

Target: > 90% of scheduled HSE inspections

Responsibility: HY Site Manager

4.5.4 Objective: Minimise and manage environmental complaints

KPI: Consult with impacted neighbours and promptly address all complaints

Target: ≤ 1 complaint per significant construction milestone

Responsibility: Johnstaff

4.6 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.

4.7 Environmental Planning

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

4.7.1 Environmental Aspects & Impact

All activities related to the New Primary School in Epping, which are enacted by or on behalf of Hansen Yuncken, are identified in the "Project HSE Risk Assessment" (refer Appendix A.4). 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 New Primary School in Epping are summarised in the "Environmental Risk Register" contained within this CEMP (Section 4.3).

4.7.2 Work Method Statements

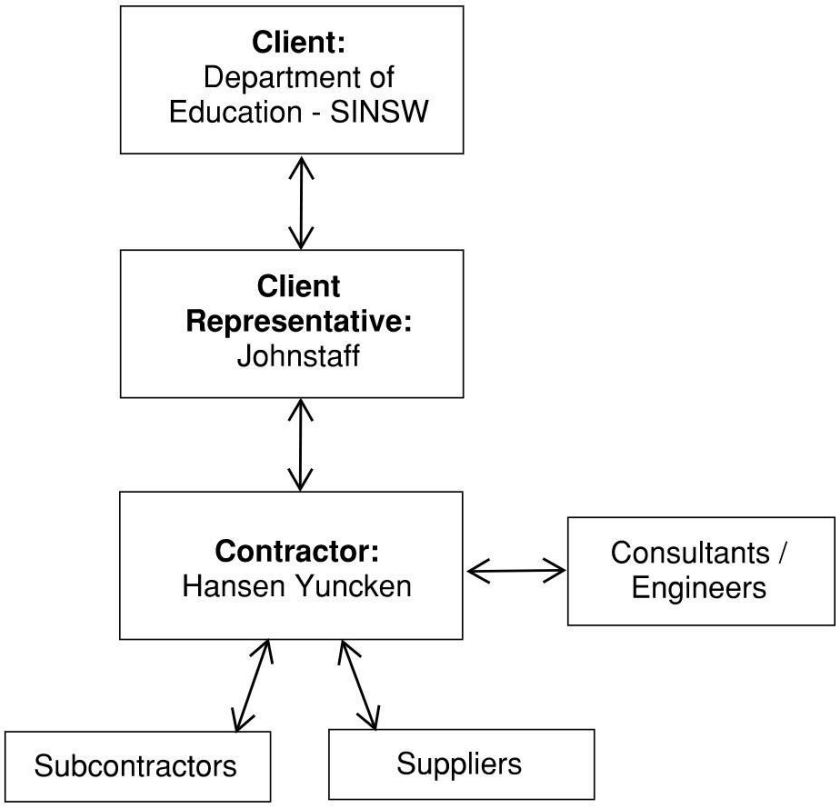
For each activity rated as a significant risk (i.e. Risk class >M/Medium) to the environment, a further Risk assessment is undertaken with the additional controls identified and contained within a Work Method Statement. This document details the; steps involved, hazards, control measures and persons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

4.7.3 Legal Compliance and Other Requirements

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

4.8 Roles and Responsibilities

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



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

Engagement with project stakeholders including consultants and contractors

Notifications and communications with adjacent property occupants and owners advising of the Works;

Formal notices of road closures and related matters;

Conveying enquiries and complaints regarding the works (including but not limited to traffic, dust and noise) to the client;

Liaising with key stakeholders and local authorities regarding the works; and

- Environmental issues related to the works.

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

Client Representative – provides a medium of communication between the client and the contractor and is responsible for all community consultation and communication

Contractor – responsible for delivering the project in accordance with the relevant legislation, including the enforcement of the CEMP for it's subcontractors and suppliers.

Consultants/Engineers – provide expert knowledge into the generation of aspects of the CEMP in line with industry standards and the relevant legislations.

Subcontractor/Suppliers – responsible to abiding by the requirements of the CEMP when carrying out their contract works.

4.9 Environmental Hold Points

The below hold points are directly correlated to the environmental management of the New Primary School in Epping project site:

- C20a): Street trees must not be trimmed or removed unless it forms a part of this development consent or prior written approval from Council is obtained or is required in an emergency to avoid the loss of life or damage to property.
- C24: written approval of Council must be obtained to connect or discharge site stormwater to Council's stormwater drainage system or street gutter
- C28: Unexpected Finds Protocol – Aboriginal Heritage, In the event that surface disturbance identifies a new Aboriginal object works shall only recommence with the written approval of Planning Secretary.
- BMP 2.1.1A – A qualified surveyor must be engaged to mark-out the maximum extent of approved vegetation clearing disturbance.
- BMP 2.1.1A – A qualified Ecologist will be assigned to undertake a pre-clearing survey to help a Surveyor delineate areas permitted to be cleared from areas that must be retained.
- BMP 2.1.3 – Do not undertake any clearing work until temporary fencing has been erected around vegetation
- BMP 2.1.6 – Prior to vegetation being cleared, a qualified Ecologist with fauna identification experience should determine the presence of any suitable habitat for roasting microbats, nesting birds, roosting microbats, or other fauna in the vegetation due to be cleared.
- BMP 2.10.1 - Prior to any dam dewatering of the existing waterbody or creek, an Ecologist will inspect the dam for nesting fauna which should be captured and relocated.

5 Implementation

5.1 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.

5.2 Environmental Impacts of Subcontractor Activities

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

Likely Impacts – outlines the impacts of the environmental issues that have been assessed in the environmental risk register

Mitigation Strategies – outline the procedures/actions that will be taken to minimise the possibility of the impacts outlined above from occurring.

5.3 Environmental Risk Register

Environmental Risk Register Summary & Responsibilities		
Environmental Issue	Risk to Project	Responsible Personnel
Location & Land use Residential and other properties may be impacted with construction works due to construction noise and dust	Low	PM
Noise & Vibration Construction of the development may result in short term impacts during the project due to the use of heavy machinery, drilling and plant as well as construction personnel and vehicle movements.	Low	PM / SM
Traffic & Access During construction there will be impacts to traffic on public roads surrounding the project from construction vehicles and deliveries for site.	Medium	PM / SM

Environmental Risk Register Summary & Responsibilities		
Air Quality During the earthworks stage of the project, there is a risk of poor air quality generated by the constructions works.	Low	SM
Soils, Erosion, & Water Quality There is a risk of soil leaving the site and potentially contaminating the stormwater system in the short-term during the earthworks stage of the project.	Low	SM
Terrestrial Flora & Fauna The removal of trees during construction works poses minimal risk to landscaped species throughout the area. Particular trees have been flagged for removal. These shall be marked and checked prior to any removal.	Low	PM / SM
Cultural Heritage It is unlikely that construction works will impact any undisturbed aboriginal artefacts given that the Heritage Impact Statement has been provided by GML Heritage which has advised that no Aboriginal Heritage Constraints exist for the New Primary School in Epping.	Low	PM / SM

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

5.3.1 Sub-Plan Risks Safeguard / Mitigations Register

Sub-Plan Safeguard / Mitigations Register			
Actions	**Person/s Responsible**	**Timing / Frequency**	**Document Source**
Location & Land Use (Geotechnical) • The engineering properties (e.g., plasticity, reactivity, CBR, etc.) of any fill imported to the site will be equivalent, or superior, to the existing materials on site. • Vibration trials and continuous monitoring will be undertaken if heavy equipment or rock hammers are to be used near sensitive structures. • All footings and bored piles will be inspected by an experienced geotechnical professional during construction to check the adequacy of • the foundation material and, in the case of piles, to check the socket cleanliness and roughness. • Serviceable analysis will be undertaken if the ultimate bearing pressures are used to proportion the piles. • Seepage should be removed from excavations prior to pouring concrete • Refer to CEMP Section.	Project Manager	As required	EIS Section 6.10 Appendix 11 CEMP 5.4 Location and Land Use
Noise and Vibration • A Construction Noise Management Plan, to be implemented by the Contractor, will be prepared that clearly identifies the strategies to be put in place to minimise potentially adverse noise impacts upon the surrounding community (including the school). • The developer will inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details. • Where all feasible and reasonable practices have been applied and noise is more than 5dB(A) above the noise affected level, the proponent should negotiate with the community. • The quietest feasible construction equipment will be selected. • Ripping will be used where rock removal is required.	Project Manager Site Manager	Continuous unattended monitoring	EIS Section 6.6 Appendix 36 CNVMSP 6 Noise and Vibration Management Plan

• Localised treatment, such as barriers, shrouds and the like will be used around fixed plant, such as pumps and generators. • Provision of respite periods will be utilised, particularly on Saturdays. • Plant Noise Audit – Noise emission levels of all critical items of mobile plant and equipment will be checked for compliance with noise limits appropriate to those items prior to the equipment going into service. To this end, testing will be established with the Contractor. • Operator Instruction – Operators will be trained to raise their awareness of potential noise problems and to increase their use of techniques to minimise noise emission. • Equipment Selection – All fixed plant at the work sites will be appropriately selected, and where necessary, fitted with attenuators, acoustical enclosures and other noise attenuation measures to ensure that the total noise emission from each work site complies with EPA guidelines. • Site Noise Planning – Where practical, the layout and positioning of noise-producing plant and activities will be optimised to minimise noise emission levels. • Maximising the offset distance between plant items and nearby noise sensitive receivers. • Preventing noisy plant working simultaneously and adjacent to sensitive receivers. • Minimising consecutive works in the same site area. • Orienting equipment away from noise sensitive areas. • Carrying out loading and unloading away from noise sensitive areas. • Noise monitoring, if required, will be performed by an acoustical consultant directly engaged by the contractor. • Continuous or attended vibration surveys resulting from high vibration generating activities which are • within the recommended safe working distances detailed in Table 16 above. Vibration assessments should include continuous vibration logging or attended			

vibration measurements of proposed activities to be undertaken on the site.			
Air Quality and Odour • All plant and machinery involved in the works will be regularly serviced and checked for exhaust emissions and catalytic converters. • Refer to CEMP Section 5.7.	Site manager	As required	EIS Appendix 33 CEMP 5.7 Air Quality & Dust Control
Water Quality and Hydraulics • Sediment diverting measures such as sandbags and fabric filters will to used to minimise sediment reaching Council's stormwater drainage networks. • Reduce pollution to downstream areas and receiving waters; • Reduce land degradation; • Raise an awareness of ecologically sustainable development (ESD) principles and their application to the development	Site Manager	As required	EIS Section 6.8 CSWMSP 2.1 Water Quality 2.2 Flood Impact Assessment 2.4 Off-Site Flow management
Geology and Soil • Haulage trucks entering and leaving site will have their loads covered appropriately. • Weather conditions will be continually monitored for factors such as wind. • Wherever practical, a wet process for concrete sawing, coring and grinding will be implemented. • Where not practical to use a wet process for concrete sawing or grinding direct dust extraction, a dust vacuum will be used. • Materials on site are to be stockpiled and stored appropriately. • The use of soil stockpiles are to be limited but where required, they will be watered down. • Stormwater pits are to be covered with geotextile fabric and sandbags. Ensure large portions of sediment are contained to prevent runoff: • large portions of sediments are contained to prevent runoff: • Sediment diverting measures to minimise sediment in Council's stormwater drainage networks (i.e. sandbags and/or geo-textile filter fabric protecting existing and proposed drainage pits);	Site Manager	As required	EIS Section 6.8 Appendix 26 CSWMSP 2.3 Erosion and Sediment Control Plan

• Overland flow; • Indicative temporary stockpile locations; • Sediment control fencing location & extents; and • Covering and revegetating disturbed areas (as soon as practicable & as required to prevent sediment laden runoff from leaving the site).			
Contamination • Refer to CEMP Section.	Site Manager Contractor	As required	CEMP 5.11 Site Contamination
Waste • A spillage kit (dry absorbent material – sand, saw dust or oil absorber) shall be on site and its location communicated. A licensed waste disposal contractor will carry out transport and disposal of spillage. • The discovery of unexpected hazardous materials or contamination will be dealt with in accordance with Council, the NSW EPA and WorkCover requirements, in consultation with the project team as required. Use the avoid, reuse, reduce, recycle principles • Minimisation of recurring packaging materials • Returning packaging to the supplier • Separation of recycling of materials off site • Audit and monitor the correct usage of bins • Audit and monitor the Waste Contractor	Project Manager Site Manager Waste Contractor Sub-contractors	As required	CWMSP 6 Waste Management Strategies
Flora and Fauna Biodiversity Management Plan • Clearing protocol that identifies vegetation to be retained and prevent inadvertent damage • Reduce Soil Disturbance • Control the quality of water released from the site into the receiving environment • Reduce impacts of noise • Control air quality • Prevent the spread of weeds or pathogens between infected and uninfected areas • Staff training and site briefing to communicate environmental features to be protected and measures to be implemented	Project Manager Site Manager Landscape Contractor Environment Coordinator Project Ecologist	BMP - Prior to any works - For the duration of the construction works - during landscaping As required	BMP 2. Impact Mitigation and Minimisation Measures EIS Section 6.4 Section 6.7 Appendix 10 Appendix 34 CEMP 5.9 Terrestrial Flora and Fauna

• Ecological restoration, rehabilitation and/or ongoing maintenance of retained native vegetation habitat on or adjacent to the development site • Assigning a project ecologist • Dewatering of waterbodies • Mitigating rubbish dumping • Management of pest animals and predatory species • Avoid and minimise impacts to critically endangered ecological community EIS & CEMP • The project will not contain any rainforest timbers (unless plantation grown), timbers from high conservation forests and will use only recycled timber, engineered and glued timber composite products, timber from plantations or sustainably managed regrowth forests. • Light spill from the facility which impacts on migratory animals and insects will be minimised. Dissolved pollutants in stormwater discharged from the site will be minimised. • No chemical pesticides and/or termiticides will be used on the project • Mechanical ventilation will only be used in areas where natural ventilation cannot be achieved. • Removed native vegetation will be separated from general construction waste, mulched and stockpiled for reuse. • Tree works will to be undertaken by an experienced and qualified arborist. • A Level 5 AQF Project Arborist experienced in managing trees on construction sites will be appointed to prepare and certify a Tree Management Plan. • Appropriate Tree Protection Fence to enclose and protect the TPZ will be installed. • Additional root, trunk and branch protection as required to protect retained trees where minor encroachments within the TPZ are anticipated is to be installed. • Any activity that is likely to damage trunk, crown or root systems are prohibited within a TPZ.			

• In the event of damage to a tree or the TPZ of a tree to be retained, the Project Arborist will be engaged to inspect and provide advice on remedial action. • All fill material to be placed within the TPZ will be approved by an Arborist. • Proposed paved areas within the TPZ will be placed on or above grade to minimise excavation and avoid root severance and/or damage. • In the event of any tree deteriorating in health after the construction period, the Project Arborist will be engaged to provide advice on any remedial action. • Refer to CEMP Section.			
Aboriginal Heritage • An Aboriginal Cultural Heritage Induction detailing the zones of heritage sensitivity, as well as description of how to identify unexpected artefacts during work, will be prepared by either a qualified heritage consultant or a project RAP. • An unexpected finds procedure should be written as part of a concise • Aboriginal Cultural Heritage Induction, which will be delivered to all site workers before the commencement of on-site work • Refer to CEMP Section.	Project Manager Site Manager	As required	EIS Section 6.2 Appendix 23 CEMP 5.11.8 Unexpected Finds
Non-Aboriginal Heritage • Refer to CEMP Section.	Project Manager Site Manager	As required	CEMP 5.11.8 Unexpected Finds
Visual and Aesthetics • Refer to CEMP Section.	Project Manager Site Manager	As required	CEMP 5.13 Visual
Traffic and Access • All vehicles transporting loose materials will be required to have the entire load covered and / or secured to prevent any large items, excess dust or debris being deposited onto the roadway during travel to and from the site.	Project Manager Site Manager	Continuous Mitigations Weekly TTM Inspections Shift TTM Inspections	CPTMSP 4 Traffic Management Plan EIS Section 6.3 Appendix 31

• The Head Contractor will induct all subcontractors and suppliers to ensure that the procedures are met for all vehicles entering and exiting the construction site. All vehicles should enter and leave the site in a manner that eliminates interaction between pedestrians and the public. • The Head Contractor will monitor the internal and immediate external roads leading to and from the site and take all necessary steps to clean any debris deposited by construction vehicles. • Public roads and access points will not be obstructed by any materials, vehicles, refuse skips or the like under any circumstances without authority approval. • Heavy vehicles will generally arrive and depart outside of peak traffic periods. • Subcontractor deliveries will not be taken between the times of 8:00am– 9:30pm, and 2:30pm – 4:00pm. • Construction and delivery vehicles entering or leaving the site will use arterial roads wherever possible. • Pedestrians will be safely directed during the construction of temporary and final crossovers by temporary fencing and management of an accredited traffic controller when required. • The existing footpaths shall remain open to pedestrians and cyclists at all times.		Client Inspections	
Social and Ecological • Ongoing consultation with the community will be undertaken to assist in sharing the benefits of the project, addressing community concerns and preventing misinformation. • Project leaders will continue a dialog with the local community through a Parent Advisory Council (PAC) and other mechanisms. • A dedicated contact person will be appointed to respond and understand feedback from parents, teachers, staff and	Project Manager Site Manager	As required	EIS Section 6.8 Appendix 24 CEMP 5.18 Community Consultation and Complaints Handling

the community to assist with monitoring issues associated with the operation of the site. • Sensitive receptions will be placed in appropriate locations in and around the school to monitor potential amenity impacts during construction. • Refer to CEMP Section.			

5.4 Location and Land Use

5.4.1 Site Location

The proposed development is located on the site of the former Northern Sydney TAFE at 86 Chelmsford Avenue (Lot 1, D.P. 582172). It is located within the Epping South Precinct in the local government area (LGA) of Parramatta and is part of the South West Priority Growth Area. The site has an area of approximately 20,670m2 and forms an irregular rectangle shape with the long edge running east-west. The site is situated approximately 16.25 kms northwest of the Sydney Central Businesses District (CBD), 7 kms northeast of Parramatta CBD, and 40 km southwest of Campbelltown CBD. (refer to Appendix A.3 for further information regarding site location).

5.4.2 Likely Impacts

The construction works would be short term in nature and would not interfere with the current use of the site. All construction activities would be carried out with due diligence, duty of care and best management practices. Given the location of residential and other properties in close proximity to the works area, some impacts associated with construction traffic, noise/vibration and dust are likely to affect adjacent residents. These likely impacts will be addressed below.

5.4.3 Mitigation Strategies

The neighbouring landowners are to be consulted 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

The consent approval stipulates working times to minimise the impact on the community being generally Monday to Friday 7am-6pm, Saturday 8am-1pm, no work on Sundays or public holidays.

5.5 Noise and Vibration

5.5.1 Tools and Noise Monitoring Procedures (During Demolition Works)

Unattended Continuous Noise Monitoring

Configure the permanent noise monitoring systems to continuously record LAeq, LA10, LA90, LA1 and LAmax statistical noise levels in 15-minute intervals

During continuous monitoring, the noise loggers would be downloaded and serviced on a weekly basis or as required by VMS staff

- Prepare a concise noise assessment report of the results and findings

5.5.2 Likely Impacts

Construction of the proposed development will result in short term noise impacts during the construction period. The predicted noise levels during the construction phase have been identified in the project Construction Noise & Vibration Management Plan along with associated mitigation strategies that are to be adopted to minimise these impacts (refer Appendix A.6 for the Construction Noise & Vibration Management Plan) in accordance with Condition B12(d), and B14(a)-(d), of SSD 8873789.

5.5.3 Mitigation Strategies

The following mitigation strategies listed have been developed to control the level of noise and vibration that affect the relevant stakeholders:

Site construction noise will be managed in accordance Construction Noise and Vibration Management Plan (CNVMP) developed for this project. The CNVMP 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. Refer to Communication Engagement Plan which is in accordance with Condition B14(e) of SSD 8873789.

Provide consultation where prolonged or consecutive periods of construction works are planned.

Construction activities shall be restricted to the hours dictated in the consent SSD 8873789.

The consent approval stipulates working times to minimise the impact on the community being generally Monday to Friday 7am-6pm, Saturday 8am-1pm, no work on Sundays or public holidays.

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. In accordance with Condition B14(f) of SSD 8873789.

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.

Ensure workers and contractors are regularly trained (such as toolbox talks) to use equipment in ways to minimise noise

“Quacker” reversing alarms to be used for plant vehicles if practicable.

For more detailed mitigation strategies related to specific work phases and the relevant mitigation strategies to be adopted, refer to the CNVMP (Appendix A.6).

5.6 Traffic & Access

5.6.1 Likely Impacts

Construction of the new site facilities shall see some increase in traffic in the local area. The increased traffic is not predicted to have an impact on local traffic flow and only a minor inconvenience to local road users is expected. Construction vehicle routes have been developed with the intention of minimising the impact of construction traffic on the local streets in the immediate vicinity. Access to site is anticipated to

be primarily via O'Keefe Drive. In accordance with Condition B12(c), B13(a)-(d), and B17(a)-(d) of the SSD 8873789, the management of construction traffic developed as a result of these works in summarised in the Construction Traffic Management Plan (refer Appendix A.5).

In accordance with SSD 8873789 Condition B18, on-site parking facilities will be provided in line with the site layout plan contained within Appendix A.13.

5.6.2 Mitigation Strategies

Follow the Construction Traffic Management Plan (TMP) based on the detailed construction methodology and use of specific heavy vehicles and construction plant. 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 in consultation with NSW Roads & Maritime Services (RMS) and Paramatta 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

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

Construction activities shall be restricted to the hours dictated in the consent SSD 8873789.

The consent approval stipulates working times to minimise the impact on the community being generally Monday to Friday 7am-6pm, Saturday 8am-1pm, no work on Sundays or public holidays.

5.7 Air Quality & Dust Control

In accordance with condition B12(a)iii) of SSD 8873789, repeated in part as follows; the Construction Environmental Management Plan (CEMP) which must include, but is not limited to, the following; (iii) management of dust and odour to protect the amenity of the neighbourhood. This section of the CEMP addresses this condition, outlining the likely impacts of air quality and dust control for the various aspect of the construction works, along with the mitigation strategies that will be implemented to minimise these impacts on the neighbourhood.

5.7.1 Likely Impacts

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

5.7.2 Mitigation Strategies

Construction vehicles and equipment to be suitably serviced prior to commencement of construction activities and all necessary maintenance to be undertaken during the construction period to meet EPA air quality requirements.

Excessive use of vehicles and powered construction equipment will be minimised where possible

All construction machinery will be turned off when not in use to minimise emissions where possible.

Construction contractors to monitor dust generation progressively.

Dust suppression methods will be adopted where required (i.e. on windy days when earthworks and vehicle movements are generating dust). Examples of dust suppression methods include:

Water carts

Localised use of water to supress excavation activities as they are occurring to suppress dust

Covering stockpiles

Any stockpiled spoil/fill will be protected to minimise dust generation to avoid sediment moving offsite.

Vehicles transporting spoil from the site to be covered.

The burning of waste materials will not be permitted on site

5.8 Soil, Erosion & Water Quality

In accordance with condition B16(b) & (f) of SSD 8873789, repeated in part as follows; the Construction Environmental Management Plan (CEMP) which must include, but is not limited to, the following; (a) stormwater control and discharge & (f) measured to ensure sediment and other materials are not tracked onto the roadway by vehicles leaving the site. This section of the CEMP addresses these conditions, outlining the likely impacts associated with stormwater runoff and the mitigation strategies that will be implemented to ensure that these impacts are minimised. Further to this, in accordance with condition B12(f), B16(a), (c), and (e), refer to Appendix A.7 for the Soil and Water Management Sub-Plan.

5.8.1 Likely Impacts

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

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

Excavation for foundations and site levelling;

Stockpiling and transportation of excess spoil; and

General construction waste entering drainage lines

5.8.2 Mitigation Strategies

Construction is to be undertaken in accordance with the Erosion and Sediment Control Plan, which is in accordance to Condition B16(d) of SSD 8873789.

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 at designated construction 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

5.9 Terrestrial Flora and Fauna

5.9.1 Likely Impacts

There are multiple tree species found within the site premise of Epping South Public School. The mitigation strategies outlined in the subsequent section will be adopted during construction to minimise the impact that the construction has on the local flora and fauna.

5.9.2 Mitigation Strategies

No vegetation removal or modification is to occur beyond the proposed works areas shown on the plans.

Any identified noxious weeds should be removed as part of the works if encountered

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.

Access restricted by fencing to the outside of the SRZ or TPZ. No materials to be stored or plant access within the fenced restricted area.

5.10 Archaeology & Cultural Heritage

5.10.1 Likely Impacts

There is a possibility of encountering culturally significant indigenous artefacts as determined by the Aboriginal Archaeological Assessment that has been completed for the area. If the proposed works would disturb any undisturbed Aboriginal objects or sites of historical relics, the following mitigation strategies will be adopted. The following Mitigation Strategies are in accordance with Condition B12(b) of SSD 8873789.

5.10.2 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 Wallumedegal 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.

5.11 Site Contamination

5.11.1 Contaminated Soil Risk Assessment

A preliminary contamination investigation has been conducted by Environmental Investigation Services (EIS) which has concluded that there is a relatively low potential for contamination-related unexpected finds to occur at the site during the proposed development works (refer Appendix A.12 for Executive Summary). Prior to the commencement of bulk earthworks (under the Early Works DA) and in line with the risk assessment generated for the project, an assessment of actual or potential soil contamination

and it's impacts was undertaken using the Soil Contamination Assessment on BIM360 Field. The purpose of this assessment was 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. The findings of this assessment concluded that there is no contaminated soil present on the site. There are no existing adjacent buildings to the site. Despite this, Section 4.11.7 of this management plan contains the unexpected finds protocol that is to be adopted in the event that unexpected contaminated material is encountered.

5.11.2 Identification of Contaminated Soil

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

Upon discovery of contaminated soil, the HY Site Manager shall arrange for works to be ceased immediately in the area 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.

The EIS and Identification of Contaminated Soil is in accordance with Condition B15(c) of SSD 8873789.

5.11.3 Risk of Exposure

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

Defining certain areas as contaminated and restricting access to them;

Appropriate signage;

Training construction employees in industrial hygiene procedures;

Keeping non-essential motor vehicles such as personal cars out of contaminated areas;

Regular medical checks of construction personnel who are exposed to contaminated soils;

Keeping stockpiles of contaminated material watered down to minimise dust generation in accordance with any water restriction requirements and ensure that runoff is not generated from excessive watering;

Covering truck loads with tarpaulins and watering material when loading and unloading;

Wheel washes for trucks and vehicle leaving the contaminated areas;

Regular road sweeping and cleaning;

Dust monitoring and adjustment of construction programs to accommodate high risk periods when conditions are windy or very dry; and

Monitoring of concentrations of volatiles.

Industrial hygiene practices may include:

Wearing long sleeved shirts and trousers or overalls to minimise dermal exposure;

Wearing gloves when handling soils;

Washing hands and faces before eating, drinking or smoking;

Leaving overalls at site for laundering;

Showering and washing facilities; and

Wearing respiratory equipment during times of high dust or volatile emissions.

5.11.4 Groundwater Management

The contamination investigation conducted by EIS concluded that groundwater is not considered to pose a risk to the site (refer Appendix A.12 for the Executive summary). This was based on boreholes that were completed in the investigation that did not encounter any groundwater on the site, and the laboratory testing of groundwater samples obtained was below the Site Assessment Criteria. Despite this, the measures outlined in Section 4.11.5 will be adopted to mitigate the potential contamination of groundwater. Furthermore, the unexpected finds protocols outlined in Section 4.11.7 & Section 4.11.8 will be adopted in the event that groundwater is encountered on site.

5.11.5 Release of Contaminants to Soil and Groundwater

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

If heavily contaminated soil is placed in contact with clean soils, contaminants could be mobilized by rainwater or chemical / physical reactions and affect the clean soils to a limited extent.

Similarly, there is a risk that contaminated soil is not clearly differentiated from clean soil and that mistakes could occur which cause the materials to be mixed or wrongly handled or disposed of.

This shall be overcome by implementing a material tracking system for all contaminated soils and ensuring that construction staff are trained how to use the system.

This shall involve documenting areas containing contaminated soil and putting signage near stockpiles that indicated the type of material present and its contamination status.

It shall also require supervision and documentation of all movements of contaminated materials around the site.

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

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

This may be achieved by:

Covering stockpiles of contaminated soil;

Placing stockpiles of contaminated soil on bitumen or other sealed areas;

Installation of adequate bunding or other approved method to contain runoff;

Collecting stormwater run-off from stockpile areas; and

Analytical testing of collected stormwater prior to its release.

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

Groundwater could potentially be impacted by contaminants mobilized from stockpiled contaminated soil or by buried material.

Minimising runoff from stockpiles, as outlined above would reduce the risk to groundwater.

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

5.11.6 Heavy Metal Contamination

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

5.11.7 Mitigation Strategies

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.

5.11.8 Unexpected Finds

In accordance with Condition B14(b) SSD 8873789, unexpected finds protocols must be included within the CEMP to outline the process to be followed in the event that unexpected contamination and/or Aboriginal/non-Aboriginal heritage is found through the duration of the project. Unexpected Find shall be addressed in compliance with the Hansen Yuncken's Unexpected Finds protocol listed below:

Unexpected Finds Protocols – General including aboriginal and non-aboriginal items

1. Immediately cease work and contact site foreman
2. Site Foreman to construct temporary barricading to prevent worker access to the unexpected substance(s) and install appropriate stormwater/sediment controls
3. Site foreman to contact Client and arrange inspection by the Aboriginal Cultural Heritage consultant
4. Aboriginal Cultural Heritage consultant to undertake detailed inspection and sampling & analysis
5. If the findings assessed are presenting to be of Aboriginal Cultural Heritage significance, following steps should be in accordance with the Aboriginal Cultural Heritage consultants direction and works must cease until further notice.
6. If the findings assessed are not presenting to be of Aboriginal Cultural Heritage significance, Site foreman to remove safety barricades and controls and continue work
7. Aboriginal Cultural Heritage consultant to supervise remediation and undertake validation/clearance as per the remediation/validation/clearance plan
8. Site Foreman to remove barricades and controls and continue work.
9. Aboriginal Cultural Heritage consultant to submit assessment/validation/clearance to site foreman for distribution to Client and appropriate regulatory authorities.

Unexpected Finds Protocol – Asbestos and contamination

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

a. Upon discovery of suspected asbestos containing material, the site manager is to be notified and the affected area closed off 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.

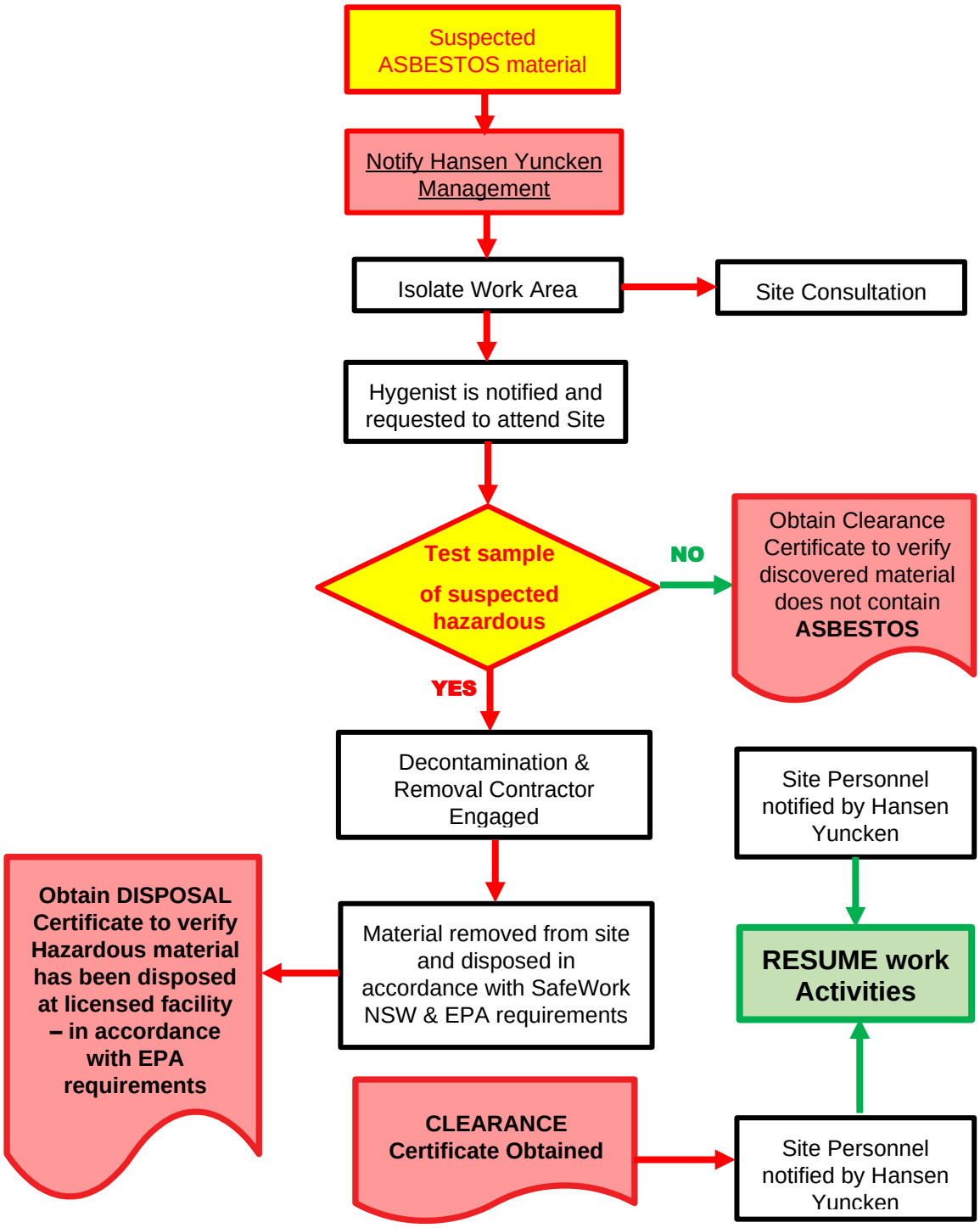
i. Validation samples would be collected from the remedial excavation to confirm the complete removal of the asbestos containing materials. If the asbestos pipes/conduits are uncovered, then sampling density would typically comprise one sample per 10-20 linear meter (depending on the length of the pipe). 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^2 (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

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 4.12 of this plan on Waste Management 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.

5.12 Waste Management

In accordance with Condition B12(e) of SSD 8873789, the Construction Waste Management Plan (CWMP) has been completed for the project and is contained within (Appendix A.8). The CWMP contains detailed information regarding the types and disposal of different waste types throughout the project. In particular, section 5 of the Waste Management Plan addresses the way that waste will be addressed throughout the construction process with reference to the unexpected finds protocols that are to be adopted in the event that an unexpected find is encountered.

In accordance with Condition B15(a), the waste classification for the project is contained within Appendix A.9. Detailed information regarding the treatment and allocation of waste for the duration of the project is contained within the CWMP.

5.12.1 Waste Reduction

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

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

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

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

5.12.2 Waste Generation – Fill Material

All materials are site won and will be retained on site.

5.12.3 Non-Recyclable Waste

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

5.12.4 Waste Collection & Disposal

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

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

Waste collection points are nominated on the Site Layout Plan.

Waste Collection & Disposal is in accordance with Condition B15(b) of SSD 8873789.

5.12.5 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.

5.12.6 Concrete Waste & Washout

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

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.

5.12.7 Mitigation Strategies

Accurate written records are to be kept such as:

Who transported the waste (company name, ABN, vehicle registration and driver details, date and time of transport, description of waste)

Copies of waste dockets/receipts for the waste facility (date and time of delivery, name and address of the facility, it's ABN, contact person).

The construction contractor 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).

5.13 Visual

5.13.1 Likely Impacts

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

5.13.2 Mitigation Strategies

Construct landscaping in accordance with the design documentation will reduce visual impacts of the new development.

5.14 Environmental Complaints

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

5.15 Fuel & Chemical Spills

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

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

5.16 Hazardous Materials

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

5.17 External Lighting

In accordance with condition B12(a)iv) of SSD 8873789, the external lighting to the proposed New Primary School in Epping complies with AS4282-2019 – Control of the Obstructive Effects of Outdoor Lighting. Please refer to Appendix A.11 for the certificate verifying the compliance with these Australian Standards.

5.18 Community Consultation and Complaints Handling

In accordance with condition B12(a)v) of SSD 8873789, community consultation and complaints handling is primarily the responsibility of the Client. Hansen Yuncken will provide assistance where possible to ensure that the client is complying with the requirements of Community Communication Strategy, developed for the new Public School in Epping.

5.18.1 Community Consultation

Community consultation is primarily the responsibility of the client. Hansen Yuncken will ensure that the relevant strategies/outcomes are incorporated within the relevant management plans and construction process where possible. The main channels that the client is planning on conducting consultation is through the following:

Community information phone line

Community contact cards

Door knocks

Face-to-face meetings/briefings

Fact sheets

Information Booths

Project updates

Project Reference Group

Website

Works notifications

Letterbox drops

The above have been extracted from Table 3 of the Community Communication Strategy.

5.18.2 Complaints Handling

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

Phone: 1300 482 651

Email: schoolinfrastructure@det.nsw.edu.au

Upon receipt of the complaint from the Project Director, Hansen Yuncken will endeavour to close out the complaint in a timely manner. The complaint will be logged to ensure that the impact of future construction works that may impact the community in a similar manner are minimised.

6 Measurement & Evaluation

6.1 Environmental Incidents & Emergencies

6.1.1 Environmental Incidents

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

6.1.2 Environmental Emergencies

Preparation for and response to the environmental impacts of emergency events shall be conducted in accordance with Hansen Yuncken's project Emergency Response Plan. 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.

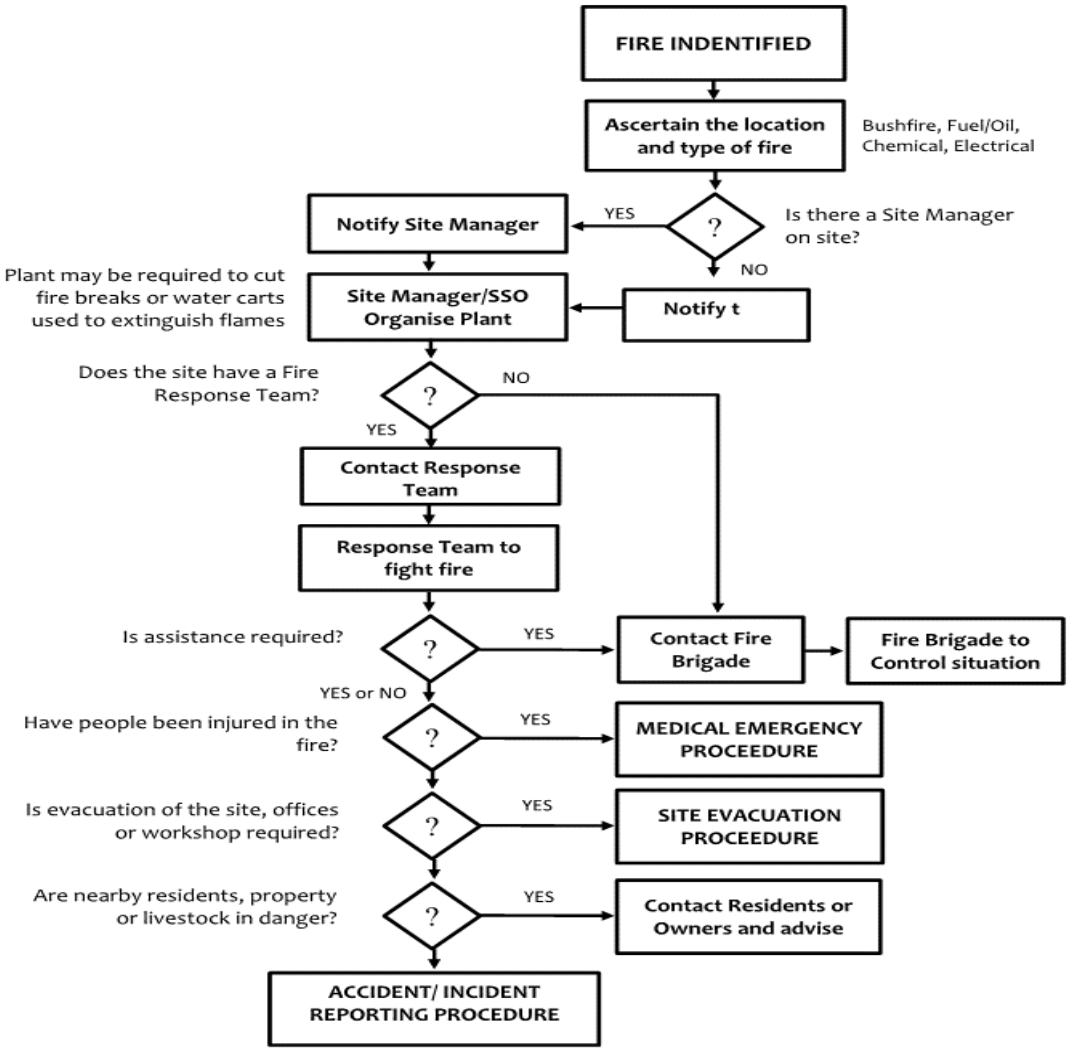
Firstly, call 000 if the incident presents an immediate threat to human health or property. Fire and Rescue NSW, the NSW Police and the NSW Ambulance Service are the first responders, as they are responsible for controlling and containing incidents.

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:

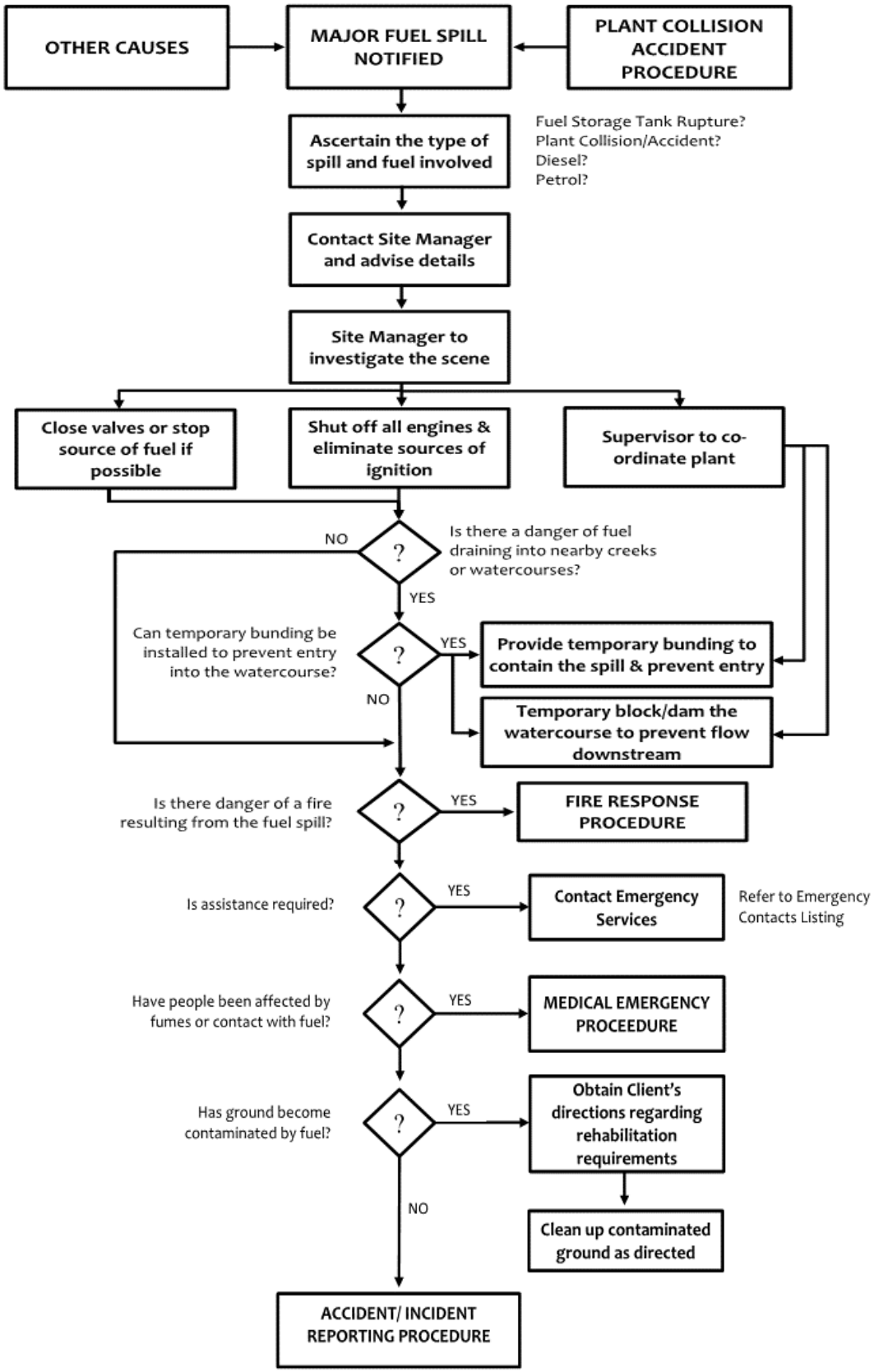
EPA Environment Line on 131 555

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

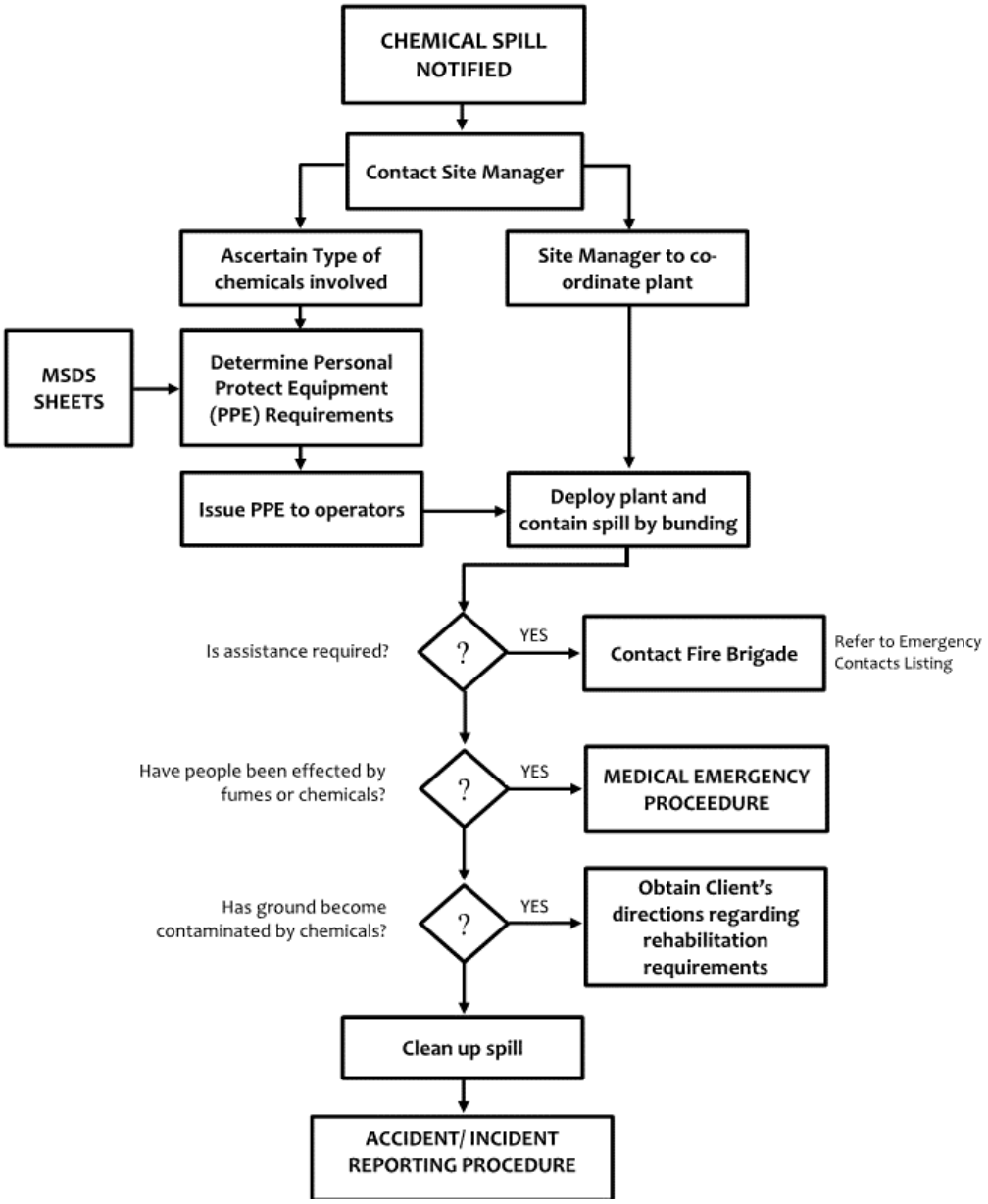
Fire


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

Major Fuel Spill



Chemical Spill



6.2 Environmental Inspections & Audits

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

Fortnightly site inspections,
Monthly task observations,
3 monthly internal audits,
Monthly external audits in line with the contract requirements &,
Bi-Monthly external audits in line with the contract requirements.

Refer to appendix A15 for the HY HSE Audit.

6.2.1 Non-Conformances

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

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

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

Works/products not meeting specified requirements are identified; and/or

Works have not been inspected or tested in accordance with specified requirements (frequency, method, authority); and/or

A systematic and/or repeated omission/error that may result in a time or cost implication to the project.

Note that the client is responsible for all notifications to DPIE.

6.2.2 Reporting & Corrective Actions

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

operating costs,

cost of nonconformity and its correction,

product performance,

regulatory requirements,

client satisfaction, and

any other risks

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

identify nonconformities that relate to: products; QMS processes; resources; subcontractors and outsourced work; client complaints;

review and determine the causes of nonconformities using problem solving tools such as the root cause analysis process - Process Workflow flowchart - to determine the underlying root cause(s) of the nonconformity;

evaluate the need for corrective action to minimise the occurrence of identified nonconformities;

determine and implement the corrective action needed; and

monitor the corrective actions taken and record the results to determine if further improvement is necessary to get it right.

Actions taken to eliminate the cause of nonconformity must flow from the root cause analysis and may involve changes to product, process, resources, methods, equipment, etc. or any combination of these.

Records of the actions taken and follow-up activities shall be monitored and maintained by the project Ensure timely completion of any open corrective action. Monitor corrective action records on an ongoing basis, for any recurrence of the nonconformity where corrective action was taken.

HY will provide appropriate notification to Johnstaff and SINSW as described below;

Site conditions –

If the Contractor becomes aware of Adverse Site Conditions, the Contractor must notify the Principal in writing as soon as possible and in any event within 7 days after becoming aware of the Adverse Site Conditions. Where practicable, the notification should be given before the Adverse Site Conditions are disturbed. The notification must include details of:

The Site Conditions the Contractor claims are Adverse Site Conditions;

- The reasons why the Contractor claims that the Site Conditions are Adverse Site Conditions (having regard to the warranty in clause 36.2), including any information supporting this contention;
- The effect on the Works;
- The effect on achieving Completion;
- The additional work and resources involved and the Contractor's estimate of its entitlement to any adjustment to the Contract Price; and
- Any other matters the Contractor considers relevant.

  - Notify the Principal immediately upon discovering any damaged services or services that obstruct the Works and are not shown in the Principal's Documents.

- WHS -

  - The Contractor is to notify the Principal and Project Manager of an incident that has occurred on-site by submitting a high level written correspondence within the same day of occurance and follow up with a detailed final report withion 48 hours of occurance of any incident

  - Notify the Principal of any notifiable incident and any incident requiring medical treatment or involving lost time as soon as reasonably practicable after the incident. Provide a written report to the Principal within twenty-four hours after an incident, giving details of the incident and evidence that requirements of the WHS Act have been met.

  - Immediately notify the Principal of any Prohibition, Improvement, Non-disturbance or Penalty Notice issued by SafeWork NSW for any work under the Contract.

- Hazardous substances discovered unexpectedly on the Site

  - If any Nominated Hazardous Substance is discovered unexpectedly on the Site, the Contractor must suspend all work that may result in exposure to the substance and notify the Principal immediately of the type of substance and its location.

- Not less than 7 days prior to starting any asbestos removal work, notify the local office of SafeWork NSW and the Principal of the intention to carry out that work

- Environmental Management -

- Immediately notify the Principal of any pollution incident that may cause material harm to the environment, providing evidence that notification requirements of the POEO Act have been met, where applicable

The client is responsible for all appropriate notifications to DPIE.

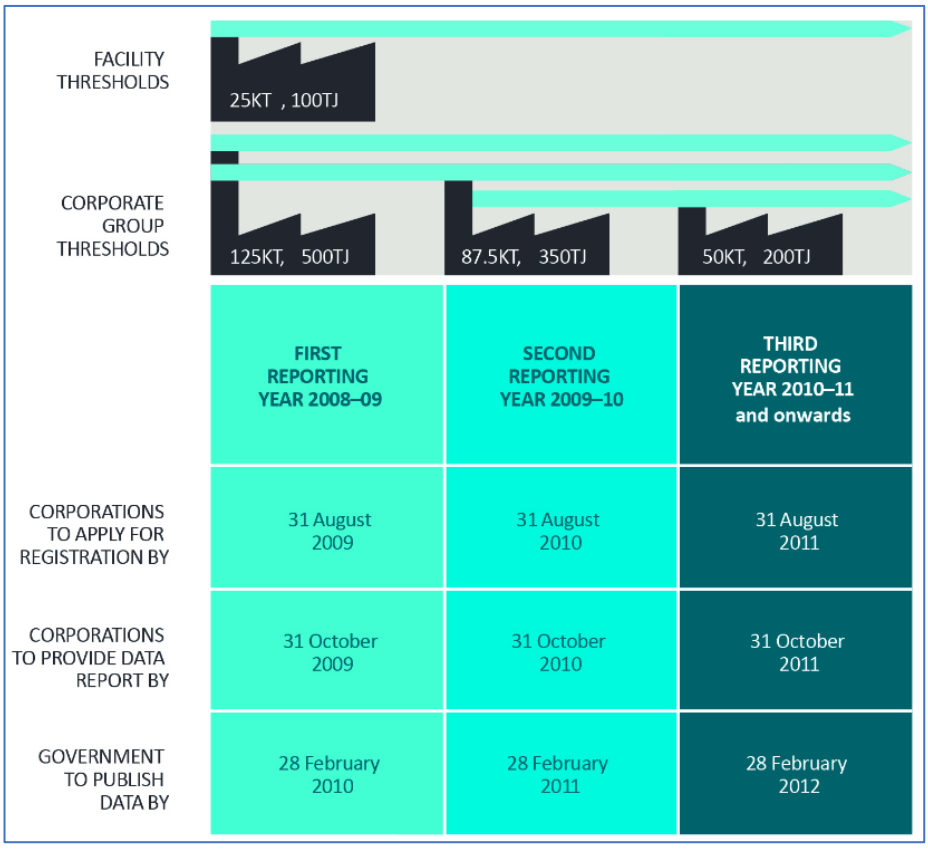
6.3 National Greenhouse & Energy Reporting (NGER)

6.3.1 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).

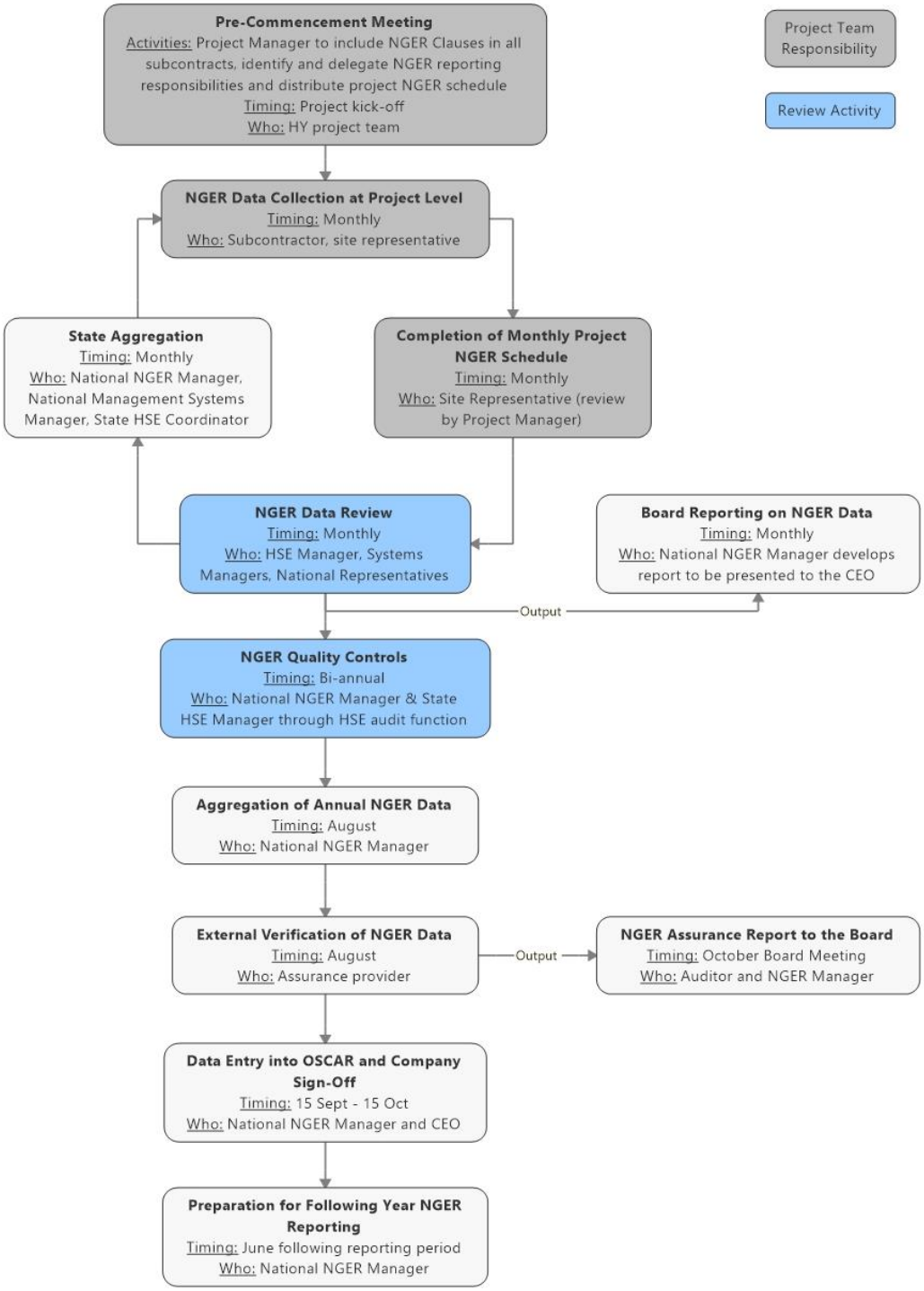
6.3.2 Reporting Thresholds

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 (CO2-e) annual report (NGER).



	FIRST REPORTING YEAR 2008–09	SECOND REPORTING YEAR 2009–10	THIRD REPORTING YEAR 2010–11 and onwards
CORPORATIONS TO APPLY FOR REGISTRATION BY	31 August 2009	31 August 2010	31 August 2011
CORPORATIONS TO PROVIDE DATA REPORT BY	31 October 2009	31 October 2010	31 October 2011
GOVERNMENT TO PUBLISH DATA BY	28 February 2010	28 February 2011	28 February 2012

6.3.3 NGER Reporting process



6.3.4 NGER Data Collection

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

7 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)

8 Appendices

8.1 A.1 Hansen Yuncken Environmental Policy Statement

HANSENYUNCKEN

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

Page 1 of 1

8.2 A.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, and 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

QMS 010

Quality Control Services QCS ENVIRONMENTAL

JAS-ANZ

www.jas-anz.org/register

8.3 A.3 Site Location

86 Chelmsford Ave, Epping, NSW, 2121

Source: Google Maps

8.4 A.4 HSE Project Risk Assessment

HANSENYUNCKEN

PROJECT HSE RISK ASSESSMENT

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

RELEVANT PROCEDURE:	Project HSE Risk Assessment
PROJECT:	New Primary School in Epping & Epping West Public School Alterations and Additions
JOB NO:	SC134
ASSESSED BY:	Dylan Screpis
ASSESSMENT DATE:	October 2021

RISK ASSESSMENT TABLE		**Consequence**				
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Likelihood		Significant	Major	Moderate	Minor	Insignificant
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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**
Amenities					
Access	A	4	Medium	SafeWork NSW Code Of Practice: Managing the work Environment and Facilities	Gravel, all weather 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	SafeWork 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	SafeWork NSW Code Of Practice: Managing the work Environment and Facilities	A cleaner is engaged twice a week to manage and maintain all amenities.
Seating	A	4	Medium	SafeWork 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	SafeWork NSW Code Of Practice: Managing the work Environment and Facilities	Lighting is setup in all amentities for safe access
Air Quality	A	4	Medium	SafeWork 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	SafeWork NSW Code Of Practice: Managing the work Environment and Facilities	Air conditioning installed to all lunch sheds
Drinking water	A	4	Medium	SafeWork NSW Code Of Practice: Managing the work Environment and Facilities	Bubbler set up at lunch sheds and varoius locations throughout site
Dining Facilities	A	4	Medium	SafeWork NSW Code Of Practice: Managing the work Environment and Facilities	Clean and tidy tables are available in all lunch sheds. There is sufficient space for all workers to site down and have lunch
Hand washing	A	4	Medium	SafeWork 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	SafeWork NSW Code Of Practice: Managing the work Environment and Facilities	Hot showers are provided on site
Change Room	A	4	Medium	SafeWork NSW Code Of Practice: Managing the work Environment and Facilities	Change rooms with benching and coat hooks are proivded on site for workers to change clothes
Air Quality					
Dust from plant & truck movements	C	4	Medium	WHS 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 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	SafeWork NSW Code Of Practice: WHS 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 photo ID at all times and sign into the site attendance register on a Daily Basis after they have been Inducted.
Unauthorised access to Site	B	3	Medium	SafeWork NSW Code Of Practice: WHS Consultation, coordination and cooperation HY procedure - Site Establishment Hansen Yuncken HYer Standard 09 Site Establishment	Install safety/warning signage e.g. Construction Site Authorised Persons Only, All visitors report to site office Where a security fence is used to control unauthorised entry onto a construction site, they should: • be constructed from suitable, dedicated materials with no holes or gaps; • be a suitable height to deter entry (for example, at least 1.8 metres high) • be soundly constructed (for example, gates and joints) • be secure and not present a weak point for entry • be stable and able to withstand anticipated loads or forces (for example, strong winds, persons attempting to climb the fence) • be difficult to gain access under the fence and to scale the fence Where a fence is comprised of discrete panels, the joints should not weaken it and should provide the same level of security as the panels Sheets of reinforcing mesh should not be used as site fencing because it may allow adequate hand and foot hold for children to climb over the protruding ends Fencing with signage and shade cloth type coverings may require additional support to resist wind loadings. Gates should not represent a weak point and the closed gate should provide the same level of security Gates to have locks and chains fitted Gates to be kept locked where required, e.g. vehicle access points, or traffic controllers in place Undertake regular inspections to ensure integrity of fences and gates After Hours Security on Site
Unauthorised access to work areas / Work areas not secured	B	4	Medium	SafeWork NSW Code Of Practice: WHS Consultation, coordination and cooperation HY Procedures - Work Permits, Excavations and Trenches, Working at Heights, Inexperienced workers	Barricading of excavations and trenches Signage in place (danger/caution/mandatory) Work Permit systems Exclusion zones Lock access to roof areas HRCW SWMS Safe access to work areas Communication of work areas/exclusion zones at daily prestart meetings Site specific induction
Visitors entering site without Hansen Yuncken permission would be unaware of site hazards eg, asbestos, gas lines etc	C	5	Low	SafeWork NSW Code Of Practice: WHS 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.

PROJECT HSE RISK ASSESSMENT

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RELEVANT PROCEDURE:	Project HSE Risk Assessment
PROJECT:	New Primary School in Epping & Epping West Public School Alterations and Additions
JOB NO:	SC134
ASSESSED BY:	Dylan Screpis
ASSESSMENT DATE:	October 2021

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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**
Pedestrians/ workers walking around site being struck by vehicles/trucks/ plant moving around site	D	1	Medium	SafeWork NSW Code of Practice: Managing the risks of plant in the workplace SafeWork 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	SafeWork NSW Code Of Practice: How to manage work health and safety risks	Gate keeper 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	Ford Civil/ Traffic Construction Traffic Management 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	WHS Management Pan	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		A Parking area on site has been established. Vehicles are not permitted to park outside of the car park area.

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Asbestos					
Workers being exposed to the asbestos contaminated soil (ACM) at various locations around site	NA	3	NA	Working with asbestos guide 2008	A contamination report for the sites has been produced and has not identified any ACM. An unexpected finds protocol is to be implemented
Unidentified finds of asbestos	B	3	Medium	HY Procedure SafeWork NSW Code of Practice: How to manage and control asbestos in the workplace SafeWork NSW Code of Practice: How to safely remove asbestos	If asbestos is found stop work immediately and notify HY site staff immediately whom will arrange for a hyienist to assess the area. Area to be closed off with bunting/ red white tape and warning signage. 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	SafeWork NSW NSW Code of Practice: Managing risks of hazardous chemicals in the workplace	Fuel to be stored in fuel storage areas only. Fuel drums are to be placed back in the fuel storage area after refuelling has been completed. No refuelling near any hot works being undertaken. All subcontractors must have a 'refuelling SWMS'
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 selear 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	SafeWork NSW Code Of Practice: Control of work related exposure to Hepatitis and HIV (blood borne) viruses WHS Management Plan SafeWork NSW: Code Of Practice: Managing the work Environment and Facilities	A cleaner has been engaged by Hansen Yuncken to clean amenities on a bi-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 emergency 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	WHS Management Plan	All design changes must be risk assessed by HY and Consultants. 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 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 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 out riggers sinking in ground resulting in crane rolling over	A	1	High	NWHSC 1010: National Standard for Plant 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 WHS Plan	Dogman and crane operator to constantly communicate with each other. Crane operator to take directions from dogman only.

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HAZARD (Include additional project specific hazards as required)	**L**	**C**	**Class**	**Legislation, Standards & Codes of Practice**	**Enter Details of Specific Controls Required**
Concrete					
Concrete Pumping - overload formwork structure	A	2	High	WHS Plan	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	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	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	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	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 cleaned up immediately. Slurry to be cleaned up immediately
Strike PT cables whilst cutting concrete	B	4	Medium	WHS Plan	Review As Constructed Drawings, consult Structrular 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	NWHSC 1009: Safe Working in a Confined Space AS 2865: Confined Spaces SafeWork NSW Code of Practice: Confined spaces	No chemicals are to be used inside in-ground pits. Close supervision of all men working inside pits at all times. Lid to be kept open at all times. Sparging up of pits is to be conducted as pit risers are installed to minimise the need to enter the pit afterwards
Workers unable to easily enter and exit trenches	D	3	Medium	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 2017: Part 4.3 Confined spaces	All open trenching has good ventilation. Refuelling does not occur inside open trenches. Oxy acetylene equipment is kept clear of open trenching.
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	WHS Plan	Unexpected finds protocal
Deliveries To Site					
Delivery vehicle drivers unaware of site hazards	A	4	Medium	SafeWork NSW Code of Practice: Moving Plant On Construction Sites: 2004	All delivery drivers must complete a 'delivery driver induction' prior to entering site.
Delivery vehicle unloading in an unsafe area eg. in an area where there is mobile plant or pedestrians frequently moving past	C	2	Medium	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. Exclusion zones to keep people clear of loading/unloading areas will consist of flagging on bollards with Danger Loading/unloading area – no go zone signage Delivery Driver Safe Zone Three pedestrian control barriers will be installed off the exclusion zone "bollards and flagging" where the delivery driver will remain during loading/unloading activities. This driver safe zone must be on the same side of the vehicle where mobile plant is operating so the operator has line of sight with the delivery driver at all times. A "driver safe zone" sign will be attached to the barriers.
Pedestrians/ other workers in the area being struck by materials as they are being unloaded from the truck	A	4	Medium	WHS 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	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 Drug and Alcohol Management Plan	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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Dust					
Disruption/ nuisance to neighbours and client	D	5	Low	SafeWork NSW Code of Practice: Managing the risks of hazardous chemicals in the workplace Environmental Engagement Plan Zoic Construction Soil and Water Management Plan	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 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 cleaned up immediately. Slurry to be cleaned up immediately . HY Cutting amnd Coring permit in place.
Electricity					
Electrocution from faulty/ damaged electrical equipment	D	1	Medium	AS/NZS 3017: Electrical installations - Testing & inspection guidelines SafeWork NSW: Code Of Practice: Managing Electrical Risks	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	WHS Plan SafeWork NSW: Code Of Practice: Managing Electrical Risks	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 SafeWork NSW: Code Of Practice: Managing Electrical Risks	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	SafeWork NSW: Code Of Practice: Managing Electrical Risks	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 SafeWork NSW: Code Of Practice: Managing Electrical Risks	All subcontractors conducting excavation works must obtain a ground works permit 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 SafeWork NSW: Code Of Practice: Managing Electrical Risks	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.
Emergency Services Unavailability					
Injured person may not receive first aid treatment in a sufficient amount of time	E	3	Low	WHS Act 2011 SafeWork NSW Code of Practice: First Aid in the Workplace 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. HY site staff have senior first aid training. There are first aid kits in the site office. The first aid facilities have been setup in accordance with SafeWork NSW Code Of Practice: First Aid in the Workplace 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 2017	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 Northrop Water Stormwater Managemetn Plan	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 discharged in accordance with the stormwater management plan. The water must be flocked, tested and approved by HY prior to being pumped into the existing stormwater system.
Erosion causing perimeter scaffolding to become unstable	NA	3	NA	Environmental Management Plan	All perimeter scaffolding to be checked following significant rainfall and rectified by scaffolder as required.

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Existing services					
Damage to existing services could cause major disruption to the client eg. live power, security cables etc.	E	5	Low	SafeWork NSW Code Of Practice: Excavation Work WHS Plan	Subcontractors are available to repair services in the event they are damaged. HY to notify client
PLANT OPERATORS STRIKING UNDERGROUND SERVICES WHILST UNDERTAKING TRENCHING/ EXCAVATION WORKS	C	1	High	Ausgrid National Standard NS 156 - Working near or around underground cables WHS Plan	A ground works permit 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
Explosive Powered Tools					
Eye and hearing damage	E	4	Low	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	SafeWork NSW Code Of Practice: Excavation Work	All trenches over 1.5m must be benched at 1:1 at a maximum of 1.5m or battered at 45 degrees unless stated otherwise by a geotechnical engineers report. A ramp or steps must be cut into the trench for easy pedestrian access.Shoring boxes to be used for trenches greater than 1.5 m deep if benching is not possible
Excavation under 1.5m	C	4	Medium	SafeWork NSW Code Of Practice: Excavation Work	Accessing trenches under 1.5M Supervisor is to inspect trenches daily and ensure that ground condtions are suitable and that workforce access trenches safely and not to jump into trenches, only step down into them.
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	WHS Management 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 out riggers. Sole plates are to be used underneath EWP stabilizers if the ground is soft. Ground conditions to be constantly checked during and after rain fall.
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	SafeWork NSW 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	SafeWork NSW Code of Practice:Managing the risks of falls at the workplace	Spread first section of joist on beam from intermediate work platform and only access the deck to start laying ply once the joist are down and handrail is in place. Use scaffold to gain access to deck to start laying plywood When you sheet up to 1.8m from end of joist lay next section of joist NEVER sheet to the end of the joist even if there is a catch deck in place Lay joist across bearers fixed at a spacing of 450 maximum to prevent any possibility of falls while construction of the deck. Establish working areas for steelfixers & other trades. A 'formwork only' zone should be maintained behind the leading edge. This zone should be clearly demarcated by signage and a barrier. Protect open penetrations with edge protection (e.g. handrails) or cover securely. Cast5in metal mesh with a small aperture (e.g. 50 x 50 mm mesh size or smaller) for small penetrations. Paint ply covers with appropriate warnings (e.g. "PENO" or similar) and fasten securely.
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

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PROJECT HSE RISK ASSESSMENT

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PROJECT:	New Primary School in Epping & Epping West Public School Alterations and Additions
JOB NO:	SC134
ASSESSED BY:	Dylan Screpis
ASSESSMENT DATE:	October 2021

RISK ASSESSMENT TABLE		**Consequence**				
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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 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 2017 Part 4.4 Falls	All penetrations to be covered and secured and the wording "peno" or "do not remove" sprayed onto the plywood/metal plate.
Workers falling from ladders	C	3	Medium	SafeWork NSW Code Of Practice: Managing the risk of falls at workplaces	Ladders are to used in accordance with the HY ladder policy. Ladders are the last resort for height access and other means of height access should be used eg EWP's, mobile scaffolding, platform ladders etc. Standard A frame ladders can be used but only for short duration works or tight restricted spaces such as small rooms where a scissor lift will not fit. Ladders with 4 steps or less are not permitted on site
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 trannys. Scaffolder will erect 'danger scaffold incomplete' signage until the scaffold is ready for use and a handover certificate has been issued to HY. All trades have been made aware not to alter the scaffold under any circumstance.
Personnel falling into open trenches or off the edges of batters and excavations	D	3	Medium	Emergency Response Plan	All open trenches and along the top edge of batters must be bunted off at least 1m from the edge of the trench. Deep trenching must be benched every 1.5m so that a person can only fall a maximum of 1.5m.
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	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 materials must be stacked neatly clear from edge of deck and kick boards must be put in place
Building material and tools falling from scaffold decks	NA	2	NA	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	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 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	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	SafeWork NSW Code of Practice: Managing the risks of hazardous chemicals in the workplace	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

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ASSESSED BY:	Dylan Screpis
ASSESSMENT DATE:	October 2021

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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**
First aid					
Persons unaware of what to do if an individual requires first aid	E	5	Low	WHS Regulation 2017	Emergency response plan posted on site notice board. All workers explained of the location of the first aid room and contact details for site first aiders.
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 amenities. 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	SafeWork NSW Code of Practice: First aid in the workplace:	Access routes to be kept clear around site for emergency vehicles
Inadequate first aid supply's	E	3	Low	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 SafeWork NSW Code of Practice: First aid in the workplace
Inadequately trained first aiders/ insufficient number of first aiders	E	3	Low	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	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	Emergency Response Plan	Defibrillator to be kept in first aid room
Number of buildings	E	5	Low	Emergency Response Plan	5 - all easily accessible for pedestrians or vehicles
Maximum Number of levels on each building	E	5	Low	Emergency Response Plan	3 - All have internal stair access
Time taken to walk to furthest point on site	D	4	Low	Emergency Response Plan	5 minutes - from first aid room to furthest point on site
Nearest Hospital	D	4	Low	Emergency Response Plan	Camden Hospital Sydney
Nearest Medical centre	D	4	Low	Emergency Response Plan	Gregory Hills Medical centre
Maximum time to medical service	D	4	Low	Emergency Response Plan	10 min
Maximum number of workers	D	4	Low	Emergency Response Plan	>100
Site hours	E	5	Low	Emergency Response Plan	7:00am - 6:00pm Monday - Friday 8:00am - 2:00pm Saturday. No Works on Sundays or Public Holidays. A first aid qualified person from Hansen Yuncken is on site at all times
Average hours worked by a worker	E	5	Low	Emergency Response Plan	Workers generally work 8-9 hours per day
Remote or isolated works	E	4	Low	Emergency Response Plan	Workers are not permitted to work alone. There must be atleast 2 workers in the same area at all times. Due to the nature of the site it is unlikely any worker will be isolated or work alone
Types of injuries over the last 12 months	E	4	Low	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	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
Cuts and abrasions	C	4	Medium	Emergency Response Plan	Type A first aid kit has contents for treating these types of injuries
Sprains and strains	D	4	Low	Emergency Response Plan	Ice packs and instant cold packs to be available
Eye injuries	D	3	Medium	Emergency Response Plan	Eye wash facilities will be made available
Burns	E	4	Low	Emergency Response Plan	Burn cream and non adherent wound dressings
Fractures	D	4	Low	Emergency Response Plan	Type A first kit and a stretcher for moving injured workers
Dislocations	D	4	Low	Emergency Response Plan	Type A first aid kit has triangle slings
Poisoning and toxic effect of substances	E	5	Low	Emergency Response Plan	Safety data sheets available for all substances used.
Heat stroke	D	4	Low	Emergency Response Plan	Ice packs and cold water on standby. Subcontractors have been addressed at side induction to take breaks, work in shade wherever possible., job rotation etc

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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**
Ground Collapse/poor ground					
Plant roll over from sinking in unstable ground conditions	C	3	Medium	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 subcontractor WHS representatives 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	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	WHS Plan 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	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 Environmental Management Plan	A spill kit is kept in the site office. Any drums of fuel larger than 20 litres must be bunded. All trades are to set up a hazardous substance storage are next to their site containers with signage erected 'no smoking', 'Danger Fuel Storage area' etc
Unsafe storage of oxy acetylene equipment	C	3	Medium	AS 4332 The storage and handling of gases in cylinders Environmental Management Plan	Oxygen and acetylene bottles are to be stored in separate ventilated cages 3m apart at the end of each day and appropriate warning signage erected.
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
Heat stress					
Sun burn	D	4	Low	SafeWork NSW Code Of Practice: How to manage work health and safety risks	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.
Heavy lifting (over normal crane operation)					

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Manual handling injuries	E	4	Low	WHS Regulation 2017 Part 4.2 Hazardous Manual Tasks	Team lifts for heavy items. Mechanical lifts wherever possible
Back injuries	E	3	Low	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 wrapped around a solid structure only. Slings to be wrapped by dogman and riggers only
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	hot works permit	Conduct all grinding away from flammable materials and other workers I the area. Be ware of direction of flying sparks
Welders flash to other trades	B	4	Medium	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
Hygiene (poor)					
Unhygienic facilities could result in workers becoming ill and contracting diseases	D	4	Low	SafeWork NSW Code Of Practice: Managing the work environment and facilities	A cleaner has been engaged by Hansen Yuncken to clean amenities on a bi-weekly 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	SafeWork NSW Code Of Practice: Managing the work environment and facilities	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	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 WHS Plan Traffic Management Plan Road Management Act 2004	No lifting of building materials outside of the construction fence unless traffic control and diversions are in place and the subcontractor has seeked approval from the HY Site Manager.
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 2017 Part 4.2 Hazardous Manual Tasks	Gloves to be worn for manual handling tasks as per Hansen Yuncken glove & clip policy

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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 with in 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	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 conatct and eye contact with the operator. No person is to approach the machine until the operator has stopped moving the machine and signalled that it is safe to approach. Spotters working with machines must always stand in an area where they are visible to the operator.
Plant roll over on unstable ground	E	3	Low	SafeWork NSW Code of Practice - Managing the Risks of Plant in the Workplace	Plant operator and HY site staff must assess conditions and determine if the ground is stable for plant. If the plant has out riggers then they must be fully extended. Subcontractors must obtain a 'plant setup permit' from Hansen Yuncken prior to setting up any plant with outriggers eg. concrete boom pumps, cranes, frannas etc
Possibility of scissor lift being driven off edge of concrete slab resulting in scissor lift tipping over	NA	2	NA	SafeWork NSW 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	SafeWork NSW 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	SafeWork NSW Code Of Practice: Control of work related exposure to Hepatitis and HIV (blood borne) viruses	Workers injured by needle stick to be sent to the nearest medical centre
Workers unaware of what to if a needle is found	E	4	Low	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	SafeWork NSW NSW: Code Of Practice: Managing the work environment and facilities	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 Acoustic Dynamics Construction Noise and Virbation Management Plan	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
Overhead Power lines					
Power lines over Chalmers St Construction zone	A	1	High	WHS Plan	All plant and workers must keep clear of overhead power lines as per SafeWork NSW Code Of Practice: Work near overhead power lines
				SafeWork NSW Code of Practice: Work near overhead power lines 2006	Tiger Tails to be installed prior to and hoarding installation and cranage

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PROJECT HSE RISK ASSESSMENT

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ASSESSMENT DATE:	October 2021

RISK ASSESSMENT TABLE		**Consequence**				
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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**
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. Lifting gear register to be supplied to Hansne Yuncken. Hansne Yuncken Sling verification checklist to be completed for soft slings if not captured on lifting register.
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	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	D	2	Medium		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	E	1	Medium	SafeWork NSW Code Of Practice: Excavation Work	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
Scaffold					
Fall from heights over 2m	C	2	Medium	WHS Regulation 2017: Part 3.1 Managing risks to health and safety	
Fall from heights whilst forming up and pouring concrete	C	2	Medium	AS4576: Guidelines for scaffolding	
Insufficient egress from building in the event of an emergency	B	5	Medium	WHS Plan	
Inadequate development of scaffold plan	D	5	Low		
Possible scaffold overload resulting in scaffold collapse - materials and workers	C	4	Medium		
Scaffold sinking into soft ground compromising structural integrity	D	3	Medium		
Sediment and erosion control					
Mud, dirt and sediment polluting stormwater systems	C	4	Medium	Environmental Protection Act 1994	Northrop sediment and erosion control plans
Mud, dirt and sediment polluting stormwater systems	C	4	Medium	Environmental Management Plan	Silt barriers to be installed around low areas of site to catch all rain fall. All stormwater pits to be covered in silt control. All vehicles tyres must be washed clean of mud prior to leaving site. Silt socks to be placed in front of stormwater drains in gutters. Inspections to be carried out weekly by HY using the Site HSE inspection report

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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**
Site Lighting					
Sun glare restricting plant operators visibility	C	4	Medium	WHS Regulation 2017	Sunglasses to be worn by plant operators as required. Certain tasks may also be conducted at different times of the day to stop the sun becoming an issue.
Lighting (Poor)	NA	5	NA	SafeWork 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 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	D	1	Medium	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	D	1	Medium	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	D	1	Medium	NSW Code of Practice: Formwork 1998	Structural steel must be signed off by engineer prior to installation of precast concrete panels
Structural steel collapse	D	1	Medium	AS 4991: Lifting devices	Structural steel must be erected by qualified dogmen and riggers. Subcontractor must submit ITP's to Hansen Yuncken. Hansen Yuncken to complete QC Compliance audit report: Structural Steel checklist
Synthetic fibres					
Unsafe handling of roof insulation	D	4	Low	SafeWork 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 are 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	C	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	C	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 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.

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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**
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 All these controls need to be identified on site layout plan and communicated to all workers at site induction.
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 purposesAll these controls need to be identified on site layout plan and communicated to all workers at site induction.
Blind spots creating collisions between vehicles	E	3	Low		Warning signs to be erected at blind spots All these controls need to be identified on site layout plan and communicated to all workers at site induction.
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 seperated theough entry/ exit by way of concrete jersy kerbs. All these controls need to be identified on site layout plan and communicated to all workers at site induction.
Tree lopping					
Tree lopping	A	4	Medium		Area to be delimeated and HRCW for falling from heights and Plant and Equipment
Vehicle & plant exhaust fumes					
Workers overcome by exhaust fumes from plant	E	1	Medium	SafeWork NSW Code of Practice: Managing risks of hazardous chemicals in the workplace	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	SafeWork NSW Code of Practice: Managing risks of hazardous chemicals in the workplace 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
Waste Management/ Littering					
Inadequate bins on site to dispose of rubbish	E	3	Low	WHS Act/ Regulation 2017 Zoic Construction Waste management Plan	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	SafeWork NSW Code of Practice; Managing the risk of falls in the workplace 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 2017 Part 4.4 Falls	Install handrail, mid-rails and toe-boards where scaffolders are working from deck below while building using the approved control methods such as the 1m rule or Advanced guardrail systems
Perimeter scaffold collapse	E	1	Medium	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 SafeWork NSW Code Of Practice: Safe Work On Roofs: Part 1
Mobile scaffold collapse	B	1	High	SafeWork 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	WP ticket required to operate boom lift >11m . EWPAA yellow car required for EWP <11m. Ground conditions to be checked prior to operation. Harnesses and lanyards must be maintained and kept in good condition
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 accidently being driven off edge of slab. Scissor lift operators must have a EWPAA yellow card or WP type ticket. Stabilizers and sole plates must be used for rough terrain scissors used on soft ground
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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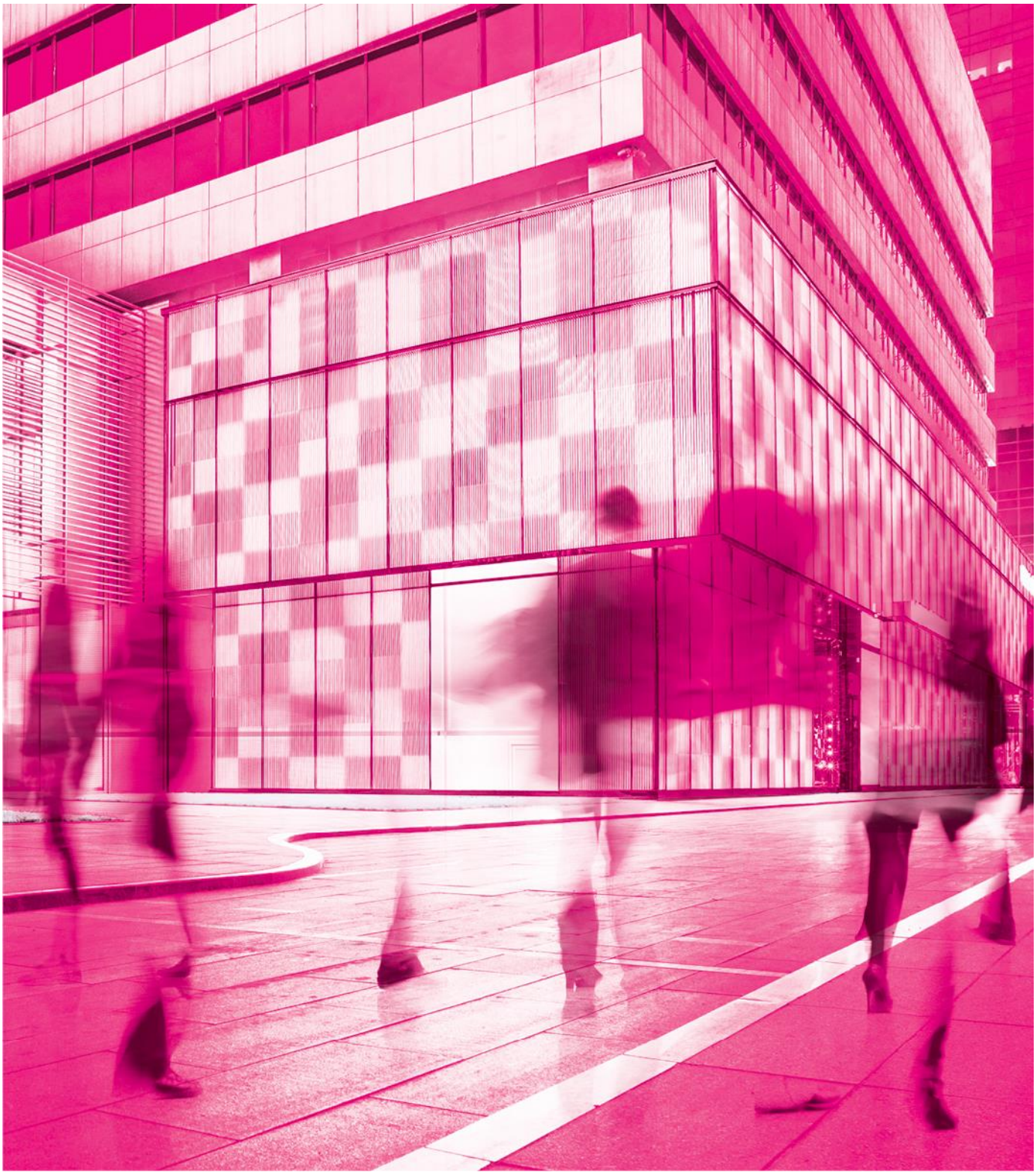
HAZARD (Include additional project specific hazards as required)	**L**	**C**	**Class**	**Legislation, Standards & Codes of Practice**	**Enter Details of Specific Controls Required**
Potential Emergencies - preparation for and response to potential emergency events assessed high or medium risk to be defined 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
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
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	B	3	Medium	HY Procedure for Emergency Response	Contact with overhead power lines is part of the HY emergency response plan
Precast Panel Collapse	D	1	Medium	HY Procedure for Emergency Response	Precast panel collapse is part of the HY emergency response plan
Structural failure/collapse	D	1	Medium	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

8.5 A.5 Construction Traffic and Pedestrian Management Sub-plan



Construction Traffic & Pedestrian Management Plan;

New Primary School in Epping

For Hansen Yuncken c/o Schools Infrastructure

26 November 2021

parking;
traffic;
civil design;
wayfinding;

ptc.

Document Control

New Primary School in Epping, Construction Traffic & Pedestrian Management Plan

Issue	Date	Issue Details	Author	Reviewed	For the attention of
1	23/08/21	Draft Issue	SC/FM	SN	Sasha Vuckovic
2	05/10/21	1st Issue	SC/JJ	SN	Dylan Screpis
3	25/11/21	For Consultation	FM	SN	Paul Sartor
4	25/11/21	2nd Issue	FM	SN	Dylan Screpis
5	26/11/21	Minor update	FM	DS	Harrison Jones

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1. Introduction

1.1 Project Summary

ptc. has been engaged by Hansen Yuncken to prepare a preliminary Construction Traffic & Pedestrian Management Plan (CTPMP) associated with the proposed construction for a New Primary School in Epping, located at 86 Chelmsford Avenue, Epping NSW 2121.

Ongoing consultation with TfNSW and City of Parramatta Council has been undertaken as part of regular Traffic Working Group meetings (commenced earlier in 2021) & direct submission of draft issue on 25 November 2021, addressing draft SSDA condition B15, B20 and B21. (Refer to Section 1.3). The location of the site is shown in Figure 1.

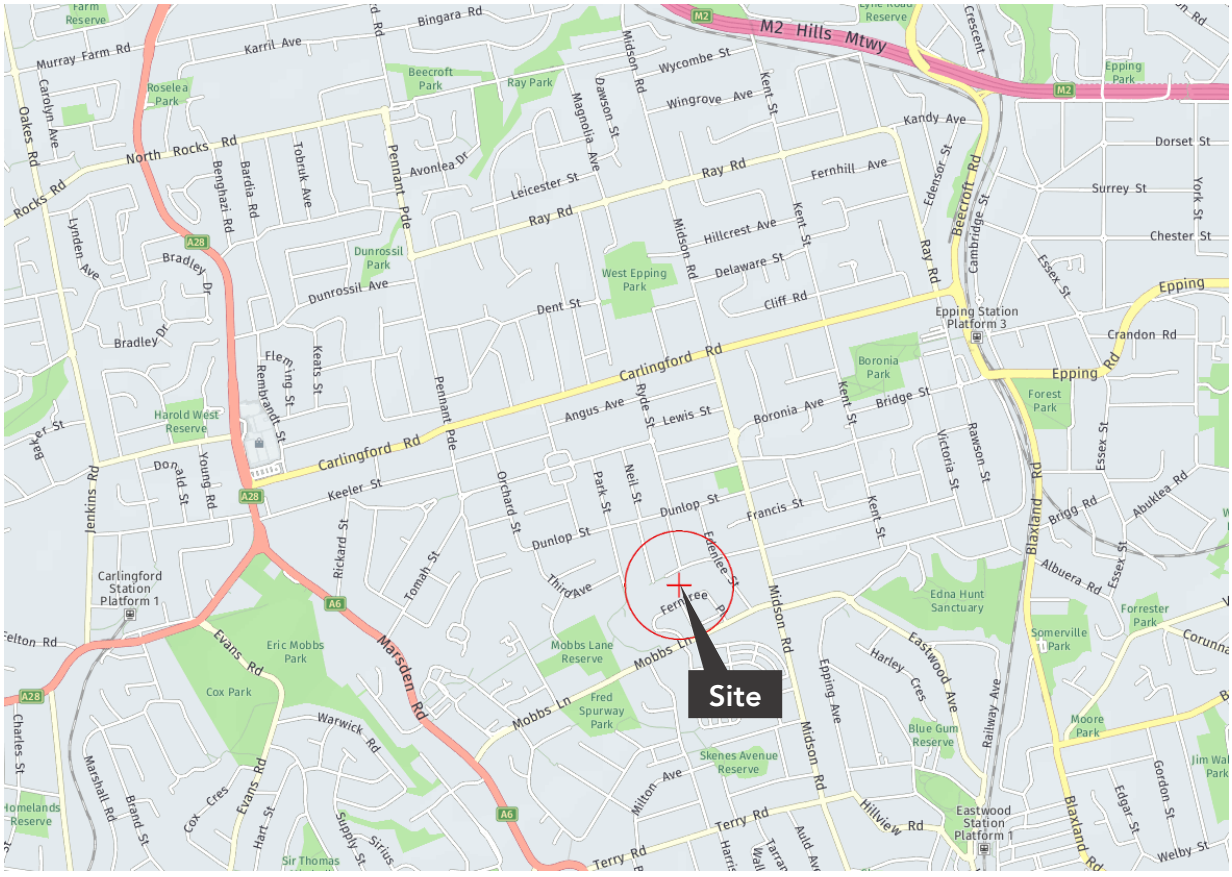

Figure 1 - Site Location (Source: HereWego Maps)

1.2 Secretary's Environmental Assessment Requirements (SEARs)

As per *Section 6. Transport and Accessibility* of the Secretary's Environmental Assessment Requirements (SEARs) dated 14 September 2020, a preliminary Construction Traffic and Pedestrian Management Plan is to be prepared.

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1.3 Compliance with Conditions of Consent

A summary of the relevant requirements of the SSDA conditions of consent are provided below for clarity.

Condition B15

The **Construction Traffic and Pedestrian Management Sub-Plan** (CTPMSP) must be prepared to achieve the objective of ensuring safety and efficiency of the road network and address, but not be limited to the following:

(a) Be prepared by a suitably qualified and experienced person(s):

Refer to Document Control Sheet.

(b) Be prepared in consultation with Council and TfNSW:

Refer to Section 1.1

(c) Detail

i) Measure to ensure road safety and network efficiency during construction in consideration of potential impacts on general traffic, cyclists and pedestrians and bus services;

Refer to Section 4.11, Section 4.17, Section 4.20, Section 4.21 and Attachment 2.

ii) measures to ensure the safety of vehicles and pedestrians accessing adjoining properties where shared vehicle and pedestrian access occurs;

Refer to Section 4.11, Section 4.17, Section 4.18, Section 4.21 and Attachment 2.

iii) detail heavy vehicle routes, access and parking arrangements.

Refer to Section 4.8 and Attachment 3.

iv) the swept path of the longest construction vehicle entering and exiting the site in associated with the new work, as well as manoeuvrability through the site, in accordance with the latest version of AS 2890.2; and

Refer to Swept paths Plans (Attachment 1) (Drawing 01T-0205 and Drawing 01T-0211)

v) arrangements to ensure that construction vehicles enter and leave the site in a forward direction unless in specific exceptional circumstances under the supervision of accredited traffic controller(s).

Refer to Swept paths Plans (Attachment 1) (Drawing 01T-0205 and Drawing 01T-0211)

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Condition B20

A **Driver Code of Conduct** must be prepared and communicated by the Applicant to heavy vehicle drivers and must address the following:

(a) Minimise the impacts of earthworks and construction on the local and regional road network.

Refer to Section 4.21

(b) *Minimise conflicts with other road users.*

Refer to Traffic Guidance Scheme (Attachment 2)

(c) Minimise road Traffic Noise; and

Refer to Section 4.4, Section 4.21 and Attachment 3.

(d) Ensure truck drivers use specified routes.

Refer to Section 4.8, Section 4.17, Section 4.21 and Attachment 3.

Condition B21

(a) Prior to the commencement of construction, the Applicant must submit a **Construction Worker Transportation Strategy** to the Certifier. The Strategy must detail the provision of sufficient parking facilities or other travel arrangements for construction workers in order to minimise demand for parking in nearby public and residential streets. A copy of the strategy must be provided to the Planning Secretary for information

Refer to Section 4.13

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2. Background Information

2.1 Site Context

The site currently lies within an Educational Establishment (SP2) zone, as shown in Figure 2.

Key features surrounding the site include:

- Low Density Residential (R2) to the North;
- General Residential (R1) to the South;
- Medium Density Residential (R3) to the East; and
- Public Recreation (RE1) to the West.

The proposal relates to the following site:

- Lot 1, DP582172

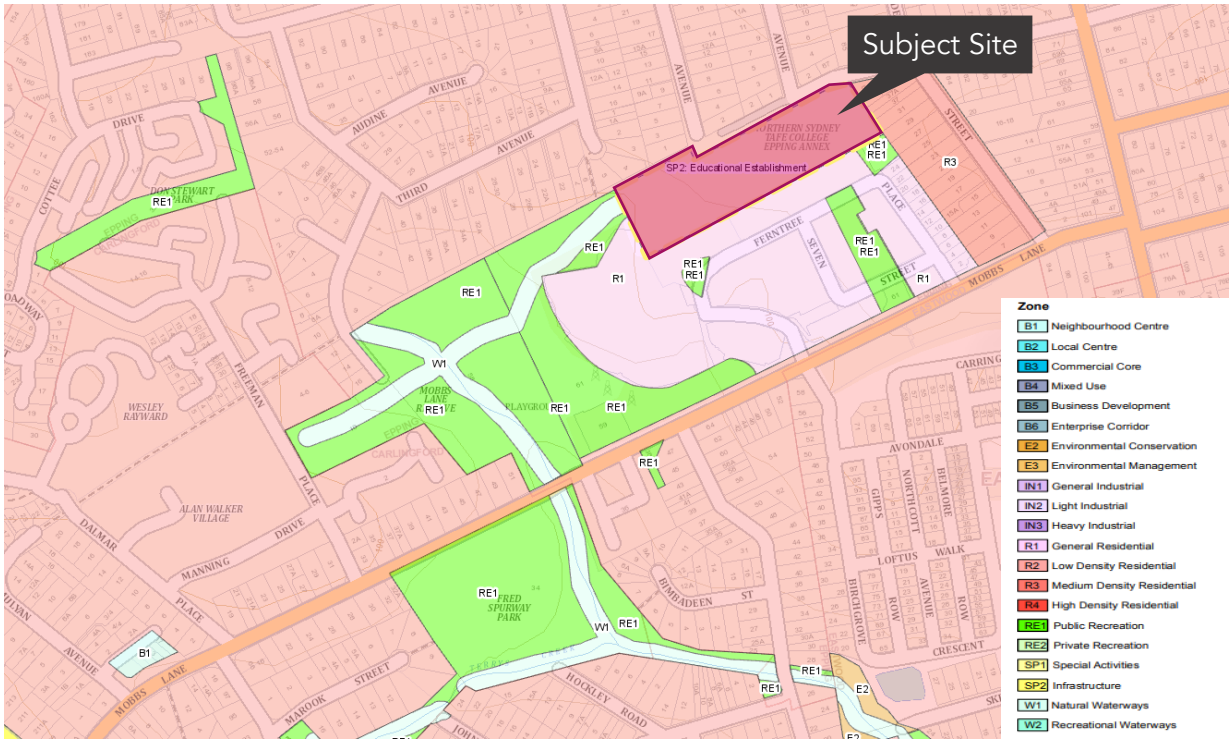

Figure 2 - Local land use map (Source: NSW Planning Portal)

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2.2 Development Proposal

The proposed development is for the establishment of a new K-6 Public School, master planned to cater for up to 1,000 students. Works include:

- Demolition of existing structures associated with the former use of the site as a TAFE campus;
- Construction of new buildings on the eastern and central portions of the site. The works are proposed to be undertake in stages. Facilities which will generally include:
    - Home bases (classrooms) suitable for a school population of 1,000 students;
    - Administration and staff areas;
    - Hall and canteen;
    - Library;
    - COLA;
    - Special education unit; and
    - Special programs area.
- Play spaces in various locations;
- Accessible paths linking the school facilities; and
- A staff car park accessed from Second Avenue.

The proposal will also require potential remediation of the land and tree/vegetation removal. The works are proposed to be undertaken in stages. The Stage 1 works will provide a total of 25 home bases and associated facilities together with a hall and canteen, administration facilities and play spaces. Car parking for the Stage 1 development will also be provided.

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3. Existing Transport Facilities

3.1 Road Hierarchy

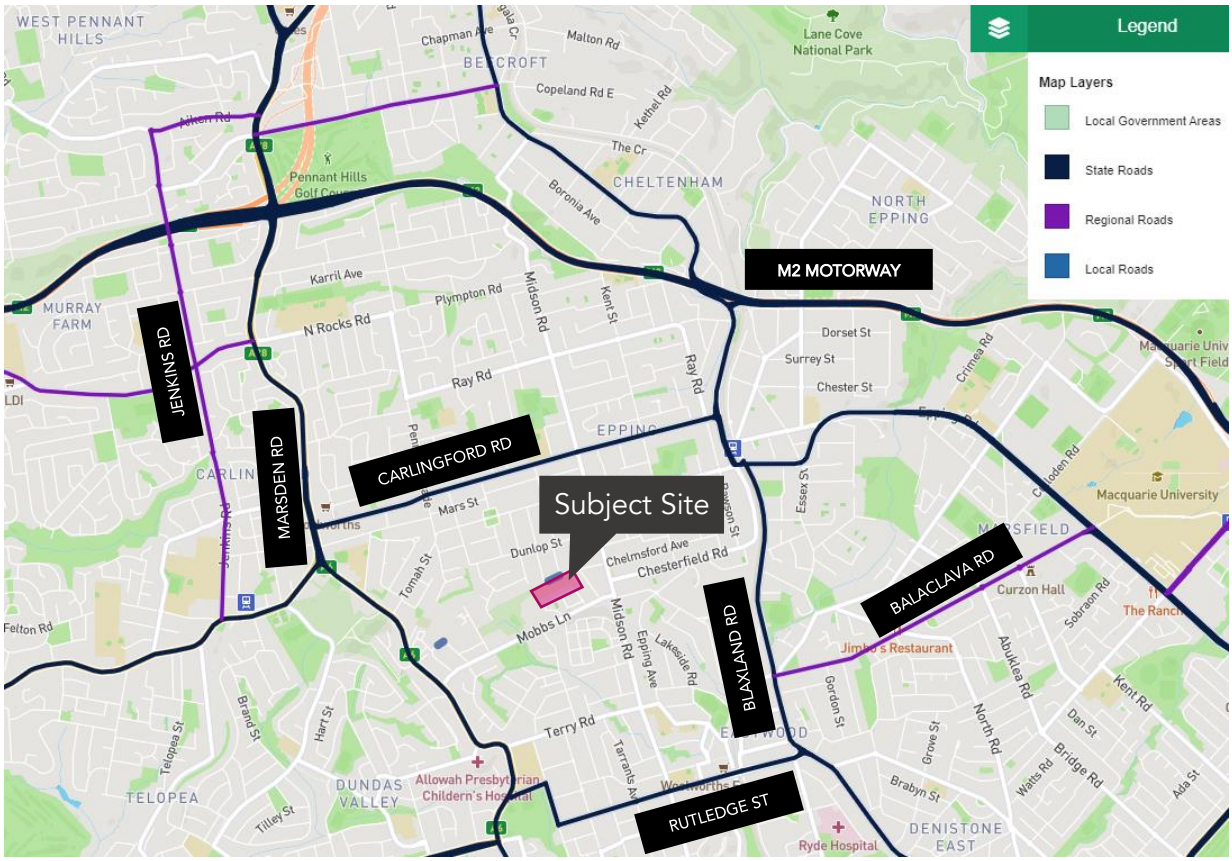

Figure 3 - Road Hierarchy (Source: TfNSW NSW Road Network Classifications)

The NSW administrative road hierarchy comprises the following road classifications, that align with the generic road hierarchy as follows:

State Roads	Freeways and Primary Arterials (TfNSW Managed)
Regional Roads	Secondary or sub arterials (Council Managed, partly funded by the State)
Local Roads	Collector and local access roads (Council Managed)

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3.1.1 Existing Road Network

Table 1 - Existing Road Network - Grimes Lane

Grimes Lane	
Road Classification	Local Road
Alignment	East – West
Number of Lanes	1 lane eastbound, 1 lane westbound
Carriageway Type	Undivided
Carriageway Width	6 metres
Speed Limit	50 kph
School Zone	No
Parking Controls	Unsigned, generally no parking (no through road)
Forms Site Frontage	Yes

Figure 4 - Grimes Lane Eastbound (Source: Google Maps)

Table 2 - Existing Road Network - Chelmsford Ave

Chelmsford Ave	
Road Classification	Local Road
Alignment	East – West
Number of Lanes	1 lane eastbound, 1 lane westbound
Carriageway Type	Undivided
Carriageway Width	6.5 metres
Speed Limit	50 Kph
School Zone	No
Parking Controls	Unrestricted Parking
Forms Site Frontage	Yes

Figure 5 - Chelmsford Ave Eastbound (Source: Google Maps)

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Table 3 - Existing Road Network - First Ave

First Ave	
Road Classification	Local Road
Alignment	North – South
Number of Lanes	1 lane northbound, 1 lane southbound
Carriageway Type	Undivided
Carriageway Width	8.5 metres
Speed Limit	50 Kph
School Zone	No
Parking Controls	Unrestricted Parking
Forms Site Frontage	No

Figure 6 - First Ave Northbound (Source: Google Maps)

Table 4 - Existing Road Network - Second Ave

Second Ave	
Road Classification	Local Road
Alignment	East – West
Number of Lanes	1 lane northbound, 1 lane southbound
Carriageway Type	Undivided
Carriageway Width	8.5 metres
Speed Limit	50 Kph
School Zone	No
Parking Controls	Unrestricted Parking
Forms Site Frontage	No

Figure 7 - Second Ave Northbound (Source: Google Maps)

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Table 5 - Existing Road Network - Carlingford Road

Carlingford Road	
Road Classification	State Road
Alignment	East – West
Number of Lanes	1 lane eastbound, 1 lane westbound
Carriageway Type	Undivided
Carriageway Width	13 metres
Speed Limit	60 kph
School Zone	Yes
Parking Controls	No stopping, Clearway 6am-7pm M-F, 9am-6pm Sat, Sun & Public Holidays both directions
Forms Site Frontage	No

Figure 8 - Carlingford Road Eastbound (Source: Google Maps)

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3.2 Key Intersections

The key intersections in the vicinity of the development site and their characteristics are listed below:

- Pennant Hills Road / Carlingford Road: traffic signal controlled, 3-leg intersection
- Beecroft Road / Carlingford Road: traffic signal controlled, 3-leg intersection
- Carlingford Road / Midson Road: traffic signal controlled, 4-leg intersection
- Marsden Road / Terry Road: traffic signal controlled, 3 leg intersection

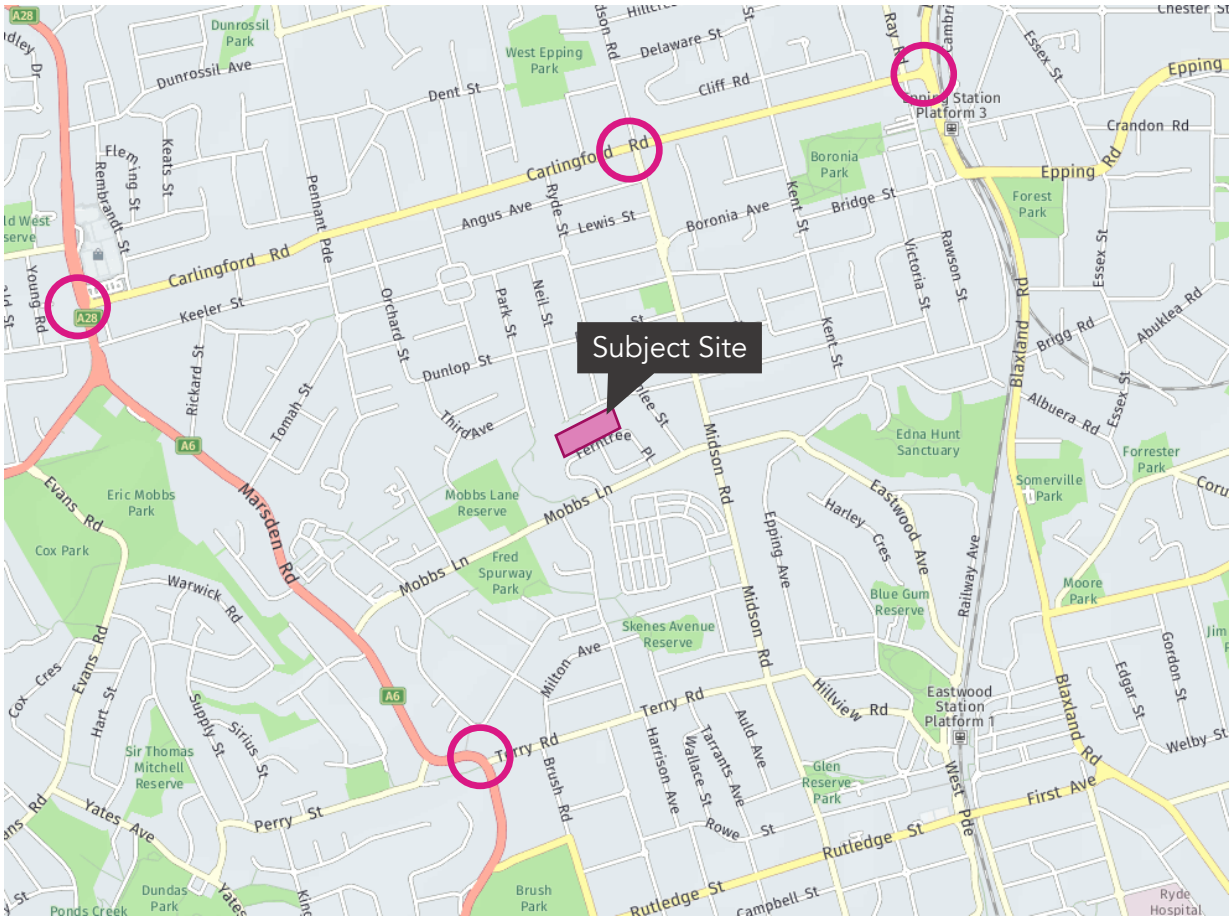

Figure 9 - Key Intersections (Source: TfNSW NSW Road Network Classifications)

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3.3 Public Transport

The locality has been assessed in the context of available forms of public transport that may be utilised by prospective staff and visitors. When defining accessibility, the NSW Guidelines to Walking & Cycling (2004) suggest that 400m-800m is a comfortable walking distance.

The area of comfortable walking distance is shown in Figure 10.

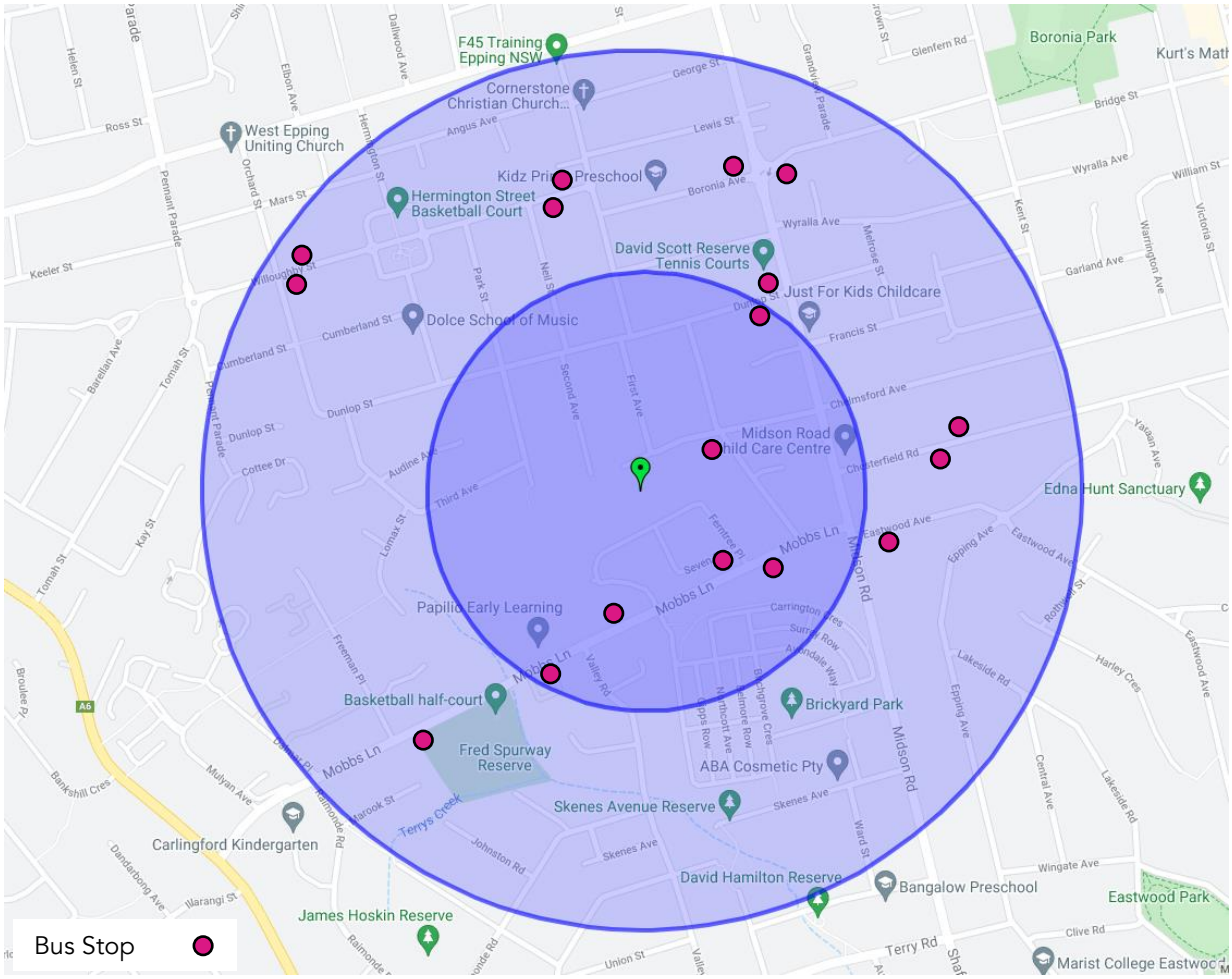

Figure 10 - Public Transport Accessibility (Source: Nearmap)

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3.3.1 Bus Services

The subject site is well serviced with multiple bus stops within a comfortable walking distance. A summary of the available bus routes that service the site is shown in Table 6.

Table 6 - Bus Route Summary

Bus Route	Coverage (to and from)	Service Frequency
521	**Parramatta to Eastwood**	**Weekdays:** AM peak – every 1 hour PM peak – every 30 minutes **Saturday:** No service available **Sunday and public holidays:** No service available
550	**Macquarie Park to Parramatta via Epping**	**Weekdays:** AM/PM peak – every 10 minutes Off Peak – every 20 minutes **Saturday:** Every 20 minutes **Sunday and public holidays:** Every 20 minutes
541	**Eastwood to Epping**	**Weekdays:** AM/PM peak – every 30 minutes Off Peak – every 1 hour **Saturday:** Every 1 hour **Sunday and public holidays:** Every 1 hour

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3.3.2 Active Transport

The bus routes in the vicinity of the subject site are predominantly serviced by Mobbs Lane which is within the 400m-800m walking catchment as defined by the NSW Guidelines to Walking & Cycling (2004). It is anticipated that this will encourage mode shift towards active transport. The catchments are well serviced with amenities for pedestrians such as footpaths and street lighting.

It is noted that there is limited on-road and off-road cycling infrastructure available within the vicinity of the site as shown in Figure 11. However, given the type of development proposed, it is anticipated that users of the development will predominantly travel to/from the Site via private vehicles.

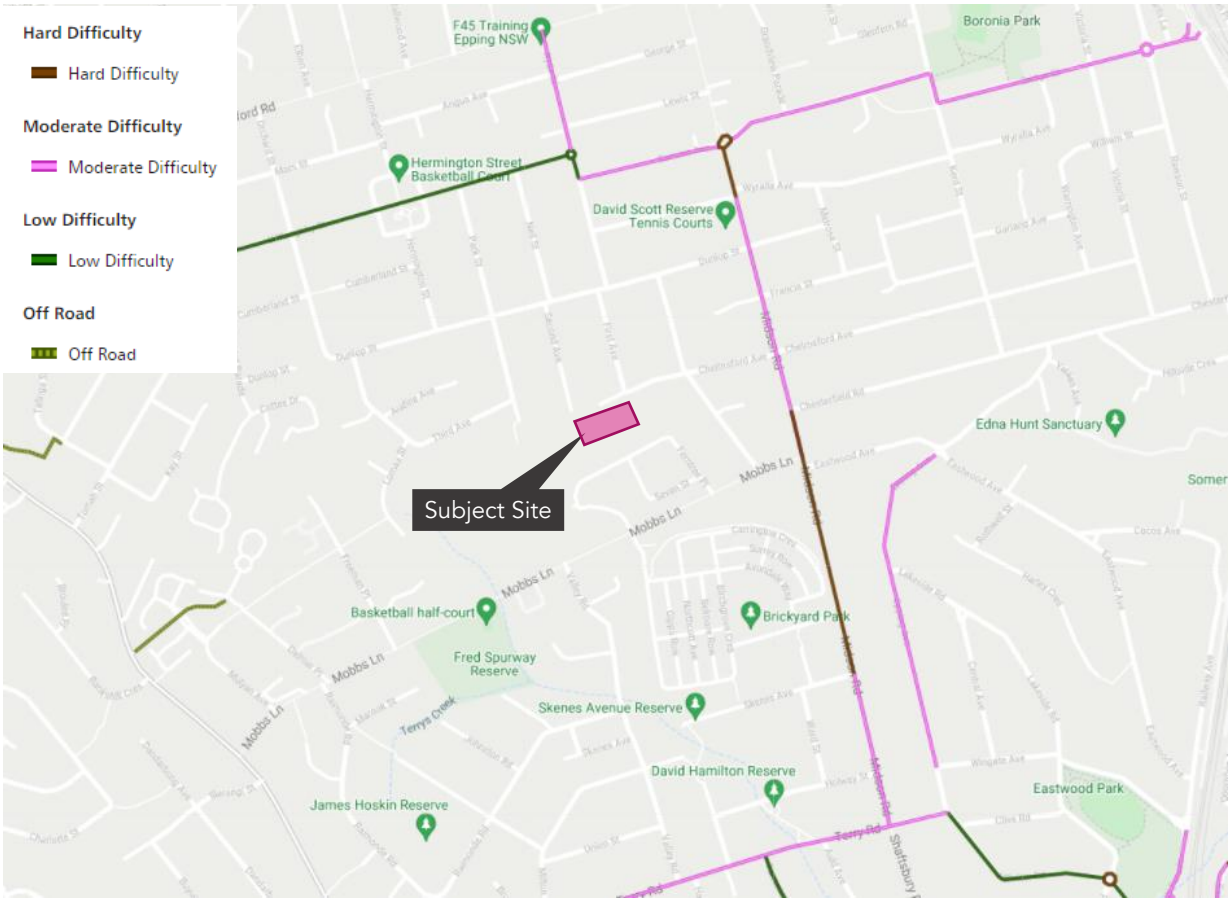

Figure 11 - Cycling Infrastructure (Source: RMS Cycleway Finder)

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4. Traffic Management Plan

4.1 Traffic Management Planning Process

Temporary Traffic Management (TTM) for the project has been planned in accordance with Transport for NSW, *Traffic control at work sites – Technical Manual, Issue No.6.0,* 14 September 2020 (TCAWS). The process is shown in Figure 12.

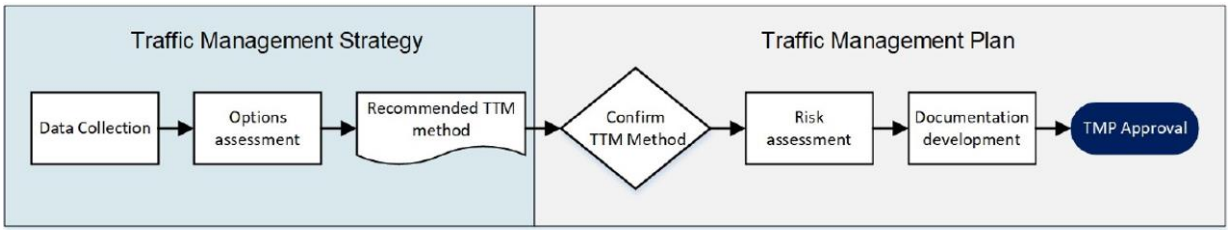

Figure 12 - Traffic Management Plan process

An iterative process is being adopted in collaboration with relevant stakeholders to adopt the most appropriate traffic management approach and develop the associated documents for the work.

4.2 Traffic Management Strategy

A traffic management strategy has been chosen to support the appropriate allocation of time, funds and resources for the project, and allow for consultation in determining the safest and most efficient way for road users to interact with the work site. The following have been considered in determining the TTM method:

Detour options

No detours are necessary or proposed by the client and therefore, disproportionate amount of disruption to the road users will NOT be introduced.

Site location

The site of the works contains vegetation, existing signage and infrastructure that may obstruct signs and devices needed for certain strategies.

Work area

The area needed to safely perform the work does justify the full closure of sections of road.

Vulnerable road users

Desire lines of pedestrians, cyclists, motorcyclists and users of scooters do not impact on works or create undesired interaction between these road users and traffic

Community facilities and needs

The presence of the Fred Spurway Reserve and Carlingford Road bus stops in the vicinity of the site does not create conflict with the work.

4.3 Decision of TTM Method

After considering the factors in Section 4.2, the TTM method chosen is "Around (elimination)" as traffic can and will be completely separated from the work area. This method will provide the lowest overall net risk option.

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4.4 Hours of Work

All works associated with the project will be restricted to typical working hours (or stipulated by the conditions of the SSD Consent):

- Monday to Friday 7:00am to 6:00pm;
- Saturday 8:00am to 1:00pm; and
- Sunday and Public Holidays No works to be undertaken without prior approval.

4.5 General Requirements

In accordance with TfNSW requirements, all vehicles transporting loose materials will have the entire load covered and/or secured to prevent any items, excess dust or dirt particles depositing onto the roadway during travel to and from the site. All subcontractors shall undergo induction by the lead contractor to ensure all procedures are met for all vehicles entering and exiting the construction site. The lead contractors will monitor the roads leading to and from the site and undertake all necessary steps to rectify any road deposits caused by the construction activity.

Vehicles operating to, from and within the site shall do so in a manner that does not create unreasonable or unnecessary noise or vibration. No tracked vehicles are required nor permitted on any paved roads. Public roads and access points will not be obstructed by any materials, vehicles, refuse skips or the like, under any circumstances.

The applicant/contractor is required to follow and abide the specific standard requirements for construction management.

4.6 Construction Program

The construction is anticipated to commence in November 2021 and be completed in December 2022.

4.7 Construction Vehicle Volumes

The largest construction vehicle accessing the Site and the Works Zone will be a 20 metre Articulated Vehicle. Refer to Drawing # 01T-0105 & 01T-0205 in Appendix A for swept paths of each type of vehicle accessing the site. Table 5 below outlines the anticipated vehicle volumes per day for each stage of works.

Table 7 - Construction Vehicle Demand

Stage	Vehicle Type	Vehicle Volume
Early works (i.e. demolition)	HRV	5 trips per day
Earthworks	MRV – HRV	20 trips per day
Concrete Pouring	MRV	10 trips per day
Reinforcement deliveries	Truck & dog / AV	1 trip per week
Other deliveries / telehandlers	Tipper truck & telehandler	1 trip per day

Construction vehicles are to avoid travelling to and from the site during the morning and afternoon pick up and drop off times, where possible. If access is required during these times, traffic controllers will manage any potential conflicts between vehicular and pedestrian movements (see TGS in Appendix E).

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4.8 Construction Vehicle Routes

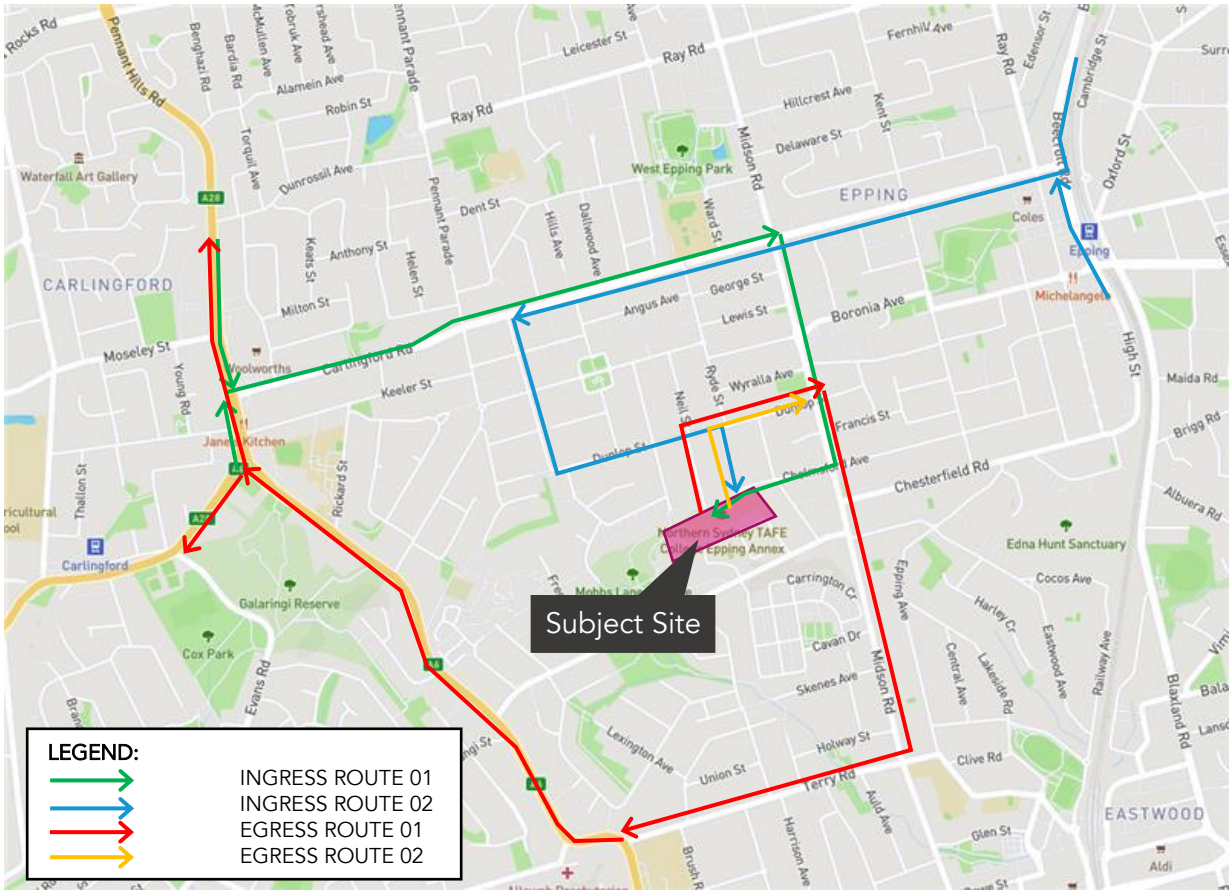

Figure 13 - Construction Vehicle Ingress & Egress Routes

- Ingress route 01: accommodates vehicles up to/equivalent to a 19-metre Articulated Vehicle accessing a Works Zone along the southern side of Grimes Lane (during construction of Grimes Lane upgrade works)
- Ingress route 02: accommodates vehicles up to/equivalent to a 19-metre Truck & Dog Trailer accessing the Site via two vehicular access/egress gates
- Egress route 01: accommodates vehicles up to/equivalent to a 19-metre Articulated Vehicle egressing the Works Zone along Grimes Lane (during construction of Grimes Lane upgrade works)
- Egress route 02: accommodates vehicles up to/equivalent to a 19-metre Truck & Dog Trailer egressing the Site

4.9 Access and Egress from Site

A swept path assessment has been undertaken using a 20m articulated vehicle as the largest anticipated vehicle accessing the Site. The assessment indicates that the existing public roadways are able to accommodate the turning manoeuvres of the construction vehicles.

4.9.1 Road Rules 2014 – NSW Legislation Regulation 28

The following has been extracted from the road rules which allows for the use of multi-lanes to perform a left turn manoeuvre for the proposed heavy vehicles.

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A driver may approach and enter the intersection from the marked lane next to the left lane as well, or instead of, the left lane if:

(a) the driver's vehicle, together with any load or projection, is 7.5 metres long, or longer, and

(b) the vehicle displays a do not overtake turning vehicle sign, and

(c) any part of the vehicle is within 50 metres of the nearest point of the intersection, and

(d) it is not practicable for the driver to turn left from within the left lane, and

(e) the driver can safely occupy the next marked lane and can safely turn left at the intersection by occupying the next marked lane, or both lanes.

The construction vehicles that require the use of multi-lanes all exceed 7.5m in length and also meets all other requirements stipulated in the regulation. Therefore, the swept path assessment has been undertaken utilising multi-lanes to perform turning manoeuvres when necessary.

4.9.2 Restricted Access Vehicle (RAV) Routes

The construction vehicles will access/egress the site via Pennant Hills Road or Beecroft Road and Carlingford Road. It is noted that these roads are approved routes with restrictions for heavy vehicle access by vehicles up to 25/26m B-Doubles, as shown in Figure 14.

However, roads with restrictions which will need to be adhered to and approved by the National Heavy Vehicle Regulator (NHVR). The Principal Controller is to ensure that all construction vehicles travelling to/from the site are to seek approval from NHVR prior to commencement of works.

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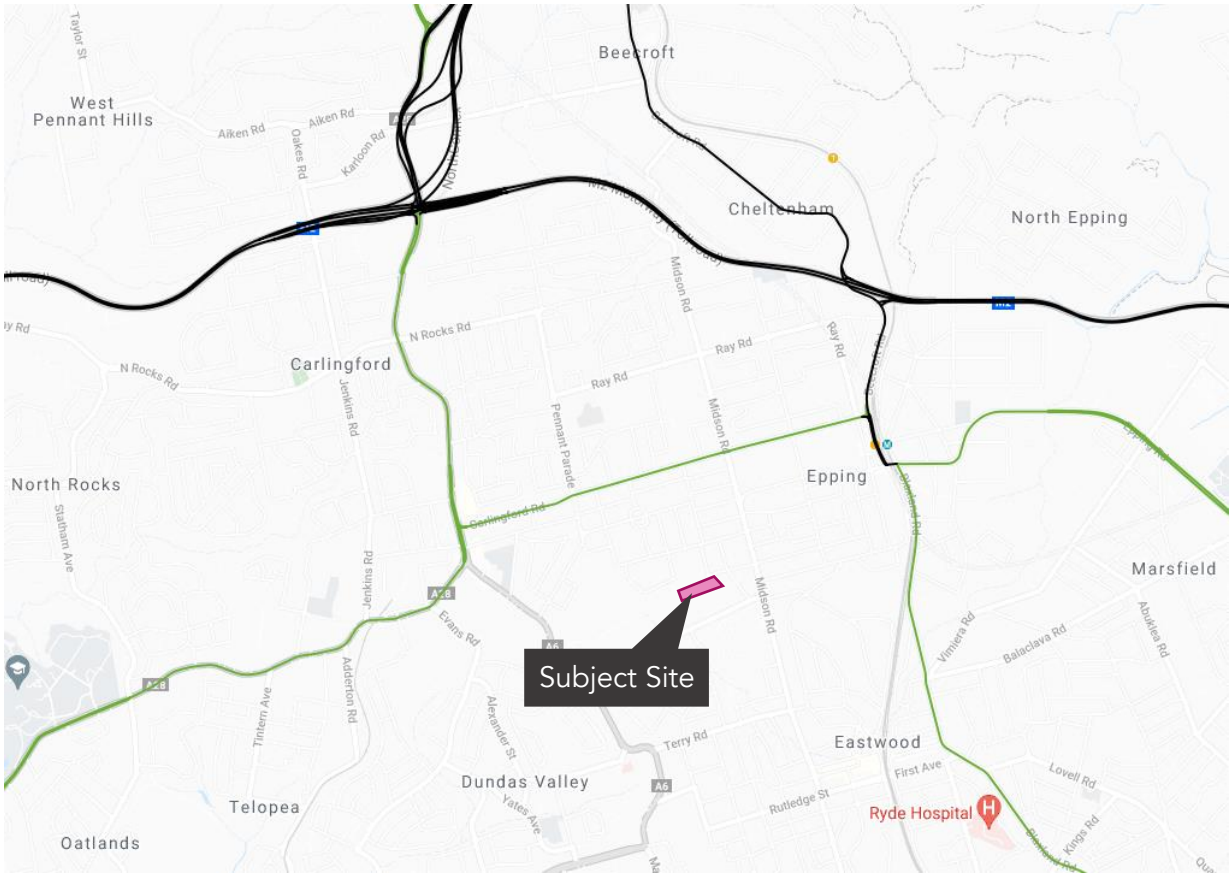

Figure 14 - Restricted Access Vehicle Interactive Map (Source: TfNSW Roads & Waterways)

4.10 Works Zone

The proposed development may require a Works Zone along the southern edge of Grimes Lane during the construction of the Grimes Lane / Second Avenue upgrade works, accommodating vehicle lengths up to a 20m Articulated Vehicle or equivalent. The lead contractor is to submit to Council, any relevant Works Zones or Road Occupancy applications.

4.11 Pedestrian Access

Pedestrian access to and around the site is to be maintained at all times. Pedestrian gates at the Site will be controlled and restricted to approved personnel entry only.

The frontage along Chelmsford Avenue is currently provided with a pedestrian footpath, where temporary fencing and management from a TfNSW accredited traffic controller will maintain pedestrian access at all times (refer to Drawing # 01T-0105 in Appendix A).

4.12 Special Deliveries

Any oversized vehicles that are required to travel to the site will be dealt with separately, with the submission of relevant permits to and subsequent approval by the City of Parramatta Council prior to any delivery.

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4.13 Construction Worker Transport Strategy

There will be limited parking available on site for construction personnel due to site constraints. Contractors and construction workers are encouraged to carpool or utilise public transport within the site vicinity. Additionally, all site personnel are to be advised that they are not to park on-street in the vicinity of the development site and within 400 metres (5 minutes' walk) of the site as shown in Figure 10, the public transport options available to construction workers are detailed in Section 3.3.

4.14 Work Site Security

The Site is to be secured by the use of appropriate temporary steel fencing (specified in Australian Standards and WorkCover requirements) along the frontage of the Site on Chelmsford Avenue / Grimes Lane for segregation and protection for pedestrians and the work area throughout the entire construction stage. The exact location is to be agreed prior to the commencement of the works.

All access points are to be securely locked when site activities are not in progress.

4.15 Plant/Equipment Management

At the commencement of construction, plant and equipment, including construction hoarding/scaffolding material, site sheds, mobile cranes and machinery will be required to be delivered to the site. The delivery and removal of plant and equipment to and from the site will be undertaken from the on-site materials handling/loading area, via the use of machine floats.

The delivery and removal of plant and equipment that requires a wide or long load vehicle will be subject to a separate application/permit and separate prior approval from City of Parramatta and other relevant authorities. In order to minimise traffic disruption during the delivery of the plant and equipment, it is proposed to undertake this work during the evening/early morning period. All plant and equipment deliveries will be carried out in accordance with Council's requirements and the NSW Police regulations.

4.16 Spoil Management

Contaminated material will be checked, sorted and treated prior to the removal from the site. Contaminated material will be classified in accordance with the provisions of the Protection of the 'Environment Operations Act 1997 and the NSW DECC Waste Classification Guidelines, Part 1: Classifying Waste (April 2008)'.

All construction work involving the removal and disposal of asbestos cement will be undertaken by appropriately qualified contractors duly licensed with SafeWork NSW, holding either a Friable (Class A) or a Non-Friable (Class B) Asbestos Removal License whichever applies.

During the removal of asbestos material from the site, signs containing the words 'DANGER ASBESTOS REMOVAL IN PROGRESS' will be erected in prominent visible positions on the site. The signs will be in accordance with AS1319-1994 Safety signs for the occupational environment for size, illumination, location and maintenance.

All trucks removing spoil from the site will be loaded to prescribed weight limits and loose material will be covered during transport from the site. Loose material will be removed from all vehicles and/or machinery before leaving the site and entering the road system.

All vehicles leaving the site will be cleaned. The construction contractor will be responsible for locating a truck wash facility or other appropriate cleaning mechanism adjacent to the construction access driveways.

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Any run-off from the washing down of vehicles will be directed to the sediment control system to be located within the site.

The loading of spoil onto trucks will be carried out on-site in an approved and controlled manner. The management of the on-site materials handling/loading area and the movement of trucks on and off the site will be the responsibility of the contractor.

4.17 Staff Induction

All staff and subcontractors engaged on site will be required to undergo a site induction. The induction will include permitted access routes to and from the construction site for all vehicles, as well as standard environmental, OH&S, driver protocols and emergency procedure. Additionally, the lead contractor will discuss TMP requirements regularly as part of toolbox talks and advise workers of public transport and carpooling opportunities.

4.18 Adjoining Properties

Access to all adjoining properties will be maintained throughout the works.

4.19 Occupational Health and Safety

Any workers required to undertake works or traffic control within the public domain shall be suitably trained and will be covered by adequate and appropriate insurances. All traffic control personnel will be required to hold TfNSW accreditation in accordance with Section 8 of Traffic Control at Worksites.

4.20 Method of Communicating Traffic Changes

TGSs in accordance with Australian Standards (AS 1742.3 – Traffic Control Devices for Works on Roads) and TCAWS manual will advise motorist of upcoming changes in the road network.

The contractor shall each morning, prior to work commencing, ensure all signage is erected in accordance with the TGS and clearly visible. Each evening, upon completion of work, the contractor is to ensure signage is either covered or removed as required. Sign size is to be size "A".

No deviation from the approved TGS shall be permitted, unless otherwise approved by Council and certified by an RMS accredited personnel.

The associated TGS road signage will inform drivers of works activities in the area including truck movements in operation.

Prior to commencement of works on site the contractor is to inform neighbouring properties of proposed works and provide site contact information by means of a letter box distribution. Additionally, a minimum fourteen (14) days notification must be provided to adjoining property owners prior to the implementation of any temporary traffic control measures.

4.21 Driver Code of Conduct

All heavy vehicle drivers are required to follow the ingress and egress routes in a "forward in, forward out" manner as specified in Section 4.8, whilst adhering to all road rules and regulations. This is essential to minimise the impacts of earthworks and construction on the local and regional road network. Should there be a Traffic Guidance Scheme (TGS) required to manage construction activity, all construction vehicles entering or exiting the site shall operate under the direction of a TfNSW accredited traffic controller at all

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times, to minimise conflicts with other road users. Furthermore, construction traffic activity shall only occur within the permitted hours of work (see Section 4.4) to minimise road traffic noise.

This code of conduct will be advised to all drivers engaged on site at the staff induction, where all demolition and construction vehicles (excluding worker vehicles) are to be contained wholly within the site and must enter the site completely before stopping.

A Driver Code of Conduct leaflet has been prepared as part of this CPTMP for distribution to truck drivers and operators, included as Appendix C.

4.22 Traffic Incident Management

In the event of an incident, the Project Manager is to be notified immediately.

During an emergency, construction personnel are to call the emergency number (000) before notifying the Project Manager.

Any incidents that occurs within he public road shall be reported to Transport Management Centre (TMC).

4.23 Hazard and Risk Identification

All construction projects entail a set of risks—from a transport perspective—that may need to be mitigated. Some of these hazards and risks are related to:

- moving traffic
- queued traffic
- site vehicle access and egress points
- topographical constraints

To assess the transport risks associate with the construction work, a risk matrix has been prepared as shown in Table 8. The definitions of the risk matrix are as follows:

Likelihood (L)

- Almost unprecedented: not expected to occur in the next 100 years.
- Very unlikely: expected to occur once every 10 to 100 years.
- Unlikely: expected to occur once every 1 to 10 years.
- Likely: expected to occur once during any given year.
- Very likely: expected to occur occasionally (1 to 10 times) during any given year.
- Almost certain: expected to occur multiple times (10 or more times) during any given year.

Consequence (C)

- Insignificant: Illness, first aid or injury not requiring medical treatment. No lost time.
- Minor: Minor injury or illness requiring medical treatment. No lost time post medical treatment.
- Moderate: Minor injuries or illnesses resulting in lost time.
- Major: 1 to 10 serious injuries or illnesses resulting in lost time or potential permanent impairment

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- Severe: single fatality and/or 11 to 20 serious injuries or illnesses* resulting in lost time or potential permanent impairment.
- Catastrophic: multiple fatalities and/or more than 20 serious injuries or illnesses* resulting in lost time or potential permanent impairment.

Risk Rating (R)

- Low (L)
- Medium (M)
- High (H)
- Very High (VH)

Table 8 - Risk Matrix

Likelihood	Consequence						
		Insignificant C6	Minor C5	Moderate C4	Major C3	Severe C2	Catastrophic C1
	Almost certain L1	M	H	H	VH	VH	VH
	Very likely L2	M	M	H	H	VH	VH
	Likely L3	L	M	M	H	H	VH
	Unlikely L4	L	L	M	M	H	H
	Very unlikely L5	L	L	L	M	M	H
	Almost unprecedented L6	L	L	L	L	M	M

The risks of the construction activities and the proposed mitigation measures are provided in Table 9

Table 9 - Risks and Mitigations

Risk	L/C/R	Mitigation	L/C/R
Construction vehicles loading / unloading at work zone will limit accessibility for residents.	L1/C6/M	Provide appropriate signage prior to the setup of work zone to other motorists of changes in road conditions. Inform residents on what the works will involve and how the road network will be changed in advance so residents understand the road constraints during building setup.	L5/C6/L

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Risk	L/C/R	Mitigation	L/C/R
Private vehicles attempting to overtake 20m articulated vehicles (AVs) when turning right from Pennant Hills Road to Carlingford Road.	L4/C3/M	Ensure 20m articulated vehicles manoeuvre in between the two right-turn lanes on Pennant Hills Road, reducing risk of private vehicles overtaking. In addition, ensure construction vehicles have "Do not overtake turning vehicle" sign at the back of trucks.	L5/C5/L

4.24 Contact Details for On-Site Enquiries and Site Access

Dylan Screpis	Andrew Baker
Project Manager	Site Manager
0427 697 352	0401 141 509

4.25 CTPMP Approval, Monitoring and Review

This CTPMP has been reviewed and endorsed by the designer's one-up manager who holds a current Prepare Works Zone Traffic Management Plan qualification. This approved CTPMP has been used to inform the development of all TGSs for the work.

Regular monitoring and review are to be conducted throughout the life of the project to ensure that the CTPMP remains current and addresses all risks at the work site for the duration of the project or activity.

To ensure that this CTPMP is kept up to date, the activities identified in Table 10 will be undertaken to facilitate review and continuous improvement.

Table 10 - Monitoring Activities

Stage	Activity	Purpose	Qualification	Tools and checklists
Planning	TGS verification	To ensure that the TGS selected or designed is suitable for the works and location.	ITCP or PWZTMP	TCAWS Appendix E.2 TGS verification checklist
During TTM	Weekly TTM inspections (includes preopening inspection)	To ensure that the CTPMP and relevant TGS are appropriate and operating safely, effectively and efficiently	PWZTMP	TCAWS Appendix E.3 Weekly TTM inspection checklist
	Shift TTM inspections	To ensure that the TGS is implemented as designed. This includes at a minimum, twice per shift and when: • A TGS is installed, changed or updated. • At regular frequency afterwork commences, recommended every 2hours; and • Once after care arrangements have been installed if required	ITCP or PWZTMP	TCAWS Appendix E.4 Shift / Daily TTM inspection checklist
	CTPMP review	To ensure that CTPMP controls are achieving the required outcomes.	PWZTMP	Not provided

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	Client inspections	Verification of TTM through the Transport Traffic Engineering Services, Work Health and Safety Branch, Surveillance Officers or other client representatives.	Divisionally determined	Not provided
Post Completion	Post-completion inspection	To ensure that the site has been demobilised as planned and is safe for opening to traffic	ITCP or PWZTMP	Appendix E.5 Post completion inspection checklist

All relevant changes must be considered and recorded in the CTPMP with any changes made by an appropriately qualified person. A copy of all documentation relating to the endorsement of the changes must be available to be accessed, either electronically or in hard copy, by the person responsible for the works.

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5. TGS Confirmation and Approval

In the event a Traffic Guidance Scheme (TGS) is required, the lead contractor is to design and set out the TGS in accordance with Issue 6.0 of the Traffic control at work sites Technical Manual, November 2020 (TCAWS).

It is noted that any changes to the existing parking restrictions will require a minimum fourteen (14) days notification to adjoining property owners prior to the implementation of any temporary traffic control measures.

Any revisions or additional TGSs ones must be prepared by a PWZTMP qualified person upon engagement of the traffic management contractor and prior to commence of works on site.

5.1 TGS Verification

TCAWS TGS D.4.7 is to be approved as being appropriate for use at the work site. Site confirmation must be undertaken via the completion of the TGS verification.

A TGS verification must be undertaken to confirm the selected or designed TGS is fit for purpose. A TGS verification must be completed in accordance with Section 8.1.2 TGS verification by an ITCP or PWZTMP qualified person. TGS verification must include an inspection of the work site where the TGS will be implemented.

5.2 TGS Approval

The PWZTMP qualified person who has designed or modified the relevant TGS has approved the TGS for use. Approval of the TGS includes:

- Review of the relevant TMP, risk assessment and associated TTM specific documentation;
- Design, redesign or modification of the TGS must be in accordance with the requirements of TCAWS;
- Confirmation that the TGS provides the relevant information for the ITCP person to safely implement on-site.

The one up manager of the PWZTMP qualified person has approved the TGS, including:

- Any non-standard or unaccepted signs or devices;
- Any departures from the requirements of TCAWS;
- If a manual traffic controller is proposed for use.

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6. Summary

This CTPMP has been prepared for the construction activities associated with the construction of a New Primary School in Epping located on Chelmsford Avenue / Grimes Lane, Epping. This report outlines the traffic process associated with the construction work, as well as the traffic management measures to improve and regulate the safety of pedestrians, cyclists, motorists, and works in the site vicinity.

It is envisaged that this document will be continually reviewed and amended if required, in the event of changes to design, the surrounding road network, or additional requirements of Council, TfNSW, or any other relevant authority.

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Attachment 1 Swept Path Assessment

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LEGEND:

- INGRESS ROUTE 1
- INGRESS ROUTE 2
- EGRESS ROUTE 1
- EGRESS ROUTE 2

NOTES:

1. INGRESS ROUTE 1 - VEHICLE LENGTH UP TO A 19m ARTICULATED VEHICLE / EQUIVALENT, ENTERING WORKS ZONE ON SITE FRONTAGE
2. INGRESS ROUTE 2 - VEHICLE LENGTH UP TO A 19m TRUCK & DOG VEHICLE / EQUIVALENT, ENTERING SITE
3. EGRESS ROUTE 1 - VEHICLE LENGTH UP TO A 19m ARTICULATED VEHICLE / EQUIVALENT, EXITING WORKS ZONE (WITH A TNSW ACCREDITED TRAFFIC CONTROLLER)
4. EGRESS ROUTE 2 - VEHICLE LENGTH UP TO A 19m TRUCK & DOG VEHICLE / EQUIVALENT, EXITING SITE

DRAWING KEY

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P2	27/09/21	FOR INFORMATION	SC	DS
P1	20/08/21	FOR INFORMATION	SC	DS

PROJECT

A NEW PRIMARY SCHOOL IN EPPING

DRAWING TITLE

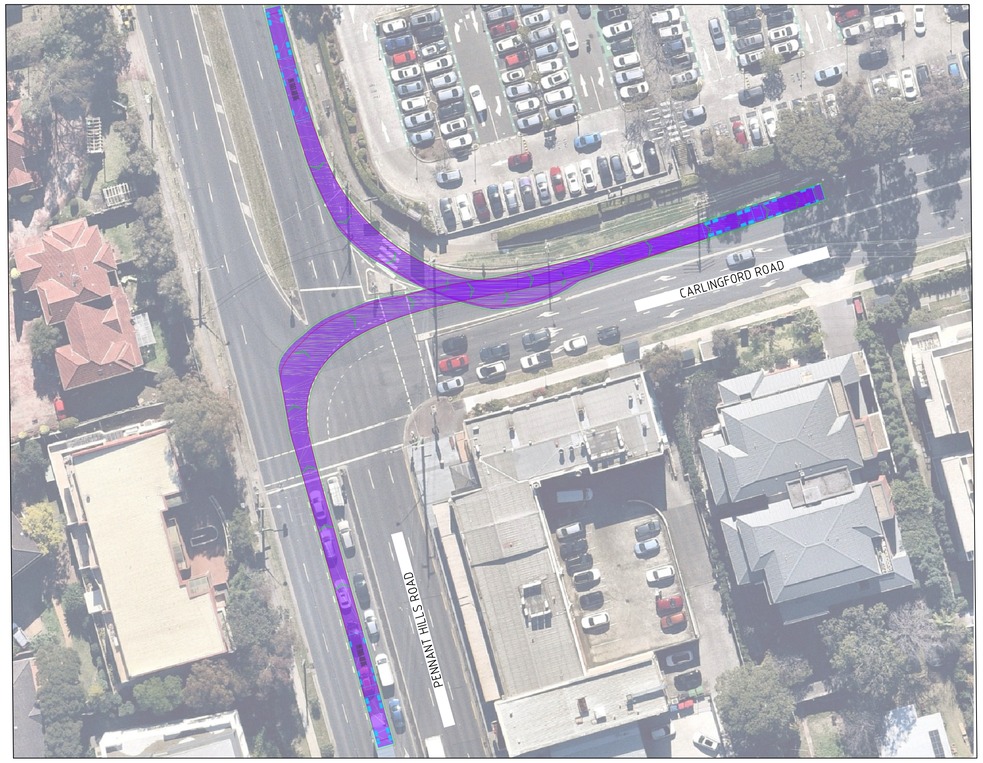
CONSTRUCTION TRAFFIC ROUTES OVERVIEW

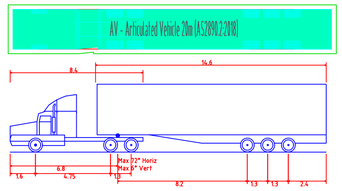
ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

CLIENT	HANSEN YUNCKEN
DRAWING #	01T-0001
PROJECT #	3166
SCALE	1 : 5000 @ A1 1 : 10000 @ A3

PRELIMINARY

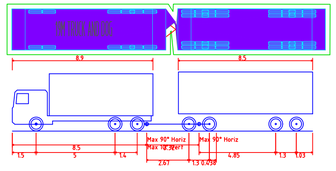
REV P2





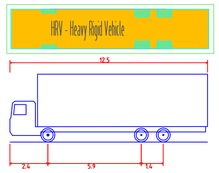
AV - Articulated Vehicle 20m (AS2890.2:2018)

Overall Length	20.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



19M TRUCK AND DOG

Overall Length	19.000m
Overall Width	2.600m
Overall Body Height	3.738m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Wall to Wall Turning Radius	12.000m



HRV - Heavy Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

DRAWING KEY

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P2	27/09/21	FOR INFORMATION	SC	DS
P1	20/08/21	FOR INFORMATION	SC	DS

PROJECT

A NEW PRIMARY SCHOOL IN EPPING

DRAWING TITLE

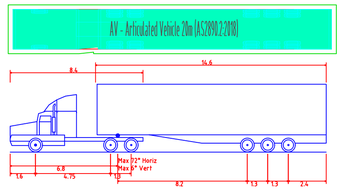
INGRESS ROUTE 01 - PENNANT HILLS ROAD / CARLINGFORD ROAD

ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

CLIENT	HANSEN YUNCKEN
DRAWING #	01T-0101
PROJECT #	3166
SCALE	1 : 500 @ A1 1 : 1000 @ A3

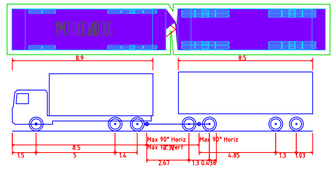
PRELIMINARY

REV P2



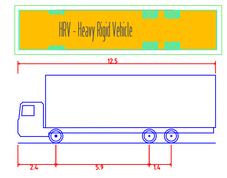
AV - Articulated Vehicle 20m (AS2890.2:2018)

Overall Length	20.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



19M TRUCK AND DOG

Overall Length	19.000m
Overall Width	2.600m
Overall Body Height	3.738m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Wall to Wall Turning Radius	12.000m



HRV - Heavy Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

DRAWING KEY

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P2	27/09/21	FOR INFORMATION	SC	DS
P1	20/08/21	FOR INFORMATION	SC	DS

PROJECT

A NEW PRIMARY SCHOOL IN EPPING

DRAWING TITLE

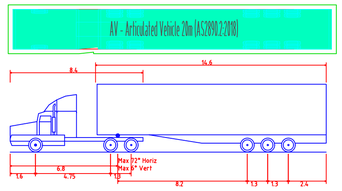
INGRESS ROUTE 01 - CARLINGFORD ROAD / MIDSON ROAD

ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

CLIENT	HANSEN YUNCKEN
DRAWING #	01T-0102
PROJECT #	3166
SCALE	1 : 250 @ A1 1 : 500 @ A3

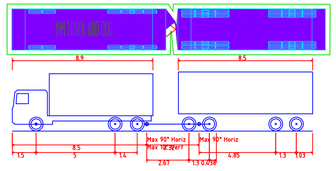
PRELIMINARY

REV P2



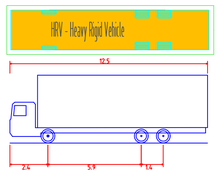
AV - Articulated Vehicle 20m (AS2890.2:2018)

Overall Length	20.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.419m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



19M TRUCK AND DOG

Overall Length	19.000m
Overall Width	2.600m
Overall Body Height	3.738m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Wall to Wall Turning Radius	12.000m



HRV - Heavy Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

DRAWING KEY

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P2	27/09/21	FOR INFORMATION	SC	DS
P1	20/08/21	FOR INFORMATION	SC	DS

PROJECT

A NEW PRIMARY SCHOOL IN EPPING

DRAWING TITLE

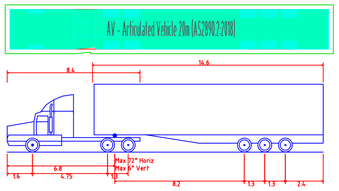
INGRESS ROUTE 01 - MIDSON ROAD / BORONIA AVENUE

ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

CLIENT	HANSEN YUNCKEN
DRAWING #	01T-0103
PROJECT #	3166
SCALE	1 : 500 @ A1 1 : 1000 @ A3

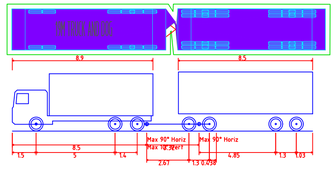
PRELIMINARY

REV P2



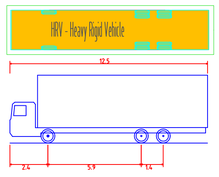
AV - Articulated Vehicle 20m (AS2890.2:2018)

Overall Length	20.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



19M TRUCK AND DOG

Overall Length	19.000m
Overall Width	2.600m
Overall Body Height	3.738m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Wall to Wall Turning Radius	12.000m



HRV - Heavy Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

DRAWING KEY

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P2	27/09/21	FOR INFORMATION	SC	DS
P1	20/08/21	FOR INFORMATION	SC	DS

PROJECT

A NEW PRIMARY SCHOOL IN EPPING

DRAWING TITLE

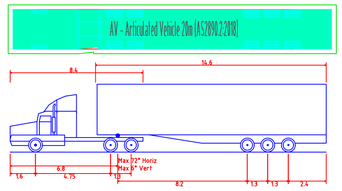
INGRESS ROUTE 01 - MIDSON ROAD / CHELMSFORD AVENUE

ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

CLIENT	HANSEN YUNCKEN
DRAWING #	01T-0104
PROJECT #	3166
SCALE	1 : 250 @ A1 1 : 500 @ A3

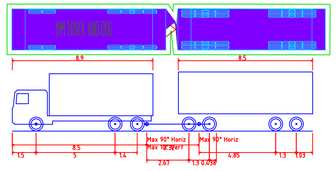
PRELIMINARY

REV P2



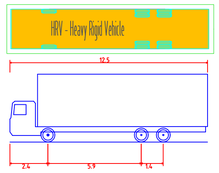
AV - Articulated Vehicle 20m (AS2890.2:2018)

Overall Length	20.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



19M TRUCK AND DOG

Overall Length	19.000m
Overall Width	2.600m
Overall Body Height	3.738m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Wall to Wall Turning Radius	12.000m



HRV - Heavy Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

DRAWING KEY

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P2	27/09/21	FOR INFORMATION	SC	DS
P1	20/08/21	FOR INFORMATION	SC	DS

PROJECT

A NEW PRIMARY SCHOOL IN EPPING

DRAWING TITLE

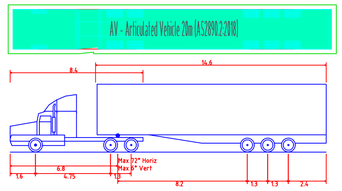
INGRESS ROUTE 01 - CHELMSFORD AVENUE / GRIMES LANE / SECOND AVENUE (WORKS ZONE)

ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

CLIENT	HANSEN YUNCKEN
DRAWING #	01T-0105
PROJECT #	3166
SCALE	1 : 250 @ A1 1 : 500 @ A3

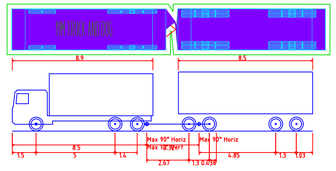
PRELIMINARY

REV P2



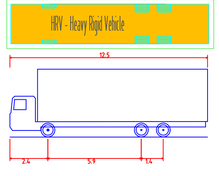
AV - Articulated Vehicle 20m (AS2890.2:2018)

Overall Length	20.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



19M TRUCK AND DOG

Overall Length	19.000m
Overall Width	2.600m
Overall Body Height	3.738m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Wall to Wall Turning Radius	12.000m



HRV - Heavy Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

DRAWING KEY

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P2	27/09/21	FOR INFORMATION	SC	DS
P1	20/08/21	FOR INFORMATION	SC	DS

PROJECT

A NEW PRIMARY SCHOOL IN EPPING

DRAWING TITLE

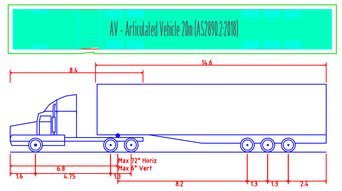
EGRESS ROUTE 01 - SECOND AVENUE / DUNLOP STREET

ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

CLIENT	HANSEN YUNCKEN
DRAWING #	01T-0111
PROJECT #	3166
SCALE	1 : 250 @ A1 1 : 500 @ A3

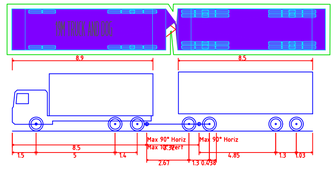
PRELIMINARY

REV P2



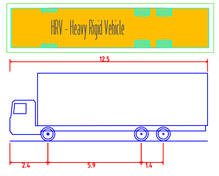
AV - Articulated Vehicle 20m (AS2890.2:2018)

Overall Length	20.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.419m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



19M TRUCK AND DOG

Overall Length	19.000m
Overall Width	2.600m
Overall Body Height	3.738m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Wall to Wall Turning Radius	12.000m



HRV - Heavy Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

DRAWING KEY

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P2	27/09/21	FOR INFORMATION	SC	DS
P1	20/08/21	FOR INFORMATION	SC	DS

PROJECT

A NEW PRIMARY SCHOOL IN EPPING

DRAWING TITLE

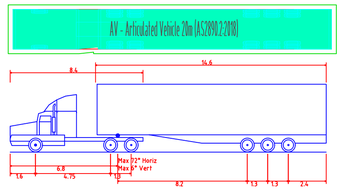
EGRESS ROUTE 01 & 02 - DUNLOP STREET / MIDSON ROAD

ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

CLIENT	HANSEN YUNCKEN
DRAWING #	01T-0112
PROJECT #	3166
SCALE	1 : 250 @ A1 1 : 500 @ A3

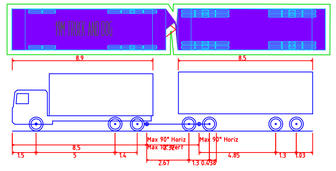
PRELIMINARY

REV P2



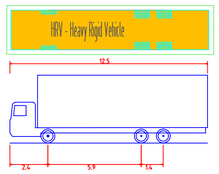
AV - Articulated Vehicle 20m (AS2890.2:2018)

Overall Length	20.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.419m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



19M TRUCK AND DOG

Overall Length	19.000m
Overall Width	2.600m
Overall Body Height	3.738m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Wall to Wall Turning Radius	12.000m



HRV - Heavy Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

DRAWING KEY

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P2	27/09/21	FOR INFORMATION	SC	DS
P1	20/08/21	FOR INFORMATION	SC	DS

PROJECT

A NEW PRIMARY SCHOOL IN EPPING

DRAWING TITLE

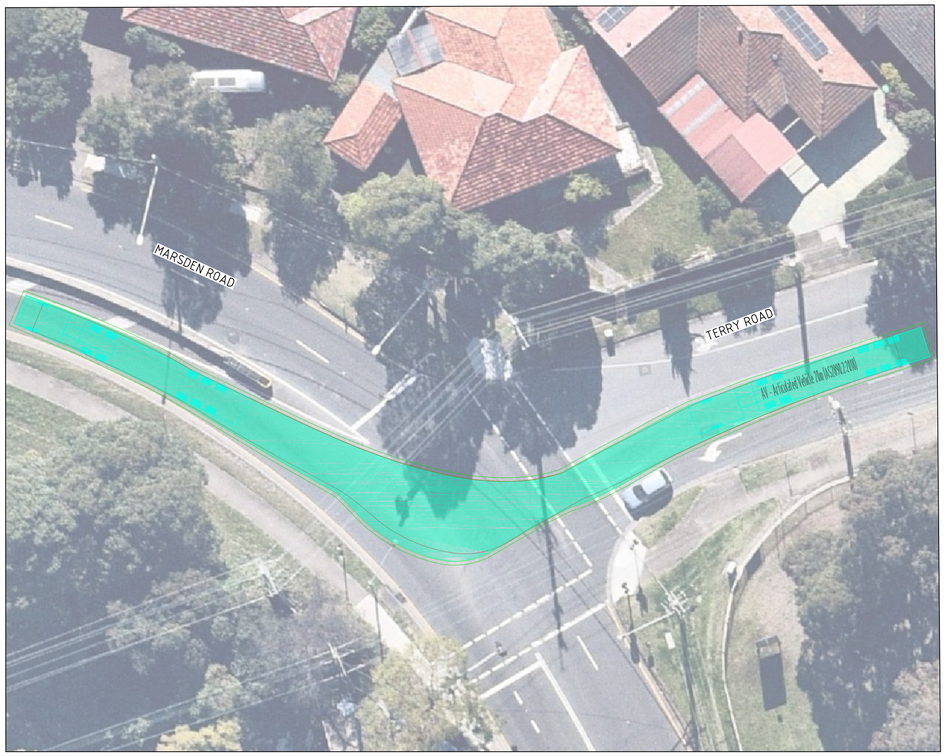
EGRESS ROUTE 01 & 02 - MIDSON STREET / TERRY ROAD

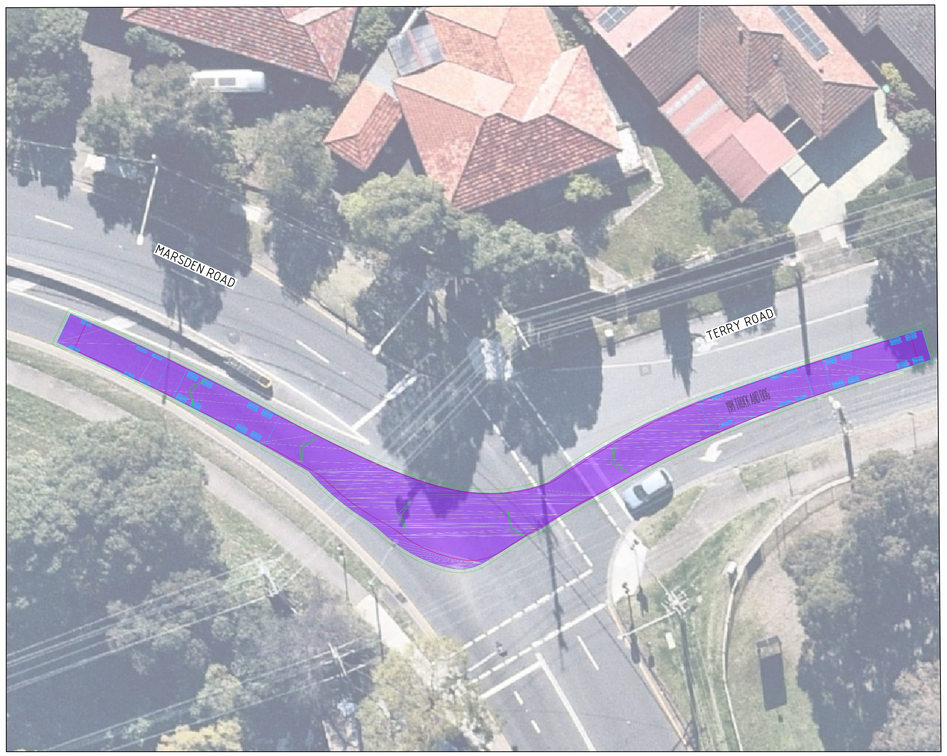
ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

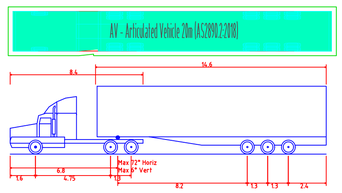
CLIENT	HANSEN YUNCKEN
DRAWING #	01T-0113
PROJECT #	3166
SCALE	1 : 250 @ A1 1 : 500 @ A3

PRELIMINARY

REV P2

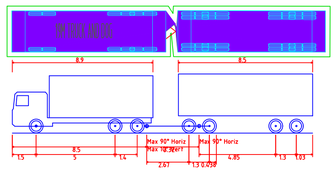






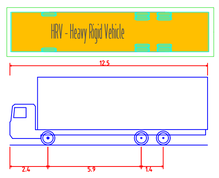
AV - Articulated Vehicle 20m (AS2890.2:2018)

Overall Length	20.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



19M TRUCK AND DOG

Overall Length	19.000m
Overall Width	2.600m
Overall Body Height	3.738m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Wall to Wall Turning Radius	12.000m



HRV - Heavy Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

DRAWING KEY

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P2	27/09/21	FOR INFORMATION	SC	DS
P1	20/08/21	FOR INFORMATION	SC	DS

PROJECT

A NEW PRIMARY SCHOOL IN EPPING

DRAWING TITLE

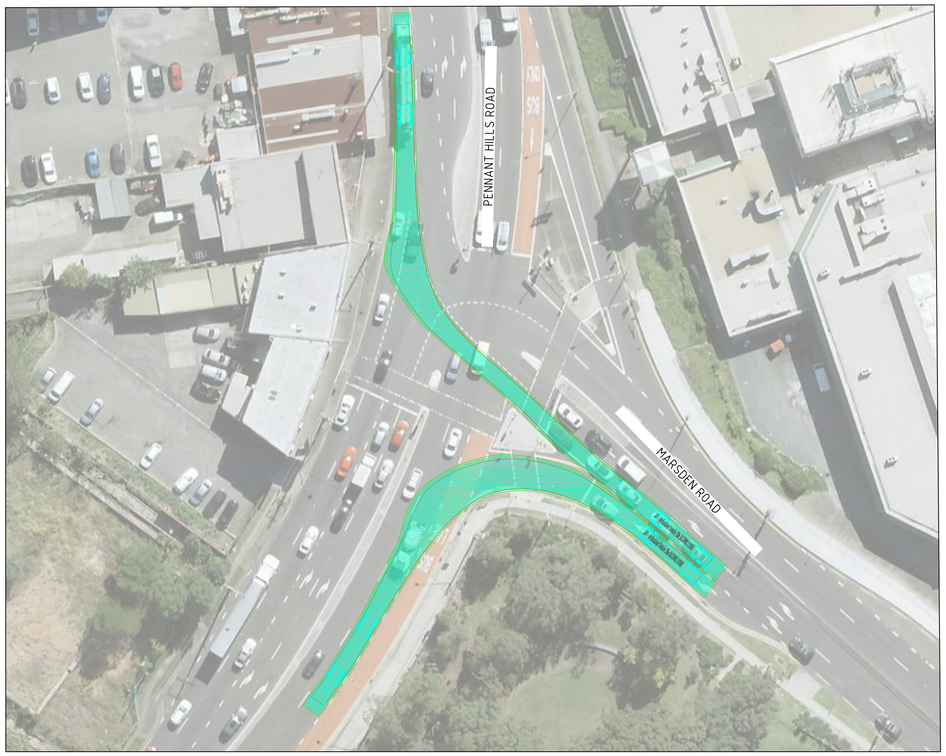
EGRESS ROUTE 01 & 02 - TERRY ROAD / MARSDEN ROAD

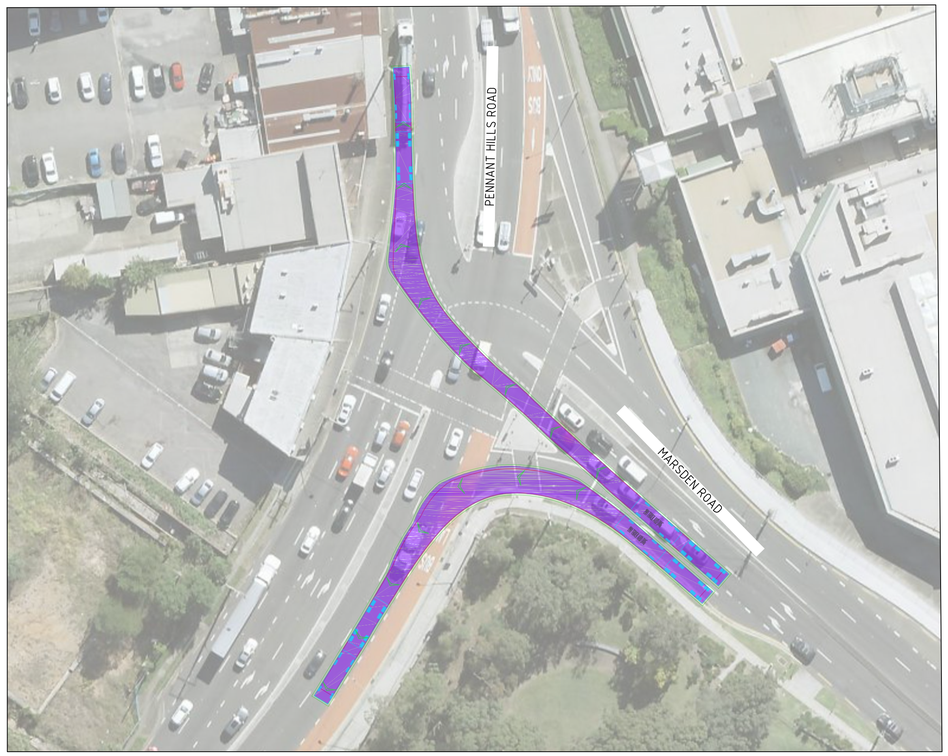
ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

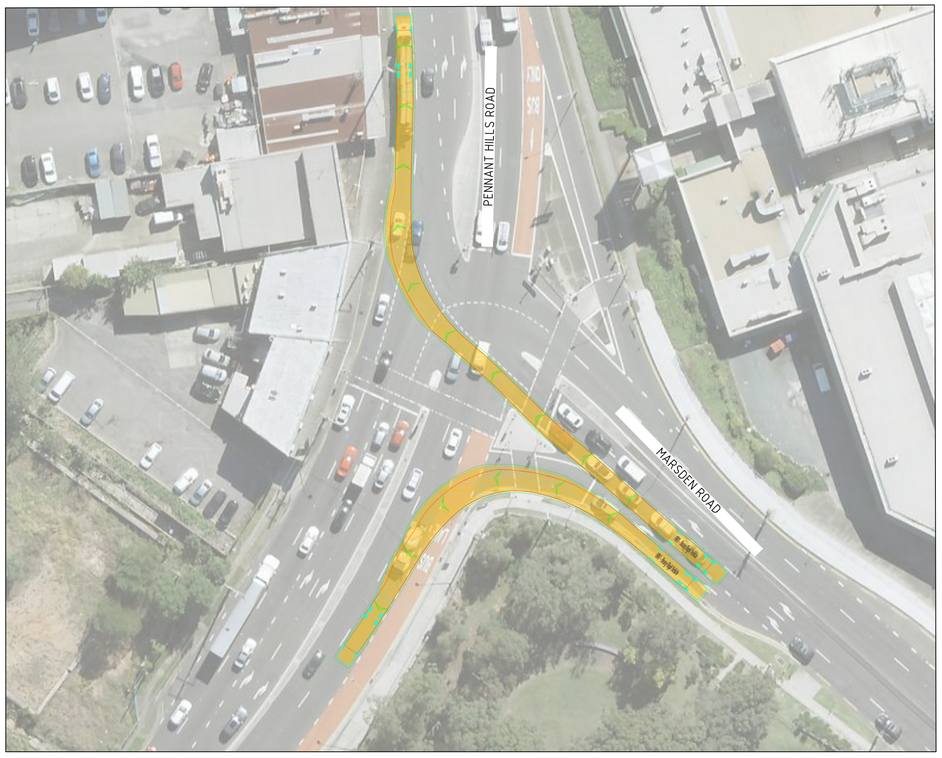
CLIENT	HANSEN YUNCKEN
DRAWING #	01T-0114
PROJECT #	3166
SCALE	1 : 250 @ A1 1 : 500 @ A3

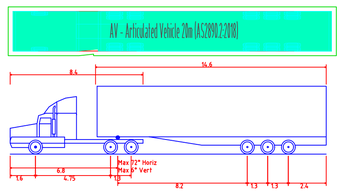
PRELIMINARY

REV P2



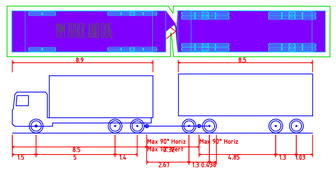






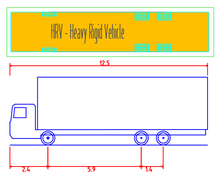
AV - Articulated Vehicle 20m (AS2890.2:2018)

Overall Length	20.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



19M TRUCK AND DOG

Overall Length	19.000m
Overall Width	2.600m
Overall Body Height	3.738m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Wall to Wall Turning Radius	12.000m



HRV - Heavy Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

DRAWING KEY

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P2	27/09/21	FOR INFORMATION	SC	DS
P1	20/08/21	FOR INFORMATION	SC	DS

PROJECT

A NEW PRIMARY SCHOOL IN EPPING

DRAWING TITLE

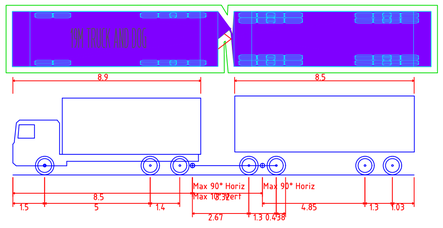
EGRESS ROUTE 01 & 02 - MARSDEN ROAD / PENNANT HILLS ROAD

ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

CLIENT	HANSEN YUNCKEN
DRAWING #	01T-0115
PROJECT #	3166
SCALE	1 : 500 @ A1 1 : 1000 @ A3

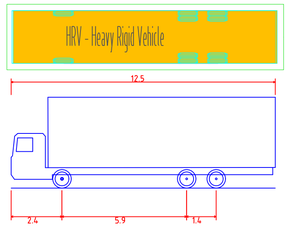
PRELIMINARY

REV P2



19M TRUCK AND DOG

Overall Length	19.000m
Overall Width	2.600m
Overall Body Height	3.738m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Wall to Wall Turning Radius	12.000m



HRV - Heavy Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

DRAWING KEY

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P2	27/09/21	FOR INFORMATION	SC	DS
P1	20/08/21	FOR INFORMATION	SC	DS

PROJECT

A NEW PRIMARY SCHOOL IN EPPING

DRAWING TITLE

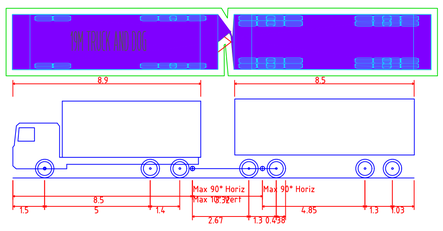
INGRESS ROUTE 02 - BEECROFT ROAD / CARLINGFORD ROAD

ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

CLIENT	HANSEN YUNCKEN
DRAWING #	01T-0201
PROJECT #	3166
SCALE	1 : 500 @ A1 1 : 1000 @ A3

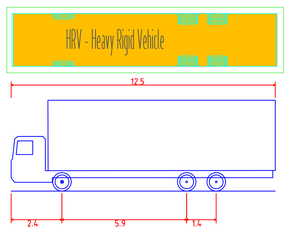
PRELIMINARY

REV P2



19M TRUCK AND DOG

Overall Length	19.000m
Overall Width	2.600m
Overall Body Height	3.738m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Wall to Wall Turning Radius	12.000m



HRV - Heavy Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

DRAWING KEY

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P2	27/09/21	FOR INFORMATION	SC	DS
P1	20/08/21	FOR INFORMATION	SC	DS

PROJECT

A NEW PRIMARY SCHOOL IN EPPING

DRAWING TITLE

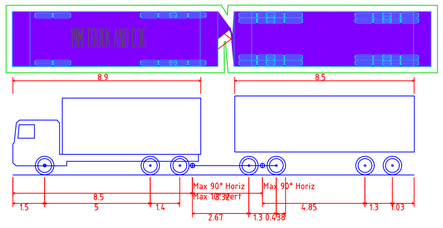
INGRESS ROUTE 02 - CARLINGFORD ROAD / ORCHARD STREET

ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

CLIENT	HANSEN YUNCKEN
DRAWING #	01T-0202
PROJECT #	3166
SCALE	1 : 500 @ A1 1 : 1000 @ A3

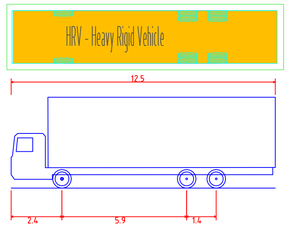
PRELIMINARY

REV P2



19M TRUCK AND DOG

Overall Length	19.000m
Overall Width	2.600m
Overall Body Height	3.738m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Wall to Wall Turning Radius	12.000m



HRV - Heavy Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

DRAWING KEY

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P2	27/09/21	FOR INFORMATION	SC	DS
P1	20/08/21	FOR INFORMATION	SC	DS

PROJECT

A NEW PRIMARY SCHOOL IN EPPING

DRAWING TITLE

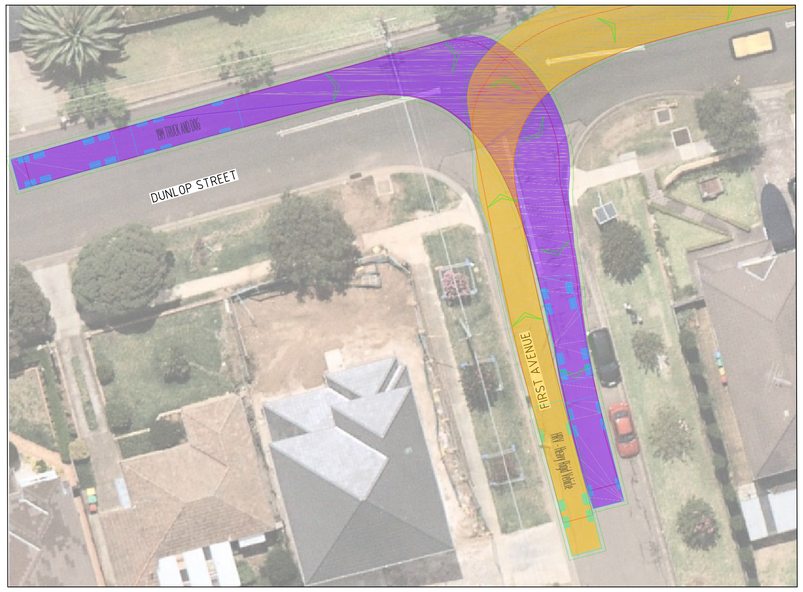
INGRESS ROUTE 02 - ORCHARD STREET / DUNLOP STREET

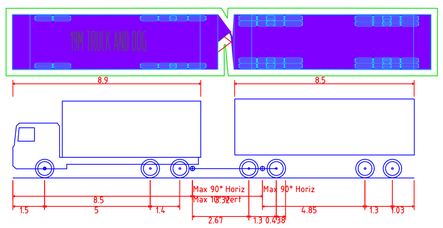
ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

CLIENT	HANSEN YUNCKEN
DRAWING #	01T-0203
PROJECT #	3166
SCALE	1 : 500 @ A1 1 : 1000 @ A3

PRELIMINARY

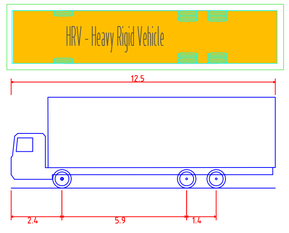
REV P2





19M TRUCK AND DOG

Overall Length	19.000m
Overall Width	2.600m
Overall Body Height	3.738m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Wall to Wall Turning Radius	12.000m



HRV - Heavy Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

DRAWING KEY

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P2	27/09/21	FOR INFORMATION	SC	DS
P1	20/08/21	FOR INFORMATION	SC	DS

PROJECT

A NEW PRIMARY SCHOOL IN EPPING

DRAWING TITLE

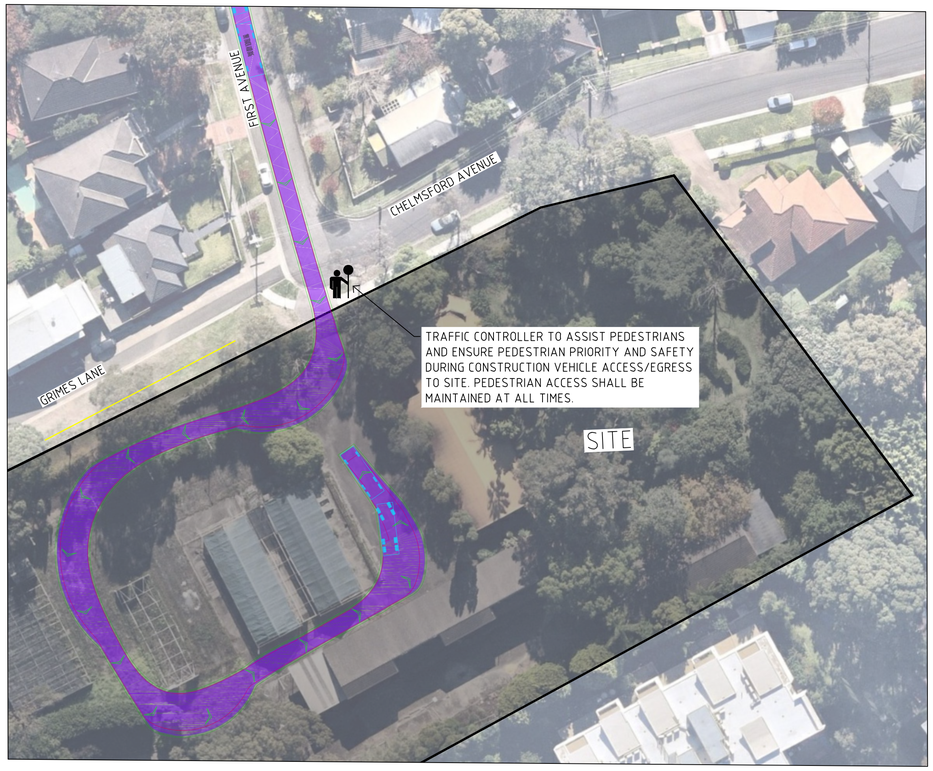
INGRESS ROUTE 02 - DUNLOP STREET / FIRST AVENUE

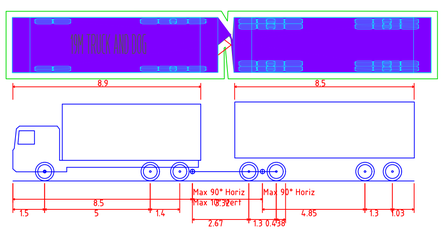
ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

CLIENT	HANSEN YUNCKEN
DRAWING #	01T-0204
PROJECT #	3166
SCALE	1 : 500 @ A1 1 : 1000 @ A3

PRELIMINARY

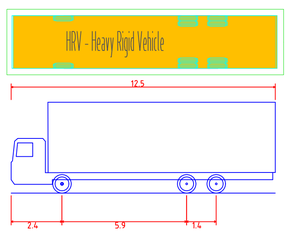
REV P2





19M TRUCK AND DOG

Overall Length	19.000m
Overall Width	2.600m
Overall Body Height	3.738m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Wall to Wall Turning Radius	12.000m



HRV - Heavy Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

DRAWING KEY

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P2	27/09/21	FOR INFORMATION	SC	DS
P1	20/08/21	FOR INFORMATION	SC	DS

PROJECT

A NEW PRIMARY SCHOOL IN EPPING

DRAWING TITLE

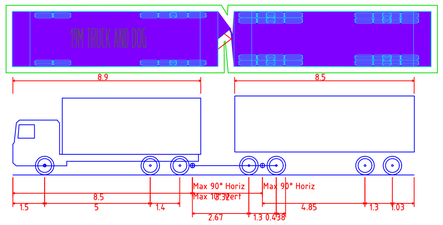
INGRESS ROUTE 02 - SITE ENTRY & TURNAROUND

ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

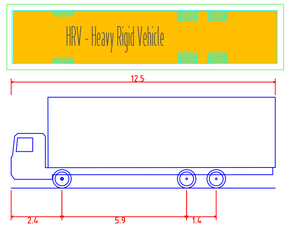
CLIENT	HANSEN YUNCKEN
DRAWING #	01T-0205
PROJECT #	3166
SCALE	1 : 500 @ A1 1 : 1000 @ A3

PRELIMINARY

REV P2



19M TRUCK AND DOG	
Overall Length	19.000m
Overall Width	2.600m
Overall Body Height	3.738m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Wall to Wall Turning Radius	12.000m



HRV - Heavy Rigid Vehicle	
Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

DRAWING KEY

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P2	27/09/21	FOR INFORMATION	SC	DS
P1	20/08/21	FOR INFORMATION	SC	DS

PROJECT

A NEW PRIMARY SCHOOL IN EPPING

DRAWING TITLE

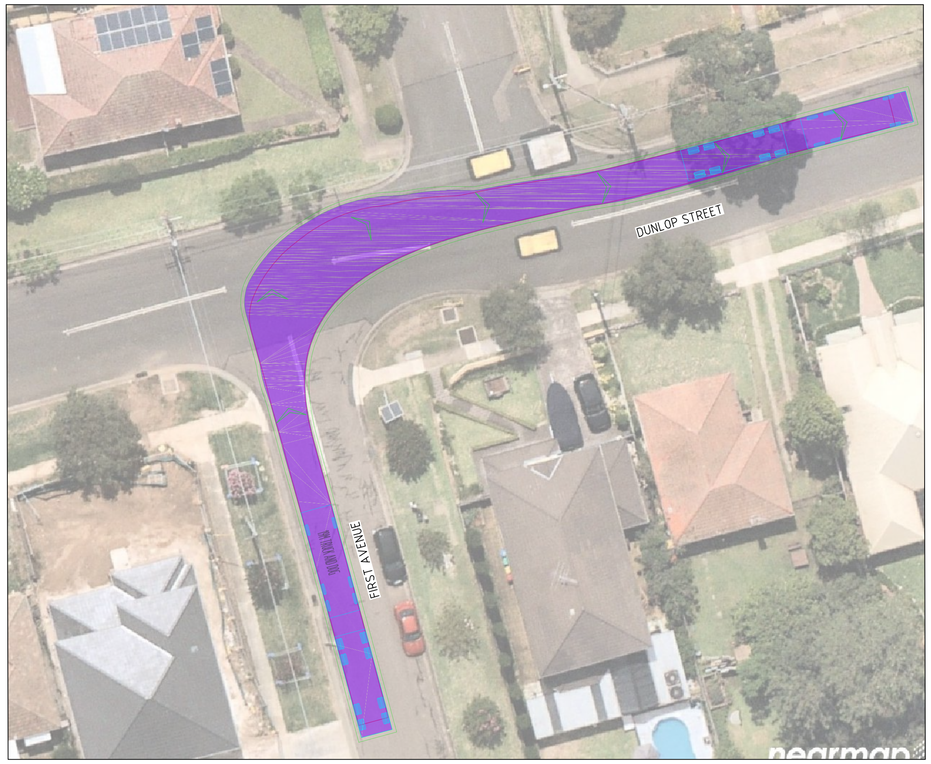
EGRESS ROUTE 02 - SITE EXIT TO FIRST AVENUE

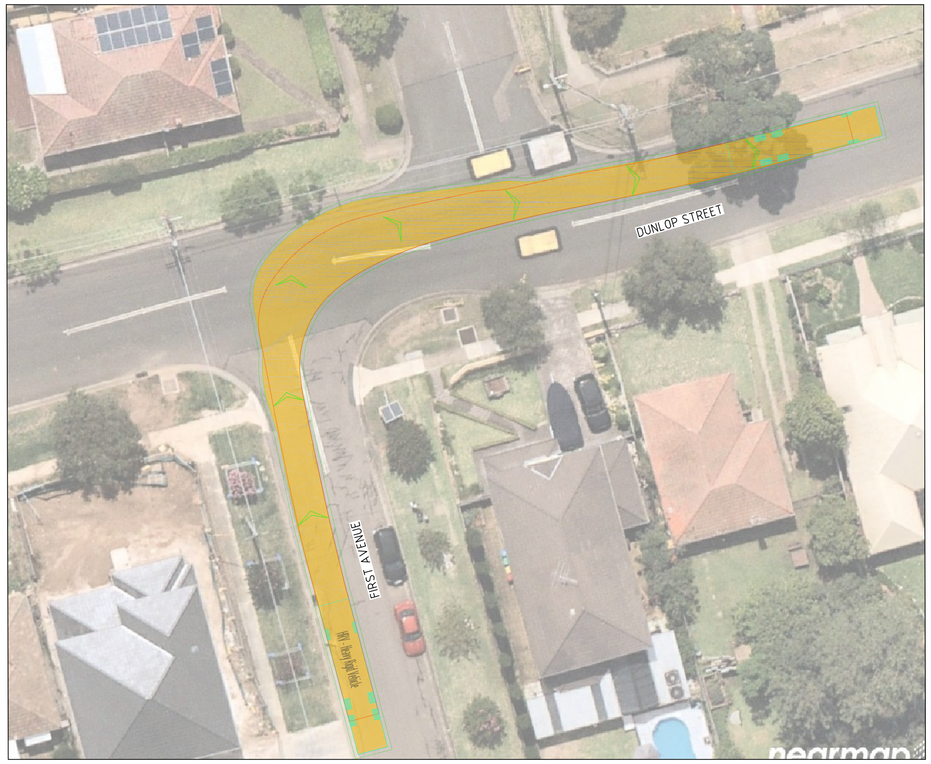
ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

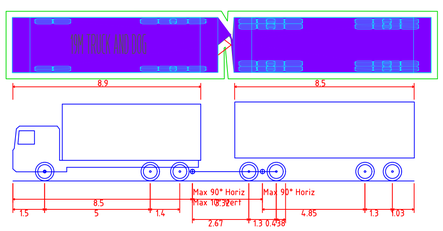
CLIENT	HANSEN YUNCKEN
DRAWING #	01T-0211
PROJECT #	3166
SCALE	1 : 500 @ A1 1 : 1000 @ A3

PRELIMINARY

REV P2

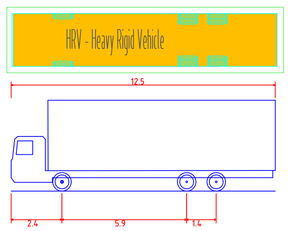






19M TRUCK AND DOG

Overall Length	19.000m
Overall Width	2.600m
Overall Body Height	3.738m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Wall to Wall Turning Radius	12.000m



HRV - Heavy Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

DRAWING KEY

REV	DATE	DESCRIPTION	DRAWN	REVIEWED
P2	27/09/21	FOR INFORMATION	SC	DS
P1	20/08/21	FOR INFORMATION	SC	DS

PROJECT

A NEW PRIMARY SCHOOL IN EPPING

DRAWING TITLE

EGRESS ROUTE 02 - FIRST AVENUE / DUNLOP STREET

ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

CLIENT	HANSEN YUNCKEN
DRAWING #	01T-0211
PROJECT #	3166
SCALE	1 : 500 @ A1 1 : 1000 @ A3

PRELIMINARY

REV P2

Attachment 2 Traffic Guidance Scheme

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comments

A3

LEGEND

XX — INSTALLATION SEQUENCE NUMBER

XX — REMOVAL SEQUENCE NUMBER

ptc.
Suite 502, 1 James Place
North Sydney NSW 2060
t +61 2 8920 0800
ptcconsultants.co

REV	DATE	COMMENT / DESCRIPTION	DRAWN	REVIEWED
1	29/09/21	FOR INFORMATION	AP	DB

PROJECT
NEW PRIMARY SCHOOL IN EPPING CTMP

DRAWING TITLE
Traffic Guidance Scheme (TGS) 1

CLIENT	HANSEN YUNCKEN
DRAWING #	PTC-001
PROJECT #	21-3166
SCALE	1 : 1000 @ A3

CONSTRUCTION

REV 1

Attachment 3 Drivers Code of Conduct

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Hours of Work

Monday to Friday	7:00am to 6:00pm
Saturday	8:00am to 1:00pm
Sunday and Public Holidays	No works to be undertaken without prior approval

Emergency Contact Numbers

Service NSW Transport Management Centre
131 700

Parramatta City Council
1300 617 058

Hansen Yuncken (Project Manager)
Dylan Screpis

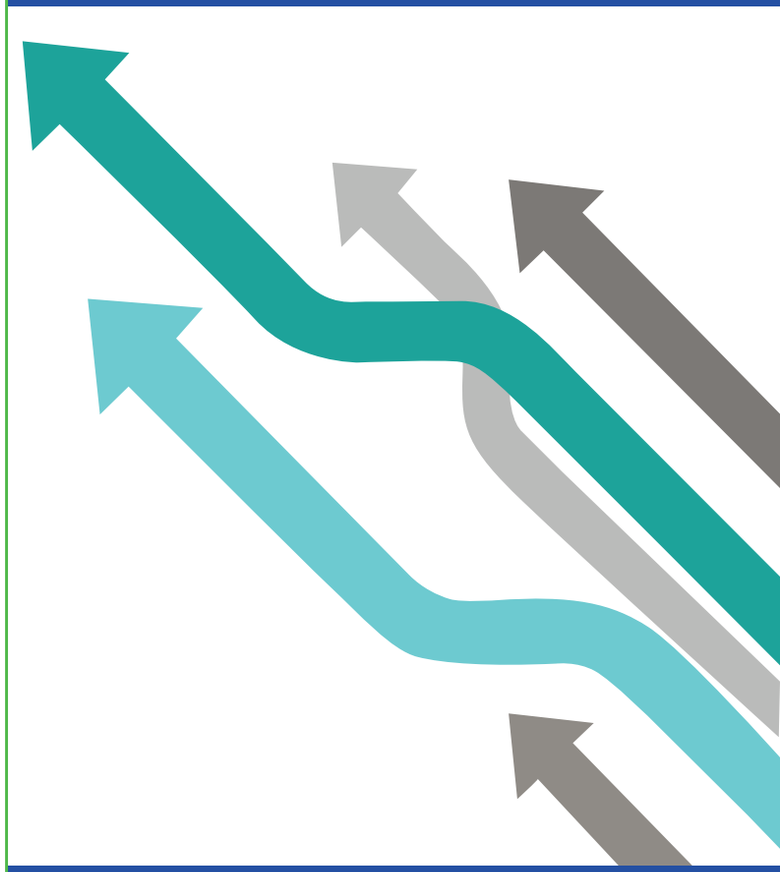
0427 697 352

Hansen Yuncken (Sydney)
02 9770 7600

All other Emergencies
000

HANSENYUNCKEN

NSW Department of Education
Epping South Public School



Driver Code of Conduct

This Driver Code of Conduct applies to all personnel and any other person conducting business for NSW Department of Education whether a direct employee of Hansen Yuncken or employed by another organisation providing service or working with Hansen Yuncken.

General Requirements

• As a driver you are required to know and comply with all the road rules pertaining to your vehicle;

• You are expected to hold a valid driver's licence for the class of the vehicle you are operating;

• Undertake a site induction carried out by an approved member of the construction staff or suitably qualified person;

• Participate in regular toolbox meetings with appropriate and qualified person; and

• You are to operate the vehicle in a safe manner within and outside the construction site and comply with the direction of authorised site personnel while inside the site.

Truck Routes

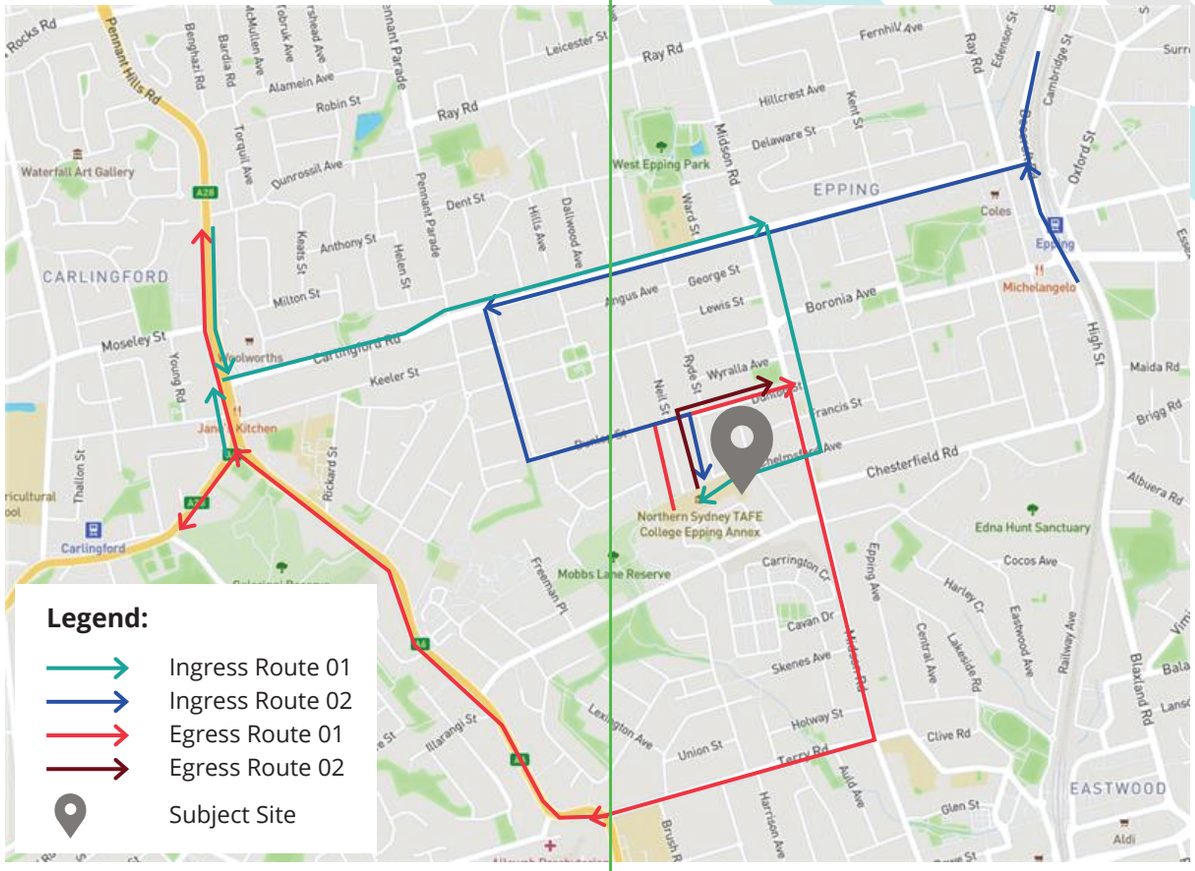
Heavy vehicle drivers are to carefully plan their routes so that state and regional roads are given priority for route selection, keeping in mind the certain restrictions during particular times of the day (i.e. approved Temporary Road Occupancy and/or Works Zone permit conditions).

Other Considerations

• Speed Limits – All heavy vehicle drivers are to observe the posted speed limits, within or outside of the construction site. Keep in mind that there are changes in traffic conditions and altered speed limits are posted on approach to the site;

• Driver Fatigue – Driver fatigue is a road safety hazard and one of the biggest causes of accidents especially for heavy vehicle drivers. All drivers have a duty to not drive a vehicle while impaired by fatigue.

• Covering Loads – RMS requires all load covers to secure and contain all materials within the vehicle and trailer;



Other Considerations

• Heavy Vehicle Interval – To increase road safety, heavy vehicles leaving the construction site should be separated, as far as practicable, a minimum of a 10-minute interval;

• Vehicle Breakdowns – In the case of a breakdown, the vehicle must be towed to the nearest breakdown point as soon as possible and reported to the Service NSW Transport Management Centre (131 700)

8.6 A.6 Construction Noise and Vibration Management Sub-plan

New Public School in Epping — Construction Noise Vibration Management Sub Plan (CNVMSP)

Hansen Yuncken

Report number: 210125-EPPS-CNVMSP-210831-R4
Date: 24 November 2021
Version: For Tender

Project Number: 210125

PULSE WHITE NOISE ACOUSTICS Level 5, 73 Walker Street, North Sydney NSW 2060
P 1800 4 PULSE (1800 478 573) **E** info@pwna.com.au **pwna.com.au** ABN 95 642 886 306

DOCUMENT CONTROL

Project Name	New Public School in Epping — Construction Noise Vibration Management Sub Plan (CNVMSP)
Project Number	210125
Report Reference	210125-EPPS-CNVMSP-210831-R4
Client:	Hansen Yuncken

Revision	Description	Reference	Date	Prepared	Checked	Authorised
1	Issue 1	210125-EPPS-CNVMSP-210831-R1	31 August 2021	Ben White	Matt Furlong	Ben White
2	Issue 2	210125-EPPS-CNVMSP-210831-R2	14 September 2021	Ben White	Matt Furlong	Ben White
3	For Tender	210125-EPPS-CNVMSP-210831-R3	19 September 2021	Ben White	Matt Furlong	Ben White
4	For Tender	210125-EPPS-CNVMSP-210831-R4	24 November 2021	Ben White	Matt Furlong	Ben White

PREPARED BY:

Pulse White Noise Acoustics Pty Ltd
ABN 95 642 886 306
Level 5, 73 Walker Street, North Sydney, 2060
1800 4 PULSE

This report has been prepared by Pulse White Noise Acoustics Pty Ltd with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with the Hansen Yuncken. Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of Hansen Yuncken
No warranties or guarantees are expressed or should be inferred by any third parties.
This report may not be relied upon by other parties without written consent from Pulse White Noise Acoustics.

This report remains the property of Pulse White Noise Acoustics Pty Ltd until paid for in full by the client, Hansen Yuncken.

Pulse White Noise Acoustics disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

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1 INTRODUCTION

Pulse White Noise Acoustics (PWNA) has been engaged to prepare a Construction Noise and Vibration Management Sub Plan (CNVMSP) for the construction of the New Public School in Epping (Epping South) located at 86 Chelmsford Avenue, Epping NSW.

Onsite unattended and attended noise levels have previously been determined for the project and included in the RWDI *New Public School in Epping– Noise Impact Assessment* dated 23 April 2021 and reference: 2190042. The details of the acoustic survey included in the RWDI report have been used in this assessment.

A glossary of acoustic terminology used throughout this report is included in Appendix A.

The author of this report is a director of Pulse White Noise Acoustics who is a member of the Australian Acoustic Society, details including Ben's CV and membership of the AAS are included in Appendix B.

1.1 Site Layout and Development Overview

The proposed development is for the establishment of a new K-6 Public School, master planned to cater for up to 1,000 students. Works include:

- Demolition of existing structures associated with the former use of the site as a TAFE campus;
- Construction of new buildings on the eastern and central portions of the site. The works are proposed to be undertaken in stages. Facilities which will generally include:
    - Home bases (classrooms) suitable for a school population of 1,000 students;
    - Administration and staff areas:
    - Hall and canteen;
    - Library;
    - COLA;
    - Special education unit; and
    - Special programs area.
- Play spaces in various locations;
- Accessible paths linking the school facilities; and
- A staff car park accessed from Second Avenue.

The proposal will also require potential remediation of the land and tree/vegetation removal. The works are proposed to be undertaken in stages. The application will be lodged as a concept development application. The application will also seek approval for the Stage 1 works. The Stage 1 works will provide a total of 25 home bases and associated facilities together with a hall and canteen, administration facilities and play spaces. Car parking for the Stage 1 development will also be provided.

The site is located to the south of Grimes Lance and Chelmsford Avenue, the works to be conducted as part of the new school are included in Figure 1 below.

The new Public School is bordered by residential dwellings along the western, southern and eastern boundaries as well as residence opposite on Grimes Lane and Chelmsford Avenue to the north of the site.

Residential receives which are located within proximity to the site include a combination of single and two storey dwellings as well as multi story buildings with windows overlook the school property.

The nearest sensitive receivers to the site have been identified below.

Receiver 1: Single and two storey residential dwellings located to the north of the school located on Grimes Lane.

Receiver 2: Single and two storey residential dwellings located to the north of the school opposite on Chelmsford Avenue.

Receiver 3: Single and two storey residential dwellings located to the east of the school on the corner of Chelmsford Avenue and Edenlee Street.

Receiver 4: Multi story residential building located to the south of the site.

Receiver 5: Multi story residential building located to the west of the site.

Receiver 6: Single and two storey residential dwellings located to the northwest of the school located on Second Avenue and Meredith Street.

Figure 1 Site Map, Measurement Locations and Surrounding Receivers

1.2 SSD Compliance

This report has been undertaken in accordance with the requirements of Item B16 of the project's conditions of consent.

Details of conditions of consent and sections of the report which include the required items required by the consent are included in the table below.

Table 1 SSD Compliance Table

SSD Condition number	Requirement	Report Reference for Satisfaction
B16	*B16. The Construction Noise and Vibration Management Sub-Plan must address, but not be limited to, the following:*	-
(a)	*be prepared by a suitably qualified and experienced noise expert;*	Ben white is a director of Pulse White Noise Acoustics, Ben's CV and membership of the Australian Acoustic Society is included in Appendix B.
(b)	*describe procedures for achieving the noise management levels in EPA's Interim Construction Noise Guideline (DECC, 2009);*	Section 4.1
(c)	*describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers;*	Section 6.1 and 6.2
(d)	*include strategies that have been developed with the community for managing high noise generating works;*	Section 6.2 and Section 6.8
(e)	*describe the community consultation undertaken to develop the strategies in condition B16(d);*	Section 6.5 and Appendix C
(f)	*include a complaints management system that would be implemented for the duration of the construction; and*	Section 6.6
(g)	*include a program to monitor and report on the impacts and environmental performance of the development and the effectiveness of the implemented management measures in accordance with the requirements of condition B11*	Section 6.2.2 and Section 6.3.2

Note 1: For Monday to Sunday, Daytime 7:00 am – 10:00 pm; Night-time 10:00 pm – 7:00 am.

Note 2: The L_{Aeq} is the energy average sound level. It is defined as the steady sound level that contains the same amount of acoustical energy as a given time-varying sound.

2 EXISTING ACOUSTIC ENVIRONMENT

Measured noise levels from the attended noise survey undertaken as part of the RWDI *New Public School in Epping– Noise Impact Assessment* dated 23 April 2021 and reference: 2190042 have been used in this assessment.

As part of the RWDI *New Public School in Epping– Noise Impact Assessment* dated 23 April 2021 and reference: 2190042 an assessment of background noise levels within the vicinity of the site has been undertaken. The *New Public School in Epping– Noise Impact Assessment* includes an assessment which has been stated to be in accordance with the NSW EPA's *Noise Policy for Industry* (NPI, 2017).

The Rating Background Noise Level (RBL) is the background noise level used for assessment purposes and includes the 90th percentile of the daily background noise levels during each assessment period, being day, evening and night. The RBL $L_{A90\ (15minute)}$ and L_{Aeq} noise levels presented within the *New Public School in Epping– Noise Impact Assessment* are summarised in Table 2.

Table 2 Measured Ambient Noise Levels corresponding to the NPI's Assessment Time Periods

Measurement Location	Daytime[1] 7:00 am to 6:00 pm		Evening[1] 6:00 pm to 10:00 pm		Night-time[1] 10:00 pm to 7:00 am	
	L_{A90}[2] (dBA)	L_{Aeq}[3] (dBA)	L_{A90}[2] (dBA)	L_{Aeq}[3] (dBA)	L_{A90}[2] (dBA)	L_{Aeq}[3] (dBA)
Monitor Location: North of the site						
North of the site – See Figure 1	38	48	38	55	35	47
Monitor Location: Southwest of the site						
Southwest of the site – See Figure 1	37	49	40	54	36	46

Note 1: For Monday to Saturday, Daytime 7:00 am – 6:00 pm; Evening 6:00 pm – 10:00 pm; Night-time 10:00 pm – 7:00 am. On Sundays and Public Holidays, Daytime 8:00 am – 6:00 pm; Evening 6:00 pm – 10:00 pm; Night-time 10:00 pm – 8:00 am

Note 2: The L_{A90} noise level is representative of the "average minimum background sound level" (in the absence of the source under consideration), or simply the background level.

Note 3: The L_{Aeq} is the energy average sound level. It is defined as the steady sound level that contains the same amount of acoustical energy as a given time-varying sound.

Measured noise levels in accordance with the time periods defined by the NSW EPA RNP 2011 are presented below.

Table 3 Measured Ambient Noise Levels corresponding to the "RNP" Assessment Time Periods

Measurement Location	Daytime [1] 7:00 am to 10:00 pm	Night-time [1] 10:00 pm to 7:00 am
	L_{Aeq} (whole period) [2] (dBA)	L_{Aeq} (whole period) [2] (dBA)
Grimes Lane	48	47

Note 1: For Monday to Sunday, Daytime 7:00 am – 10:00 pm; Night-time 10:00 pm – 7:00 am.

Note 2: The L_{Aeq} is the energy average sound level. It is defined as the steady sound level that contains the same amount of acoustical energy as a given time-varying sound.

3 PROJECT CONDITIONS OF CONSENT

Relevant noise and vibration criteria for construction activities includes item B16 of the SSD which includes the following:

> Construction Noise and Vibration Management Sub-Plan (see condition B16 for required inclusions)
>
> *B16. The Construction Noise and Vibration Management Sub-Plan must address, but not be limited to, the following:*
> *(a) be prepared by a suitably qualified and experienced noise expert;*
> *(b) describe procedures for achieving the noise management levels in EPA's Interim Construction Noise Guideline (DECC, 2009);*
> *(c) describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers;*
> *(d) include strategies that have been developed with the community for managing high noise generating works;*
> *(e) describe the community consultation undertaken to develop the strategies in condition B16(d);*
> *(f) include a complaints management system that would be implemented for the duration of the construction; and*
> *(g) include a program to monitor and report on the impacts and environmental performance of the development and the effectiveness of the implemented management measures in accordance with the requirements of condition B11*

The project has included a *Community Communication* Strategy as require in the consent, Details of the Community Communication Strategy are included in Appendix C.

4 NOISE AND VIBRATION CRITERIA

Relevant noise and vibration criteria for construction activities are detailed below.

4.1 Construction Noise Objectives

Relevant construction noise objectives applicable to this project are outlined below.

4.1.1 NSW EPA (Former DECC) Interim Construction Noise Guideline (ICNG) 2009

Noise objective for construction and demolition activities are discussed in the *Interim Construction Noise Guideline* (ICNG). The ICNG also recommends procedures to address potential impacts of construction noise on residences and other sensitive land uses. The main objectives of the ICNG are summarised as follows:

- Promote a clear understanding of ways to identify and minimise noise from construction works;
- Focus on applying all "feasible" and "reasonable" work practices to minimise construction noise impacts;
- Encourage construction to be undertaken only during the recommended standard hours unless approval is given for works that cannot be undertaken during these hours;
- Streamline the assessment and approval stages and reduce time spent dealing with complaints at the project implementation stage; and
- Provide flexibility in selecting site-specific feasible and reasonable work practices in order to minimise noise impacts.

The ICNG contains a quantitative assessment method which is applicable to this project. Guidance levels are given for airborne noise at residences and other sensitive land uses.

The quantitative assessment method involves predicting noise levels at sensitive receivers and comparing them with the Noise Management Levels (NMLs). The NML affectation categories for residential receivers have been reproduced from the guideline and are listed in the table below.

Table 4 NMLs for quantitative assessment at residences

Time of Day	Noise Management Level $L_{Aeq(15minute)}$ [1,2]	How to Apply
Recommended standard hours: Monday to Friday 7 am to 6 pm Saturday 8 am to 1 pm No work on Sundays or public holidays	Noise affected RBL + 10 dB	The noise affected level represents the point above which there may be some community reaction to noise. • Where the predicted or measured LAeq(15minute) is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. • The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
	Highly noise affected 75 dBA	The highly noise affected level represents the point above which there may be strong community reaction to noise. • Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account: 1. Times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning or mid-afternoon for works near residences. 2. If the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
Outside the recommended standard hours above	Noise affected RBL + 5 dB	• A strong justification would typically be required for works outside the recommended standard hours. • The proponent should apply all feasible and reasonable work practices to meet the noise affected level. • Where all feasible and reasonable practices have been applied and noise is more than 5 dB above the noise affected level, the proponent should notify the community.

Note 1 Noise levels apply at the property boundary that is most exposed to construction noise, and at a height of 1.5 m above ground level. If the property boundary is more than 30 m from the residence, the location for measuring or predicting noise levels is at the most noise-affected point within 30 m of the residence. Noise levels may be higher at upper floors of the noise affected residence.

Note 2 The RBL is the overall single-figure background noise level measured in each relevant assessment period (during or outside the recommended standard hours). The term RBL is described in detail in the NSW Industrial Noise Policy (EPA 2000).

Construction noise levels at other noise receivers are outlined below:

- Construction noise levels within classrooms other educational institutions is not recommended to exceed 45dBA $L_{Aeq,15minute}$, when measured internally.
- Construction noise levels at offices and retail outlets are not recommended to exceed 70dBA LAeq,15minute, when measured externally.

Based on the measured background noise levels summarised in section 2, and the NMLs outlined above, the construction noise criteria to be used in this assessment are listed in Table 5.

Table 5 NMLs as basis for the acoustic assessment

Receiver Types	NML, dB $L_{Aeq(15minute)}$		
	Standard Hours **Monday to Friday: 7:00am to 6:00pm** **Saturday: 8:00am to 1:00pm**		**Outside Standard Hours** **All hours not listed in the adjacent column.**
Residential – Receiver 1 to the north on Grimes Lane	**NAFL: 48** (RBL (38) + 10dB)	**HNAL: 75**	RBL + 5dB
Residential – Receiver 2 to the north on Chelmsford Avenue	**NAFL: 48** (RBL (38) + 10dB)		
Residential – Receiver 3 to the east on the corner of Chelmsford Avenue and Edenlee Street	**NAFL: 48** (RBL (38) + 10dB)		
Residential – Receiver 4 to the south of the site	**NAFL: 49** (RBL (39) + 10dB)		
Residential – Receiver 5 to the southwest of the site	**NAFL: 49** (RBL (39) + 10dB)		
Residential – Receiver 6 to the northwest of the site on Second Avenue and Meredith Street	**NAFL: 48** (RBL (38) + 10dB)		

4.2 Vibration Criteria

Effects of ground borne vibration on buildings may be segregated into the following three categories:

- Human comfort – vibration in which the occupants or users of the building are inconvenienced or possibly disturbed.
- Effects on building contents – where vibration can cause damage to fixtures, fittings and other non-building related objects.
- Effects on building structures – where vibration can compromise the integrity of the building or structure itself.

4.2.1 Vibration Criteria – Human Comfort

Vibration effects relating specifically to the human comfort aspects of the project are taken from AV-TG. This type of impact can be further categorised and assessed using the appropriate criterion as follows:

- Continuous vibration – from uninterrupted sources.
- Impulsive vibration – up to three instances of sudden impact e.g., dropping heavy items, per monitoring period.
- Intermittent vibration – such as from drilling, compacting or activities that would result in continuous vibration if operated continuously.

Table 6 Continuous vibration acceleration criteria (m/s^2) 1 Hz-80 Hz

Location	Assessment period	Preferred Values		Maximum Values	
		z-axis	x- and y-axis	z-axis	x- and y-axis
Critical working areas (e.g. hospital operating theatres, precision laboratories)	Day or night-time	0.0050	0.010	0.10	0.20
Residences	Daytime	0.010	0.0071	0.020	0.014
	Night-time	0.007	0.005	0.014	0.010
Offices, schools, educational institutions and places of worship	Day or night-time	0.020	0.014	0.040	0.028
		0.04	0.029	0.080	0.058
Workshops	Day or night-time	0.04	0.029	0.080	0.058

Table 7 Impulsive vibration acceleration criteria (m/s^2) 1 Hz-80 Hz

Location	Assessment period	Preferred Values		Maximum Values	
		z-axis	x- and y-axis	z-axis	x- and y-axis
Critical working areas (e.g. hospital operating theatres, precision laboratories)	Day or night-time	0.0050	0.010	0.10	0.20
Residences	Daytime	0.30	0.21	0.60	0.42
	Night-time	0.10	0.071	0.20	0.14
Offices, schools, educational institutions and places of worship	Day or night-time	0.64	0.46	1.28	0.92
Workshops	Day or night-time	0.64	0.46	1.28	0.92

Table 8 Intermittent vibration impacts criteria ($m/s^{1.75}$) 1 Hz-80 Hz

Location	Daytime		Night-time	
	Preferred Values	Maximum Values	Preferred Values	Maximum Values
Critical working areas (e.g. hospital operating theatres, precision laboratories)	0.10	0.20	0.10	0.20
Residences	0.20	0.40	0.13	0.26
Offices, schools, educational institutions and places of worship	0.40	0.80	0.40	0.80
Workshops	0.80	1.60	0.80	1.60

4.2.2 Vibration Criteria – Building Contents and Structure

The vibration effects on the building itself are assessed against international standards as follows:

- For transient vibration: British Standard BS 7385: Part 2-1993 *"Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration"* (BSI 1993); and
- For continuous or repetitive vibration: German DIN 4150: Part 3 – 1999 *"Effects of Vibration on Structure"* (DIN 1999).

4.2.3 Standard BS 7385 Part 2 - 1993

For transient vibration, as discussed in standard BS 7385 Part 2-1993, the criteria are based on peak particle velocity (mm/s) which is to be measured at the base of the building. These are summarised below.

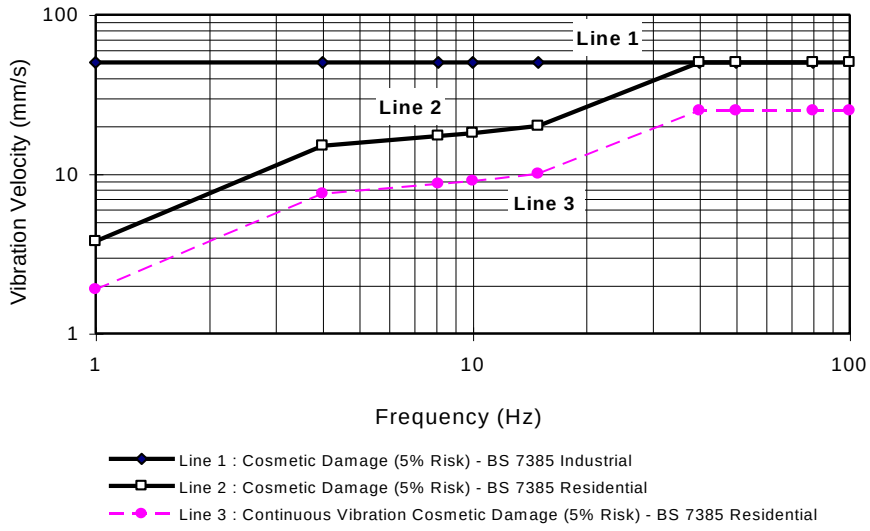
Table 9 Transient vibration criteria as per standard BS 7385 Part 2 - 1993

Line in Figure 2	Type of Building	Peak Component Particle Velocity in Frequency Range of Predominant Pulse	
		4 Hz to 15 Hz	15 Hz and Above
1	Reinforced or framed structures Industrial and heavy commercial buildings.	50 mm/s at 4 Hz and above	
2	Unreinforced or light framed structures Residential or light commercial type buildings	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above

Standard BS 7385 Part 2 – 1993 states that the values in Table 9 relate to transient vibration which does not cause resonant responses in buildings.

Where the dynamic loading caused by continuous vibration events is such that it results in dynamic magnification due to resonance (especially at the lower frequencies where lower guide values apply), then the values in Table 9 may need to be reduced by up to 50% (refer to Line 3 in Figure 2).

Figure 2 BS 7385 Part 2 – 1993, graph of transient vibration values for cosmetic damage



In the lower frequency region where strains associated with a given vibration velocity magnitude are higher, the recommended values corresponding to Line 2 are reduced. Below a frequency of 4 Hz, where a high displacement is associated with the relatively low peak component particle velocity value, a maximum displacement of 0.6 mm (zero to peak) is recommended. This displacement is equivalent to a vibration velocity of 3.7 mm/s at 1 Hz.

The standard also states that minor damage is possible at vibration magnitudes which are greater than twice those given in Table 9, and major damage to a building structure may occur at values greater than four times the tabulated values.

Fatigue considerations are also addressed in the standard and it is concluded that unless the calculation indicates that the magnitude and number of load reversals is significant (in respect of the fatigue life of building materials) then the values in Table 9 should not be reduced for fatigue considerations.

4.2.4 Standard DIN 4150 Part 3 - 1999

For continuous or repetitive vibration, standard DIN 4150 Part 3-1999 provides criteria based on values for peak particle velocity (mm/s) measured at the foundation of the building; these are summarised in Table 10. The criteria are frequency dependent and specific to particular categories of structures.

Table 10 Structural damage criteria as per standard DIN 4150 Part 3 - 1999

Type of Structure	Peak Component Particle Velocity, mm/s			
	Vibration at the foundation at a frequency of			Vibration of horizontal plane of highest floor at all frequencies
	1 Hz to 10 Hz	10 Hz to 50 Hz	50 Hz to 100 Hz[1]	
Buildings used for commercial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40
Dwellings and buildings of similar design and/or use	5	5 to 15	15 to 20	15
Structures that, because of their sensitivity to vibration, do not correspond to those listed in lines 1 and 2 and are of great intrinsic value (e.g. buildings that are under a preservation order)	3	3 to 8	8 to 10	8

Note 1: For frequencies above 100Hz, at least the values specified in this column shall be applied.

4.3 Construction Traffic Noise Criteria

For existing residences and other sensitive land uses affected by additional traffic on existing roads, the NSW *Road Noise Policy (RNP)* states that for noise associated with increased road traffic generated by land use developments, any increase in the total traffic noise level should be limited to 2 dB during both day and night-time periods. An increase of 2 dB represents a minor impact that is considered barely perceptible to the average person.

5 NOISE AND VIBRATION ASSESSMENT

5.1 Construction Noise Assessment

Sound power levels have been predicted for the construction tasks identified in the project program. The equipment anticipated for use in each task is based on previous project experience. The sound power levels for the equipment likely to be used for each of the listed tasks are provided in Table 11 below.

Table 11 Summary of predicted sound power levels

Tasks	Equipment	Sound Power Levels (dBA re 1pW)	Aggregate Sound Power Level per Task (dBA re 1pW)
Site Establishment Works	Mobile crane	110	113
	Power hand tools	109	
	Semi Rigid Vehicle [1]	105	
Ground Works and Demolition	Excavator	112	119
	Hand held jack hammer [1]	111	
	Dump truck [1]	104	
	Concrete saw [1]	114	
	Skid steer	110	
	Power hand tools	109	
Structure	Hand held jack hammer [1]	106	117
	Concrete saw [1]	114	
	Power hand tools	109	
	Welder	101	
	Concrete pump truck	110	
	Concrete agitator truck	108	
Internal Works	Power hand tools	109	109
Common and External Works	Concrete agitator truck	108	117
	Saw cutter [1]	104	
	Dump truck [1]	104	
	Concrete saw [1]	114	
	Power hand tools	109	

Note 1: An assumed time correction has been applied, this being 5 minutes of operation in any 15-minute interval.

5.2 Predicted Construction Noise Levels

Predicted construction noise levels are presented below for each of the surrounding receivers in accordance with the NSW EPA ICNG.

Note:

- Predicted noise levels presented below are given in a range, this includes the expected minimums as well as the maximums.
- With regards to the maximum noise levels in the range, these are typically experienced when plant/works are within close proximity to a boundary. In our experience whilst these levels above NML's and considered intrusive they will only occur for a short time and is not a representation of noise levels during the entire construction period.

Table 12 Receiver 1 – Summary of preliminary predicted construction noise levels – Residence to the north of the site on Grimes Lane

Phase	Activity	Aggregate Sound Power Level (dBA re 1pW)	Predicted Individual Noise Level at Receiver dBA $L_{Aeq\ 15\ minutes}$	Predicted Combined Noise Level at Receiver dBA $L_{Aeq\ 15\ minutes}$	Criteria dBA $L_{Aeq\ 15\ minutes}$	Summary of Result
Site Establishment Works	Mobile crane	113	62 to 76	65 to 79	**Standard Construction Hours** 38 + 10 = **48** **Highly Noise Affected Level** Standard Construction Hours **75**	Works indicatively predicted to have the potential to exceed the noise management level when working near a receiver. Mitigations of construction noise required to be undertaken including measures detailed in this report.
	Power hand tools		61 to 75			
	Semi Rigid Vehicle		57 to 71			
Ground Works and Demolition	Excavator	119	64 to 78	70 to 84		
	Handheld jack hammer		58 to 72			
	Dump truck		56 to 70			
	Concrete saw		66 to 80			
	Skid steer		62 to 76			
	Power hand tools		61 to 75			
Structure	Handheld jack hammer	117	58 to 72	69 to 83		
	Concrete saw		66 to 80			
	Power hand tools		61 to 75			
	Welder		53 to 67			
	Concrete pump truck		62 to 76			
	Concrete agitator truck		60 to 74			
Internal Works	Power hand tools	109	61 to 75	61 to 75		
Common and External Works	Concrete agitator truck	117	60 to 74	69 to 82		
	Saw cutter		56 to 70			
	Dump truck		56 to 70			
	Concrete saw		66 to 80			
	Power hand tools		61 to 75			

Table 13 Receiver 2 – Summary of predicted construction noise levels – Residence to the north of the site on Chelmsford Avenue

Phase	Activity	Aggregate Sound Power Level (dBA re 1pW)	Predicted Individual Noise Level at Receiver dBA $L_{Aeq\ 15\ minutes}$	Predicted Combined Noise Level at Receiver dBA $L_{Aeq\ 15\ minutes}$	Criteria dBA $L_{Aeq\ 15\ minutes}$	Summary of Result
Site Establishment Works	Mobile crane	113	57 to 72	60 to 76	**Standard Construction Hours** 38 + 10 = **48** **Highly Noise Affected Level** Standard Construction Hours **75**	Works indicatively predicted to have the potential to exceed the noise management level when working near a receiver. Mitigations of construction noise required to be undertaken including measures detailed in this report.
	Power hand tools		56 to 71			
	Semi Rigid Vehicle		52 to 68			
Ground Works and Demolition	Excavator	119	59 to 74	65 to 81		
	Handheld jack hammer		53 to 69			
	Dump truck		51 to 67			
	Concrete saw		61 to 77			
	Skid steer		57 to 72			
	Power hand tools		56 to 71			
Structure	Handheld jack hammer	117	53 to 69	65 to 80		
	Concrete saw		61 to 77			
	Power hand tools		56 to 71			
	Welder		48 to 63			
	Concrete pump truck		57 to 72			
	Concrete agitator truck		55 to 70			
Internal Works	Power hand tools	109	56 to 71	56 to 71		
Common and External Works	Concrete agitator truck	117	55 to 70	64 to 79		
	Saw cutter		51 to 67			
	Dump truck		51 to 67			
	Concrete saw		61 to 77			
	Power hand tools		56 to 71			

Table 14 Receiver 3 - Summary of predicted construction noise levels – Residence located to the east corner of Chelmsford Avenue and Edenlee Street

Phase	Activity	Aggregate Sound Power Level (dBA re 1pW)	Predicted Individual Noise Level at Receiver dBA $L_{Aeq\ 15\ minutes}$	Predicted Combined Noise Level at Receiver dBA $L_{Aeq\ 15\ minutes}$	Criteria dBA $L_{Aeq\ 15\ minutes}$	Summary of Result
Site Establishment Works	Mobile crane	113	57 to 72	60 to 76	**Standard Construction Hours** 38 + 10 = **48** **Highly Noise Affected Level** Standard Construction Hours **75**	Works indicatively predicted to have the potential to exceed the noise management level when working near a receiver. Mitigations of construction noise required to be undertaken including measures detailed in this report.
	Power hand tools		56 to 71			
	Semi Rigid Vehicle		52 to 68			
Ground Works and Demolition	Excavator	119	59 to 74	65 to 81		
	Handheld jack hammer		53 to 69			
	Dump truck		51 to 67			
	Concrete saw		61 to 77			
	Skid steer		57 to 72			
	Power hand tools		56 to 71			
Structure	Handheld jack hammer	117	53 to 69	64 to 80		
	Concrete saw		61 to 77			
	Power hand tools		56 to 71			
	Welder		48 to 63			
	Concrete pump truck		57 to 72			
	Concrete agitator truck		55 to 70			
Internal Works	Power hand tools	109	56 to 71	56 to 71		
Common and External Works	Concrete agitator truck	117	55 to 70	64 to 79		
	Saw cutter		51 to 67			
	Dump truck		51 to 67			
	Concrete saw		61 to 77			
	Power hand tools		56 to 71			

Table 15 Receiver 4 - Summary of predicted construction noise levels – Residence located to the south of the site

Phase	Activity	Aggregate Sound Power Level (dBA re 1pW)	Predicted Individual Noise Level at Receiver dBA $L_{Aeq\ 15\ minutes}$	Predicted Combined Noise Level at Receiver dBA $L_{Aeq\ 15\ minutes}$	Criteria dBA $L_{Aeq\ 15\ minutes}$	Summary of Result
Site Establishment Works	Mobile crane	113	60 to 76	63 to 79	**Standard Construction Hours** 39 + 10 = **49** **Highly Noise Affected Level** Standard Construction Hours **75**	Works indicatively predicted to have the potential to exceed the noise management level when working near a receiver. Mitigations of construction noise required to be undertaken including measures detailed in this report.
	Power hand tools		59 to 75			
	Semi Rigid Vehicle		55 to 71			
Ground Works and Demolition	Excavator	119	62 to 78	68 to 84		
	Handheld jack hammer		56 to 72			
	Dump truck		54 to 70			
	Concrete saw		64 to 80			
	Skid steer		60 to 76			
	Power hand tools		59 to 75			
Structure	Handheld jack hammer	117	56 to 72	67 to 83		
	Concrete saw		64 to 80			
	Power hand tools		59 to 75			
	Welder		51 to 67			
	Concrete pump truck		60 to 76			
	Concrete agitator truck		58 to 74			
Internal Works	Power hand tools	109	59 to 75	59 to 75		
Common and External Works	Concrete agitator truck	117	58 to 74	66 to 83		
	Saw cutter		54 to 70			
	Dump truck		54 to 70			
	Concrete saw		64 to 80			
	Power hand tools		59 to 75			

Table 16 Receiver 5 - Summary of predicted construction noise levels – Residence located to the southwest of the site

Phase	Activity	Aggregate Sound Power Level (dBA re 1pW)	Predicted Individual Noise Level at Receiver dBA $L_{Aeq\ 15\ minutes}$	Predicted Combined Noise Level at Receiver dBA $L_{Aeq\ 15\ minutes}$	Criteria dBA $L_{Aeq\ 15\ minutes}$	Summary of Result
Site Establishment Works	Mobile crane	113	53 to 64	57 to 68	**Standard Construction Hours** 39 + 10 = **49** **Highly Noise Affected Level** Standard Construction Hours **75**	Works indicatively predicted to have the potential to exceed the noise management level when working near a receiver. Mitigations of construction noise required to be undertaken including measures detailed in this report.
	Power hand tools		52 to 63			
	Semi Rigid Vehicle		49 to 60			
Ground Works and Demolition	Excavator	119	55 to 66	62 to 73		
	Handheld jack hammer		50 to 61			
	Dump truck		48 to 59			
	Concrete saw		58 to 69			
	Skid steer		53 to 64			
	Power hand tools		52 to 63			
Structure	Handheld jack hammer	117	50 to 61	61 to 72		
	Concrete saw		58 to 69			
	Power hand tools		52 to 63			
	Welder		44 to 55			
	Concrete pump truck		53 to 64			
	Concrete agitator truck		51 to 62			
Internal Works	Power hand tools	109	52 to 63	52 to 63		
Common and External Works	Concrete agitator truck	117	51 to 62	60 to 71		
	Saw cutter		48 to 59			
	Dump truck		48 to 59			
	Concrete saw		58 to 69			
	Power hand tools		52 to 63			

Table 17 Receiver 6 - Summary of predicted construction noise levels – Residence located to the northwest on Second Avenue and Meredith Street

Phase	Activity	Aggregate Sound Power Level (dBA re 1pW)	Predicted Individual Noise Level at Receiver dBA $L_{Aeq\ 15\ minutes}$	Predicted Combined Noise Level at Receiver dBA $L_{Aeq\ 15\ minutes}$	Criteria dBA $L_{Aeq\ 15\ minutes}$	Summary of Result
Site Establishment Works	Mobile crane	113	55 to 70	58 to 73	**Standard Construction Hours** 38 + 10 = **48** **Highly Noise Affected Level** Standard Construction Hours **75**	Works indicatively predicted to have the potential to exceed the noise management level when working near a receiver. Mitigations of construction noise required to be undertaken including measures detailed in this report.
	Power hand tools		54 to 69			
	Semi Rigid Vehicle		50 to 65			
Ground Works and Demolition	Excavator	119	57 to 72	63 to 78		
	Handheld jack hammer		51 to 66			
	Dump truck		49 to 64			
	Concrete saw		59 to 74			
	Skid steer		55 to 70			
	Power hand tools		54 to 69			
Structure	Handheld jack hammer	117	51 to 66	63 to 77		
	Concrete saw		59 to 74			
	Power hand tools		54 to 69			
	Welder		46 to 61			
	Concrete pump truck		55 to 70			
	Concrete agitator truck		53 to 68			
Internal Works	Power hand tools	109	54 to 69	54 to 69		
Common and External Works	Concrete agitator truck	117	53 to 68	62 to 77		
	Saw cutter		49 to 64			
	Dump truck		49 to 64			
	Concrete saw		59 to 74			
	Power hand tools		54 to 69			

5.3 Construction Traffic Noise Assessment

It is proposed that the construction traffic would access the site via Chelmsford Avenue to the north of the site. All construction traffic will access the site and use the surrounding roadways in accordance with the site Construction Management plan.

5.4 Vibration Assessment

In order to maintain compliance with the human comfort vibration criteria discussed in Section 4.2, it is recommended that the indicative safe distances listed in table below should be maintained. These indicative safe distances should be validated prior to the start of construction works by undertaking measurements of vibration levels generated by construction and demolition equipment to be used on site.

Since the criteria for scientific or medical equipment (should any of these exist close to the site) can be more stringent than those required for human comfort, vibration validating measurements should be conducted at each site to determine the vibration level and potential impact onto this sensitive equipment.

Additionally, any vibration levels should be assessed in accordance with the criteria discussed in Section 4.2.

Table 18 Recommended indicative safe working distances for vibration intensive plant

Plant	Rating / Description	Safe Working Distances (m)	
		Cosmetic Damage (BS 7385: Part 2 DIN 4150: Part 3)	Human Comfort (AVTG)
Vibratory roller	< 50 kN (Typically 1 – 2 tonnes)	5	15 – 20
	< 100 kN (Typically 2 – 4 tonnes)	6	20
	< 200 kN (Typically 4 – 6 tonnes)	12	40
	< 300 kN (Typically 7 – 13 tonnes)	15	100
	> 300 kN (Typically more than 13 tonnes)	20	100
Small hydraulic hammer	300 kg, typically 5 – 12 tonnes excavator	2	7
Medium hydraulic hammer	900 kg, typically 12 – 18 tonnes excavator	7	23
Large hydraulic hammer	1600 kg, typically 18 – 34 tonnes excavator	22	73
Vibratory pile driver	Sheet piles	2 – 20	20
Jackhammer	Hand held	1	Avoid contact with structure and steel reinforcements

Based on the required construction activities to be undertaken as part of the project as well as the proximity of the surrounding receivers to the site, the resulting construction vibration is unlikely to negatively impact on any of the surrounding receivers.

6 NOISE AND VIBRATION MANAGEMENT PLAN

6.1 Acoustic Management Procedures

Table 19 below summarises the management procedures recommended for airborne noise and vibration impact. These procedures are also further discussed in the report. Hence, where applicable, links to further references are provided in Table 19.

Table 19 Summary of mitigation procedures

Procedure	Abbreviation	Description	Further Reference
General Management Measures	GMM	Introduce best-practice general mitigation measures in the workplace which are aimed at reducing the acoustic impact onto the nearest affected receivers.	Refer to Section 5 For noise impact, also refer to Section 6.2.1 For vibration impact, also refer to Section 6.3.1
Project Notification	PN	Issue project updates to stakeholders, discussing overviews of current and upcoming works. Advanced warning of potential disruptions can be included. Content and length to be determined on a project-by-project basis.	Refer to Section 6.5.4 and 6.5.5
Verification Monitoring	V	Monitoring to comprise attended or unattended acoustic surveys. The purpose of the monitoring is to confirm measured levels are consistent with the predictions in the acoustic assessment, and to verify that the mitigation procedures are appropriate for the affected receivers. If the measured levels are higher than those predicted, then the measures will need to be reviewed and the management plan will need to be amended.	For noise impact, refer to Section 6.2.2. For vibration impact, refer to Section 6.3.2
Complaints Management System	CMS	Implement a management system which includes procedures for receiving and addressing complaints from affected stakeholders	Refer to Section 6.6
Specific Notification	SN	Individual letters or phone calls to notify stakeholders that noise levels are likely to exceed noise objectives. Alternatively, contractor could visit stakeholders individually in order to brief them in regards to the noise impact and the mitigation measures that will be implemented.	Refer to Section 6.5.4 and 6.5.5
Respite Offer	RO	Offer provided to stakeholders subjected to an ongoing impact.	-
Alternative Construction Methodology	AC	Contractor to consider alternative construction options that achieve compliance with relevant criteria. Alternative option to be determined on a case-by-case basis.	-

The application of these procedures is in relation to the exceedances over the relevant criteria. For airborne noise, the criteria are based on NMLs. The allocation of these procedures is discussed in Section 6.1.1

For vibration, the criteria either correspond to human comfort, building damage or scientific and medical equipment. The application of these procedures is discussed in Section 6.1.2.

6.1.1 Allocation of Noise Management Procedures

For residences, the management procedures have been allocated based on noise level exceedances at the affected properties, which occur over the designated NMLs (refer to section 3). The allocation of these procedures is summarised in Table 20 below.

Table 20 Allocation of noise management procedures – residential receivers

Construction Hours	Exceedance over NML (dB)	Management Procedures (see definition above)
Standard Hours Mon – Fri: 8:00 am to 7:00 pm Sat: 8:00 am – 5:00 pm	0 - 3	GMM
	4 - 10	GMM, PN, V [1], CMS, AC
	> 10	GMM, PN, V, CMS, SN, AC
Outside Standard Hours Mon – Fri: 7:00 am to 8:00 am Sat: 7:00 am to 8:00 am	0 - 10	GMM, AC
	11 - 20	GMM, PN, V [1], CMS, AC
	> 20	GMM, PN, V, CMS, SN, RO, AC

Notes

1. Verification monitoring to be undertaken upon complaints received from affected receivers

Please note the following regarding the allocation of these procedures:

- The exceedances have been estimated as part of the acoustic assessment, and these are summarised in Section 5.1.
- The allocation of procedures is based on the assumptions used for noise level predictions (refer to Section 5.1). Consequently, these allocations can be further refined once additional details of the construction program become available.

For non-residential receivers (such as commercial), management measures are provided in Section 6.2.3.

6.1.2 Allocation of Vibration Management Procedures

Table 21 below summarises the vibration management procedures to be adopted based on exceedance scenarios (i.e., whether the exceedance occurs over human comfort criteria, building damage criteria, or criteria for scientific and medical equipment). Please note these management procedures apply for any type of affected receiver (i.e., for residences as well as non-residential receivers).

Table 21 Allocation of vibration management procedures

Construction Hours	Exceedance Scenario	Management Procedures
Standard Hours Mon – Fri: 8:00 am to 7:00 pm Sat: 8:00 am – 5:00 pm	Over human comfort criteria (refer to Section 4.2)	GMM, PN, V, RO
	Over building damage criteria (refer to Section 4.2)	GMM, V, AC
Outside Standard Hours Mon – Fri: 7:00 am to 8:00 am Sat: 7:00 am to 8:00 am	Over human comfort criteria (refer to Section 4.2)	GMM, SN, V, RO, CMS
	Over building damage criteria (refer to Section 4.2)	GMM, V, AC

6.2 Site Specific Noise Mitigation Measures – High Noise Affected Appliances

Predicted noise levels outlined in section 5.1 indicate exceedances above the Noise Management Levels (NMLs) as well as the Highly Noise Affected Level (HNAL) when in proximity to a boundary. To militate against any exceedances, the site will need to introduce periods of respite for activities which are creating noise levels above the HNAL only (i.e. greater than 75dBA). See below.

Table 22 Recommended Respite Periods

Monday to Friday	Saturday
7:00am to 8:00am – No noisy works (Respite Period)	8:00am to 9:00am – No noisy works (Respite Period)
8:00am to 11:30am – Works	9:00am to 12:00pm – Works
11:30am to 12:30pm – No noisy works (Respite Period)	12:00pm to 1:00pm – No noisy works (Respite Period)
12:30pm to 3:30pm – Works	
3:30pm to 4:30pm – No noisy works (Respite Period)	
4:30pm to 6:00pm – Works	

6.2.1 General Comments

The contractor will, where reasonable and feasible, apply best practice noise mitigation measures. These measures shall include the following:

- Maximising the offset distance between plant items and nearby noise sensitive receivers.
- Preventing noisy plant working simultaneously and adjacent to sensitive receivers.
- Minimising consecutive works in the same site area.
- Orienting equipment away from noise sensitive areas.
- Carrying out loading and unloading away from noise sensitive areas.

In order to minimise noise impacts during the works, the contractor will take all reasonable and feasible measures to mitigate noise effects.

The contractor will also take reasonable steps to control noise from all plant and equipment. Examples of appropriate noise control include efficient silencers and low noise mufflers.

The contractor should apply all feasible and reasonable work practices to meet the NMLs and inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels, duration of noise generating construction works, and the contact details for the proposal.

The contractor will ensure project staff are made aware of the project's potential for noise/vibration impacts on surrounding sensitive receivers, and of the steps being taken to control those potential noise/vibration impacts. This should be communicated through the site induction process and toolbox talks.

6.2.2 Noise Monitoring

Noise monitoring, if required, will be performed by an acoustical consultant directly engaged by the contractor.

Noise monitoring is recommended to be undertaken by attended noise measurements at the start of any new phase of works (i.e. demolition, excavation or remediation works etc.). The statistical parameters to be measured should include the following noise descriptors: L_{Amin}, L_{A90}, L_{A10}, L_{A1}, L_{Amax} and L_{Aeq}. Unattended noise measurements should be conducted over consecutive 15 minute periods.

This monitoring should also be complemented by undertaking attended noise measurements in order to:

- Differentiate between construction noise sources and other extraneous noise events (such as road traffic and aircraft noise)
- Note and identify any excessive noise emitting machinery or operation.

Noise monitoring and measurements on the site will include the following:

- Noise monitoring during the required demolition to be completed on the site.
- Periodic attended noise measurements during the bulk earthworks to be completed on the site, typically monthly.

In addition to the above detailed measurements, should any complaints be received which have not been determined previously, it should be confirmed by conducting additional attended noise measurements.

The survey methodology and any equipment should comply with the requirements discussed in Standard AS 1055.1-1997.

6.2.3 Noise Mitigation Measures for Non-Residential Receivers

Where exceedances have been identified in Section 3, the following mitigation measures are recommended:

- Undertake general mitigation measures as discussed in Section 6
- Issue project updates to tenants in affected premises. The updates can include overview of current and upcoming works, as well as advanced warning of potential disruptions. These updates can also be issued through an email distribution list or via social media.
- Signage to be posted in order to provide stakeholders information regarding project details, emergency contacts and enquiry contact information.

6.2.4 Alternate Equipment or Process

Exceedance of the site's NMLs should result in an investigation as to whether alternate equipment could be used, or a difference process could be undertaken.

In some cases, the investigation may conclude that no possible other equipment can be used, however, a different process could be undertaken.

6.2.5 Acoustic Enclosures/Screening

Typically, on a construction site there are three different types of plant that will be used: mobile plant (i.e., excavators, skid steers, etc.), semi mobile plant (i.e., hand tools generally) or static plant i.e. (diesel generators).

For plant items which are static it is recommended that, in the event exceedances are being measured due to operation of the plant item, an acoustic enclosure/screen is constructed to reduce impacts. These systems can be constructed from Fibre Cement (FC) sheeting or, if airflow is required, acoustic attenuators or louvres.

For semi mobile plant, relocation of plant should be investigated to either be operated in an enclosed space or at locations away from a receiver.

With mobile plant it is generally not possible to treat these sources. However, investigations into the machine itself may result in a reduction of noise (i.e., mufflers/attenuators etc).

6.2.6 Required Piling

Piling on the site will be limited and will not required vibration or percussion piling. All piling should be undertaken during the approved hours of works for the project and the proposed period when piling is to be undertaken is to be included in the community notifications provided to surrounding receivers.

6.3 Vibration Mitigation Measures

6.3.1 General Comments

As part of the CNVMP, the following vibration mitigation measures should be implemented:

- Any vibration generating plant and equipment is to be in areas within the site in order to lower the vibration impacts.
- Investigate the feasibility of rescheduling the hours of operation of major vibration generating plant and equipment.
- Use lower vibration generating items of construction plant and equipment; that is, smaller capacity plant.
- Minimise conducting vibration generating works consecutively in the same area (if applicable).
- Schedule a minimum respite period of at least 30 minutes before activities commence which are to be undertaken for a continuous 4-hour period.
- Use only dampened rock breakers and/or "city" rock breakers to minimise the impacts associated with rock breaking works.
- Conduct attended measurements of vibration generating plant at commencement of works in order to validate the indicative safe working distances advised in Table 25 and, consequently, to establish safe working distances suitable to the project. Measurements should be conducted at the nearest affected property boundary. These safe working distances should be defined by considering the vibration criteria discussed in Section 1.2 (i.e., criteria for structural damage, human comfort and impact to scientific or medical equipment).

6.3.2 Vibration Monitoring

Vibration monitoring will be undertaken at the nearest most affected structures and include the following:

1. Attended vibration surveys resulting from high vibration generating activities which are within the recommended safe working distances detailed in Table 18 above. Vibration assessments should include attended vibration measurements of proposed activities to be undertaken on the site.

The vibration monitoring equipment would be operated and analysed by the acoustical consultant.

Reports of the measured vibration levels and their likely impacts would be prepared by the acoustical consultant and issued to the contractor.

6.4 Noise and Vibration Monitoring

As part of the management of noise from the proposed construction activities to be undertaken on the site the following noise and vibration monitoring is to be undertaken:

1. Noise Monitoring– Attended noise monitoring of excavation and construction activities is to be undertaken during the following periods:
    a. Commencement of any rock breaking or sawing on the site.
    b. In response to any ongoing complaints received from neighbours.

2. Vibration – Based on the proximity of the surrounding receivers to the works magnitudes of vibration resulting from construction activities required to be undertaken on the site are not expected to approach vibration limits detailed in Section 4.2 of this report, therefore permanent continuous vibration monitoring is not recommended.

    Attended vibration monitoring is to be undertaken at the following periods:
    a. Commencement of any high vibration generating activities including hydrail hammering, rock breaking or vibration rolling on the site.
    b. receiver location in the event complaints resulting from construction activities resulting from the perception of vibration are experienced by the occupants of buildings within the vicinity of the site.

6.5 SINSW Complaints management process

6.5.1 Enquiries and complaints management

SINSW manages enquiries, and complaints in a timely and responsive manner and detailed in the Community Communication Strategy required by SSD-8873789 condition B9.

Prior to project delivery, a complaint could be related to lack of community consultation, design of the project, lack of project progress, etc.

During project delivery, a complaint is defined as in regard to construction impacts – such as – safety, dust, noise, traffic, congestion, loss of parking, contamination, loss of amenity, hours of work, property damage, property access, service disruption, conduct or behaviour of construction workers, other environmental impacts, unplanned or uncommunicated disruption to the school.

As per the planning approval conditions, a complaints register is updated monthly and is publicly available on the project's website page on the SINSW website. The complaints register will record the number of complaints received, the nature of the complaints and how the complaint was resolved.

6.5.2 Complaints management process

All complaints will be conducted using the SINSW Community Communication Strategy for the New Public School in Epping.

Any face to face complaints will be directed to the SINSW hotline 1300 482 651. as detailed in the Community Communication Strategy.

6.5.3 Complaints in common community languages

Complaints can be made in common community languages using the Translating and Interpreting Service (TIS), managed by the Department of Home Affairs. Community members can be connected to an interpreter by calling TIS on 131 450. TIS contact details are included on all project communications. Once TIS has the interpreter on the line, the interpreter and community member are connected to School Infrastructure and phone interpretation can begin. School Infrastructure NSW receives the complaint via the translator and begins the complaints management process as outlined above.

6.5.4 Community Notifications

Prior to the works onsite being undertaken, it is recommended that community consultation with the neighbouring affected parties be undertaken. These include the locations detailed in the figure below.

Figure 3 Required Community Notification Area

Communication notification, should not be limited to the beginning of the onsite works but throughout, providing the community with constant updates on the progress and upcoming works. In our experience these could include:

- Project website.
- Email notifications; and
- Letterbox drops.

6.5.5 Community Engagement

It is proposed that throughout the duration of the project, continued meetings with both the school principals will be undertaken on a regular basis to monitor and mitigate any impacts of construction noise and vibration on the school community.

6.6 Complaints Management System

Should complaints arise they must be dealt with in a responsible and uniform manner, therefore, a management system to deal with complaints is detailed above.

6.7 Contingency Plans

Contingency plans are required to address noise or vibration problems if excessive levels are measured at surrounding sensitive receivers and/or if justified complaints occur. Such plans include:

- Stop the onsite works.
- Identify the source of the main equipment within specific areas of the site which is producing the most construction noise and vibration at the sensitive receivers; and
- Review the identified equipment and determine if an alternate piece of equipment can be used or the process can be altered.
- In the event an alternate piece of equipment or process can be used, works can re-commence.
- In the event an alternate piece of equipment or process cannot be determined implement a construction assessment to be performed by a suitably qualified acoustic consultant.

The Superintendent shall have access to view the Contractor's noise measurement records on request. The Superintendent may undertake noise monitoring if and when required.

6.8 General Mitigation Measures (Australia Standard 2436-2010)

As well as the above project specific noise mitigation controls, AS 2436-2010 "*Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites*" sets out numerous practical recommendations to assist in mitigating construction noise emissions. Examples of strategies that could be implemented on the subject project are listed below, including the typical noise reduction achieved, where applicable.

6.8.1 Adoption of Universal Work Practices

- Regular reinforcement (such as at toolbox talks) of the need to minimise noise and vibration.
- Regular identification of noisy activities and adoption of improvement techniques.
- Avoiding the use of portable radios, public address systems or other methods of site communication that may unnecessarily impact upon nearby sensitive receivers.
- Where possible, avoiding the use of equipment that generates impulsive noise.
- Minimising the need for vehicle reversing for example (particularly at night), by arranging for one-way site traffic routes.
- Use of broadband audible alarms on vehicles and elevating work platforms used on site.
- Minimising the movement of materials and plant and unnecessary metal-on-metal contact.
- Minimising truck movements.

6.8.2 Plant and Equipment

- Choosing quieter plant and equipment based on the optimal power and size to most efficiently perform the required tasks.
- Selecting plant and equipment with low vibration generation characteristics.
- Operating plant and equipment in the quietest and most efficient manner.

6.8.3 On Site Noise Mitigation

- Maximising the distance between noise activities and noise sensitive land uses.
- Installing purpose-built noise barriers, acoustic sheds and enclosures.

6.8.4 Work Scheduling

- Providing respite periods which could include restricting very noisy activities to time periods that least affect the nearby noise sensitive locations, restricting the number of nights that after-hours work is conducted near residences or by determining any specific requirements.
- Scheduling work to coincide with non-sensitive periods.
- Planning deliveries and access to the site to occur quietly and efficiently and organising parking only within designated areas located away from the sensitive receivers.
- Optimising the number of deliveries to the site by amalgamating loads where possible and scheduling arrivals within designated hours.
- Including contract conditions that include penalties for non-compliance with reasonable instructions by the principal to minimise noise or arrange suitable scheduling.

6.8.5 Source Noise Control Strategies

Some ways of controlling noise at the source are:

- Where reasonably practical, noisy plant or processes should be replaced by less noisy alternatives.
- Modify existing equipment: Engines and exhausts are typically the dominant noise sources on mobile plant such as cranes, graders, excavators, trucks, etc. In order to minimise noise emissions, residential grade mufflers should be fitted on all mobile plant utilised on site.
- Siting of equipment: locating noisy equipment behind structures that act as barriers, or at the greatest distance from the noise-sensitive area; or orienting the equipment so that noise emissions are directed away from any sensitive areas, to achieve the maximum attenuation of noise.
- Regular and effective maintenance.

6.8.6 Miscellaneous Comments

Deliveries should be undertaken, where possible, during standard construction hours.

Maximise hammer penetration (and reduce blows) by using sharp hammer tips. Keep stocks of sharp profiles at site and monitor the profiles in use.

It is advised that mobile plant and trucks operating on site for a significant portion of the project are to have reversing alarm noise emissions minimised. This is to be implemented subject to recognising the need to maintain occupational safety standards.

No public address system should be used on site (except for emergency purposes).

7 CONCLUSION

This report details the Construction Noise and Vibration Management Sub Plan for the construction of the New Public School in Epping project.

An assessment of noise and vibration impacts from the required processes to be undertaken during the construction period of the project (including ground works and construction) has been undertaken and suitable treatments, management controls, perioding measurements and community engagement has been detailed in this report.

Providing the recommendations in this report are included in the construction of the site, compliance with the relevant EPA's *Interim Construction Noise Guideline* and the projects *Consent* will be achieved.

Based on the required construction activities to be undertaken on the site and the distance separation to the neighbouring receivers, compliance with the relevant vibration criteria is expected to be achieved without additional mitigations. Conformation of compliance with the relevant criteria will be undertaken using attended vibration monitoring.

For any additional information please do not hesitate to contact the person below.

Regards

Ben White
Director

Pulse White Noise Acoustics

APPENDIX A: ACOUSTIC GLOSSARY

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

Ambient Sound	The totally encompassing sound in a given situation at a given time, usually composed of sound from all sources near and far.
Audible Range	The limits of frequency which are audible or heard as sound. The normal ear in young adults detects sound having frequencies in the region 20 Hz to 20 kHz, although it is possible for some people to detect frequencies outside these limits.
Character, acoustic	The total of the qualities making up the individuality of the noise. The pitch or shape of a sound's frequency content (spectrum) dictate a sound's character.
Decibel [dB]	The level of noise is measured objectively using a Sound Level Meter. The following are examples of the decibel readings of every day sounds; 0dB the faintest sound we can hear 30dB a quiet library or in a quiet location in the country 45dB typical office space. Ambience in the city at night 60dB Martin Place at lunch time 70dB the sound of a car passing on the street 80dB loud music played at home 90dB the sound of a truck passing on the street 100dB the sound of a rock band 115dB limit of sound permitted in industry 120dB deafening
dB(A)	*A-weighted decibels* The ear is not as effective in hearing low frequency sounds as it is hearing high frequency sounds. That is, low frequency sounds of the same dB level are not heard as loud as high frequency sounds. The sound level meter replicates the human response of the ear by using an electronic filter which is called the "A" filter. A sound level measured with this filter switched on is denoted as dB(A). Practically all noise is measured using the A filter. The sound pressure level in dB(A) gives a close indication of the subjective loudness of the noise.
Frequency	Frequency is synonymous to *pitch*. Sounds have a pitch which is peculiar to the nature of the sound generator. For example, the sound of a tiny bell has a high pitch and the sound of a bass drum has a low pitch. Frequency or pitch can be measured on a scale in units of Hertz or Hz.
Loudness	A rise of 10 dB in sound level corresponds approximately to a doubling of subjective loudness. That is, a sound of 85 dB is twice as loud as a sound of 75 dB which is twice as loud as a sound of 65 dB and so on
LMax	The maximum sound pressure level measured over a given period.
LMin	The minimum sound pressure level measured over a given period.
L1	The sound pressure level that is exceeded for 1% of the time for which the given sound is measured.
L10	The sound pressure level that is exceeded for 10% of the time for which the given sound is measured.
L90	The level of noise exceeded for 90% of the time. The bottom 10% of the sample is the L_{90} noise level expressed in units of dB(A).
Leq	The "equivalent noise level" is the summation of noise events and integrated over a selected period of time.
dB (A)	'A' Weighted overall sound pressure level
Sound Pressure Level, LP dB	A measurement obtained directly using a microphone and sound level meter. Sound pressure level varies with distance from a source and with changes to the measuring environment. Sound pressure level equals 20 times the logarithm to the base 10 of the ratio of the rms sound pressure to the reference sound pressure of 20 micro Pascals.
Sound Power Level, Lw dB	Sound power level is a measure of the sound energy emitted by a source, does not change with distance, and cannot be directly measured. Sound power level of a machine may vary depending on the actual operating load and is calculated from sound pressure level measurements with appropriate corrections for distance and/or environmental conditions. Sound power levels is equal to 10 times the logarithm to the base 10 of the ratio of the sound power of the source to the reference sound power of 1 picoWatt

APPENDIX B – BEN WHITE CV AND AAS MEMBERSHIP

Curriculum Vitae – Benjamin White

Employment Experience:

Director – Pule White Noise Acoustics November 2020 – Present

Director - White Noise Acoustics: March 2019 – Present

Director/Engineer - Acoustic Logic Consultancy: March 2001 – July 2018

Experience:

Ben White the Director of White Noise has over 17 years of experience in acoustic.

Ben has significant experience in providing acoustic services and expert advice in the following areas:

- Residential acoustic reports including aircraft noise (AS2021) assessments, traffic noise, train noise and vibration assessments.
- Noise emission assessments for various projects including assessments with planning requirements using EPA, Department of Planning, Council DCP's and similar regulatory requirements.
- Planning approvals including Development Applications for multi dwelling residential developments, commercial developments, hotels and boarding houses, places of entertainment, carparks, mixed use developments, shopping centres and the like.
- Expert court witness including Land and Environment Court and other expert witness work.
- Project planning and specifications for types of projects including residential, commercial, retail, hotel accommodation, warehouses and industrial developments and mixed-use projects.
- Project delivery for all types of projects including, design advice and project delivery requirements at all stages of projects during design and construction.
- Certification works including on site testing for the provision of certification of all types of projects including items required to comply with Part F5 of the BCA as well as project specific acoustic requirements.
- Mechanical design and advice for the treatments of mechanical services with project requirements.
- External façade design and specification.
- Specialised acoustic design advice including areas of projects.
- Issues with existing building include site surveys and audits as well as advice regarding rectification if required.

AUSTRALIAN ACOUSTICAL SOCIETY

This is to certify that

BENJAMIN WHITE

was admitted to the grade of

MEMBER

of the Australian Acoustical Society

on 27th October 2020

and is entitled to use the letters

M.A.A.S.

issued on 26th November 2020

S. Moore

President

General Secretary

AUSTRALIAN ACOUSTICAL SOCIETY A.C.N. 000 712 658 The Common Seal Of

This certificate remains the property of the Australian Acoustical Society

APPENDIX C – COMMUNITY CONSULTANT SUMMARY REPORT

NSW GOVERNMENT Education

April 2021

School Infrastructure NSW

Community Engagement Summary Report

A new primary school in Epping

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1. Introduction

School Infrastructure NSW's (SINSW) mission is to provide school infrastructure solutions by working collaboratively with all stakeholders to create learning environments across NSW that serve future needs and make us proud.

As part of our transformation in the way we plan, develop and deliver schools across the state, we are committed to openly sharing information. This will show how one school compares with its neighbouring group of schools. It also explains the challenges we face in the complex world of schools planning. Part of this transparency means that we will let the community know which schools will be worked on and at what time. It will take time since we have over 2,200 schools across the state, so we will address high growth areas within each district and region across the State first.

As we develop a range of options for addressing school infrastructure requirements, members of the community will be able to see and comment on our proposal before it is finalised. Feedback is important and helps us refine our planning process. Whilst we cannot commit to implementing everything suggested, engaging with the broader community ensures we've considered what's important to you, and balanced this with practicality and cost to deliver sustainable and relevant solutions for schools.

This report summarises the consultation and communication activities that have been undertaken in relation to the proposed new primary school in Epping. It forms part of the Environmental Impact Statement required for the State Significant Development (SSD) application as specified in the Secretary's Environmental Assessment Requirements (SEARs).

This report summarises the engagement undertaken for this stage of the proposed upgrades by outlining:

- the SEARs for stakeholder and community consultation
- the consultation process undertaken, including key meetings with stakeholders
- a summary of feedback received, and issues raised, by specific stakeholders, and
- how feedback has been considered in the development of the SSD application.

2. Background

The NSW Government is investing $7 billion over the next four years, continuing its program to deliver more than 200 new and upgraded schools to support communities across NSW. This is the largest investment in public education infrastructure in the history of NSW.

The NSW Department of Education is committed to delivering new and upgraded schools for communities across NSW. The delivery of these important projects is essential to the future learning needs of our students and supports growth in the local economy.

The new Primary School in Epping project will create core infrastructure and increase the capacity for new teaching and learning spaces across the Epping Primary Schools Community Group (SCG). This area is an area of high population growth, and the new school will respond to the projected growth within this area.

The site for the proposed new Primary School in Epping is located in the City of Parramatta, approximately 20 kilometres north-west of Sydney. The site is located near the Epping Town Centre which has been identified as an Urban Renewal Area and there is significant population growth anticipated as a result of development.

The new school location is a disused TAFE facility located approximately 770m from Epping West Public School. The site area is approximately 2.068ha, between two distinct residential typologies: detached 1-2 storey residences to the North and high density apartment buildings to the South.

The Mobbs Lane Reserve is the closest public open space to the site and is accessible by a narrow and steep walking track at the north western corner of the site.

Heritage items in the immediate area are being established through a process being managed by a Heritage Consultant working on the project. The Epping Eastwood Conservation Zone is located to the east of the site. Eastwood Brickyards are located to the south. The Dalmar Children's Home and treed accessway is located to the west of the site.

The new primary school in Epping will deliver:

- Homebases (classrooms) suitable for a school population of approximately 600 students as part of the Stage 1 works
- Administration and staff areas
- Hall and canteen
- Library
- Covered outdoor learning area (COLA)
- Special education unit
- Special programs area
- Play space in various locations
- Accessible paths linking the school facilities
- A staff car park
- Infrastructure upgrades to encourage the school community to walk to the new facilities

2.1. Secretary's Environmental Assessment Requirements

The Secretary's Environmental Assessment Requirements (SEARs) for the State Significant Development were received on 14 September 2020. An excerpt can be found below.

"During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups, relevant special interest groups, including local Aboriginal land councils and registered Aboriginal stakeholders and affected landowners. In particular, you must consult with:

- the relevant Council.
- Government Architect NSW (through the NSW SDRP process).
- Transport for NSW.

Consultation should commence as soon as practicable to inform the scope of investigation and progression of the proposed development.

The EIS must describe and include evidence of the consultation process and the issues raised and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.

Targeted consultation in accordance with the draft Social Impact Assessment Guideline 2020 (Department of Planning, Industry and Environment) must also occur where there is a requirement to prepare and submit a Social Impact Assessment."

3. Consultation Approach

3.1. Consultation objectives

As set out in the Community Engagement Plan, the following community engagement objectives have been identified for this proposal:

- Promote the benefits of the project
- Build key schools community stakeholder relationships and maintain goodwill with impacted communities
- Manage community expectations and build trust by delivering on our commitments
- Provide timely information to impacted stakeholders, schools and broader communities
- Address and correct misinformation in the public domain
- Reduce the risk of project delays caused by negative third party intervention
- Leave a positive legacy in each community.

3.2. Description of consultation and communication channels and activities

The table below describes the consultation and communication channels and activities that have been undertaken and the strategic intent of each activity.

Activity	**Strategic intent**
School community engagement (Project Review Group, Meetings, workshops and design user group sessions)	Project Review Group meetings, ad-hoc meetings and workshops comprise representatives from the new primary school in Epping to discuss aspects of the design, consultation and construction approach and seek feedback and input from members. Design user groups seek input from end users including staff about the proposed design and its applicability.
Communications (Project webpage, Information Pack, Project Updates and Works Notifications)	Publication of project information. A screen print of the project webpage can be found at Appendix 1. A sample Project Update can be found at Appendix 2. A sample Works Notification can be found at Appendix 3.
Contact channels (Emails and 1300 project information number)	Direct responses to stakeholder and community contact.

3.3. Consultation activities

A key factor of the project is the governance provided through the Project Reference Group (PRG), which provides feedback on critical design elements and the overall project direction. PRG meetings commenced on 19 February 2020 and has met on 11 occasions to date. PRG membership comprises of the school leadership team of the new primary school in Epping including a representative Principal who acts on behalf of the new school, project team members and a Parent and Community (P&C) representative.

Date/s	Targeted stakeholders	Consultation activity	Attendance
2020			
-	Educational Design Workshops	Session took place in early concept design phase.	SINSW and school representatives (including Principal representing new school)
19/02/20	PRG Meeting No 0.1 – Provided an overview of the project scope, status, educational rationale workshop and reports.	PRG Meeting	Regular group meeting
18/03/20	PRG Meeting No 0.2 – Discussed program for Business Case completion, service needs, target project scope and planning pathways.	PRG Meeting	Regular group meeting
05/02/20	PRG Meeting No 0.3 – Update provided on consultants engaged to date. Master plan report and options presented to the PRG.	PRG Meeting	Regular group meeting
16/06/20	PRG Meeting No 0.4 – Update provided on consultants engaged since last PRG. Updated plans and site constraints presented.	PRG Meeting	Regular group meeting
23/07/20	PRG Meeting No 0.5 – Request for SEARs prepared and awaiting approval for submission. Design status presented and design items discussed for upcoming design workshop. New Senior Project Director, Delivery introduced to PRG.	PRG Meeting	Regular group meeting
20/08/20	PRG Meeting No 0.6 - Discussed delays to lodge business case due to the need to align design to meet budget. SEARs request submitted. Presented current design status. New Community Engagement Manager introduced to PRG.	PRG Meeting	Regular group meeting
17/09/20	PRG Meeting No 0.7 – Concept Design Report finalised and endorsed by TSG, PRG & EFSG. SEARs and comments issued by DPIE were presented. Consultant engagement updates provided. PRG notified that Project Manager and Cost Manager engagement for the next phases were in progress.	PRG Meeting	Regular group meeting
15/10/20	PRG Meeting No 0.8 - SDRP review session was held and comments on the design will be addressed as part of the SSDA. Schools were notified that consultants will be starting site investigations, especially related to Aboriginal Cultural Assessment.	PRG Meeting	Regular group meeting
19/11/20	PRG Meeting No 0.9 - Discussed the progress of Tender Documentation for Early Contractor Involvement and confirmed Project Team is on track to release tender in early December 2020. Update provided on consultant engagements and ongoing site investigations.	PRG Meeting	Regular group meeting
16/12/20	PRG Meeting No 9.B - An email update was provided to the PRG noting that tender was released on 24th November 2020. PRG was also	PRG meeting	Regular group meeting

Date/s	Targeted stakeholders	Consultation activity	Attendance
	informed on the ongoing and planned site investigations and all council consultations undertaken in December.		
June 2020 to April 2021	8 meetings held with the Departments Technical Stakeholders Group including the Educational Facilities Standards and Guidelines (EFSG), ICT, Maintenance and Cleaning, Security, Work Health & Safety, Future Learning Unit, and Demountables unit.	Technical Stakeholder Groups	Regular group meeting
2021			
18/02/21	PRG Meeting No 10 - PRG informed that the Business Case was approved by Treasury in December 2020. ECI tender closed in January 2021 and is expected to be awarded in late February 2021. Meeting with council and TfNSW were held to discuss offsite infrastructure works.	PRG Meeting	Regular group meeting
12/03/21	Head Contractor, new Design Team and School leadership team – Introduction Session	Design Consultation Workshop	Regular group meeting
18/03/21	PRG Meeting No 11 - PRG informed that tender was awarded to Hansen Yuncken. The new Design Architects will be Pedavoli Architects (PA). Site Investigations have been completed and consultants are progressing with the reports for SSDA submission. Schematic Design will be developed over the new few weeks.	PRG Meeting	Regular group meeting
26/03/21	Head Contractor, new Design Team and School leadership team – Architects presented the amendments to the current Concept Design derived from the design validation, EFSG comments, Government Architect comments, ESFG compliance, DDA and Australian standards.	Design Consultation Workshop No 0.1	Regular Group Meeting
01/04/21	Head Contractor, new Design Team and School leadership team – Architects presented the updates to the floor plans based on comments from Design Workshop 01.	Design Consultation Workshop No 0.2	Regular group meeting
TBC	PRG meetings planned once a month till construction commencement. During construction the meetings will be changed to Project Control Group meetings.	PRG Meetings	Regular group meetings

3.4. Communication actions

The table below outlines the communication actions undertaken to keep stakeholders and communities informed about this proposal.

Date	Targeted stakeholders	Communication channel and action
2020		
August 2020	Future school community, nearby residents	Planning update
25 November 2020	Future school community, nearby residents	Works notification
December 2020	Future school community, nearby residents	Project update
2021		
May 2021 (specific date TBC)	Future school community and local community	Information session, Information pack, Information boards and Project Update

4. Stakeholder and Community Feedback

Stakeholder and community feedback has been integral to the development of this proposal. Feedback was sought from stakeholders and communities through the consultation activities and communication channels listed in Section 3.

The project team has responded to 8 direct emails and 1 phone call about the project.

These interactions have identified key issues of community interest for consideration during the preparation of the Environmental Impact Statement.

Key issues included:

- Preservation of large mature and indigenous trees on the site
- Preservation of wildlife, birds and animals on the site
- Request for specific tree to be removed from the site

4.1. Stakeholder meetings and correspondence

This section outlines a summary of the key consultation undertaken with stakeholders, as defined and required by the SEARs.

Stakeholder	Date/s	Feedback topics	Outcomes
Government Architects – Design Review Session 01	23/09/20	The Project Team's presentation explained the opportunities, constraints and design approaches for the school. SDRP issued advice letter noting that the presentation was detailed and clearly explained the rationale for the proposal. Letter provided comments and recommendations to be addressed in the ongoing design development of the school focussing on Masterplan and Architecture, focussing on staging, carpark, Aboriginal Heritage, Bushfire, ESD etc.	Next meeting scheduled 26 May 2021.
Aboriginal Heritage Consultation – DPIE, Heritage NSW, RAPs etc.	Various	22/04/2020 – Search of National Native Title Tribunal undertaken for City of Parramatta Council. 22/04/2020 – Wrote to organisations seeking the names of any Aboriginal people or organisations who may hold cultural knowledge. DPIE and COP Council responded with potential stakeholders. 01/05/2020 – Notification of the proposed project and invitation to be consulted issued. Notices issued via Letter and Newspaper. Closing date for registration in letter was 16/05/2020 and in newspaper notice was 8/06/2020. 07/07/2020 – List of RAPs compiled and sent to DPIE and MLALC. 24/06/2020 – Information letter was sent to all RAPs with project information and the proposed methodology for archaeological excavation of the site. 24/06/2020 – Notification of proposed assessment methodology sent to all RAPs. 31/07/2020 – Draft ACHAR sent to RAPs for a 28-day review period. 10/12/2020 – Geotechnical monitoring and Aboriginal archaeological test excavations commenced. Grinding stone uncovered. 11/02/2021 – Draft testing report sent to all RAPs for review within a 28-day review period with a recommendation to conduct salvage excavation.	The correspondence addresses the SEARs requirement to complete Aboriginal Heritage Consultation. Comments from RAPs have been addressed in the ACHAR.
City of Parramatta Council – Flood correspondence	Various	17/11/2020 – Initial email requesting consultation 04/12/2020 – Council responded with initial comments and request for documents 09/12/2020 – Flood Analysis report issued to council 23/12/2020 – Council provided comments 11/01/2021 – Updated report and consultant's summary issued to Council 15/02/2021 – Follow up email to council for any additional comments and a request to issue Council's Map to be included in the FAR. 05/03/2021 - Follow up email to council for any additional comments and a request to issue Council's Map to be included in the FAR. 22/03/2021 – Follow up email to council for any final comments and a request to issue Council's Map to be included in the FAR. 29/03/2021 - Council responded confirming that the requested Council Map is no longer relevant.	The correspondence addresses the SEARs requirement to consult with the relevant local authority, however we understand that DPE will refer the development application to City of Parramatta Council for comment as part of the SSDA assessment process. This feedback is also referenced in the Flood Assessment report.
City of Parramatta Council – Council Meeting 01 (Ecology)	30/11/20	Meeting was held with Ecology Consultant, SI, Johnstaff (PM) and the City of Parramatta Council to discuss ecology related issues on the project and received positive feedback from the council.	Feedback topics taken forward to next meeting. Feedback is also referenced in the BDAR.
City of Parramatta Council – Traffic and Transport Council Meeting 01	02/12/20	Project Team provided overview of site traffic and transport issues. Discussed council proposed works planned for the area.	Feedback topics taken forward to next meeting.

City of Parramatta Council – Transport Working Group Meeting 01	19/01/21	Introduction to attendees and project.	Topics taken forward to next meeting.
City of Parramatta Council – Transport Working Group Meeting 02	03/02/21	Follow-up meeting for a new primary school in Epping and Epping West Public School meeting.	Topics taken forward to next meeting.
City of Parramatta Council	17/03/21	Meeting to discuss footpaths at a new primary school in Epping and Epping West Public School.	Topics taken forward.
City of Parramatta Council – Transport Working Group Meeting 03	14/04/21	Meeting discussed construction traffic and proposed footpaths at a new primary school in Epping.	Topics taken forward.
Government Architects – Design Review Session 02	26/05/21	Design Review Session 02 scheduled	Design Review Session 02 scheduled

5. Project response

The feedback received during consultation has been considered in the preparation of the Environmental Impact Statement. The table below provides a detailed summary of the key issues that emerged and the corresponding project response.

Key issues	Project response	Relevant report
Transport for NSW (TfNSW) and Roads and Maritime Services (RMS) both issued comments for inclusion in the SEARs for the proposed development, and these requirements have been addressed.	Transport Working Group meetings were held with the Council and representatives from TfNSW and RMS to discuss the proposed development and receive feedback on any relevant matters that required consideration prior to finalising the project. The Traffic and Transport Assessment prepared by SCT was discussed and road safety around the school was also discussed.	Traffic Impact Assessment Report
Sydney Water has issued comments for inclusion in the SEARs for the proposed development.	These requirements have been addressed.	Stormwater Management Plan, Sustainable Development Report
Heritage NSW has issued comments for inclusion in the SEARs for the proposed development.	These requirements have been addressed.	Heritage Impact Assessment Report
EPA NSW has issued comments for inclusion in the SEARs for the proposed development.	These requirements have been addressed.	Noise and Vibration Impact Assessment Report, Hazardous Materials Survey, PSI, DSI and RAP, Preliminary Waste Management Plan.
EESG has issued comments for inclusion in the SEARs for the proposed development.	These requirements have been addressed.	Flood Assessment Report, Stormwater Management Plan, PSI, ASSMP and Salinity MP letters.
Endeavour Energy has issued comments for inclusion in the SEARs for the proposed development.	These requirements have been addressed.	Engineering Report, Bushfire Assessment Report, Flood Assessment Report.
The local member is briefed on the project and the project status.	The local member is supportive of the development and proposed facilities.	N/A.

6. Next Steps

In preparing the SSD application for a new primary school in Epping, the project team has met the consultation requirements prescribed by the SEARs.

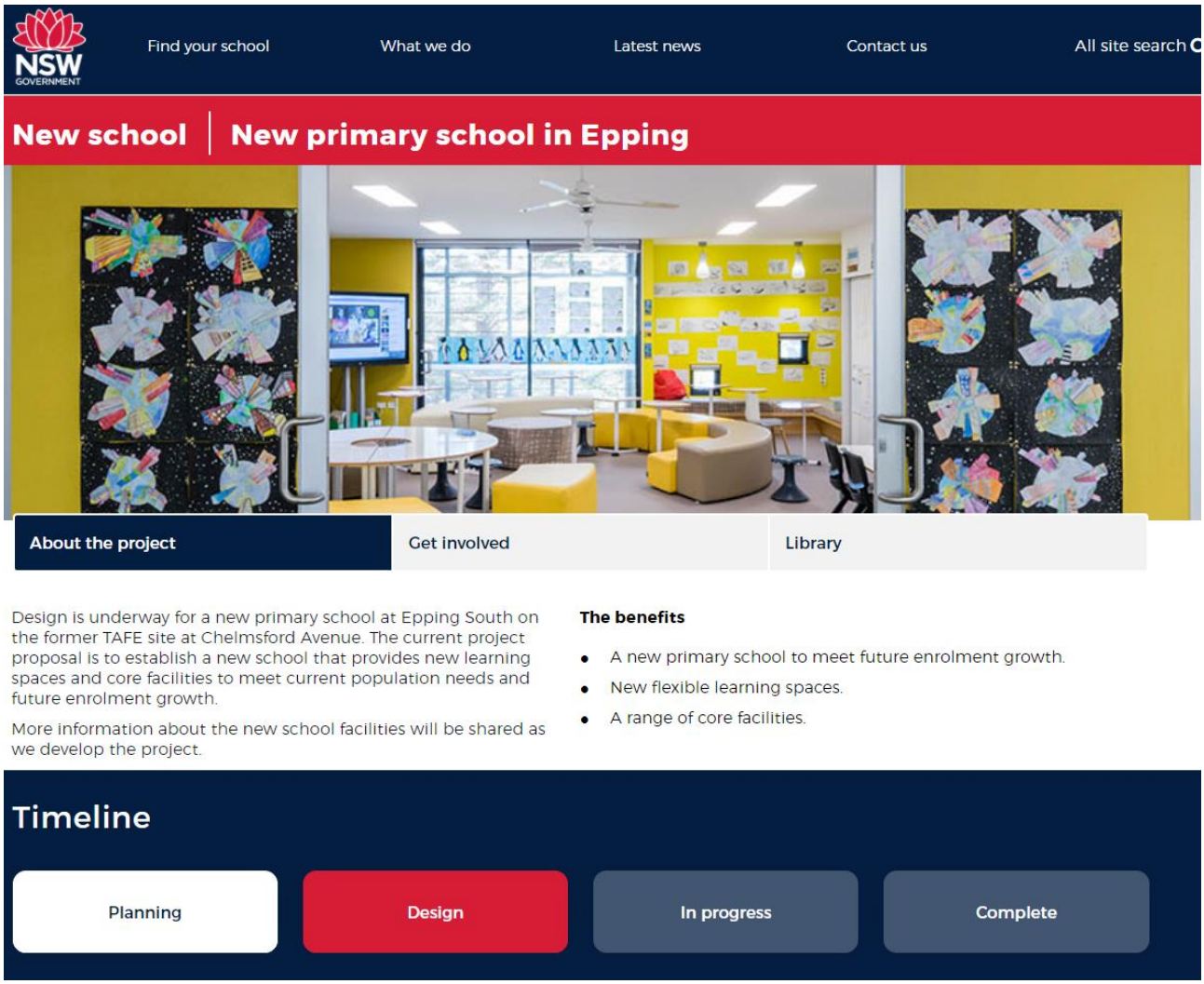
School Infrastructure NSW has demonstrated in this report the extent of engagement made with stakeholders to date. All of the designs and studies lodged with the SSDA have incorporated the feedback received to date. This engagement will continue through design development with ongoing feedback being incorporated into the designs.

Continued engagement will take place with stakeholders and communities during the statutory exhibition of the SSDA, as well as during future stages of the planning and development process.

School Infrastructure NSW will continue to update the project webpage and produce updates at key project stages for stakeholders and communities.

Appendices

Appendix 1: Screen print of project webpage



Appendix 2: Sample Project Update

NSW Department of Education – School Infrastructure

Artist impression of the Epping West Public School upgrade

Epping Schools

Project update

December 2020

Investing in our schools

The NSW Government is investing $7 billion over the next four years, continuing its program to deliver more than 200 new and upgraded schools to support communities across NSW. This is the largest investment in public education infrastructure in the history of NSW.

The NSW Department of Education is committed to delivering new and upgraded schools for communities across NSW. The delivery of these important projects is essential to the future learning needs of our students and supports growth in the local economy.

Epping West Public School

We are planning an upgrade at Epping West Public School to to provide upgraded facilities for the school community. It is proposed to deliver new flexible learning spaces and expanded staff and administration areas.

A new primary school in Epping

Planning for the new primary school in Epping is underway. Proposed works involve the establishment of a new primary school at the former TAFE NSW campus on Chelmsford Avenue, to meet future enrolment growth. It is proposed to deliver new flexible learning spaces as well as a range of core facilities.

schoolinfrastructure.nsw.gov.au

NSW GOVERNMENT

Appendix 3: Sample Works Notification

NSW Department of Education – School Infrastructure

A new primary school in Epping

Works notification

25 November 2020

We are committed to delivering a new primary school in Epping. The project involves the establishment of a new primary school at the former TAFE NSW campus on Chelmsford Avenue, to meet the future enrolment growth. It is proposed to deliver new flexible learning spaces as well as a range of core facilities.

Upcoming investigation works

As part of planning for this project, we need to undertake some investigative works around the school site. These investigations will include:

- Traffic surveys to monitor traffic flow
- Soil investigations using small excavators
- Heritage surveys involving small excavators at specific test areas around the site
- Ecological investigations to inspect flora and fauna

Working hours

The investigative work will take place between Monday 30 November 2020 and Friday 29 January 2021.

The traffic survey equipment will be installed between 8:00pm and 4:00am on roads surrounding the school site.

The contamination investigation will take place between 7:00am and 5:00pm within the school grounds.

There will be no work taking place on Sundays, public holidays, or between Christmas and New Year.

Keeping you updated

We are here to make sure that work is completed safely and efficiently and we will minimise impacts on the community at every opportunity. Thank you for your patience while we deliver this important school infrastructure.

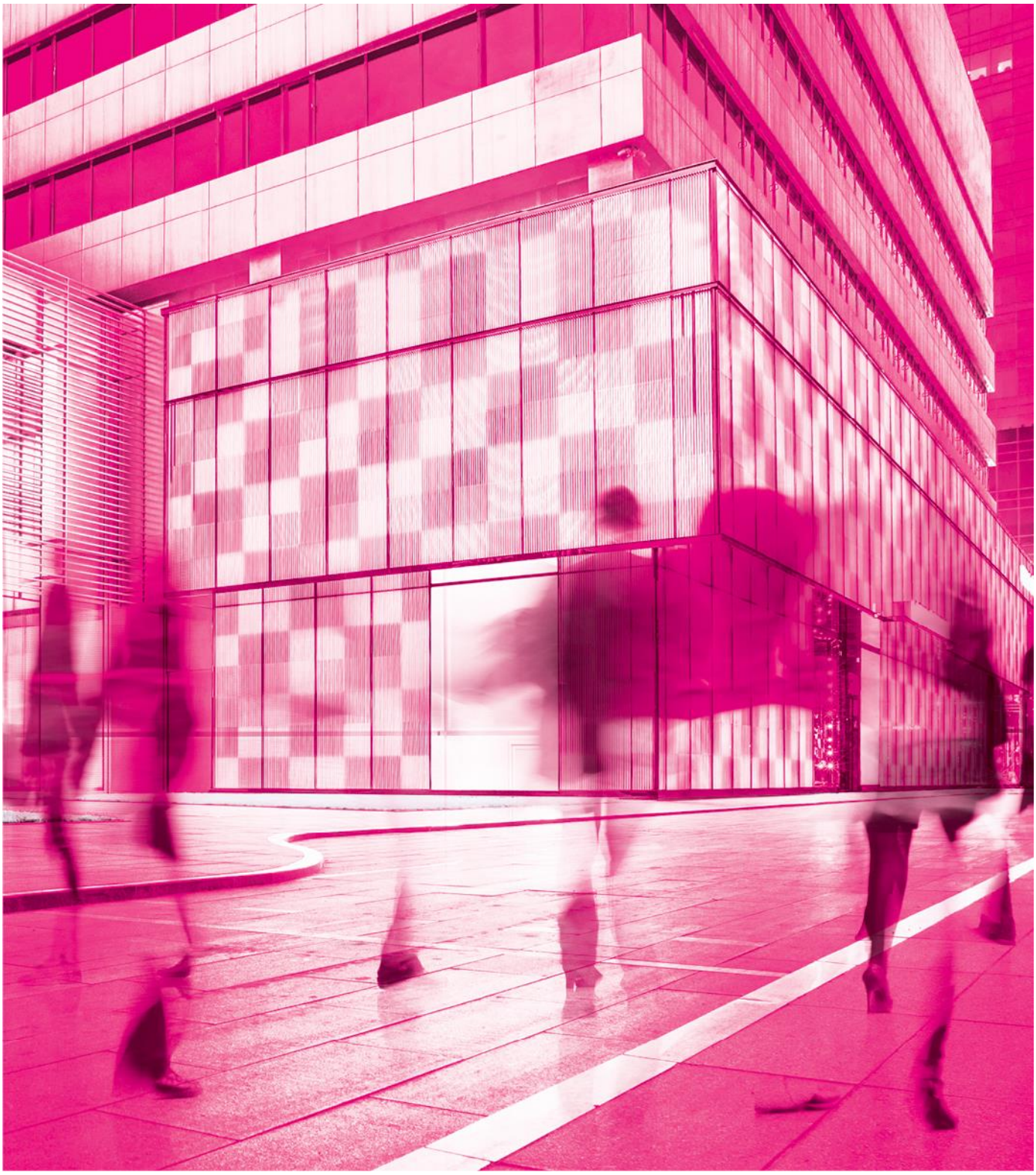
For more information contact:

School Infrastructure NSW
Email: schoolinfrastructure@det.nsw.edu.au
Phone: 1300 482 651
www.schoolinfrastructure.nsw.gov.au

schoolinfrastructure.nsw.gov.au

NSW GOVERNMENT

8.7 A.7 Construction Soil and Water Management Sub-plan



report;

New Primary School in Epping - Construction Soil and Water Management Sub Plan

For Hansen Yuncken

25 November 2021

parking;
traffic;
civil design;
wayfinding;

ptc.

Document Control

New Primary School in Epping - Construction Soil and Water Management Sub Plan, Report

Issue	Date	Issue Details	Author	Reviewed	For the attention of
A	06/10/21	For Council Consultation	CNL/SC	SN	Dylan Screpis / Parramatta City Council
B	25/11/21	Revised Issue	FM	SN	Dylan Screpis

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Attachment 2 RUSLE Calculations 2

Figure 1 – Site Location of New Primary School in Epping 2
Figure 2 – Architectural plan 3

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1. Introduction

ptc. has been engaged by Hansen Yuncken to prepare a Construction Soil and Water Management Sub Plan for 'New Primary School in Epping' ("Site") located at 86 Chelmsford Avenue, Epping NSW 2121.

The location of the site is illustrated in Figure 1.

Figure 1 – Site Location of New Primary School in Epping

1.1 Site Locality

The Site is located on the southern side of Chelmsford Avenue, which is currently occupied by existing TAFE buildings.

The Site generally falls from east to west with a minor crest toward the eastern end of the Site and lies within the Terry's Creek River Catchment of the City of Parramatta (CoP) Local Government Area (LGA).

1.2 Development Proposal

The proposed development is for the establishment of a new K-6 Public School, master planned to cater for up to 1,000 students. Works include:

- Demolition of existing structures associated with the former use of the site as a TAFE campus;
- Construction of new buildings on the eastern and central portions of the site. Facilities which will generally include:

Home bases (classrooms) suitable for a school population of 1,000 students;

Administration and staff areas:

Hall and canteen;

Library;

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COLA;

Special education unit; and

Special programs area.

- Play spaces in various locations;
- Accessible paths linking the school facilities; and
- A staff car park accessed from Second Avenue.

The proposal will also require potential remediation of the land and tree/vegetation removal. The application will be lodged as a State Significant Development Application (SSDA) . The application has been approved for the Stage 1 works. The Stage 1 works will provide a total of 25 home bases and associated facilities together with a hall and canteen, administration facilities and play spaces. Car parking for the Stage 1 development will also be provided.

The proposed Site plan is shown below.

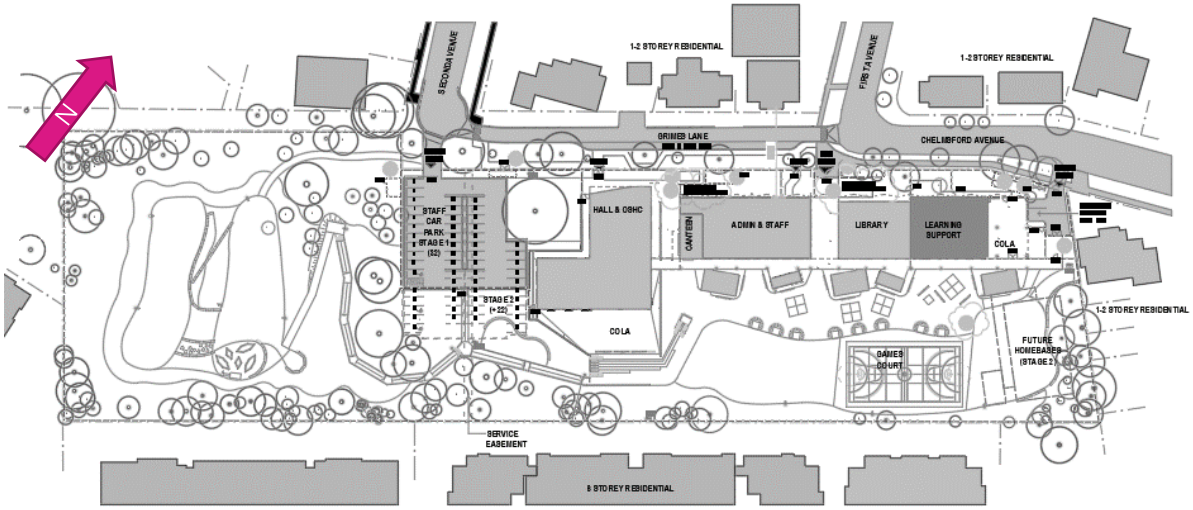

Figure 2 – Architectural plan

© Copyright; ptc.

1.3 Design Standards, Policies and Guidelines

The following design standards, policies and guidelines are referenced to ensure relevant stormwater design and management requirements are met:

- City of Parramatta (CoP) Local Environmental Plan (LEP) 2011;
- City of Parramatta (CoP) Development Control Plan (DCP) 2011;
- City of Parramatta (CoP) Policy 340 – Stormwater Disposal 2020;
- City of Parramatta (CoP) Development Engineer Guidelines 2018;
- Landcom Managing Urban Stormwater – Soils and Construction 2004;
- Australian Rainfall and Runoff – A guide to Flood Estimation 2016;
- Sydney Water On-site stormwater detention policy 2020;
- Upper Parramatta River Catchment Trust (UPRCT) On-Site Stormwater Detention Handbook 4th Edition 2005;
- NSW Department of Education (DoE) Educational Facilities Standards and Guidelines (EFSG); and
- Guidelines for developments adjoining land managed by the Office of Environment and Heritage 2013.

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1.4 Compliance with Conditions of Consent

A summary of the relevant requirements of the SSDA conditions of consent are provided below for clarity.

Condition B18

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

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

Refer to Document Control Sheet

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

Refer to Sediment and Erosion Control Plans (Attachment 1)

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

Refer to Sediment and Erosion Control Plans (Attachment 1)

(d) Provide a plan of how all construction works will be managed in a wet-weather events (i.e. storage of equipment, stabilisation of the Site);

Refer to Sediment and Erosion Control Plans (Attachment 1)

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

Refer to Section 2.5

(f) Describe the measures that must be implemented to manage stormwater and flood flows for small and large sized events, including, but not limited to 1 in 5-year ARI.

Refer to Section 2.5

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2. Construction Soil and Water Management

2.1 Water Quality

Landcom Managing Urban Stormwater – Soils and Construction 2004 ('Blue Book') contains erosion, sediment and waste control measures are required to mitigate the impacts of land disturbance activities on soils, landforms and receiving waters; including:

- Reduce pollution to downstream areas and receiving waters;
- Reduce land degradation;
- Raise an awareness of ecologically sustainable development (ESD) principles and their application to the development.

Chapter 2 of the Blue Book states that a Soil and Water Management Plan (SWMP) should be prepared for all development works where more than 2,500sqm of land is disturbed.

Section 9.3 of the Blue Book states that all SWMPs should include relevant calculations of capacities for any sediment basins and other structures. These calculations should be:

- Based on an assessment of site-specific data
- Account for the pollution potential of the site
- Consider the sensitivity of receiving waters and other ESD matters

2.2 Flood Impact Assessment

A Flood Analysis Report had been prepared by Site Plus Pty Ltd dated April 2021 to address the requirements of the NSW Floodplain Development Manual 2005 and CoP flooding controls for the proposed development. It was noted that the Site is not affected by mainstream flooding, however, Section 10.7 certificate issued 18 May 2020 (No. 2018/2459) indicated the Site as being impacted by overland flow.

In light of the above, diversion bunds and sediment fences will ensure that the flows from upstream areas are diverted around the construction site. Construction site grading will direct disturbed area flows to sediment control measures.

2.3 Soil and Water Management Plan

An Erosion and Sediment Control Plan (ESCP) has been prepared in accordance with Landcom Managing Urban Stormwater – Soils and Construction 2004, included in **Attachment 1**. The Soil and Water Management Plan (SWMP) details the following control measures during construction to ensure large portions of sediments are contained to prevent runoff:

- Sediment diverting measures to minimise sediment in Council's stormwater drainage networks (i.e. sandbags and/or geo-textile filter fabric protecting existing and proposed drainage pits);
- Overland flow;
- Indicative temporary stockpile locations;
- Sediment control fencing location & extents;
- Covering and revegetating disturbed areas (as soon as practicable & as required to prevent sediment laden runoff from leaving the site); and

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- Provision of a temporary sediment basin (noting that provision of a sediment basin is not strictly required, as potential soil loss is less than 150m^3/year in accordance with 'Blue Book' guidelines).

It is noted that site foreman is to monitor weather forecast, and when high chance of rain is forecasted, cover stockpiles and locate machinery/equipment in areas to prevent sediment laden runoff from leaving the site.

2.4 Site Constrains and Characteristics

Site constraints were calculated using the RUSLE[1] to size sediment basins, see Attachment 2.

The construction site constraints and characteristics criteria are identified in Table 1 below:

Table 1 – Site constraints and characteristics

Constraint / Opportunity	Value
Rainfall erosivity	Moderate (R-factor = 2,460)
Slope gradients	Moderate (up to 10%)
Potential erosion hazard	Low (from Figure 4.6 in Blue Book)
Rainfall Zone	Zone 1
Soil erodibility	Low to moderate (highest K-factor = 0.046)
Calculated soil loss	220 t/ha/yr
Soil Loss Class	Class 1
Soil texture group	Type D
Percent dispersible (subsoil)	Assumed > 10%
Runoff coefficient	0.69 adopted
Disturbed site area	14,450 m^2

Based on the calculated R-factor of 2,460, slope gradients less than 10% falls below the A-line in Figure 4.6 of the Blue Book is classified as low erosion hazard.

It is noted that the 75th percentile has been adopted for the design rainfall depth as earthworks are anticipated to take place over a period of less than 6 months. Protection for battered areas is to be implemented by the contractor if portions of the site are intended to be unvegetated area for an extended amount of time (i.e. > 6 months).

[1] Revised Universal Soil Loss Equation

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For the majority of the site where building pads will be constructed, the existing dam on the western end of the construction site will be utilised as a sediment basin; refer to Attachment 2 for calculations based using the RUSLE.

2.4.1 Calculations

A summary of the results calculated using RUSLE is presented in Table 2 (refer to Attachment 2):

Table 2 – RUSLE calculation results summary

Catchment / Site	Soil Catchment Area (ha)	Soil Loss (m^3/ha/yr)	Soil Loss Class	Average yearly soil loss[2] (m^3/yr)
1	0.065	15	1	0.975
2	0.358	20	1	7.16
3	0.294	19	1	5.586
4	0.393	103	1	40.479
5	0.106	289	4	30.634
6	0.3	53	1	15.9
			Total	100.73

According to the Blue Book, a sediment basin is not required for average yearly soil losses of less than 150 cubic metres per year. However, despite there being no requirement for the provision of a sediment basin for the site, the proposed underground OSD tank (in catchment site 4) and the existing dam (in catchment site 6) will be utilised as temporary sediment basins during construction works for soil and water management.

2.5 Off-site flow management

All off-site flows from the site will be contained by temporary sediment basins and straw bale mini sediment basin traps for each catchment. It is anticipated for flows up to the 1 in 5-year ARI critical storm event be contained within the mini sediment basin (contaminated water), and larger storm events up to the 1 in 20-year ARI critical and 1 in 100-year ARI critical storm events will overtop the straw bale via a weir configuration (as clean runoff, via a grass swale and sediment fence / filter fabric). These flows will pass through a buffer area to the west of the site, prior to leaving the site. This will allow an opportunity for infiltration and will also filter any sediment laden water that overtops the temporary sediment basins and min straw bale sediment basins.

Once disturbed area is reduced, straw bale mini sediment basin is to be managed as required and clean runoff from completed/stabilised areas is to be directed downstream of sediment measures.

[2] Soil catchment area (ha) x soil loss (m^3/ha/yr)

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The provision of temporary sediment basins (in catchment site 4 and 6) on the western portion of the site, despite the RUSLE calculations demonstrating that the development does not warrant the introduction, will ensure construction soil and water will be adequately managed on site.

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Attachment 1 Sediment and Erosion Control Plans

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EXISTING DAM MAY ACT AS TEMPORARY SEDIMENT BASIN.

DISCHARGE WATER FROM TEMPORARY SEDIMENT BASIN TO VEGETATED AREA UPSTREAM OF STRAW BALE MINI SEDIMENT BASIN PROTECTION IN ACCORDANCE WITH THE BLUE BOOK.

SEDIMENT FENCE AS A SECONDARY DIVERSION MEASURE

STRAW BALE MINI SEDIMENT BASIN TRAP TO DETAIL

CONSTRUCT TEMPORARY CONSTRUCTION VEHICLE ACCESS TRAP TO DETAIL.

STRAW BALE MINI SEDIMENT TRAP FOR RUNOFF OVERTOPPING TEMPORARY SEDIMENT BASIN

RETAIN VEGETATION DOWNSTREAM FROM TEMPORARY SEDIMENT BASIN.

CONSTRUCT BUND/SWALE ON LOW END TO DIRECT OVERLAND RUNOFF TO DAM ACTING AS TEMPORARY SEDIMENT BASIN TO DETAILS.

SEDIMENT FENCE AS A SECONDARY DIVERSION MEASURE

SITE 4 · SITE 5 · SITE 6 · TAC1 · RW-1 · RW-6 · KG · KO · SW · SS · E · W · CONCRETE · RW BELOW · STAGE 2 CAR PARK 52 SPACES + 2 DDA SPACES

CONTINUATION ON EPPS-0102

PRELIMINARY

SURVEY LEGEND:

- SITE BOUNDARY
- EX SURFACE LEVEL
- EX SURFACE CONTOUR
- EX TREE
- EX SIGNIFICANT TREE
- EX WATER MAIN
- EX STORMWATER
- EX ELECTRICAL LINE
- EX TELECOMMUNICATIONS LINE
- EX KERB INLET PIT
- EX STORMWATER PIT

SITE WORKS LEGEND:

- DEMOLISH EXISTING PIT (& MAKE GOOD PAVEMENT/FILL TO MATCH ADJACENT LANDSCAPE)
- NEW GRATED INLET PIT
- NEW JUNCTION PIT
- NEW STRIP GRATED DRAIN
- BUILDING FOOTPRINT

SOIL & WATER MANAGEMENT LEGEND:

- GEOTEXTILE PIT FILTER 2
- KERB INLET SEDIMENT TRAP
- VEHICLE ACCESS SEDIMENT TRAP
- OVERLAND FLOW
- SEDIMENT FENCE
- SECURITY FENCE
- TEMPORARY STOCKPILE LOCATION (INDICATIVE, TBC ON SITE)
- BUND / SWALE

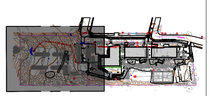
NOTE: PROTECT ANY PITS NOT INDICATED ON PLAN DEEMED NECESSARY BY CONTRACTOR

. . . . . SITE X DENOTES CATCHMENT SITE IN SEDIMENT BASIN CALCULATION SHEET (REFER TO SWMP EPPS-CV-TD-RPT-0003)

SOIL & WATER MANAGEMENT NOTES:

1. IT IS ASSUMED THAT HOARDINGS/SILT FENCING WILL BE PROVIDED TO THE STAGE BOUNDARY SUFFICIENT TO PREVENT SEDIMENT RUNOFF FROM LEAVING SITE (EXCEPT IN THE CASE OF ENTRY/EXIT LOCATIONS WHERE TEMPORARY CONSTRUCTION ENTRY/EXIT SEDIMENT TRAP ARE PROVIDED). IF THIS IS NOT THE CASE, PROVIDE SEDIMENT FENCE TO STANDARD DETAIL BELOW AS REQUIRED TO PREVENT SEDIMENT FROM LEAVING SITE, DIRECT RUNOFF TO SEDIMENT BASIN.
2. ALL SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED IN ACCORDANCE WITH LANDCOM MANAGING URBAN STORMWATER "BLUE BOOK".
3. SEDIMENT CONTROL FOR LANDSCAPED WORKS DOWNSTREAM OF THE BUILDING IS TO INCLUDE A SILTFENCE AND SANDBAGS AS REQUIRED. INSTALL BUND TO DIVERT UPSTREAM CATCHMENT AWAY FROM DISTURBED SOIL AREA. SOIL AND WATER MANAGEMENT PLAN IS TO BE ADJUSTEED DURING THE STAGED CONSTRUCTION,
4. CONSTRUCT NEW PITS AND PROTECT PRIOR TO SURFACING.
5. COVER & REVEGETATE DISTURBED AREAS AS SOON AS PRACTICABLE & AS REQUIRED TO PREVENT SEDIMENT LADEN RUNOFF FROM LEAVING THE SITE.

DRAWING KEY



10/6/2021

AMENDMENTS

REV	BY	DATE	DESCRIPTION
A	FM	14/08/21	FOR TENDER
B	DS	30/08/21	FOR TENDER
C	DS	08/09/21	FOR TENDER
D	CNL	06/10/21	FOR TENDER

HANSEN YUNCKEN

NSW GOVERNMENT Education

STRUCTURAL, MECH, & ESD NORTHROP (02) 9241 4188	LANDSCAPE ARCHITECT TAYLOR BRAMMER LANSCAPE ARCH. (02) 4267 5088
CIVIL PTC CONSULTANTS (02) 8920 0800	BCA GROUP DLA (02) 8355 3160
ELEC, ICT, AV, FIRE & SEC ERBAS & ASSOCIATES PTY. LTD. (02) 9437 1022	ACCESSIBILITY JAZ BUILDING CONSULTANTS (03) 9108 6196
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AUSTRALIA
TEL: +61 2 8920 0800
WEB: www.ptcconsultants.co

ptc.

NEW PRIMARY SCHOOL IN EPPING

86 CHELMSFORD AVE, EPPING NSW 2121

DRAWING NAME

SEDIMENT & EROSION CONTROL PLAN 1

PROJECT NORTH

0 2 4 6 8 10 20

SCALE 1 : 200 @ A1

6 OCTOBER 2021

DRAWING NUMBER					REVISION
PROJECT	DISCIPLINE	PHASE	TYPE	SERIES NUMBER	
EPPS -	CV -	TD -	DWG -	00_0101	D

SEDIMENT FENCE TO EXTENT OF WORK MINIMISE DISTURBED AREA.

CONSTRUCT TEMPORARY CONSTRUCTION VEHICLE ACCESS TRAP TO DETAIL.

SANDBAG SEDIMENT TRAPS ON DOWNSTREAM END

STRAW BALE MINI SEDIMENT BASIN TRAP TO DETAIL

BM S.S.M.191681
R.L.116.425 (A.H.D.)

CHELMSFORD AVENUE

STRAW BALE MINI SEDIMENT BASIN TRAP TO DETAIL.

2 STOREY BRICK DWELLING TILE ROOF

SINGLE STOREY BRICK BUILDING METAL ROOF

SINGLE STOREY CONCRETE BLOCK BUILDING TILE ROOF

SINGLE STOREY CLAD BUILDING TILE ROOF

FUTURE HOMEBASES (STAGE 2)

INSTALL TEMPORARY SITE PERIMETER STEEL SECURITY FENCE AND MAINTAIN.

SEDIMENT FENCE TO EXTENT OF WORK MINIMISE DISTURBED AREA.

CONTINUATION ON EPPS-0101

PRELIMINARY

10/6/2021

SURVEY LEGEND:

- SITE BOUNDARY
- EX SURFACE LEVEL
- EX SURFACE CONTOUR
- EX TREE
- EX SIGNIFICANT TREE
- EX WATER MAIN
- EX STORMWATER
- EX ELECTRICAL LINE
- EX TELECOMMUNICATIONS LINE
- EX KERB INLET PIT
- EX STORMWATER PIT

SITE WORKS LEGEND:

- DEMOLISH EXISTING PIT (& MAKE GOOD PAVEMENT/FILL TO MATCH ADJACENT LANDSCAPE)
- NEW GRATED INLET PIT
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- NEW STRIP GRATED DRAIN
- BUILDING FOOTPRINT

SOIL & WATER MANAGEMENT LEGEND:

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- KERB INLET SEDIMENT TRAP
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- OVERLAND FLOW
- SEDIMENT FENCE
- SECURITY FENCE
- TEMPORARY STOCKPILE LOCATION (INDICATIVE, TBC ON SITE)
- BUND / SWALE

NOTE: PROTECT ANY PITS NOT INDICATED ON PLAN DEEMED NECESSARY BY CONTRACTOR

. . . . . DENOTES CATCHMENT SITE IN SEDIMENT BASIN CALCULATION SHEET (REFER TO SWMP EPPS-CV-TD-RPT-0003)
SITE X

SOIL & WATER MANAGEMENT NOTES:

1. IT IS ASSUMED THAT HOARDINGS/SILT FENCING WILL BE PROVIDED TO THE STAGE BOUNDARY SUFFICIENT TO PREVENT SEDIMENT RUNOFF FROM LEAVING SITE (EXCEPT IN THE CASE OF ENTRY/EXIT LOCATIONS WHERE TEMPORARY CONSTRUCTION ENTRY/EXIT SEDIMENT TRAP ARE PROVIDED). IF THIS IS NOT THE CASE, PROVIDE SEDIMENT FENCE TO STANDARD DETAIL BELOW AS REQUIRED TO PREVENT SEDIMENT FROM LEAVING SITE, DIRECT RUNOFF TO SEDIMENT BASIN.
2. ALL SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED IN ACCORDANCE WITH LANDCOM MANAGING URBAN STORMWATER "BLUE BOOK".
3. SEDIMENT CONTROL FOR LANDSCAPED WORKS DOWNSTREAM OF THE BUILDING IS TO INCLUDE A SILTFENCE AND SANDBAGS AS REQUIRED. INSTALL BUND TO DIVERT UPSTREAM CATCHMENT AWAY FROM DISTURBED SOIL AREA. SOIL AND WATER MANAGEMENT PLAN IS TO BE ADJUSTEED DURING THE STAGED CONSTRUCTION.
4. CONSTRUCT NEW PITS AND PROTECT PRIOR TO SURFACING.
5. COVER & REVEGETATE DISTURBED AREAS AS SOON AS PRACTICABLE & AS REQUIRED TO PREVENT SEDIMENT LADEN RUNOFF FROM LEAVING THE SITE.

AMENDMENTS

REV	BY	DATE	DESCRIPTION
A	FM	16/08/21	FOR TENDER
B	DS	08/09/21	FOR TENDER
C	SC	06/10/21	FOR TENDER

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WEB: www.ptcconsultants.co

ptc.

NEW PRIMARY SCHOOL IN EPPING

86 CHELMSFORD AVE, EPPING NSW 2121

DRAWING NAME

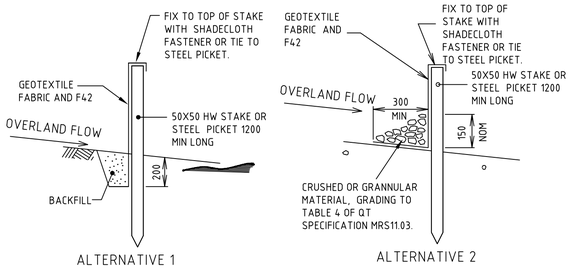
SEDIMENT & EROSION CONTROL PLAN 2

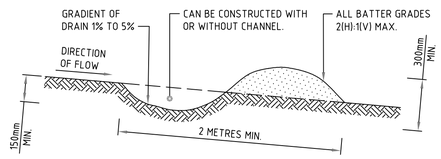
PROJECT NORTH

SCALE 1 : 200 @ A1

6 OCTOBER 2021

DRAWING NUMBER					REVISION
PROJECT	DISCIPLINE	PHASE	TYPE	SERIES NUMBER	
EPPS -	CV -	TD -	DWG -	00_0102	B

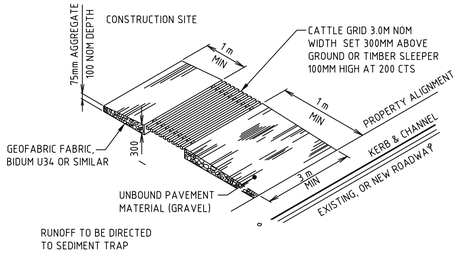




NOTE: ONLY TO BE USED AS TEMPORARY BANK WHERE MAXIMUM UPSLOPE LENGTH IS 80 METRES.

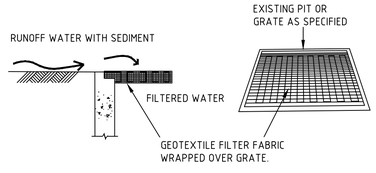
TEMPORARY DRAINAGE SWALE

NOT TO SCALE



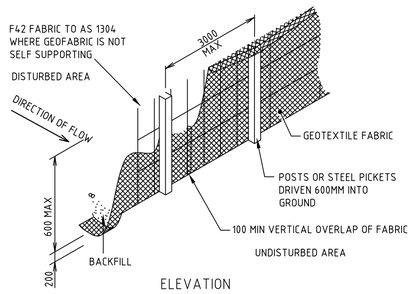
TEMPORARY CONSTRUCTION VEHICLE ENTRY/EXIT SEDIMENT TRAP

NOT TO SCALE



GEOTEXTILE PIT FILTER

NOT TO SCALE

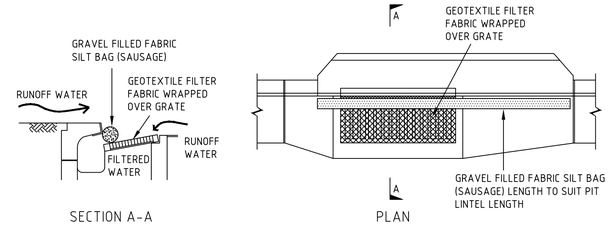


SEDIMENT FENCE

NOT TO SCALE

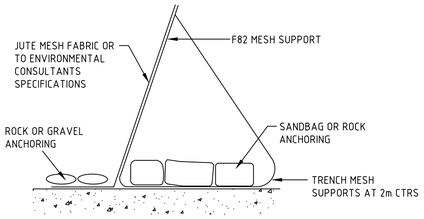
TEMPORARY DRAINAGE SWALE

1. BUILD WITH GRADIENTS BETWEEN 0.5 AND 5 PERCENT.
2. AVOID REMOVING TREES AND SHRUBS IF POSSIBLE - WORK AROUND THEM.
3. ENSURE THE STRUCTURES ARE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT COULD IMPEDE WATER FLOW.
4. BUILD THE DRAINS WITH CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTIONS, NOT V SHAPED.
5. ENSURE THE BANKS ARE PROPERLY COMPACTED TO PREVENT FAILURE.
6. COMPLETE PERMANENT OR TEMPORARY STABILISATION WITHIN 10 DAYS OF CONSTRUCTION.



KERB INLET SEDIMENT TRAP

NOT TO SCALE

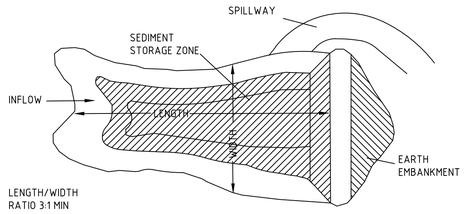


ALTERNATIVE SEDIMENT FENCE

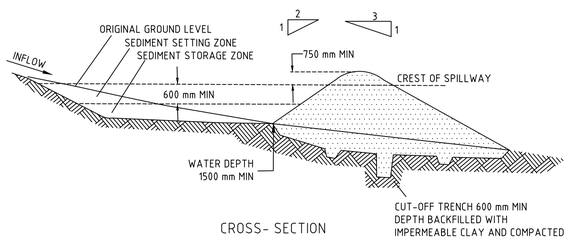
NOT TO SCALE

ALTERNATIVE SEDIMENT FENCE NOTES

1. INSTALL THIS TYPE OF SEDIMENT FENCE WHEN USE OF SUPPORT POSTS IS NOT DESIRABLE OR NOT POSSIBLE. SUCH CONDITIONS MIGHT APPLY, FOR EXAMPLE, WHERE APPROVAL IS GRANTED FROM THE APPROPRIATE AUTHORITIES TO PLACE THESE FENCES IN HIGHLY SENSITIVE ESTUARINE AREAS.
2. USE BENT TRENCH MESH TO SUPPORT THE F82 WELDED MESH FACING AS SHOWN ON THE DRAWING ABOVE. ATTACH THE JUTE MESH TO THE WELDED MESH FACING USING UV-RESISTANT CABLE TIES.
3. STABILISE THE WHOLE STRUCTURE WITH SANDBAG OR ROCK ANCHORING OVER THE TRENCH MESH AND THE LEADING EDGE OF THE JUTE MESH. THE ANCHORING SHOULD BE SUFFICIENTLY LARGE TO ENSURE STABILITY OF THE STRUCTURE IN THE DESIGN STORM EVENT, USUALLY THE 10 YEAR EVENT.



PLAN VIEW



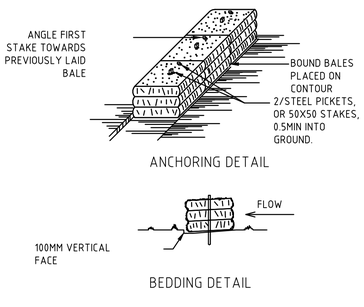
CROSS- SECTION

SEDIMENT BASIN

NOT TO SCALE

SEDIMET BASIN NOTES

1. THE EXISTING DAM CAN ACT AS SEDIMENT BASIN



STRAW BALE MINI SEDIMENT CONTROL

NOT TO SCALE

SOIL & WATER MANAGEMENT NOTES:

1. IT HAS BEEN ASSUMED THAT HOARDINGS/SILT FENCING WILL BE PROVIDED TO THE STAGE BOUNDARY SUFFICIENT TO PREVENT SEDIMENT RUNOFF FROM LEAVING SITE (EXCEPT IN THE CASE OF ENTRY/EXIT LOCATIONS WHERE TEMPORARY CONSTRUCTION ENTRY/EXIT SEDIMENT TRAP ARE PROVIDED). IF THIS IS NOT THE CASE, PROVIDE SEDIMENT FENCE TO STANDARD DETAIL BELOW AS REQUIRED OT PREVENT SEDIMENT FROM LEAVING SITE, DIRECT RUNNOFF TO SEDIMENT BASIN.
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10/6/2021

PRELIMINARY

AMENDMENTS

REV	BY	DATE	DESCRIPTION
A	FM	16/08/21	FOR TENDER
B	SC	06/10/21	FOR TENDER

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ptc.

NEW PRIMARY SCHOOL IN EPPING

86 CHELMSFORD AVE, EPPING, NSW 2121

DRAWING NAME

SEDIMENT & EROSION CONTROL STANDARD DETAILS

PROJECT NORTH

NOT TO SCALE

6 OCTOBER 2021

DRAWING NUMBER

PROJECT	DISCIPLINE	PHASE	TYPE	SERIES NUMBER	REVISION
EPPS -	CV -	TD -	DWG -	00_0111	B

Attachment 2 RUSLE Calculations

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SWMP Commentary, Detailed Calculations

Note: These "Detailed Calculation" spreadsheets relate only to high erosion hazard lands as identified in figure 4.6 or where the designer chooses to use the RUSLE to size sediment basins. The "Standard Calculation" spreadsheets should be used on low erosion hazard lands as identified by figure 4.6 and where the designer chooses not to run the RUSLE in calculations.

1. Site Data Sheet

Site Name: **New Primary School in Epping**

Site Location: **86 Chelmsford Avenue, Epping NSW 2121**

Precinct: **Epping (City of Parramatta)**

Description of Site: **Site 2: Catchment sloping toward eastern end of site, Site 3: catchment sloping toward car park/ western end, Site 4: Site 5: Catchment new car park, Site 6: Catchment new play area**

Site area	Site						Remarks
	1	2	3	4	5	6	
Total catchment area (ha)	0.065	0.358	0.294	0.393	0.106	0.3	
Disturbed catchment area (ha)	0.01	0.3	0.2	0.34	0.001	0.12	

Soil analysis

% sand (faction 0.02 to 2.00 mm							Soil texture should be assessed through mechanical dispersion only. Dispersing agents (e.g. Calgon) should not be used
% silt (fraction 0.002 to 0.02 mm)							
% clay (fraction finer than 0.002 mm)							
Dispersion percentage							E.g. enter 10 for dispersion of 10%
% of whole soil dispersible							See Section 6.3.3(e)
Soil Texture Group							See Section 6.3.3(c), (d) and (e)

Rainfall data

Design rainfall depth (days)	5	5	5	5	5	5	See Sections 6.3.4 (d) and (e)
Design rainfall depth (percentile)	75	75	75	75	75	75	See Sections 6.3.4 (f) and (g)
x-day, y-percentile rainfall event	43.3	43.3	43.3	43.3	43.3	43.3	See Section 6.3.4 (h)
Rainfall intensity: 2-year, 6-hour storm	10.6	10.6	10.6	10.6	10.6	10.6	See IFD chart for the site

RUSLE Factors

Rainfall erosivity (*R*-factor)	2460	2460	2460	2460	2460	2460	Automatic calculation from above data
Soil erodibility (*K*-factor)	0.046	0.046	0.046	0.046	0.046	0.046	RUSLE data can be obtained from Appendixes A, B and C
Slope length (m)	20	60	50	50	20	40	
Slope gradient (%)	1	1	1	5	18	3	
Length/gradient (*LS*-factor)	0.13	0.18	0.17	0.91	2.55	0.47	
Erosion control practice (*P*-factor)	1.3	1.3	1.3	1.3	1.3	1.3	
Ground cover (*C*-factor)	1	1	1	1	1	1	

Calculations

Soil loss (t/ha/yr)	19	26	25	134	375	69	
Soil Loss Class	1	1	1	1	4	1	See Section 4.4.2(b)
Soil loss (m^3/ha/yr)	15	20	19	103	289	53	
Sediment basin storage volume, m^3		1	1	6		1	See Sections 6.3.4(i) and 6.3.5 (e)

4. Volume of Sediment Basins, *Type D* and *Type F* Soils

Basin volume = settling zone volume + sediment storage zone volume

Settling Zone Volume

The settling zone volume for *Type F* and *Type D* soils is calculated to provide capacity to contain all runoff expected from up to the y-percentile rainfall event. The volume of the basin's settling zone (V) can be determined as a function of the basin's surface area and depth to allow for particles to settle and can be determined by the following equation:

$$V = 10 \times C_v \times A \times R_{x\text{-day, y-\%ile}} \ (m^3)$$

where:

10 = a unit conversion factor

C_v = the volumetric runoff coefficient defined as that portion of rainfall that runs off as stormwater over the x-day period

$R_{x\text{-day, y-\%ile}}$ = is the x-day total rainfall depth (mm) that is not exceeded in y percent of rainfall events. (See Sections 6.3.4(d), (e), (f), (g) and (h)).

A = total catchment area (ha)

Sediment Storage Zone Volume

In the detailed calculation on Soil Loss Classes 1 to 4 lands, the sediment storage zone can be taken as 50 percent of the settling zone capacity. Alternately designers can design the zone to store the 2-month soil loss as calculated by the RUSLE (Section 6.3.4(i)(ii)). However, on Soil Loss Classes 5, 6 and 7 lands, the zone must contain the 2-month soil loss as calculated by the RUSLE (Section 6.3.4(i)(iii).

Place an "X" in the box below to show the sediment storage zone design parameters used here:

	50% of settling zone capacity,
	2 months soil loss calculated by RUSLE

Total Basin Volume

Site	C_v	$R_{x\text{-day, y-\%ile}}$	Total catchment area (ha)	Settling zone volume (m^3)	Sediment storage volume (m^3)	Total basin volume (m^3)
1	0.69	43.3	0.065	19.42005		19.42005
2	0.69	43.3	0.358	106.95966	1	107.95966
3	0.69	43.3	0.294	87.83838	1	88.83838
4	0.69	43.3	0.393	117.41661	6	123.41661
5	0.69	43.3	0.1056	31.550112		31.550112
6	0.69	43.3	0.3	89.631	1	90.631

Attachment 3 SI Consultation Form

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Post Approval – Consultation

Consultation needs to be meaningful, done with courtesy and respect and be well documented. These are people/ organisations that we need to be building meaningful relationships with.

Conditions of all consent can require consultation with a range of stakeholders. Consultation in the post approval world needs to be well documented to satisfy the condition requirements.

Examples include Council, service providers (eg. Electricity gas etc.), consult with local bus provider and TfNSW.

Read each condition carefully, any reference to consult triggers consultation.

Typically on State Significant Development, there will be a specific consultation condition as to how this piece can be appropriately addressed.

Consultation is not:

- A token gesture
- Done at the end of the piece of work,
- An email to the relevant stakeholder with no response;
- A meeting with the stakeholder with no meeting minutes.

Consultation is:

- Meaningful
- Done prior to the requirement,
- Captures an outcome,
- Identifies matters resolved,
- Identifies matters unresolved,
- Any disagreements are disclosed; and
- How we are going to address unresolved matters?

How to capture all the relevant details on consultation requirements? Any consultation requirement in a condition is required to be accompanied with the following table:

Post Approval Consultation Record

Identified Party to Consult:	City of Parramatta Council
Consultation type:	SSDA Submission, Response to Submission correspondence
When is consultation required?	Prior to the commencement of operation
Why	To discuss any relevant input from Council as required by Consolidated Conditions for SSD-8873789 – New Primary School in Epping (Condition B18).
When was consultation scheduled/held	9-10 November 2021 – response issued
When was consultation held	9-10 November 2021 – response issued
Identify persons and positions who were involved	Stephen Naughton (stephen.naughton@ptcconsultants.co), Project Director, ptc. Shana Cai (shana.cai@ptcconsultants.co), Engineer, ptc. Engineering Department, City of Parramatta Council
Provide the details of the consultation	**9 November 2021** As part of the SSDA, a Construction Soil and Water Management Sub Plan has been submitted to Council for review and feedback by ptc. **10 November 2021** Council supplied response having no issues with the submitted plan, noting that formal approval will be part of the SSDA approval
What specific matters were discussed?	New Primary School in Epping - Construction Soil and Water Management Sub Plan
What matters were resolved?	A construction soil and water management sub plan to be prepared to determine measures to manage construction site sediment and erosion in accordance with the publication Managing Urban Stormwater: Soils & Construction (‘Blue Book’)
What matters are unresolved?	N/A
Any remaining points of disagreement?	N/A
How will SINSW address matters not resolved?	N/A

8.8 A.8 Construction Waste Management Sub-Plan

CONSTRUCTION WASTE MANAGEMENT PLAN

EPPING SOUTH PUBLIC SCHOOL
86 CHELMSFORD AVENUE, EPPING

IMAGE CREDIT THE PEDAVOLI ARCHITECTS

Revision Number:	VERSION 3
Report Date:	26/11/2021
Presented by:	JO DRUMMOND EcCell ENVIRONMENTAL MANAGEMENT 35 WAVERLEY CRESCENT BONDI JUNCTION NSW 2022 www.eccellenvironmental.com.au
Submitted to:	Hansen Yuncken Building 1, L3, 75-85 O'Riordan Street Alexandria

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2 PROJECT DESCRIPTION 1

3 PROJECT LOCATION 2

4 PURPOSE OF THE CWMP 2

5 NSW LEGISLATIVE REQUIREMENTS AND GUIDELINES 3

5.1 RESPONSE TO SEARS 3

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Appendix B Hazardous Building Materials (HBM) Survey April 2021 Douglas Partners 16

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Table 1 - SEARs Requirement & CWMP Page Reference

Table 2 SSD Conditions B 17

Table 3 - Breakdown of Tasks and Responsibilities

DISCLAIMER
This report is based on information provided by Hansen Yuncken. To that extent, this report relies on the accuracy of the information provided to the consultant. This report is not a substitute for legal advice on the relevant environmental related legislation, which applies to businesses, contractors or other bodies. Accordingly, EcCell Environmental will not be liable for any loss or damage that may arise out of this project.

DOCUMENT CONTROL				
ISSUE NUMBER	DATE	AUTHOR	REVIEW	APPROVED BY
VERSION 1	30/04/2021	Jo Drummond	Patrick Nolan	Jo Drummond
Version 2	2/09/2021	Jo Drummond	Patrick Nolan	Jo Drummond
VERSION 3	26/11/2021	Jo Drummond	Patrick Nolan	Jo Drummond

1 INTRODUCTION

This Construction Waste Management Plan (CWMP) has been prepared for Hansen Yuncken to support the State Significant Development Application (SSD-8873789) for the new public school in south Epping: Epping South Public School (ESPC).

The proposed ESPC is located on 86 Chelmsford Avenue in the City of Parramatta Council Local Government Area (LGA), which was previously a campus for the Northern Sydney Institute of TAFE. The new public school will accommodate 600 students in 2023, the year of commencement, and increase to 1,000 students by 2028.

This report has addressed the requirements outlined in Section (4.12), (Waste Management) of the 'Planning Secretary's Environmental Assessment Requirements' (SEARs) dated 14th September 2020

SSD Condition SSD Conditions B 17 Construction Waste Management Sub-Plan.

2 PROJECT DESCRIPTION

The existing site contains 3 single-storey, former TAFE buildings and 5 lightweight glasshouse structures. The site location that's proposed (following demolition of an existing building) is for the former Northern Sydney TAFE College, which has two entry locations. It will be comprised of 25 Homebases and 35 core facilities, which include admin/staff area, hall, Out of School Hours Care (OSHC), canteen, special education unit, special programs area, library, outdoor play areas, covered outdoor learning areas (COLA), staff car park, covered walkways and bus bay, possible extension and upgrade of Grimes Lane to connect First and Second Avenues. The project aims be completed over 3 stages:

Stage 1: Core 35 facilities and 25 teaching Spaces and 3 SELU teaching spaces.

Stage 2: An addition of 8 teaching spaces.

Stage 3: An addition of 11 teaching spaces. The staged growth of the school is envisaged to be facilitated by modular construction to minimise impact to the function of school. Therefore, the design has provision for Design for Manufacture and Assembly (DMA) construction methodology.

3 PROJECT LOCATION

Figure 1 Approximate site location *(Source Google Maps)*

4 PURPOSE OF THE CWMP

The purpose of the CWMP Include:

- To meet the key waste requirements issues of the Secretary's Environmental Assessment Requirements (SEARs) Section 4.12 (8) of the Environmental Planning Assessment Act 1979
- Identify, quantity and classify waste streams to be generated during construction.
- Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site.
- To ensure storage and collection of waste is designed and managed having appropriate regard to space, location and amenity.
- Describe measures to be implemented to manage, reuse, and recycle and safely dispose of the waste.
- To maximise reuse and recycling of construction materials and materials from development.
- To encourage building design techniques in general which minimise waste generation.
- To minimise the amount of waste being deposited to landfill with targets to reuse or recycle at least 90% of construction and demolition material.
- Address relevant requirements of the Waste Classification Guidelines (EPA, 2014).

5 NSW LEGISLATIVE REQUIREMENTS AND GUIDELINES

Relevant key legislation and guidelines applicable to the project include:

- NSW Department of Planning and Environment, Secretary's Environmental Assessment Requirements (SEARs)
- P*rotection of the Environment (General) Operations Act* 1998
- Protection of the Environment Operations (Waste) Regulation 2014
- *Waste Avoidance and Resource Recovery Act* 2014
- Waste Classification Guidelines (EPA, 2014)

5.1 RESPONSE TO SEARS

The CWMP is required by the Secretary's Environmental Assessment Requirements (SEARs) for SSD-1. SSD-8873789 This table identifies the SEARs and relevant reference within this report.

Table 1 - SEARs Requirement & CWMP Page Reference

SEARs Item	Report Reference
Classification of the waste.	Page 8-10 PROJECT PHASE
Estimates / details of the quantity of each classification of waste to be generated during the construction of the project, including bulk earthworks and spoil balance.	Page 8-10 PROJECT PHASE
Handling of waste including measures to facilitate segregation and prevent cross contamination.	Page 4-5 ROLES AND RESPONSIBILITIES
Management of waste including estimated location and volume of stockpiles.	Page 8 PROJECT PHASE
Waste minimisation and reuse.	Page 4-5 ROLES AND RESPONSIBILITIES
Lawful disposal or recycling locations for each type of waste.	Page 3-4 SERVICING ARRANGMENTS
Contingencies for the above, including managing unexpected waste volumes.	Page 3-4 SERVICING ARRANGMENTS

5.2 SSD CONDITION B 1 4E B17 A,B,C REQUIREMENT

The Construction Waste Management Sub-Plan (CWMSP) must address, but not be limited to, the procedures for the management of waste including the following:
use;

Table 2 - SSD Condition B 14(e) & B17 CWMP Page Reference

	Report Reference
a) the recording of quantities, classification (for materials to be removed) and validation (for materials to remain) of each type of waste generated during construction and proposed	Project Phase Section 8
(b) information regarding the recycling and disposal locations; and	Section 8
c) confirmation of the contamination status of the development areas of the site based on the validation results. Douglas Partners Report on Hazardous Building Materials (HBM) Survey April 2021 Appendix B	Douglas Partners Hazardous Building Materials Report (HBM) Survey) April 2021 Appendix B

6 WASTE MANAGEMENT STRATEGIES

6.1 SERVICING ARRANGMENTS

The current legislation determines that the generator of waste is the owner of the waste until the waste crosses a calibrated weighbridge into a licensed facility. Waste contractors to demolition and construction teams are the primary transporters of waste off-site, accordingly, waste contractors will be required to provide verifiable monthly reports on waste reused, reprocessed or recycled (diverted from landfill) or waste sent to landfill. These reports have a direct bearing on the generator's compliance with the relevant regulations.

The CWMP will be implemented on site throughout including singularly or collectively through the demolition ,construction and fit out phases.

A Waste Data File must be maintained on-site and all entries are to include:

- The classification of the waste
- The time and date of material removed
- A description of and the volume of waste collected
- The location and name of the waste facility that the waste is transferred to
- The vehicle registration and the name of the waste contractor's company

The Waste Data File will be made available for inspection to any authorized officer at any time during the life of the site works. At the conclusion of site works, the designated person will retain all waste documentation and make this validating documentation available for inspection.

Arrangement's will be made with the Waste Contractor to increase bin supply if there is an unexpected increase in waste generation.

6.2 CONSTRUCTION WASTE MANAGEMENT EQUIPMENT, BIN SIZES AND COLLECTION FREQUENCY

All waste will be removed by a licensed waste contractor using 15-meter bins on site. The construction waste will be removed when bins are full and within the construction site hours to reduce disturbance of the neighbours.

6.3 ROLES AND RESPONSIBILITIES

The waste management strategy for the project will operate over the design, procurement, and construction including fit out of the project and is detailed in Table .

Table 3 - Breakdown of Tasks and Responsibilities

Management Strategies	Responsibilities
Design:	
Use of modular components in design	Architect & Engineer
Use of prefabricated components in design	Architect & Builder
Design for materials to standard sizes	Architect & Subcontractors
Design for operational waste minimisation	Architect & Builder
Consider ways to avoid, reuse and recycle construction wastes	Subcontractors.
Procurement:	
Select recycled and reprocessed materials	Architect, Engineer, Builder & Sub Contractors
Select components that can be reused after deconstruction	Architect, Engineer & Builder
Prioritise suppliers that take back offcuts and unused product.	Sub-Contractors
Encourage contractors and subcontractors that use unneeded offcuts and unused product for use on other jobs	
Ordering the right quantities of materials (Purchasing Policy);	Sub-Contractors
Include prefabrication of materials	
Pre-construction:	
Waste management plan to be reviewed & approved prior to construction	Builder
Contract a Waste Contractor	Waste Contractor
Construction on-site:	
Use the avoid, reuse, reduce, recycle principles	Builder & Waste Contractor
Minimisation of recurring packaging materials	Sub-contractors
Returning packaging to the supplier	Builder & Sub-contractor
Separation of recycling of materials off site	Waste Contractor

Management Strategies	Responsibilities
Audit and monitor the correct usage of bins Audit and monitor the Waste Contractor	Builder & Waste Contractor Builder
<u>Avoiding construction waste</u> Reduce extraneous packaging use reusable padding and careful packing All packaging generated on site should be captured for reuse or recycling wherever possible Reuse formwork Use modular components Use reuse non-returnable containers on the job site to the maximum extent possible	Builder

6.4 ON SITE WASTE MANAGEMENT REQUIREMENTS

There will be a designated waste storage area for the disposal and storage of demolition and construction waste prior to collection. This area will be located conveniently for the demolition and construction work team to use the bins as well as for waste contractors to collect. An indicative location has been provided in Appendix A. Other requirements include:

- The routes for movement of waste between work site and waste storage area are to be kept obstruction-free.
- The routes for movement of bins and waste between storage and collection points are marked in the site drawing, and will be kept obstruction-free (if waste is moved between the waste storage area(s).
- The waste bin collection point provided will be accessible for waste collection vehicles. There are no obstructions to turning or reversing, pulling up vehicles and lifting bins.
- Access for waste collection vehicles will not be compromised by construction-related activities vehicles or other consequences of construction staging.
- All waste not being reused on site will be removed during, or at the completion of, the construction stage.
- No waste will be left on site unless it is part of valid reuse on site, which is integral to and in place in the design.
- In order to manage noise levels, collection of waste from the construction site will only occur during hours approved for construction work.
- All vehicles entering or leaving the site must have their loads covered.
- All vehicles, before leaving the site, to be cleaned of dirt, sand and other materials, to avoid tracking these materials onto public roads.
- At the completion of the works, the work site is left clear of waste and debris.

- the recording of quantities, classification (for materials to be removed) and validation (for materials to remain) of each type of waste generated during excavation ,demolition and construction.
- information regarding the recycling and disposal locations.
- confirmation of the contamination status of the development areas of the site based on the validation results

7 WASTE MANAGEMENT PLAN APPLICATION

Project

Epping South Public School

Address

86 Chelmsford Avenue, Epping

Applicant

Department of Education c/o School Infrastructure NSW

Details of Application

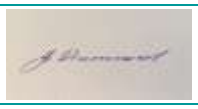
The proposed development is for the establishment of a new K-6 public school, master-planned to cater for up to 1,010 students and 54 staff.

Description of Buildings and Other Structures Currently on the Site

The existing site contains 3 single-storey, former TAFE buildings and 5 lightweight glasshouse structures.

Brief Description of Proposal

Demolition of existing single storey Tafe buildings and construction of a new 3 storey school.

Prepared by:	
Name:	Jo Drummond
Signed:	
Contact Number:	0412 214 233
Date:	30/04/2021

Version 3

8 PROJECT PHASE

8.1 DEMOLITION

MATERIAL TYPE ON SITE	ESTIMATED VOLUME (m^3) or WEIGHT (t)		ON-SITE TREATMENT	OFF-SITE TREATMENT	
	Recycling	Disposal	Proposed reuse recycling collection methods	Disposal / Transport Contractor	Waste Depot, Recycling Outlet or Landfill site
Concrete, Brick & Tile	$180m^3$		Co-mingled	Ground King Civil Pty Ltd	Concrete Recyclers; 14 Thackeray St, Camellia NSW 2142
Timber	$25m^3$		Co-mingled	Ground King Civil Pty Ltd	Martin's Landscape Supplies; 272/274 New Line Rd, Dural NSW 2158
Metals & Handrails	$30m^3$		Co-mingled	Ground King Civil Pty Ltd	MET Recycling; 134 Carnarvon St, Silverwater NSW 2128 BA
Plasterboard		$25m^3$	Co-mingled	Ground King Civil Pty Ltd	Aussie Skips; 108 Madeline St, Strathfield South NSW 2136

Cardboard	15m3		Co-mingled	Ground King Civil Pty Ltd	Bingo Industries; 1 Kangaroo Ave, Eastern Creek NSW 2766
Porcelain	25m^3		Co-mingled	Ground King Civil Pty Ltd	Concrete Recyclers; 14 Thackeray St, Camellia NSW 2142
Doors & Partitions	24m^3		Co-mingled	Ground King Civil Pty Ltd	Aussie Skips; 108 Madeline St, Strathfield South NSW 2136
Vinyl, Carpet & Underlay		22m^3	Co-mingled	Ground King Civil Pty Ltd	Bingo Industries; 1 Kangaroo Ave, Eastern Creek NSW 2766
General Waste		90m3		Ground King Civil Pty Ltd	Aussie Skips; 108 Madeline St, Strathfield South NSW 2136
HazMat		Volume TBA	See HazMat Report	Penny Green Pty Ltd	SUEZ Kemps Creek Resource Recovery Park; 1725 Elisabeth Dr, Kemps Creek NSW 2178

Subtotal	299	137			
Total	436				

Note: Epping South - demolition of existing single TAFE buildings. Data TBA by the Demolition Contractor
There is expected hazardous materials to be removed as per Report on Hazardous Building Materials (HBM) Survey April 2021 Douglas Partners

8.2 EXCAVATION

MATERIAL TYPE ON SITE Waste Classification	ESTIMATED VOLUME (m^3) or WEIGHT (t)			ON-SITE TREATMENT	OFF-SITE TREATMENT	
	Reuse	Recycling	Disposal	Proposed reuse and/or recycling collection methods	Disposal / Transport Contractor	Waste Depot, Recycling Outlet or Landfill site
Footings Excavated Fill	$25m^3$			Reuse on site	Ground King Civil Pty Ltd	N/A
Excavated Tree Roots		$20m^3$		Sent for reprocessing	Ground King Civil Pty Ltd	Bingo Eastern Creek Recycling Ecology Park (& Landfill); 1 Kangaroo Ave, Eastern Creek NSW 2766 TBA

Contaminated Fill			SUEZ Kemps Creek	Disposal	Ground King Civil Pty Ltd	SUEZ Kemps Creek Resource Recovery Park; 1725 Elisabeth Dr, Kemps Creek NSW 2178
Subtotal	**25m^3**	**20m^3**				
Total	**45m^3**					

Narrative: Excavation as per the Geotech Report Douglas Partners quantity TBA 5.2
SSD CONDITION B 12 REQUIREMENT
a) the recording of quantities, classification (for materials to be removed) and validation (for materials to remain) of each type of waste generated during construction and proposed
(b) information regarding the recycling and disposal locations; and
c) confirmation of the contamination status of the development areas of the site based on the validation results

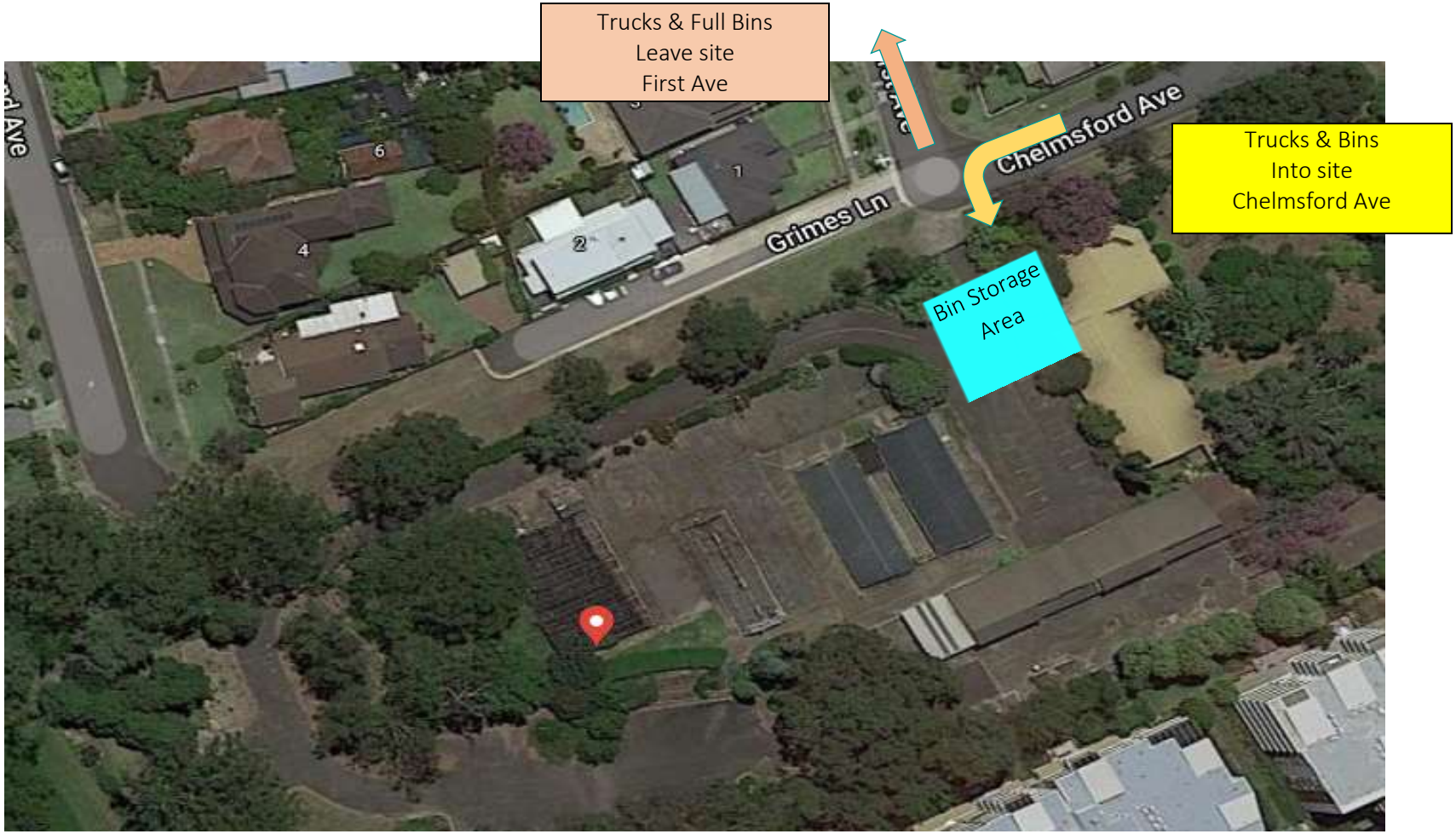
.

8.3 CONSTRUCTION EPPING SOUTH:

MATERIAL TYPE ON SITE Waste Classification Construction and Demolition Waste	ESTIMATED WEIGHT (t) Or Volume (m^3)			ON-SITE TREATMENT	OFF-SITE TREATMENT	
	Reuse	Recycling	Landfill Disposal	Proposed reuse and/or recycling collection methods	Disposal / Transport Contractor	Recycling Outlet or Landfill site
Concrete, Brick, Block Work, Render, Tiles		$25m^3$		Co-mingled Bins	Just Skip Bins Pty Ltd	KLF Recycling Hornsby Pty Ltd (Asquith); 7-9 Brennan CI, Asquith NSW 2077 Crushed for road base
Metals		$18m^3$		Co-mingled Bins	Just Skip Bins Pty Ltd	KLF Recycling Hornsby Pty Ltd (Asquith); 7-9 Brennan CI, Asquith NSW 2077 Scrap Metal Dealer for smelting
Timber Off-Cuts		$12m^3$		Co-mingled Bins	Just Skip Bins Pty Ltd	KLF Recycling Hornsby Pty Ltd (Asquith); 7-9 Brennan CI, Asquith NSW 2077Recycled for chips and mulch
Cardboard		$32m^3$		Co-mingled Bins	Just Skip Bins Pty Ltd	KLF Recycling Hornsby Pty Ltd (Asquith); 7-9 Brennan CI, Asquith NSW 2077Recycled into cardboard
Plasterboard		$34m^3$		Co-mingled Bins	Just Skip Bins Pty Ltd	KLF Recycling Hornsby Pty Ltd (Asquith); 7-9 Brennan CI, Asquith NSW 2077Recycled as soil conditioner
Containers, Plastics, Plastic Packaging		* $32m^3$	$25m^3$	Co-mingled Bins	Just Skip Bins Pty Ltd	KLF Recycling Hornsby Pty Ltd (Asquith); 7-9 Brennan CI, Asquith NSW 2077-

						Styrene and plastic to landfill
Asphalt		10 m^3		Co-mingled Bins	Just Skip Bins Pty Ltd	KLF Recycling Hornsby Pty Ltd (Asquith); 7-9 Brennan CI, Asquith NSW 2077Recycled and reused as asphalt
Pallets And Reels	30 units			Separated onsite	Just Skip Bins Pty Ltd	Returned to the supplier
Liquid Waste (paint washout)			30 litres	Separated onsite	Just Skip Bins Pty Ltd	T KLF Recycling Hornsby Pty Ltd (Asquith); 7-9 Brennan CI, Asquith NSW 2077 Transferred to licenced landfill
General Waste			37m^3	Co-mingled Bins	Just Skip Bins Pty Ltd	Bingo Eastern Creek
Sub Total	30 units	163m^3	62m^3			
TOTAL	225m^3			NB: Plus, an additional 30 pallets (single units returned to suppliers for reuse) and 30 litres of liquid waste		
Notes: This construction phase is an advanced conceptual design of pre-fabricated modular units assembled on-site and as such the waste generated on-site is reduced.						

APPENDIX A – RECYCLING AREA AND SITE'S ACCESS AND EGRESS



APPENDIX B HAZARDOUS BUILDING MATERIALS (HBM) SURVEY APRIL 2021 DOUGLAS PARTNERS

Douglas Partners
Geotechnics / Environment / Groundwater

Integrated Practical Solutions

Report on
Hazardous Building Materials (HBM) Survey

New Public School in Epping
86 Chelmsford Avenue, Epping NSW

Prepared for
Hansen Yuncken Pty Ltd

Project 99671.05
August 2021

Douglas Partners
Geotechnics / Environment / Groundwater

Document History

Document details

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The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

	Signature	Date
Author		2 August 2021
Reviewer		2 August 2021

bsi. ISO 9001 Quality Management
FS 604853

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Executive Summary

Douglas Partners Pty Ltd (DP) was engaged by Hansen Yuncken Pty Ltd (Hansen Yuncken) to conduct a Hazardous Building Materials (HBM) survey of existing buildings at an unoccupied TAFE campus at 86 Chelmsford Avenue, Epping NSW (the Site). The Site is proposed for a new Epping South Public School. The survey, which included the use of a limited range of destructive / intrusive investigation techniques, was undertaken to help assess the general location, extent and condition of asbestos-containing materials (ACM) and other HBM prior to building demolition. The inspection was supplemented by a limited program of sample collection and laboratory analysis.

HBM were identified or assumed present during the survey as indicated in Table 1 below.

Table 1: Hazardous Building Materials (HBM) Risk Profile

Building / Area	Non-Friable Asbestos	Friable Asbestos	SMF	Lead Paint	Lead Dust	PCB
Building A	✓	×	✓	✓	✓	✓
Building B	✓	×	✓	✓	✓	✓
Building C	✓	×	✓	✓	✓	✓
Glasshouse 1	✓	×	✓	×	×	✓
Glasshouse 2	✓	×	✓	×	×	✓
Greenhouse 1	✓	×	✓	×	×	✓
Greenhouse 2	×	×	✓	✓	×	✓
Greenhouse 3	✓	×	✓	×	×	✓
Flammable Store	×	✓	×	✓	×	✓
Shed 1	×	×	×	×	×	×
Shed 2	×	×	✓	×	×	×
Shed 3 and water tank	×	×	×	✓	×	×
Shed 4 and metal framed shelter	×	×	✓	×	×	✓
General grounds	✓	×	×	×	×	✓

SMF = synthetic mineral fibre, PCB = polychlorinated biphenyls, ✓= identified and / or suspected present, × = not identified and / or not suspected present. Refer to the Registers in Appendices B to O for details / clarification.

Limited or no access was available to certain areas of the buildings and / or the Site. Inaccessible areas should be assumed to potentially contain HBM unless assessment of these areas by a Competent Person confirms otherwise.

HBM should be managed in accordance with the requirements of the NSW Work Health and Safety (WHS) Act 2011 (WHS Act), NSW WHS Regulation 2017 (WHS Regulation) and relevant Codes of Practice, Australian Standards and guidelines.

HBM should be removed prior to any significant disturbance including from maintenance, refurbishment and demolition work.

Limitations apply to this HBM survey and report as outlined in Section 10.

This report should be read in its entirety and may not be reproduced other than in full, except with the prior written approval of DP.

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Report on Hazardous Building Materials (HBM) Survey
New Public School in Epping
86 Chelmsford Avenue, Epping NSW

1. Introduction

Douglas Partners Pty Ltd (DP) was engaged by Hansen Yuncken Pty Ltd (Hansen Yuncken), to conduct a Hazardous Building Materials (HBM) survey of existing buildings at an unoccupied TAFE campus at 86 Chelmsford Avenue, Epping NSW (the Site). The Site is proposed for a new Epping South Public School. The survey was undertaken to help assess the general location, extent and condition of the following HBM prior to building demolition:

- Asbestos containing materials (ACM);
- Synthetic mineral fibre (SMF) insulation;
- Polychlorinated biphenyls (PCBs) in fluorescent light fittings;
- Lead paint systems; and
- Lead dust in ceiling cavities.

The survey, which included the use of a limited range of destructive / intrusive investigation techniques, was supplemented by a limited program of sample collection and laboratory analysis.

Notes about this report and a site plan are contained in Appendix A.

The results of the survey, including details of the HBM identified and the results of ACM risk assessments, are provided in the HBM Registers (the Registers) in Appendices B to O. Selected photographs are also contained therein.

Laboratory analysis certificate(s) for the samples collected and analysed are provided in Appendix P.

Limited or no access was available to certain areas as outlined in the Registers and Section 7 of this report (including Table 4).

2. Project Appreciation

The Epping Primary Schools Community Group (SCG) is experiencing significant growth, demonstrating the need to accommodate increased demand through additional permanent teaching facilities through to 2036. School Infrastructure NSW is undertaking a project (the Project) to address school demand in the Epping area and to reduce the risk of potential overcrowding of teaching spaces. The overarching strategy includes a new public school in Epping (86 Chelmsford Avenue, Epping) as well as upgrade work at Epping West Public School (96 Carlingford Road, Epping). DP understands that School Infrastructure NSW has engaged Hansen Yuncken to undertake demolition of the buildings at the Site.

DP previously undertook a HBM survey at the Site as part of the Project (Phases 0-2) to assist the investigation options for delivery of a business case, which encompassed development of a masterplan, concept design and State Significant Development (SSD) application submission. Refer to DP's *Report on Hazardous Building Materials (HBM) Survey, New Public School in Epping, 86 Chelmsford Avenue, Epping NSW*, report ref. 99671.02.R.001.Rev2, 22 April 2021 (DP, 2021). This report supersedes DP (2021) and includes additional inspection and analysis / test results.

This HBM survey of the current buildings and structures present at the Site was undertaken to further assess the general location, extent and condition of asbestos-containing materials (ACM) and other HBM prior to building demolition.

3. Site Description

The Site is located at 86 Chelmsford Avenue, Epping NSW and comprises an unoccupied TAFE campus with three primary buildings (herein termed Buildings A, B and C) and a variety of horticulture buildings / structures including glasshouses / greenhouses, sheds and a flammable goods store. Land use surrounding the Site is generally residential.

A plan of the Site that identifies the general location of the buildings / structures assessed by DP is provided in Appendix A and should be referred to in respect of the Registers in Appendices B to O.

4. Regulatory Framework

In NSW, occupational health and safety is regulated under the NSW Work Health and Safety Act 2011 (WHS Act) and the NSW Work Health and Safety Regulation 2017 (WHS Regulation). The WHS Act and WHS Regulation place a broad range of responsibilities on key stakeholders to promote and secure the safety and health of persons in the workplace. The WHS Regulation also outlines specific requirements pertaining to the identification, assessment and control of asbestos and other hazardous materials in the workplace.

In addition to the WHS Act and WHS Regulation there are a range of Codes of Practice, Guidance Notes, Australian Standards and other guidelines relating to the management of HBM in the workplace and their disposal. These include the following as updated / replaced from time to time:

- SafeWork NSW *Code of Practice: How to Manage and Control Asbestos in the Workplace*;
- SafeWork NSW *Code of Practice: How to Safely Remove Asbestos*;
- National Occupational Health and Safety Commission (NOHSC) *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres, 2nd Edition* [NOHSC:3003(2005)];
- AS4361.2 – 2017, *Guide to hazardous paint management - Lead paint in residential, public and commercial buildings*;
- SafeWork NSW *Safe management of synthetic mineral fibres (SMF) – glasswool and rockwool*;
- Safe Work Australia *Guide to Handling Refractory Ceramic Fibres*, December 2013;

- NSW EPA *Polychlorinated Biphenyl (PCB) Chemical Control Order*, 1997;
- Environment Protection and Heritage Council *Polychlorinated Biphenyls Management Plan*, *Revised Edition*, April 2003;
- NSW *Protection of the Environment Operations (Waste) Regulation* 2014; and
- NSW Environment Protection Authority (EPA) *Waste Classification Guidelines, Part 1: Classifying Waste*, November 2014 (EPA, 2014).

5. Survey Method

The survey consisted of a visual inspection of safely accessible areas of the buildings / structures identified in the Executive Summary, Table 1. While not technically part of the survey scope, other potentially relevant items identified by DP within the general grounds of the Site during the inspection process were also recorded (refer to the last Building / Area listed in Table 1 and to Appendix O).

The inspection included the use of simple, non-powered hand tools (e.g. hammer, pinch bar, screwdriver and pliers), and a limited range of destructive / intrusive inspection techniques, to access selected areas where HBM were thought likely to be hidden. The inspection was supplemented by a limited program of sample collection and laboratory analysis.

Samples of suspected ACM were collected by DP using hand tools (e.g., knife or pliers) and analysed for asbestos by a National Association of Testing Authorities (NATA) accredited laboratory. Sample size is typically limited to minimise disturbance of the material and potential structural or aesthetic impacts. The samples were analysed by polarised light microscopy (PLM) with dispersion staining in accordance with AS4964-2004 *Method for the qualitative identification of asbestos in bulk samples*.

Spot testing for lead paints was conducted using 3M LeadCheck™ swabs. Paint samples were also collected by DP and analysed for lead by a NATA accredited laboratory. Analysis was by Inductively Coupled Plasma - Atomic Emission Spectrometry / Mass Spectrometry (ICP-AES / MS) or other relevant method. Paint samples generally contained approximately equal portions of all layers of paint at the locations sampled, to the extent reasonably practicable, and therefore typically reflect the average lead content of the overall paint system at the location sampled.

SMF insulation was identified primarily by visual inspection or incidentally as a result of laboratory analysis for asbestos.

Light fittings were visually inspected to assess their general age and whether any indicators of past PCB removal programs (e.g., 'PCB free' labels) were present. A selection of light fittings were partially dismantled to confirm capacitor type. Notwithstanding this, not all types of light fitting could be adequately accessed due to height or the nature of construction.

Lead dust samples were collected from readily accessible ceiling cavities. Samples were collected from a surface area of 100 cm^2 or 900 cm^2 and analysed for lead by a NATA accredited laboratory using ICP-AES / MS. The sampling area and laboratory analysis result (total lead in µg) were then used to calculate the lead dust loading in milligrams of lead per square metre (mg/m^2).

Surveys typically proceed on a 'risk management' basis whereby priority is given to addressing material(s) of higher quantity and / or risk and as they are encountered. Further, material sampling and analysis programs are necessarily limited and, in the case of similar or repetitive buildings, building elements and / or rooms / areas, it is often necessary to assume consistent use of construction materials including HBM.

6. Asbestos Risk Assessment Method

ACM poses a health risk if asbestos fibres are released to the atmosphere and inhaled. There is also a risk of environmental contamination whenever asbestos is disturbed. The degree of risk associated with any given ACM depends on a range of factors such as the friability, extent, condition, and location / accessibility of the material, the asbestos mineral type(s) present, the nature of site activities and ventilation.

The asbestos risk assessment method employed by DP considers several key factors that influence risk and a numerical score is assigned to each (refer Table 2 below). These scores are then added together to determine an overall risk rating for the ACM (refer Table 3 below). A degree of professional judgement may be applied when determining the final risk rating since, for example, it is not practicable to include in Table 2 all risk factors that may be relevant to a given situation.

Risk assessments for ACM should be reviewed on a regular basis including when:

- The Asbestos Management Plan is reviewed;
- Further asbestos or ACM is identified at the workplace;
- Asbestos is removed, disturbed, sealed, enclosed or undergoes any other change in condition;
- There is evidence that the risk assessment is no longer valid; and
- There is evidence that control methods are not effective; or
- A significant change is proposed for the workplace or for work practices or procedures relevant to the risk assessment.

An asbestos risk assessment review is to be conducted at least every 5 years. The review is to be performed by a Competent Person.

Table 2: Key Risk Factors

Risk Factor	Score	Description
Friability	0	Non-friable (fibre reinforced vinyls, bituminous materials, adhesives)
	1	Non-Friable (fibre reinforced cement products such as wall and roof sheeting)
	2	Semi-Friable (low density insulation board, millboard, ropes, paper, textiles, gaskets or highly weathered asbestos cement)
	3	Friable (thermal insulation to pipes/boilers, sprayed insulation, loose fill insulation)
Condition	0	Very Good. Very little or no visible indication of damage. Structurally sound. No significant repairs required. Material performs as intended.
	1	Good - Minor damage in small, localised areas. Structurally sound. Minor preventative action may be required as a precaution and / or to prolong material life. Material generally performs as intended.
	2	Fair. Localised damage in various areas. Material is generally structurally sound however local removal and replacement of damaged sections may be required. Material performance may be somewhat impaired in areas.
	3	Poor. Material exhibits significant damage throughout. Overall structural stability may be compromised. Material performance is significantly impaired.
Treatment	0	Fully enclosed, encapsulated or sealed. ACM is entirely contained, and the enclosure/encapsulation/sealing material is in good condition.
	1	Generally enclosed, encapsulated or sealed. ACM is generally contained however enclosure/encapsulation/sealing material may not be completely continuous or exhibits minor damage/penetrations.
	2	Partially enclosed, encapsulated or sealed. ACM is contained in area(s) however enclosure/encapsulation/sealing material is not present, significantly damaged or ineffective in area(s).
	3	Enclosure/encapsulation/sealing material is significantly damaged and / or generally ineffective or there is no treatment.
Accessibility	0	The ACM is not directly accessible to occupants. Contact is highly unlikely unless a significant, dedicated effort is made. Substantial demolition, dismantling and / or special access equipment would be required.
	1	The ACM is generally not accessible to occupants. Contact is unlikely but could be made with special tools or equipment (e.g., elevating work platform) or minor demolition/dismantling.
	2	Some portion(s) of ACM are accessible to occupants. Direct contact may occur periodically but often requires basic tools/equipment (e.g. step ladder).
	3	The majority of the ACM is accessible to occupants. Direct contact is a common occurrence and may be made with minimal effort or unintentionally.

Risk Factor	Score	Description
Activity	0	Area generally not occupied. Normally very little or no activity. Activities may be highly restricted, or the area secured. Examples may include subfloor voids, ceiling cavities, confined spaces and other inaccessible areas.
	1	Low level occupancy. Some activity in parts or area only occupied periodically. Examples may include plant rooms and storerooms.
	2	Moderate level occupancy. Activity normally present throughout area. May include offices, laboratories, classrooms, workshops, and warehouses.
	3	High level occupancy. Generally high levels of activity. Activities may be wide-ranging and / or largely unrestricted. Examples may include production/manufacturing areas, construction sites and public areas/thoroughfares.
Ventilation	0	Exterior area where natural ventilation and associated dilution is largely unlimited. Significant retention and / or build-up of airborne contaminants is unlikely.
	1	Interior area. Natural ventilation and dilution are limited but area is not particularly confined. Limited retention and / or build-up of airborne contaminants is possible.
	2	Confined areas where ventilation and associated dilution is significantly limited. Significant retention and / or build-up of airborne contaminants is possible or likely.
	3	Asbestos material subject to direct ventilation (e.g., inside an AC system or near a fan or air exhaust) which may result in disturbance and / or elevated fibre concentrations in air.

Table 3: Risk Rating

Overall Score	Risk Rating	Description
15-18	High (H)	The ACM poses an elevated and typically unacceptable risk of exposure and / or environmental contamination. Controls should generally be implemented as soon as possible to address the risk. Removal of the whole or part of the ACM is typically required. Other controls such as enclosure, encapsulation and / or sealing may also be necessary if portion(s) of ACM are to remain in place. As an interim measure, access to the area should be appropriately restricted. Air monitoring is often recommended to confirm airborne asbestos concentrations and provide a written record for future reference.
10-14	Moderate (M)	The ACM poses a moderate risk of exposure and / or environmental contamination. Often there has been minor damage or there is potential for disturbance / degradation in the foreseeable future. Consideration should be given to implementing appropriate controls in the short to medium term to address the risk(s) and / or prolong the lifespan of the material. Relevant controls typically include enclosure, encapsulation and / or sealing. Extensive removal is generally not required, and the material can generally be managed on site if desired and serving a useful purpose.
0-9	Low (L)	The risk of exposure and environmental contamination is generally low while the material remains undisturbed and in its present condition. The material may generally remain in place without the requirement for significant, material-specific control measures such as removal, enclosure, encapsulation or sealing

Note: If the ACM is likely to be disturbed (e.g., by maintenance, refurbishment, or demolition work) and / or is no longer serving a useful purpose then the ACM should generally be removed. All ACM should be clearly identified with a label/signage where reasonably practicable.

7. Results

The overall results of the survey are summarised in Table 1 in the Executive Summary of this report. Further details of the HBM identified at the Site, including the results of asbestos risk assessments, are provided in the Registers in Appendices B to O.

Limited or no access was available to certain areas as outlined below (including Table 4) and in the Registers.

Access to building exteriors and the grounds of the Site generally was limited in areas due to substantial vegetation. Access to Greenhouse 2 was also limited due to structural damage associated with a fallen tree.

Access was not available to:

- A small quantity of amenity / utility rooms at the eastern side of Building B which were locked; and
- A small quantity of amenity / utility rooms at the western exterior side of Building C.

Safe access was not available to the roofs of the buildings in general (due to height and risk of fall).

Asbestos was identified in some putties, mastics and sealants in and around window frames. Where identified, such asbestos containing materials should be taken to potentially occur throughout the particular building / area in general and may also be expected in buildings of similar age and construction at the Site.

Notwithstanding the HBM assessed by DP (refer Section 1), the presence of lead flashing in some buildings was also confirmed by lead spot testing. Where identified, such materials should be taken to potentially occur throughout the building / area in general and may also be expected in buildings of similar age and construction at the Site.

The buildings / structures at the Site generally appear to be constructed slab-on-ground, or similar, and no readily accessible building subfloor areas were identified.

Table 4: Access Limitations*

Location / Area	Access Type	Reason(s)
Areas / materials at height (e.g. roofs)	Limited	Access limited to safely accessible areas and use of 1.8 m step ladder. Work at height and use of specialised access equipment not included in survey scope.
Confined spaces (e.g. interior of tanks)	Nil	Not included in survey scope.
Ceiling cavities	Limited	Access generally limited by height, location and size of access points, location of services and building structure, stability of ceiling support structure and general clearance within ceiling cavities.
Subfloor voids	Nil	Buildings/structures generally appear to be constructed slab-on-ground or similar. Readily accessible subfloor areas not identified.
Below floor covering materials (e.g., carpet, vinyl sheeting etc.)	Limited	Access generally limited due to fixtures / furnishings, storage and practicalities associated with complete removal of floor coverings.
Fluorescent light fittings	Limited	A selection of readily accessible light fittings was inspected. Access was prevented in areas by height and / or nature of construction.
Other potentially energised plant, equipment and services (e.g. electrical panels).	Limited	Full access requires certified isolation and de-energisation by a qualified / licensed technician or similar. Not included in survey scope.
Subsurface areas including building footings and contamination in soil / fill	Nil	Not included in survey scope.

* Refer also to the Register (Appendices B to O).

8. Key Risks

Key risks that may apply to the management of HBM during the Project include:

- Inadequate management and control of known HBM;
- Additional HBM being present in inaccessible areas;
- HBM abatement work being perceived as an unacceptable risk to occupants of the Site and / or the general public; and
- Inordinate fees associated with management and control of additional HBM if found at the Site.

9. Recommendations

Relevant notes and / or a summary recommendation for each HBM identified or assumed present at the Site are provided in the Registers (Appendix B to O).

The general recommendations in Section 9.1 onwards are provided for informative purposes and should be considered where the relevant HBM has been identified or assumed present by DP or is subsequently suspected to be present based on reasonable grounds.

The presence of identified and assumed HBM at the Site, and the potential presence of any as-yet undetected HBM, should be considered during the risk assessment for any proposed work at the Site or Site use. In particular, consideration should be given to further targeted assessment of any areas that were not accessed, and areas where access was limited, based on the location and extent of any proposed work or activity to be undertaken at the Site (e.g. demolition, refurbishment or maintenance work).

9.1 General

HBM should be managed in accordance with the requirements of the WHS Act, WHS Regulation and subordinate Codes of Practice, Australian Standards, and guidelines.

HBM should be visually inspected on a regular basis. Any change to the condition of the material or relevant site conditions should be reported.

HBM should be removed prior to any significant disturbance such as maintenance, refurbishment, and demolition work.

A HBM management plan, and scope of work specification for any planned abatement, should be developed to aid compliance with the requirements of the WHS Act and Regulation including those that relate to the identification of hazards and control of associated risks.

HBM abatement work should be appropriately monitored and / or audited to help ensure quality and compliance.

An appropriate level of stakeholder consultation and communication should be undertaken at all times to help ensure that all relevant operational and project risks are adequately controlled.

The scope, fees, and terms / conditions applicable to any HBM work, including abatement, should be carefully assessed by a suitably qualified, experienced, and competent person to help ensure that associated costs remain within reasonable limits. Such assessment should include consideration of the fees that may apply to the management and control of any unexpected or additional finds.

Prior to any work involving HBM a risk assessment should be conducted and Safe Work Method Statement (SWMS) developed. The SWMS should outline the controls necessary to ensure that the risks of exposure and environmental contamination are adequately controlled.

HBM remediation and removal work should be undertaken in controlled conditions.

Waste should be assessed and classified for disposal in accordance with relevant legislation and EPA (2014).

At the completion of HBM abatement and / or removal work a clearance inspection should be conducted by a Competent Person, or in the case of friable asbestos, by a Licensed Asbestos Assessor.

9.2 Asbestos-Containing Material (ACM)

Asbestos and ACM must be managed in accordance the WHS Regulation, the SafeWork NSW *Code of Practice: How to Manage and Control Asbestos in the Workplace* and the SafeWork NSW *Code of Practice: How to Safely Remove Asbestos.*

Exposure to airborne asbestos in the workplace must be eliminated to the extent that is reasonably practicable. If it is not reasonably practicable to eliminate exposure it must be minimised to the extent that is reasonably practicable.

An Asbestos Management Plan must be developed to enable compliance with the WHS Regulation (Clause 429).

The presence and location of asbestos or ACM identified at a workplace must be clearly indicated by a label if it is reasonably practicable to do so.

Warning labels and signs should be consistent with the examples provided in the SafeWork NSW *Code of Practice: How to Manage and Control Asbestos in the Workplace* and comply with AS1319 *Safety Signs for the Occupational Environment*.

Non-friable ACM that are structurally intact and in good to fair condition may typically remain in place provided that they are not significantly disturbed.

Tools and equipment that generate dust must generally not be used on asbestos or ACM. These include high-speed abrasive power and pneumatic tools (e.g., angle grinders, sanders, saws and high-speed drills, brooms, and brushes).

Tools and equipment that cause the release of asbestos, including power tools and brooms, may only be used on asbestos if the equipment is enclosed and / or designed to capture or suppress asbestos fibres and / or the equipment is used in a way that is designed to capture or suppress asbestos fibres safely. In such a case, other controls including PPE may also be required based upon the results of a pre-work risk assessment and the SWMS adopted.

The use of high-pressure water spray and compressed air on asbestos or ACM is specifically prohibited under the WHS Regulation.

If ACM become damaged, they should be repaired or removed and replaced with an alternative, non-asbestos building product as soon as possible.

The scope of asbestos removal work should be outlined in a technical specification (i.e., Scope of Work Report) developed by a Competent Person (in the case of non-friable asbestos) or a Licensed Asbestos Assessor (in the case of friable asbestos).

Removal of friable asbestos must only be undertaken by a Class A licensed asbestos removalist. Removal of 10 m^2 or more of non-friable asbestos must only be undertaken by a Class A or Class B licensed asbestos removalist.

Air monitoring, including background, control, and clearance monitoring, is a mandatory requirement during removal of friable asbestos. Air monitoring should also be considered during removal of non-friable asbestos particularly where sensitive receptors exist such as at schools, hospitals, in public areas and at similar sites.

Air monitoring must be undertaken in accordance with the National Occupational Health and Safety Commission (NOHSC) *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres, 2nd Edition* [NOHSC:3003(2005)].

All air monitoring samples must be analysed by a NATA accredited laboratory that holds accreditation for the required analysis.

At the completion of asbestos removal, a clearance inspection must be conducted by a Competent Person (for non-friable asbestos removal) or a Licensed Asbestos Assessor (for friable asbestos removal).

Air monitoring and clearance inspections must be performed by person/s independent of the licensed asbestos removalist.

All waste should be classified for disposal in accordance with relevant legislation and EPA (2014). Asbestos waste is preclassified as Special Waste under these guidelines.

Asbestos transporters and facilities receiving asbestos waste must report the movement of asbestos waste to the EPA. Entities involved with the transport or disposal of asbestos waste in NSW, or arranging the transport of asbestos waste in NSW, must use the EPA's online tool, WasteLocate.

All asbestos waste must be disposed at a waste collection facility licensed to receive asbestos waste. All disposal receipts should be retained.

A person who relinquishes management or control of the workplace must ensure that the Asbestos Register is given to the person, if any, assuming management or control of the workplace.

9.3 Synthetic Mineral Fibre (SMF)

SMF insulation materials may generally remain in place providing that they are in good condition and unlikely to be disturbed.

To reduce the potential for disturbance, exposure, and environmental contamination SMF insulation materials may be encapsulated or enclosed. Higher risk materials, such as loose fill insulation, may also be removed and replaced if necessary.

SMF work is to be undertaken in accordance with the requirements of the WHS Regulation and subordinate Codes of Practice, Guidance Notes, and other documents. These include:

- SafeWork NSW *Safe management of synthetic mineral fibres (SMF) - glasswool and rockwool*;
- Safe Work Australia *Guide to Handling Refractory Ceramic Fibres, December 2013*; and
- Guidance Note on the Membrane Filter Method for the Estimation of Airborne Synthetic Mineral Fibres [NOHSC:3006(1989)].

Reference should also be made to the Australian Institute of Occupational Hygienists (AIOH) *Synthetic Mineral Fibres (SMF) And Occupational Health Issues, Position Paper*, October 2011 (reformatted January 2018) for guidance and information.

Where reasonable concern exists over possible respirable fibre concentrations in any application, the first step is often to confirm that the work practices, as recommended for the particular product, are being followed. Air monitoring may not be required when it has been clearly established that appropriate work practices are being carried out.

Notwithstanding the above, exposures to airborne SMF should not exceed the relevant Safe Work Australia (SWA) exposure standards outlined in Table 5 below.

Table 5: SWA Exposure Standards for SMF

Standard Name	Time Weighted Average (TWA) Exposure Standard
Glass wool, rock (stone) wool, slag wool and continuous glass filament and low biopersistence Man Made Vitreous Fibres (MMVF)	2 mg/m^3 (inhalable dust)
Refractory ceramic fibres (RCF), special purpose glass fibres and high biopersistence MMVF	0.5 f/mL (respirable) 2 mg/m^3 (inhalable dust)

SMF waste should be disposed at a licensed waste collection facility. Note that synthetic fibre waste (from materials such as fibreglass, polyesters, and other plastics) packaged securely to prevent dust emissions is pre-classified as General Solid Waste (non-putrescible) under EPA (2014).

All disposal receipts should be retained.

9.4 Polychlorinated Biphenyls (PCBs)

Prior to any significant disturbance, such as demolition, refurbishment or maintenance works, fluorescent light fittings should be electrically isolated and inspected in detail for components (e.g., metal canister-type capacitors and ballasts etc.) that may contain PCB's. Any components containing, or suspected to contain, PCB should be removed by a Competent Person.

PCB-containing components should be managed in accordance with the general requirements of the WHS Regulation and relevant environmental laws and guidelines including:

- Environmentally Hazardous Chemicals (EHC) Act 2008 and subordinate *Polychlorinated Biphenyl (PCB) Chemical Control Order 1997*; and
- *Polychlorinated Biphenyls Management Plan, Revised Edition, April 2003*, issued by the Environment Protection and Heritage Council (EPHC).

Any PCB-containing components that exhibit leakage should be removed and replaced by a Competent Person as soon as possible. Access to areas containing leaking components should be suitably restricted.

The conveyance and disposal of PCB material and PCB waste must be undertaken in accordance with the requirements outlined in the *Polychlorinated Biphenyl (PCB) Chemical Control Order* 1997.

All disposal receipts should be retained.

9.5 Lead Paint

The potential presence of lead paint(s) at the Site should be considered during the risk assessment for any proposed works. Additional, targeted sampling and analysis for lead paints should be considered prior to any work that may result in significant disturbance of paint system(s).

Lead paints should be managed in accordance with the WHS Regulation (including Chapter 7, Part 7.2 Lead) and:

- AS4361.1 - 2017, *Guide to hazardous paint management - Lead and other hazardous metallic pigments in industrial applications*; and
- AS4361.2 - 2017, *Guide to hazardous paint management - Lead paint in residential, public and commercial buildings*.

Generally, when one or more tests from a building or portion of a building indicate that lead is present, the paint should be treated as lead paint. Further, a project should not be classified as free of lead unless all samples within the area are proven to be free of lead and the sampling is comprehensive.

Lead paint that is in sound condition, not directly accessible (e.g., over-painted with lead-free paint) and unlikely to be disturbed may not require any immediate action.

Area(s) of lead paint that are in poor condition (e.g., flaking, delaminating) should generally be removed along with any lead paint debris and associated dust.

Exposed area(s) of lead paint that are intact may be stabilised by over-painting with a lead-free paint, or by covering with a suitable encapsulant. Stabilisation can provide an interim to long-term solution to a lead paint hazard.

The lead paint removal method and control measures adopted should be determined by risk assessment and a detailed knowledge of the workplace and proposed use / activities.

Exposure to airborne lead must be maintained below the relevant SWA exposure standards pertaining to lead. The SWA 8-hour Time Weighted Average (TWA) exposure standard for lead (inorganic dusts and fumes) is 0.05 mg/m^3. Other exposure standards apply for substances such as lead chromate.

Air monitoring for lead may be required during lead paint remediation works based on risk assessment and the requirements to maintain airborne lead levels below the abovementioned exposure standards.

At the completion of lead paint removal, a clearance inspection should be conducted by a Competent Person. The Competent Person should determine the requirements for clearance including any air monitoring or sample analysis that may be required.

Lead paint waste should be assessed and classified for disposal in accordance with relevant legislation and EPA (2014).

Based on previous correspondence with the NSW EPA DP understands that EPA (2014) does not consider AS4361.1 - 2017 or AS4361.2 - 2017, including the definition of lead paint therein, for waste classification assessment. As such:

- These standards have no bearing on how waste is classified in NSW; and
- Waste classification should be carefully considered and an appropriate degree of liaison with the NSW EPA may be required to help ensure correct waste classification.

All disposal receipts should be retained.

9.6 Lead Dust

Laboratory analysis results for lead dust should be taken as an approximate indication of site conditions only since sampling is limited and the concentration of lead in dust may vary considerably between locations within the same general area.

No recognised Australian guidelines have been identified for the direct assessment of lead concentrations in ceiling cavity dust. Notwithstanding this, AS4361.2-1998 *Guide to Lead Paint Management, Part 2: Residential and Commercial Buildings* (superseded) outlined acceptance limits for lead in surface dust after lead paint management activities. These limits were:

- Interior floors: 1 mg/m^2 (as lead).
- Interior window sills: 5 mg/m^2 (as lead); and
- Exterior surfaces: 8 mg/m^2 (as lead).

The United States Environmental Protection Authority (US EPA) 40 CFR Part 745 *Lead; Identification of Dangerous Levels of Lead; Final Rule* identifies the following clearance standards following abatement:

- Floors - 40 µg/ft^2 (~0.43 mg/m^2) lead;
- Interior window sills - 250 µg/ft^2 (~2.7 mg/m^2) lead; and
- Window troughs - 400 µg/ft^2 (~4.3 mg/m^2) lead.

The above acceptance limits may be used as a guide to assessing lead concentrations in settled dust in the absence of other relevant assessment criteria. As a precaution, and due to the nature of the Site, a lead concentration of 0.5 mg/m^2 has been used to identify potentially hazardous conditions in this assessment.

Where the concentration of lead in dust approaches 0.5 mg/m^2 appropriate control and / or remedial measures may need to be identified via risk assessment and with a detailed knowledge of the workplace and proposed use/activities.

Where ceiling spaces and similar cavities are effectively enclosed and provide very limited or no opportunity for lead containing dust to enter occupied areas, the dust may typically remain in place. In such a case, access to the cavities should be suitably restricted and all entrances signposted with appropriate warning signs.

Any personnel required to enter building cavities or other areas containing elevated concentrations of lead in dust should undertake an appropriate risk assessment and develop a SWMS for the work. The SWMS must identify controls that ensure the risk of exposure to lead and environmental contamination remains at an acceptable level for the personnel entering the area and for occupants of the building and surrounds.

Consideration should be given to removal of lead containing dust including when:

- There is a significant risk of the lead entering occupied areas;
- Significant disturbance of lead dust is likely due to maintenance, refurbishment, demolition, or other reason(s); or

- Removal is a reasonably practical means of eliminating the hazard.

Removal of lead dust should be undertaken by a suitably qualified and experienced removalist.

The lead dust removal method and control measures adopted should be determined by risk assessment and a detailed knowledge of the workplace and proposed use / activities.

Exposure to airborne lead must be maintained below the relevant SWA exposure standards pertaining to lead. The SWA 8-hour TWA exposure standard for lead (inorganic dusts and fumes) is 0.05 mg/m^3.

Air monitoring for lead may be required based on the results of risk assessment and the requirement to maintain airborne lead concentrations below the abovementioned exposure standard(s).

At the completion of lead dust removal, a clearance inspection should be conducted by a Competent Person. The Competent Person should determine the requirements for clearance including any air monitoring or sample analysis that may be required.

Lead waste should be assessed and classified for disposal in accordance with relevant legislation and EPA (2014).

All disposal receipts should be retained.

10. Limitations

Douglas Partners (DP) has prepared this report (or services) for this project at the New Public School in Epping in accordance with DP's proposal SYD201665.P.001.Rev0 – Epping South of 15 February 2021 and Consultancy Agreement No. SC134_018 with Hansen Yuncken executed 23 June 2021.

This report is provided for the exclusive use of Hansen Yuncken for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and / or their agents.

The results provided in the report are indicative of the conditions on the Site only at the specific inspection, sampling and / or testing locations, and then only to the extent practicable and safely accessible at the time the work was carried out. Site conditions may change after DP's field inspection, sampling and testing has been completed.

DP's advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by DP in this report may be affected by undetected variations in site conditions across the Site between and beyond the inspection, sampling and / or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

This report must be read in conjunction with all of the attached and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

Although the sampling plan adopted for this investigation is considered appropriate to achieve the stated project objectives, there are necessarily parts of the Site that have not been inspected, sampled and / or tested. This is either due to undetected variations in conditions or to budget constraints (as discussed above), or to parts of the Site being inaccessible or unavailable, or to occupants, furnishings or stored items preventing access. It is therefore considered possible that HBM, including asbestos, may be present in unobserved or untested parts of the Site, between and beyond the inspection, sampling and testing locations, and hence no warranty can be given that all HBM have been identified.

Inspections are limited to areas that are safely accessible at the time of the inspection without undue damage to building finishes or disturbance of occupants. Inspections exclude hidden and inaccessible locations such as within building cavities, voids and enclosed sections of risers / shafts as well as materials encased within the building structure or located below the exposed ground surface (e.g., pipes, drains and formwork). In addition, residual asbestos materials (e.g., asbestos lagging to pipes and vessels) may remain undiscovered below newer, asbestos-free materials (e.g., preformed SMF insulation). Such residual asbestos materials may not be identified without extensive intrusive investigation and / or dismantling / demolition work if at all.

Any disturbance of building materials, such as during renovation, maintenance or demolition work, may reveal additional HBM.

Limitations apply to the laboratory analytical methods used. For example, it can be very difficult or impossible to detect the presence of asbestos in some bulk materials (e.g., vinyl tiles) using the polarised light microscopy analytical method, even after ashing or disintegration of samples. This is due to the small length or diameter of asbestos fibres present in the material or attributed to the fact that very fine fibres have been dispersed individually throughout the material.

While work is undertaken in a professional manner the nature of HBM and the limitations of the method(s) used mean that we cannot guarantee that all HBM or issues of concern have been identified. This report should therefore not be considered a definitive account of all HBM that may be present at the Site.

DP personnel are not licenced or accredited quantity surveyors. Any quantities quoted in this report are provided for general guidance only and should not be relied upon. The services of a licenced quantity surveyor should be engaged in order to determine reliable quantities.

The recommendations and conclusions contained in this report shall not abrogate a person of their responsibility to work in accordance with statutory requirements, codes of practice, standards, guidelines, safety data sheets, work instructions or industry best practice.

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The assessment of atypical safety hazards arising from this advice is restricted to the environmental components set out in this report and based on known project conditions and stated design advice and assumptions. While some recommendations for safe controls may be provided, detailed 'safety in design' assessment is outside the current scope of this report and requires additional project data and assessment.

Douglas Partners Pty Ltd

Appendix A

About This Report

Site Plan

About this Report

November 2020

Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Conditions of Engagement for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

continued next page

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

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PLAN: IDENTIFICATION SURVEY FOR LOT 1 DP 582172
No. 86 CHELMSFORD AVENUE, EPPING
DATE OF SURVEY: 27/07/16
REF No: 2016195

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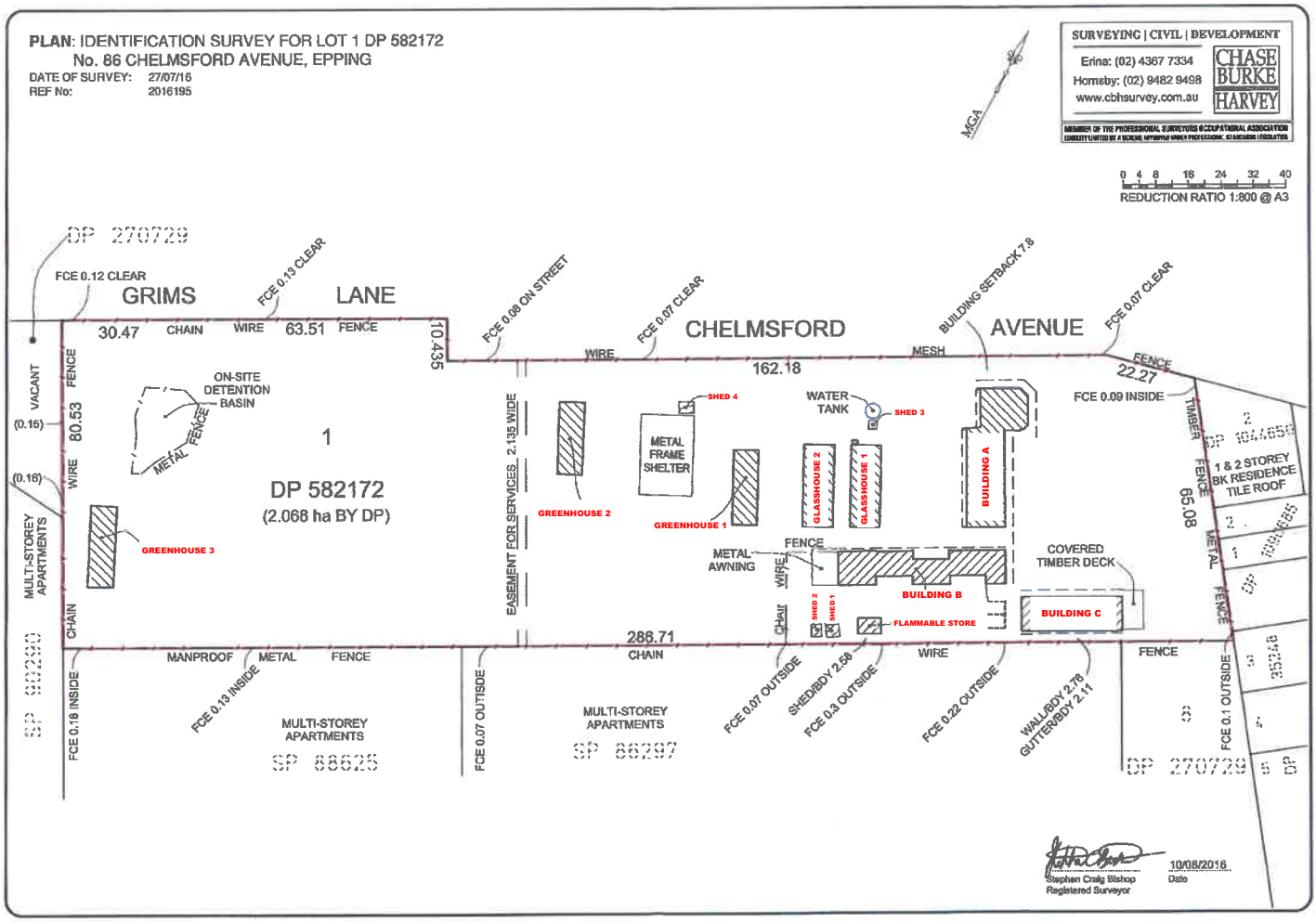

Stephen Craig Bishop
Registered Surveyor

10/08/2016
Date

Appendix B

Building A - Register and Plates

Douglas Partners
Geotechnics · Environment · Groundwater

DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Building A	exterior	window	putty	B00AE A01	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building A	exterior	concrete pavement, expansion joint	bituminous mastic	B00AE A02	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building A	interior, Room A7	floor	vinyl tile	B00ARA7 A01	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building A	interior, Room A6	floor	vinyl tile	AS-2	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building A	interior, Room A5	floor	vinyl tile	AS-1	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building A	Room A4, kitchen	floor	vinyl flooring	B00ARA4 A01	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building A	Room A-1	window	glazing putty	AS-5	**asbestos detected by analysis**	0	1	2	2	1	0	6	Low	N/A	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building A	Room A-3	window	glazing putty	AS-6	**asbestos detected by analysis**	0	1	2	2	1	0	6	Low	N/A	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building A	interior, office area	typical wall-mounted fan	interior, ceramic insulator	AS-7	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building A	interior, Room A-5	typical heater	interior, ceramic insulator	AS-8	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building A	exterior, northern end of building	covered walkway, between wall and footpath	bitumastic	AS-9	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building A	exterior, northern end of building	covered walkway, expansion joint between footpath sections	bitumastic	AS-10	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building A	external, northeastern end of building	electrical cupboard, interior	various backing boards and mounting strips	AS-4	**asbestos detected by analysis**	0	1	2	2	1	0	6	Low	6	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building A	external, northeastern end of building	small electrical cabinet	backing board	AS-3	**asbestos detected by analysis**	0	1	2	2	1	0	6	Low	7	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building A	external, northwestern end of building	signpost at site entrance	fibre cement sheeting	AS-11	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building A	ceiling cavity	throughout, underide of roof	insulation	N/A	**SMF identified visually**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building A	interior, Room A-4	hot and boiling water units	bulk insulation	N/A	**SMF identified visually**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building A	interior, Room A-6	hot water unit	bulk insulation	N/A	**SMF identified visually**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).

DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Building A	exterior, eastern aspect	steel beams	cream paint and red undercoats	Spot test 1 and B00AE LP1	**lead paint (>0.1% lead w/w)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	Any areas of damaged/flaking lead paint and any associated debris should be removed and the building surfaces adequately sealed (e.g. overpainted) where necessary by a suitably qualified and experienced contractor. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any paint disturbance or building work (e.g. maintenance, refurbishment and demolition) .
Building A	exterior, eastern aspect	steel beams	green paint	Spot test 2 and B00AE LP2	**lead paint (>0.1% lead w/w)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	Any areas of damaged/flaking lead paint and any associated debris should be removed and the building surfaces adequately sealed (e.g. overpainted) where necessary by a suitably qualified and experienced contractor. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any paint disturbance or building work (e.g. maintenance, refurbishment and demolition) .
Building A	interior, rooms throughout	doors	cream paint	Spot test 3 and B00ARA7 LP01	**lead paint (>0.1% lead w/w)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	Any areas of damaged/flaking lead paint and any associated debris should be removed and the building surfaces adequately sealed (e.g. overpainted) where necessary by a suitably qualified and experienced contractor. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any paint disturbance or building work (e.g. maintenance, refurbishment and demolition) .

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DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Building A	interior, rooms throughout	door frames	red paint	Spot test 4 and B00ARA7 LP02	**lead paint (>0.1% lead w/w)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	Any areas of damaged/flaking lead paint and any associated debris should be removed and the building surfaces adequately sealed (e.g. overpainted) where necessary by a suitably qualified and experienced contractor. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any paint disturbance or building work (e.g. maintenance, refurbishment and demolition) .
Building A	rooms and areas in general	materials in general	paints	refer B00AE LP1 and LP2, and B00ARA7 LP01 and LP2	**may comprise lead paint (>0.1% lead w/w)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Any areas of damaged/flaking lead paint and any associated debris should be removed and the building surfaces adequately sealed (e.g. overpainted) where necessary by a suitably qualified and experienced contractor. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any paint disturbance or building work (e.g. maintenance, refurbishment and demolition) .
Building A	interior, Room A7	ceiling cavity	settled dust/debris	B00ARA7 LD01	**elevated lead (≥0.5 mg/m2)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Ensure access to contaminated building cavities is adequately restricted and entry is only made under controlled conditions. Consider removing contamination if reasonably practicable to do so and prior to any substantive disturbance. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Implement appropriate controls to prevent exposure and dispersal during building work (e.g. maintenance, refurbishment and demolition work).

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						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Building A	interior, Room A3	ceiling cavity	settled dust/debris	B00ARA3 LD01	**elevated lead (≥0.5 mg/m2)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Ensure access to contaminated building cavities is adequately restricted and entry is only made under controlled conditions. Consider removing contamination if reasonably practicable to do so and prior to any substantive disturbance. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Implement appropriate controls to prevent exposure and dispersal during building work (e.g. maintenance, refurbishment and demolition work).
Building A	rooms and areas in general	ceiling cavities	settled dust/debris	refer B00ARA7 LD01 and B00ARA3 LD01	**elevated lead (≥0.5 mg/m^2) suspected**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Ensure access to contaminated building cavities is adequately restricted and entry is only made under controlled conditions. Consider removing contamination if reasonably practicable to do so and prior to any substantive disturbance. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Implement appropriate controls to prevent exposure and dispersal during building work (e.g. maintenance, refurbishment and demolition work).
Building A	interior	northern office area, fluorescent light fitting	Ferguson ballast, F 140 WTP	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8, 9	Item not specifically listed in ANZECC (1997) and therefore suspected to contain PCB as a precaution. Consider conducting confirmation sampling and analysis. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).
Building A	rooms and areas generally	fluorescent light fittings	internal components (e.g. metal capacitors, ballasts etc.)	N/A	**may contain PCB**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Confirm status of hazardous material(s) when safe access is available. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).
Building A	Room A-6	refrigeration unit	capacitor(s)	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10	Item not specifically listed in ANZECC (1997) and therefore suspected to contain PCB as a precaution. Consider conducting confirmation sampling and analysis. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).

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Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Building A	rooms and areas in general	throughout	flashing (if present) e.g. to roof joints and/or damp course	N/A	**lead (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Reinspect condition on a regular basis. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Implement appropriate controls to prevent exposure and dispersal during building work (e.g. maintenance, refurbishment and demolition work). Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).

Photograph 1: Building A, exterior, eastern aspect, steel beams, cream paint and red undercoats, lead paint (>0.1% lead w/w).

Photograph 2: Building A, exterior, eastern aspect, steel beams, green paint, lead paint (>0.1% lead w/w).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.02 PLATE No: 1 REV: A
	CLIENT: School Infrastructure NSW	DATE: May-20

Photograph 3: Building A, interior, rooms throughout, doors, cream paint , lead paint (>0.1% lead w/w).

Photograph 4: Building A, interior, rooms throughout, door frames, red paint, lead paint (>0.1% lead w/w).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT: 99671.02
	Hazardous Building Materials (HBM) Register	PLATE No: 2
	Proposed Epping South Public School	REV: A
	CLIENT: School Infrastructure NSW	DATE: May-20

Photograph 5: Building A, ceiling cavity, throughout, underide of roof, insulation, SMF identified visually.

Photograph 6: Building A, external, northeastern end of building, electrical cupboard, interior, various backing boards and mounting strips, asbestos detected by analysis.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.02 PLATE No: 3 REV: A
	CLIENT: School Infrastructure NSW	DATE: May-20

Photograph 7: Building A, external, northeastern end of building, small electrical cabinet, backing board, asbestos detected by analysis.

Photograph 8: Building A, interior, northern office area, fluorescent light fitting, Ferguson ballast, F 140 WTP, PCB (suspected).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.02 PLATE No: 4 REV: A
	CLIENT: School Infrastructure NSW	DATE: May-20

Photograph 9: Building A, interior, northern office area, fluorescent light fitting, Ferguson ballast, F 140 WTP, PCB (suspected).

Photograph 10: Building A, Room A-6, refrigeration unit, capacitor(s), may contain PCB.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.02 PLATE No: 5 REV: A
	CLIENT: School Infrastructure NSW	DATE: May-20

Appendix C

Building B - Register and Plates

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DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Building B	exterior, western awning area	western end, pavement expansion gap running north-south	bitumastic	B-A01	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building B	exterior, western awning area	northern end, pavement expansion gap running east-west	bitumastic	B-A02	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building B	exterior, western awning area	roof, translucent panels	fibreglass sheeting	N/A	**SMF identified visually**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	exterior, western façade	base of concrete block wall, expansion gap	bitumastic	B-A03	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building B	exterior, western façade	small electrical panel	electrical backing board ('Lebah' brand)	AS-19	**asbestos detected by analysis**	0	1	1	3	1	0	6	Low	2, 3	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	exterior, western façade	roof, lining below verge tiles	fibre cement sheeting	B-A04	**asbestos detected by analysis**	1	1	2	1	1	0	6	Low	4	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	exterior, eastern façade	roof, lining below verge tiles	fibre cement sheeting	AS-22	**asbestos detected by analysis**	1	1	2	1	1	0	6	Low	13	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	exterior, northern façade	western end, electrical panel	mounting strips	AS-20	**asbestos detected by analysis**	0	1	1	2	1	0	5	Low	5, 6	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	exterior, northern façade	eave lining and ceiling of alcove outside Potting Rooms	fibre cement sheeting	B-A05	**asbestos detected by analysis**	1	0	1	1	1	0	4	Low	7	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	exterior, northern façade	western end, windows above weatherboard wall section	window glazing putty	B-A06	**asbestos detected by analysis**	1	2	1	2	1	0	7	Low	8	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	exterior, northern façade	western end, windows above weatherboard wall section	putty around window frame	B-A07	**asbestos detected by analysis**	1	2	2	2	1	0	8	Low	9	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	exterior, northern façade	base of weatherboard wall, expansion gap	bitumastic	B-A08	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building B	exterior, northern façade	centre window frame set	window glazing putty	B-A09	**asbestos detected by analysis**	1	2	1	2	1	0	7	Low	10	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	exterior, northern façade	roller door between Potting Rooms, head lining	fibre cement sheeting	B-A10	**asbestos detected by analysis**	1	1	1	1	1	0	5	Low	11	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	exterior, northern façade	eastern end, window frames	glazing putty	B-A11	**asbestos detected by analysis**	1	2	2	2	1	0	8	Low	12	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	exterior, northern façade	base of concrete block wall, expansion gap	bitumastic	B-A12	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building B	eastern end building	electrical cupboard, electrical panel	mounting strip(s)	AS-17	**asbestos detected by analysis**	0	1	1	2	1	0	5	Low	14	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).

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DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
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						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Building B	exterior, eastern façade	southern end, base of wall, expansion gap	bitumastic	B-A13	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building B	exterior, southern façade	between window frames and wall	putty	B-A14	**asbestos detected by analysis**	1	2	2	2	1	0	8	Low	15	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	exterior, southern façade	roof (above awning), lining below verge tiles	fibre cement sheeting	refer B-A04, AS-22	**asbestos (suspected)**	1	1	2	1	1	0	6	Low	16	Inaccessible area/material - hazardous material(s) suspected present as a precaution. Confirm status of hazardous material(s) when safe access available and prior to any disturbance.
Building B	exterior, southern façade	expansion joint in pavement near bulk material storage bins	bitumastic	B-A15	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building B	exterior, southern façade	head lining above western roller door	fibre cement sheeting	AS-21	**asbestos detected by analysis**	1	1	1	1	1	0	5	Low	18	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	exterior, southern façade	head lining above eastern roller door	fibre cement sheeting	AS-23	**asbestos detected by analysis**	1	1	1	1	1	0	5	Low	17	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	interior, eastern end building	southern toilet (labelled A-10 Men), toilet partitions	fibre cement board	B-A16	**asbestos detected by analysis**	1	1	2	3	1	1	9	Low	19	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	interior, eastern end building	centre toilet (labelled A-9 Toilet), ceiling cavity, hot water units (x2)	internal insulation	N/A	**SMF (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20, 29	Room inaccessible during this inspection (locked) - hazardous material(s) suspected present as a precaution. Confirm status of hazardous material(s) when safe access available and prior to any disturbance.
Building B	interior, eastern end building	northern toilet (labelled A-8 women), toilet partitions	fibre cement board	refer B-A16	**asbestos (suspected)**	1	1	2	3	1	1	9	Low	21	Room inaccessible during this inspection (locked) - Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	interior, eastern end building	amenities room(s), urinal(s)	lining to rear of urinal(s)	N/A	inaccessible	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Some rooms inaccessible during this inspection (locked) - Confirm status of hazardous material(s) when safe access available and prior to any disturbance.
Building B	interior, central storage room (between Potting Rooms)	eastern wall, electrical cupboard, top panel	fibre cement	AS-12	**asbestos detected by analysis**	1	2	3	2	1	1	10	Moderate	22	Consider sealing material. Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	interior, central storage room (between Potting Rooms)	eastern wall, electrical cupboard	fibre cement debris	refer AS-12	**asbestos (suspected)**	1	3	3	2	1	1	11	Moderate	23	Ensure access is appropriately restricted. Remove and dispose material as asbestos waste as soon as possible.
Building B	interior, central storage room (between Potting Rooms)	eastern wall, electrical cupboard, door inserts	fibre cement	AS-13	**asbestos detected by analysis**	1	2	3	2	1	1	10	Moderate	N/A	Consider sealing material. Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	interior, central storage room (between Potting Rooms)	eastern wall, blue electrical panel	mounting strips	AS-15	**asbestos detected by analysis**	0	1	1	2	1	0	5	Low	24	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	interior, central storage room (between Potting Rooms)	eastern wall, orange electrical panel	mounting strips	AS-14	**asbestos detected by analysis**	0	1	1	2	1	0	5	Low	24	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).

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						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Building B	interior, eastern end building	wall mounted electrical heater	perforated ceramic-like insulation material	AS-16	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building B	interior, eastern end building	window frames	glazing putty	AS-18	**asbestos detected by analysis**	1	2	2	2	1	0	8	Low	N/A	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	rooms and areas in general	roof, lining below verge tiles	fibre cement sheeting	B-A04, AS-22	**asbestos (suspected)**	1	1	2	1	1	0	6	Low	refer 4, 13, 16	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	rooms and areas in general	window frames	window glazing putty	refer B-A06	**asbestos (suspected)**	1	2	1	2	1	0	7	Low	refer 8	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	rooms and areas in general	window frames	putty around window frames	refer B-A07 and B-A14	**asbestos (suspected)**	1	2	2	2	1	0	8	Low	refer 9	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).

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Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Building B	exterior, western awning	metal framework to awning	brown paint	spot test 1 and B-LP01	**lead paint (>0.1% lead w/w)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Any areas of damaged/flaking lead paint and any associated debris should be removed and the building surfaces adequately sealed (e.g. overpainted) where necessary by a suitably qualified and experienced contractor. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any paint disturbance or building work (e.g. maintenance, refurbishment and demolition) .
Building B	exterior, southern façade	bollard	green paint	B-LP02	**lead paint (>0.1% lead w/w)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Any areas of damaged/flaking lead paint and any associated debris should be removed and the building surfaces adequately sealed (e.g. overpainted) where necessary by a suitably qualified and experienced contractor. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any paint disturbance or building work (e.g. maintenance, refurbishment and demolition) .
Building B	northern façade	weatherboard wall	green paint	spot test 4	negative for lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building B	northern façade	Potting Room 2, door	cream paint	spot test 5	negative for lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building B	northern façade	concrete block wall	cream paint	spot test 6	negative for lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building B	eastern façade	covered walkway, fascia	cream and green paint	spot test 7	negative for lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building B	southern façade	western end, large roller door	brown and underlying white paint	spot test 8	negative for lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building B	eastern end of building	middle toilet (labelled A-9 Toilet), typical wall	white paint	spot test 9	negative for lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building B	eastern end of building	middle toilet (labelled A-9 Toilet), ceiling	white paint	spot test 10	negative for lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building B	rooms and areas in general	throughout	paints	refer B-LP01 and B-LP02	**may comprise lead paint (>0.1% lead w/w)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Any areas of damaged/flaking lead paint and any associated debris should be removed and the building surfaces adequately sealed (e.g. overpainted) where necessary by a suitably qualified and experienced contractor. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any paint disturbance or building work (e.g. maintenance, refurbishment and demolition) .

DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Building B	western awning	base of wall	dampcourse flashing	spot test 3	**positive for lead**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	25	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	exterior, northern façade	base of wall	dampcourse flashing	spot test 11	**positive for lead**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	26	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	exterior, southern façade	roofing joint	flashing	spot test 12	**positive for lead**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).

DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Building B	rooms and areas in general	throughout	flashing (where present e.g. roof, windows and/or dampcourse)	refer spot test 3, 11 and 12	**lead (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	27	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building B	interior, eastern end building	centre toilet (labelled A-9 Toilet), ceiling cavity	settled dust/debris	B-LD01	**elevated lead (≥0.5 mg/m2)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	28	Ensure access to contaminated building cavities is adequately restricted and entry is only made under controlled conditions. Remove contamination if reasonably practicable to do so and prior to any substantive disturbance. Implement appropriate controls to prevent exposure and dispersal during building work (e.g. maintenance, refurbishment and demolition work). Classify material(s) for disposal, when required, in accordance with the NSW EPA Waste Classification Guidelines.
Building B	interior	eastern potting room, ceiling cavity	settled dust/debris	LD-3	**elevated lead (≥0.5 mg/m^2)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	37	Ensure access to contaminated building cavities is adequately restricted and entry is only made under controlled conditions. Remove contamination if reasonably practicable to do so and prior to any substantive disturbance. Implement appropriate controls to prevent exposure and dispersal during building work (e.g. maintenance, refurbishment and demolition work). Classify material(s) for disposal, when required, in accordance with the NSW EPA Waste Classification Guidelines.
Building B	interior	western potting room, ceiling cavity	settled dust/debris	LD-5	**elevated lead (≥0.5 mg/m^2)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	38	Ensure access to contaminated building cavities is adequately restricted and entry is only made under controlled conditions. Remove contamination if reasonably practicable to do so and prior to any substantive disturbance. Implement appropriate controls to prevent exposure and dispersal during building work (e.g. maintenance, refurbishment and demolition work). Classify material(s) for disposal, when required, in accordance with the NSW EPA Waste Classification Guidelines.

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DP Project No: 99671.05
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						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Building B	rooms and areas in general	ceiling cavities (where present)	settled dust/debris	refer B-LD01, LD-3, LD-5	**elevated lead (≥0.5 mg/m^2) suspected**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Ensure access to contaminated building cavities is adequately restricted and entry is only made under controlled conditions. Remove contamination if reasonably practicable to do so and prior to any substantive disturbance. Implement appropriate controls to prevent exposure and dispersal during building work (e.g. maintenance, refurbishment and demolition work). Classify material(s) for disposal, when required, in accordance with the NSW EPA Waste Classification Guidelines.
Building B	exterior, western awning area	fluorescent light fittings	internal components (e.g. metal capacitors, ballasts etc.)	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	30	Inaccessible area/material - hazardous material(s) suspected present as a precaution. Confirm status of hazardous material(s) when safe access is available. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).

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DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
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						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Building B	exterior, northern façade	ceiling of alcove between Potting Room 1 and 2, fluorescent light fittings	internal components (e.g. metal capacitors, ballasts etc.)	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31	Inaccessible area/material - hazardous material(s) suspected present as a precaution. Confirm status of hazardous material(s) when safe access is available. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).
Building B	exterior, eastern façade	covered walkway, fluorescent lights	internal components (e.g. metal capacitors, ballasts etc.), MSP low loss ballast	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	32	Item not specifically listed in ANZECC (1997) and therefore suspected to contain PCB as a precaution. Consider conducting confirmation sampling and analysis. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).
Building B	exterior, southern façade	eaves, fluorescent light fittings	internal components (e.g. metal capacitors, ballasts etc.)	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	33, 39	Capacitor / ballast details illegible and therefore suspected to contain PCB as a precaution. Consider conducting confirmation sampling and analysis. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).
Building B	exterior, southern façade	eaves, fluorescent light fittings	internal components (e.g. metal capacitors, ballasts etc.)	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	33, 40	Capacitor / ballast details illegible and therefore suspected to contain PCB as a precaution. Consider conducting confirmation sampling and analysis. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).
Building B	interior	storage cell at western end of building, fluorescent lights	internal components (e.g. metal capacitors, ballasts etc.)	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	34	Inaccessible area/material (height) - hazardous material(s) suspected present as a precaution. Confirm status of hazardous material(s) when safe access is available. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).
Building B	interior	ceilings throughout building in general, fluorescent lights	internal components (e.g. metal capacitors, ballasts etc.)	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	35	Inaccessible area/material (height) - hazardous material(s) suspected present as a precaution. Confirm status of hazardous material(s) when safe access is available. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).
Building B	interior	suspended fluorescent lights directly above benches	internal components generally	N/A	**PCB unlikely**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	36	Inspection of several accessible light fittings did not identify PCB containing components.
Building B	rooms and areas generally	fluorescent light fittings generally	internal components (e.g. metal capacitors, ballasts etc.)	N/A	**may contain PCB**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	refer 30 - 35, 39, 40	Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).

Photograph 1: Building B, exterior, western awning area, roof, translucent panels, fibreglass sheeting, SMF identified visually.

Photograph 2: Building B, exterior, western façade, small electrical panel, electrical backing board ('Lebah' brand), asbestos detected by analysis.

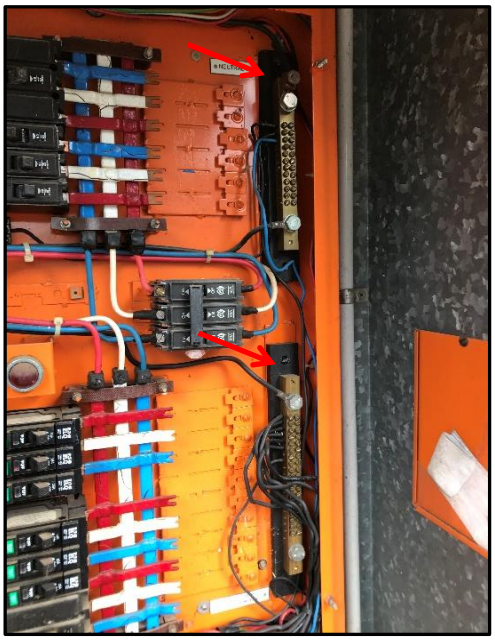
Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 1 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 3: Building B, exterior, western façade, small electrical panel, electrical backing board ('Lebah' brand), asbestos detected by analysis.

Photograph 4: Building B, exterior, western façade, roof, lining below verge tiles, fibre cement sheeting, asbestos detected by analysis.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 2 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 5: Building B, exterior, northern façade, western end, electrical panel, mounting strips, asbestos detected by analysis.



Photograph 6: Building B, exterior, northern façade, western end, electrical panel, mounting strips, asbestos detected by analysis.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 3 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 7: Building B, exterior, northern façade, eave lining and ceiling of alcove outside Potting Rooms, fibre cement sheeting, asbestos detected by analysis.

Photograph 8: Building B, exterior, northern façade, western end, windows above weatherboard wall section, window glazing putty, asbestos detected by analysis.

Photograph 9: Building B, exterior, northern façade, western end, windows above weatherboard wall section, putty around window frame, asbestos detected by analysis.

Photograph 10: Building B, exterior, northern façade, centre window frame set, window glazing putty, asbestos detected by analysis.

Photograph 11: Building B, exterior, northern façade, roller door between Potting Rooms, head lining, fibre cement sheeting, asbestos detected by analysis.

Photograph 12: Building B, exterior, northern façade, eastern end, window frames, putty around window frames, asbestos detected by analysis.

Photograph 13: Building B, exterior, eastern façade, roof, lining below verge tiles, fibre cement sheeting, asbestos detected by analysis.

Photograph 14: Building B, eastern end building, electrical cupboard, electrical panel, mounting strip(s), asbestos detected by analysis.

Photograph 15: Building B, exterior, southern façade, between window frames and wall, putty, asbestos detected by analysis.

Photograph 16: Building B, exterior, southern façade, roof (above awning), lining below verge tiles, fibre cement sheeting, asbestos (suspected).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 8 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 17: Building B, exterior, southern façade, head lining above eastern roller door, fibre cement sheeting, asbestos detected by analysis.

Photograph 18: Building B, exterior, southern façade, head lining above western roller door, fibre cement sheeting, asbestos detected by analysis.

Photograph 19: Building B, interior, eastern end building, southern toilet (labelled A-10 Men), toilet partitions, fibre cement board, asbestos detected by analysis.

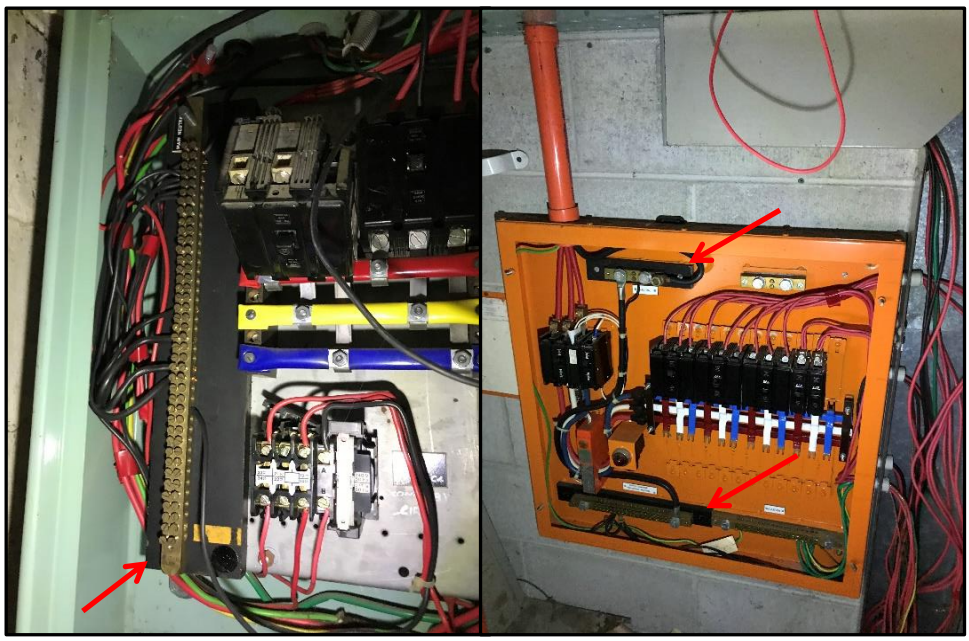
Photograph 20: Building B, interior, eastern end building, centre toilet (labelled A-9 Toilet), ceiling cavity, hot water units (x2), internal insulation, SMF (assumed).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 10 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 21: Building B, interior, eastern end building, northern toilet (labelled A-8 women), toilet partitions, fibre cement board, asbestos (assumed).

Photograph 22: Building B, interior, central storage room (between Potting Rooms), eastern wall, electrical cupboard, top panel, fibre cement, asbestos detected by analysis.

Photograph 23: Building B, interior, central storage room (between Potting Rooms), eastern wall, electrical cupboard, fibre cement debris, asbestos (suspected).



Photograph 24: Building B, interior, central storage room (between Potting Rooms), eastern wall, blue and orange electrical panels, mounting strips, asbestos detected by analysis.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 12 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 25: Building B, western awning, base of wall, dampcourse flashing, positive for lead.

Photograph 26: Building B, exterior, northern façade, base of wall, dampcourse flashing, positive for lead.

Photograph 27: Building B, rooms and areas in general, throughout, paints, may comprise lead paint (>0.1% lead w/w).

Photograph 28: Building B, interior, eastern end building, centre toilet (labelled A-9 Toilet), ceiling cavity, settled dust/debris, elevated lead (≥0.5 mg/m2).

Photograph 29: Building B, interior, eastern end building, centre toilet (labelled A-9 Toilet), ceiling cavity, hot water units (x2), internal insulation, SMF (assumed).

Photograph 30: Building B, exterior, western awning area, fluorescent light fittings, internal components (e.g. metal capacitors, ballasts etc.), PCB (assumed).

Photograph 31: Building B, exterior, northern façade, ceiling of alcove between Potting Room 1 and 2, fluorescent light fittings, internal components (e.g. metal capacitors, ballasts etc.), PCB (assumed).

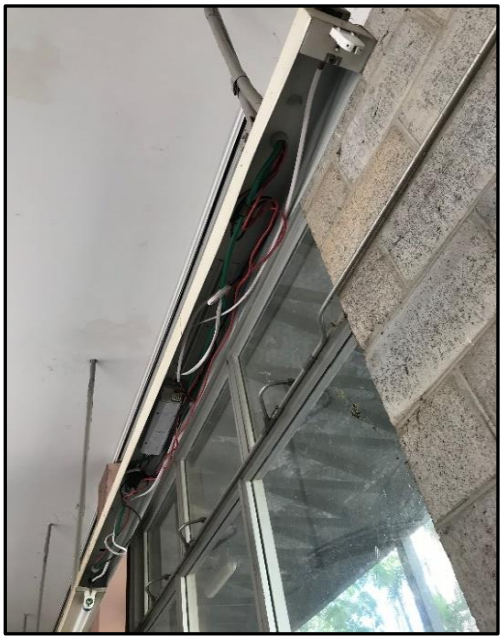
Photograph 32: Building B, exterior, eastern façade, covered walkway, fluorescent lights, internal components (e.g. metal capacitors, ballasts etc.), PCB (assumed).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 16 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 33: Building B, exterior, southern façade, eaves, fluorescent light fittings, internal components (e.g. metal capacitors, ballasts etc.), PCB (assumed).

Photograph 34: Building B, interior, storage cell at western end of building, fluorescent lights, internal components (e.g. metal capacitors, ballasts etc.), PCB (assumed).

Photograph 35: Building B, interior, ceilings throughout building in general, fluorescent lights, internal components (e.g. metal capacitors, ballasts etc.), PCB (assumed).



Photograph 36: Building B, interior, suspended fluorescent lights directly above benches, internal components generally, nil PCB (assumed).

Photograph 37: Building B, interior, eastern potting room, ceiling cavity, settled dust/debris, elevated lead (≥0.5 mg/m^2) and SMF insulation.

Photograph 38: Building B, interior, western potting room, ceiling cavity, settled dust/debris, elevated lead (≥0.5 mg/m^2) and SMF insulation.

Photograph 39: Building B, exterior, southern façade, eaves, fluorescent light fittings, internal components (e.g. metal capacitors, ballasts etc.), PCB (assumed).

Photograph 40: Building B, exterior, southern façade, eaves, fluorescent light fittings, internal components (e.g. metal capacitors, ballasts etc.), PCB (assumed).

Appendix D

Building C - Register and Plates

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DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Building C	exterior, northwestern corner of building	electrical pit	fibre cement product	B00CEA01	**asbestos detected by analysis**	1	2	1	2	1	0	7	Low	2	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	exterior	eave linings	fibre cement sheeting	B00CEA02	**asbestos detected by analysis**	1	1	1	2	1	0	6	Low	3	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	exterior, window sets in general	around window frame, packing materials	fibre cement sheeting	AS-37	**asbestos detected by analysis**	1	1	2	1	1	1	7	Low	23	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	exterior, northwest façade	pavement, expansion joints	bitumastic	AS-38, AS-39	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building C	typical room	typical window frame	glazing putty	B00CEA03	**asbestos detected by analysis**	1	2	1	2	1	0	7	Low	4	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	typical room	typical window frame	glazing putty	C-INT-TK01	**asbestos detected by analysis**	1	2	1	2	1	0	7	Low	similar 4	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	typical room	typical window frame	glazing putty	C-INT-TK02	**asbestos detected by analysis**	1	2	1	2	1	0	7	Low	similar 4	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	rooms and areas in general	window frames generally	glazing putty	refer B00CEA03, C-INT-TK01 and TK02	**asbestos (suspected)**	1	2	1	2	1	0	7	Low	N/A	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	rooms and areas in general	window frames generally	putty between window frames and wall (if present)	refer Building B, B-A07 and B-A14	**asbestos (suspected)**	1	2	2	2	1	0	8	Low	refer Building B, photos 9 and 15	Material not visually identified but may be obscured/hidden within joint(s). Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	interior, main classroom	floor	red vinyl tiles	B00CI A01	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building C	interior, main classroom	north and south wall linings	fibre cement sheeting	B00CI A02	**asbestos detected by analysis**	1	1	1	3	1	1	8	Low	6	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	interior, main classroom	ceiling	fibre cement sheeting	B00CI A03	**asbestos detected by analysis**	1	1	1	2	1	1	7	Low	7	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	interior, main classroom	window frame	glazing putty	AS-36	**asbestos detected by analysis**	1	1	1	2	1	1	7	Low	N/A	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	interior, eastern staff office	floor	red vinyl tiles	AS-24	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building C	interior, eastern staff office	ceiling	fibre cement sheeting	AS-25	**asbestos detected by analysis**	1	1	1	2	1	1	7	Low	8	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).

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Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Building C	interior, eastern staff office	north wall linings	fibre cement sheeting	AS-26	**asbestos detected by analysis**	1	1	1	3	1	1	8	Low	similar 9	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	interior, eastern staff office	south wall linings	fibre cement sheeting	AS-27	**asbestos detected by analysis**	1	1	1	3	1	1	8	Low	9	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	interior, area of Male and Female toilets	above doors, infill panel(s)	fibre cement panel(s)	B00CI A04, AS-30	**asbestos detected by analysis**	1	1	1	2	1	1	7	Low	10	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	adjacent to male toilet	hot water heater	bulk insulation	N/A	**SMF**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	15	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	interior, corridors to female and male toilets	ceiling	fibre cement sheeting	B00CI A05	**asbestos detected by analysis**	1	1	1	2	1	1	7	Low	11	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	interior, foyer to bathrooms	ceiling	fibre cement sheeting	AS-29	**asbestos detected by analysis**	1	1	1	2	1	1	7	Low	12	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).

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DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Building C	interior, foyer to bathrooms	floor	vinyl flooring	B00CI A06, AS-28	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building C	interior, foyer to bathrooms	northern wall lining	fibre cement sheeting	AS-32	**asbestos detected by analysis**	1	1	1	3	1	1	8	Low	13	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	interior, foyer to bathrooms	underside of sink	bituminous membrane	B00CI A07	**asbestos detected by analysis**	0	1	1	2	1	1	6	Low	14	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	interior bathrooms	ceilings	fibre cement sheeting	AS-31	**asbestos detected by analysis**	1	1	1	2	1	1	7	Low	N/A	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	interior, western room	floor	red vinyl tiles	AS-33	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building C	interior, western room	ceiling	fibre cement sheeting	refer B00CI A03	**asbestos (suspected)**	1	1	1	2	1	1	7	Low	N/A	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	interior, western room	electrical cabinet, interior	mounting strip(s)	AS-34	**asbestos detected by analysis**	0	1	2	1	1	1	6	Low	24	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	interior, western room	southern door, head lining	fibre cement sheeting	AS-35	**asbestos detected by analysis**	1	1	1	2	1	1	7	Low	N/A	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	interior, western room	northern wall lining	fibre cement sheeting	refer AS-32	**asbestos (suspected)**	1	1	1	3	1	1	8	Low	Similar 13	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	exterior, southern façade	entry alcove to male and female toilets, typical ceiling	fibre cement sheeting	C-EXT-TK01	**asbestos detected by analysis**	1	1	1	2	1	0	6	Low	16	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	exterior, western façade	entry alcove, ceiling	fibre cement sheeting	C-EXT-TK02	**asbestos detected by analysis**	1	1	1	2	1	0	6	Low	17	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	exterior, western entrance to building	infill panel(s) above doors x 3	fibre cement panel(s)	refer B00CI A04	**asbestos (suspected)**	1	1	1	2	1	1	7	Low	18	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	rooms and areas in general	ceilings generally	fibre cement sheeting	refer B00CI A03 and A05	**asbestos (suspected)**	1	1	1	2	1	1	7	Low	refer 7, 8, 11, 12	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	rooms and areas in general	north and south interior walls linings	fibre cement sheeting	refer B00CI A02	**asbestos (suspected)**	1	1	1	3	1	1	8	Low	refer 6 and 9	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	interior generally	amenities room(s), urinal(s) if/where present	lining to rear of urinal(s)	N/A	inaccessible	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inaccessible area/material - Confirm status of hazardous material(s) when safe access available and prior to any disturbance.
Building C	interior	1 to 2 small room(s) in southeastern corner of building	materials in general	N/A	inaccessible	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inaccessible area/material (keys required) - Confirm status of hazardous material(s) when safe access available and prior to any disturbance.
Building C	exterior	timber beams	green paint	spot test 1	negative for lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.

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DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Building C	exterior	doors	green paint	spot test 2 and B00CE LP01	**lead paint (>0.1% lead w/w)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5	Any areas of damaged/flaking lead paint and any associated debris should be removed and the building surfaces adequately sealed (e.g. overpainted) where necessary by a suitably qualified and experienced contractor. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any paint disturbance or building work (e.g. maintenance, refurbishment and demolition) .
Building C	exterior	door frames	cream paint	Spot test 3 and B00CE LP02	non-lead paint (≤0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building C	interior, foyer to bathrooms	walls	cream paint	Spot test 4 and B00CI LP 01	non-lead paint (≤0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Building C	rooms and areas in general	materials in general	paints	refer B00CE LP01	**may comprise lead paint (>0.1% lead w/w)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Any areas of damaged/flaking lead paint and any associated debris should be removed and the building surfaces adequately sealed (e.g. overpainted) where necessary by a suitably qualified and experienced contractor. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any paint disturbance or building work (e.g. maintenance, refurbishment and demolition) .
Building C	ceiling cavity	above male toilet	settled dust/debris	LD-4	**elevated lead (≥0.5 mg/m^2)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Ensure access to contaminated building cavities is adequately restricted and entry is only made under controlled conditions. Remove contamination if reasonably practicable to do so and prior to any substantive disturbance. Implement appropriate controls to prevent exposure and dispersal during building work (e.g. maintenance, refurbishment and demolition work). Classify material(s) for disposal, when required, in accordance with the NSW EPA Waste Classification Guidelines.

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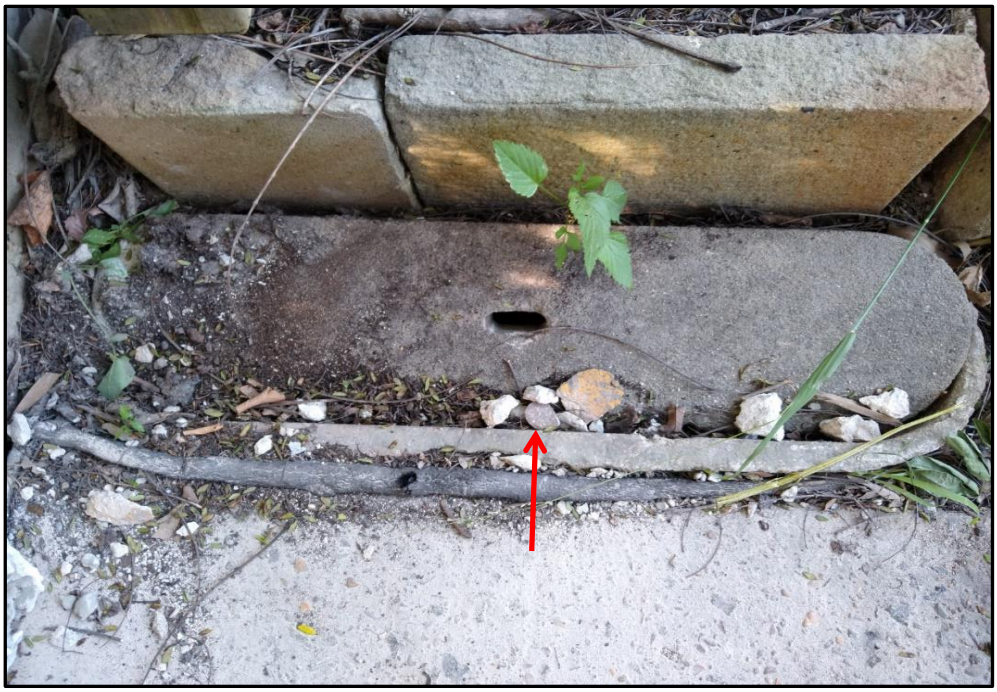
DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Building C	rooms and areas in general	ceiling cavities	settled dust/debris	refer LD-4	**elevated lead (≥0.5 mg/m2) suspected**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Ensure access to contaminated building cavities is adequately restricted and entry is only made under controlled conditions. Remove contamination if reasonably practicable to do so and prior to any substantive disturbance. Implement appropriate controls to prevent exposure and dispersal during building work (e.g. maintenance, refurbishment and demolition work). Classify material(s) for disposal, when required, in accordance with the NSW EPA Waste Classification Guidelines.
Building C	rooms and areas in general	ceiling cavity	fibre cement fragments / offcuts	various (e.g. AS-25, AS-29, AS-31)	**asbestos (suspected)**	1	1	1	2	1	1	7	Low	25	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building C	exterior, northern façade	eave, fluorescent light fittings	DUCON capacitor, APF 240 CR	N/A	**PCB identified**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	19, 20	Capacitor appears to be identified in ANZECC (1997) as containing PCB. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).
Building C	interior, ladies toilet and/or associated vestibule	fluorescent light fittings	Plessey capacitor, APF 240 SCR	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21, 22	Item not specifically listed in ANZECC (1997) and therefore suspected to contain PCB as a precaution. Conduct confirmation sampling and analysis if desired. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).
Building C	interior, men's toilet and/or associated vestibule	fluorescent light fittings	Plessey capacitor, APF 240 SCR	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	Item not specifically listed in ANZECC (1997) and therefore suspected to contain PCB as a precaution. Conduct confirmation sampling and analysis if desired. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).
Building C	rooms and areas in general	fluorescent light fittings	internal components (e.g. metal capacitors, ballasts etc.)	N/A	**may contain PCB**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).
Building C	rooms and areas in general	throughout	flashing (where present e.g. roof, windows and/or damp course)	refer Building B, spot tests 3, 11 and 12	**lead (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).

Photograph 1: Building C, interior, men's toilet and/or associated vestibule, fluorescent light fittings, Plessey capacitor, APF 240 SCR, PCB (assumed).



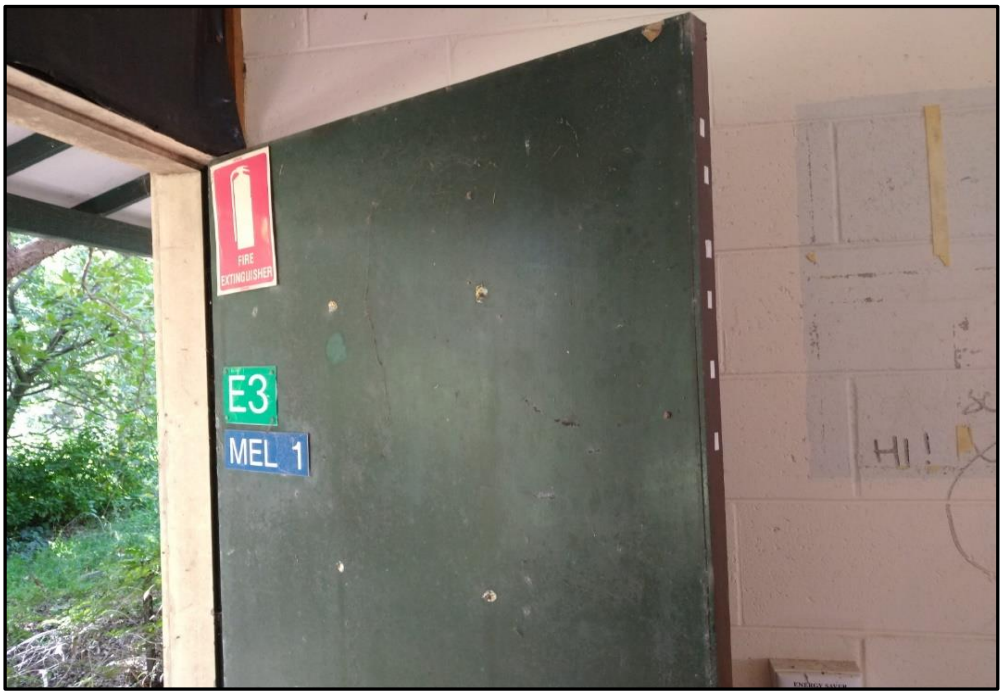
Photograph 2: Building C, exterior, northwestern corner of building, electrical pit, fibre cement product, asbestos detected by analysis.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 1 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 3: Building C, exterior, eave linings, fibre cement sheeting, asbestos detected by analysis.

Photograph 4: Building C, typical room, typical window frame, putty, asbestos detected by analysis.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 2 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21



Photograph 5: Building C, exterior, doors, green paint, lead paint (>0.1% lead w/w).

Photograph 6: Building C, interior, main classroom, north and south wall linings, fibre cement sheeting, asbestos detected by analysis.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 3 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 7: Building C, interior, main classroom, ceiling, fibre cement sheeting, asbestos detected by analysis.

Photograph 8: Building C, interior, eastern staff office, ceiling, fibre cement sheeting, asbestos detected by analysis.

Photograph 9: Building C, interior, eastern staff office, south wall linings, fibre cement sheeting, asbestos detected by analysis.

Photograph 10: Building C, interior, area of Male and Female toilets, above doors, infill panel(s), fibre cement panel(s), asbestos detected by analysis.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 5 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 11: Building C, interior, corridors to female and male toilets, ceiling, fibre cement sheeting, asbestos detected by analysis.

Photograph 12: Building C, interior, foyer to bathrooms, ceiling, fibre cement sheeting, asbestos detected by analysis.

Photograph 13: Building C, interior, foyer to bathrooms, northern wall lining, fibre cement sheeting, asbestos detected by analysis.

Photograph 14: Building C , interior, foyer to bathrooms, underside of sink, bituminous membrane, asbestos detected by analysis.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 7 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 15: Building C, adjacent to male toilet, hot water heater, internal insulation generally, SMF (assumed).

Photograph 16: Building C, exterior, southern façade, entry alcove to male and female toilets, typical ceiling, fibre cement, asbestos detected by analysis.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register**	PROJECT: 99671.05 PLATE No: 8
	Proposed Epping South Public School	REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

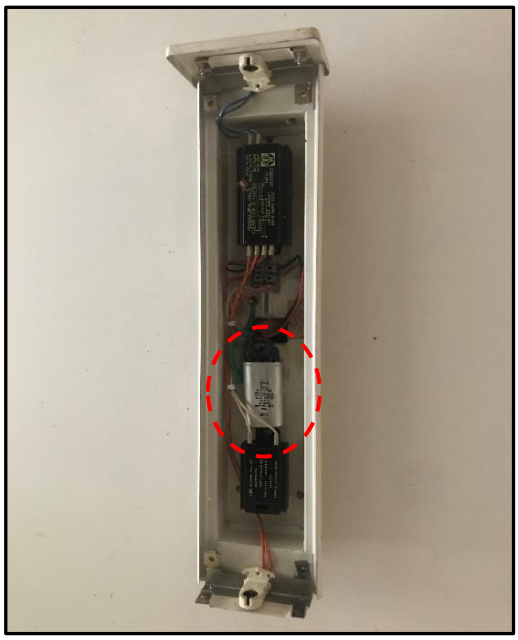
Photograph 17: Building C, exterior, western façade, entry alcove, ceiling, fibre cement, asbestos detected by analysis.

Photograph 18: Building C, exterior, western entrance to building, infill panel(s) above doors x 3 , fibre cement panel(s), asbestos (assumed).

Photograph 19: Building C, exterior, northern façade, eave, fluorescent light fittings, DUCON capacitor, APF 240 CR, PCB identified.

Photograph 20: Building C, exterior, northern façade, eave, fluorescent light fittings, DUCON capacitor, APF 240 CR, PCB identified.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 10 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

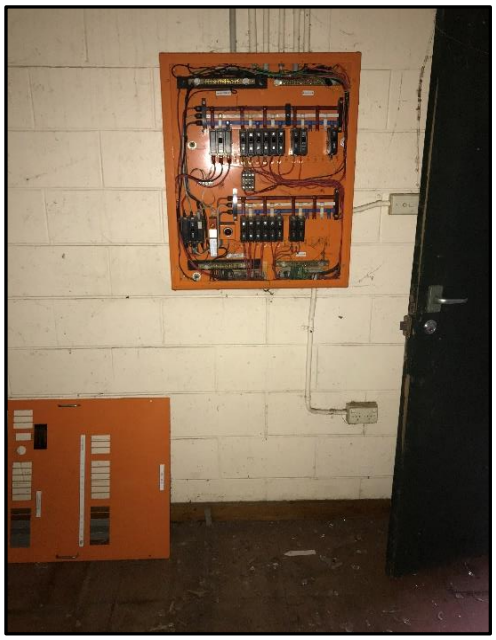


Photograph 21: Building C, interior, ladies toilet and/or associated vestibule, fluorescent light fittings, Plessey capacitor, APF 240 SCR, PCB (assumed).

Photograph 22: Building C, interior, ladies toilet and/or associated vestibule, fluorescent light fittings, Plessey capacitor, APF 240 SCR, PCB (assumed).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 11 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 23: Building C, exterior, window sets in general, around window frame, packing materials, fibre cement sheeting, asbestos detected by analysis.



Photograph 24: Building C, interior, western room, electrical cabinet, interior, mounting strip(s), asbestos detected by analysis.

Photograph 25: Building C, rooms and areas in general, ceiling cavity, fibre cement fragments / offcuts, asbestos (suspected).

Appendix E

Glasshouse 1 - Register and Plates

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DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Glasshouse 1	interior	floor	fibre cement debris	GH1-A01	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	similar 1-4	No hazardous material identified. Caution advised due to potential variability in materials ptresent and results obtained in Glasshouse 2.
Glasshouse 1	interior	floor	fibre cement debris	GH1-A02	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	similar 1-4	No hazardous material identified. Caution advised due to potential variability in materials ptresent and results obtained in Glasshouse 2.
Glasshouse 1	interior	floor	fibre cement debris	GH1-A03	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	similar 1-4	No hazardous material identified. Caution advised due to potential variability in materials ptresent and results obtained in Glasshouse 2.
Glasshouse 1	interior	floor	fibre cement debris	GH1-A04	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	similar 1-4	No hazardous material identified. Caution advised due to potential variability in materials ptresent and results obtained in Glasshouse 2.
Glasshouse 1	interior	floor	fibre cement debris	GH1-A05	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	similar 1-4	No hazardous material identified. Caution advised due to potential variability in materials ptresent and results obtained in Glasshouse 2.
Glasshouse 1	interior	concrete floor, typical expansion joint	bitumastic	GH1-A06	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Glasshouse 1	exterior, northeast	storage bins (labelled 17-23), western wall	flat fibre cement sheeting	GH1-A07	**asbestos detected by analysis**	1	1	3	3	1	0	9	Low	5	Consider sealing material. Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Glasshouse 1	exterior, northeast	storage bins (labelled 17-23)	corrugated translucent sheeting	GH1-A08	no asbestos detected by analysis, **SMF detected**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Glasshouse 1	north and south façade	door linings	fibreglass	N/A	**SMF identified visually**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Glasshouse 1	exterior, northern side	chemical store, door	residual green paint	spot test 1	negative for lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9	No hazardous material identified.
Glasshouse 1	interior	typical fluorescent light fitting	plastic capacitor	N/A	nil PCB identified	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10	No hazardous material identified.
Glasshouse 1	interior	typical fluorescent light fitting	metal ballast, ATCO	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	similar 12	Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).
Glasshouse 1	exterior	typical fluorescent light fitting	plastic capacitor	N/A	nil PCB identified	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11	No hazardous material identified.
Glasshouse 1	exterior	fluorescent light fitting	Soltra ballasts, type W K 20 P	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8	Item not specifically listed in ANZECC (1997) and therefore suspected to contain PCB as a precaution. Conduct confirmation sampling and analysis if desired. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).
Glasshouse 1	rooms and areas in general	fluorescent light fittings	internal components (e.g. metal capacitors, ballasts etc.)	N/A	**may contain PCB**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).

Photograph 1: Glasshouse 1, interior, floor, fibre cement debris, no asbestos detected by analysis.

Photograph 2: Glasshouse 1, interior, floor, fibre cement debris, no asbestos detected by analysis.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 1 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 3: Glasshouse 1, interior, floor, fibre cement debris, no asbestos detected by analysis.

Photograph 4: Glasshouse 1, interior, floor, fibre cement debris, no asbestos detected by analysis.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 2 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 5: Glasshouse 1, exterior, northeast, storage bins (labelled 17-23), western wall, flat fibre cement sheeting, asbestos detected by analysis.

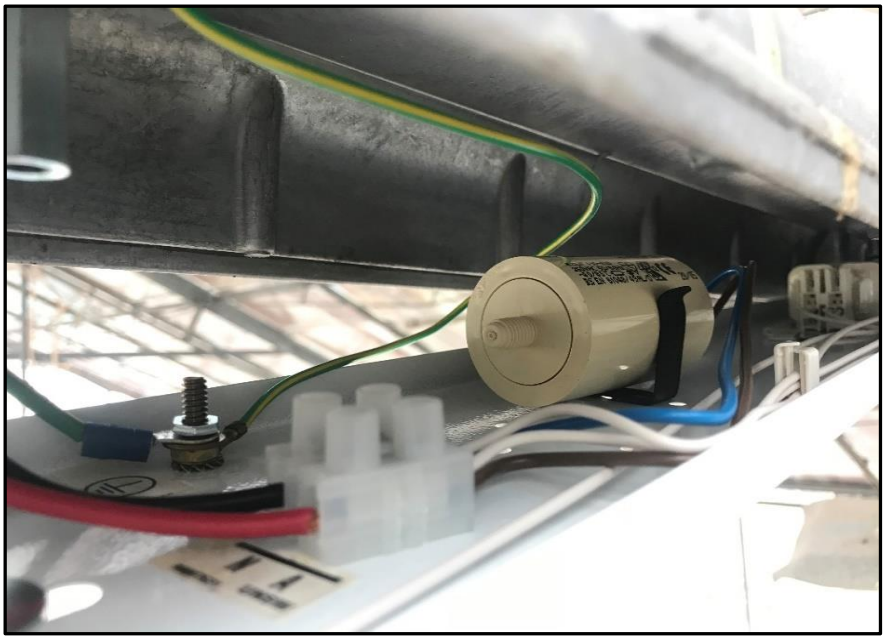
Photograph 6: Glasshouse 1, exterior, northeast, storage bins (labelled 17-23), corrugated translucent sheeting, no asbestos detected by analysis, SMF detected.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 3 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 7: Glasshouse 1, north and south façade, door linings, fibreglass, SMF identified visually.

Photograph 8: Glasshouse 1, exterior, fluorescent light fitting, Soltra ballasts, type W K 20 P, PCB (suspected).

Photograph 9: Glasshouse 1, exterior, northern side, chemical store, door, residual green paint, negative for lead.



Photograph 10: Glasshouse 1, interior, typical fluorescent light fitting, plastic capacitor, nil PCB identified.

Photograph 11: Glasshouse 1, exterior, typical fluorescent light fitting, plastic capacitor, nil PCB identified.

Photograph 12: Glasshouse 1, interior, typical fluorescent light fitting, metal ballast, ATCO, PCB (suspected).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 6 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Appendix F

Glasshouse 2 - Register and Plates

Douglas Partners
Geotechnics · Environment · Groundwater

DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Glasshouse 2	interior	concrete floor, typical expansion joint	bitumastic	GH2-A01	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Glasshouse 2	interior	below planting table leg, packing materials	fibre cement	GH2-A02	**asbestos detected by analysis**	1	3	3	2	1	1	11	Moderate	1, 2	Ensure access is appropriately restricted. Remove and dispose material as asbestos waste as soon as possible.
Glasshouse 2	interior	base of planting table, south end	fibre cement	GH2-A03	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Glasshouse 2	interior	base of planting table, north end	fibre cement	GH2-A04	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Glasshouse 2	interior	below planting table leg, packing materials	fibre cement	GH2-A05	**asbestos detected by analysis**	1	3	3	2	1	1	11	Moderate	1, 2	Ensure access is appropriately restricted. Remove and dispose material as asbestos waste as soon as possible.
Glasshouse 2	interior	base of southern wall, expansion gap	bitumastic	GH2-A06	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Glasshouse 2	interior	floor	fibre cement fragment	AS-40	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Glasshouse 2	interior	floor	minor fibre cement sheeting debris	refer GH2-A02 and A05	**asbestos (suspected)**	1	3	3	2	1	1	11	Moderate	3	Ensure access is appropriately restricted. Remove and dispose material as asbestos waste as soon as possible.
Glasshouse 2	north and south façade	door linings	fibreglass	N/A	**SMF identified visually**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Glasshouse 2	interior	above planting table, portion fluorescent lights	RIFA capacitor, type PMP 5098	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4, 5	Item not specifically listed in ANZECC (1997) and therefore assumed to contain PCB as a precaution. Conduct confirmation sampling and analysis if desired. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).
Glasshouse 2	interior	above planting table, portion fluorescent lights	internal components (e.g. metal capacitors, ballasts etc.)	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).
Glasshouse 2	exterior	fluorescent light fitting	Soltra ballasts, type W K 20 P	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6, 7	Item not specifically listed in ANZECC (1997) and therefore assumed to contain PCB as a precaution. Conduct confirmation sampling and analysis if desired. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).
Glasshouse 2	exterior	fluorescent light fittings in general	internal components (e.g. metal capacitors, ballasts etc.)	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).

Photograph 1: Glasshouse 2, interior, below planting table leg, packing materials, fibre cement, asbestos detected by analysis.

Photograph 2: Glasshouse 2, interior, below planting table leg, packing materials, fibre cement, asbestos detected by analysis.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 1 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 3: Glasshouse 2, interior, floor, minor fibre cement sheeting debris, asbestos (suspected).

Photograph 4: Glasshouse 2, interior, above planting table, portion fluorescent lights, RIFA capacitor, type PMP 5098, PCB (suspected).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 2 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 5: Glasshouse 2, interior, above planting table, portion fluorescent lights, RIFA capacitor, type PMP 5098, PCB (suspected).

Photograph 6: Glasshouse 2, exterior, fluorescent light fitting, Soltra ballasts, type W K 20 P, PCB (suspected).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT: 99671.05
	Hazardous Building Materials (HBM) Register	PLATE No: 3
	Proposed Epping South Public School	REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 7: Glasshouse 2, exterior, fluorescent light fitting, Soltra ballasts, type W K 20 P, PCB (suspected).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 4 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Appendix G

Greenhouse 1 - Register and Plates

DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
Proposed Epping South Public School

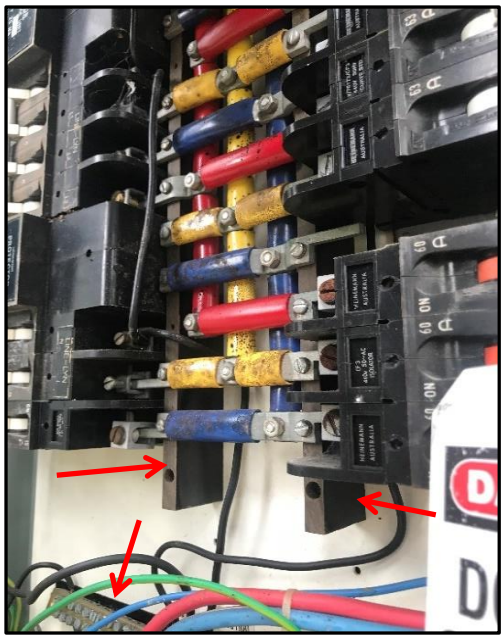
						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Greenhouse 1	exterior, north and south façade	end walls, sheeting	fibreglass	N/A	**SMF identified visually**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Greenhouse 1	interior and exterior	ground surfaces	materials in general	N/A	limited access due vegetation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	Confirm status of hazardous material(s) when adequate/safe access is available.
Greenhouse 1	interior	southern wall, inside electrical cabinet, small electrical panel	backing board (Formica)	AS-41	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	No hazardous material identified.
Greenhouse 1	interior	southern wall, inside electrical cabinet, large electrical panel	mounting strips	N/A	**asbestos (suspected)**	0	1	1	1	1	0	4	Low	4	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Greenhouse 1	interior	typical fluorescent light fitting	ATCO metal capacitor / ballast	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5	Item not specifically listed in ANZECC (1997) and therefore suspected to contain PCB as a precaution. Conduct confirmation sampling and analysis if desired. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).
Greenhouse 1	interior	fluorescent light fittings	internal components (e.g. metal capacitors, ballasts etc.)	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).

Photograph 1: Greenhouse 1, exterior, north and south façade, end walls, sheeting, fibreglass, SMF identified visually.

Photograph 2: Greenhouse 1, interior and exterior , ground surfaces, materials in general, limited access due vegetation.

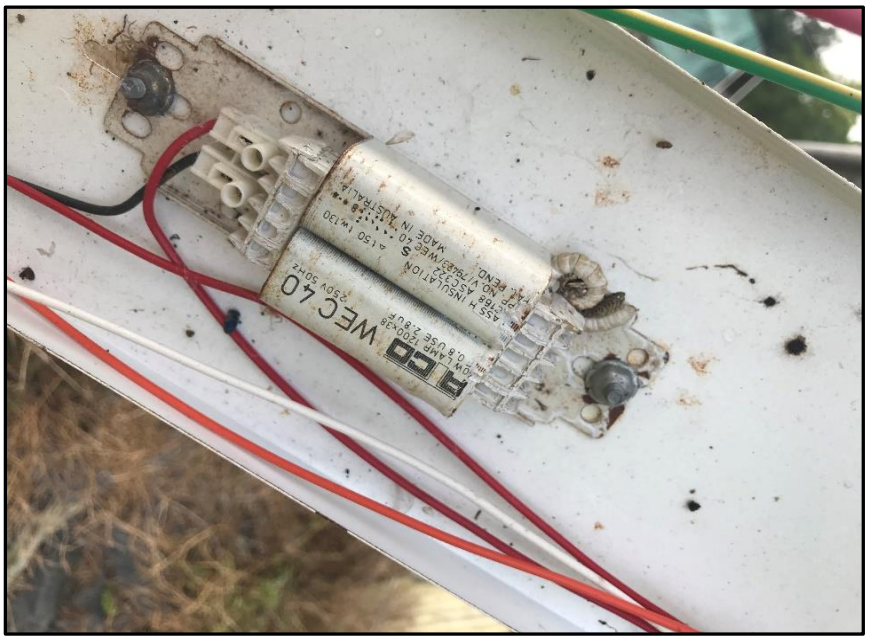
Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 1 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 3: Greenhouse 1, interior, southern wall, inside electrical cabinet, small electrical panel, backing board (Formica), no asbestos detected by analysis.



Photograph 4: Greenhouse 1, interior, southern wall, inside electrical cabinet, large electrical panel, mounting strips, asbestos (suspected).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 2 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21



Photograph 5: Greenhouse 1, interior, typical fluorescent light fitting, ATCO metal capacitor / ballast, PCB (suspected).

Appendix H

Greenhouse 2 - Register and Plates

DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Greenhouse 2	exterior, north and south façade	end walls, sheeting	fibreglass	N/A	**SMF identified visually**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Greenhouse 2	interior and exterior	southern section	materials in general	N/A	liimted access due structural damage (fallen tree)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1 and 2	Confirm status of hazardous material(s) when adequate/safe access is available.
Greenhouse 2	interior	northern section, stored on table	fibre cement board	SH-A01	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	No hazardous material identified.
Greenhouse 2	interior	southern wall, electrical cabinet	electrical mounting board / strip	AS-44	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	No hazardous material identified.
Greenhouse 2	interior	metal table	grey paint	LP-11	**lead paint (>0.1% lead w/w)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Any areas of damaged/flaking lead paint and any associated debris should be removed and the building surfaces adequately sealed (e.g. overpainted) where necessary by a suitably qualified and experienced contractor. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any paint disturbance or building work (e.g. maintenance, refurbishment and demolition) .
Greenhouse 2	interior	northern end, fluorescent light fitting	plastic capacitor	N/A	nil PCB (assumed)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Greenhouse 2	interior	fluorescent light fitting	metal capacitor / ballast, ATCO EC40	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Item not specifically listed in ANZECC (1997) and therefore suspected to contain PCB as a precaution. Conduct confirmation sampling and analysis if desired. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).
Greenhouse 2	interior	fluorescent light fittings in general	internal components (e.g. metal capacitors, ballasts etc.)	N/A	**may contain PCB**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc) prior to disturbance (e.g. renovation, demolition or maintenance work).
Greenhouse 2	exterior	areas in general	materials in general	N/A	limited access due vegetation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5	Confirm status of hazardous material(s) when adequate/safe access is available.

Photograph 1: Greenhouse 2, exterior, north and south façade, end walls, sheeting, fibreglass, SMF identified visually.

Photograph 2: Greenhouse 2, interior and exterior , southern section, materials in general, inaccessible due structrual damange (fallen tree now removed).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School** CLIENT: Hansen Yuncken Pty Ltd	PROJECT: 99671.05 PLATE No: 1 REV: A DATE: Jul-21

Photograph 3: Greenhouse 2, interior, northern section, stored on table, fibre cement board, no asbestos detected by analysis.

Photograph 4: Greenhouse 2, interior, southern wall, electrical cabinet, electrical mounting board / strip, no asbestos detected by analysis.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 2 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 5: Greenhouse 2, exterior, areas in general, materials in general, limited access due vegetation.

Appendix I

Greenhouse 3 - Register and Plates

DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Greenhouse 3	exterior, north and south façade	end walls, sheeting	fibreglass	N/A	**SMF identified visually**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Greenhouse 3	interior	electrical cabinet	backing board(s)	AS-43	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	No hazardous material identified.
Greenhouse 3	interior	electrical cabinet	backing board(s)	N/A	**asbestos (suspected)**	0	1	1	1	1	0	4	Low	2	Asbestos suspected as a precaution. Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Greenhouse 3	interior	fluorescent light fitting	plastic capacitor	N/A	nil PCB (suspected)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Greenhouse 3	interior	fluorescent light fitting	metal capacitor / ballast, ATCO EC40	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5	Item not specifically listed in ANZECC (1997) and therefore suspected to contain PCB as a precaution. Conduct confirmation sampling and analysis if desired. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).
Greenhouse 3	rooms and areas in general	throughout	materials in general	N/A	limited access due vegetation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	Confirm status of hazardous material(s) when adequate/safe access is available.

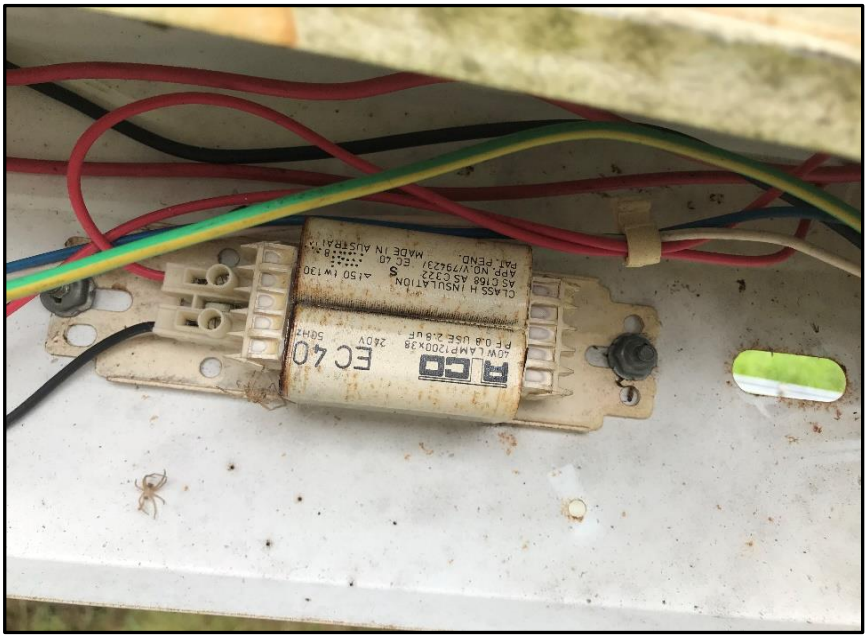
Photograph 1: Greenhouse 3, interior, electrical cabinet, backing board(s), no asbestos detected by analysis.

Photograph 2: Greenhouse 3, interior, electrical cabinet, backing board(s), asbestos (suspected).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register**	PROJECT: 99671.05 PLATE No: 1
	Proposed Epping South Public School	REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 3: Greenhouse 3, interior, fluorescent light fittings, internal components (e.g. metal capacitors, ballasts etc.), inaccessible.

Photograph 4: Greenhouse 3, rooms and areas in general, throughout, materials in general, limited access due vegetation.



Photograph 5: Greenhouse 3, interior, fluorescent light fitting, metal capacitor / ballast, ATCO EC40, PCB (suspected).

Appendix J

Flammable Store - Register and Plates

Douglas Partners
Geotechnics · Environment · Groundwater

DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Flammable Store	exterior, north side	pavement, typical expansion gap	bitumastic	FS-A01	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Flammable Store	western facade	entrance door, fire resistant core	door insulation	FS-A02	**asbestos detected by analysis**	3	2	1	2	1	1	10	Moderate	1	Material assumed friable as a precaution and due limited access. Some damage around door locking mechanism. Ensure access is suitably restricted and disturbance prevented. Remove material as soon as practicable and prior to any disturbance. Removal must be undertaken by a suitably licensed asbestos removalist.
Flammable Store	interior	door frame	brown paint	LP-15	**lead paint (>0.1% lead w/w)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Any areas of damaged/flaking lead paint and any associated debris should be removed and the building surfaces adequately sealed (e.g. overpainted) where necessary by a suitably qualified and experienced contractor. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any paint disturbance or building work (e.g. maintenance, refurbishment and demolition) .
Flammable Store	rooms and areas in general	materials in general	paints	refer LP-15	**may comprise lead paint (>0.1% lead w/w)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Any areas of damaged/flaking lead paint and any associated debris should be removed and the building surfaces adequately sealed (e.g. overpainted) where necessary by a suitably qualified and experienced contractor. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any paint disturbance or building work (e.g. maintenance, refurbishment and demolition) .
Flammable Store	interior, ceiling	fluorescent light fittings (x2)	internal components (e.g. metal capacitors, ballasts etc.)	N/A	**PCB (assumed)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	Inaccessible area/material - hazardous material(s) assumed present as a precaution. Confirm status of hazardous material(s) when safe access is available. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).

Photograph 1: Flammable Store, western facade, entrance door, fire resistant core, door insulation, asbestos detected by analysis.

Photograph 2: Flammable Store, interior, ceiling, fluorescent light fittings (x2), internal components (e.g. metal capacitors, ballasts etc.), PCB (suspected).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 1 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Appendix K

Shed 1 - Register and Plates

DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Shed 1	rooms and areas in general	throughout	materials in general	N/A	nil hazardous materials identified	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	No hazardous material identified.
Shed 1	exterior	wall	green paint	LP-12	lead paint (<0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Shed 1	interior	roof, fluorescent light fitting	internal components (e.g. metal capacitors, ballasts etc.)	N/A	nil PCB (suspected)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	No hazardous material identified.

Photograph 1: Shed 1, rooms and areas in general, throughout, materials in general, nil hazardous materials identified.

Photograph 2: Shed 1, interior, roof, fluorescent light fitting, internal components (e.g. metal capacitors, ballasts etc.), nil PCB (suspected).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 1 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Appendix L

Shed 2 - Register and Plates

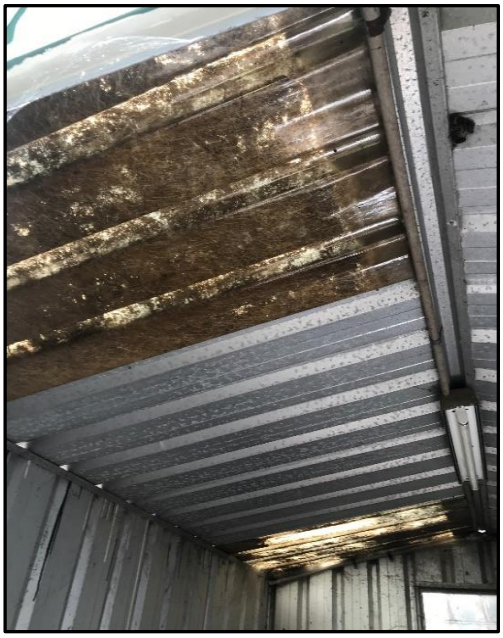
DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Shed 2	rooms and areas in general	throughout	materials in general	N/A	nil hazardous materials identified	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	No hazardous material identified.
Shed 2	exterior	wall	green paint	LP-13	lead paint (<0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Shed 2	interior	roof, fluorescent light fitting	internal components (e.g. metal capacitors, ballasts etc.)	N/A	nil PCB (suspected)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	No hazardous material identified.
Shed 2	roof	translucent panels	fibreglass (assumed)	N/A	**SMF (assumed)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Shed 2	interior	wall, infill panel to extraction fan	fibre cement sheeting	AS-46	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.

Photograph 1: Shed 2, rooms and areas in general, throughout, materials in general, nil hazardous materials identified.

Photograph 2: Shed 2, interior, roof, fluorescent light fitting, internal components (e.g. metal capacitors, ballasts etc.), nil PCB (suspected).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT: 99671.05
	Hazardous Building Materials (HBM) Register	PLATE No: 1
	Proposed Epping South Public School	REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21



Photograph 3: Shed 2, roof, translucent panels, fibreglass, SMF (suspected).

Appendix M

Shed 3 and Water Tank - Register

DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Tank	exterior	wall	textured coating	AS-45	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Tank	exterior	wall	green paint	LP-16	lead paint (<0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Shed 3	exterior	wall	green paint	LP-14	**lead paint (>0.1% lead w/w)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Any areas of damaged/flaking lead paint and any associated debris should be removed and the building surfaces adequately sealed (e.g. overpainted) where necessary by a suitably qualified and experienced contractor. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any paint disturbance or building work (e.g. maintenance, refurbishment and demolition) .
Shed 3	rooms and areas in general	throughout	paints	N/A	**may comprise lead paint (>0.1% lead w/w)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Any areas of damaged/flaking lead paint and any associated debris should be removed and the building surfaces adequately sealed (e.g. overpainted) where necessary by a suitably qualified and experienced contractor. Classify material for disposal in accordance with the NSW EPA Waste Classification Guidelines and segregate material, if required, for disposal. Minimise disturbance and implement controls to prevent exposure and dispersal during any paint disturbance or building work (e.g. maintenance, refurbishment and demolition) .

Appendix N

Shed 4 and Metal Framed Shelter - Register and Plates

Douglas Partners
Geotechnics · Environment · Groundwater

DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
Shed 4	interior	timber support structure, fluorescent light fitting(s)	metal ballast / capacitor, ATCO EC18/20	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	Inaccessible area/material - hazardous material(s) suspected present as a precaution. Confirm status of hazardous material(s) when safe access is available. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).
Shed 4	exterior	throughout	materials in general	N/A	limited access due vegetation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1 and 3	Limited access due vegetation. Confirm status of hazardous material(s) when adequate/safe access available and prior to any disturbance.
Adjacent Shed 4	metal framed shelter	walls panels generally (in-place and dislodged)	fbreglass	N/A	**SMF identified visually**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4, 5, 6	Remove and dispose damaged/dislodged material. Reinspect condition of material remaining in place on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Adjacent Shed 4	metal framed shelter	throughout	materials in general	N/A	access limited by vegetation	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7, 8	Limited access due vegetation. Confirm status of hazardous material(s) when adequate/safe access available and prior to any disturbance.

Photograph 1: Shed 4, exterior, throughout, materials in general, limited access due vegetation.

Photograph 2: Shed 4, interior, timber support structure, fluorescent light fitting(s), internal components (e.g. metal capacitors, ballasts etc.), PCB (suspected).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register**	PROJECT: 99671.05 PLATE No: 1
	Proposed Epping South Public School	REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 3: Shed 4, exterior, throughout, materials in general, limited access due vegetation.

Photograph 4: Adjacent Shed 4, metal framed shelter, walls panels generally (in-place and dislodged), fbreglass, SMF identified visually.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 2 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 5: Adjacent Shed 4, metal framed shelter, walls panels generally (in-place and dislodged), fbreglass, SMF identified visually.

Photograph 6: Adjacent Shed 4, metal framed shelter, walls panels generally (in-place and dislodged), fbreglass, SMF identified visually.

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 3 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 7: Adjacent Shed 4, metal framed shelter, throughout, materials in general, access limited by vegetation.

Photograph 8: Adjacent Shed 4, metal framed shelter, throughout, materials in general, access limited by vegetation.

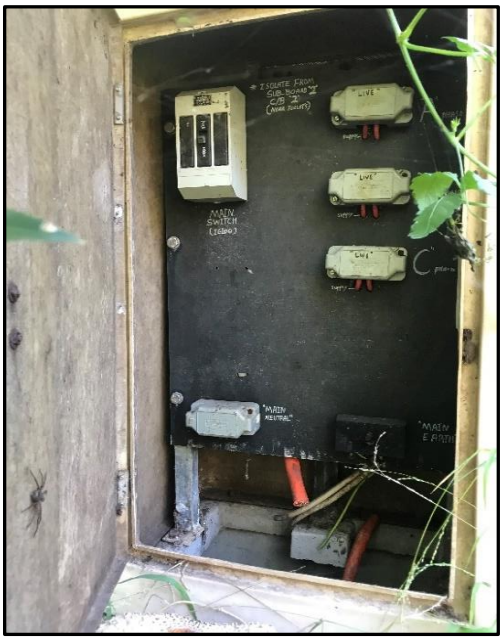
Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT: 99671.05
	Hazardous Building Materials (HBM) Register	PLATE No: 4
	Proposed Epping South Public School	REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Appendix O

General Grounds - Register and Plates

DP Project No: 99671.05
Hazardous Building Materials (HBM) Register
Proposed Epping South Public School

						Asbestos Risk Assessment									
Building	**Room / Area**	**Material Location**	**Material Type**	**Sample No.**	**Material Status**	**Friability**	**Condition**	**Treatment**	**Accessibility**	**Activity**	**Ventilation**	**Risk Score**	**Action Priority**	**Photo No.**	**Summary Comment/Recommendation**
general grounds	near southern side of Greenhouse 2	electrical hub	electrical backing board	N/A	**asbestos (suspected)**	1	1	2	2	1	0	7	Low	1, 2	Asbestos suspected as a precaution. Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
general grounds	flood lights	interior of light fitting and/or pole	internal components (e.g. metal capacitors, ballasts etc.)	N/A	**PCB (suspected)**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3, 4, 5, 6	No PCBs identified in a selection of access hatches inspected at ground level, however, the majority of the light pole / fitting is inaccessible and hazardous material(s) are assumed present as a precaution. Confirm status of hazardous material(s) when safe access is available. Remove and dispose any PCB containing components (e.g. metal capacitors and ballasts etc.) prior to disturbance (e.g. renovation, demolition or maintenance work).



Photograph 1: general grounds, near southern side of Greenhouse 2, electrical hub, electrical backing board, asbestos (suspected).

Photograph 2: general grounds, near southern side of Greenhouse 2, electrical hub, electrical backing board, asbestos (suspected).

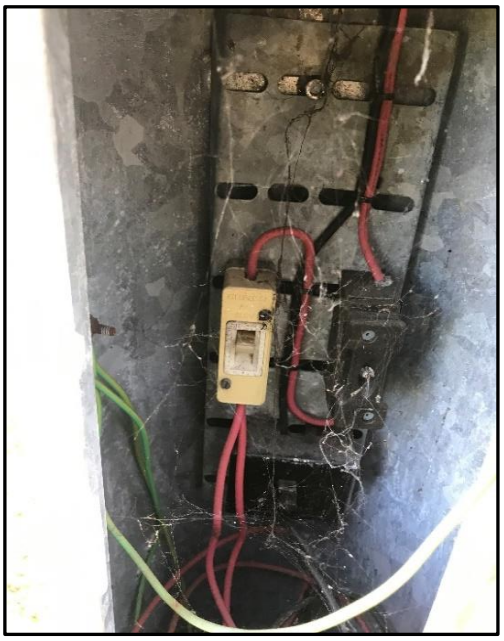
Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Building Materials (HBM) Register** **Proposed Epping South Public School**	PROJECT: 99671.05 PLATE No: 1 REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 3: general grounds, flood lights, interior of light fitting and/or pole, internal components (e.g. metal capacitors, ballasts etc.), PCB (susected).

Photograph 4: general grounds, flood lights, interior of light fitting and/or pole, internal components (e.g. metal capacitors, ballasts etc.), PCB (susected).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT: 99671.05
	Hazardous Building Materials (HBM) Register	PLATE No: 2
	Proposed Epping South Public School	REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Photograph 5: general grounds, flood lights, interior of light fitting and/or pole, internal components (e.g. metal capacitors, ballasts etc.), PCB (susected).



Photograph 6: general grounds, flood lights, interior of light fitting and/or pole, internal components (e.g. metal capacitors, ballasts etc.), PCB (susected).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs**	PROJECT: 99671.05
	Hazardous Building Materials (HBM) Register	PLATE No: 3
	Proposed Epping South Public School	REV: A
	CLIENT: Hansen Yuncken Pty Ltd	DATE: Jul-21

Appendix P

Laboratory Certificate(s) of Analysis

Envirolab Services Pty Ltd
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12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 241776

Client Details

Client	Douglas Partners Pty Ltd
Attention	Tim Kulmar
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**99671.02- Epping South**
Number of Samples	37 Material, 2 Paint, 1 Swab
Date samples received	29/04/2020
Date completed instructions received	29/04/2020

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	06/05/2020
Date of Issue	07/05/2020
Reissue Details	This report replaces R00 created on 05/05/2020 due to: sample ID error

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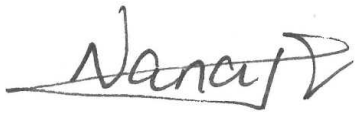
Asbestos Approved By
Analysed by Asbestos Approved Identifier: Lucy Zhu, Matt Mansfield
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Jaimie Loa-Kum-Cheung, Metals Supervisor
Loren Bardwell, Senior Chemist
Lucy Zhu, Asbestos Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

Asbestos ID - materials						
Our Reference		241776-1	241776-2	241776-3	241776-4	241776-5
Your Reference	UNITS	B-A01	B-A02	B-A03	B-A04	B-A05
Date Sampled		24/04/2020	24/04/2020	24/04/2020	24/04/2020	24/04/2020
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	30/04/2020	30/04/2020	30/04/2020	30/04/2020	30/04/2020
Mass / Dimension of Sample	-	55x28x5mm	55x20x10mm	70x25x10mm	25x20x3mm	31x18x5mm
Sample Description	-	Black bituminous material	Black bituminous material	Black bituminous material	Beige fibre cement material	Beige fibre cement material
Asbestos ID in materials	-	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	Chrysotile asbestos detected Organic fibres detected	Chrysotile asbestos detected Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	[NT]	[NT]

Asbestos ID - materials						
Our Reference		241776-6	241776-7	241776-8	241776-9	241776-10
Your Reference	UNITS	B-A06	B-A07	B-A08	B-A09	B-A10
Date Sampled		24/04/2020	24/04/2020	24/04/2020	24/04/2020	24/04/2020
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	30/04/2020	30/04/2020	30/04/2020	30/04/2020	30/04/2020
Mass / Dimension of Sample	-	35x30x2mm	20x15x2mm	60x40x10mm	25x20x2mm	30x20x4mm
Sample Description	-	Grey crumbly mastic	Beige mastic	Black bituminous material	Grey hard mastic	Beige fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected	Chrysotile asbestos detected	No asbestos detected Organic fibres detected	Chrysotile asbestos detected	Chrysotile asbestos detected Organic fibres detected
Trace Analysis	-	[NT]	[NT]	No asbestos detected	[NT]	[NT]

Asbestos ID - materials						
Our Reference		241776-11	241776-12	241776-13	241776-14	241776-15
Your Reference	UNITS	B-A11	B-A12	B-A13	B-A14	B-A15
Date Sampled		24/04/2020	24/04/2020	24/04/2020	24/04/2020	24/04/2020
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	30/04/2020	30/04/2020	30/04/2020	30/04/2020	30/04/2020
Mass / Dimension of Sample	-	35x25x5mm	55x25x10mm	40x30x10mm	45x25x3mm	70x20x10mm
Sample Description	-	Grey hard mastic	Black bituminous material	Black bituminous material	Grey hard mastic	Black bituminous material
Asbestos ID in materials	-	Chrysotile asbestos detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	Chrysotile asbestos detected	No asbestos detected Organic fibres detected
Trace Analysis	-	[NT]	No asbestos detected	No asbestos detected	[NT]	No asbestos detected

Asbestos ID - materials						
Our Reference		241776-16	241776-20	241776-21	241776-22	241776-23
Your Reference	UNITS	B-A16	GH1-A01	GH1-A02	GH1-A03	GH1-A04
Date Sampled		24/04/2020	24/04/2020	24/04/2020	24/04/2020	24/04/2020
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	30/04/2020	30/04/2020	30/04/2020	30/04/2020	30/04/2020
Mass / Dimension of Sample	-	30x8x3mm	33x18x5mm	50x30x5mm	20x15x8mm	50x40x5mm
Sample Description	-	Grey fibre cement material	Beige fibre cement material	Beige fibre cement material	Grey fibre cement material	Grey fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	No asbestos detected
Trace Analysis	-	[NT]	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - materials						
Our Reference		241776-24	241776-25	241776-26	241776-27	241776-28
Your Reference	UNITS	GH1-A05	GH1-A06	GH1-A07	GH1-A08	GH2-A01
Date Sampled		24/04/2020	24/04/2020	24/04/2020	24/04/2020	24/04/2020
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	30/04/2020	30/04/2020	30/04/2020	30/04/2020	30/04/2020
Mass / Dimension of Sample	-	30x30x5mm	40x35x5mm	40x25x5mm	25x20x5mm	40x25x6mm
Sample Description	-	Grey fibre cement material	Black hardened bituminous material	Beige fibre cement material	Pale vinyl sheeting	Black bituminous material
Asbestos ID in materials	-	No asbestos detected	No asbestos detected Organic fibres detected	Chrysotile asbestos detected Amosite asbestos detected	No asbestos detected Synthetic mineral fibres detected	No asbestos detected Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	[NT]	No asbestos detected	No asbestos detected

Asbestos ID - materials						
Our Reference		241776-29	241776-30	241776-31	241776-32	241776-33
Your Reference	UNITS	GH2-A02	GH2-A03	GH2-A04	GH2-A05	GH2-A06
Date Sampled		24/04/2020	24/04/2020	24/04/2020	24/04/2020	24/04/2020
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	30/04/2020	30/04/2020	30/04/2020	30/04/2020	30/04/2020
Mass / Dimension of Sample	-	70x55x5mm	20x30x5mm	35x20x2mm	30x15x4mm	50x30x6mm
Sample Description	-	Beige fibre cement material	Beige fibre cement material	Beige fibre cement material	Beige fibre cement material	Black bituminous material
Asbestos ID in materials	-	Chrysotile asbestos detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	Chrysotile asbestos detected Amosite asbestos detected	No asbestos detected Organic fibres detected
Trace Analysis	-	[NT]	No asbestos detected	No asbestos detected	[NT]	No asbestos detected

Asbestos ID - materials						
Our Reference		241776-34	241776-35	241776-36	241776-37	241776-38
Your Reference	UNITS	FS-A01	FS-A02	SH-A01	C-INT-TK01	C-INT-TK02
Date Sampled		24/04/2020	24/04/2020	24/04/2020	24/04/2020	24/04/2020
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	30/04/2020	30/04/2020	30/04/2020	30/04/2020	30/04/2020
Mass / Dimension of Sample	-	40x40x8mm	60x35x6mm	40x25x5mm	20x20x2mm	15x15x2mm
Sample Description	-	Black bituminous material	Pink fibre cement material	Beige fibre cement material	Grey hardened mastic	Grey hardened mastic
Asbestos ID in materials	-	No asbestos detected Organic fibres detected	Chrysotile asbestos detected Amosite asbestos detected	No asbestos detected	Chrysotile asbestos detected	Chrysotile asbestos detected
Trace Analysis	-	No asbestos detected	[NT]	No asbestos detected	[NT]	[NT]

Asbestos ID - materials			
Our Reference		241776-39	241776-40
Your Reference	UNITS	C-EXT-TK01	C-EXT-TK02
Date Sampled		24/04/2020	24/04/2020
Type of sample		Material	Material
Date analysed	-	30/04/2020	30/04/2020
Mass / Dimension of Sample	-	30x15x2mm	30x15x5mm
Sample Description	-	Grey fibre cement material	Grey fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected	Chrysotile asbestos detected
Trace Analysis	-	[NT]	[NT]

Lead in Paint			
Our Reference		241776-17	241776-18
Your Reference	UNITS	B-LP01	B-LP02
Date Sampled		24/04/2020	24/04/2020
Type of sample		Paint	Paint
Date prepared	-	30/04/2020	30/04/2020
Date analysed	-	01/05/2020	01/05/2020
Lead in paint	%w/w	0.28	0.29

Lead in swab		
Our Reference		241776-19
Your Reference	UNITS	B-LD01
Date Sampled		24/04/2020
Type of sample		Swab
Date prepared	-	30/04/2020
Date analysed	-	30/04/2020
Lead in Swabs	µg/swab	150

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Metals-020/021/022	Digestion of Paint chips/scrapings/liquids for Metals determination by ICP-AES/MS and or CV/AAS.
Metals-020/021/022	Digestion of Dust wipes/swabs and /or miscellaneous samples for Metals determination by ICP-AES/MS and/or CV-AAS

QUALITY CONTROL: Lead in Paint						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			30/04/2020	[NT]	[NT]	[NT]	[NT]	30/04/2020	[NT]
Date analysed	-			01/05/2020	[NT]	[NT]	[NT]	[NT]	01/05/2020	[NT]
Lead in paint	%w/w	0.005	Metals-020/021/022	<0.005	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: Lead in swab					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			30/04/2020	[NT]	[NT]	[NT]	[NT]	30/04/2020	[NT]
Date analysed	-			30/04/2020	[NT]	[NT]	[NT]	[NT]	30/04/2020	[NT]
Lead in Swabs	µg/swab	1	Metals-020/021/022	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Envirolab Services Pty Ltd
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12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 241775

Client Details

Client	Douglas Partners Pty Ltd
Attention	Tim Bransgrove, Tim Kulmar
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**99671.02- Epping South**
Number of Samples	14 Material, 7 Paint, 2 Swab
Date samples received	29/04/2020
Date completed instructions received	29/04/2020

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	06/05/2020
Date of Issue	05/05/2020

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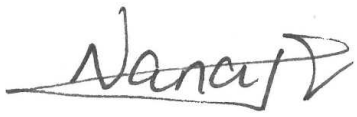
Asbestos Approved By
Analysed by Asbestos Approved Identifier: Lucy Zhu
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Jaimie Loa-Kum-Cheung, Metals Supervisor
Loren Bardwell, Senior Chemist
Lucy Zhu, Asbestos Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

Asbestos ID - materials						
Our Reference	UNITS	241775-1	241775-2	241775-3	241775-4	241775-5
Your Reference		B00CEA01	B00CEA02	B00CEA03	B00CI A01	B00CI A02
Date Sampled		24/04/2020	24/04/2020	24/04/2020	24/04/2020	24/04/2020
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	04/05/2020	04/05/2020	04/05/2020	04/05/2020	04/05/2020
Mass / Dimension of Sample	-	30x18x5mm	20x15x3mm	25x20x2mm	60x40x3mm	45x15x4mm
Sample Description	-	Beige fibre cement material	Grey fibre cement material	Grey hardened mastic	Peach vinyl tile & adhesive	Beige fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected	Chrysotile asbestos detected	Chrysotile asbestos detected	No asbestos detected Organic fibres detected	Chrysotile asbestos detected Organic fibres detected
Trace Analysis	-	[NT]	[NT]	[NT]	No asbestos detected	[NT]

Asbestos ID - materials						
Our Reference		241775-6	241775-7	241775-8	241775-9	241775-10
Your Reference	UNITS	B00CI A03	B00CI A04	B00CI A05	B00CI A06	B00CI A07
Date Sampled		24/04/2020	24/04/2020	24/04/2020	24/04/2020	24/04/2020
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	04/05/2020	04/05/2020	04/05/2020	04/05/2020	04/05/2020
Mass / Dimension of Sample	-	47x25x4mm	35x25x5mm	20x15x3mm	42x41x3mm	35x20x3mm
Sample Description	-	Beige fibre cement material	Beige fibre cement material	Beige fibre cement material	Beige vinyl tile & adhesive	A)White fibrous material B)Black bitumen
Asbestos ID in materials	-	Chrysotile asbestos detected Organic fibres detected	Chrysotile asbestos detected Amosite asbestos detected	Chrysotile asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	A)Chrysotile asbestos detected B)No asbestos detected Organic fibres detected
Trace Analysis	-	[NT]	[NT]	[NT]	No asbestos detected	No asbestos detected

Asbestos ID - materials					
Our Reference		241775-14	241775-15	241775-16	241775-17
Your Reference	UNITS	B00AE A01	B00AE A02	B00ARA7 A01	B00ARA4 A01
Date Sampled		24/04/2020	24/04/2020	24/04/2020	24/04/2020
Type of sample		Material	Material	Material	Material
Date analysed	-	04/05/2020	04/05/2020	04/05/2020	04/05/2020
Mass / Dimension of Sample	-	25x15x3mm	44x40x10mm	54x33x3mm	60x50x3mm
Sample Description	-	Grey mastic material	Black bituminous material	Beige vinyl tile & adhesive	Beige vinyl tile & adhesive
Asbestos ID in materials	-	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Lead in Paint						
Our Reference		241775-11	241775-12	241775-13	241775-20	241775-21
Your Reference	UNITS	B00CE LP01	B00CE LP02	B00CI LP01	B00AE LP1	B00ARA7 LP01
Date Sampled		24/04/2020	24/04/2020	24/04/2020	24/04/2020	24/04/2020
Type of sample		Paint	Paint	Paint	Paint	Paint
Date prepared	-	30/04/2020	30/04/2020	30/04/2020	30/04/2020	30/04/2020
Date analysed	-	01/05/2020	01/05/2020	01/05/2020	01/05/2020	01/05/2020
Lead in paint	%w/w	1.7	0.081	<0.005	0.33	0.19

Lead in Paint			
Our Reference		241775-22	241775-23
Your Reference	UNITS	B00AE LP2	B00ARA7 LP02
Date Sampled		24/04/2020	24/04/2020
Type of sample		Paint	Paint
Date prepared	-	30/04/2020	30/04/2020
Date analysed	-	01/05/2020	01/05/2020
Lead in paint	%w/w	0.13	0.29

Lead in swab			
Our Reference		241775-18	241775-19
Your Reference	UNITS	B00ARA7 A01	B00ARA3 LD01
Date Sampled		24/04/2020	24/04/2020
Type of sample		Swab	Swab
Date prepared	-	30/04/2020	30/04/2020
Date analysed	-	30/04/2020	30/04/2020
Lead in Swabs	µg/swab	96	140

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Metals-020/021/022	Digestion of Paint chips/scrapings/liquids for Metals determination by ICP-AES/MS and or CV/AAS.
Metals-020/021/022	Digestion of Dust wipes/swabs and /or miscellaneous samples for Metals determination by ICP-AES/MS and/or CV-AAS

QUALITY CONTROL: Lead in Paint						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			30/04/2020	[NT]	[NT]	[NT]	[NT]	30/04/2020	[NT]
Date analysed	-			01/05/2020	[NT]	[NT]	[NT]	[NT]	01/05/2020	[NT]
Lead in paint	%w/w	0.005	Metals-020/021/022	<0.005	[NT]	[NT]	[NT]	[NT]	98	[NT]

QUALITY CONTROL: Lead in swab						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			30/04/2020	[NT]	[NT]	[NT]	[NT]	30/04/2020	[NT]
Date analysed	-			30/04/2020	[NT]	[NT]	[NT]	[NT]	30/04/2020	[NT]
Lead in Swabs	µg/swab	1	Metals-020/021/022	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

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CERTIFICATE OF ANALYSIS 273096

Client Details

Client	Douglas Partners Pty Ltd
Attention	Tim Kulmar
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**99671.05, Epping South**
Number of Samples	44 Material, 3 Swab, 1 Paint
Date samples received	01/07/2021
Date completed instructions received	01/07/2021

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	08/07/2021
Date of Issue	08/07/2021

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Asbestos Approved By
Analysed by Asbestos Approved Identifier: Wonnie Condos, Lucy Zhu
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Giovanni Agosti, Group Technical Manager
Hannah Nguyen, Senior Chemist
Lucy Zhu, Asbestos Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

Asbestos ID - materials						
Our Reference		273096-1	273096-2	273096-3	273096-4	273096-5
Your Reference	UNITS	AS-1	AS-2	AS-3	AS-4	AS-5
Date Sampled		28/06/2021	28/06/2021	28/06/2021	28/06/2021	28/06/2021
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Mass / Dimension of Sample	-	80x45x3mm	80x40x3mm	50x10x2mm	25x10x10mm	20x20x2mm
Sample Description	-	Beige vinyl tile	Beige vinyl tile	Black bituminous material	Black bituminous material	Black putty
Asbestos ID in materials	-	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	Chrysotile asbestos detected	Chrysotile asbestos detected	Chrysotile asbestos detected Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	[NT]	[NT]	[NT]

Asbestos ID - materials						
Our Reference		273096-6	273096-7	273096-8	273096-9	273096-10
Your Reference	UNITS	AS-6	AS-7	AS-8	AS-9	AS-10
Date Sampled		28/06/2021	28/06/2021	28/06/2021	28/06/2021	28/06/2021
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Mass / Dimension of Sample	-	40x20x2mm	10x8x2mm	40x40x3mm	30x30x2mm	50x30x13mm
Sample Description	-	Black putty	White ceramic-like material	Pink insulation material	Black bituminous material	Black bituminous material
Asbestos ID in materials	-	Chrysotile asbestos detected Organic fibres detected	No asbestos detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected
Trace Analysis	-	[NT]	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - materials						
Our Reference		273096-11	273096-12	273096-13	273096-14	273096-15
Your Reference	UNITS	AS-11	AS-12	AS-13	AS-14	AS-15
Date Sampled		28/06/2021	28/06/2021	28/06/2021	28/06/2021	28/06/2021
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Mass / Dimension of Sample	-	30x20x3mm	20x10x5mm	60x32x5mm	16x15x5mm	12x10x2mm
Sample Description	-	Beige fibre cement material & paint	Beige fibre cement material	Beige fibre cement material	Brown bituminous material	Brown bituminous material
Asbestos ID in materials	-	No asbestos detected Organic fibres detected	Chrysotile asbestos detected Organic fibres detected	Chrysotile asbestos detected Amosite asbestos detected Organic fibres detected	Chrysotile asbestos detected	Chrysotile asbestos detected
Trace Analysis	-	No asbestos detected	[NT]	[NT]	[NT]	[NT]

Asbestos ID - materials						
Our Reference		273096-16	273096-17	273096-18	273096-19	273096-20
Your Reference	UNITS	AS-16	AS-17	AS-18	AS-19	AS-20
Date Sampled		28/06/2021	28/06/2021	28/06/2021	28/06/2021	28/06/2021
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Mass / Dimension of Sample	-	20x15x2mm	7x3x1mm	15x15x1mm	30x15x4mm	12x12x8mm
Sample Description	-	Pink insulation material	Brown bituminous material	Grey soft mastic	Brown bituminous material	Brown bituminous material
Asbestos ID in materials	-	No asbestos detected	Chrysotile asbestos detected	Chrysotile asbestos detected	Chrysotile asbestos detected	Chrysotile asbestos detected
Trace Analysis	-	No asbestos detected	[NT]	[NT]	[NT]	[NT]

Asbestos ID - materials						
Our Reference		273096-21	273096-22	273096-23	273096-24	273096-25
Your Reference	UNITS	AS-21	AS-22	AS-23	AS-24	AS-25
Date Sampled		28/06/2021	28/06/2021	28/06/2021	28/06/2021	28/06/2021
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Mass / Dimension of Sample	-	145x85x5mm	30x22x5mm	115x70x5mm	70x50x3mm	30x23x5mm
Sample Description	-	Beige fibre cement material	Beige fibre cement material	Beige fibre cement material	Orange vinyl tile & adhesive	Beige fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected Organic fibres detected	Chrysotile asbestos detected	Chrysotile asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	Chrysotile asbestos detected Organic fibres detected
Trace Analysis	-	[NT]	[NT]	[NT]	No asbestos detected	[NT]

Asbestos ID - materials						
Our Reference		273096-26	273096-27	273096-28	273096-29	273096-30
Your Reference	UNITS	AS-26	AS-27	AS-28	AS-29	AS-30
Date Sampled		28/06/2021	28/06/2021	28/06/2021	28/06/2021	28/06/2021
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Mass / Dimension of Sample	-	30x30x2mm	35x22x5mm	77x61x3mm	20x17x2mm	25x20x4mm
Sample Description	-	Beige fibre cement material	Beige fibre cement material	Beige vinyl tile & adhesive	Beige fibre cement material	Beige fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected Organic fibres detected	Chrysotile asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	Chrysotile asbestos detected Organic fibres detected	Chrysotile asbestos detected Organic fibres detected
Trace Analysis	-	[NT]	[NT]	No asbestos detected	[NT]	[NT]

Asbestos ID - materials						
Our Reference		273096-31	273096-32	273096-33	273096-34	273096-35
Your Reference	UNITS	AS-31	AS-32	AS-33	AS-34	AS-35
Date Sampled		28/06/2021	28/06/2021	28/06/2021	28/06/2021	28/06/2021
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Mass / Dimension of Sample	-	20x9x3mm	30x25x5mm	103x47x3mm	30x15x4mm	20x15x2mm
Sample Description	-	Beige fibre cement material	Beige fibre cement material	Orange vinyl tile & adhesive	Brown bituminous material	Beige fibrous material
Asbestos ID in materials	-	Chrysotile asbestos detected Organic fibres detected	Chrysotile asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	Chrysotile asbestos detected	Chrysotile asbestos detected Organic fibres detected
Trace Analysis	-	[NT]	[NT]	No asbestos detected	[NT]	[NT]

Asbestos ID - materials						
Our Reference		273096-36	273096-37	273096-38	273096-39	273096-40
Your Reference	UNITS	AS-36	AS-37	AS-38	AS-39	AS-40
Date Sampled		28/06/2021	28/06/2021	28/06/2021	28/06/2021	28/06/2021
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Mass / Dimension of Sample	-	20x20x2mm	15x10x2mm	65x20x10mm	115x30x12mm	20x17x5mm
Sample Description	-	Grey soft mastic	Beige fibre cement material	Black bituminous material	Black bituminous material	Beige fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected	Chrysotile asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected
Trace Analysis	-	[NT]	[NT]	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - materials					
Our Reference		273096-41	273096-42	273096-43	273096-44
Your Reference	UNITS	AS-41	AS-42	AS-43	AS-44
Date Sampled		28/06/2021	28/06/2021	28/06/2021	28/06/2021
Type of sample		Material	Material	Material	Material
Date analysed	-	06/07/2021	06/07/2021	06/07/2021	06/07/2021
Mass / Dimension of Sample	-	8x5x3mm	35x32x3mm	47x25x3mm	10x10x2mm
Sample Description	-	Brown resinous material	Grey resinous material	Grey resinous material	Brown resinous material
Asbestos ID in materials	-	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Lead in swab				
Our Reference		273096-45	273096-46	273096-47
Your Reference	UNITS	LD-3	LD-4	LD-2
Date Sampled		28/06/2021	28/06/2021	28/06/2021
Type of sample		Swab	Swab	Swab
Date prepared	-	08/07/2021	08/07/2021	08/07/2021
Date analysed	-	08/07/2021	08/07/2021	08/07/2021
Lead in Swabs	µg/swab	1,700	220	170

Lead in Paint		
Our Reference		273096-48
Your Reference	UNITS	LP-11
Date Sampled		28/06/2021
Type of sample		Paint
Date prepared	-	06/07/2021
Date analysed	-	06/07/2021
Lead in paint	%w/w	6.2

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Metals-020/021/022	Digestion of Paint chips/scrapings/liquids for Metals determination by ICP-AES/MS and or CV/AAS.
Metals-020/021/022	Digestion of Dust wipes/swabs and /or miscellaneous samples for Metals determination by ICP-AES/MS and/or CV-AAS

QUALITY CONTROL: Lead in swab					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			08/07/2021	[NT]	[NT]	[NT]	[NT]	08/07/2021	[NT]
Date analysed	-			08/07/2021	[NT]	[NT]	[NT]	[NT]	08/07/2021	[NT]
Lead in Swabs	µg/swab	1	Metals-020/021/022	<1	[NT]	[NT]	[NT]	[NT]	107	[NT]

QUALITY CONTROL: Lead in Paint						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			06/07/2021	[NT]	[NT]	[NT]	[NT]	06/07/2021	[NT]
Date analysed	-			06/07/2021	[NT]	[NT]	[NT]	[NT]	06/07/2021	[NT]
Lead in paint	%w/w	0.005	Metals-020/021/022	<0.005	[NT]	[NT]	[NT]	[NT]	106	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Note, even after disintegration, it can be difficult to detect the presence of asbestos in some asbestos containing bulk materials using PLM and dispersion staining. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.

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CERTIFICATE OF ANALYSIS 273548

Client Details

Client	Douglas Partners Pty Ltd
Attention	Tim Kulmar
Address	96 Hermitage Rd, West Ryde, NSW, 2114

Sample Details

Your Reference	**99671.05, Epping South**
Number of Samples	7 Paint
Date samples received	07/07/2021
Date completed instructions received	07/07/2021

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	09/07/2021
Date of Issue	09/07/2021

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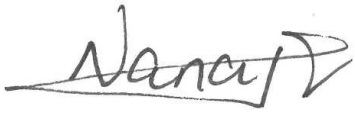
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Asbestos Approved By
Analysed by Asbestos Approved Identifier: Wonnie Condos
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Giovanni Agosti, Group Technical Manager
Lucy Zhu, Asbestos Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

Lead in Paint						
Our Reference		273548-1	273548-2	273548-3	273548-4	273548-5
Your Reference	UNITS	LP-12	LP-13	LP-14	LP-15	LP-16
Date Sampled		28/06/2021	28/06/2021	28/06/2021	28/06/2021	28/06/2021
Type of sample		Paint	Paint	Paint	Paint	Paint
Date prepared	-	09/07/2021	09/07/2021	09/07/2021	09/07/2021	09/07/2021
Date analysed	-	09/07/2021	09/07/2021	09/07/2021	09/07/2021	09/07/2021
Lead in paint	%w/w	0.009	<0.005	0.12	0.58	0.005

Asbestos ID - Paint			
Our Reference		273548-6	273548-7
Your Reference	UNITS	AS-45	AS-46
Date Sampled		28/06/2021	28/06/2021
Type of sample		Paint	Paint
Date analysed	-	08/07/2021	08/07/2021
Mass / Dimension of Sample	-	20x20x2mm	40x35x2mm
Sample Description	-	Plaster & paint	Beige fibre cement material & paint
Asbestos ID in materials	-	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Metals-020/021/022	Digestion of Paint chips/scrapings/liquids for Metals determination by ICP-AES/MS and or CV/AAS.

QUALITY CONTROL: Lead in Paint						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			09/07/2021	[NT]	[NT]	[NT]	[NT]	09/07/2021	[NT]
Date analysed	-			09/07/2021	[NT]	[NT]	[NT]	[NT]	09/07/2021	[NT]
Lead in paint	%w/w	0.005	Metals-020/021/022	<0.005	[NT]	[NT]	[NT]	[NT]	94	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

8.9 A.9 Waste classification

Material Type on Site	Estimated Volume (m^3) or Weight (t) (Most Favourable → Least)			ON-SITE TREATMENT	OFF-SITE TREATMENT	
	Reuse	Recycling	Disposal	Proposed reuse and/or recycling collection methods	Disposal / Transport Contractor	Waste Depot, Recycling Outlet or Landfill site
Concrete Brick Block-work & Tile		197m^3		Co-mingled Bins	TBA	Crushed for road base
Metals		114m^3		Co-mingled Bins	TBA	Scrap Metal Dealer for smelting
Timber off-cuts		247m^3		Co-mingled Bins	TBA	Recycled for chips and mulch
Cardboard		169m^3		Co-mingled Bins	TBA	Recycled into cardboard
Plasterboard		184m^3		Co-mingled Bins	TBA	Recycled as soil conditioner
Plastics, plastic packaging, paint drums, containers		142m^3	25 m^{3-}	Co-mingled Bins	TBA	- Styrene and plastic to landfill * Paint drums nested and recycled
Pallets and Reels	130 units			Separated onsite	TBA	Returned to the supplier
Liquid Waste			17 m^3	Separated onsite	TBA	Transferred to licenced landfill
General Waste			170 m^3	Co-mingled Bins	TBA	Transferred to licenced landfill
Sub Total	**NB:130 units**	**1,053m^3**	**212 m^3**			
TOTAL	**1,265 m^3**			**NB: Plus, an additional 130 pallets (single units returned to suppliers for reuse)**		

Narrative:
As the contracts for all contractors have not been let there are still those including the waste contractor To Be advised (TBA**).**
All waste will be co-mingled and taken for off-site separation and reuse or recycling except Pallets and Reels and liquid waste to be sent to landfill for processing.

8.10 A.10 SSDA Compliance Conditions

Refer over the page for a condition satisfaction table outlining where each of the conditions have been addressed throughout the CEMP.

Development Consent

Section 4.38 of the Environmental Planning and Assessment Act 1979

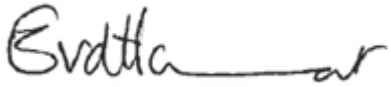
As delegate of the Minister for Planning and Public Spaces under delegation executed on 26 April 2021, I determine:

(a) to grant consent to the Development Application referred to in Schedule 1, subject to the conditions specified in Schedule 2 and Schedule 3; and

(b) that pursuant to section 4.37 of the *Environmental Planning and Assessment Act 1979*, any subsequent stage of the development not being for the purpose of an educational establishment comprising alterations and additions to an existing school with a capital investment value in excess of $20 million is to be determined by the relevant authority and that stage of the development ceases to be state significant development.

These conditions are required to:

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



Erica van den Honert
Executive Director
Infrastructure Assessments

Sydney 26 November 2021

SCHEDULE 1

Application Number:	SSD-8873789
Applicant:	Department of Education
Consent Authority:	Minister for Planning and Public Spaces
Site:	86 Chelmsford Avenue, Epping (Lot 1, DP582172)

Development: Concept masterplan and Stage 1 development for the New Epping South Primary School, including:

- a Concept Proposal for:
  - new Kindergarten to Year 6 primary school;
  - demolition of existing structures associated with the former use of the site as a TAFE campus;
  - building envelopes and land use for maximum three storey buildings on the central and eastern sections of the site; and

- associated works including road upgrades, pedestrian infrastructure, parking, earthworks, tree removal, site remediation, drainage works, landscaping and school signage.

- Stage 1:
  - demolition of existing structures on site and site preparation including bulk earthworks;
  - construction of a three storey building comprising home bases, special education learning areas, covered outdoor learning areas (COLA), administration/staff areas, canteen, library and amenities to cater for a capacity of 600 students;
  - construction of a single storey hall/out of school hours building with COLA;
  - construction of an extension to Grimes Avenue to link with Second Avenue containing drop-off/pick-up facilities and Stage 1 car park with access from Second Avenue; and
  - associated works including tree removal, site remediation, covered walkways, landscaping, outdoor play areas and sports court, bicycle parking, drainage works and school signage.

DEFINITIONS

Aboriginal object	Has the same meaning as the definition of the term in section 5 of the *National Parks and Wildlife Act 1974*
Aboriginal place	Has the same meaning as the definition of the term in section 5 of the *National Parks and Wildlife Act 1974*
Accredited Certifier	Means the holder of accreditation as an accredited certifier under the *Building Professionals Act 2005* acting in relation to matters to which the accreditation applies
Advisory Notes	Advisory information relating to the consent but do not form a part of this consent
Applicant	NSW Department of Education or any other person carrying out any development to which this consent applies
BCA	Building Code of Australia
BC Act	*Biodiversity Conservation Act 2016*
CEMP	Construction Environmental Management Plan
Certification of Crown building work	Certification under section 6.28(2) of the EP&A Act
Certifier	Means a council or accredited certifier or in the case of Crown development, a person qualified to conduct a Certification of Crown Building work
Compliance Reporting Post Approval Requirements	Compliance Reporting Post Approval Requirements as available on the Department's website
Conditions of this consent	The conditions contained in Schedule 2 and Schedule 3 of this document
Construction	All physical work to enable operation including (unless specifically excluded by a condition) but not limited to the demolition and removal of buildings, the carrying out of works for the purposes of the development, including bulk earthworks, and erection of buildings and other infrastructure permitted by this consent, but excluding the following: • demolition and removal of buildings; • removal of trees as approved under the consent; • building and road dilapidation surveys; • investigative drilling or investigative excavation; • archaeological salvage; • establishing temporary site offices (in locations identified by the conditions of this consent); • installation of environmental impact mitigation measures, fencing, enabling works; and • minor adjustments to services or utilities However, where heritage items, or threatened species or threatened ecological communities (within the meaning of the *Biodiversity Conservation Act 2016 or Environment Protection and Biodiversity Conservation Act 1999*) are affected or potentially affected by any physical work, that work is construction, unless otherwise determined by the Planning Secretary in consultation with EES Group or DPIE Fisheries (in the case of impact upon fish, aquatic invertebrates or marine vegetation)
Council	City of Parramatta Council
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
Demolition	The deconstruction and removal of buildings, sheds and other structures on the site

Department	NSW Department of Planning, Industry and Environment
Development	The development described in the EIS and RtS, including the works and activities comprising as specified in Schedule 1 and as modified by the conditions of this consent
Development Application(s)	Application for development consent or other assessment process prescribed in the *Environmental Planning and Assessment Act 1979* including exempt and complying development
DOPU	Drop-off and pick-up
Earthworks	Bulk earthworks, site levelling, import and compaction of fill material, excavation for installation of drainage and services
EES Group	Environment, Energy and Science Group of the Department of Planning, Industry and Environment
EIS	The Environmental Impact Statement titled *State Significant Development (SSD-8873789) New Primary School in Epping*, prepared by DFP Planning dated 20 May 2021, submitted with the application for consent for the development, including any additional information provided by the Applicant in support of the application
ENM	Excavated Natural Material
Environment	Includes all aspects of the surroundings of humans, whether affecting any human as an individual or in his or her social groupings
EPA	NSW Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPL	Environment Protection Licence under the POEO Act
Evening	The period from 6pm to 10pm
Feasible	Means what is possible and practical in the circumstances
Heritage	Encompasses both Aboriginal and historic heritage including sites that predate European settlement, and a shared history since European settlement
Heritage NSW	Heritage, Community Engagement of the Department of Premier and Cabinet
Incident	An occurrence or set of circumstances that causes, or threatens to cause, material harm and which may or may not be, or cause, a non-compliance *Note: "material harm" is defined in this consent*
Independent Audit Post Approval Requirements	Independent Audit Post Approval Requirements as available on the Department's website
Land	Has the same meaning as the definition of the term in section 1.4 of the EP&A Act
EMP	Environmental Management Plan
Management and mitigation measures	The management and mitigation measures set out in Section 7 of the EIS
Material harm	Is harm that: a) involves actual or potential harm to the health or safety of human beings or to the environment that is not trivial; or b) results in actual or potential loss or property damage of an amount, or amounts in aggregate, exceeding $10,000, (such loss includes the reasonable costs and expenses that would be incurred in taking all reasonable and practicable measures to prevent, mitigate or make good harm to the environment)
Minister	NSW Minister for Planning and Public Spaces (or delegate)

Mitigation	Activities associated with reducing the impacts of the development prior to or during those impacts occurring
Monitoring	Any monitoring required under this consent must be undertaken in accordance with section 9.39 of the EP&A Act
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
Non-compliance	An occurrence, set of circumstances or development that is a breach of this consent
Operation	The carrying out of the approved purpose of the development upon completion of construction operational readiness work
Operational readiness work	Use of the completed areas of the development by school staff to prepare for the operation of the development
Planning Secretary	Planning Secretary under the EP&A Act, or nominee
POEO Act	*Protection of the Environment Operations Act 1997*
Reasonable	Means applying judgement in arriving at a decision, taking into account: mitigation, benefits, costs of mitigation versus benefits provided, community views, and the nature and extent of potential improvements
Registered Aboriginal Parties	Means the Aboriginal persons identified in accordance with the document entitled "*Aboriginal cultural heritage consultation requirements for proponents 2010*" (DECCW)
Rehabilitation	The restoration of land disturbed by the development to a good condition, to ensure it is safe, stable and non-polluting
RSA	Road Safety Audit
RtS	The Applicant's Response to Submissions and Amended Proposal to issues raised in submissions received in relation to the application for consent for the development under the EP&A Act, titled *State Significant Development Response to Submissions New Primary School in Epping – SSD 8873789*, prepared by Johnstaff, dated 23 July 2021
Sensitive receivers	A location where people are likely to work, occupy or reside, including a dwelling, school, hospital, office or public recreational area
Site	The land defined in Schedule 1
Site Auditor	As defined in section 4 of the *Contaminated Land Management Act 1997*
Site Audit Report	As defined in section 4 of the *Contaminated Land Management Act 1997*
Site Audit Statement	As defined in section 4 of the *Contaminated Land Management Act 1997*
SRtS	The Applicant's Supplementary Response to Submissions to issues raised in submissions received in relation to the application for consent for the development under the EP&A Act, titled *State Significant Development Response to Submissions 2 New Primary School in Epping – SSD 8873789*, prepared by Johnstaff, dated 17 September 2021
TfNSW	Transport for New South Wales
VENM	Virgin Excavated Natural Material
Waste	Has the same meaning as the definition of the term in the Dictionary to the POEO Act
Year	A period of 12 consecutive months

SCHEDULE 2

CONDITIONS OF CONSENT FOR CONCEPT PROPOSAL

PART A ADMINISTRATIVE CONDITIONS

Obligation to Minimise Harm to the Environment

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

Determination of Future Applications

A2. In accordance with section 4.22(4) of the EP&A Act all development under the Concept Proposal must be subject of future application(s).

A3. The determination of future development application(s) is not be inconsistent with the terms of development consent SSD-8873789 as described in Schedule 1 and subject to conditions in Part B, Schedule 2.

Terms of Consent

A4. The development may only be carried out:

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

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

(c) generally in accordance with the EIS, RtS and SRtS; and

(d) in accordance with the approved plans in the table below:

Architectural Drawings prepared by *Pedavoli Architects*			
Dwg No.	**Rev**	**Name of Plan**	**Date**
1001	B	Site Plan	12 July 2021
1004	B	Staging Plan	12 July 2021
1101	C	Northwest & Northeast Elevations	22 November 2021
1102	C	Southwest & Southeast Elevations	22 November 2021
1103	C	Streetscape Elevations	22 November 2021
1201	C	Sections 1	22 November 2021
1201	C	Sections 2	22 November 2021
1501	B	SSDA GFA Plan	12 July 2021
Landscaping Plans prepared by Taylor Brammer Landscape Architects			
Dwg No.	**Rev**	**Name of Plan**	**Date**
L000	C	Landscape: Cover Sheet	12 July 2021
L100	C	Overall Site Plan	12 July 2021

A5. Consistent with the requirements in this consent, the Planning Secretary may make written directions to the Applicant in relation to:

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

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

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

A6. The conditions of this consent and directions of the Planning Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document listed in condition A4(c). In the event of an inconsistency, ambiguity or conflict between any of the documents listed in condition A4(c), the most recent document prevails to the extent of the inconsistency, ambiguity or conflict.

Limits of Consent

A7. This consent lapses five years after the date of consent unless work is physically commenced.

Grimes Lane Drop-Off and Pick-Up (DOPU) Facilities

A8. Prior to the school student population exceeding 600 and again exceeding 800 students, surveys must be undertaken of the Grimes Lane DOPU facilities in both the morning and afternoon peak periods (over multiple days) to determine the operation of the area and its ability to accommodate student demands. The surveys must include:

(a) the number of vehicles using the Grimes Lane DOPU facilities throughout the morning and afternoon school drop-off and pick-up periods;

(b) the number of occupied and unoccupied parking spaces within the DOPU facilities on Grimes Lane throughout the morning and afternoon school drop-off and pick-up periods;

(c) the extent of any vehicle queuing that may take place on Grimes Lane or surrounding residential streets during the morning and afternoon school drop-off and pick-up periods;

(d) typical dwell time (length of stay) of vehicles within the DOPU facilities on Grimes Lane; and

(e) the proportion of students being dropped off on surrounding residential streets, as opposed to the formal Grimes Lane DOPU area, via interview surveys to be conducted by the school.

A9. Prepare a report that includes an analysis, based on the findings from surveys conducted under condition A8, which identifies any existing shortfall in capacity of DOPU facilities operation, consequent vehicle queuing and student drop-off/pick-up on surrounding residential streets. The report must also assess the likely increase in DOPU facilities demand on Grimes Lane based on the increased student load associated with the subsequent stage of development and must conclude whether the increased demand for DOPU facilities could be accommodated on Grimes Lane. The report must be submitted to the satisfaction of the Planning Secretary and a copy provided to Council for information.

A10. Where the report prepared under condition A9 concludes that insufficient space would be available on Grimes Lane to accommodate the additional demands, the report must include mitigation measures to ensure that the increase in students would not adversely affect the safety or amenity of surrounding residential streets. Measures may include, but not limited to:

(a) active on site management and staffing of the DOPU facilities on Grimes Lane to provide for efficient traffic management and facilitate a higher turnover of vehicles within the area;

(b) staggered start and finish times to spread the DOPU demand over a longer time period;

(c) annual review of the STP to improve effectiveness of mode share shifts towards public and active transport options; and

(d) provision of additional DOPU facilities.

A11. Any mitigation measures proposed as a result of condition A10 above, must be implemented prior to the school student population exceeding 600 students and subsequently again before exceeding 800 students. Evidence of any implemented mitigation measures must be submitted to the satisfaction of the Planning Secretary and a copy provided to Council for information.

Road Safety Audit

A12. Within three months of the student population exceeding 600 students and again within three months of the student population exceeding 800 students, an independent Road Safety Audit (RSA), prepared by a suitably qualified consultant, must be undertaken of the local road network surrounding the school and generally centred on Grimes Lane, First Avenue, Second Avenue, Chelmsford Avenue, Edenlee Street and intersecting roads. The RSA and evidence of

implementation of recommendations must be submitted to the Certifier and a copy provided to Council and the Planning Secretary for information.

Prescribed Conditions

A13. The Applicant must comply with all relevant prescribed conditions of development consent under Part 6, Division 8A of the EP&A Regulation.

Planning Secretary as Moderator

A14. In the event of a dispute between the Applicant and a public authority, in relation to an applicable requirement in this approval or relevant matter relating to the Development, either party may refer the matter to the Planning Secretary for resolution. The Planning Secretary's resolution of the matter must be binding on the parties.

PART B CONDITIONS TO BE SATISFIED IN FUTURE DEVELOPMENT APPLICATIONS

Building Design

B1. All future development application(s) for new built form for Stage 2 and Stage 3 must include:

(a) detailed plans, elevations and sections;

(b) artist's perspectives and photomontages; and

(c) a detailed design statement prepared by the project architect demonstrating the design quality of the proposed development having regard to the existing buildings on site, adjacent properties and the character of the surrounding development including, but not limited to, an assessment of:

(i) how the proposed design responds to and mitigates environmental impacts such as acoustic and visual privacy, solar access to adjoining buildings and public spaces, noise and reflectivity;

(ii) how the proposal incorporates a high standard of architectural design, materials and detailing appropriate to the building type and location; and

(iii) how the proposal is consistent with the New Primary School in Epping, Design Analysis Report dated 13 July 2021 and prepared by Pedavoli Architects.

B2. The proposed new built form for Stage 2 and Stage 3 must be contained within the approved building envelopes illustrated in the approved plans referenced at Schedule 2, Condition A4(d).

Environmental Amenity

B3. All future development applications for new built form for Stage 2 and Stage 3 must:

(a) include an assessment of amenity impacts including solar access (including detailed overshadowing diagrams), visual privacy, view loss and light spill; and

(b) be accompanied by a noise and vibration assessment that identifies and provides a quantitative assessment of the main noise generating sources and activities during construction, and any noise sources during operation. Details are to be provided outlining any mitigation measures to ensure the amenity of adjoining sensitive land uses is protected throughout the construction and operational periods.

Sediment and Erosion Control

B4. All future development applications for new built for Stage 2 and Stage 3 must be accompanied by a Sediment and Erosion Control Plan.

Landscaping

B5. Where future development applications for new built form for Stage 2 and Stage 3 impact existing landscaping, they must include:

(a) detailed landscape plans identifying any additional vegetation to be removed or relocated, and the location of replacement and additional landscaping. The plans must:

i) be generally in accordance with the landscaping plans, submitted with the RtS, prepared by Taylor Brammer Landscape Architects dated 12 July 2021; and

ii) include relevant details of the species to be planted (preferably species native/indigenous to the area) and the landscape treatments, including any pavement and seating areas.

(b) an arboricultural impact assessment, including detailed root mapping, which demonstrates that the Stage 2 and Stage 3 works would not be detrimental to the long term health of the existing trees retained on site.

Ecologically Sustainable Development

B6. All future development applications for new built form for Stage 2 and Stage 3 must demonstrate how the principles of Ecologically Sustainable Development have been incorporated into the design, construction and on-going operation of the new buildings.

Utilities

B7. All future development applications for new built form for Stage 2 and Stage 3 must address the existing capacity and any augmentation requirements of the development for the provision of utilities including staging of infrastructure through the preparation of an Infrastructure Management Plan in consultation with relevant agencies and service providers.

Stormwater and Flooding

B8. All future development applications for new built form for Stage 2 and Stage 3 must be accompanied by:

(a) a Stormwater Management Plan detailing an assessment of any flood risk on site and consideration of any relevant provisions of the NSW Floodplain Development Manual 2005, stormwater and drainage infrastructure, and details demonstrating that water sensitive urban design measures have been incorporated into the development; and

(b) a Stormwater Plan.

Disability Access

B9. All future development applications for new built form for Stage 2 and Stage 3 must include a Disability Access Review to demonstrate an appropriate degree of accessibility in accordance with the *Disability (Access to Premises - buildings) Standards 2010 (the Premises Standards*).

Waste

B10. All future development applications for the new built form for Stage 2 and Stage 3 must include a Waste Management Plan to address storage, collection, and management of waste and recycling within the development.

Traffic, Access and Car Parking

B11. All future development applications for new built form for Stage 2 and Stage 3 must be accompanied by:

(a) a detailed assessment of the traffic and transport impacts associated with the construction and operation of the proposed development, including (but not limited to) information demonstrating that the drop-off and pick-up facilities can sufficiently cater for the proposed increase in student numbers in Schedule 2, Part A Conditions for Concept Approval, condition A8 to condition A11;

(b) plans confirming that the on site car park has a minimum provision of 53 spaces in Stage 2 and Stage 3;

(c) an updated School Transport Plan for the school, outlining the measures to reduce private vehicle usage; and

(d) a preliminary Construction Traffic and Pedestrian Management Plan detailing vehicles routes, numbers of trucks, hours of operation, access arrangements and traffic control measures.

Geotechnical Assessment Report

B12. All future development applications for new built form for Stage 2 and Stage 3 must be accompanied by a detailed Geotechnical Assessment Report with details of proposed mitigation measures during excavation works and measures to control impacts on adjoining properties due to vibration or changes to groundwater or drainage during construction.

SCHEDULE 3
CONDITIONS OF APPROVAL FOR STAGE 1 WORKS
PART A ADMINISTRATIVE CONDITIONS

Obligation to Minimise Harm to the Environment

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

Terms of Consent

A2. The development may only be carried out:

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

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

(c) generally in accordance with the EIS, RtS and SRtS; and

(d) in accordance with the approved plans in the table below:

Architectural Drawings prepared by *Pedavoli Architects*			
Dwg No.	**Rev**	**Name of Plan**	**Date**
001	D	Site Plan	12 July 2021
003	D	Demolition Plan	12 July 2021
011	D	Composite Plan - Ground Floor	12 July 2021
012	D	Composite Plan - First Floor	12 July 2021
013	D	Composite Plan - Second Floor	12 July 2021
021	D	Composite Plan - Roof Plan	12 July 2021
101	D	Northwest & Northeast Elevations	12 July 2021
102	D	Southwest & Southeast Elevations	12 July 2021
103	D	Streetscape Elevation	12 July 2021
201	D	Sections 1	12 July 2021
202	D	Sections 2	12 July 2021
401	D	Render and Materials Sample Board	12 July 2021
Landscaping Plans prepared by Taylor Brammer Landscape Architects			
Dwg No.	**Rev**	**Name of Plan**	**Date**
L000	C	Landscape: Cover Sheet	12 July 2021
L100	C	Landscape: Overall Site Plan	12 July 2021
L200	A	Landscape: Finishes Plan	12 July 2021
L201	A	Landscape: Finishes Plan	12 July 2021
L300	A	Landscape: Grading Plan	12 July 2021
L301	A	Landscape: Grading Plan	12 July 2021
L400	A	Landscape: Planting Plan	12 July 2021
L401	A	Landscape: Planting Plan	12 July 2021
L500	A	Landscape: Cross Sections	12 July 2021
L501	A	Landscape: Cross Sections	12 July 2021
L502	A	Landscape: Cross Sections	12 July 2021
L503	A	Landscape: Cross Sections	12 July 2021
L600	A	Landscape: Construction Details	12 July 2021
L601	A	Landscape: Construction Details	12 July 2021

L700	A	Landscape: Specification	12 July 2021
L701	A	Landscape: Specification	12 July 2021
Civil Engineering Drawing prepared by ptc.			
00_0201	P6	Bulk Earthworks Plan	19 July 2021

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

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

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

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

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

Limits of Consent

A5. This consent lapses five years after the date of consent unless work is physically commenced.

Prescribed Conditions

A6. The Applicant must comply with all relevant prescribed conditions of development consent under Part 6, Division 8A of the EP&A Regulation.

Planning Secretary as Moderator

A7. In the event of a dispute between the Applicant and a public authority, in relation to an applicable requirement in this approval or relevant matter relating to the Development, either party may refer the matter to the Planning Secretary for resolution. The Planning Secretary's resolution of the matter must be binding on the parties.

Evidence of Consultation

A8. Where conditions of this consent require consultation with an identified party, the Applicant must:

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

(b) provide details of the consultation undertaken including:

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

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

Staging

A9. The project may be constructed and operated in stages. Where compliance with conditions is required to be staged due to staged construction or operation, a Staging Report (for either or both construction and operation as the case may be) must be prepared and submitted to the satisfaction of the Planning Secretary. The Staging Report must be submitted to the Planning Secretary no later than one month before the commencement of construction of the first of the proposed stages of construction (or if only staged operation is proposed, one month before the commencement of operation of the first of the proposed stages of operation).

A10. A Staging Report prepared in accordance with condition A9 must:

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

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

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

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

A11. Where a Staging Report is required, the project must be staged in accordance with the Staging Report, as approved by the Planning Secretary.

A12. Where construction or operation is being staged in accordance with a Staging Report, the terms of this consent that apply or are relevant to the works or activities to be carried out in a specific stage must be complied with at the relevant time for that stage as identified in the Staging Report.

Staging, Combining and Updating Strategies, Plans or Programs

A13. The Applicant may:

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

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

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

A14. Any strategy, plan or program prepared in accordance with condition A13, where previously approved by the Planning Secretary under this consent, must be submitted to the satisfaction of the Planning Secretary.

A15. If the Planning Secretary agrees, a strategy, plan (including management plan, architectural or design plan), or program may be staged or updated without consultation being undertaken with all parties required to be consulted in the relevant condition in this consent.

A16. Updated strategies, plans (including management plan, architectural or design plan), or programs supersede the previous versions of them and must be implemented in accordance with the condition that requires the strategy, plan, program or drawing.

Structural Adequacy

A17. All new buildings and structures, and any alterations or additions to existing buildings and structures, that are part of the development, must be constructed in accordance with the relevant requirements of the BCA.

Notes: Part 8 of the EP&A Regulation sets out the requirements for the certification of the development.

External Walls and Cladding

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

External Materials

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

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

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

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

Applicability of Guidelines

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

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

Monitoring and Environmental Audits

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

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

Access to Information

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

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

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

(ii) all current statutory approvals for the development;

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

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

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

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

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

(viii) a complaints register, updated monthly;

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

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

(b) keep such information up to date, to the satisfaction of the Planning Secretary and publicly available for 12 months after the commencement of operations.

Compliance

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

Incident Notification, Reporting and Response

A25. The Planning Secretary must be notified through the major projects portal immediately after the Applicant becomes aware of an incident. The notification must identify the development (including the development application number and the name of the development if it has one), and set out the location and nature of the incident.

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

Non-Compliance Notification

A27. The Planning Secretary must be notified through the major projects portal within seven days after the Applicant becomes aware of any non-compliance. The Certifier must also notify the Planning Secretary through the major projects portal within seven days after they identify any non-compliance.

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

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

Revision of Strategies, Plans and Programs

A30. Within three months of:

(a) the submission of a compliance report under condition A32;

(b) the submission of an incident report under condition A26;

(c) the submission of an Independent Audit under condition C41 or C42;

(d) the approval of any modification of the conditions of this consent; or

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

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

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

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

Compliance Reporting

A32. Compliance Reports of the project must be carried out in accordance with the Compliance Reporting Post Approval Requirements.

A33. Compliance Reports must be submitted to the Department in accordance with the timeframes set out in the Compliance Reporting Post Approval Requirements, unless otherwise agreed by the Planning Secretary.

A34. The Applicant must make each Compliance Report publicly available 60 days after submitting it to the Planning Secretary.

A35. Notwithstanding the requirements of the Compliance Reporting Post Approval Requirements, the Planning Secretary may approve a request for ongoing annual operational compliance

reports to be ceased, where it has been demonstrated to the Planning Secretary's satisfaction that an operational compliance report has demonstrated operational compliance.

PART B PRIOR TO COMMENCEMENT OF CONSTRUCTION

Notification of Commencement

B1. The Applicant must notify the Planning Secretary in writing of the dates of the intended commencement of construction and operation at least 48 hours before those dates.

B2. If the construction or operation of the development is to be staged, the Planning Secretary must be notified in writing at least 48 hours before the commencement of each stage, of the date of commencement and the development to be carried out in that stage.

Certified Drawings

B3. Prior to the commencement of construction, the Applicant must submit to the satisfaction of the Certifier structural drawings prepared and signed by a suitably qualified practising Structural Engineer that demonstrates compliance with this development consent.

External Walls and Cladding

B4. Prior to the commencement of construction, the Applicant must provide the Certifier with documented evidence that the products and systems proposed for use or used in the construction of external walls, including finishes and claddings such as synthetic or aluminium composite panels, comply with the requirements of the BCA. The Applicant must provide a copy of the documentation given to the Certifier to the Planning Secretary within seven days after the Certifier accepts it.

Protection of Public Infrastructure

B5. Prior to the commencement of demolition, removal of buildings or construction (whichever occurs first), the Applicant must:

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

(b) prepare a Pre-Construction Dilapidation Report identifying the condition of all public (non-residential) infrastructure and assets in the vicinity of the site (including roads, gutters and footpaths) that have potential to be affected;

(c) submit a copy of the Pre-Construction Dilapidation Report to the asset owner, Certifier and Council; and

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

Pre-Construction Survey – Residential Properties

B6. Prior to the commencement of any demolition, removal of buildings or construction (whichever occurs first), the Applicant must offer a pre-construction survey to owners of residential buildings that are likely to be impacted by vibration generating works.

B7. Where the offer for a pre-construction survey is accepted (as required by condition B6), the Applicant must arrange for a survey to be undertaken by a suitably qualified and experienced expert prior to the commencement of vibration generating works that could impact on the identified buildings.

B8. Prior to the commencement of any vibration generating works that could impact on the buildings surveyed as required by condition B6 and B7, the Applicant must:

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

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

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

Community Communication Strategy

B9. No later than 48 hours prior the commencement of construction, a Community Communication Strategy must be submitted to the Planning Secretary for information. The Community

Communication Strategy must provide mechanisms to facilitate communication between the Applicant, the relevant Council and the community (including adjoining affected landowners and businesses, and others directly impacted by the development), during the design and construction of the development and for a minimum of 12 months following the completion of construction. The Community Communication Strategy must:

(a) identify people to be consulted during the design and construction phases;

(b) set out procedures and mechanisms for the regular distribution of accessible information about or relevant to the development;

(c) provide for the formation of community-based forums, if required, that focus on key environmental management issues for the development;

(d) set out procedures and mechanisms:

(i) through which the community can discuss or provide feedback to the Applicant;

(ii) through which the Applicant will respond to enquiries or feedback from the community; and

(iii) to resolve any issues and mediate any disputes that may arise in relation to construction and operation of the development, including disputes regarding rectification or compensation.

Ecologically Sustainable Development

B10. Prior to the commencement of construction, unless otherwise agreed by the Planning Secretary, the Applicant must demonstrate that ESD is being achieved by either:

(a) registering for a minimum 4 star Green Star rating with the Green Building Council Australia and submit evidence of registration to the Certifier; or

(b) seeking approval from the Planning Secretary for an alternative certification process.

Outdoor Lighting

B11. Prior to commencement of lighting installation, evidence must be submitted to the satisfaction of the Certifier that all outdoor lighting within the site has been designed to comply with AS 1158.3.1:2005 Lighting for roads and public spaces – Pedestrian area (Category P) lighting – Performance and design requirements and AS 4282-2019 Control of the obtrusive effects of outdoor lighting.

Demolition

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

Environmental Management Plan Requirements

B13. Management plans required under this consent must be prepared having regard to the relevant guidelines, including but not limited to the *Environmental Management Plan Guideline: Guideline for Infrastructure Projects* (DPIE April 2020).

Note:

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

Construction Environmental Management Plan

B14. Prior to the commencement of demolition, removal of buildings or construction (whichever occurs first), the Applicant must submit a Construction Environmental Management Plan (CEMP) to the Certifier and provide a copy to the Planning Secretary for information. The CEMP must include, but not be limited to, the following:

(a) details of:

(i) hours of work;

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

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

(iv) external lighting in compliance with AS 4282-2019 Control of the obtrusive effects of outdoor lighting;

(v) community consultation and complaints handling as set out in the Community Communication Strategy required by condition B9;

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

(c) Construction Traffic and Pedestrian Management Sub-Plan (see condition B15);

(d) Construction Noise and Vibration Management Sub-Plan (see condition B16);

(e) Construction Waste Management Sub-Plan (see condition B17);

(f) Construction Soil and Water Management Sub-Plan (see condition B18); and

(g) Biodiversity Management Sub-Plan (see condition B19).

B15. The Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP) must be prepared to achieve the objective of ensuring safety and efficiency of the road network and address, but not be limited to, the following:

(a) be prepared by a suitably qualified and experienced person(s);

(b) be prepared in consultation with Council and TfNSW;

(c) detail

(i) measures to ensure road safety and network efficiency during construction in consideration of potential impacts on general traffic, cyclists and pedestrians and bus services;

(ii) measures to ensure the safety of vehicles and pedestrians accessing adjoining properties where shared vehicle and pedestrian access occurs;

(iii) detail heavy vehicle routes, access and parking arrangements;

(iv) the swept path of the longest construction vehicle entering and exiting the site in associated with the new work, as well as manoeuvrability through the site, in accordance with the latest version of AS 2890.2; and

(v) arrangements to ensure that construction vehicles enter and leave the site in a forward direction unless in specific exceptional circumstances under the supervision of accredited traffic controller(s).

B16. The Construction Noise and Vibration Management Sub-Plan must address, but not be limited to, the following:

(a) be prepared by a suitably qualified and experienced noise expert;

(b) describe procedures for achieving the noise management levels in EPA's *Interim Construction Noise Guideline* (DECC, 2009);

(c) describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers;

(d) include strategies that have been developed with the community for managing high noise generating works;

(e) describe the community consultation undertaken to develop the strategies in condition B16(d);

(f) include a complaints management system that would be implemented for the duration of the construction; and

(g) include a program to monitor and report on the impacts and environmental performance of the development and the effectiveness of the implemented management measures in accordance with the requirements of condition B13.

B17. The Construction Waste Management Sub-Plan (CWMSP) must address, but not be limited to, the procedures for the management of waste including the following:

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

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

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

B18. The Applicant must prepare a Construction Soil and Water Management Sub-Plan (CSWMSP) and the plan must address, but not be limited to the following:

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

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

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

(d) provide a plan of how all construction works will be managed in wet-weather events (i.e. storage of equipment, stabilisation of the site);

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

(f) describe the measures that must be implemented to manage stormwater and flood flows for small and large sized events, where applicable, but not limited to 1 in 5-year ARI and 1 in 100-year ARI.

B19. The Biodiversity Management Sub-Plan (BMSP) must address, but not be limited to, the following:

(a) be prepared by a suitably qualified and experienced person/s;

(b) identify areas of land where impacts on biodiversity are to be avoided as outlined in the biodiversity development assessment report, dated 23 July 2021 and prepared by Ecological Australia and set out how these areas will be protected from construction impacts; and

(c) set out the measures identified in the biodiversity development assessment report to minimise, mitigate and manage impacts on biodiversity, including timing and responsibility for delivery of the measures.

B20. A Driver Code of Conduct must be prepared and communicated by the Applicant to heavy vehicle drivers and must address the following:

(a) minimise the impacts of earthworks and construction on the local and regional road network;

(b) minimise conflicts with other road users;

(c) minimise road traffic noise; and

(d) ensure truck drivers use specified routes.

Construction Parking

B21. Prior to the commencement of construction, the Applicant must submit a Construction Worker Transportation Strategy to the Certifier. The Strategy must detail the provision of sufficient parking facilities or other travel arrangements for construction workers in order to minimise demand for parking in nearby public and residential streets. A copy of the strategy must be provided to the Planning Secretary for information.

Operational Noise – Design of Mechanical Plant and Equipment

B22. Prior to installation of mechanical plant and equipment:

(a) a detailed assessment of mechanical plant and equipment with compliance with the relevant project noise trigger levels as recommended in the Noise Impact Assessment dated 21 April 2021 and prepared by RWDI must be undertaken by a suitably qualified person; and

(b) evidence must be submitted to the Certifier that any noise mitigation recommendations identified in the assessment carried out under condition (a) have been incorporated into the design to ensure the development will not exceed the project noise trigger levels identified in the noise impact assessment dated 21 April 2021 and prepared by RWDI.

Landscaping

B23. Prior to the installation of landscaping, the Applicant must prepare a revised Landscape Plan to manage the landscaping works on site, to the Certifier. The plan must:

(a) provide for the planting of 141 trees;

(b) detail the location, species, maturity and height at maturity of plants to be planted;

(c) detail landscaping in areas of retained native/indigenous vegetation and using a diverse range (trees, shrubs and groundcovers) from the native/indigenous vegetation communities that occur on the site. Exotic tree and plant species may be considered for use in and adjacent to open play spaces and areas identified as cleared or exotic vegetation in the Biodiversity Development Assessment Report, dated 23 July 2021 and prepared by Ecological Australia;

(d) where any trees removed contain hollows / hollow trunks or fissures, these must be retained as ground fauna habitat and / or used as replacement hollows and attached to trees within the development area. If re-use of salvaged hollows is impractical, compensatory nest boxes must be included within vegetation to be retained. The number and locations of nest boxes must be determined by a qualified ecologist to adequately mitigate the loss of any hollow-bearing tress from the area;

(e) comply with the following principles of Appendix 5 of 'Planning for Bush Fire Protection 2019'.

Operational Waste Storage and Processing

B24. Prior to the commencement of construction of waste storage and processing areas, the Applicant must obtain agreement from Council for the design of the operational waste storage area (where waste removal will be undertaken by Council). Where waste removal will be undertaken by a third party, evidence must be provided to the Certifier that the design of the operational waste storage area:

(a) is constructed using solid non-combustible materials;

(b) is designed to ensure the door/gate to the waste storage area is vermin proof and can be opened from both inside and outside the storage area at all times;

(c) includes a hot and cold water supply with a hose through a centralised mixing valve;

(d) is naturally ventilated or an air handling exhaust system is in place; and

(e) includes signage to clearly describe the types of materials that can be deposited into recycling bins and general garbage bins.

Road works

B25. Prior to the commencement of construction of road works, the Applicant must submit plans and technical specifications to the satisfaction of the relevant roads authority for the following:

(a) the reconstruction and extension of Grimes Lane between First Avenue and Second Avenue, associated pedestrian infrastructure and vehicle cross overs fronting Chelmsford Avenue and Second Avenue;

(b) the proposed connection between Second Avenue and the on site car park that incorporates:

(i) a revised driveway design to include a splay extending two metres from the driveway edge along the front boundary and 2.5m from the boundary along the edge of the driveway, in accordance with Figure 3.3 of the latest version of AS2890.1; and

(ii) information to demonstrate that clear sight lines for pedestrians and vehicles exiting the site would not be compromised by landscaping, signage, fences, walls or display materials.

B26. Prior to the commencement of construction of road works the Applicant must submit an application for the proposed line markings and signage to Grimes Lane and relevant surrounding streets to Council for consideration by the Parramatta Traffic Committee under Delegated Authority and Council's approval.

B27. Prior to the commencement of construction of road works, the Applicant must submit details to the satisfaction of Council of street tree planting on the northern side of Grimes Lane and provide a copy to the Planning Secretary for information.

B28. Prior to the commencement of construction of pedestrian infrastructure upgrades, the Applicant must submit plans and technical specification to the satisfaction of Council for the following works as proposed in the SRtS:

(a) raised pedestrian crossings at either end of Grimes Lane;

(b) a pedestrian refuge island on the southern side of the intersection of Chelmsford Avenue and Edenlee Street;

(c) a zebra type raised pedestrian crossing constructed on the southern side of the intersection of Chelmsford Avenue and Midson Road;

(d) construction of new pedestrian footpaths in the following locations:

(i) First Avenue - Dunlop Street to Chelmsford Avenue (eastern side);

(ii) Chelmsford Avenue - First Avenue to Edenlee Street (northern side); and

(iii) Dunlop Street - Neil Street to Hermington Street (northern side).

Notes:

- *Approval must be obtained for roadworks under section 138 of the Roads Act 1993.*
- *All costs associated with the proposed road upgrade works are to be paid by the Applicant at no cost to Council.*
- *All works within the road reserve are to be designed and constructed in accordance with Council's Standards.*
- *Works shall be inspected by Council's Civil Assets Team prior to the pouring of concrete or placement of asphalt.*
- *In accordance with Section 4.42 of the Environmental Planning and Assessment Act 1979, an approval under Section 138 of the Roads Act 1993 cannot be refused if it is necessary for carrying out state significant development that is authorised by a development consent and is substantially consistent with the consent.*

Operational Access, Car Parking and Service Vehicle Arrangements

B29. Prior to the commencement of construction of operational parking and access facilities, evidence of compliance of the design of operational parking and access arrangements with the following requirements must be submitted to the Certifier:

(a) a minimum of 32 on-site car parking spaces for use during Stage 1 operation of the development and designed in accordance with the latest versions of AS 2890.1 and AS 2890.6; and

(b) the swept path of the largest service vehicle entering and exiting the site in association with the new work, as well as manoeuvrability through the site, must be in accordance with the latest version of AS 2890.2.

Site Contamination

B30. Prior to the commencement of demolition, removal of buildings or construction (whichever comes first), the Applicant must engage a NSW EPA-accredited Site Auditor to provide advice throughout the duration of works to ensure that any work required in relation to soil or groundwater contamination is appropriately managed.

Project Arborist

B31. Prior to the commencement of demolition, removal of buildings or construction (whichever comes first), a project arborist must be engaged to ensure all tree protection measures and works are carried out in accordance with the conditions of this consent. The project arborist must have a minimum AQD Level 5 qualification and minimum 5 years' experience. Details of the arborist including name, business name and contact details must be provided to the Certifier.

PART C DURING CONSTRUCTION

Site Notice

C1. A site notice(s) must be prominently displayed at the boundaries of the site during construction for the purpose of informing the public of project details and must satisfy the following requirements:

(a) minimum dimensions of the site notice(s) must measure 841 mm x 594 mm (A1) with any text on the site notice(s) to be a minimum of 30-point type size;

(b) the site notice(s) must be durable and weatherproof and must be displayed throughout the works period;

(c) the approved hours of work, the name of the builder, Certifier, structural engineer, site/ project manager, the responsible managing company (if any), its address and 24-hour contact phone number for any inquiries, including construction/ noise complaint must be displayed on the site notice(s); and

(d) the site notice(s) must be mounted at eye level on the perimeter hoardings/fencing and must state that unauthorised entry to the site is not permitted.

Operation of Plant and Equipment

C2. All construction plant and equipment used on site must be maintained in a proper and efficient condition and operated in a proper and efficient manner.

Demolition

C3. Demolition work must comply with the demolition work plans required by *Australian Standard AS 2601-2001 The demolition of structures* (Standards Australia, 2001) and endorsed by a suitably qualified person as required by condition B12.

Construction Hours

C4. Construction, including the delivery of materials to and from the site, may only be carried out between the following hours:

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

(b) between 8am and 1pm, Saturdays.

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

C5. Notwithstanding condition C4, provided noise levels do not exceed the existing background noise level plus 5dB, works may also be undertaken during the following hours:

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

(b) between 1pm and 4pm, Saturdays.

C6. Construction activities may be undertaken outside of the hours in condition C4 and C5 if required:

(a) by the Police or a public authority for the delivery of vehicles, plant or materials; or

(b) in an emergency to avoid the loss of life, damage to property or to prevent environmental harm; or

(c) where the works are inaudible at the nearest sensitive receivers; or

(d) for the delivery, set-up and removal of construction cranes, where notice of the crane-related works is provided to the Planning Secretary and affected residents at least seven days prior to the works; or

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

C7. Notification of such construction activities as referenced in condition C6 must be given to affected residents before undertaking the activities or as soon as is practical afterwards.

C8. Rock breaking, rock hammering, sheet piling, pile driving and similar activities may only be carried out between the following hours:

(a) 9am to 12pm, Monday to Friday;

(b) 2pm to 5pm Monday to Friday; and

(c) 9am to 12pm, Saturday.

Construction Traffic

C9. All construction vehicles must be contained wholly within the site, except if located in an approved on-street work zone, and vehicles must enter the site or an approved on-street work zone before stopping.

Hoarding Requirements

C10. The following hoarding requirements must be complied with:

(a) no third-party advertising is permitted to be displayed on the subject hoarding/ fencing; and

(b) the construction site manager must be responsible for the removal of all graffiti from any construction hoardings or the like within the construction area within 48 hours of its application.

No Obstruction of Public Way

C11. The public way (outside of any approved construction works zone or Road Occupancy Permit) must not be obstructed by any materials, vehicles, refuse, skips or the like, under any circumstances.

Construction Noise Limits

C12. The development must be constructed to achieve the construction noise management levels detailed in *the Interim Construction Noise Guideline* (DECC, 2009). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the management and mitigation measures identified in the approved Construction Noise and Vibration Management Plan.

C13. The Applicant must ensure construction vehicles (including concrete agitator trucks) do not arrive at the site or surrounding streets outside of the construction hours of work outlined under condition C4.

C14. The Applicant must implement, where practicable and without compromising the safety of construction staff or members of the public, the use of 'quackers' to ensure noise impacts on surrounding noise sensitive receivers are minimised.

Vibration Criteria

C15. Vibration caused by construction at any residence or structure outside the site must be limited to:

(a) for structural damage, the latest version of *DIN 4150-3 (1992-02) Structural vibration - Effects of vibration on structures* (German Institute for Standardisation, 1999); and

(b) for human exposure, the acceptable vibration values set out in the *Environmental Noise Management Assessing Vibration: a technical guideline* (DEC, 2006) (as may be updated or replaced from time to time).

C16. Vibratory compactors must not be used closer than 30 metres from residential buildings unless vibration monitoring confirms compliance with the vibration criteria specified in condition C15.

C17. The limits in conditions C15 and C16 apply unless otherwise outlined in a Construction Noise and Vibration Management Plan, approved as part of the CEMP required by condition B16 of this consent.

Tree Removal

C18. The following trees as identified in the Arboricultural Impact Assessment, dated 17 September and prepared by TALC are approved for removal:

(a) tree numbers 1, 4 to 8, 11, 13, 18, 21, 24 to 37, 39, 40, 42A, 43A, 43 to 48, 49, 52 to 54, 60, 61, 65, 108A, 109, 111, 112, 116, 126 to 132, 140 to 144, 146 to 147, 149 to 153, 156 and 169.

C19. During tree removal works, an experienced and qualified ecologist must be present to relocate any displaced fauna that may be disturbed during this activity. Any injured fauna must be appropriately cared for and released on site or at an appropriate nearby location once rehabilitated.

Tree Protection

C20. For the duration of the construction works:

(a) street trees must not be trimmed or removed unless it forms a part of this development consent or prior written approval from Council is obtained or is required in an emergency to avoid the loss of life or damage to property;

(b) all street trees immediately adjacent to the approved disturbance area and property boundaries must be protected at all times during construction in accordance with Council's tree protection requirements. Any street tree, which is damaged or removed during construction due to an emergency, must be replaced, to the satisfaction of Council;

(c) all trees on the site that are not approved for removal must be suitably protected during construction as per the recommendations of the Arboricultural Impact Assessment, dated 17 September and prepared by TALC; and

(d) if access to the area within any protective barrier is required during the works, it must be carried out under the supervision of a qualified arborist. Alternative tree protection measures must be installed, as required. The removal of tree protection measures, following completion of the works, must be carried out under the supervision of a qualified arborist and must avoid both direct mechanical injury to the structure of the tree and soil compaction within the canopy or the limit of the former protective fencing, whichever is the greater.

Air Quality

C21. The Applicant must take all reasonable steps to minimise dust generated during all works authorised by this consent.

C22. During construction, the Applicant must ensure that:

(a) activities are carried out in a manner that minimises dust including emission of windblown or traffic generated dust;

(b) all trucks entering or leaving the site with loads have their loads covered;

(c) trucks associated with the development do not track dirt onto the public road network;

(d) public roads used by these trucks are kept clean; and

(e) land stabilisation works are carried out progressively on site to minimise exposed surfaces.

Imported Fill

C23. The Applicant must:

(a) ensure that only VENM, ENM, or other material that meets the requirements of a relevant order and exemption issued by the EPA, is brought onto the site;

(b) keep accurate records of the volume and type of fill to be used; and

(c) make these records available to the Certifier upon request.

Disposal of Seepage and Stormwater

C24. Adequate provisions must be made to collect and discharge stormwater drainage during construction to the satisfaction of the Certifier. The prior written approval of Council must be obtained to connect or discharge site stormwater to Council's stormwater drainage system or street gutter.

Emergency Management

C25. The Applicant must prepare and implement awareness training for employees and contractors, including locations of the assembly points and evacuation routes, for the duration of construction.

Stormwater Management System

C26. Within three months of the commencement of construction, the Applicant must design an operational stormwater management system for the development and submit it to the satisfaction of the Certifier. The system must:

(a) be designed by a suitably qualified and experienced person(s);

(b) be generally in accordance with the conceptual design in the RtS;

(c) be in accordance with applicable Australian Standards; and

(d) ensure that the system capacity has been designed in accordance with *Australian Rainfall and Runoff* (Engineers Australia, 2016) and *Managing Urban Stormwater: Council Handbook* (EPA, 1997) guidelines.

Aboriginal Cultural Heritage

C27. Construction must be undertaken in accordance with the recommendations of the Aboriginal Cultural Heritage Assessment Report, dated 22 July 2021 and prepared by Comber Consultants.

Note: Aboriginal cultural heritage inductions would benefit from the involvement of Aboriginal community representatives.

Unexpected Finds Protocol – Aboriginal Heritage

C28. In the event that surface disturbance identifies a new Aboriginal object:

(a) all works must halt in the immediate area to prevent any further impacts to the object(s);

(b) a suitably qualified archaeologist and the registered Aboriginal representatives must be contacted to determine the significance of the objects;

(c) the site is to be registered in the Aboriginal Heritage Information Management System (AHIMS) which is managed by Heritage NSW under Department of Premier and Cabinet and the management outcome for the site included in the information provided to AHIMS;

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

(e) and works may only recommence with the written approval of the Planning Secretary.

Waste Storage and Processing

C29. All waste generated during construction must be secured and maintained within designated waste storage areas at all times and must not leave the site onto neighbouring public or private properties.

C30. All waste generated during construction must be assessed, classified and managed in accordance with the Waste Classification Guidelines Part 1: Classifying Waste (EPA, 2014).

C31. The Applicant must ensure that concrete waste and rinse water are not disposed of on the site and are prevented from entering any natural or artificial watercourse.

C32. The Applicant must record the quantities of each waste type generated during construction and the proposed reuse, recycling and disposal locations for the duration of construction.

C33. The Applicant must ensure that the removal of hazardous materials, particularly the method of containment and control of emission of fibres to the air, and disposal at an approved waste disposal facility is in accordance with the requirements of the relevant legislation, codes, standards and guidelines.

Outdoor Lighting

C34. The Applicant must ensure that all external lighting is constructed and maintained in accordance with AS 4282-2019 Control of the obtrusive effects of outdoor lighting.

Site Contamination

C35. The Applicant must conduct site investigations to confirm the full nature and extent of the contamination at the site and comply with the following requirements:

(a) the site investigations must be undertaken, and the subsequent report(s), must be prepared in accordance with relevant guidelines made or approved by the EPA under section 105 of the *Contaminated Land Management Act 1997*;

(b) the reports must be prepared, or reviewed and approved, by consultants certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme; and

(c) the recommendations of the Remediation Action Plan, dated April 2021 and prepared by Douglas Partners.

C36. The unexpected finds procedure within the Remediation Action Plan, dated April 2021 and prepared by Douglas Partners, must be updated following results of further site investigations undertaken in accordance with condition C35 and implemented throughout the duration of the works.

C37. Remediation of the site must be carried out in accordance with the Remediation Action Plan, dated April 2021 and prepared by Douglas Partners and any variations to the Remediation Action Plan approved by an NSW EPA-accredited Site Auditor.

C38. Where remediation is carried out / completed in stages, a NSW EPA-accredited Site Auditor must confirm satisfactory completion of each stage by the issuance of Interim Audit Advice(s).

C39. The Applicant must ensure the proposed development does not result in a change of risk in relation to any pre-existing contamination on the site that would result in significant contamination.

Independent Environmental Audit

C40. Proposed independent auditors must be agreed to in writing by the Planning Secretary prior to the commencement of an Independent Audit.

C41. Independent Audits of the development must be conducted and carried out in accordance with the Independent Audit Post Approval Requirements.

C42. The Planning Secretary may require the initial and subsequent Independent Audits to be undertaken at different times to those agreed to above, upon giving at least 4 week's notice to the Applicant of the date or timing upon which the audit must be commenced.

C43. In accordance with the specific requirements in the Independent Audit Post Approval Requirements, the Applicant must:

(a) review and respond to each Independent Audit Report prepared under condition C41 of this consent, or condition C42 where notice is given;

(b) submit the response to the Planning Secretary; and

(c) make each Independent Audit Report and response to it publicly available within 60 days after submission to the Planning Secretary.

C44. Independent Audit Reports and the applicant's response to audit findings must be submitted to the Planning Secretary within two months of undertaking the independent audit site inspection as outlined in the Independent Audit Post Approval Requirements unless otherwise agreed by the Planning Secretary.

C45. Notwithstanding the requirements of the Independent Audit Post Approval Requirements, the Planning Secretary may approve a request for ongoing independent operational audits to be ceased, where it has been demonstrated to the Planning Secretary's satisfaction that an audit has demonstrated operational compliance.

Operational Readiness Work

C46. Operational readiness work must not commence on site until the following details have been submitted to the Certifier:

(a) a plan and description of the area(s) of the site to be used for operational readiness work (including pedestrian access) and areas still under construction (including construction access);

(b) the maximum number of staff to be involved in operational readiness work on site at any one time;

(c) arrangements to ensure the safety of school staff on the site, including how:

(i) areas to be used for operational readiness work will be clearly and securely separated from the areas of the site still under construction;

(ii) pedestrian access to and within the site will be managed to ensure no conflict with construction vehicle movements; and

(d) access and parking arrangements to minimise impacts on the surrounding street network having regard to number of staff involved in operational readiness work on site at any one time and parking arrangements for construction workers on site.

C47. Operational readiness work must only be undertaken in accordance with the details submitted under condition C46 and the following requirements:

(a) no more than 5 staff are involved in operational readiness work;

(b) no students or parents are permitted; and

(c) the Applicant has implemented appropriate arrangements to ensure the safety of school staff.

PART D PRIOR TO COMMENCEMENT OF OPERATION

Notification of Occupation

D1. At least one month before commencement of operation, the date of commencement of the operation of the development must be notified to the Planning Secretary in writing. If the operation of the development is to be staged, the Planning Secretary must be notified in writing at least one month before the commencement of each stage, of the date of commencement and the development to be carried out in that stage.

External Walls and Cladding

D2. Prior to commencement of operation, the Applicant must provide the Certifier with documented evidence that the products and systems used in the construction of external walls including finishes and claddings such as synthetic or aluminium composite panels comply with the requirements of the BCA.

D3. The Applicant must provide a copy of the documentation given to the Certifier to the Planning Secretary within seven days after the Certifier accepts it.

Works as Executed Plans

D4. Prior to the commencement of operation, works-as-executed plans signed by a registered surveyor demonstrating that the stormwater drainage and finished ground levels have been constructed as approved, must be submitted to the Certifier.

Warm Water Systems and Cooling Systems

D5. The installation of warm water systems and water cooling systems (as defined under the *Public Health Act 2010*) must comply with the *Public Health Act 2010*, Public Health Regulation 2012 and Part 1 (or Part 3 if a Performance-based water cooling system) of *AS/NZS 3666.2:2011 Air handling and water systems of buildings – Microbial control – Operation and maintenance* and the NSW Health Code of Practice for the Control of Legionnaires' Disease.

Outdoor Lighting

D6. Prior to the commencement of operation, the Applicant must submit evidence from a suitably qualified practitioner to the Certifier that demonstrates that installed lighting associated with the development achieves the objective of minimising light spillage to any adjoining or adjacent sensitive receivers and:

(a) complies with the latest version of AS 4282-2019 - *Control of the obtrusive effects of outdoor lighting* (Standards Australia, 1997); and

(b) has been mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network.

Mechanical Ventilation

D7. Prior to commencement of operation, the Applicant must provide evidence to the satisfaction of the Certifier that the installation and performance of the mechanical ventilation systems complies with:

(a) *AS 1668.2-2012 The use of air-conditioning in buildings – Mechanical ventilation in buildings* and other relevant codes; and

(b) any dispensation granted by Fire and Rescue NSW.

Operational Noise – Design of Mechanical Plant and Equipment

D8. Prior to the commencement of operation, the Applicant must submit evidence to the Certifier that the noise mitigation recommendations in the assessment undertaken under condition B22 have been incorporated into the design of mechanical plant and equipment to ensure the development will not exceed the project noise trigger levels identified in the noise impact assessment, dated 21 April 2021 and prepared by RWDI.

Fire Safety Certification

D9. Prior to commencement of occupation, a Fire Safety Certificate must be obtained for all the Essential Fire or Other Safety Measures forming part of this consent. A copy of the Fire Safety

Certificate must be submitted to the relevant authority and Council. The Fire Safety Certificate must be prominently displayed in the building.

Structural Inspection Certificate

D10. Prior to the commencement of occupation of the relevant parts of any new or refurbished buildings, a Structural Inspection Certificate or a Compliance Certificate must be submitted to the Certifier. A copy of the Certificate with an electronic set of final drawings (contact approval authority for specific electronic format) must be submitted to the approval authority and the Council after:

(a) the site has been periodically inspected and the Certifier is satisfied that the structural works is deemed to comply with the final design drawings; and

(b) the drawings listed on the Inspection Certificate have been checked with those listed on the final Design Certificate/s.

Compliance with Food Code

D11. Prior to the commencement of operation, the Applicant is to obtain a certificate from a suitably qualified tradesperson, certifying that the kitchen, food storage and food preparation areas have been fitted in accordance with the AS 4674 *Design, construction and fit-out of food premises* and provide evidence of receipt of the certificate to the satisfaction of the Certifier.

Post-Construction Dilapidation Report – Protection of Public Infrastructure

D12. Prior to the commencement of operation, the Applicant must engage a suitably qualified and experienced expert to prepare a Post-Construction Dilapidation Report. This Report must:

(a) ascertain whether the construction works created any structural damage to public infrastructure by comparing the results of the Post-Construction Dilapidation Report with the Pre-Construction Dilapidation Report required by condition B5 of this consent;

(b) have, if it is decided that there is no structural damage to public infrastructure, the written confirmation from the relevant public authority that there is no adverse structural damage to their infrastructure (including roads).

(c) be submitted to the Certifier;

(d) be forwarded to Council for information; and

(e) be provided to the Planning Secretary when requested.

Repair of Public Infrastructure

D13. Unless the Applicant and the relevant public authority agree otherwise, the Applicant must:

(a) repair, or pay the full costs associated with repairing, any public infrastructure that is damaged by carrying out the construction works; and / or

(b) relocate, or pay the full costs associated with relocating any infrastructure that needs to be relocated as a result of the development; and / or

(c) pay compensation for the damage as agreed with the owner of the public infrastructure.

Note: This condition does not apply to any damage to roads caused as a result of general road usage or otherwise addressed by contributions of this consent.

Road Damage

D14. Prior to the commencement of operation, the cost of repairing any damage caused to Council or other Public Authority's assets in the vicinity of the subject site as a result of construction works associated with the approved development must be met in full by the Applicant.

Post-Construction Survey – Residential Properties

D15. Where a pre-construction survey has been undertaken in accordance with condition B7, prior to the commencement of operation the Applicant must engage a suitably qualified and experienced expert to undertake a post-construction survey and prepare a Post-Construction Survey Report. This Report must:

(a) document the results of the post-construction survey and compare it with the pre-construction survey to ascertain whether the construction works caused any damage to buildings surveyed in accordance with condition B7;

(b) be provided to the owner of the relevant buildings surveyed;

(c) be provider to the Certifier; and

(d) be provided to the Planning Secretary when requested.

D16. Where the Post-Construction Survey Report determines that damage to the identified property occurred as a result of the construction works, the Applicant must repair, or pay the full costs associated with repairing the damaged buildings, within an agreed timeline between the owner of the identified property and the Planning Secretary. Alternatively, the Applicant may pay compensation for the damage as agreed with the property owner.

Road works

D17. Prior to the commencement of operation, the Applicant must complete the construction of Grimes Lane and vehicle cross overs fronting Chelmsford Avenue and Second Avenue, as approved under condition B25 to the satisfaction of the relevant roads authority.

Notes:

- *Approval must be obtained for roadworks under section 138 of the Roads Act 1993.*
- *All costs associated with the proposed road upgrade works are to be paid by the Applicant at no cost to Council.*
- *All works within the road reserve are to be designed and constructed in accordance with Council's Standards.*
- *Works shall be inspected by Council's Civil Assets Team prior to the pouring of concrete or placement of asphalt.*
- *In accordance with Section 4.42 of the Environmental Planning and Assessment Act 1979, an approval under Section 138 of the Roads Act 1993 cannot be refused if it is necessary for carrying out state significant development that is authorised by a development consent and is substantially consistent with the consent.*

D18. Prior to the commencement of operation, an independent Road Safety Audit prepared by a suitably qualified consultant, must be undertaken of Grimes Lane from the Chelmsford Avenue/First Avenue cross over and the Second Avenue cross over, in consultation with Council and TfNSW and any recommendations of the RSA must be implemented. The RSA and evidence of implementation of recommendations must be submitted to the Certifier prior to any occupation.

D19. Prior to commencement of operation or other timeframe agreed in writing by the Planning Secretary, evidence must be provided to the Certifier that pedestrian infrastructure upgrades approved under condition B28 have been completed to the satisfaction of Council.

D20. Prior to the commencement of operation or other timeframe agreed in writing by the Planning Secretary, evidence must be provided to the Certifier that street tree planting has been completed on the northern side of Grimes Lane in accordance with the details approved under condition B27.

Car Parking Arrangements

D21. Prior to the commencement of operation or other timeframe agreed in writing by the Planning Secretary, evidence must be submitted to the Certifier that demonstrates that 32 parking spaces have been provided on site.

Bicycle Parking and End-of-Trip Facilities

D22. Prior to the commencement of operation, compliance with the following requirements for secure bicycle parking and end-of-trip facilities must be submitted to the Certifier:

(a) the provision of a minimum 20 staff and 40 student bicycle and scooter parking spaces;

(b) the layout, design and security of bicycle facilities must comply with the minimum requirements of the latest version of AS 2890.3:2015 *Parking facilities - Bicycle parking*, and be located in easy to access, well-lit areas that incorporate passive surveillance;

(c) the provision of end-of-trip facilities for staff; and

(d) appropriate pedestrian and cyclist advisory signs.

Note: All works/regulatory signposting associated with the proposed development shall be at no cost to the relevant roads authority.

School Zones

D23. Prior to the commencement of operation, all required School Zone signage, speed management signage and associated pavement markings must be installed, inspected by TfNSW and handed over to TfNSW.

Note: Any required approvals for altering public road speed limits, design and signage are required to be obtained from the relevant consent authority.

D24. The Applicant must maintain records of all dates in relation to installing, altering and removing traffic control devices related to speed.

School Transport Plan

D25. Prior to the commencement of operation, a School Transport Plan (STP) must be submitted to the satisfaction of the Planning Secretary. The plan must:

(a) be prepared by a suitably qualified consultant in consultation with Council and TfNSW;

(b) include arrangements to promote the use of active and sustainable transport modes, including:

(i) objectives and mode share targets (i.e. site and land use specific, measurable and achievable and timeframes for implementation);

(ii) specific tools and actions to help achieve the objectives and mode share targets;

(iii) details regarding the methodology and monitoring/review program to measure the effectiveness of the objectives and mode share targets, including the frequency of monitoring and the requirement for travel surveys to identify travel behaviours of users of the development.

(c) include operational transport access management arrangements, including:

(i) detailed pedestrian analysis including the identification of safe route options to identify the need for management measures such as staggered school start and finish times to ensure students and staff are able to access and leave the site in a safe and efficient manner during school start and finish;

(ii) the location of all car parking spaces on the school campus and their allocation (i.e. staff, visitor, accessible, emergency, etc.);

(iii) the location and operational management procedures of the drop-off and pick-up parking, including staff management/traffic controller arrangements;

(iv) the location and operational management procedures for the drop-off and pick-up of students by buses and coaches including staff management/traffic controller arrangements;

(v) delivery and services vehicle and bus access and management arrangements;

(vi) management of approved access arrangements;

(vii) potential traffic impacts on surrounding road networks and mitigation measures to minimise impacts, including measures to mitigate queuing impacts associated with vehicles accessing drop-off and pick-up zones;

(viii) car parking arrangements and management associated with the proposed use of school facilities by community members; and

(d) measures to promote and support the implementation of the plan, including financial and human resource requirements, roles and responsibilities for relevant employees involved in the implementation of the plan; and

(e) a monitoring and review program that includes, but not limited to:

(i) mode share surveys (undertaken at a suitable time to reflect typical school operations) to determine the level of achievement of travel mode share targets;

(ii) review of the adequacy of school bus services to cater for school demand; and

(iii) identification of measures to be implemented where mode share targets are not met and/or where demand exceeds the capacity of bus services.

Positive Covenant and Restriction - Stormwater Detention

D26. Prior to the commencement of operation or other timeframe agreed in writing by the Planning Secretary, the Applicant must create a Positive Covenant and Restriction on the Use of Land under Section 88E of the *Conveyancing Act 1919*, burdening the owner of the land with the requirement to maintain the on site stormwater detention and water sensitive urban design facilities on the lot.

Note:

- *The terms of the 88E Instruments are to be generally in accordance with Council's "standard terms" available in Council's website, under Development Forms.*
- *Where a Title exists, the Positive Covenant and Restriction on the Use of Land is to be created through an application to the Land Registry Services Office using forms 13PC and 13RPA. The 88E Instruments must be submitted to Council for approval. Copy of the registered title documents showing the covenants and restrictions must be submitted to Council for records*

Utilities and Services

D27. Prior to commencement of operation, the Applicant must obtain a Compliance Certificate for water and sewerage infrastructure servicing of the site under section 73 of the *Sydney Water Act 1994*.

Stormwater Operation and Maintenance Plan

D28. Prior to the commencement of operation, a Stormwater Operation and Maintenance Plan (SOMP) is to be submitted to the Certifier. The SOMP must ensure the proposed stormwater quality measures remain effective and contain the following:

(a) maintenance schedule of all stormwater quality treatment devices;

(b) record and reporting details;

(c) relevant contact information; and

(d) Work Health and Safety requirements.

Signage

D29. Prior to the commencement of operation, way-finding signage and signage identifying the location of staff car parking must be installed.

D30. Prior to the commencement of operation, bicycle way-finding signage must be installed within the site to direct cyclists from footpaths to designated bicycle parking areas.

Operational Waste Management Plan

D31. Prior to the commencement of operation, the Applicant must prepare a Waste Management Plan for the development and submit it to the Certifier. The Waste Management Plan must:

(a) detail the type and quantity of waste to be generated during operation of the development;

(b) describe the handling, storage and disposal of all waste streams generated on site, consistent with the *Protection of the Environment Operations Act 1997, Protection of the Environment Operations (Waste) Regulation 2014* and the *Waste Classification Guideline* (Department of Environment, Climate Change and Water, 2009);

(c) detail the materials to be reused or recycled, either on or off site; and

(d) include the Management and Mitigation Measures included in the EIS.

Site Contamination

D32. Prior to the commencement of operation, the Applicant must submit a Section A1 Site Audit Statement or a Section A2 Site Audit Statement accompanied by an Environmental Management Plan (if required) prepared by a NSW EPA accredited Site Auditor. The Section A1 or A2 Site Audit Statement must verify the relevant part of the site is suitable for the intended land use and be provided, along with any Environmental Management Plan to the Planning Secretary and the Certifier.

Landscaping

D33. Prior to the commencement of operation or other timeframe agreed in writing by the Planning Secretary, landscaping of the site must be completed in accordance with landscape plan(s) approved under condition A2(d).

D34. Prior to the commencement of operation, the Applicant must prepare a Landscape Management Plan to manage the revegetation and landscaping on-site and submit it to the Certifier. The plan must:

(a) describe the ongoing monitoring and maintenance measures to manage revegetation and landscaping; and

(b) be consistent with the Applicant's Management and Mitigation Measures in the EIS and RtS.

Asset Protection Zones

D35. Prior to the commencement of operation, the entire property must be managed as an inner protection area (IPA) in accordance with the requirements of Appendix 4 of Planning for Bush Fire Protection 2019.

Consultation with Council – Shared Use of Facilities

D36. Prior to the commencement of operation, evidence must be submitted to the Certifier that consultation has occurred with Council with regard to the following:

(a) opportunities for shared community use of the school's facilities; and

(b) opportunities for the use of nearby local public open space/parks to supplement what is provided on site.

Operational Flood Emergency Management Plan

D37. Prior to the commencement of operation, a Flood Emergency Management Plan must be submitted to the Certifier that:

(a) is prepared by a suitably qualified and experienced person(s);

(b) addresses the provisions of the *Floodplain Risk Management Guidelines (EESG);*

(c) is in accordance with the recommendations of the *Flood Analysis Report*, prepared by Site Plus and dated November 2020;

(d) includes details of:

(i) the flood emergency responses for operational phases of the development;

(ii) predicted flood levels;

(iii) flood warning times and flood notification;

(iv) assembly points and evacuation routes;

(v) evacuation and refuge protocols; and

(vi) awareness training for employees and contractors, and visitors.

PART E POST OCCUPATION

Out of Hours Events

E1. Prior to the commencement of the first out of hours events (School Use) run by the school that involve 100 or more people, the Applicant is to prepare an Out of Hours Event Management Plan (School Use) in consultation with Council and submit it to the Council and Planning Secretary for information. The plan must include the following:

(a) the number of attendees, time and duration;

(b) arrival and departure times and modes of transport;

(c) where relevant, a schedule of all annual events;

(d) measures to encourage non-vehicular travel to the school and promote and support the use of alternate travel modes (i.e. public transport);

(e) details of the use of the buildings or outdoor sports courts, where applicable, restricting use before 8am and after 10pm;

(f) measures to minimise localised traffic and parking impacts; and

(g) include measures to minimise noise impacts on any sensitive residential receivers, including the preparation of acoustic management plan.

E2. The Out of Hours Event Management Plan (School Use) must be implemented by the Applicant for the duration of the identified events or use.

E3. Community use of the site outside of school hours must:

(a) be restricted to no more than 50 attendees;

(b) not occur before 8am or after 9:30pm; and

(c) not include the use of amplified music unless inside a building with doors and windows closed.

E4. Prior to the commencement of out of hours events (Community Use) run by the external parties, the Applicant is to prepare an Out of Hours Event Management Plan (Community Use) in consultation with Council and submit it to the Council and Planning Secretary for information. The plan must include the following:

(a) the number of attendees, times and durations;

(b) arrival and departure times and modes of transport;

(c) where relevant, a schedule of all annual events;

(d) measures to encourage non-vehicular travel to the school and promote and support the use of alternate travel modes (i.e. public transport);

(e) details of the use of the buildings or outdoor sports courts where applicable, restricting use before 8am and after 10pm;

(f) measures to minimise localised traffic and parking impacts; and

(g) measures to minimise noise impacts on any sensitive residential receivers, including the preparation of acoustic management plan.

E5. The Out of Hours Event Management Plan (Community Use) must be implemented and updated by the Applicant for the duration of the identified community events or uses.

Operation of Plant and Equipment

E6. All plant and equipment used on site must be maintained in a proper and efficient condition operated in a proper and efficient manner.

Warm Water Systems and Cooling Systems

E7. The operation and maintenance of warm water systems and water cooling systems (as defined under the Public Health Act 2010) must comply with the Public Health Act 2010, Public Health Regulation 2012 and Part 2 (or Part 3 if a Performance-based water cooling system) of AS/NZS 3666.2:2011 Air handling and water systems of buildings – Microbial control – Operation and maintenance and the NSW Health Code of Practice for the Control of Legionnaires' Disease.

Community Communication Strategy

E8. The Community Communication Strategy must be implemented for a minimum of 12 months following the completion of construction.

Environmental Management Plan

E9. Upon completion of remediation works, the Applicant must manage the site in accordance with the Environmental Management Plan approved by the Site Auditor (if any) under condition D32 and any on-going maintenance of remediation notice issued by EPA under *the Contaminated Land Management Act 1997*.

Operational Noise Limits

E10. The Applicant must ensure that noise generated by operation of the development does not exceed the noise limits in noise impact assessment dated 21 April 2021 and prepared by RWDI.

E11. The Applicant must undertake short term noise monitoring in accordance with the *Noise Policy for Industry* where valid data is collected following the commencement of use of each stage of the development. The monitoring program must be carried out by an appropriately qualified person and a monitoring report must be submitted to the Planning Secretary within two months of commencement use of each stage of the development or other timeframe agreed to by the Planning Secretary to verify that operational noise levels do not exceed the recommended noise levels for mechanical plant identified in noise impact assessment dated 21 April 2021 and prepared by RWDI. Should the noise monitoring program identify any exceedance of the recommended noise levels referred to above, the Applicant is required to implement appropriate noise attenuation measures so that operational noise levels do not exceed the recommended noise levels or provide attenuation measures at the affected noise sensitive receivers.

Unobstructed Driveways and Parking Areas

E12. All driveways, footways and parking areas must be unobstructed at all times. Driveways, footways and car spaces must not be used for the manufacture, storage or display of goods, materials, refuse, skips or any other equipment and must be used solely for vehicular and/or pedestrian access and for the parking of vehicles associated with the use of the premises.

School Transport Plan

E13. The School Transport Plan required by condition D25 of this consent must be updated annually and implemented unless otherwise agreed by the Planning Secretary.

Ecologically Sustainable Development

E14. Unless otherwise agreed by the Planning Secretary, within six months of commencement of operation, Green Star certification must be obtained demonstrating the development achieves a minimum 4 star Green Star Design & As Built rating. If required to be obtained, evidence of the certification must be provided to the Certifier and the Planning Secretary. If an alternative certification process has been agreed to by the Planning Secretary under condition B10, evidence of compliance of implementation must be provided to the Planning Secretary and Certifier.

Outdoor Lighting

E15. Notwithstanding condition D6, should outdoor lighting result in any residual impacts on the amenity of surrounding sensitive receivers, the Applicant must provide mitigation measures in consultation with affected landowners to reduce the impacts to an acceptable level.

Landscaping

E16. The Applicant must maintain the landscaping and vegetation on the site in accordance with the approved Landscape Management Plan required by condition D34 for the duration of occupation of the development.

Asset Protection Zones

E17. The asset protection zones required by condition D35 shall be maintained for the duration of occupation of the development.

APPENDIX 1 ADVISORY NOTES

General

AN1. All licences, permits, approvals and consents as required by law must be obtained and maintained as required for the development. No condition of this consent removes any obligation to obtain, renew or comply with such licences, permits, approvals and consents.

Long Service Levy

AN2. For work costing $25,000 or more, a Long Service Levy must be paid. For further information please contact the Long Service Payments Corporation Helpline on 131 441.

Legal Notices

AN3. Any advice or notice to the consent authority must be served on the Planning Secretary.

Access for People with Disabilities

AN4. The works that are the subject of this application must be designed and constructed to provide access and facilities for people with a disability in accordance with the BCA. Prior to the commencement of construction, the Certifier must ensure that evidence of compliance with this condition from an appropriately qualified person is provided and that the requirements are referenced on any certified plans.

Utilities and Services

AN5. Prior to the construction of any utility works associated with the development, the Applicant must obtain relevant approvals from service providers.

AN6. Prior to the commencement of above ground works written advice must be obtained from the electricity supply authority, an approved telecommunications carrier and an approved gas carrier (where relevant) stating that satisfactory arrangements have been made to ensure provisions of adequate services.

Road Design and Traffic Facilities

AN7. All roads and traffic facilities must be designed to meet the requirements of Council or TfNSW (whichever is applicable). The necessary permits and approvals from the relevant road authority must be obtained prior to the commencement of road or pavement construction works.

Road Occupancy Permit

AN8. Prior to the commencement of construction works, for occupation of any part of the footpath or road for carrying out work, storage of building materials and the like, an application for a Road Occupancy Permit must be submitted to Council.

Oversize Vehicles

AN9. Oversize vehicles using local roads require approval from the National Heavy Vehicle Regulator (NHVR). The Applicant must submit an application for an Oversize Vehicle Access Permit through NHVR's portal (www.nhvr.gov.au/about-us/nhvr-portal), prior to driving oversize vehicles through local roads within the City of Parramatta local government area.

Road Occupancy Licence

AN10. A Road Occupancy Licence must be obtained from the relevant road authority for any works that impact on traffic flows during construction activities.

One-way Traffic Approval

AN11. One-way traffic approval for Grimes Lane must be obtained from relevant roads authority.

SafeWork Requirements

AN12. To protect the safety of work personnel and the public, the work site must be adequately secured to prevent access by unauthorised personnel, and work must be conducted at all times in accordance with relevant SafeWork requirements.

Hoarding Requirements

AN13. The Applicant must submit a hoarding application to Council for the installation of any hoardings over Council footways or road reserve.

Speed limit authorisation

AN14. At least eight weeks prior to the commencement of operation, the Applicant must submit the following details to TfNSW and obtain authorisation to install School Zone signs and associated pavement markings, and / or removal / relocation of any existing Speed Limit signs:

(a) a copy of the conditions of consent;

(b) the proposed school commencement/opening date;

(c) two sets of detailed design plans showing the following:

(i) accurate site boundaries;

(ii) details of all road reserves, adjacent to the site boundaries;

(iii) all proposed access points from the site to the public road network and any additional conditions imposed/proposed on their use;

(iv) all existing and proposed pedestrian crossing facilities on the adjacent road network;

(v) all existing and proposed traffic control devices and pavement markings on the adjacent road network (including School Zone signs and pavement markings); and

(vi) all existing and proposed street furniture and street trees.

Handling of Asbestos

AN15. The Applicant must consult with SafeWork NSW concerning the handling of any asbestos waste that may be encountered during construction. The requirements of the Protection of the Environment Operations (Waste) Regulation 2014 with particular reference to Part 7 – 'Transportation and management of asbestos waste' must also be complied with.

Fire Safety Certificate

AN16. The owner must submit to Council an Annual Fire Safety Statement, each 12 months after the final Safety Certificate is issued. The certificate must be on, or to the effect of, Council's Fire Safety Statement.

APPENDIX 2 WRITTEN INCIDENT NOTIFICATION AND REPORTING REQUIREMENTS

Written Incident Notification Requirements

1. A written incident notification addressing the requirements set out below must be emailed to the Planning Secretary through the major projects portal within seven days after the Applicant becomes aware of an incident. Notification is required to be given under this condition even if the Applicant fails to give the notification required under condition A25 or, having given such notification, subsequently forms the view that an incident has not occurred.
2. Written notification of an incident must:
   (a) identify the development and application number;
   (b) provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident);
   (c) identify how the incident was detected;
   (d) identify when the applicant became aware of the incident;
   (e) identify any actual or potential non-compliance with conditions of consent;
   (f) describe what immediate steps were taken in relation to the incident;
   (g) identify further action(s) that will be taken in relation to the incident; and
   (h) identify a project contact for further communication regarding the incident.
3. Within 30 days of the date on which the incident occurred or as otherwise agreed to by the Planning Secretary, the Applicant must provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all requirements below, and such further reports as may be requested.
4. The Incident Report must include:
   (a) a summary of the incident;
   (b) outcomes of an incident investigation, including identification of the cause of the incident;
   (c) details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence; and
   (d) details of any communication with other stakeholders regarding the incident.

8.11 A.11 External Lighting Compliance

09/09/2021

Hansen Yuncken
Building 1, L3, 75-85 O'Riordan Street
Alexandria NSW 2015

Attention: **Sasha Vuckovic**

Dear Sasha,

Project: New Primary School in Epping
Document title; Design Intent Statement – Electrical, ICT, Dry Fire, And Security Services

Pursuant to the provisions of Clause A5.2 of the National Construction Code of Australia (NCC2019), we hereby certify that the above design is in accordance with the normal engineering practice and meets the requirements of EFSG (except for those items listed in the departure schedule), TSG requirements, PRG requirements, school operation requirements, the Educational Model, the Functional Design Brief, and the Building Code of Australia and relevant Australian Standards as applicable. In particular the following NCC Sections/clauses and Australian Standards:

NCC E4 and AS 2293.1-2018	*Emergency and Exit Lighting*
NCC E2.2b Specific Provisions	*Smoke Detection*
AS/CA S008- 2013	*Requirements for customer cabling products.*
AS/NZS 3080- 2013	*Information technology*
NCC F4, AS 1680.0-2009, AS4282, AS1158, & SSDA Conditions B9 and B12a.	*Artificial Lighting*
NCC J6	*Artificial Lighting and Power*
NCC J8	*Facilities for Energy Monitoring*
AS 3000-2018	*General Electrical Works*

Should any further confirmations or evidence be required to support this statement please enquire to myself directly via email; nicolas.sleiman@erbas.com.au

Company:	Erbas and Associates Pty Ltd
Full Name of the Certifier:	Nicolas Sleiman
Position:	Associate Engineer - Electrical Services
Qualifications:	Bachelor of Engineering

Signature:

8.12 A.12 Site Investigation Executive Summary (Groundwater Investigation)

The below is an extract from the Detailed Site Investigation for the Epping South Primary School that was conducted from Environmental Investigation Services (EIS) in April 2021.

Executive Summary

Douglas Partners Pty Ltd (DP) has been engaged by School Infrastructure NSW to complete this Detailed Site Investigation (Contamination) (DSI) for a New Public School at 86 Chelmsford Avenue, Epping (the site). The objective of the DSI is to assess the suitability of the site for the proposed development and whether further investigation and / or management is required.

The investigation included a review of previous investigations undertaken at the site, soil sampling from 44 locations, (seven drilled boreholes, five hand-augured boreholes, 11 test pits and 21 surface samples), groundwater sampling from one location, surface water sampling from one location (the on-site detention basin), laboratory analysis for contaminants of potential concern (COPC) and interpretation of results with reference to current NSW EPA endorsed guidelines.

A review of previous reports indicates that the site previously had a rural / agricultural land use between circa 1900 until circa 1961. Buildings consistent with the current site layout were built circa 1975 and were used for teaching horticulture courses until at least 2011.

Key potential sources of contamination identified from previous investigations included former agricultural land use, demolition / deterioration of former and current buildings, potential disturbed / levelled / filled ground, former surrounding site uses including a television studio and brickworks, horticultural education land use and on-site dangerous goods / chemical storage.

The current investigation encountered fill in all test locations to depths of between 0.25 m and 1.65 m below ground level (bgl).

The results of the investigation indicated the general absence of gross contamination of fill at the site. Concentrations of all contaminants tested in soil / fill, were below the adopted SAC except for TPH fraction F3 (>C16-C34) in one sample (SS126/0.0-0.1), which exceeded the sample-specific EIL and TRH in some samples which did not undergo silica-gel clean-up analysis. SS126 was located within a shed with flammable goods storage but was taken from on top of a concrete slab. The presence of TRH in samples across the site and TPH following silica gel clean-up suggest a potential for some localised areas of petroleum contamination in surface soils, particularly in the footprint of the Dangerous Goods Stores near the southern site boundary.

The groundwater investigation suggested the general absence of gross contamination in groundwater and surface water at the site. Slightly elevated concentrations of metals in groundwater and surface water (namely copper and zinc) are considered to be associated with the urbanised nature of the area. TRH and BTEX were detected in groundwater and surface water and may be associated with the dangerous good stores near BH113. Additional groundwater and surface water investigation is recommended to further assess the recorded TRH and BTEX in these media.

Whilst no contamination requiring remediation has been identified in this DSI, there are some data gaps and potential on-site sources of contamination. It is therefore recommended that a Remediation Action Plan (RAP) be prepared to describe the additional works required to address these issues. Section 14 of this report provides recommendations on what should be addressed in the RAP.

Final classification of soils / gravel which are to be disposed off-site (either to land fill or for re-use) will also be required in accordance with the POEO Act.

8.13 A.13 Site Layout Plan

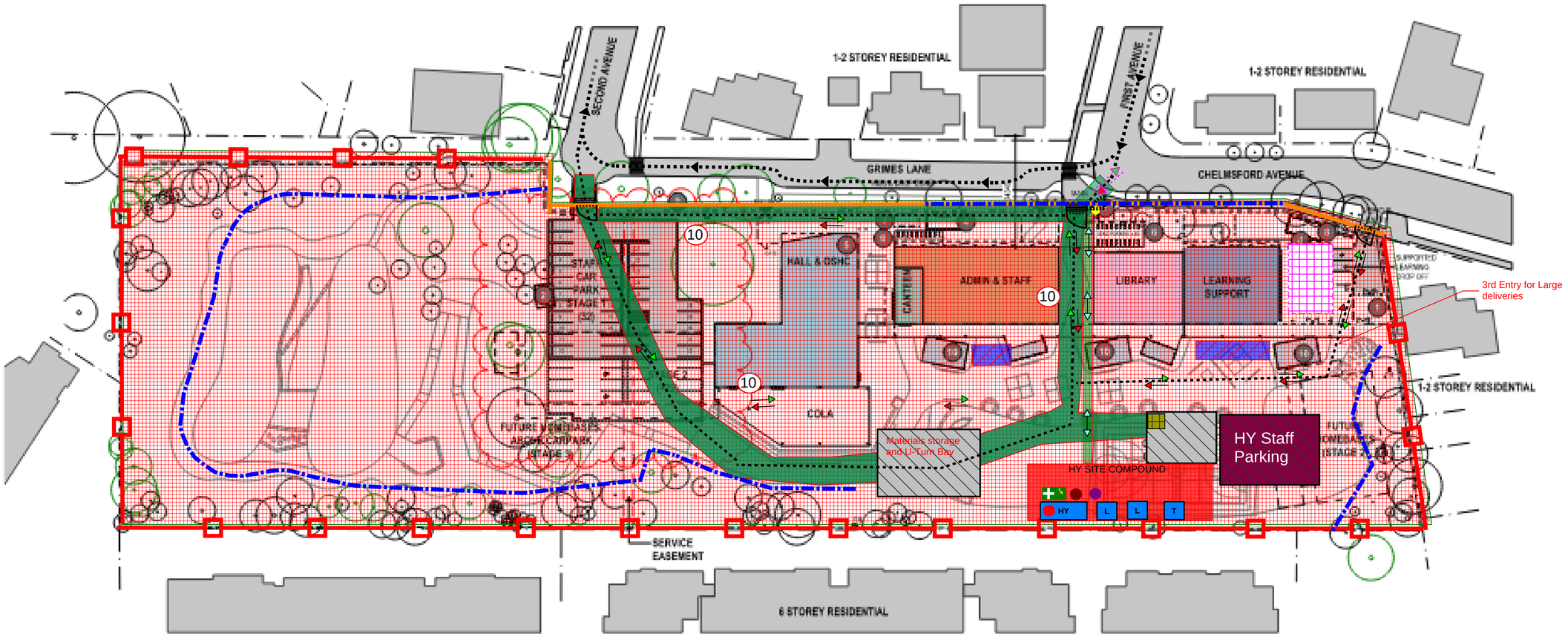
Legend of Symbols

- External Perimeter Site Boundary Fencing
- Vehicle Gate
- Pedestrian Gate
- HY Statutory Project Site Signage Board
- Vehicle Access into Project Site
- Vehicle Egress out of Project Site
- Site Personnel Entry / Exit / Travel Routes
- Emergency Services Vehicle main Access to / Egress from Project Site
- Hoarding
- Water field Barrier
- Temporary Electrical Distribution Board
- Fire Fighting Equipment
- Emergency Response push button (Nurse Call)
- Spill Kit
- Delivery Laydown Zone & General Storage
- Main Site Bins / resource recovery
- Site Emergency Evacuation Muster Point
- Site Offices Hansen Yuncken
- Site Toilets (m=male f=female)
- Site Lunchrooms
- First Aid & Defrib
- Internal Site Vehicle Main Path / Road
- Vehicle Speed Limit Signage
- All whether Access Path
- Crane / Hoisting / Concrete Boom Pump Set-up Location
- Vehicle Shaker Grid
- Sign In/Sign Out QR Code
- Temporary Fencing
- Existing fence (to be utilised until permanent fence installed

Sediment Control

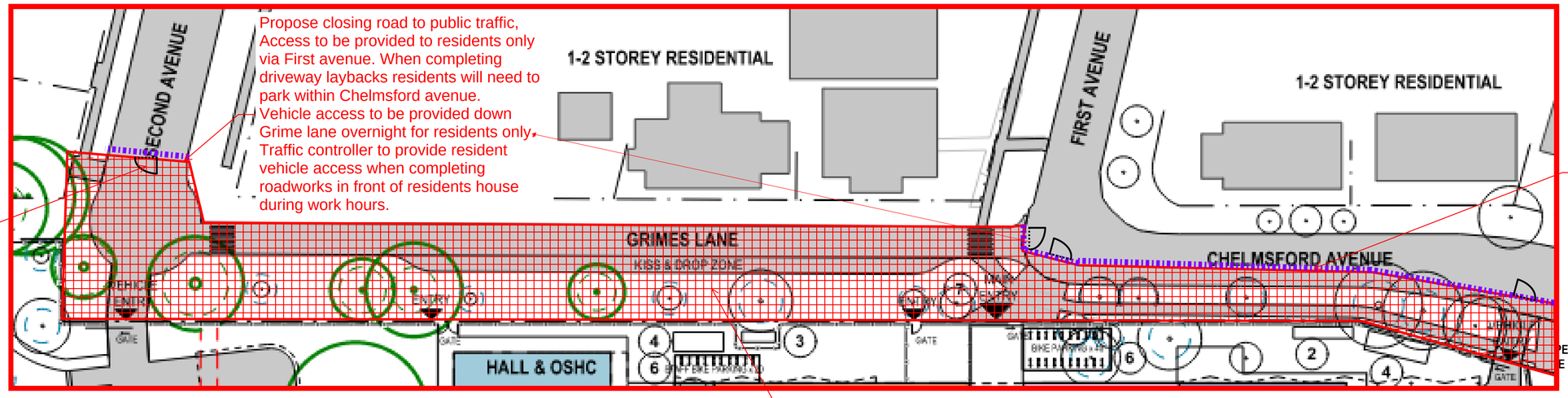
- Sediment Fence

Stage 1a - Internal Boundary works



Stage 1b - External Boundary works

Access for Construction Vehicles only



SITE SERVICES:

NUMBER	DESCRIPTION

PRELIMINARY

12/04/2021 7:16:06 PM

AMENDMENTS

REV	BY	DATE	DESCRIPTION
	RO	29/03/2021	ISSUE TO CLIENT FOR INFORMATION
	RO	06/04/2021	ISSUE FOR INFORMATION
	HS	12/04/2021	ISSUE FOR INFORMATION

HANSENYUNCKEN

NSW GOVERNMENT Education

PEDAVOLI ARCHITECTS PTY LTD
LEVEL 2,
458-468 WATTLE STREET
ULTIMO NSW 2007 AUSTRALIA
TEL: +61 2 9291 0000
WEB: www.pp-a.com.au
NOMINATED ARCHITECT:
VINCE PEDAVOLI
NSW REG. No. 5045

PEDAVOLI ARCHITECTS

New Primary School in Epping
Construction Site Layout Plan - Rev 2 - 13/04/2021

NORTH

5000 10000 15000 20000 25000 50000

SCALE 1 : 500 @ A1

12 APRIL 2021

PROJECT	PHASE	SERIES NUMBER	REVISION
EPPS	- SSDA -	001	

8.14 A.14 COVID-19 Management Plan

HANSENYUNCKEN

COVID-19 MANAGEMENT PLAN

Rev: 7 – October 2021

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Uncontrolled Document in Hard Copy
Copies shall not be made without the written
permission of Hansen Yuncken State HSE Manager

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1 Document Information

1.1 Document Control and Review

Change Information			
Review	**Description**	**Issued by**	**Issue date**
1	Initial Issue	PF	17/03/2020
2	COVID update	PF	27/06/2021
3	COVID update	PF	20/07/2021
4	Included requirements from NSW Government re: COVID-19 Safety Plan for construction	PF	30/07/2021
4	Included additional information in section 3.30 Protocol to Manage sites where a person becomes unwell at work	PF	9/08/2021
4	Removed the term negative from COVID testing requirements	PF	11/08/2021
4	Included requirements for confrontational situations for COVID Marshals	PF	17/08/2021
5	Included • Reference to Service NSW permit requirements • Requirements for Capacity of Workers at a construction site • Record keeping requirements re: place of residence to determine whether staff are required to undertake COVID- 19 testing and/or be vaccinated against COVID-19 • Vaccination requirements for authorised workers leaving Greater Sydney (50km radius) Removed • Reference to Central Coast and Shellharbour Revised appendix 7.1 and 7.2	PF	30/8/2021
6	Included changes in line with updated Public Health Orders	PF	18/10/2021
6	Included reference to toolbox talks.	PF	18/10/2021
7	Included section 3.8 What to do if a worker who tests positive for COVID-19 has been in the workplace Removed appendix 7.1 Emergency Protocol for Suspected Case of COVID-19 and 7.2 Protocol for Confirmed case of COVID-19	PF	22/10/2021

2 Commitment & Policy

2.1 Scope

This Management Plan details requirements for the management of COVID-19 on all Hansen Yuncken projects and forms part of the project WHS Management Plan.

2.2 Purpose

This document is to assist all HY staff, subcontractors, clients & essential site visitors in managing and mitigating the risks to health & safety amid the COVID-19 pandemic.

The aim of this document is to provide guidance & options where available to controlling the risks in the day-to-day operations of all HY construction sites.

This document is subject to change whenever the advice from regulators, industry bodies or health professionals is updated.

This plan will be reviewed where required in line with updates from the NSW Government and recorded in the Document Control and Review section of this plan.

2.3 COVID-19 information

CLOSE CONTACT DEFINITION

A close contact is someone who has been near enough to a person with COVID-19 while they were infectious and there is a reasonable chance they will be infected with COVID-19.

If you have been identified as a close contact of a person with COVID-19 you need to isolate and get tested for COVID-19 as soon as possible, even if you don't have symptoms

For Latest COVID-19 case locations, requirements for testing, restrictions and alerts in NSW use the following link.

https://www.health.nsw.gov.au/Infectious/covid-19/Pages/case-locations-and-alerts.aspx

3 Wellbeing of Workers

3.1 COVID Marshals

Hansen Yuncken will appoint COVID marshals for their site/office.

This will be a minimum ratio of 1 COVID Marshal per 50 workers.

Required training for COVID Marshals will include induction into:

- Hansen Yuncken COVID-19 Management Plan and
- the QR code check in detailed info poster (attached) which gives guidance on the following so the COVID marshals can explain to workers:
    - How to check in with the Services NSW app.
    - How to add others to your check in
    - How to download the Services NSW app
    - How to Use the Check-in webform
    - What to do if you Don't have a smart phone

COVID Marshals will be responsible for supporting site compliance and providing advice to employers and workers on the following measures:

- Undertaking visual checks on workers on entry top site to check if any Covid-19 signs/symptoms are being displayed
- Ensuring workers practice appropriate physical distancing measures
- Monitor entry and exit points to maintain physical distancing and prevent over-crowding
- Monitor compliance with check in using the WOL and Services NSW Covid safe unique QR (green tick) code for the relevant address/site
- Explaining Services NSW check in procedure

Where a situation becomes confrontational, COVID Marshals are to remove themselves from the area and call HY site team members for assistance.

3.2 Entry to Site

3.2.1 General

Entry points must have COVID- 19 declaration signage displayed and have facilities for washing of hands or sanitiser provided for use by workers.

3.2.2 Signing in

Prior to any persons entering Hansen Yuncken (HY) projects and/or offices, ensure that all workers including HY employees, subcontractor employees, delivery drivers, consultants and visitors log into site each day using the Services NSW QR code app or alternative approved method for contact tracing in addition to logging into WhosOnLocation (WOL) and completing the COVID-19 declaration.

3.3 Workers/Delivery Drivers

Where practicable site entry should be limited to a single access point where there will be multiple QR codes (to limit any queues of workers) and COVID-19 marshals to check people have logged in using the Services NSW app.

3.4 Workers/Delivery Drivers

Where practicable site entry should be limited to a single access point where there will be multiple QR codes (to limit any queues of workers) and COVID-19 marshals to check people have logged in using the Services NSW app.

Inducted workers are to sign in on the I-pad provided using their own pen/pointer.

Workers, including delivery drivers, are required to complete the COVID-19 daily worker questionnaire/declaration to confirm they have/do not: -

- TESTED POSITIVE FOR COVID-19 WITHIN THE LAST 14 DAYS?
- BEEN IN CLOSE CONTACT WITH ANY PERSON WHO HAS TESTED POSITIVE FOR COVID-19 WITHIN THE LAST 14 DAYS?
- EXPERIENCING ANY ONE OF THE COVID-19 SYMPTOMS?
- BEEN ON ANOTHER WORK SITE WHERE COVID 19 HAS BEEN IDENTIFIED WITHIN THE LAST 14 DAYS?
- BEEN ADVISED TO SELF ISOLATE FROM NSW HEALTH DUE TO KNOWN HOT SPOTS?

All responses and/or declarations are true and correct.

If a visitor declares any of the above, they will not be granted access to site. The worker should inform their supervisor/manager immediately.

3.5 Site Visitors

Only essential visitors such as clients or consultants should be attending site.

These visits need to be pre-arranged with HY management to enable an electronic COVID-19 declaration to be completed prior to the visitor accessing site.

Approved visitors need to be escorted by the nominated inducted person at all times and adhere to hygiene and social distancing practices.

Visitors will be required to complete the COVID-19 visitor questionnaire/declaration.

The visitor's inducted escort shall confirm the following 5 questions: -

- HAVE TESTED POSITIVE FOR COVID-19 WITHIN THE LAST 14 DAYS?
- HAVE BEEN IN CLOSE CONTACT WITH ANY PERSON WHO HAS TESTED POSITIVE FOR COVID-19 WITHIN THE LAST 14 DAYS?
- ARE EXPERIENCING ANY ONE OF THE COVID-19 SYMPTOMS?
- HAVE BEEN ON ANOTHER WORK SITE WHERE COVID 19 HAS BEEN IDENTIFIED WITHIN THE LAST 14 DAYS?
- HAVE BEEN ADVISED TO SELF ISOLATE FROM NSW HEALTH DUE TO KNOWN HOT SPOTS?

At each attendance to site and/or the office the visitor and their escort shall confirm the questionnaire/declaration has been relayed and all questions have been responded to and are true and correct.

If a visitor declares any of the above, they will not be granted access to site. The visitor should inform Hansen Yuncken immediately.

3.6 Exclude Workers Who are Unwell from the Site.

A poster will be displayed at entry points to the site that details you are not to enter the site if you have:

- Travelled to or attended any COVID hotspots as advised by the NSW Government
- Tested positive for COVID-19 within the last 14 days
- Been assessed by the health authority as being in close contact with a confirmed case of COVID-19 in the last 14 days.
- Been experiencing Flu like symptoms including shortness of breath or high temperature in the last 14 days

3.7 Protocol to Manage sites where a person becomes unwell at work/home

Protocol for worker experiencing some of the COVID-19 Symptoms

1) Worker experiences symptoms at work, at home or on another site
2) Immediately notify employer
3) Employer immediately notifies Hansen Yuncken
4) Hansen Yuncken notifies clients representative
5) Worker leaves site, home or other site via appropriate travel to prevent spreading
6) Conduct COVID test
7) Isolate at home
8) Wait for test results
9) Inform employer of results
10) If positive notify Hansen Yuncken
11) Hansen Yuncken to check records to identify areas of the site in which the worker had attended in the given timeframe
12) Hansen Yuncken to check records to identify other workers in areas of the site in which the infected worker had attended in the given timeframe and complete the contact risk assessment to identify potential close and casual contacts.
13) Hansen Yuncken notifies those workers employers by aconex transmittal
14) Hansen Yuncken notifies clients representative
15) Implement process if a person has attended the workplace and has tested positive for COVID-19 Section 3.8 of this plan.

NOTE: Workers are requested to notify Hansen Yuncken site management as soon as they become aware of having tested positive to COVID-19 or have been notified they are a close contact.

3.8 What to do if a worker who tests positive for COVID-19 has been in the workplace

Hansen Yuncken and/or a subcontractor might be notified that a worker who has attended the workplace has tested positive for COVID-19 by:

- public health authorities
- the worker who has tested positive
- an employer of a worker who visits the workplace.

The privacy and confidentiality of the person who tested positive for COVID-19 must always be maintained.

3.8.1 Process

The following process will be followed if a person has attended the workplace and has tested positive for COVID-19.

1. Tell the worker who has tested positive for COVID-19 to return home directly and follow the advice from NSW Health.

2. Ensure the safety of the workplace and workers, for example by cleaning and disinfecting all areas used by the person who tested positive for COVID-19.

3. Notify SafeWork NSW on 13 10 50.

   Be ready to give details by phone and if requested, in writing within 48 hours.

   SafeWork NSW will share this information with NSW Health to assist the contact tracing and management of COVID-19.

4. Businesses should assess how much contact other workers had with the person who tested positive for COVID-19, while that person was infectious in the workplace.

   Use the Contact Classification Tool (this tool will be published soon), the contact risk assessment matrix for community and workplace settings and any industry-specific guidance to help with this assessment. If you need assistance with this process, call SafeWork NSW on 13 10 50.

5. Inform NSW Health if any close contacts are identified by emailing MOH-PHEOVMT@health.nsw.gov.au.

6. Advise any worker identified as a close or casual contact to immediately leave the workplace, be tested, return directly home and follow NSW Health advice.

   They should not wait for official communication from NSW Health. NSW Health will contact people who are confirmed as close contacts, generally by phone call or SMS text message.

7. Advise workers and contractors of the situation in your workplace. Consult with workers about the identification and management of any remaining health and safety risks.

3.8.2 How will NSW Health be involved

NSW Health will contact people who are confirmed as close contacts, generally by phone call and SMS text message.

NSW Health may become involved if there are multiple cases associated with a business or workplace, including if information shared by SafeWork indicates there have been 3 or more employees test positive in a 7-day period.

Based on further assessment, NSW Health may recommend further actions to reduce the risk of spread of COVID-19.

3.8.3 Business responsibilities for informing workers

Advise workers and contractors of the general situation, noting that the privacy and confidentiality of the person who tested positive for COVID-19 must always be maintained. Information provided should include:

- Symptoms of COVID-19 that staff and contractors should monitor themselves for
- Where to seek advice and help
- Reminders to staff, contractors, visitors and customers to not enter the premises if they are unwell.

- Advice on physical distancing and personal hygiene measures (e.g. hand hygiene and cough etiquette)
- What infection control measures has put in place, including cleaning
- Any other specific advice provided by public health authorities.

3.8.4 Closing down the premises may or may not be required

Businesses do not necessarily have to close if a worker has tested positive to COVID-19.

Unless instructed to close by NSW Health, HY senior management will determine whether the site will remain open, or to close and reopen, based on:

- Ongoing transmission. Evidence of ongoing spread of infection (transmission) from person to person in the workplace might mean the business has to close temporarily to stop transmission between workers.
- Cleaning requirements. Premises must be appropriately cleaned following attendance of a confirmed case. This can be done overnight so as not to disrupt normal business hours. If premises are told during business hours they may need to close to undertake cleaning.

3.8.5 Cleaning guidance

All areas used by any suspected or confirmed case of COVID-19 should be cleaned and disinfected.

For hard surfaces, either:

- use detergent and water for cleaning followed by disinfectant solution (2-step clean)
- use a combined detergent and disinfectant solution (2-in-1 clean).

Specialist cleaning is not required.

3.8.6 When workers are returning to work

Workers who have tested positive for COVID-19 can only return to work after they are medically cleared. This means they have completed the required isolation period and are no longer infectious.

Workers who are contacts can return to work once they have completed any testing and isolation period.

After returning to work, employers should provide staff, visitors, contractors and customers safety information that includes:

- Symptoms of COVID-19 staff, visitors, contractors and customers should self-monitor for
- Where to seek advice and help
- Reminders not to enter the premises if they are unwell
- Advice on physical distancing and personal hygiene measures (e.g. hand hygiene and cough etiquette)
- What infection control measures the business operator has put in place, including cleaning
- Any other specific advice provided by public health authorities.

3.9 Contact Risk Assessment

The risk of COVID-19 transmission is increased when a person:

- Has close-range (<1.5m) contact with a case during the case's infectious period; or
- Shares an indoor space with a case during the case's infectious period.

Risk categories for each type of contact are described in **Table 1** and **Table 2.**

Table 1: Risk categories for people who have had close-range (<1.5m) contact with a case during the case's infectious period, for both indoor and outdoor settings.

Type of close-range contact	Masks*	Vaccination status of the exposed person**	
		Partial or none	Full
Direct physical contact†	Yes	Close	Casual
	No	Close	Casual
Conversation while within 1.5 m	Yes	Close	Low risk
	No	Close	Casual
Within 1.5m for more than 1 minute (cumulative over 24hrs)	Yes	Close	Low risk
	No	Close	Casual

* No = Mask not worn or improperly worn by case or contact.
** Fully vaccinated is 14 days following 2nd dose.
† Includes shaking hands, hugging or kissing.

Table 2: Risk categories for people who have shared an indoor space with a case during their infectious period but who have not had close-range (<1.5m) contact.

Size of indoor space* (m2)	Time (mins)	Masks**	Vaccination status of the exposed person†	
			Partial or none	Full
< 100	< 1	Yes	Low risk	Low risk
		No	Casual	Low risk
	1 to 15	Yes or no	Close	Low risk
	> 15	Yes or no	Close	Casual
100 - 300	< 1	Yes or no	Low risk	Low risk
	1 to 15	Yes or no	Casual	Low risk
	> 15	Yes or no	Casual	Low risk
> 300	Any	Yes or no	Low risk	Low risk

An indoor space is any substantially enclosed area where airflow is impeded by a wall, partition or barrier.
** No = Mask not worn or improperly worn by case or contact.
† Fully vaccinated is 14 days following 2nd dose.

3.10 Contact management

3.10.1 Close contacts

Follow the advice for close contacts at the following link.

https://www.health.nsw.gov.au/Infectious/factsheets/Pages/advice-for-contacts.aspx

Refer to Appendix 7.3.1

3.10.2 Casual contacts

Follow the advice for casual contacts at the following link.

https://www.health.nsw.gov.au/Infectious/factsheets/Pages/covid-19-casual-contact.aspx

Refer to Appendix 7.3.2

3.11 Provision of Training and Advice

Staff will be inducted in the COVID-19 Management Plan.

For information on Good hygiene for coronavirus (COVID-19) staff will access the following link https://www.health.gov.au/news/health-alerts/novel-coronavirus-2019-ncov-health-alert/how-to-protect-yourself-and-others-from-coronavirus-covid-19

Posters will be displayed on site that include physical distancing, face masks and hand hygiene.

3.12 First Aid Personnel

Qualified first aiders are to maintain a physical distance of two metres unless it is medically necessary to be near the person.

If the injured person is able to self-treat, they should be instructed in how to do so, and the First Aider should remain on standby to treat the injured person should it become necessary.

PPE provided will include:

- Disposable gloves (nitrile gloves if allergic to latex)
- Face Masks
- Eye protection
- Resuscitation masks or shields.

3.13 COVID-19 Vaccinations

The Australian Government is in the process of rolling out the COVID-19 vaccine program. COVID-19 vaccines will be offered to everyone living in Australia and the rollout is based on phases and priority groups.

We acknowledge that electing to have the vaccine is a personal choice.

You will need to keep your Manager informed of your appointment date (if during work hours), prior to it taking place, and when you will be away from work.

Should you be feeling unwell and need some recovery time following your vaccination, time off work and notification to your manager remains as per our standard Personal (Sick) Leave policy.

Hansen Yuncken will encourage all subcontractors to provide support if their workers elect to get vaccinated with some provision of paid time off during work hours to attend the appointment.

NSW Government Book a COVID Vaccination posters will be displayed on site.

3.14 Mandatory Vaccination Requirements

Mandatory vaccinations (fully vaccinated) are required for workers within school grounds, within hospital buildings, where required by the client or where a risk assessment identifies the need.

Where there is a requirement for mandatory vaccinations COVID Marshals will check for compliance prior to the worker entering the site

3.15 Proof of Vaccination Status

You can get an immunisation history statement or COVID-19 digital certificate to show proof of your vaccinations.

3.16 Surveillance COVID-19 Testing

If the client has a requirement for COVID 19 surveillance testing, COVID Marshals will check for compliance prior to the worker entering the site.

3.17 Proof of COVID-19 test

You must have proof of your COVID-19 test such as an SMS text message on your phone or an email addressed to you.

3.18 BIM360

Task observations, work permits and any other BIM360 checklists usually requiring S/C signatures are not to be signed during this period.

In headers of checklists under comments, note that the S/C requesting permits or the like, and that the S/C has acknowledged the terms of the permit. S/C are not to handle HY staff iPads.

iPads are not to be shared amongst HY staff.

3.19 Wellbeing of staff

Our EAP is available to all Hansen Yuncken employees (and immediate family members) and provides a confidential support service across a range of areas.

EAP services are provided by independent psychologists who are experienced in providing counselling and practical solution focused support in a sensitive and supportive manner.

Employees can access EAP services directly (at no cost) for either personal for work related issues, which can include the stresses of COVID 19 and the impact it has on our lives.

NSW EAP: MEND Services

Contact number: 1800 300 011

Email: info@mendservices.com.au

Reference number: 81 51 55

4 Physical Distancing

4.1 General

- Maintain 1.5 metre physical distancing separation
- Limit physical interactions and utilise other methods for meetings such as video / audio conferencing
- Limit physical interaction between workers and use other means of communication such as mobile phones or two-way radios
- Limit worker / visitor numbers in offices and on site where possible
- Facilitate work from home for HY staff where practical
- Create specific walkways through the construction site to maintain physical separation
- Stagger mealtimes and smokos to limit the number of workers congregating in one area. Spread out furniture in crib/break rooms
- Site inductions will be undertaken in smaller groups to comply with the 1 person per 4 square metre rules.
- Prestart meetings will be undertaken in smaller groups or in an open, well ventilated spaces
- Conduct toolbox and other meetings online or via conferencing facilities. If not, conduct such meetings in wide open spaces to enable workers to keep the required distance of at least 1.5metres
- Postpone non-essential training and or move to online training
- Place signage about social distancing around the work site where possible
- In circumstances where the 1.5 metre rule cannot be adhered to such as team lifts, working in EWPs, and undertaking a work activity that requires 2 or more workers in close proximity, a task risk assessment is to be undertaken by the subcontractor to identify alternative methods to undertake the task that must be implemented to protect workers.

4.2 Transportation to and from Site

No car parking is available on site, but Hansen Yuncken will encourage workers to reduce their use of public transport where possible.

Hansen Yuncken will promote compliance with rules relating to carpooling at daily prestart meetings. This will include:

- Permitted for fully vaccinated adults
- Those not fully vaccinated can only carpool with their household

4.3 Site Entry Point

Multiple QR codes will be posted at the site entry to avoid overcrowding when checking in.

Covid-19 Marshals shall monitor entry and exit points to the site to maintain social distancing and prevent overcrowding.

Signage will be in place at entry/exit points to promote social distancing.

When a Covid-19 marshal is not on the entry point the gate will be closed/locked and a sign on the gate will indicate contact numbers for relevant Hansen Yuncken team members.

4.4 Inductions

All inductions are to be pre-arranged with HY project management, who will determine if it is urgent that the workers skills are required on site.

If not, the worker will be inducted at a later stage.

Preference will be to undertake inductions in outdoor areas.

Induction rooms are to have signage attached nominating the maximum allowable people at any given time.

Inductions may need to be staggered to maintain social distancing in induction rooms.

Site inductions need to include content around COVID-19 controls.

Where workers are required to undertake the WhosOnLocation (WOL) “Hansen Yuncken General HSE Introduction” (Online), these need to be completed on workers personal devices –laptops, mobile phones or tablets.

Where HY is providing devices for WOL inductions these need to be cleaned between each user with alcohol wipes or hospital grade disinfectant.

All induction rooms must have hand sanitiser available and be cleaned on a regular basis.

4.5 Consultation – pre-start / toolbox meetings

Where practicable and weather permitting, these are to be conducted in large open areas such as car parks, laydown areas or inside large structures (if available), to maintain social distancing requirements.

If this cannot be achieved these will need to be conducted in smaller work groups to maintain current social distancing requirements.

For worker sign off the below options will be applied if no alternative is viable/practical:

Option 1:

Site manager to provide each S/C supervisor with our pre-start template populated with COVID-19 worker declaration as a line item along with any other relevant topics relating to the day’s activities. S/C supervisors are to ensure their workers sign this off and return to HY site manager prior to commencing work.

These are to be added to header of BIM360 pre-start checklist as verification of consultation. This would be more effective on larger sites

Option 2:

Pre-populate a list of names of all workers (this can be done by running a report through either WOL for the previous days attendance).

HY site manager can then conduct a roll call and tick off workers in attendance. This would be more effective on smaller sites.

Whichever method is chosen HY staff are to ensure regular consultation is undertaken with updates on COVID-19 as necessary.

4.6 Prestart Meeting Content

Standard agenda items on the daily prestart will include:

- Promote compliance with rules relating to carpooling. This will include:
  - Permitted for fully vaccinated adults
  - Those not fully vaccinated can only carpool with their household

- Designation of separate work zones for trades as part of the coordination process.

  A copy of designated work zones and subcontractors working within those zones will be posted on the site noticeboard.

- Discouraging congregation outside sites before/after shifts and on meal breaks

4.7 Toolbox Meetings

Toolbox talks will be undertaken to address worker health and training and to relay advice in relation to personal hygiene, any updated infection control measure and adherence to COVID-19 requirements.

These toolbox talks can be undertaken by:

- Hansen Yuncken with the workers, ensuring social distancing requirements are complied with or
- Subcontractor supervisor with their workers.

4.8 Work Zones

Separate work zones will be determined at the daily prestart meeting during the coordination process to limit the movement of people and teams between work areas.

Emphasis will be placed on restricting one trade to each work area.

A copy of designated work zones and subcontractors working within those zones will be posted on the site noticeboard on a daily basis.

4.9 Deliveries

Use contactless deliveries and invoicing where practicable.

Where practicable, the Hansen Yuncken site team will issue NSW Government QR codes electronically to subcontractors to be forwarded to delivery drivers prior to site entry.

Delivery drivers must not leave their vehicles unless they are required to participate in the unloading process.

A Covid-19 Marshal will induct the delivery driver into the site, from a safe distance.

The site unique QR code will be posted at the delivery entrance to the site in a position, at window height, that eliminates the need for any contact with others.

If the driver needs to be involved in the loading/unloading process all other workers will always maintain a 3-metre clearance from the driver.

Other workers must not touch areas of the vehicle where the delivery driver has been in contact with.

Deliveries will be assessed individually to minimise the risk of delivery drivers leaving their vehicles.

This will include consultation with the subcontractor on how the load will be managed.

Any non-compliant deliveries will be refused entry to site and appropriate authorities will be notified.

A separate toilet will be made available for exclusive use by delivery drivers and be cleaned on a regular basis i.e., the more frequent the use, the more frequent the cleaning regime.

This toilet will be signposted as a delivery driver only toilet.

Delivery drivers are not permitted to use any of the amenities that are designed for the use of site workers.

4.10 Capacity of workers at construction sites

Construction sites can have:

- 1 person/4 sqm for indoor and
- 1 person/2 sqm for outdoor settings

4.11 Offices/Meeting Rooms

All offices/meeting rooms will have signage on the outside of the office to designate the maximum number of people allowed at any given time in accordance with the 4 square metre rules.

Social distancing needs to be maintained in site offices/meeting rooms.

Signage needs to be displayed on these offices advising of the maximum amount of allowable people for each shed or site office location to comply with the 1 person per 4 square metre rules.

Phone numbers of site management need to be displayed so S/C supervisors can phone ahead and meet external of office for discussions.

Encourage S/C supervisors to have their own set of drawings and documents to limit cross contamination.

Non-essential site team members should be working from head office or home, so far as practicable.

4.12 Meal / Lunch breaks

Meal/lunchrooms will be signed to identify the maximum number of workers allowed in the room at any one given time as per the 1 person/4 sqm requirement.

Each seat will be numbered, and the subcontractor supervisor is to ensure workers complete the seating register for each lunchroom.

Adequate ventilation and air flow should be maintained in enclosed amenities, for example by opening windows/doors to allow fresh air, installing fans and/or exhaust fans and/or air purifiers, turning air conditioners to 'fresh' not recirculate.

Consultation with S/C's needs to occur around staggering meal and lunch breaks dependant on available amenities.

A seating layout plan will be established where the seats are numbered and a seating register will be completed by all subcontractors for their workers, which includes:

- Date
- Name of worker
- Shed and seat number
- Entry time to shed
- Exit time from to shed

Social distancing needs to be maintained in all amenities.

Limit number of persons in lunchrooms, sheds, offices, and meeting rooms to one person per 4 square metres.

Signage is to be attached to doors or walls advising of the maximum allowable number of people in each site shed.

Where practicable, place tables and chairs external of site sheds (under covered walkways) in the open or within the building structure (where there is adequate air flow) to maintain 4m2 per person.

Consider marking tables to advise of safe sitting distances.

The following items are NOT to be stored in lunch sheds:

- Shared mugs / cups
- Shared cutlery / plates / teaspoons
- Sandwich toasters

Encourage:

- Workers to bring in their own plates, cups, cutlery and/ drink bottles
- There shall be amenities provided to allow workers to clean these items immediately after use.
- These items are to be placed into individual Cooler/Chiller - bags/boxes (Esky's) or the like.

There shall be amenities provided to allow workers to clean these items immediately after use.

These items are to be placed into individual Cooler/Chiller - bags/boxes (Esky's) or the like.

4.13 Social distancing in internal work zones

Trades are to be allocated to work in distinct work areas or zones such as working on one floor or one zone to reduce workforce mixing. This will be coordinated at the Daily Pre-start meeting.

Tasks should be re-scheduled to stagger the commencement and completion times so there are less workers on-site at any one time where possible.

Work zones are to have signage attached advising maximum allowable workers within internal areas.

Physical distancing of 1.5 metres is to be maintained wherever possible.

4.14 Task Risk Assessment

In circumstances where the 1.5metre cannot be adhered to such as team lifts, working in EWPs, and undertaking a work activity that requires 2 or more workers in close proximity, a task risk assessment is to be undertaken by the subcontractor to identify alternative methods to undertake the task that must be implemented to protect workers.

These measures are to be included in the relevant SWMS.

Alternative methods can include:

- Reducing the length of time workers spend in close proximity
- Job rotation to reduce the length of time workers spend in close proximity
- PPE for workers required to be in close proximity for prolonged periods of time – gloves and P2 or N95 masks.
- Increase air flow in the work area

5 Hygiene and Cleaning

5.1 General

Posters are displayed in offices and across our sites to promote good personal hygiene.

This includes hand washing guidelines, sanitisation, cough and sneezing measures and other key information relating to infection control.

Office and site teams are regularly reviewing the frequency of daily cleaning, specifically in common areas and touch points (handles, switches, handrails, lunch tables, kitchen, and bathroom amenities).

Hand sanitiser or wash stations will be available at key points around the site, such as entry and exit points and meal areas.

Washroom facilities are adequately stocked with liquid soap as a primary handwash solution and paper towels.

Workers are required to manage their work environments and ensure that all touch points are cleaned on a regular basis with an anti-viral disinfectant or wipes

We recommend that HY employees/ workers/ visitors do not share PPE unless anti-viral disinfectant measures are available.

This includes hat, boots, vests, glasses and gloves.

Workers are required to manage their work environments and ensure that all touch points are cleaned on a regular basis with an anti-viral disinfectant or wipes.

5.2 Face Masks

Masks no longer required in offices or indoor areas unless required by the client (unvaccinated people must still wear a mask in the office/indoor areas).

An indoor space is any substantially enclosed area where airflow is impeded by a wall, partition or barrier.

Masks are not required in outdoor settings.

5.3 Hand Washing

Posters are displayed in offices and across our sites to promote good personal hygiene, this includes hand washing guidelines, cough and sneezing measures and other key information relating to infection control.

HY shall provide handwashing facilities near the front entry, delivery areas and amenities with plenty of soap and running water.

Where it is not practicable to provide handwashing facilities, sanitiser will be provided for use.

The following hand washing method is to be followed:

- Remove all hand jewellery including watches
- Wet hands and use soap and running water
- Vigorously wash hands for a minimum of 20 seconds
- Ensure all areas of palms, between fingers, fingertips and wrists are washed
- Rinse with water
- Dry thoroughly with single use material and dispose of in bin

- If using manual taps turn off with paper towel and place in bin; and
- If using hand sanitiser, ensure it contains at least 70% alcohol.

5.4 Cleaning of Site Amenities / Offices

Lunchrooms, offices and first aid rooms shall be kept spotless and cleaned regularly.

Cleaning frequency will be on a daily basis as a minimum, determined by numbers on-site and weather conditions.

Lunchrooms will be cleaned 4 times a day i.e. after each sitting.

Workers undertaking this cleaning need to have the following PPE:

- Disposable gloves
- Appropriate safety eyewear
- Disposable face masks

and wash hands thoroughly before and after with soap and water.

Cleaning cloths must be replaced regularly and disposed of in plastic bags.

When cleaning ensure all surfaces are to be wiped cleaned with detergent or disinfectant solution or wipe.

Areas/items to be cleaned include:

- Tables, benches and desks,
- Sinks
- Hot water services and pie warmers
- Entry handrails (where applicable) and door handles
- Fridges and microwaves are to be cleaned inside & out
- Computer keyboards, mouses and phones are to be wiped
- Plan racks are to be wiped
- Floors are to be mopped with hot water and disinfectant
- Air conditioner filters are to be cleaned regularly and recorded in BIM on register

Frequently touched areas and surfaces around the site, should cleaned be several times per day, where practicable, including:

- delivery areas,
- printers,
- plant and machinery controls,
- handrails,
- turnstiles
- taps and washing facilities

5.5 Tools & equipment

Workers need to consult daily about tasks to be undertaken and where practicable limit tools and equipment to individual use.

Where this is not possible these tools need to be cleaned thoroughly with alcohol wipes prior to another worker using them.

Regardless of single or multiple workers handling tools and equipment, these items must be cleaned thoroughly at the completion of each shift.

This requirement must be captured in the relevant SWMS.

5.6 Mobile plant

Consideration needs to be given to trying to maintain the same operators in mobile plant where practicable.

Alcohol wipes are to be kept with mobile plant and if operators need to be rotated out, the following items need to be cleaned with alcohol wipes or Hospital grade disinfectant: -

- All controls – steering wheels, levers and joysticks
- Insides of doors if applicable
- Door handles / gates
- Any handrails used to access internal / external of plant
- Covers of pre-start books etc
- Air conditioner (if applicable) filters need to be cleaned on a regular basis

Regardless of single or multiple operators of plant these items must be cleaned thoroughly at the completion of each shift.

This requirement must be captured in the relevant SWMS.

6 Record Keeping

6.1 QR Codes

Multiple site unique QR codes will be posted at the entrance to the site.

6.2 Entry to Site

Prior to any persons entering our projects/offices we need to ensure all workers including Hansen Yuncken employees, subcontractor employees, delivery drivers and visitors log into site each day using the Services NSW app or alternative approved method for contact tracing in addition to log into WhosOnLocation (WOL) and completing COVID-19 declaration.

Covid-19 Marshals will be responsible for monitoring compliance with check in using the WOL and Services NSW Covid safe unique QR code (green tick) for the relevant address/site.

COVID-19 marshals who are trained in the QR code check in detailed info poster which gives guidance on the following so the COVID marshals can explain to workers:

- How to check in with the Services NSW app.
- How to add others to your check in
- How to download the Services NSW app
- How to Use the Check-in webform

All workers and visitors will also check in using the Hansen Yuncken Whosonlocation (WOL) app which keeps a record of persons entering/leaving site.
These records can be accessed in an electronic format within 4 hours.

6.3 Hansen Yuncken Staff Records

Hansen Yuncken will maintain records of their staff that includes:

- records of other sites visited
- place of residence to determine whether staff are required to undertake surveillance COVID-19 testing
- mandatory surveillance COVID-19 testing results and/or be vaccinated against COVID-19
- age and vaccination status – if a person declines to provide vaccination information, it is sufficient to record that fact

Hansen Yuncken will include the Contractor notice the requirement for those employers to maintain the same records.

6.4 Notification to SafeWork NSW

Hansen Yuncken will cooperate with NSW Health if contacted in relation to a positive case of COVID-19 at your workplace and notify SafeWork NSW on 13 10 50.

7 Appendix – Contact Management

7.1 Close Contact

Vaccination status	Household contacts	Other close contacts
Fully vaccinated 2 doses completed at least 14 days before you last had contact with a COVID-19 case	• Self-isolate for 7 days (7 full 24 hour periods) from the date the last COVID-19 positive person in your household received a positive result. • Get tested immediately and again on day 6 and day 12 • Only leave self-isolation after 7 days if you receive a negative result from the test on day 6 and have no COVID-19 symptoms • For the 7 days after you have completed self-isolation you must work from home where practicable, not attend hospitality settings (such as cafes and restaurants), and not attend high risk settings even if it is your place of work. High risk settings are healthcare, aged care, disability care, early childhood centres, primary school and correctional facilities.	• Self-isolate for 7 days from the date you last had contact with the COVID-19 positive person • Get tested immediately and again on day 6 and day 12 • Only leave self-isolation after 7 days if you receive a negative result from the test on day 6 and have no COVID-19 symptoms • For the 7 days after you have completed self-isolation you must work from home where practicable, not attend hospitality settings (such as cafes and restaurants), and not attend high risk settings even if it is your place of work. High risk settings are healthcare, aged care, disability care, early childhood centres, primary school and correctional facilities.
Not fully vaccinated **0 or 1 dose or 2 doses completed less than 14 days since you last had contact with a COVID-19 case**	• Self-isolate for 14 days from the date the last COVID-19 positive person in your household received a positive result. • Get tested immediately and again on day 12 • Only leave self-isolation after 14 days if you receive a negative result from the test on day 12 and have no COVID-19 symptoms	• Self-isolate for 14 days from the date you last had contact with the COVID-19 positive person • Get tested immediately and again on day 12 • Only leave self-isolation after 14 days if you receive a negative result from the test on day 12 and have no COVID-19 symptoms

You can end your self-isolation when you fulfil the requirements in the table above. You do not require confirmation from NSW Health to end your self-isolation, however you need to be able to show evidence of your negative COVID-19 test results if requested by NSW Health or by Police

7.2 Casual Contact

Self-isolate immediately

Self-isolate until you receive the first negative test result, even if you are vaccinated or feel well.

Get tested for COVID-19

Get tested:

- as soon as possible, and
- on day 6 after your last contact with the COVID-19 positive person

If your first test is more than 4 days after your exposure to the person with COVID-19, you do not need to get the second test.

You need to be tested with a nose and throat (PCR) test even, if you don't have symptoms.

Get tested at the nearest testing centre you can safely access.

At the clinic wear a face mask that covers your nose and mouth at all times.

Tell the testing staff that you are a casual contact.

If you feel well, you do not need to isolate while you await the results of the day 6 test.

If you work in a high risk setting, please speak to your manager before returning to work.

High risk settings are healthcare, aged care, disability care, early childhood, primary school and correctional facilities.

Monitor for symptoms

You should monitor for symptoms of COVID-19 for at least 14 days after your last contact with a COVID-19 positive person.

If you develop symptoms at any time, isolate and get tested again as soon as possible, even if you have already received a negative test result.

8.15 A.15 HY HSE Audit V2

Checklist Detail

HANSENYUNCKEN

#85 - AUDIT - HSE (TEMPLATE FOR SINSW)

Status	**Not started**
Created date	Oct 06, 2021
Scheduled date	
Started date	
Completed date	
Type	**Safety**
Description	Audit to be completed annually on Projects with a duration >12 months or where Surveillance / Follow-up audit is required. The following issue types shall be raised during this Audit for any items requiring Corrective Action: Audit Opportunity for Improvement, Audit Nonconformance. AUDIT Findings: - Pass = Conformance Fail = Nonconformance / Opportunity For Improvement N/A = Not Applicable / Not Audited
Location	
Template	AUDIT - HSE [V2]
Linked documents	
Assigned to	
Creator	**Justin Sut** (Hansen Yuncken)
Section assignees	

Sections	Items	Issues	Conforming	Non-conforming	N/A	To be answered
0/36	0/157	0	0	0	0	157

1. COMPANY

Assigned to	• (0/0)

Allocate responsible Company by selecting organisation name in the “Assigned To:” section above.

2. AUDIT DETAILS

Assigned to • (0/6)

2.1	**Audit Purpose / Scope**
	◯ Project Delivery (Surveillance) Audit ◯ Follow-up Audit
2.2	**Project Start Date**
2.3	**Project Planned PC Date**
2.4	**Audit Date**
2.5	**Auditor**
2.6	**Audit Summary**
	Description (Provide brief Summary of Audit scope and findings in response box)

3. WHS PLANNING & AWARENESS

Assigned to • (0/2)

3.1	**Induction training and induction records are in place**
	◯ Pass ◯ Fail ◯ N/A
3.2	**Site files and registers are maintained and up-to-date**
	◯ Pass ◯ Fail ◯ N/A

4. HSE RISK ASSESSMENT

Assigned to • (0/4)

4.1	**HSE hazards are adequately assessed in the Project HSE Risk assessment**
	○ Pass ○ Fail ○ N/A
4.2	**Current Project HSE Risk Assessment is available to workers / displayed**
	○ Pass ○ Fail ○ N/A
4.3	**HSE Risk assessment has been reviewed/updated and identifies current/applicable hazards**
	○ Pass ○ Fail ○ N/A
4.4	**High Risk Identifier completed for the month and posted on noticeboard**
	○ Pass ○ Fail ○ N/A

5. SUBCONTRACTOR HSE MANAGEMENT

Assigned to • (0/7)

5.1	**Current Subcontractor WHS Specification is being used**
	○ Pass ○ Fail ○ N/A
5.2	**Subcontractor WHS Startup Submissions are being obtained and reviewed**
	○ Pass ○ Fail ○ N/A
5.3	**Subcontractor WHS Compliance Audits are being conducted**
	○ Pass ○ Fail ○ N/A
	Description Compliance Audits shall be conducted within the first 3 months of commencement of the relevant S/C to assess whether the S/C is complying with the requirements of, and commitments made in, their WHS startup documentation submission. Audits shall be scheduled based on risk with a focus on HRCW.
5.4	**SWMS Review processes are established and up todate**
	○ Pass ○ Fail ○ N/A
5.5	**Task Observations are being scheduled and conducted**
	○ Pass ○ Fail ○ N/A
5.6	**HSE Hazard Rectifications / Improvement Notices / Suspension Notices, are being issued and closed out accordingly.**

	○ Pass ○ Fail ○ N/A
5.7	**Work Permit Systems are in place and up to date**
	○ Pass ○ Fail ○ N/A

6. SITE MANAGEMENT

Assigned to • (0/2)

6.1	**Housekeeping is adequate**
	○ Pass ○ Fail ○ N/A
6.2	**Site is free of slip/trip hazards**
	○ Pass ○ Fail ○ N/A

7. COMMUNICATION & CONSULTATION

Assigned to • (0/6)

7.1	**Site consultation arrangements have been established and displayed**
	○ Pass ○ Fail ○ N/A
7.2	**Site signage complies with HY requirements**
	○ Pass ○ Fail ○ N/A
7.3	**Site safety notice board is maintained and includes required information**
	○ Pass ○ Fail ○ N/A
7.4	**Daily Pre-start meetings are being conducted in accordance with HY procedures**
	○ Pass ○ Fail ○ N/A
7.5	**Toolbox meetings are being conducted in accordance with HY procedures and the consultation statement**
	○ Pass ○ Fail ○ N/A
7.6	**Site HSE Committee Meetings are being conducted in accordance with HY procedures and the Consultation Statement**
	○ Pass ○ Fail ○ N/A

8. INCIDENTS & EMERGENCY RESPONSE

Assigned to • (0/7)

8.1	**First aid facilities are established as per the COP**
	○ Pass ○ Fail ○ N/A
8.2	**Project Incident Register is established and up-to date**
	○ Pass ○ Fail ○ N/A
8.3	**Incidents are correctly categorised**
	○ Pass ○ Fail ○ N/A
8.4	**Incidents are closed out in a timely manner**
	○ Pass ○ Fail ○ N/A
8.5	**Emergency Response drills are scheduled and conducted**
	○ Pass ○ Fail ○ N/A
	Description Emergency drills are to be conducted within 6 months of project start and at 6 monthly intervals thereafter. For projects with a duration 6 months must complete at least one (1) Emergency Response Drill.
8.6	**Emergency lighting is adequate**
	○ Pass ○ Fail ○ N/A
8.7	**Fire fighting equipment and signage is correctly located and servicing up to date**
	○ Pass ○ Fail ○ N/A

9. WORKING AT HEIGHTS

Assigned to • (0/11)

9.1	**Is there a risk of a person falling 2 metres or more?**
	○ Yes ○ No ○ N/A
9.2	**Access to work areas includes approved access systems,**
	○ Pass ○ Fail ○ N/A
9.3	**Protection (handrail/fence/covers etc) is in place to protect people or material fall**
	○ Pass ○ Fail ○ N/A
9.4	**Fall protection equipment is signed off by a competent person**

	○ Pass ○ Fail ○ N/A
9.5	**Fall protection PPE is recorded and checked**
	○ Pass ○ Fail ○ N/A
9.6	**People using harnesses have working at heights training (HST or WP ticket)**
	○ Pass ○ Fail ○ N/A
9.7	**Workers have been consulted and signed their SWMS**
	○ Pass ○ Fail ○ N/A
9.8	**The SWMS includes a working at heights rescue procedure**
	○ Pass ○ Fail ○ N/A
9.9	**Ladders and mobile scaffolds comply with HY policies and procedures**
	○ Pass ○ Fail ○ N/A
9.10	**Roof access permit system is in place**
	○ Pass ○ Fail ○ N/A
9.11	**Hansen Yuncken metal roofing guide has been followed**
	○ Pass ○ Fail ○ N/A

10. ASBESTOS

Assigned to • (0/7)

10.1	**Does the work involve the disturbance or removal of asbestos?**
	○ Yes ○ No ○ N/A
10.2	**Notification to WHS regulator provided**
	○ Pass ○ Fail ○ N/A
10.3	**Asbestos signage/barricading is adequate**
	○ Pass ○ Fail ○ N/A
10.4	**Atmospheric monitoring processes are established**
	○ Pass ○ Fail ○ N/A
10.5	**Are monitoring results are displayed on the site noticeboard**

	○ Pass ○ Fail ○ N/A
10.6	**Asbestos disposal methods are correct**
	○ Pass ○ Fail ○ N/A
10.7	**Clearance certificates are being obtained from a Hygienist**
	○ Pass ○ Fail ○ N/A

11. CONFINED SPACES

Assigned to • (0/3)

11.1	**Work involves working in confined spaces**
	○ Yes ○ No ○ N/A
11.2	**Confined Works permits system in place / being used**
	○ Pass ○ Fail ○ N/A
11.3	**A risk assessment has been undertaken by a competent person and reviewed before undertaking any work activity associated with a confined space**
	○ Pass ○ Fail ○ N/A

12. CONTAMINATED or FLAMMABLE ATMOSPHERES

Assigned to • (0/5)

12.1	**Work is in an area that may have a contaminated or flammable atmosphere**
	○ Yes ○ No ○ N/A
12.2	**Flammable goods are stored correctly as per SDS**
	○ Pass ○ Fail ○ N/A
12.3	**Oxy acetylene bottles are stored securely to avoid falling**
	○ Pass ○ Fail ○ N/A
12.4	**Flashback arrestors are correctly fitted to oxy acetylene bottles**
	○ Pass ○ Fail ○ N/A
12.5	**Flammable goods storage facilities include correct signage and fire extinguishers**
	○ Pass ○ Fail ○ N/A

13. MOBILE PLANT

Assigned to • (0/14)

13.1	**Does the work involve powered mobile plant?**
	○ Yes ○ No ○ N/A
13.2	**Site layout plan nominates plant entry/exit points and delivery areas and pedestrian access ways**
	○ Pass ○ Fail ○ N/A
13.3	**Site layout ensures separation of people and plant (exclusion zones/jersey curb or fencing)**
	○ Pass ○ Fail ○ N/A
13.4	**Plant verification reports are completed for all plant entering the site**
	○ Pass ○ Fail ○ N/A
13.5	**Plant with attachments have quick hitch safety pins in place**
	○ Pass ○ Fail ○ N/A
13.6	**Lifting equipment is tagged and certified**
	○ Pass ○ Fail ○ N/A
13.7	**Required plant has been registered with the State WHS Regulator**
	○ Pass ○ Fail ○ N/A
13.8	**Daily prestart inspection checklists are completed**
	○ Pass ○ Fail ○ N/A
13.9	**SWL/WLL is displayed on appropriate plant**
	○ Pass ○ Fail ○ N/A
13.10	**Spotters are used for relevant plant operation**
	○ Pass ○ Fail ○ N/A
13.11	**Plant is operated within safe distance from live overhead power lines**
	○ Pass ○ Fail ○ N/A

13.12	**Plant work areas are segregated and include appropriate signage**
	○ Pass ○ Fail ○ N/A
13.13	**Plant set-up permit system is in place**
	○ Pass ○ Fail ○ N/A
13.14	**Unused plant is parked in a safe location and ignition keys removed**
	○ Pass ○ Fail ○ N/A

14. EXCAVATION

Assigned to • (0/9)

14.1	**Does work involve excavation to a depth greater than 1.5m or a tunnel**
	○ Yes ○ No ○ N/A
14.2	**Dial B4 U Dig plans are available on site with details of service locations**
	○ Pass ○ Fail ○ N/A
	Description (Ensure issue date is 30 days)
14.3	**Groundworks Permit system is established and implemented**
	○ Pass ○ Fail ○ N/A
14.4	**Excavations/trenches are benched battered or shored**
	○ Pass ○ Fail ○ N/A
14.5	**Excavations/trenches are signed off by a Geotechnical Engineer**
	○ Pass ○ Fail ○ N/A
14.6	**Suitable barricading is installed around excavations/trenches**
	○ Pass ○ Fail ○ N/A
14.7	**Pits include metal pit covers**
	○ Pass ○ Fail ○ N/A
14.8	**Excavations/trenches contain suitable provision for access/egress**
	○ Pass ○ Fail ○ N/A
14.9	**Plant/vehicles and stock piling is outside the zone of influence**

	○ Pass ○ Fail ○ N/A

15. PRE-CAST & TILT-UP CONCRETE

Assigned to • (0/7)

15.1	**Work involves tilt-up and precast concrete**
	○ Yes ○ No ○ N/A
15.2	**Tilt up and precast audit report has been completed and supporting documentation provided**
	○ Pass ○ Fail ○ N/A
15.3	**Props are correctly fixed and secured**
	○ Pass ○ Fail ○ N/A
15.4	**Prop sizes are in accordance with design requirements**
	○ Pass ○ Fail ○ N/A
15.5	**Panel storage/stacking is adequate**
	○ Pass ○ Fail ○ N/A
15.6	**Exclusion zones are established around precast erection zones**
	○ Pass ○ Fail ○ N/A
15.7	**Crane capacity is suitable for panels**
	○ Pass ○ Fail ○ N/A

16. DEMOLITION

Assigned to • (0/8)

16.1	**Does the work involve demolition of a load bearing structure?**
	○ Yes ○ No ○ N/A
16.2	**Notification to WHS regulator provided**
	○ Pass ○ Fail ○ N/A
16.3	**Demolition plan has been established**

	○ Pass ○ Fail ○ N/A
16.4	**Demolition zone barricading/signage is adequate**
	○ Pass ○ Fail ○ N/A
16.5	**Demolition permit system is in place and up to date**
	○ Pass ○ Fail ○ N/A
16.6	**Existing services isolation processes are adequate**
	○ Pass ○ Fail ○ N/A
16.7	**Exclusion zones are being established where required**
	○ Pass ○ Fail ○ N/A
16.8	**Demolished materials capture/disposal processes are adequate**
	○ Pass ○ Fail ○ N/A

17. TEMPORARY WORKS

Assigned to • (0/10)

17.1	**Work involving structural alterations that require temporary support to prevent collapse**
	○ Yes ○ No ○ N/A
17.2	**Scaffold is inspected and signed off by a competent person**
	○ Pass ○ Fail ○ N/A
17.3	**Scaffold handover certificates used**
	○ Pass ○ Fail ○ N/A
17.4	**Scafftags used**
	○ Pass ○ Fail ○ N/A
17.5	**Formwork structure is signed off by engineer prior to pour**
	○ Pass ○ Fail ○ N/A
17.6	**Formwork structure is signed off by engineer before stripping**
	○ Pass ○ Fail ○ N/A

17.7	**Structural steel erection sequence is provided by certified engineer**
	○ Pass ○ Fail ○ N/A
17.8	**Structure is certified before loading roof sheets**
	○ Pass ○ Fail ○ N/A
17.9	**Masonry walls under construction are being core filled or braced to prevent collapse**
	○ Pass ○ Fail ○ N/A
17.10	**Hoardings and structures are inspected and signed off by engineer**
	○ Pass ○ Fail ○ N/A

18. ELECTRICAL

Assigned to • (0/8)

18.1	**Work on or near energised electrical installations and services**
	○ Yes ○ No ○ N/A
18.2	**Certificate of compliance is supplied for shed/compound**
	○ Pass ○ Fail ○ N/A
18.3	**Distribution Board checklists have been completed for every DB**
	○ Pass ○ Fail ○ N/A
18.4	**Electrical leads are correctly tested and tagged**
	○ Pass ○ Fail ○ N/A
18.5	**Lead stands/hangers are adequately used to prevent damage or contact with water**
	○ Pass ○ Fail ○ N/A
18.6	**Site portable generators include RCD protection**
	○ Pass ○ Fail ○ N/A
18.7	**Extension lead lengths are correct and not piggy backed**
	○ Pass ○ Fail ○ N/A
18.8	**Lock out/tag out procedures are established and followed**

	○ Pass ○ Fail ○ N/A

19. ROAD or RAIL

Assigned to • (0/4)

19.1	**Work on or adjacent to roadways or railways used by road or rail traffic**
	○ Yes ○ No ○ N/A
19.2	**Project traffic management plan is available and implemented on site**
	○ Pass ○ Fail ○ N/A
19.3	**Nominated traffic signage is deployed as per the management plan**
	○ Pass ○ Fail ○ N/A
19.4	**Traffic control personnel have appropriate qualifications (blue/yellow/red/orange)**
	○ Pass ○ Fail ○ N/A

20. GAS

Assigned to • (0/2)

20.1	**Work on or near pressurised gas distribution mains and consumer piping**
	○ Yes ○ No ○ N/A
20.2	**Other (include details in response)**

21. CHEMICAL

Assigned to • (0/2)

21.1	**Work on or near chemical, fuel or refrigerant lines**
	○ Yes ○ No ○ N/A
21.2	**Other (include details in comments)**

22. ARTIFICIAL EXTREME TEMPERATURES

Assigned to • (0/1)

22.1	**Work in an area where there are artificial extremes of temperature**
	○ Yes ○ No ○ N/A

23. RISK OF DROWNING

Assigned to • (0/1)

23.1	**Work in, over or adjacent to water or other liquids where there is a risk of drowning**
	○ Yes ○ No ○ N/A

24. DIVING

Assigned to • (0/1)

24.1	**Work involves diving**
	○ Yes ○ No ○ N/A

25. TELECOMMUNICATION TOWERS

Assigned to • (0/1)

25.1	**Work on telecommunication towers**
	○ Yes ○ No ○ N/A

26. EXPLOSIVES

Assigned to • (0/1)

26.1	**Work involving explosives**
	○ Yes ○ No ○ N/A

27. HAZARDOUS CHEMICALS

Assigned to • (0/7)

27.1	**Separation of mixed classes of hazardous materials is in accordance codes**
	○ Pass ○ Fail ○ N/A
27.2	**Bunding is of suitable construction and capacity**
	○ Pass ○ Fail ○ N/A

27.3	**Dispensing and mixing procedures are in accordance with SWMS/SDS requirements**
	○ Pass ○ Fail ○ N/A
27.4	**Inhalation/ventilation controls are in accordance with SWMS/SDS requirements**
	○ Pass ○ Fail ○ N/A
27.5	**Ingestion controls are in accordance with SWMS/SDS requirements,**
	○ Pass ○ Fail ○ N/A
27.6	**Bodily contact controls are in accordance with SWMS/SDS requirements**
	○ Pass ○ Fail ○ N/A
27.7	**Flammable goods areas are free of ignition sources**
	○ Pass ○ Fail ○ N/A

28. ENVIRONMENTAL PLANNING & AWARENESS

Assigned to • (0/3)

28.1	**Environmental Management Plan is included with the PMP**
	○ Pass ○ Fail ○ N/A
28.2	**Environmental procedures are covered in the site induction**
	○ Pass ○ Fail ○ N/A
28.3	**Environmental hazards are adequately assessed in the Project HSE Risk assessment**
	○ Pass ○ Fail ○ N/A

29. ENVIRONMENTAL MONITORING

Assigned to • (0/1)

29.1	**Environmental controls are included in site inspections**
	○ Pass ○ Fail ○ N/A

30. ACID SULPHATE SOILS

Assigned to • (0/1)

30.1	**Acid sulphate soil controls are in place**

	○ Pass ○ Fail ○ N/A

31. AIR QUALITY

Assigned to • (0/4)

31.1	**Dust nuisance to neighbours is minimised**
	○ Pass ○ Fail ○ N/A
31.2	**Water carts are adequately used**
	○ Pass ○ Fail ○ N/A
31.3	**Sprinkler/spray system has been established and is in use**
	○ Pass ○ Fail ○ N/A
31.4	**Suitable respiratory protection is being worn by relevant workers**
	○ Pass ○ Fail ○ N/A

32. ARCHEOLOGICAL & CULTURAL HERITAGE

Assigned to • (0/1)

32.1	**Controls for protection of archaeological or cultural heritage items are in place**
	○ Pass ○ Fail ○ N/A

33. CONTAMINATED SOIL

Assigned to • (0/1)

33.1	**Contaminated soil controls are in place**
	○ Pass ○ Fail ○ N/A

34. EROSION & SEDIMENT RUN-OFF

Assigned to • (0/4)

34.1	**Silt barriers and fences are correctly constructed and located**
	○ Pass ○ Fail ○ N/A
34.2	**Silt barriers and fences are being maintained**
	○ Pass ○ Fail ○ N/A

34.3	**Stormwater is being diverted around site where practicable**
	○ Pass ○ Fail ○ N/A
34.4	**Turbidity measurements are being taken and results meet criteria**
	○ Pass ○ Fail ○ N/A

35. FLORA & FAUNA

Assigned to • (0/2)

35.1	**Controls for protection of flora and fauna are in place,**
	○ Pass ○ Fail ○ N/A
35.2	**Other (include details in comments)**

36. WASTE MANAGEMENT

Assigned to • (0/4)

36.1	**Waste management includes recycling of waste materials removed from site**
	○ Pass ○ Fail ○ N/A
36.2	**Waste bins are of adequate capacity**
	○ Pass ○ Fail ○ N/A
36.3	**Waste bins are identified with suitable contents signage**
	○ Pass ○ Fail ○ N/A
36.4	**Waste is being correctly segregated into bins**
	○ Pass ○ Fail ○ N/A

8.16 A.16 Biodiversity Management Sub-Plan

Biodiversity Management Sub-plan

New Public School in Epping

86 Chelmsford Avenue, Epping

29 November 2021

Report:	Biodiversity Management Sub-plan New Public School in Epping 86 Chelmsford Avenue, Epping
Prepared for:	Hansen Yuncken
Prepared by:	Land Eco Consulting Pty Ltd
Date:	29 November 2021
Version:	Final 1.0

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Any survey of flora and fauna will be unavoidably constrained in a number of respects. In an effort to mitigate those constraints, we applied the precautionary principle described in the methodology section of this report to develop our conclusions. Our conclusions are not therefore based solely upon conditions encountered at the site at the time of the survey. The passage of time, manifestation of latent conditions or impacts of future events may require further examination of the project and subsequent data analysis, and re-evaluation of the data, findings, observations and conclusions expressed in this report. Land Eco Consulting has prepared this report in accordance with the usual care and thoroughness of the consulting profession, for the sole purpose described above and by reference to applicable standards, guidelines, procedures and practices at the date of issue of this report. For the reasons outlined above, however, no other warranty or guarantee, whether expressed or implied, is made as to the data, observations and findings expressed in this report, to the extent permitted by law.

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Report Certification

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Accredited Biodiversity Assessor (#BAAS18059)
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Document Control

Version	Document Name	Issue Date
Draft 1.0	Biodiversity Management Sub-plan New Public School in Epping 86 Chelmsford Avenue, Epping	07/11/2021
Draft 2.1	Biodiversity Management Sub-plan New Public School in Epping 86 Chelmsford Avenue, Epping	26/11/2021
Draft 3.0	Biodiversity Management Sub-plan New Public School in Epping 86 Chelmsford Avenue, Epping	29/11/2021
Final 1.0	Biodiversity Management Sub-plan New Public School in Epping 86 Chelmsford Avenue, Epping	29/11/2021

Compliance with Conditions of Consent

A summary of the relevant requirements of the SSDA conditions of consent is provided below for ease of reference:

SSD Conditions	Report Section
B19. The Biodiversity Management Sub-Plan (BMSP) must address, but not be limited to, the following:	
(a) be prepared by a suitably qualified and experienced person/s;	Report Certification (p. ii)
(b) identify areas of land where impacts on biodiversity are to be avoided as outlined in the biodiversity development assessment report, dated 23 July 2021 and prepared by Ecological Australia and set out how these areas will be protected from construction impacts; and	Figure 1 & 2
(c) set out the measures identified in the biodiversity development assessment report to minimise, mitigate and manage impacts on biodiversity, including timing and responsibility for delivery of the measures.	Section 2
C19. During tree removal works, an experienced and qualified ecologist is to be present to relocate any displaced fauna that may be disturbed during this activity. Any injured fauna is to be appropriately cared for and released on site or at an appropriate nearby location once rehabilitated.	Section 2.9

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Tables

Table 2. Table of measures to be implemented before, during and after construction to avoid and minimise the impacts of the project 4

Glossary

Acronym/ Term	Definition
BAM	New South Wales Biodiversity Assessment Method
BOS	New South Wales Biodiversity Offset Scheme
BC Act	New South Wales Biodiversity Conservation Act 2016
BDAR	Biodiversity Development Assessment Report
BMSP	Biodiversity Management Sub-plan
CEEC	Critically Endangered Ecological Community
DCP	Development Control Plan
Development	The use of land, and the subdivision of land, and the carrying out of a work, and the demolition of a building or work, and the erection of a building, and any other act, matter or thing referred to in section 26 that is controlled by an environmental planning instrument but does not include any development of a class or description prescribed by the regulations for the purposes of this definition (Environmental Planning and Assessment Act 1979).
CEEC	Critically Endangered Ecological Community
DPIE	NSW Government Department of Planning Industry and Environment
EEC	Endangered Ecological Community
EPBC Act	Commonwealth Environment Protection and Biodiversity Conservation Act 1999
EP&A Act	NSW Environmental Planning and Assessment Act 1979
ha	Hectares
km	Kilometre
KTP	Key Threatening Process (as listed in the BC Act)
LEP	Local Environment Plan
LGA	Local Government Area
Locality	The area within a 10km radius of the Subject Land. The same meaning when describing a local population of a species or local occurrence of an ecological community.
m	Metres
mm	Millimetres
NPWS	NSW National Parks and Wildlife Services
NSW	New South Wales
OEH	NSW Government Office of Environment and Heritage (now the Department of Planning Industry and Environment)
Proposal	The development, activity or action proposed.
SAII	Serious and Irreversible Impact
SSD	State Significant Development pursuant to the NSW Environmental Planning and Assessment Act 1979
SEPP	State Environmental Planning Policy
Subject Land	Extent of the proposed vegetation clearing and development (see Figure 1).
Subject Property	86 Chelmsford Avenue, Epping, NSW 2121 (Lot 1/DP582172) and within the road reserve along Grimes Lane (no lot or DP number is available).
Threatened species, populations and ecological communities	Species, populations and ecological communities specified in Schedules 1, 1A and 2 and *threatened species, population or ecological community* means a species, population or ecological community specified in any of those Schedules.

1. Introduction

Land Eco Consulting (Land Eco) was engaged by Hansen Yuncken ('the proponent') on behalf of Schools Infrastructure NSW to prepare a Biodiversity Management Sub-plan (BMSP) for the proposed New Public School in Epping at 86 Chelmsford Avenue, Epping NSW (**Figure 1**); State Significant Development (SSD) SSD-8873789.

The development site is located within the City of Parramatta Council local government area (LGA). The size of the lot is approximately 2.21 ha and is located within Lot 1/DP582172 and within the road reserve along Grimes Lane (no lot or DP number is available). The land is presently zoned as SP2 Infrastructure under the Parramatta Local Environmental Plan 2011. The development site predominantly consists of planted and remnant vegetation and existing infrastructure from the former TAFE and hardstand surfaces.

The proposed development consists of the establishment of the New Public School in Epping (Concept and Stage 1). This BMP has been prepared to meet the requirements of the SSD approval, specifically as follows:

> *"B19. The Biodiversity Management Sub-Plan (BMSP) must address, but not be limited to, the following:*
>
> *(a) be prepared by a suitably qualified and experienced person/s;*
> *(b) identify areas of land where impacts on biodiversity are to be avoided as outlined in the biodiversity development assessment report, dated 23 July 2021 and prepared by Ecological Australia and set out how these areas will be protected from construction impacts; and*
> *(c) set out the measures identified in the biodiversity development assessment report to minimise, mitigate and manage impacts on biodiversity, including timing and responsibility for delivery of the measures.*
>
> *C19. During tree removal works, an experienced and qualified ecologist is to be present to relocate any displaced fauna that may be disturbed during this activity. Any injured fauna is to be appropriately cared for and released on site or at an appropriate nearby location once rehabilitated."*

The proposed development is for the establishment of a new K-6 Public School, master planned to cater for up to 1,000 students, including:

- Demolition of existing structures associated with the former use of the site as a TAFE campus
- Construction of new buildings on the eastern and central portions of the site. The works are proposed to be undertaken in stages. Facilities which will generally include:
  - Home bases (classrooms) suitable for a school population of 1,000 students
  - Hall and canteen
  - Library
  - Covered Outdoor Learning Area (COLA)
  - Special education unit
  - Special programs area.
- Play spaces in various locations
- Accessible paths linking the school facilities
- Upgrades to Grimes Lane to allow for a kiss and drop station and access from First Avenue and Second Avenue
- A staff car park accessed from Second Avenue.
- vegetation removal

This Biodiversity Management Sub-plan was prepared by the following suitably qualified and experienced persons:

- Mr Semonn Oleksyn (Ecologist, Land Eco Consulting)
- Mr Kurtis Lindsay of (Principal Ecologist, Land Eco Consulting)

This Biodiversity Management Sub-plan is built upon the Biodiversity Development Assessment Report (BDAR) prepared by Eco Logical Australia (2020) and was informed by an Ecologist site assessment, on 26 October 2021. Areas of land where impacts on biodiversity are to be avoided are presented outside of the 'yellow-hashed' development site (**Figure 1; Figure 2).** Details of how these areas will be protected from construction impacts are provided in **Table 1** of this Biodiversity Management Sub-plan.

Figure 1. The location of the Subject Property (red outline) and Subject Land (yellow outline) (Eco Logical Australia 2020)

2. Impact Mitigation and Minimisation Measures

This section sets out the measures identified in the BDAR (Eco Logical Australia 2020) to minimise, mitigate and manage impacts on biodiversity, including timing and responsibility for delivery of the measures.

Measures and actions to avoid and minimise impact on biodiversity values associated with the proposed development before, during and post construction to avoid and minimise the impacts of the project are detailed in (**Table 1**).

Table 1. Table of measures to be implemented before, during and after construction to avoid and minimise the impacts of the project

Specification No.	Measure	Requirement	Management Actions to minimise, mitigate and manage impacts on biodiversity	Timing	Responsibility
1	Clearing protocol that identifies vegetation to be retained and prevent inadvertent damage	The western end of the site boundary contains native vegetation that connects to Mobbs Lane Reserve. Most of the vegetation at the western extent will be retained and maintain the connection to this reserve. Some vegetation would require removal to allow for the site establishment works. The retained vegetation will be protected and enhanced to maintain the connectivity between the site and nearby habitat. All retained vegetation will be demarcated prior to the commencement of work.	1.A qualified Surveyor must be engaged to mark-out the maximum extent of approved vegetation clearing disturbance. A qualified Ecologist will be assigned to undertake a pre-clearing survey to help a Surveyor delineate areas permitted to be cleared from areas that must be retained. Brightly coloured bunting or strong flagging tape should be used. 2. Install temporary fencing around development extent adjacent to retained vegetation. 3.Do not undertake any clearing work until temporary fencing has been erected around vegetation. 4.Install signage to inform all site contractors that they must not enter the vegetation past the approved clearing footprint (i.e. "No Go Zone"). 5.Removal of trees may only be undertaken by chainsaw, (rather than heavy machinery) when clearing in or adjacent to Blue Gum High Forest CEEC. 6.Prior to vegetation being cleared, a qualified Ecologist with fauna identification experience should determine the presence of any suitable habitat for roosting microbats, nesting birds (e.g. brush turkey mounds, stick nests, small nests or active hollows), roosting microbats, or other fauna in the vegetation (both native and non-native) due to be cleared. 7.A qualified Project Ecologist with experience in handling wildlife should be present on the site during all vegetation clearing to: - supervise clearing and capture and relocate any displaced, healthy animals, or care for/ rehabilitate any injured or orphaned animals. - supervise dewatering of waterbodies to capture and relocate any turtles or other protected fauna. 8. When trees are felled by chainsaw, the hollow-bearing section of the tree must be carefully removed and lowered to the ground for the Ecologist to inspect it for fauna in situ.	Prior to any works and for the duration of demolition and construction works.	Construction Contractor Project Ecologist Surveyor

Specification No.	Measure	Requirement	Management Actions to minimise, mitigate and manage impacts on biodiversity	Timing	Responsibility
2	Reduce soil disturbance	Reduce disturbance to reduce risk of erosion and sedimentation.	1.Clear trees with chainsaws wherever possible. 2. Implement sediment and erosion control plan developed by PTC, including sediment fences, bunding, and sediment traps.	Prior to any works and for the duration of demolition and construction works.	Construction Contractor
3	Control the quality of water released from the site into the receiving environment	Appropriate controls will be utilised and maintained to manage exposed soil surfaces and stockpiles to prevent sediment discharge into waterways.	1.Appropriate erosion and sediment control must be erected and maintained during construction. 2. As a minimum, such measures should comply with the relevant industry guidelines such as 'the Blue Book' (Landcom 2004) and/or as detailed in the site Stormwater Management Plan or Construction Environmental Management Plan (CEMP).	Prior to any works and for the duration of demolition and construction works.	Construction Contractor
4	Reduce impacts of noise	Noise barriers or daily/seasonal timing of construction and operational activities to reduce impacts of noise.	1.Daily timing of construction activities is recommended in accordance with Table 1 of Interim Construction Noise Guidelines (DECC 2009).	Prior to any works and for the duration of demolition and construction works.	Construction Contractor
5	Control air quality	Adaptive dust monitoring programs to control air quality. Dust suppression measures will be implemented during construction works to limit dust on site.	1.Implement adaptive dust monitoring program. 2.Watercarts fitted with hoses will be made available during dry and windy conditions to ensure dust suppression is maintained.	For the duration of demolition and construction works.	Construction Contractor
6	Prevent the spread of weeds or pathogens between infected areas and uninfected areas	Hygiene protocols to prevent the spread of weeds or pathogens between infected areas and uninfected areas.	1. Vehicles, machinery and building materials associated with the development construction will be checked for exposed mud or vegetative material upon arrival on site and appropriately washed down / cleaned at the entry shakedown grid if necessary. Dirty plant or machinery will not be permitted on site. 2.Plant, machinery should remain only within construction footprint areas. 3.Only authorised personnel will be permitted in 'No Go Areas'. 4. Eradicate the following Priority, Environmental and High Threat Exotic Weeds from the property, *Ligustrum lucidum*, *Phoenix canariensis*, *Araujа sericifera*, *Olea europaea,* and *Gleditsia spp.* By end of construction these weeds will represent 0% of the total vegetation cover in the property. 5.Manage Hedychium gardnerianum, *Ipomoea indica*, *Ehrharta erecta*, *Bidens pilosa* and *Asparagus aethopicus* and prevent spread into uninfected areas.	Prior to any works and for the duration of demolition and construction works.	Construction Contractor Landscape Contractor
7	Staff training and site briefing to communicate environmental features to be protected and measures to be implemented	All staff entering the Development Site are fully trained and briefed.	1.All staff working on the development will undertake an environmental induction as part of their site familiarisation. This induction will include items such as: - avoiding indirect impacts to offsite adjacent vegetation - ensuring correct storage of chemicals to prevent runoff into adjacent vegetation	Prior to any works and for the duration of demolition and construction works.	Construction Contractor Environment Coordinator.

Specification No.	Measure	Requirement	Management Actions to minimise, mitigate and manage impacts on biodiversity	Timing	Responsibility
			2.All staff entering the development site must be made aware of the presence of native vegetation adjacent to the site what to do in case of any environmental emergencies 3.Site briefings should be updated based on phase of the work and when environmental issues become apparent.		
8	Ecological restoration, rehabilitation and/or ongoing maintenance of retained native vegetation habitat on or adjacent to the development site	The retained vegetation would be managed as part of the broader school landscaping. Areas within the Development Site will be landscaped using appropriate species.	1.All landscaping within and around areas formerly (or currently) vegetated with Blue Gum High Forest will consist entirely of flora species (tree, shrubs and/or groundcovers) that are representative of Blue Gum High Forest. Suitable species selections are presented (Appendix 1).	Landscaping	Construction Contractor. Landscape architect. Landscape contractor.
9	Assigning a Project Ecologist	Assign suitably qualified person to assist with implementation of impact mitigation measures.	1.Prior to construction, the proponent will commission the services of a qualified and experienced Ecologist Consultant (>3 years of experience) with a minimum tertiary degree in Science, Conservation, Biology, Ecology, Natural Resource Management, Environmental Science or Environmental Management. The Ecologist must be licensed with a current Department of Primary Industries Animal Research Authority permit and New South Wales Scientific License issued under the BC Act. The Ecologist must be a member of the NSW Ecological Consultants Association. 2.The Ecologist will be commissioned to undertake: - an extensive pre-clearing survey searching for active bird nests (e.g. brush turkey mounds), delineating habitat-bearing trees and shrubs to be removed; and - supervision the clearance of all trees and shrubs (native and exotic) to capture, treat and/or relocate any displaced fauna. - site briefing to communicate environmental features to be protected and measures to be implemented in accordance with this Biodiversity Management Sub-plan.	Prior to vegetation clearance works	Proponent
10	Dewatering of Waterbodies	There is a small waterbody on site that will require removal.	1.Prior to any dam dewatering of the existing waterbody or creek, an Ecologist will inspect the dam for nesting fauna which should be captured and relocated. 2.Dewatering of the dam can only occur with an Ecologist present. 3.The dewatering should take place using a pump, and the inlet of the pump must be fitted with mesh that presents small fish and tadpoles from being sucked in.	Prior to and during all dam removal works.	Construction Contractor Project Ecologist

Specification No.	Measure	Requirement	Management Actions to minimise, mitigate and manage impacts on biodiversity	Timing	Responsibility
			4.The Ecologist must make a reasonable attempt to capture and relocate all native turtles, fish and other vertebrate fauna displaced by the dam dewatering. Pest species should be humanely euthanised.		
11	Mitigating Rubbish Dumping	Manage rubbish and prevent from impacting Blue Gum High Forest CEEC.	1.All waste is to be retained in a suitable waste disposal area on site, before taken off site and disposed of in a registered facility. 2.Enforce good house-keeping and 'no dumping' rules.	Prior to any works and for the duration of demolition and construction works.	Construction Contractor
12	Management of Pest Animals and Predatory Species	Prevent increase in pest animals as a result of the development.	1.Monitor pest animal activity. 2.Keep waste disposal areas contained to prevent access by pests such as rats, mice and foxes.	Prior to any works and for the duration of demolition and construction works.	Construction Contractor
13	Avoid and Minimise Impacts to Critically Endangered Ecological Community	The proposed development would retain 0.18 ha of Blue Gum High Forest which is a critically endangered ecological community (CEEC) under the BC Act and a SAII entity. in the development site.	This retained Blue Gum High Forest (Figure 2) must be: 1. Eradicated of weeds, before undertaking any infill planting, 2.Landscaped only with species representative of Blue Gum High Forest CEEC (Appendix 1)	Prior to any works and for the duration of demolition and construction works.	Construction Contractor

Figure 2. Location of Blue Gum High Forest CEEC to be retained and protected during construction.

3. References

Eco Logical Australia (2020) 86 Chelmsford Avenue Epping Biodiversity Development Assessment Report. Prepared for Schools Infrastructure NSW

Landcom (2004) Managing Urban Stormwater: Soils and Construction 'The Blue Book', Volume 1, Fourth Edition, New South Wales Government, ISBN 0-9752030-3-7

NSW Department of Environment and Climate Change (2009) Interim Construction Noise Guide

Appendix

Suitable Plant Species Selections for all areas within and adjacent to retained Blue Gum High Forest Critically Endangered Ecological Community (see Figure 2 for location).

Stratum - Growth Form	Species	Suitable Planting Density
Canopy (upper) - Tree	*Angophora costata*	1 tube stock plants / 10 m²
	Angophora floribunda	
	Eucalyptus globoidea	
	Eucalyptus paniculata	
	Eucalyptus pilularis	
	Eucalyptus saligna	
Canopy (lower) - Tree	*Allocasuarina torulosa*	2 tube stock plants / 10 m²
	Alphitonia excelsa	
	Clerodendrum tomentosum	
	Ficus coronata	
	Glochidion ferdinandi var. ferdinandi	
	Notelaea longifolia forma longifolia	
	Pittosporum undulatum	
	Rapanea variabilis	
	Acmena smithii	
	Backhousia myrtifolia	
	Elaeocarpus reticulatus	
Groundcover - Grass/Sedge	*Carex maculata*	10 tube stock plants / 10 m²
	Entolasia marginata	
	Entolasia stricta	
	Lomandra longifolia	
	Oplismenus aemulus	
	Oplismenus imbecillis	
	Poa affinis	
Groundcover - Herb	*Adiantum aethiopicum*	5 tube stock plants / 10 m²
	Asplenium flabellifolium	
	Blechnum cartilagineum	
	Calochlaena dubia	
	Dianella caerulea	
	Doodia aspera	
	Hydrocotyle laxiflora	
	Oxalis perennans	
	Pratia purpurascens	
	Pseuderanthemum variabile	
	Pteridium esculentum	
	Viola hederacea	
Mid-stratum - Shrub	*Breynia oblongifolia*	3 tube stock plants / 10 m²
	Leucopogon juniperinus	
	Maytenus silvestris	
	Persoonia linearis	
	Pittosporum revolutum	
	Platylobium formosum	

Stratum - Growth Form	Species	Suitable Planting Density
	Polyscias sambucifolia subsp. A	
Vine	*Cissus hypoglauca*	2 tube stock plants / 10 m^2
	Clematis aristata	
	Eustrephus latifolius	
	Glycine clandestina	
	Marsdenia rostrata	
	Morinda jasminoides	
	Pandorea pandorana	
	Smilax australis	
	Smilax glyciphylla	
	Tylophora barbata	

Land Eco consulting

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