

Construction Environment Management Plan

Wee Waa High School

105-107 Mitchell Street Wee Waa NSW 2388



Revision	Date	Prepared By	Approved By	Comments
A	29/07/22	Paul Nelson		Draft
B	21/10/22	Britney Pereira		Draft
C	10/11/22	Paul Nelson	Rebecca Deegan	Draft for SINSW review
D	17/11/22	Paul Nelson	Rebecca Deegan	Incorporate SINSW review
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F	27/07/23	Alec Christofides	Rebecca Deegan	Update to Vehicle Access
G	27/09/23	Kaden Merchant	Rebecca Deegan	Update to CSWMP
H	22/01/24	Paul Nelson	Rebecca Deegan	Review & Update Site Plan

Acronyms, Abbreviations & Definitions

ACRONYM / TERM	DESCRIPTION
Advisory Note - Design	The advisory note prepared by SINSW setting out design deliverables and processes for architectural services
AMU	Asset Management Unit
AS/NZS	Australia Standards / New Zealand Standards
BC	Business Case
BEP	BIM Execution Plan
BIM	Building Information Model/s
BMS	Building Management System
Built.	Built (Head Contractor)
Business Case Partner	The consultant engaged by SINSW responsible for preparing the Business Cases for the Project
CALD	Culturally and linguistically diverse (communities)
CBA	Cost Benefit Analysis
CBEP	Construction BIM Execution Plan
CE	Chief Executive of SINSW
CEMP	Built Construction Environment Management Plan
Coordinated Model	A combined Building Information Model containing multiple discipline/trade models which can be used for coordination, visualisation, and collaboration
Core	The indicative size of a primary school based on the maximum student population
CPTED	Crime Prevention through Environmental Design
D&C	Design and Construct
DA	Development Application
DBEP	Design BIM Execution Plan
DMP	Design Management Plan
DoE	NSW Department of Education
DPIE	Department of Planning Industry and Environment
EFSG	Educational Facilities Standards and Guidelines
EOI	Expression Of Interest
ESC	Executive Steering Committee
ESCP	Erosion & Sediment Control Plan
ESD	Ecologically Sustainable Development
Executive Principal	Highest ranking member of staff within a school. Principal of a School.
FBC	Final Business Case
FF&E	Furniture, Fittings & Equipment
GFA	Gross Floor Area
GLS	General Learning Space
Home Base Unit	The core teaching and learning environments for a primary school. It comprises the Home Base, personal effects storage, Home Base store room, practical activities area and withdrawal room.
HS	High School
ICT	Information and Communication Technology
Infrastructure Services Master Plan	The master plan for utilities and services
LGA	Local Government Area
NCC	National Construction Code
Other Consultants	Consultants engaged by SINSW

PAP	Principal's Authorised Person
PCG	Project Control Group
Phases	As defined by the SINSW project delivery process
PIR	Project Information Requirements
Principal	School Infrastructure NSW
POE	Post Occupancy Evaluation
PRG	Project Reference Group
Project Manager	The consultant engaged by SINSW responsible for coordination of the Project
PMP	Project Management Plan
PS	Public School
PTE	Pre-Tender Estimate
RACI Matrix	Table setting out parties' roles and responsibilities, defined by them being Responsible, Accountable, Consulted or Informed
REF	Review of Environmental Factors
SBC	Strategic Business Case
Service Delivery Plan	The plan to be prepared by a consultant setting out how they will deliver the Services
Service Need	The educational and operational services to be met by the Project as defined by SINSW
Services	The work to be performed by the consultant
The Services	Any work being carried out under the Consultancy Services Agreement, and any other items required or implied within this document, including design services
SI Portal	School Infrastructure Financial and Document Management System
SI Templates	School Infrastructure Templates
SiD	Safety in Design
SINSW	School Infrastructure NSW and Principal (in terms of contractual engagement)
SoA	Schedule of Accommodation (Areas)
SSDA	State Significant Development Application
SSP	School for Specific Purposes
SSU	Schools Security Unit
TEP	Tender Evaluation Plan
TSG	SINSW Technical Stakeholder Group
WOL	Whole of Life
The Works	Any work being carried out relating to the design and/or construction of the Project
WUC	Works Under Contract
VMS	Value Management Study
WHS	Work Health and Safety

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CONDITION SATISFACTION MATRIX – SSD 21854025

CONDITION No.	DESCRIPTION	REFERENCE
B20	Prior to the commencement of construction, the Applicant must submit a Construction Environmental Management Plan (CEMP) to the Certifier and provide a copy to the Planning Secretary within seven days when requested. A. The CEMP must include, but not be limited to, the following: (a) Details of: (i) hours of work;	Section 2.2
B20	(ii) 24-hour contact details of site manager;	Section 3.1
B20	(iii) management of dust and odour to protect the amenity of the neighbourhood;	Section 7.4.2
B20	(iv) external lighting in compliance with AS 4282-2019 Control of the obtrusive effects of outdoor lighting;	Appendix J
B20	(v) community consultation and complaints handling as set out in the Community Communication Strategy required by condition B16;	Section 14.1 & 14.2
B20(b)	An unexpected finds protocol for contamination and associated communications procedure to ensure that potentially contaminated material is appropriately managed; and	Section 11.4
B20(c)	An unexpected finds protocol for Aboriginal and non-Aboriginal heritage and associated communications procedure;	Section 11.4
B20(d)	Construction Traffic and Pedestrian Management Sub-Plan (see condition B21);	Appendix D
B20(e)	Construction Noise and Vibration Management Sub-Plan (see condition B22);	Appendix E
B20(f)	Construction Waste Management Sub-Plan (see condition B23)	Appendix F
B20(g)	Construction Soil and Water Management Sub-Plan (see condition B24);	Appendix G
B20(h)	Construction Biodiversity Management Sub-Plan (see condition B25); and	Appendix H
B20(i)	Construction Flood Emergency Response Plan (see condition B26)	Appendix I

1.0 Introduction

1.1 Commitment & Policy

The Construction Environment 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.

Built, 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.

This CEMP has been generated to satisfy the requirements of “ISO 14001:2015, Environmental management systems – Requirements with guidance for use” and the “NSW Government Environmental Management System Guidelines – 3rd edition”. It establishes guidelines and controls for all Built 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 Built as an environmentally responsible organisation to the broader community.

1.2 Description of the Works

The site is located centrally in the town of Wee Waa, within Narrabri Local Government Area. Wee Waa is located in the New England region of upper central NSW and sits adjacent to the Namoi River, approximately 40km north-west of Narrabri and 570km north-west of Sydney. The town has a population of approximately 2,000. Wee Waa and its surrounding rural area has a strong history of agricultural production, particularly cotton. The key transport connection to the town is the Kamilaroi Highway which runs north-east through the centre of the town, connecting to western NSW and Narrabri in the east.

Construction of the following:

- A new two-storey school building.
- A multi-purpose gymnasium/hall.
- A Covered Outdoor Learning Area (COLA).
- Two grass sport fields with a perimeter running track and two asphalt playing courts.
- An Agricultural and Environment Centre with two agricultural plots and large animal paddocks.
- An Aboriginal Education Community and Learning Centre.
- Internal vehicular access road from George Street running east-west through the site.
- Hard stand car park comprising approximately 10 staff/visitor spaces and 2 emergency vehicle spaces.
- Bicycle storage.

Augmentations to the road network to ensure road safety, including:

- Road strengthening for a dedicated bus drop off/pickup area/curb to rear parking along George Street.
- A new pedestrian crossing on Mitchell Street.
- Extension of existing 40km/hr school zone.

Tree removal within the footprint of the new building, sports fields and agricultural plots, as required.

- Retention of the established Eucalypt Stands.
- Installation of landscaping, additional tree planting and fencing to integrate with the design of the new school
- Installation and augmentation of associated services and stormwater infrastructure to service the new school.

1.3 Location

The Project is located in Wee Waa NSW. The footprint of the works are from 105-107 Mitchell Street, within the road reserves of George St, Mitchell Street, Charles Street and Boundary Street/Myall Lane. Wee Waa High School is located on Lot 2 DP 550633, Lot 1 DP 577294, Lot 124 DP 757125 and Lot 125 DP 757125.

1.4 Current Site

The project location is shown below:



Figure 1 - Site Location

The objective of the Construction 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 Wee Waa High School Planning Instrument
- 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 Built 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 Built Environment Policy commits the company to achieve the following goals:
- Develop and promote a culture of environmental leadership, responsibility and continual improvement across the Built business;
- Audit, monitor and ensure compliance with environmental legislative and regulatory obligations and other environmental commitments;
- Utilise the resources of Built 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. Built 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 Built environmental policies & procedures through the following mechanisms; site induction, notice board, site inspections, prestart meetings, subcontractor meetings, team meetings, toolbox talks.

1.5 Targets

1.5.1 Objective: Comply with all environmental legislation

- **KPI:** Number of identified breaches of State or Commonwealth Environmental legislation
- **Target:** Nil for duration of project.
- **Responsibility:** Built & Subcontractors

1.5.2 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:** Built & Subcontractors

1.5.3 Objective: Conduct environmental site inspections to validate environmental conformance

- **KPI:** Schedule and undertake regular site inspections
- **Target:** > 90% of scheduled HSE inspections
- **Responsibility:** Built Site Manager

1.5.4 Objective: Minimise and manage environmental complaints

- **KPI:** Consult with impacted neighbours and promptly address all complaints
- **Target:** ≤ 1 complaint per significant construction milestone
- **Responsibility:** TSA

1.6 Interface with other Project Plans and procedures

Plans referenced within this CEMP form part of the overall Construction Environmental Management Plan CEMP for the project and contribute to the management procedures. This CEMP forms part of Built's Environmental Management and interfaces with the company's Quality & HSE Management Systems. Furthermore, this CEMP is an integral part of Wee Waa High Schools – Ref works PMP.

The following plans referenced with this CEMP form part of the overall PMP for the project and contribute to the environmental management procedures:

- **Project Site Induction** - Ensures all workers onsite are aware of the 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.
- **Construction Noise & Vibration Management Plan** – Identifies mitigation methods to minimise the risk of noise & vibration to the workers onsite and the surrounding properties.
- **Construction Traffic Pedestrian Management Plan** – Summarises how construction and pedestrian traffic will be managed on the project to minimise the impact on the existing neighbours and businesses 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.
- **Audit Management Plan** - Describes the frequency of internal and external environmental audits and the process for closing out any non-conformances raised.
- **Emergency Response Plan** – Outlines the process to manage the following environmental emergencies, asbestos exposure, water pollution, fire, major fuel spill & chemical spill
- **Communications Management Plan** – Summarises how communications shall be structured on the project, including tools to be utilised and parties to be involved in communications.
- **WHS Management Plan** – Outlines the processes and procedures to manage work health and safety issues that occur on the project

Built

- Construction Waste Management Plan – Identifies how construction generated waste is managed, disposed of and recorded
- Construction Soil and Water Management Plan – Identifies the erosion and sediment control measures to be applied prior and throughout construction.
- Construction Environmental Management Plan – Identifies the environmental controls and remediation actions in the event of an environmental incident
- Quality Management Plan – Outlines the Built Quality Management System and how works are required to be verified throughout the project lifecycle.

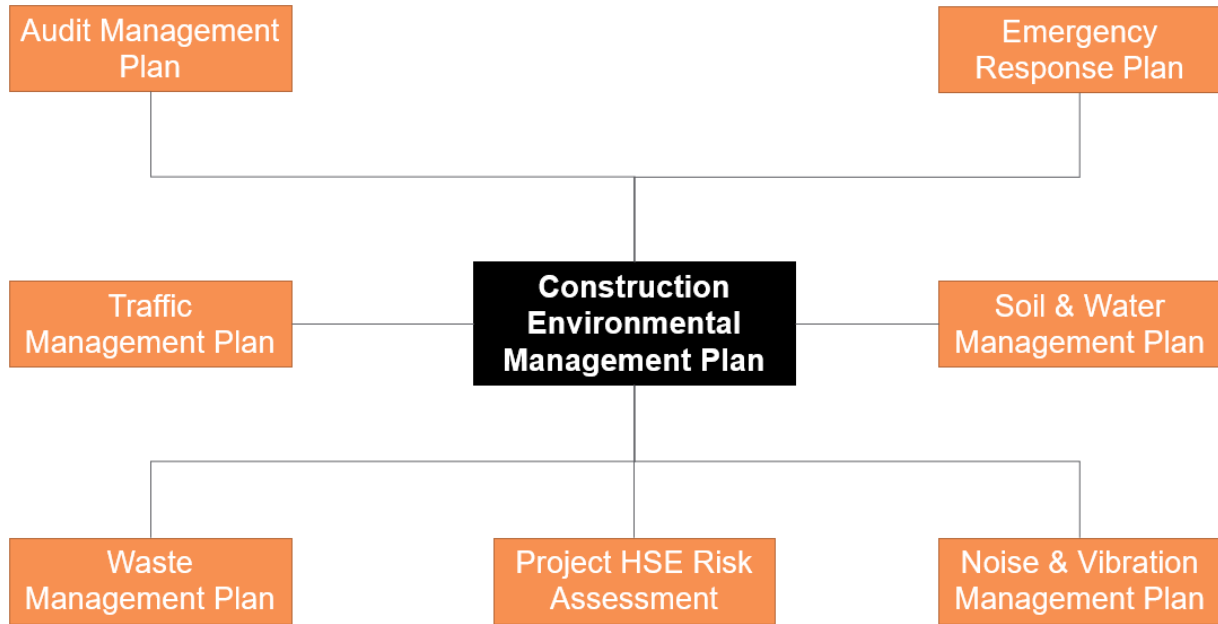


Figure 2 - CEMP Flow Chart

1.7 Sustainability & Social Impact

The project provides an opportunity for Built to continue to prove their commitment to Sustainability and Social Impact.

As such, the SSI vision and principles for Built involves:

HOW WE BUILD	HOW WE WORK	HOW WE BUY	HOW WE GIVE
Green Standard Commitment	Diversity, Inclusion & Wellbeing	Positive Supply Chain Practices	Charitable Giving & Volunteering
TARGETS Recycling 90% construction waste recycled GreenPower 100% certified renewable electricity ESD Value Add Green building solutions offered in our tender responses Responsible materials 60% of construction materials Green Star compliant Min. 30% cement replaced with supplementary cementitious materials in all concrete mixes Healthy Sites 95% of finishes Green Star compliant Leadership & Accountability Sharing best practices & transparent reporting	TARGETS Diversity & Inclusion <ul style="list-style-type: none"> 30% of Built's workforce to be women by end 2025 4% of Built's workforce to come from underrepresented groups by end 2025 100% of leaders participate in inclusion & cultural awareness training Continue to progress Indigenous reconciliation through our RAP Health & Wellbeing <ul style="list-style-type: none"> Investment in 36 wellbeing programs accessible to all staff Safety culture <ul style="list-style-type: none"> Industry leading site behaviour program driving positive culture 	TARGETS Social Procurement 1% of spend with Social Benefit Providers to provide jobs for people historically excluded from full economic participation including: <ul style="list-style-type: none"> Aboriginal and/or Torres Strait Islander owned businesses (Supply Nation) Social Enterprises including Australian Disability Enterprises (Social Traders) Modern Slavery Act Work proactively with our supply chain to raise awareness and mitigate the risk of supplying products or services produced using modern slavery	TARGETS Charitable Giving <ul style="list-style-type: none"> \$1 million donated to grassroots charities & community causes Volunteering <ul style="list-style-type: none"> Up to 7,600 volunteer hours per annum (1 volunteering day per employee) Causes we support Grassroots organisations with a focus on local community needs that align with: <ul style="list-style-type: none"> Children & Families in Need Mental Health Diverse & Inclusive Employment
Environmental Imperative Driving sustainable design & construction outcomes	Industry Imperative Improving diversity & inclusion and mental & physical health	Economic Imperative Employment opportunities for underrepresented groups	Community Imperative Connecting with community issues and people living in need

Figure 3 - Built Social Impact

2.0 Authority Approval

2.1 Licences and Permits

All relevant licenses and permits required by legislation and council shall be identified and applications submitted as necessary. These include, but are not limited to:

- Work zones (if necessary)
- Crossover Applications
- Narrabri Council Authority works
- Service Authority authorisations (if necessary)

2.2 Hours of works

Working Day	Working Hours
Monday to Friday	7:00AM to 6:00 PM
Saturday	8:00 AM to 1:00 PM
Sunday and Public Holidays	No works permitted

Table 1 - Hours of Work

2.3 24 Hour Contact

The 24 Hour contacts for this project shall be Rebecca Deegan – 0427 21 080

3.1 Key Contacts and Responsibilities

The key project contacts & their responsibilities are as follows:

Discipline	Company	Role	Name
Head contractor	Built	Construction Manager	Steve Kogias
	Built	Project Manager	Rebecca Deegan
	Built	Design Manager	Paul Nelson
	Built	Project Engineer	Alec Christofides
	Built	Site Manager	Neil George

Table 2 - Key Personnel Contacts

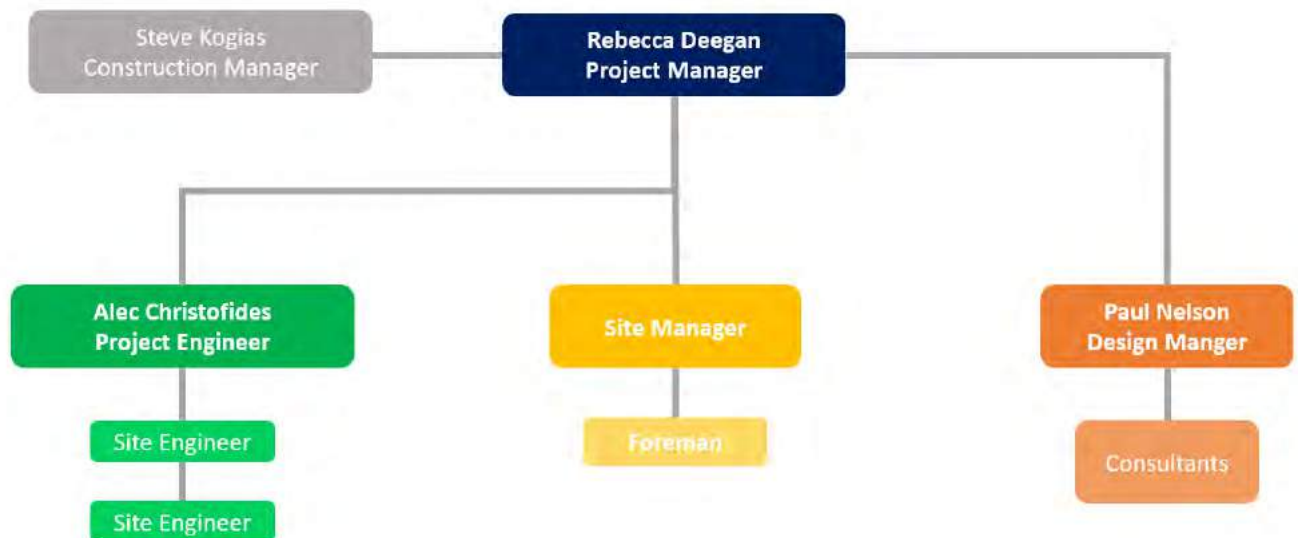


Figure 4 - Project Org Chart

4.0 Environmental Planning

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

4.1 Environmental Aspects & Impact

All activities related to the Wee Waa High School Project, which are enacted by or on behalf of Built, are identified in the “Project HSE Risk Register” (refer Appendix C). 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 Register” and assessed for significance by using the Risk Matrix (Appendix C). Each identified potential impact is rated (Risk rating) in relation to its predicted likelihood and consequence. Environmental Impacts as applicable to the Wee Waa High School are summarised in the “Environmental Risk Register” contained within this CEMP (Section 5.3).

4.1.1 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 High Risk 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.

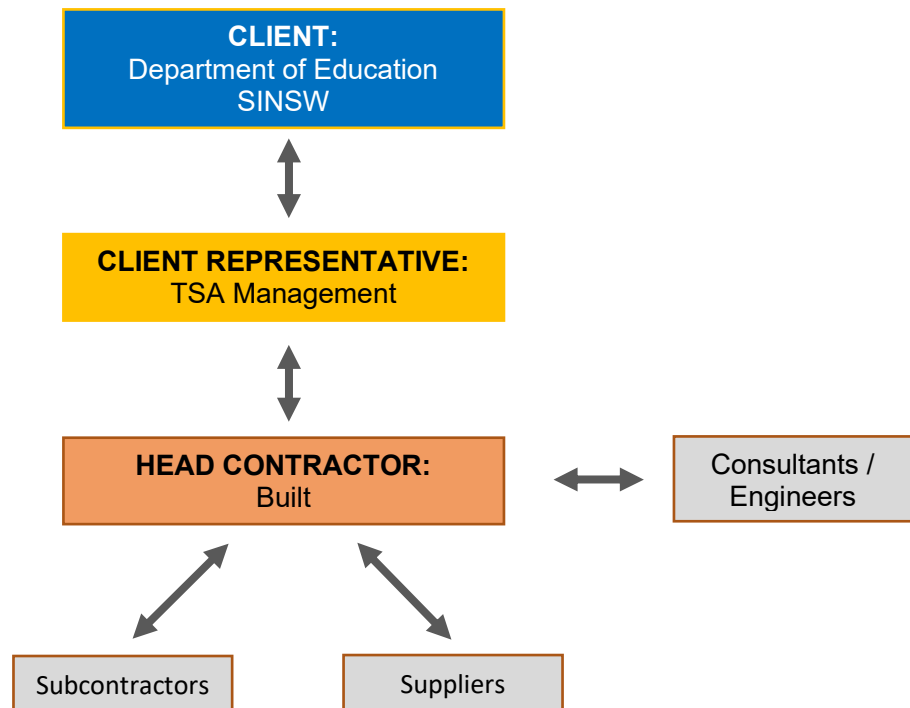
4.1.2 Legal Compliance and Other Requirements

Built has developed a procedure (“Legislation Standards and Codes of Practice”), available on BuiltIQ to identify legal and other requirements that are applicable to the Wee Waa High School 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 BuiltIQ to regulatory body websites and relevant NSW legislation relevant to environmental Aspects and management of the same.

4.1.3 Roles and Responsibilities

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



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

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

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

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

5.1 Environmental Awareness

All Built 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 (HSE Appendix 7)

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 Presentation.

This document applies to all Built 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
<u>Location & Land use</u>		
Residential and other properties may be impacted with construction works due to construction noise and dust	Low	PM
<u>Noise & Vibration</u>		
Construction of the development may result in short term impacts during the project due to the use of heavy machinery, drilling and plant as well as construction personnel and vehicle movements.	Low	PM / SM

Traffic & Access

During construction there will be impacts to traffic on public roads surrounding the project from construction vehicles and deliveries for site.

Medium

PM / SM

Air Quality

During the earthworks stage of the project, there is a risk of poor air quality generated by the 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. The preliminary site investigation concluded that there were no 'native trees' that were present on the site.

Low

PM / SM

Cultural Heritage

It is unlikely that construction works will impact any undisturbed aboriginal artefacts given that Biosis has completed an archaeological survey report, which concluded the area possesses low archaeological potential. The Upper Canal corridor has been identified as requiring preventative measures to minimise the impact that vibration, soil and water has on it during construction.

Medium

PM / SM

Table 3 - Environmental Risk Register

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

6.0 Location and Land Use

6.1 Site Location

The Project is located in Wee Waa NSW. The footprint of the works are from 105-107 Mitchell Street, within the road reserves of George St, Mitchell Street, Charles Street and Boundary Street/Myall Lane.

6.2 Likely Impacts

The construction works would be short term in nature. 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.

6.3 Mitigation Strategies

The neighbouring landowners are to be consulted in regard to the construction works, predicted program and any access requirements.

Land disturbance during construction is to be limited to that required to undertake the construction works

Construction works to be undertaken in consideration of adjacent vegetation

Areas disturbed during construction to be returned to the pre-construction condition

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.

7.0 Noise and Vibration

7.1 Likely Impacts

Construction of the proposed development will result in short term noise impacts during the construction period. The predicted noise levels during the construction phase have been identified in the project Construction Noise & Vibration Management Plan along with associated mitigation strategies that are to be adopted to minimise these impacts (Appendix E for the Construction Noise & Vibration Management Plan)

7.2 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.

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 21854025.

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.

Provided that works do not exceed the existing background noise level plus 5dB, the consent approval stipulates that works may be undertaken Monday to Friday 6pm-7pm, Saturday 1pm-4pm.

Any activities that cause intense vibration and noise, i.e. rock breaking and pile driving, are to be carried out Monday to Friday 9am to 12pm, 2pm to 5pm and Saturday 9am to 12pm.

Any noise complaint received will be investigated as soon as practicable. Any practicable and feasible measures to minimise noise will be identified and implemented if required.

All possible steps to be taken to silence construction equipment where possible.

Optimum siting of work areas, vehicle and plant parking areas, materials stockpiles and equipment storage areas in locations where potential acoustical impacts will be minimised.

One hour respite periods should be offered during the most noise and vibration intensive periods of the day.

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 all plant on site where applicable

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

8.0 Traffic & Access

8.1 Likely Impacts

Construction of the new site facilities shall see some increase in traffic in the local area. The increased traffic is not predicted to have an impact on local traffic flow and only a minor inconvenience to local road users is expected. Construction vehicle routes have been developed with the intention of minimising the impact of construction traffic on the local streets in the immediate vicinity. Access to site will be from Charles Street. The management of construction traffic developed as a result of these works is summarised in the Construction Traffic Pedestrian Management Plan (refer Appendix D).

8.2 Mitigation Strategies

Follow the Construction Traffic Pedestrian Management Plan (CTPMP) 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:

Australian Standard 1742.3 - 2002 Traffic Control Devices for Works on Roads.

The CTPMP will be developed in consultation with Transport for NSW (TfNSW) and Narrabri Shire Council.

The CTPMP 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 with primary access to site via George Street. A secondary access from Charles street will be used by vehicles where necessary.

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 21854025.

- 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.

There is to be no parking adjacent or opposite the existing Wee Waa Primary School whilst during school operational hours.

9.0 Air Quality & Dust Control

In accordance with condition B20a (iii) of SSD 21854025, 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.

9.1 Likely Impacts

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

9.2 Mitigation Strategies

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

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

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

Construction contractors to monitor dust generation progressively.

Dust suppression methods 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 suppress excavation activities as they are occurring to suppress dust

Covering stockpiles

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

Vehicles transporting spoil from the site to be covered where required.

The burning of waste materials will not be permitted on site

Erect shade cloth barriers to site fences around potentially dusty activities such as trench excavations and material stockpiles where practicable.

Impose a maximum speed limit of 20km/h on all internal roads and work areas during construction.

Modify working practices by limiting activity during periods of adverse weather (hot, dry and windy conditions) and when dust is seen leaving the site.

Minimise drop heights from loading or handling equipment.

Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable

With respect to managing track out: Access gates to be located at least 10m from receptors where possible. Avoid dry sweeping of large areas. Trips and slip distances should be controlled and reduced where possible, for example by coordinating delivery and removal of materials to avoid unnecessary trips.

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Visual monitoring should comprise: At the commencement of each day's activities, the local meteorological forecast should be reviewed. Increasing the frequency of site inspections when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.

10.0 Soil, Erosion & Water Quality

In accordance with condition B20a (iv) & (v) of SSD 21854025, repeated in part as follows; 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 B24, refer to Appendix G for the Soil and Water Management Sub-Plan.

10.1 Likely Impacts

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

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

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

10.2 Mitigation Strategies

Construction is to be undertaken in accordance with the Erosion and Sediment Control Plan.

All erosion and sediment control devices shall be properly maintained for the duration of the work.

All structures are to be inspected after rain events and sediment to be removed

Any temporary stockpiles should be stabilised using sediment fencing or similar.

All fuels and other hazardous liquids shall be stored 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 Built construction works will be silt protected with geo-fabric and/or granular socks. Drains will be monitored and maintained by Built

Stockpiles to be established at Built approved location's

Sediment fences shall be installed at required locations at the perimeter of the site

Stormwater shall be diverted to retention basins

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The location and details of permanent controls shall be included on the Site Layout Plan

Placement of hay bales or mesh and gravel inlet filters around and along the proposed catch drains and existing stormwater inlet pits within the site boundary.

11.0 Flora and Fauna

11.1 Likely Impacts

The construction of the Wee Waa High School is occurring on a greenfield site, with a small number of existing flora and fauna present. The preliminary site investigations have concluded that there are no native trees that need to be removed as part of the development. There is a total of 14 flora species across the site which are common groundcovers that are typical of derived pasture. 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.

11.2 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.

12.0 Archaeology & Cultural Heritage

12.1 Likely Impacts

An Aboriginal Archaeological Assessment has been completed for the area by Biosis, which has deduced that the area possesses low archaeological potential. While it is unlikely that the proposed works would disturb any undisturbed Aboriginal objects or sites of historical relics, the following mitigation strategies will be adopted.

12.2 Mitigation Strategies

All workers (including contractors) should be made aware that it is illegal to harm an Aboriginal object or historic relics, and if a potential Aboriginal object or historic relic is encountered during activities, then all work at the site will cease and the OEH will be contacted to advise on the appropriate course of action to allow the Kamilaroi/Gamilaraay People to record and collect the identified item(s).

All workers (including contractors) should be inducted concerning Aboriginal cultural heritage values

In accordance with Condition B20b and B15c of SSD 21854025, unexpected finds protocols must be included within the CEMP to outline the process to be followed in the event that unexpected contamination is found through the duration of the project.

Discovery of cultural heritage objects or items

In the event of the discovery of what is believed to be an Aboriginal object or a significant historic item, the following steps will be adhered to:

1. All work close to the discovery will cease and an area of 5 m around the location will be fenced with temporary construction fencing
2. Advice will be sought from a qualified archaeologist to determine whether the find constitutes an Aboriginal object or a historic item of heritage significance
3. If the object is confirmed as Aboriginal or likely to possess historic heritage significance, then the archaeologist, (in consultation with RAPs if the find is an Aboriginal object, see **Section** Error! Reference source not found.), will determine the significance and best management of the find
4. No works will re-commence within the stop work zone until the find has been appropriately assessed
5. If the find is determined to be an Aboriginal object or a significant historic item, then every consideration must be made to conserve the object or item in the landscape including the amendment of design plans

6. If harm to an Aboriginal object within the CHMP area is unavoidable, then depending on the nature of the site, the object(s) may be salvaged following the methodology in Error! Reference source not found.
7. If harm to an Aboriginal object outside the CHMP area is unavoidable, then further investigation, including undertaking the ACHCRs, developing an Aboriginal Cultural Heritage Assessment Report (ACHAR) and applying for an AHIP will be required (see **Section** Error! Reference source not found.)
8. If harm to a significant historic item is unavoidable either within or outside the CHMP area then further investigation, including the preparation of a Statement of Heritage Impact (SOHI), will be required (see **Section** Error! Reference source not found.)
9. Newly discovered Aboriginal objects will be registered on the AHIMS database in accordance with Section 89A of the NPW Act
10. The Heritage Council will be notified of newly discovered significant historic items in accordance with Section 146 of the Heritage Act
11. All new objects or items will be incorporated into the cultural heritage database in accordance with **Section** Error! Reference source not found..
12. Construction works within the CHMP area shall only recommence once the actions of this Plan have been complied with in full
13. Construction works outside the CHMP area shall only recommence with the written approval of HNSW or an appropriate permit (i.e. an AHIP).

Aboriginal ancestral remains

In the unlikely event that a potential burial site or Aboriginal ancestral remains are exposed within the CHMP area, the following procedure should be followed:

- All work in the vicinity of the skeletal material will cease immediately and an area of 10 m radius around the find will be cordoned off with temporary construction fencing
- The find/s will be immediately reported to the work supervisor who will immediately advise NSW Department of Education or other nominated senior staff member
- NSW Department of Education will promptly notify the NSW Police Force (as required for all human remains discoveries) and HNSW
- If the remains are suspected to be human, the NSW Police Force will engage a suitably qualified person to inspect the remains and decide of whether the remains are human, and if so, the likely ancestry (Aboriginal or non-Aboriginal) and antiquity (precontact, historical or forensic):
 - If the remains are identified as forensic the area is deemed as a crime scene and police instructions will be followed

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- If the remains are identified as Aboriginal, the site is to be secured and HNSW and all RAPs are to be notified in writing. An appropriate methodology for possible exhumation will be developed in consultation with HNSW and the RAPs
- If the remains are non-Aboriginal (historical) remains, the site is to be secured and the HNSW is to be contacted. An appropriate methodology for possible exhumation will be developed in consultation with HNSW.

The above process functions only to appropriately identify the remains and secure the site. From this time, the management of the remains is to be determined through liaison with the appropriate stakeholders (including the NSW Police Force, forensic anthropologist, HNSW, and RAPs [if ancestral remains are being disturbed]).

13.0 Site Contamination

13.1 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 K for Executive Summary). Prior to the commencement of bulk earthworks and in line with the risk assessment generated for the project, an assessment of actual or potential soil contamination risk and impacts will be undertaken. The purpose of this assessment was to provoke whether Built 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 was no known 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.

13.2 Identification of Contaminated Soil

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

Upon discovery of contaminated soil, the Built 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.

13.3 Risk of Exposure

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

- Defining certain areas as contaminated and restricting access to them;
- Appropriate signage;
- Training construction employees in industrial hygiene procedures;
- Keeping non-essential motor vehicles such as personal cars out of contaminated areas;
- Regular medical checks of construction personnel who are exposed to contaminated soils;
- Keeping stockpiles of contaminated material watered down to minimise dust generation in accordance with any water restriction requirements and ensure that runoff is not generated from excessive watering;
- Covering truck loads with tarpaulins and watering material when loading and unloading;
- Wheel washes for trucks and vehicle leaving the contaminated areas;
- Regular road sweeping and cleaning;
- Dust monitoring and adjustment of construction programs to accommodate high risk periods when conditions are windy or very dry; and

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

13.4 Groundwater Management

The contamination investigation conducted by EIS concluded that groundwater is not considered to pose a risk to the site (refer Appendix K 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.

13.5 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.

13.6 Heavy Metal Contamination

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

13.6.1 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.

13.7 Unexpected Finds

In accordance with Condition B20b and B15c of SSD 21854025, unexpected finds protocols must be included within the CEMP to outline the process to be followed in the event that unexpected contamination is found through the duration of the project.

Unexpected Find shall be addressed in compliance with the Built's Unexpected Finds protocol listed below:

Unexpected Finds Protocols – General

1. Immediately cease work and contact site foreman
2. Site Foreman to exclude area.
3. Site foreman to contact Project Manager who will contact Client and arrange inspection by environmental consultant
4. Environmental consultant to undertake detailed inspection and sampling & analysis as per the

documented sampling procedures outlined in the RAP analytical results against documented site assessment criteria in the RAP

5. If substance assessed as presenting an unacceptable risk to human health
6. If substance assessed as not presenting an unacceptable risk to human health Site foreman to remove safety barricades and environmental controls and continue work
7. Environmental consultant to supervise remediation and undertake validation/clearance as per the remediation/validation/clearance plan
8. Site Foreman to remove barricades and environmental controls and continue work.
9. Environmental 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:

1. Only licensed, competent and authorised persons may access the area in which the asbestos or suspected asbestos is identified;
2. Contact an occupational hygienist to attend site (if not already present) following advice from legal counsel;
3. Air monitoring should be conducted in accordance with the applicable legislation;
4. Sampling can be completed by hygienist or engage licensed removalists;
5. Maintain air monitoring in public areas until all potential hazards are removed;
6. Check for exposed ceilings, floor, ducted heating/ cooling, access/ egress areas for potential risk and isolate or barricade if required;
7. Clearance monitoring shall be undertaken subsequent to asbestos removal

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:

1. Upon discovery of structure, the site foreman is to be notified and the area barricaded;
2. Visual identification of the tank and associated pipe-work;
3. 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;

14.0 Waste Management

In accordance with Condition B20(f), the Construction Waste Management Plan (CWMP) has been completed for the project and is contained within (Appendix F). The CWMP contains detailed information regarding the types and disposal of different waste types throughout the project

14.1 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.

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

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

1. Reduce the amount of waste material produced on the project by ensuring that only enough materials required to perform the works are ordered.
2. Any excess materials from particular work areas are to be retained and incorporated into other work areas where practical.
4. 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.

14.2 Non-Recyclable Waste

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

14.3 Waste Collection & Disposal

Appropriate waste bins are to be provided by Built 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.

14.4 Waste Reporting

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

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

Waste quantities from lucidity will be pulled into the Power BI Database for analysis and reporting against Built Waste reduction target of 90% Construction waste recycling.

14.5 Concrete Waste & Washout

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

Washout shall be captured using membranes or other suitable means and allowed to set. Waste shall be placed in bins for disposal with site waste.

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

14.5.1 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).

15.0 Flood Event

In accordance with Condition B20(i), the Construction Flood Emergency Response Plan (CFERP) has been completed for the project and is contained within (Appendix I). The CFERP contains detailed information regarding the projects emergency response plan for flood events. The following are a summary of key items extracted from this plan.

15.1 Likely Impacts

Wee Waa is protected from Namoi River flooding by the Town Levee. Previous investigations found that while the Town Levee would not be overtopped for Namoi River floods up to about 0.2% AEP in magnitude, the construction site would still be subject to relatively frequent inundation as a result of local catchment runoff.

Without the implementation of appropriate management measures, the inundation of the construction site by floodwater has the potential to:

Cause damage to the proposal works and delays in construction programming

Inundate site sheds and limit access to the site

Pose a safety risk to construction workers

Detrimentially impact the downstream waterways through the transport of sediments and construction materials by floodwaters

Obstruct the passage of floodwater and overland flow through the provision of temporary measures such as site sheds and stockpiles, which in turn could exacerbate flooding conditions in existing development located outside the construction footprint.

15.1.1 Mitigation Strategies

Monitoring the weather forecasts and warnings is an important first step in managing the flood risks at the site. This should occur daily and more frequently when a relevant warning has been issued.

Flood levels at the Glencoe gauge at Wee Waa and for Narrabri Creek Gauge to be observed via BOM website.

15.2 Before a Flood :

1. All staff and contractors will be made aware during staff inductions of the possibility of flooding and the procedures to be followed if a flood were to occur.
2. A fully charged and functional mobile phone will be kept in the site office whenever the site is occupied.
3. A computer with internet access and at least two hours independent power supply will be kept on site whenever the site is occupied
4. An emergency contact sheet will be kept on site. A suggested format for these details and other necessary contact details is provided in Appendix D.
5. Management will maintain an emergency kit including a portable radio and torch with spare batteries and a first aid kit on site.
6. The weather forecast and warnings will be checked each morning when the site opens
7. Temporary earth bunding
8. Spoil stockpiles locations
9. habitable floor levels
10. Underside of abutments of Pedestrian Footbridge No.1 and No.2

11. Avoidance of storage of materials and heavy machinery on George Street
- 12.

15.3 During a Flood :

15.3.1 Major Flood Warning for the Namoi River

The Site Manager or delegate will contact all staff and contractors including those not on site and inform them that Wee Waa will be isolated. Staff on site should follow the directions of the local NSW SES. Staff outside of Wee Waa should not attempt to come to site until advised that flooding has subsided.

15.3.2 Flood water is observed approaching the site

The Site Manager or delegate will contact all staff and contractors including those not on site to advise that the local streets are flooding and not to come to the site until advised that flooding has subsided. The Site Manager or delegate will evacuate and secure the site. The Site Manager or delegate will start the sump pump at the trash rack and monitor it every hour

15.4 After a Flood :

The Site Manager will notify all staff and contractors that the local flood threat has passed and that main roads are open but that other roads may be affected by flooding or debris and they must not drive or walk through floodwaters.

No staff will be allowed to return to site until floodwaters have subsided and the emergency services have given the all clear to return

All flood affected parts of the site will be inspected by the Site Manager and declared safe prior to staff and contractors being given the all-clear to return

A hazard assessment will be undertaken for the clean-up, safe work methods statements will be prepared and personal protective equipment supplied consistent with the known hazards which can be associated with floods:

- Slips, trips and falls
- Sharp debris
- Venomous animals
- Contaminated water and sediments

Following the re-commencement of site activities, a de-brief will be held with key management staff and may involve Council flood staff. The flood event and response, including the use of this Plan and any emergency procedures will be reviewed.

1. Excavate and stockpile impacted materials (based on field observations) for classification;
2. Validation of the remedial pit by a qualified environmental consultant for the contaminants of concern at the following sampling density:
3. Base of tank pit excavation - 1 sample per 25 m² (i.e. 5m x 5 m grid);
4. 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;
5. Fuel feed lines/pipe-work - 1 sample per 10 linear metre and 2 - 3 depth interval; and
6. 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;
7. Waste classification and off-site disposal of impacted materials in accordance with Section 4.12 of this

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- plan on Waste Management and
8. Inclusion of validation, waste classification and disposal documents (including landfill docket and, in the case of USTs, tank and pipe work destruction certificates) in the validation report.

16.0 Environmental Complaints

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

16.1 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.

16.2 Hazardous Materials

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

16.3 External Lighting

In accordance with condition B18 & B20a (iv) of SSD 21854025, the external lighting to the proposed Wee Waa School complies with AS1158.3.1:2005 – Pedestrian area (Category P) lighting – Performance, Design Requirements and AS4282-2019 – Control of the Obstructive Effects of Outdoor Lighting and the NSW Dark Sky Planning Guideline 2016. Please refer to Appendix J for the certificate verifying the compliance with these Australian Standards.

17.0 Community Consultation and Complaints Handling

In accordance with condition B16a (viii) of SSD 21854025, community consultation and complaints handling is the responsibility of the applicant. Built will provide assistance where possible, and register any information received for SINSW's action as per the requirements of Community Communication Strategy, developed for the New Wee Waa High School.

17.1 Community Consultation

Community consultation is primarily the responsibility of the client. Built 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 updates meetings
- Website
- Works notifications
- Letterbox drops

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

17.2 Complaints Handling

The primary form of assistance that Built will provide is through the complaints handling process. During the project delivery phase, a complaint defined as in regard to construction impacts – such as – safety, dust, noise, traffic, congestion, loss of parking, contamination, loss of amenity, hours of work, property damage, property access, service disruption, conduct or behaviour of construction workers or other environmental impacts. If a complaint is made directly to Built, 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, Built 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.

18.0 Measurement & Evaluation

18.1 Environmental Incidents & Emergencies

18.1.1 Environmental Incidents

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

18.1.2 Environmental Emergencies

Preparation for and response to the environmental impacts of emergency events shall be conducted in accordance with Built'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.

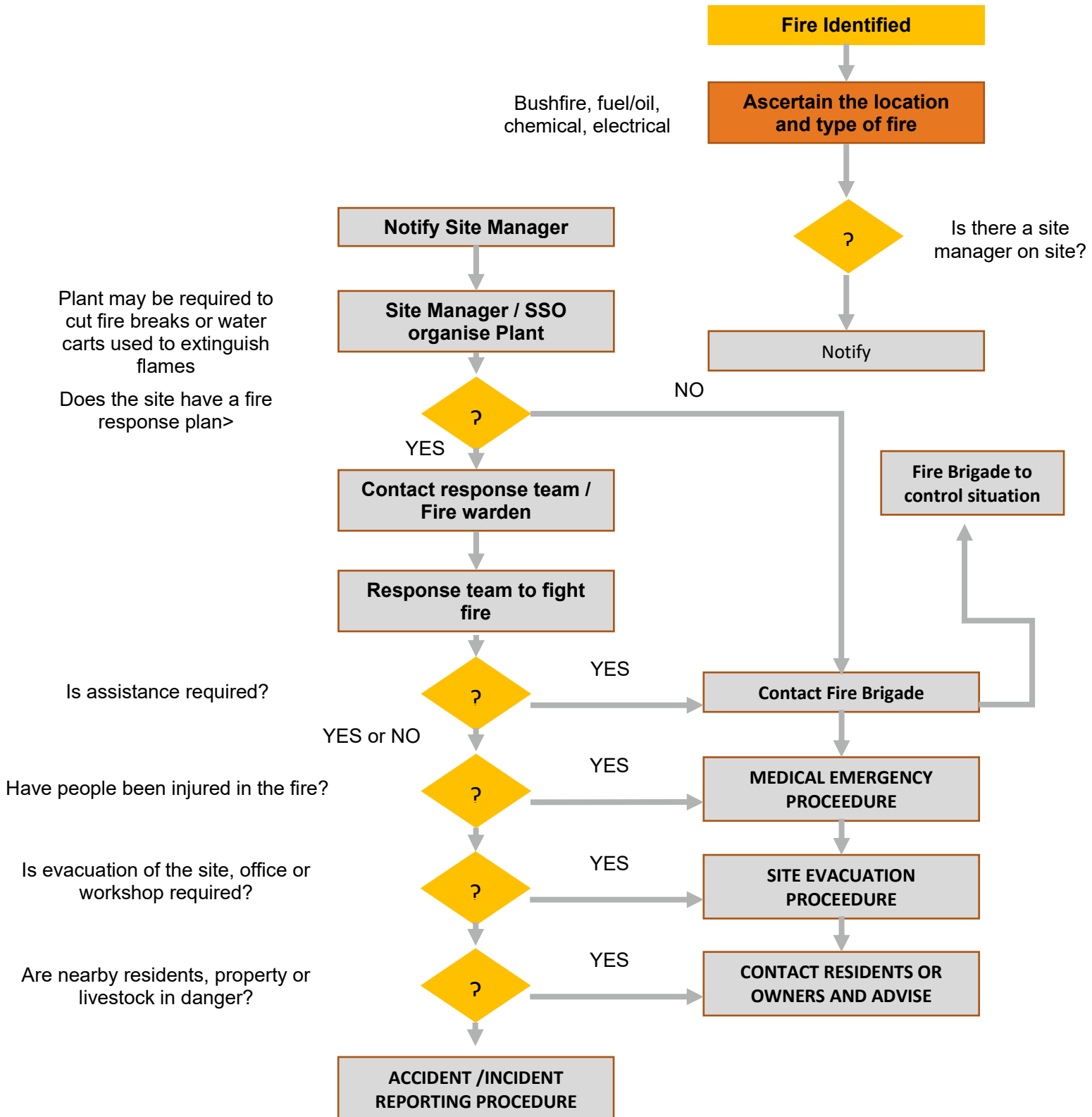
Firstly, call 000 if the incident presents an immediate threat to human health or property. Fire and Rescue NSW, the NSW Police and the NSW Ambulance Service are the first responders, as they are responsible for controlling and containing incidents.

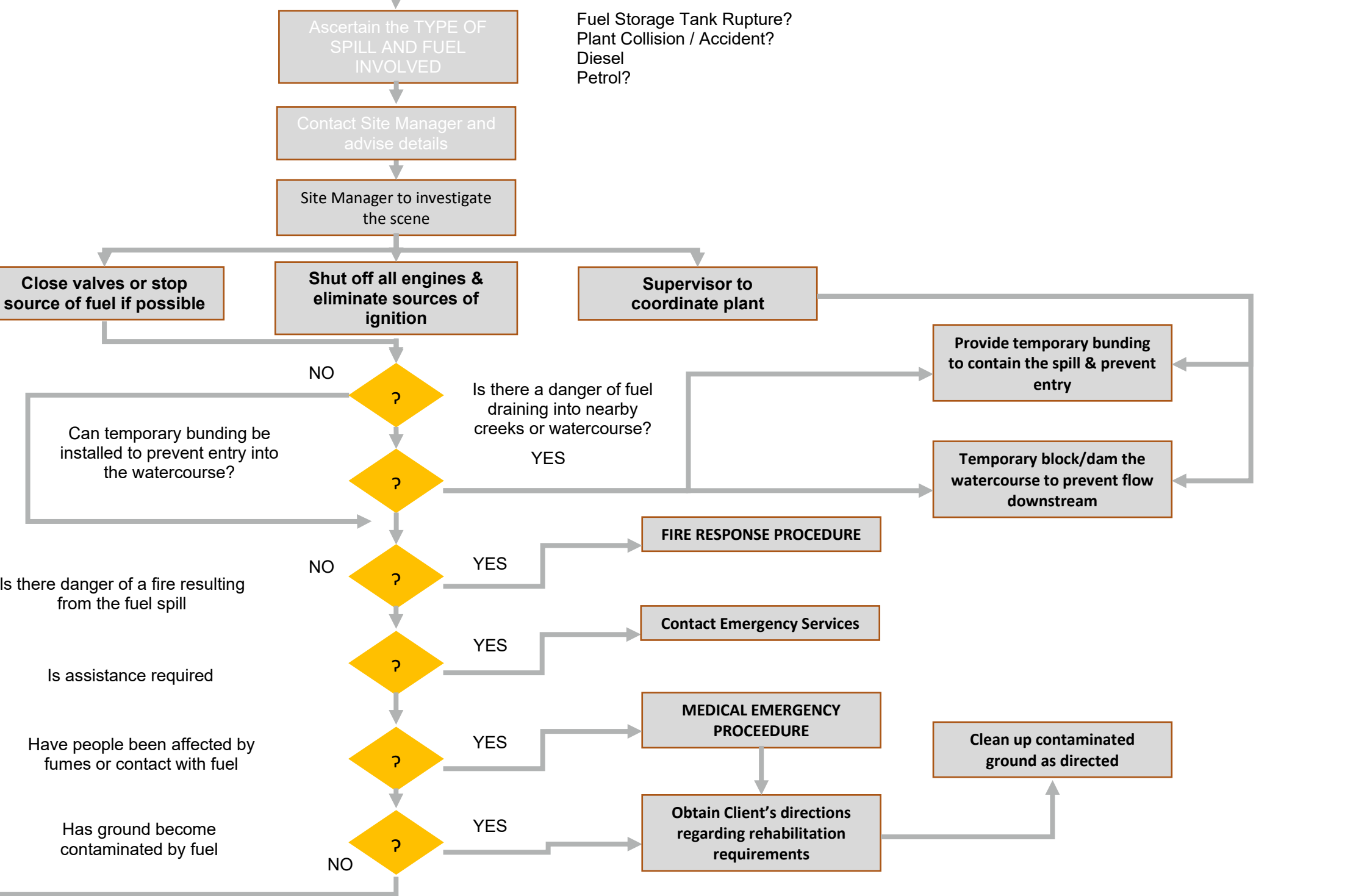
If the incident does not require an initial combat agency, or once the 000 call has been made, notify the Built Site Manager who will notify the relevant authorities in the following order. The 24-hour hotline for each authority is given when available:

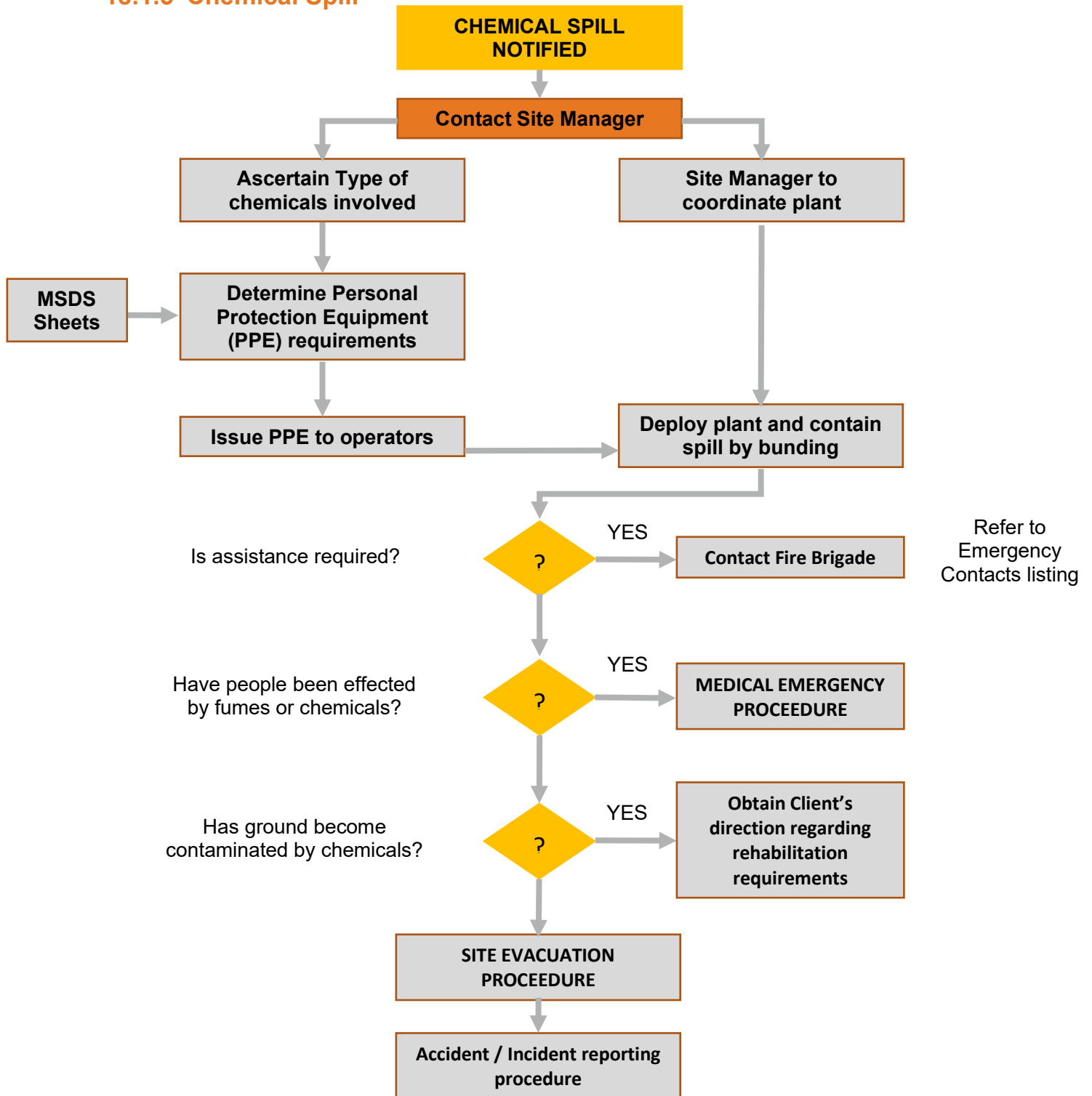
EPA Environment Line on 131 555

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

18.1.3 FIRE







19.0 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.

19.1 Non-Conformances

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

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

Built 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.

19.2 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

Built 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

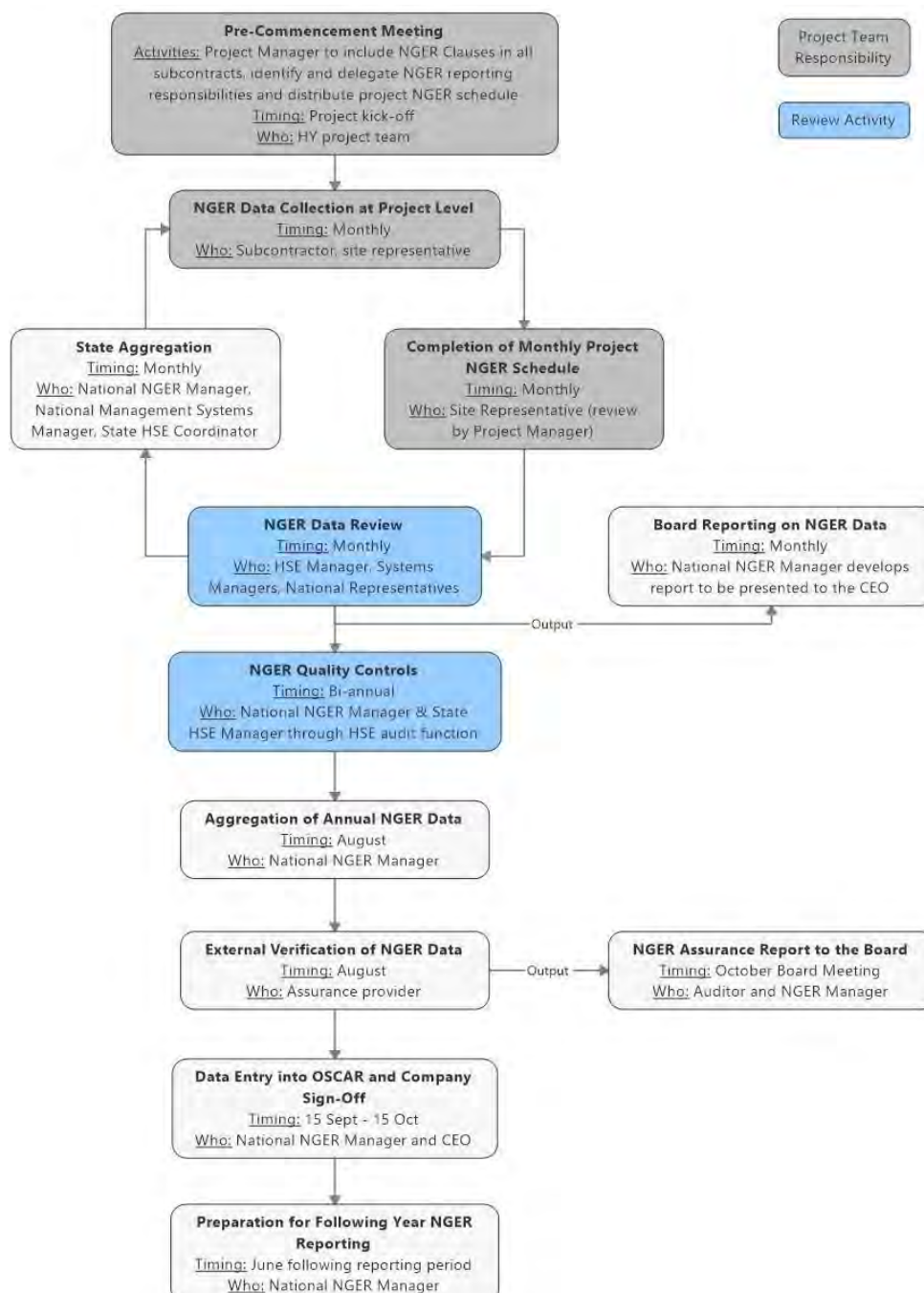
20.0 National Greenhouse & Energy Reporting (NGER)

20.1 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).

20.2 NGER Reporting Process

Built utilise an in house Lucidity software to report Natural Green House Emissions.



20.3 NGER Data Collection

NGER data is to be recorded on the Lucidity platform monthly using the Site Electricity, Natural Gas and fuel usage checklist. This data is taken from Lucidity and collated through Power BI for record keeping.

21.0 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

Environmental Management Plan Guideline: Guideline for Infrastructure Projects (DPE April 202)

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

ISO 31000:2009 Risk management – Principles and guidelines

APPENDIX A - Built Environmental Policy Statement

Built.

Environmental Management Policy

Our Aim

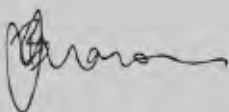
Built is committed to establishing and maintaining ours and our clients work environments with priority given to minimising adverse environmental effects from our activities and fostering a culture of sustainable environmental management.

The Built environmental strategy is the ongoing development of a system based on AS/NZS ISO14001, legislation and applying the principles of best practice environmental management to our activities. Built is committed to objectives and individual programs by applying proactive approaches to environmental stewardship through:

- Identifying environmental activities, aspects and impacts and applying appropriate environmental actions
- Minimising the effects of our activities on the environment
- Preventing pollution
- Complying with applicable environmental laws and regulations, Codes of Practice and Guidelines leading to the development of appropriate monitoring, measurement and review activities
- Working cooperatively with our clients and responsible agencies in exercising environmental due diligence at all stages
- Conducting relevant environmental education and training to improve awareness, knowledge and skills
- Developing and implementing plans and procedures for the effective operation and management of our processes
- Meeting Performance Standards and Key Performance Indicators, and taking action to improve performance through regular and formal reviews
- Communicating with staff, clients and stakeholders on all areas on environmental performance

Built acknowledges this environmental policy as a commitment that involves cooperation and consultation with all stakeholders to meet the company's business objectives.

Built is committed to continual improvement in environmental management. This includes regular monitoring, assessment and review of all aspects of the system by both internal and external audits.



Brett Mason
Managing Director
1 July 2018

Built

APPENDIX B - Built environmental Management Accreditation – ISO14001



Certificate of Conformity

Built Pty Ltd

ABN: 24 083 928 045

Built Qld Pty Limited

ABN: 43 108 064 099

Built Fitout and Refurbishment Limited

Company Number: 11645768

To certify that their

Environmental
Management System

has been assessed and registered as complying with the requirements of
ISO 14001:2015 – *Environmental management systems – Requirements with guidance for use.*

Scope of works covered by certification and locations
Refer to the Certification Schedule for further details.

Certification Number **20904**
Issue Date **22/07/2022**
Issue Number **10**

Period of Registration
09/08/2022 to 09/08/2025

John Edwards, Operations Director
dlcs international

Certification is subject to ongoing surveillance assessments
The validity of this certificate can be verified at www.jas-anz.org/register

This certificate and certification mark remains the property of
dlcs international • www.dlcsi.com.au
St Kilda Rd Towers, 1 Queens Road, Level 6, Suite 625, Melbourne, VIC 3004



Accredited by the Joint Accreditation System of
Australia and New Zealand.
Acc. No. M5250513AM

Built

APPENDIX C - HSE Project Risk Assessment



**Appendix 5 to HSE Plan
Safety Risk Register**

WEE WAA HS

1. Purpose and Matrix

Appendix 5 OHS Risk Register

Purpose

To assist in establishing the HSE Plan, the Project Manager in conjunction with the nominated site team, Regional HSE Manager / HSE Manager / Coordinator will undertake a workshop to develop the 'Project Health & Safety Risk Register' which is designed to assist the site team to evaluate the health and safety risks for the project, in conjunction with the projects schedule of work.

Built's generic 'Appendix 5 Project Risk Register' is used as the basis for developing the project-specific risk register. However, the project Manager is responsible for ensuring the project-specific risk register is adapted to reflect the hazards and controls applicable to the project and those that are unique to the project scope of works and situation. Where additional hazards are identified beyond those identified in the generic risk register the Project Manager, in conjunction with the HSE Manager/Coordinator, is to ensure such controls reflect the requirements of WHS/OHS Regulations, Australian Standards and Codes of Practice.

The workshop shall consider the various trades / work areas / construction phases etc, and identify foreseeable hazards, assess their level of risk, and determine the most appropriate controls. When determining such controls, the first priority shall be to eliminate the hazard or risk, so far as is reasonably practicable, when it is not reasonably practicable to eliminate the hazard or risk the hierarchy of controls shall be applied to minimise the hazard and risk to as low as is reasonably practicable.

Section 2 'Project Overview' provides an initial overview of the specific project criteria allowing for the workshop participants to identify and comment on the initial key health & safety aspects of the project. The information determined applicable in this section is to be considered when reviewing Section 3 'Standard Controls' and establishing Section 4 Project Specific Register'

Note: Items listed in Part 1 are not exhaustive and there may be other criteria applicable to consider during the workshop or at some later stage when reviewing and updating the register.

Section 4 'Project Specific Register' provides for the consideration and recording of hazard and risks specific to the project scope of works and planning appropriate controls so as to eliminate those risks, so far as is reasonably practicable, or where not reasonably practicable to eliminate such risks, to reduce them so far as is reasonably practicable in accordance with the following hierarchy of control (in the order they appear):

1. Substitution - substituting (wholly or partly) the hazard giving rise to the risk with something that gives rise to a lesser rise
2. Isolation - isolating the hazard from any person exposed to it such as the use of machine guards, isolation switches, ventilation, manual handling devices and barriers
3. Engineering - controls to reduce the risk. For example – attach guards to the machine to protect users.
4. Administrative - procedural controls to eliminate or reduce the exposure to hazards through the adherence to permits or procedures or instructions. For example, scheduled work breaks, job rotation, confined space permit, safe working instructions on how to use an angle grinder
5. Personal Protective - Equipment - such as ear muffs, safety glasses, respirators, gloves, footwear and sun

As considered appropriate separate workshops may be held at different stages of the project to address the various trades / work areas / construction phases etc or processes not covered during the initial risk assessment workshop, providing they are held prior to the relevant activity, phase or section of work commencing.

Note: The 'Project Health & Safety Risk Register' is not designed to provide detailed step by step procedures for the identified 'Hazards and Risks', but allows the Project team to plan for the works and provide an outline of the principal controls that are to be implemented.

When developing the initial 'Project Health & Safety Risk Register' and to ensure the workshop flows smoothly and logically, some pre workshop planning should be completed by the Project Manager (or nominated workshop leader). In preparing the 'Project Health & Safety Risk Register' the Generic Hazard and Risk Register is to be reviewed, however, it is not necessary to transfer information from the 'Generic Hazard & Risk Register' into the 'Project Health & Safety Risk Register' since these are considered 'known risks' with appropriate controls pre-determined. If however the controls for generic hazards and risks identified on the 'Generic Hazard and Risk Register' are determined not to be suitable for the project-specific circumstances the hazards, risks and controls are to be dealt with in the 'Project Health & Safety Risk Register.'

The Project Health & Safety Risk Register can be used in an Excel format.

*Note

The description used for HRCW in the Project Specific Register are abbreviated. For the full description, refer to the relevant state legislation.

Risk Assessment Matrix			
Consequence (severity) – is how seriously a person could be harmed	Likelihood – is an estimate of how probable it is for the hazard to occur leading to harm.		
	Very Likely (VL)	Possible (POS)	Very Unlikely (VU)
HIGH SEVERITY (HS) • Death • Permanent impairment (i.e. total or partial loss of body function or permanent damage to an individual's health); • Unable to ever resume their pre-injury duties as a result of injury/illness	HIGH	HIGH	MEDIUM
MEDIUM SEVERITY (MS) • Injury resulting in a period of lost time or returning to work on restricted duties before being able to resume their full pre-injury duties.	HIGH	MEDIUM	LOW
LOW SEVERITY (LS) • Medical treatment injury from which the person is able to resume full pre-injury duties; • First Aid treatment	MEDIUM	LOW	LOW
RISK LEVEL AND MANAGEMENT ACTIONS		HIERARCHY OF CONTROL	
High Risk – (Unacceptable) Action must be taken to eliminate the risk to health and safety so far as is reasonably practicable. If it is not reasonably practicable to eliminate the risk to health and safety the risks are to be minimised so far as is reasonably practicable by implementing the controls measures listed as 2 nd , 3 rd and 4 th (in this order of priority). Management Actions: If control measures 1, 2, 3 or 4 cannot be applied any decision to use lower order controls, i.e. 5 and 6 require approval from the Project Manager (or above, e.g. Construction Manager).		1st Elimination - i.e. the permanent removal of the hazard from the workplace	1E
		HIERARCHY OF CONTROL	
		2nd Substitution - substituting (wholly or partly) the hazard giving rise to the risk with something that gives rise to a lesser risk	2S
		3rd Isolation - isolating the hazard from any person exposed to it such as the use of machine guards, isolation switches, ventilation, manual handling devices and barriers.	3I
		4th Engineering - controls to reduce the risk. For example – attach guards to the machine to protect users.	4E
Medium Risk – (Tolerable) if the risk to health and safety cannot be eliminated so far as is reasonably practicable or minimised so far as is reasonably practicable by implementing control measures listed as 2 nd , 3 rd or 4 th (in this order of priority) Administrative controls may be applied. Management Actions: If control measures 1, 2, 3 or 4 cannot be applied any decision to use lower order controls, i.e. 5 and 6 require approval from the Project Engineer (or above, e.g. Project Manager).		5th Administrative - procedural controls to eliminate or reduce the exposure to hazards through the adherence to permits or procedures or instructions. For example, scheduled work breaks, job rotation, confined space permit, safe working instructions on how to use an angle grinder.	5A
Low Risk – (Acceptable) if the risk to health and safety cannot be eliminated so far as is reasonably practicable or minimised so far as is reasonably practicable by implementing control measures listed as 2 nd , 3 rd , 4 th or 5 th (in this order of priority) the use of suitable personal protective equipment may be applied. Management Actions: If control measures 2, 3, 4 or 5 cannot be applied any decision to use lower order controls, i.e. 6, require approval from the Site Manager (or above, e.g. Project Engineer).		6th Personal Protective - Equipment - such as ear muffs, safety glasses, respirators, gloves, footwear and sun screen.	6P
		Note: The use of a harness, in either restraint or arrest, requires approval from the Site Manager or Project Engineer or Project Manager (or above). Approval cannot be given by a person in a lower position than either of these, e.g. the Foreman.	

Project Name:	WEE WAA HIGH SCHOOL
Project Number:	201481
Date of initial workshop:	
OFSC Scheme Project?	NO

Project Description
Wee Waa High School Education Redevelopment is the Design and Construction of a New High School with the capacity for 300 students. The High School provides a flexible design suited for future focused learning while offering a safe and secure learning environment on a new site. The Project Scope includes New Two-Storey Buildings, Multipurpose Hall/Gymnasium, Covered Outdoor Learning Areas, Sporting Fields, Agriculture and Environment Centre, Aboriginal Education Community and Learning Centre. The Project has been tendered based on Built DfMA Solution.

Risk workshop Participants required		
Name	Project Role	Company
Steve Kogias	Construction Manager	Built
Neil George	Site Manager	Built
Rebecca Deegan	Project Manager	Built
Alec Christofidies	Project Engineer	Built
Andros Calpis	Project Engineer	Built
James Heap	Site Engineer	Built
Lloyd Bennett	Foreman	Built
Scott Cameron	Contract Administrator	Built

12. Reference documents / material	Y/N	
Site HSE Plan	Y	
State/Territory specific WHS Act or OHS Act	Y	State
State/Territory specific WHS Regulation or OHS Regulation	Y	State
Australian Standards	Y	
Industry approved Codes of Practice or Guidance Notes	Y	
National Codes of Practice	Y	
Regulatory Body Safety Alerts	Y	
Built's SIDE / Client Design Report (if available)	Y	
Previous reported injuries, illnesses and/or incidents	N	NA at time of project start up

1. High Risk Construction Work	Ref to Register (Y/N)	Areas of concern / Reference (in Appendix 5)
Risk of a person falling more than 2m	Y	DfMA Site Install
Risk of materials falling 3m	Y	DfMA Site Install
Likely to involve disturbing asbestos	Y	Northern Area of site. Access to containment bubbles, e.g. first aid, scaffold alterations?
Work in or near a shaft or trench deeper than 1.5m or a tunnel	Y	Civil Stormwater upgrade works (Swale and Pipework install)
Work on or near chemical, fuel or refrigerant lines	N	
Tilt-up or precast concrete elements	Y	DfMA Panels, SW concrete pipes
Work in areas with artificial extremes of temperature	N	
Work in an area that may have a contaminated or flammable atmosphere	N	
Temporary load-bearing support for structural alterations or repairs	Y	DfMA Install
Use of explosives	N	
Work on or near energised electrical installations or services	Y	Overhead Power substation/lines on site boundary, Charles St inground services and overhead power poles adjacent to box culvert install in road reserve, Mitchell St stay within drainage swale
Work on, in or adjacent to a road, railway, shipping lane or other traffic corridor in use by traffic other than pedestrians	Y	Civil Stormwater upgrade works (Swale and Pipework install)
Work in or near water or other liquid that involves a risk of drowning	Y	Civil Stormwater Swale
Demolition of load-bearing structure	N	
Work in or near a confined space	Y	Civil Stormwater trenches and services Underneath Building
Work on or near pressurised gas mains or piping	N	
Work on a telecommunication tower	N	
Work in an area with movement of powered mobile plant	Y	Earthworks Plant and Mobile Cranes
Diving work	N	
2. Consideration of Other Hazardous tasks	Y/N	Areas of concern / Reference (in Appendix 5)
Use of explosive or power actuated hand fastening tools	N	
Hazardous materials and dangerous goods	Y	Asbestos to corner of Mitchell and Charles St (unexpected), as well as NE corner of site (expected)
Working with or removal SMS, MDF, CFC	N	
Use of electrically powered mobile plant (e.g. pallet trolleys)	Y	
Use of Lasers	Y	
Welding work / Oxy Cutting work / Use of angle grinder	Y	
Working in close proximity to pedestrian or members of the public	Y	
Use of Demolition Saws / Use of Chainsaw	Y	Tree pruning
Erecting mobile scaffolds	Y	Services trades
Refuelling plant/equipment	Y	
Use of electrical powered jack hammer	Y	
Use of electrical powered saws	Y	
Use of compressed air tools including air compressors	Y	
Work involving hazardous non-mechanical manual handling tasks	Y	General manual handling tasks
Work involving the handling of sheet glass	Y	DfMA
Hazardous atmospheres	N	
Biological	N	
Others:		
3. Supplementary plans	Y/N	Person Responsible
Demolition Plan	N	Green Field Site
Asbestos control plan	Y	
Water Management Plan	Y	
Vehicle Movement Plan	Y	
Waste Management Plan	Y	
4. Potential risks on project	Y/N	Areas of concern / Reference (in Appendix 5)
Concealed services / services	Y	
Isolation of services during works / emergency	Y	
Risk of Flooding / Water Damage to building	Y	
Other: Risk of adversely affecting town conditions	Y	

13. Built Safe Mandatory Standards	Y/N	Initial review date (month)
HSE-120 BSMS Scaffolding	N	Confirm if covers mobile scaffold - JH
HSE-121 BSMS Electrical	Y	
HSE-122 BSMS Temporary Works	Y	
HSE-123 BSMS Demolition	N	
HSE-124 BSMS Formwork Reo Concrete Placement	Y	
HSE-125 BSMS Asbestos	Y	
14. Permits	Y/N	Trade / Location
HSE-080 Concrete Cutting & Core Drilling Permit	Y	
HSE-081 Hot Works Permit	Y	
HSE-082 Confined Space Permit	Y	
HSE-083 Excavation Permit	Y	
HSE-084 Permit to Work	Y	
HSE-085 Permit for Harness Work at Height	Y	
HSE-086 Permit to Erect Alter or Dismantle a Tower Crane	N	Mobile Cranes/Manitou
HSE-087 Permit to Pump Site Water	Y	
HSE-088 Tower Crane Commissioning Checklist	N	Mobile Crane/ Manitou
HSE-089 Nine Inch Grinder and Handheld Concrete Saw Authorisation	Y	
15. Client Specific Requirement (refer to 'Client/Public/Other Entities' in Standard Controls section)	Y/N	Person Responsible / Action Required
School notifications	Y	SINSW/TSA to be notified of any HSE Incidents - AC to chase up
16. Local Council / Utilities Requirements or permits	Y/N	Person Responsible / Action Required
Council permits	Y	S138
17. Complex, new or unusual processes / technologies	Y/N	Action Required / Area of Concern
Voids	N	
Multiple plant and equipment	Y	DfMA
Temporary works	Y	DfMA
Structural alteration / demolition	N	
DfMA	Y	
18. HAZMAT	Y/N	Person Responsible / Action Required
Building older than 2003	N	
HAZMAT report requested from client	N	
HAZMAT reviewed and summary prepared	N	
19. Significant Plant / Equipment	Y/N	Action Required / Location
Man / material Hoist	N	
Tower crane	N	
Swing Stage (suspended scaffold)	N	
Mast Climber	N	
Temporary Electrical	Y	
Concrete line	N	
Civil earthworks machines	Y	

5. Third party audits	Y/N	Person Responsible
Scaffolding (including scaffolding design)	Y	Bryan Medbury
Tower Crane	N	
Crane base design and installation	Y	Crane establishment locations (WSP & Geotech & Douglas partners).
Hoist installation	N	
Hoardings / Fencing	Y	Bryan Medbury
Temporary Electrical installations	N	Confirm in BSMS - JH
False-work / Formwork	Y	Bryan Medbury
Structural Steel installations	Y	NorthRop & Bryan Medbury
In-situ gantries / lifting structures	N	
Temporary Works	Y	Bryan Medbury (Inclusive of shoring box design)
SINSW	Y	
6. Project Design	Y/N	Action required / Area of concern
Design and Construct or Construct Only	Y	
Safety in design evaluation completed & presented (refer to SIDE manual)	N	Confirm with PN SID manual - AC
Client design report required/obtained (where design is unusual)	N	
7. Excavation & Trenches	Y/N	Action required / Area of concern
Stability of adjoining buildings / materials / foundations	Y	Mitchell St stay
Vibration (from a damage nuisance perspective)	N	Confirm with CEMP - William Day noise and vibration plan
Geotechnical Reports	Y	Douglas Partners report to be used (Barnsons superseded)
Structural Engineering reports	N	
Shoring and support systems	Y	Shoring boxes required on Charles st
Design of Ground support systems, including benching/battering	Y	Bryan Medbury
Dilapidation Survey	Y	AusDilaps
Ongoing monitoring of adjoining buildings / material / foundations and frequency of	N	
Ongoing monitoring of ground support systems	N	
8. Lifting Operations (non-routine)	Y/N	Action required / Area of concern
Erection of Tower Crane	N	
Ground bearing capacity	Y	Douglas partners
Heavy Lifts (50 tonnes or more)	N	
Lifting large materials / plant or equipment	Y	
Multiple crane lifts	Y	Mobile Cranes 2.5 cranes
Precast and Tilt-up panels	Y	DfMA wall panels, concrete SW pipes
Proximity to existing buildings and structures	Y	Yes during construction only
Slab Loadings / Ground Bearing Capacity / Voids Services / Penetrations	Y	
Working near overhead power-lines	N	Vehicle movement underneath only
Note: Lifting Procedures/Plan/Studies are required for		
• large or complex tilt-up or precast concrete lifts	Y	
• multiple crane lifts	Y	
• lifting workboxes with people in the box	N	
• working near overhead power lines	Y	DfMA
• when using crane for demolition work	N	
• erecting tower cranes	N	
Crane Base Loading:		
Grouting Methodology confirmation/verified	N	
Crane base ITP's confirmed	N	
Grouting Contractor confirmation	N	
9. Lifting Operations (Routine)	Y/N	Action required / Area of concern
Crane suppliers	Y	DfMA mobile cranes
Need for specific lifting procedures	Y	DfMA Structural Panels
Lifting & Slinging Guide	Y	DfMA Install
Slab Loadings / Ground Bearing Capacity / Voids Services / Penetrations	Y	DfMA Install
10. Mobile Plant	Y/N	Action required / Area of concern
Requirements for Roll Over Protection	Y	
Requirement for Falling Object Protection (FOPS) Class 1 (Small falling objects e.g. Bricks, Hand Tools etc.)	Y	
Requirement for Falling Object Protection (FOPS) Class 2 (Large falling objects e.g. Trees, Rocks)	Y	
Vehicle Movement Plans	Y	
MEWPs required to be raised in close proximity to structures	Y	
11. Plant Movement	Y/N	Action Required / Location
Close proximity to Excavations	Y	
Close proximity to Precast Props	Y	DfMA
Close proximity to public or workers	Y	
Close proximity to Scaffold	N	DfMA
Close proximity to structural support systems	Y	
Traversing Ramps / Gradients	Y	Swale
Vehicle Movement Plans	Y	
Voids/ Penetrations	Y	Charles St & Boundary St

20. Information requested from client	Y/N	Person Responsible / Action Required
Floor and suspended slab loading	Y	
As Built's drawings including service locations	Y	
Emergency evacuation	Y	
Pre possession of site inspection: Electrical, Structural, HAZMAT etc.	N	
Other	Y	DfMA structural system to be peer reviewed by SINSW
21. Surveys / Investigations	Y/N	Action Required / Location
Dial before you dig	Y	
Slab scans	Y	
Geotech	Y	
Structural	N	
Hazmat soil investigations potholing	Y	
22. Occupying, using, interfacing with adjoining properties	Y/N	Action Required / Location
Operational facility	N	
Shared and common areas	N	
Works to be completed outside construction zone	Y	Crown Land to Namoi River
Neighbouring properties affected by the construction	Y	Neighbours driveways during civil upgrade works
Other		Refer also to 'Client/Public/Other Entities in 'Standard Controls' section
23. Members of the general public and those visiting the site	Y/N	Action Required / Location
Overhead protective structures	N	
Hoardings and fencing	Y	
Security	Y	
Site Entry	Y	Road reserve entry to be modified following council approval of
Other:		Refer also to 'Client/Public/Other Entities in 'Standard Controls' section
24. Environmental Risks	Y/N	Action Required / Location
Heritage, recycling	Y	
Spill kit, trade waste washout, concrete washout	Y	
Offsite pumping	Y	
Sediment management	Y	
(Review Project Environmental Aspects & Impacts Register)		
25. Health Monitoring and Atmospheric Monitoring (Also see Built's Health Monitoring & Exposure Monitoring Guide)	Y/N	Action Required / Location
Review Standard Controls section for relevance and Built's Health Monitoring & Exposure Monitoring Guide		
Asbestos	Y	
Crystalline Silica - earthworks, demolition, natural stones/marble products	Y	
Diesel Exhaust Emissions (enclosed/semi enclosed areas)	N	
Dusts (Not Otherwise Specified)	Y	All stockpiles to be covered with geofab
Fitness for work (including Drugs and Alcohol / Fatigue)	Y	
Hand / Arm Vibration (Use of pneumatic tools, vibration machines/equipment)	Y	
Hazardous Chemicals	Y	Fuel, Waterproofing membrane, low VOC
Lead (e.g. Paint, residue dust, removal of flashings)	N	
Noise	Y	
Personal exposure monitoring	Y	Heat and Sun exposure
Welding / Cutting (Chemical Fumes)	Y	
Snakes	Y	Snake bite kit to be on hand
High Grass	Y	
26. Risk Workshops - Note: Risk workshops should include a review of applicable Codes of Practice (refer Built Legal Register for a list of State/Territory specific COP)	Y/N	Action Required / Location
(List the proposed separate risk workshops to be held with Subcontractors)		
DfMA	Y	CLT panels (similar to tilt up pre cast works)
WTC	Y	Civil & Piling works
Carter & Osborn	Y	Temp services connection
Services trades generally	Y	Access to subfloor (confined space)
27. Emergency Preparedness	Y/N	Action Required / Location
Emergency Plan and Schedule of Emergency Equipment Completed?	Y	
First Aid Risk Assessment Completed?	Y	
Emergency evacuation	Y	
Harness Rescue	Y	Roof
Isolation points (gas/hydraulics/electrical)	Y	
Jumpform	N	
Lift shafts	Y	
Plant	Y	
Trenches/Excavation	Y	
Subfloor Structure	Y	
Risk of drowning	Y	Life ring to be sourced

WEE WAA HS											
Project Specific Register											
REF.	Work Activity, Process or Task <i>(The aspect of the scope of work or process that gives rise to the identified risk)</i>	Hazard <i>(Source of harm)</i>	Risk <i>(Describe the risk in relation to the hazards identified or select a HRCW activity)</i>	HRCW?	Risk Assessment			CONTROL MEASURES <i>(Describe the controls associated with the risks identified)</i>	HIRAC	Responsible Entity	STATUS
					Likelihood	Consequence	Risk Level				
1	Site Establishment	Site security	unauthorised access	No	Pos	MS	Med	Built to take possession of the site and make secure. ATF fencing to be installed and locked to prevent unauthorised access. Site signage to be erected to notify personal of the construction	3 Isolate	Built	Closed
1		Fencing	working adjacent to public/ collapse of hoarding	No	Pos	MS	Med	ATF fencing to be erected around the project. Installed and maintained to ensure ongoing security	3 Isolate	Built	Ongoing
2	Flood Mitigation - Stage A onsite works	Struck by mobile plant	working in and around powered mobile plant	Yes	VL	HS	High	Plant to be inducted/ operator to hold relevent VOC. Daily checks to be completed. Spotter in place during plant movement	Administr	Built & PCBU	Closed
2		Asbestos	working with Asbestos	Yes	Pos	LS	Med	Unexpected finds protocol to be adhered to	3 Isolate	Built & PCBU	Closed
2		Struck existing services	on/ near energised electrical installations/ services	Yes	VL	HS	High	Dial before the dig prior to excavations/ mark up any known services/ Use toothless bucket in the vicinity of services	3 Isolate	Built & PCBU	Closed
3	Mitchell/George street road upgrades	Struck by mobile plant	working in and around powered mobile plant	Yes	Pos	HS	High	Plant to be inducted/ operator to hold relevent VOC. Daily checks to be completed. Spotter in place during plant movement. Exclusion zones to be established and managed	Administr	Built & PCBU	Ongoing
3		Public interface	work on/ in/ adjacent to road/ railway/ traffic corridor	Yes	Pos	LS	Low	Exclusion zone and pedestrian management plan to be developed and managed	Administr	Built & PCBU	Ongoing
3		Working on or adjacent to a traffic lane	work on/ in/ adjacent to road/ railway/ traffic corridor	Yes	Pos	MS	Med	Traffic control plan in place and implemented	1 Enginee	Built & PCBU	Ongoing
4	Flood Mitigation - Stage B Charles Street	1.5m excavation greater than 1.5m	in/near a shaft/ trench with excavated depth > 1.5m	Yes	VL	HS	High	High Risk construction methodology to be provide and risk workshop undertaken and all safety measures to be implemented	1 Enginee	Built & PCBU	Ongoing
4		Moving plant	working in and around powered mobile plant unauthorise access by the public to designated work area	Yes	VL	HS	High	Plant to be inducted/ operator to hold relevent VOC. Daily checks to be completed. Spotter in place during plant movement. Exclusion zones to be established and managed	Administr	Built & PCBU	Ongoing
4		Working on or adjacent to a traffic lane	work on/ in/ adjacent to road/ railway/ traffic corridor	Yes	VL	HS	High	Traffic control plan in place and implemented	Administr	Built & PCBU	Ongoing
4		Live services - Comms, Sewer, overhead power, Water	on/ near energised electrical installations/ services	Yes	VL	HS	High	Dial before the dig prior to excavations/ mark up any known services/ Use toothless bucket. in the vicinity of services. Engage with local authorities	Administr	Built & PCBU	Ongoing
4		Structural failure - Power Poles	structural alterations/ repairs requiring temporary support to prevent collapse	Yes	VL	HS	High	Exclusions zones, consult with essential energy and obtain zone of influence information for pole stays	1 Enginee	Built & PCBU	Ongoing
4				Yes							
5	Flood Mitigation - Stage C Boundary street to Namoi river	Structural failure - Power Poles - Stay to be supported	structural alterations/ repairs requiring temporary support to prevent collapse	Yes	VL	HS	High	Exclusions zones, consult with essential energy and obtain zone of influence information for pole stays	1 Enginee	Built & PCBU	Ongoing
5		Moving plant	working in and around powered mobile plant	Yes	VL	HS	High	Plant to be inducted/ operator to hold relevent VOC. Daily checks to be completed. Spotter in place during plant movement. Exclusion zones to be established and managed	1 Enginee	Built & PCBU	Ongoing
5		Deep Excavation	risk of person falling > 2m	Yes	VL	HS	High	High Risk construction methodology to be provide and risk workshop undertaken and all safety measures to be implemented	1 Enginee	Built & PCBU	Ongoing
5											
5		Flooding of Immediate residential area	Water ingress into residentail and commercial properties	No	VU	MS	Low	Ensure pumps are onsite and are operational.	1 Enginee	Built & PCBU	Ongoing
5		Personel requiring rescue from river flat (north of levee)	Inadequate emergency response Emergency response efforts are hindered by access restraints	No	Pos	HS	High	Ensure emergency response plan is comprehensive and all workers are familiar. Review ERP and rescue procedures with local health & SES services	Administr	Built & PCBU	Ongoing
5											
6	MW - Civil works	Moving Plant	working in and around powered mobile plant	Yes	Pos	HS	High	Vehicle management plan to be adhered to Traffic control to be managed at george st entrance	Administr	Built	Ongoing
6		Deep Excavation - 1.5m	in/near a shaft/ trench with excavated depth > 1.5m	Yes	Pos	MS	Med	Benching as required at storm water and electrical pits Excavation permit to be completed as required	3 Isolate	PCBU	Closed
6			working in and around powered mobile plant	Yes	Pos	HS	High	Vehicle management plan to be adhered to	1 Enginee	Built & PCBU	Ongoing
6		Falling objects - Trees Removal	where there is a risk of falling objects > 3m	No	Pos	MS	Med	Exclusion zone in work area inclusive of spotter All plant to have FOPs	3 Isolate	Built & PCBU	Closed
6			working in and around powered mobile plant					Vehicle management plan to be adhered to			
6		Unloading materials from trucks	risk of person falling > 2m	No	Pos	HS	High	HSE-131 Vehicle Movement Plan to be review and followed	Administr	Built & PCBU	Ongoing
6			working in and around powere mobile plant								
6		Unsuitable subgrade preperation for Screw piling	machine roll over due to unstable ground conditions	No	VU	HS	med	Certified and level platform bench in conjunction with Geotech advice	1 Enginee	Built & PCBU	Ongoing
6				No							
7	Services Inground infrastructure	Moving plant	working in and around powered mobile plant	Yes	Pos	HS	High				
7		Deep excavation - Sewer connection/pump out pit	in/near a shaft/ trench with excavated depth > 1.5m	Yes	Pos	MS	Med	Road closure for duration of excavation, shoring box, lift study, Geotech advice for crane setup and location, waterfilled barriers around area, ATF fencing exclusion zone perimetre, davit arm safety winch for emergency extraction, HRWS, shoring box design and engineering, qualified installers.	1 Enginee	Built & PCBU	Ongoing
7		Temporary and permanent power connections	on/ near energised electrical installations/ services	Yes	Pos	HS	High	Implementation of HSE -094 by site team and site electrician	Administr	Built & PCBU	Ongoing
7											
8	Substructure works	Moving plant	working in and around powered mobile plant	Yes	Pos	HS	High	Vehicle management plan to be adhered to Traffic control to be managed at george st entrance	Administr	Built & PCBU	Closed
8		Unsuitable subgrade preperation for Screw piling	machine roll over due to unstable ground conditions	No	VU	HS	Med	Certified and level platform bench in conjunction with Geotech advice	1 Enginee	Built & PCBU	Closed
8		Falling objects - Structural steel installation	where there is a risk of falling objects > 3m	Yes	VL	HS	High	Exclusion zone in work area inclusive of spotter All plant to have FOPs	3 Isolate	PCBU	Closed
8			working in and around powered mobile plant					Vehicle management plan to be adhered to			
8											
8											
9	DfMA	Moving plant	Interaction with other plant and also personnel in multiple work faces	Yes	VL	HS	High	Prestarts, Segregation of work areas, exclusion zones, communication via UHF and eye contact.	3 Isolate	Built	Ongoing
9		Falling objects	where there is a risk of falling objects > 3m	Yes	VL	HS	High	Toolbox talks, exclusion zones, perimeter kickboards to floor plates, penetration covers, spotters when	3 Isolate	Built & PCBU	Ongoing
9		fall from heights	risk of person falling > 2m	Yes	Pos	MS	Med	Edge protection with handrails, EWPs, Mobile scaffolds	1 Eliminati	Built & PCBU	Ongoing
9		Panel collapse	involves tilt-up/ precast concrete	Yes	Pos	HS	High	Engineered propping design, engineered slab connections to temporary propping, qualified riggers	1 Enginee	Built & PCBU	Ongoing
9		Unsuitable subgrade preperation for crane establishment	Crane collapse or roll over	Yes	VU	HS	Med	Geotechnical design for crane establishment based on mobile crane point load information, geotechnic	1 Enginee	Built	Ongoing
9		Unsituable structural capacity of slabs for the establishment of scissor lifts	Over sized machine on bondek and CLT slabs	Yes	Pos	MS	Med	Seek engineers advice for slab loadings and approval of equipment to be used	1 Enginee	Built	Ongoing
9		Stretcher stair access to Level 1	Insufficient access for recivory or rescue of injured persons	yes	VU	LS	Low	Install stretcher stair for adequate access	1 Eliminati	Built	Ongoing
9				No							

4. Project Specific Register

REF.	Work Activity, Process or Task <i>(The aspect of the scope of work or process that gives rise to the identified risk)</i>	Hazard <i>(Source of harm)</i>	Risk <i>(Describe the risk in relation to the hazards identified or select a HRCW activity)</i>	HRCW?	Likelihood	Consequence	Risk Level	CONTROL MEASURES <i>(Describe the controls associated with the risks identified)</i>	HIRAC	Responsible Entity	STATUS
10	Covered Outdoor Learning Area	Moving plant	working in and around powered mobile plant	Yes	Pos	LS	Low	Prestarts, Segregation of work areas, exclusion zones, communication via UHF and eye contact.	3 Isolate	Built & PCBU	Ongoing
10		Falling objects	where there is a risk of falling objects > 3m	Yes	Pos	LS	Low	Toolbox talks, exclusion zones, tethered tools	3 Isolate	Built & PCBU	Ongoing
10		fall from heights	risk of person falling > 2m	Yes	Pos	LS	Low	Edge protection with handrails, EWPs, Mobile scaffolds	1 Eliminate	PCBU	Ongoing
10		Column collapse	structural alterations/ repairs requiring temporary support to prevent collapse	Yes	Pos	LS	Low	Engineered design and methodology for propping and qualified riggers during install	4 Engineer	PCBU	Ongoing
10		Unsuitable subgrade preparation for crane establishment	Crane collapse or roll over	Yes	VU	LS	Low	Geotechnical design for crane establishment based on mobile crane point load information, geotechnical testing of subgrade to confirm adequate capacity in crane set up area	4 Engineer	Built & PCBU	Ongoing
11	Footbridges	Moving plant	working in and around powered mobile plant	Yes	Pos	LS	Low	Prestarts, Segregation of work areas, exclusion zones, communication via UHF and eye contact.	3 Isolate	Built & PCBU	Ongoing
11		Drowning	carried out near water/ liquid that involves risk of drowning	No				No works will be conducted when there is water in the channel	1 Eliminate	Built	Ongoing
		Working on or adjacent to a traffic lane	work on/ in/ adjacent to road/ railway/ traffic corridor	Yes	Pos	MS	Med	Vehicle management plan to be implemented and managed Traffic control to be managed at Mitchell and Charles St	4 Engineer	Built & PCBU	Ongoing
		Working in the vicinity of overhead powerlines	on/ near energised electrical installations/ services	Yes	Pos	MS	Med	Notify local energy authority and have qualified spotter in place for duration of install if crane operations are from Mitchell St side of site	3 Isolate	Built & PCBU	Ongoing
11	Internal Fire Rated Cladding to Beams	Falling objects	risk of person falling > 2m	Yes	Pos	MS	Med	Toolbox and have exclusion zones in place. Platform ladders to be used 90deg to live edge	Administrate	Built & PCBU	Ongoing
		manual handling	where there is a risk of falling objects > 3m	Yes	Pos	MS	Med	Ensure there are 4 to 6 men involved when lifting the CLT cladding	Administrate	PCBU	Ongoing
		Lifting equipment	Lifting equipment lifting capacity	No	VU	LS	Low	Ensure lifting equipment has the required rated lifting capacity to lift the CLT cladding	4 Engineer	PCBU	Ongoing
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Built

APPENDIX D - Construction Traffic and Pedestrian Management Sub- Plan

Construction Traffic and Pedestrian Management Sub Plan

Wee Waa High School

Prepared for Built / 27 July 2023

211022 TAAF

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Rev	Date	Prepared By	Approved By	Remarks
0	07.10.22	GC	PY	For review
1	27.10.22	GC	PY	For issue
2	17.11.22	GC	PY	For issue
3	07.02.23	GC	PY	For issue
4	27.02.23	GC	PY	For issue

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Technical Director

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1.0 Introduction

1.1 Overview

TTW has been engaged by Built to provide a Construction Traffic and Pedestrian Management Sub Plan for the construction of a new high school within Wee Waa.

The proposed works involve the construction of a new high school with a capacity of 200 students (up to 300 future expansion) in a two-storey building, an Indigenous learning centre, sporting fields and associated civil and utilities works.

1.2 Conditions of Consent

The project was approved under SSD-21854025. Condition B21 of the development requires the following to be detailed within this Construction Traffic and Pedestrian Management Sub-Plan:

Condition	Reference
B21. 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);	This report has been prepared by qualified traffic engineers as shown on page 4. CVs have been attached to Appendix F of this report.
b) Be prepared in consultation with Council and TfNSW;	A draft version of this plan was provided to Narrabri Shire Council and TfNSW for comment as shown in Appendix G. No comments were received.
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;	Refer to Section 5.2
c) ii) measures to ensure the safety of vehicles and pedestrians accessing adjoining properties where shared vehicle and pedestrian access occurs;	Refer to Section 5.2
c) iii) heavy vehicle routes, access and parking arrangements;	Refer to Section 4.3 for heavy vehicle routes Refer to Section 3.2 for access points Refer to Section 4.7 for parking arrangements

Condition	Reference
<p>c) iv) the swept path of the longest construction vehicle entering and exiting the site in association with the new work, as well as manoeuvrability through the site, in accordance with the latest version of AS2890.2; and</p>	<p>Refer to Appendix C</p>
<p>c) 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); and</p>	<p>Refer to Appendix C</p>
<p>c) vi) include the requirements detailed in conditions B30, B31 and B32.</p>	<p>Refer to the remainder of this table.</p>
<p>B30. Prior to the commencement of construction, evidence of compliance of construction parking and access arrangements with the following requirements must be submitted to the Certifier:</p> <p>a) all vehicles must enter and leave the Site in a forward direction;</p> <p>b) the swept path of the longest construction vehicle entering and exiting the site in association with new work, as well as manoeuvrability through the site, is in accordance with the latest version of AS2890.2; and</p> <p>c) the safety of vehicles and pedestrians accessing adjoining properties, where shared vehicle and pedestrian access occurs, has been addressed.</p>	<p>Refer to the swept path analysis in Appendix D.</p> <p>Safety of vehicles and pedestrians has been addressed in Section 5.2.</p>
<p>B31. A Driver Code of Conduct must be prepared and communicated by the Applicant to heavy vehicle drivers and must address the following:</p> <p>a) minimise the impacts of earthworks and construction on the local and regional road network;</p> <p>b) minimise conflicts with other road users;</p> <p>c) minimise road traffic noise; and</p> <p>d) ensure truck drivers use specified routes</p>	<p>Refer to Appendix D</p>

Condition	Reference
<p>B32. 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 or public parking facilities. The Strategy must include measures to restrict worker parking to the north of Mitchell Street in order to minimise impacts on the operation of the existing Wee Waa Public School and temporary high school's pick-up/drop and bus zones. A copy of the strategy must be provided to the Planning Secretary for information.</p>	<p>Refer to the Construction Worker Transportation Strategy</p>

2.0 Existing Conditions

2.1 Site Location

The site is located centrally within Wee Waa, within Narrabri Local Government Area. The site has a frontage to Mitchell Street along the southern boundary, Charles Street along the western boundary, George Street along the eastern boundary, and residential lots to the north.

The current Wee Waa High School is temporarily co-located with Wee Waa Public School across Mitchell Street to the south.

Currently, the subject site comprises of an undeveloped greenfield site as shown in Figure 2.1.



Figure 2.1: Existing Site

2.2 Road Network

2.2.1 State Roads

Mitchell Street forms a connection between the eastern and western sections of the Kamilaroi Highway as it passes through the suburb of Wee Waa. The road is a two-lane roadway providing service both directions (one lane each). The road is subject to School zones just prior to the intersection with George Street travelling westbound and runs until just after the Church Street Intersection. Due to it serving as an extension of the Kamilaroi Highway, the road experiences steady road train movements and thus harvester and oversize vehicles require access to Mitchell Street. These movements peak during harvest season, but otherwise are relatively evenly spread once every 10-15 minutes during morning peak.

Narrabri Shire Council has recently constructed traffic calming measures adjacent to Dangar Park on Mitchell Street to slow vehicles through this area and increase safety to students.

2.2.2 Local Roads

Cowper Street is a two-lane roadway running parallel south of Mitchell Street and services travel in both directions. Parking is limited immediately adjacent to the school on the north end during school hours to service bus and pick up services. Parking on the southern side is unrestricted 45-degree angled to the flow of traffic.

Church Street is a two-lane roadway running perpendicular to and intersecting both Mitchell Street and Cowper Street to the west of the existing school site and south of the new school site. The roadway services traffic flowing both directions and is divided along the majority of its run by planted median strips. Street parking is available on both sides at 45-degree angles to the flow of traffic south of Cowper Street, or parallel to the kerb north of Cowper Street.

George Street is a two-lane roadway running perpendicular to and intersecting both Mitchell Street and Cowper Street to the East of the existing and proposed site. The roadway services traffic flow in both directions and contains no lane division markings aside from near traffic control measures such as intersections and the school crossing. A student crossing is present, joining the school to the adjacent Dangar Park. Parking is restricted in proximity to the school crossing during morning and afternoon peak school hours but features unrestricted 45-degree angle parking in the direction of traffic flow outside these zones.

Charles Street is a two-lane roadway running perpendicular to and intersecting Mitchell Street to the west of the proposed site. The roadway services traffic flow in both directions and contains no traffic control measures or line markings north of Mitchell Street.

2.3 Active Transport

2.3.1 Walking

A number of the surrounding roads do not contain formal pedestrian footpaths. There are no formal footpaths immediately adjacent to the site.

Narrabri Shire Council have recently completed kerb blistering on Mitchell Street adjacent to Dangar Park which is intended to provide traffic calming and also a shorter crossing distance.

2.3.2 Cycling

Cyclist infrastructure in and around the site area is minimal. Roadways do not contain designated cycling lanes for cyclist use which results in safety concerns, especially along Mitchell Street where high movements of Road Train Vehicles are common.

2.4 Public Transport

Currently there are school bus services to Cowper Street near to the site. There are limited public transport facilities near to the site.

2.5 Pick-up and Drop-off

Currently both the High School and Primary School share the same pick-up and drop-off area as both are located within the same site area. Pick-up and drop-off services form the bulk of travel demands amongst Primary School students (57%) as well as making up a large population of High School students (45%). Surveys amongst Staff indicate that 6% are dropped off and picked up from work as part of their primary mode of transport.



Figure 2.2: Existing Pick Up and Drop Off

2.6 Car Parking

There is no existing car park on the site of the proposed works.

3.0 Construction Overview

3.1 Construction Works

The construction works include:

- Construction of a new high school with a capacity of 200 students (up to 300 future expansion) in a two-storey building;
- An Indigenous learning centre;
- Sporting fields; and
- Associated civil and utilities works.



Figure 3.1: Proposed Site Plan

Source: WD1101 Rev M prepared by SHAC (29/06/22)

3.2 Site Layout and Access

The majority of built works are located adjacent to George Street and Mitchell Street, providing good construction access to the site. It is proposed that two construction site access points are provided, one from George Street and one from Charles Street. As Mitchell Street is a state road, the site provides good construction vehicle access.

Turning path analysis has been conducted for the largest anticipated vehicle accessing the site and is attached to this report in Appendix C.

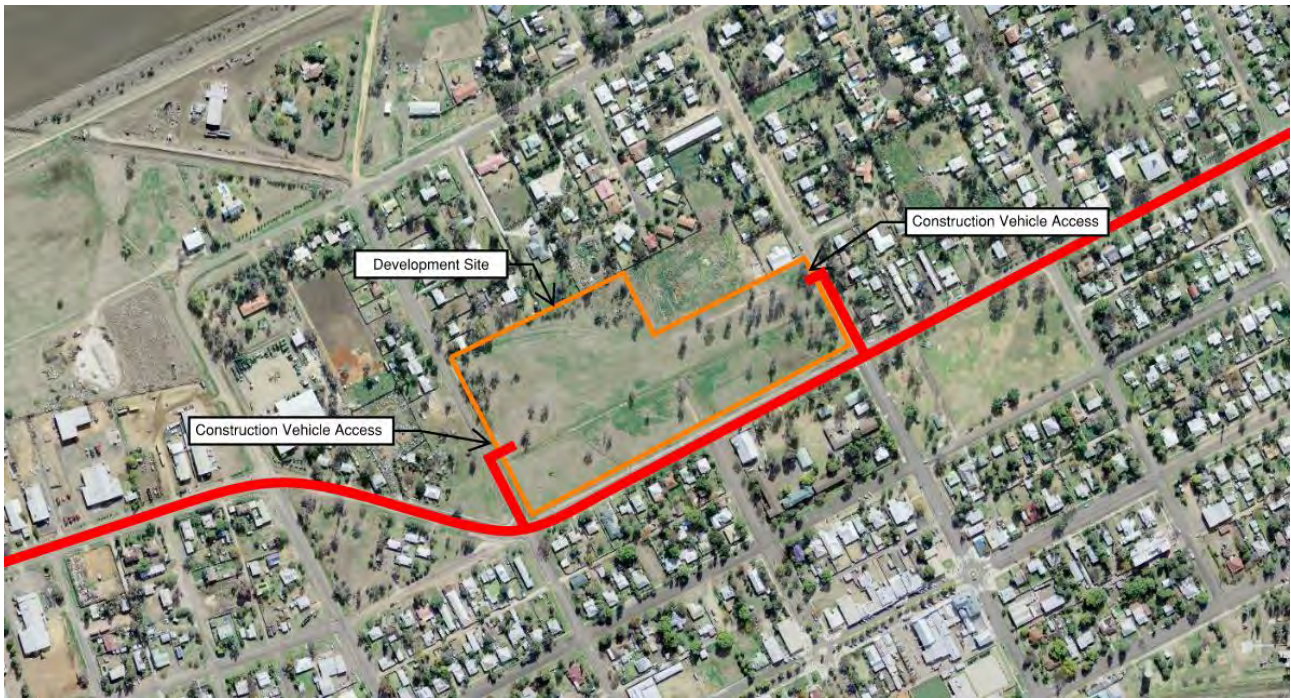


Figure 3.2: Construction Vehicle Routes

3.3 Construction Program, Workforce and Vehicle Numbers

The construction program for the works is as detailed in the table below:

Activities	Schedule (approx.)	Workforce	Vehicle Numbers
Earthworks and In Ground Substructure	Late October 2022 to December 2022	25-30 workers	5-10 vehicles per day
Super Structure	November 2022 to February 2023	30 workers	3-5 vehicles per day
Fit-out and Commissioning	Mid December 2022 to March 2023	40-50 workers	5-10 vehicles per day

3.4 Hours of Operation

The hours of operation for construction activities are conditioned to the following:

- Monday to Friday 7am to 6pm
- Saturday 8am to 1pm
- Sunday and public holidays None

Vehicle movements are to be scheduled outside road network peak periods where possible, other than necessary deliveries.

- It should be noted that no construction deliveries will be made outside of construction hours.

4.0 Construction Traffic Management

4.1 Construction Traffic Volumes

The delivery of material to and from the site will result in some generated traffic activity associated with the works. The estimated construction traffic volumes for the standard operation for the worst-case is 5 – 10 trucks per day. Consequently, increased traffic associated with construction activities will have minor impacts on the existing road network.

Light vehicle traffic generation would be generally associated with construction staff movements to and from the site. Staff would be comprised of project managers, various trades and general construction employees. Over the full period, the peak workforce represents the worst-case scenario for vehicle movements during the morning and the evening road network peak hour. The workforce arrival and departure periods (6:30 – 7am and 6:00 – 6:30pm) represent the peak construction traffic periods. Workers should be encouraged to use alternative transport options (such as carpooling) and be mindful of noise when accessing the site and arriving and leaving the site outside of the construction hours.

4.2 Construction Vehicle Types

The largest truck accessing the site during construction will be a 19m long semi-trailer. Other typical vehicles will include 130T mobile cranes and 12.5m heavy rigid vehicles.

4.3 Vehicle Routes

Construction vehicles shall be directed to travel on the main road network except where required to reach the construction site.

- Approach
 - **From East:** Approach to Charles Street or George Street via Kamilaroi Highway
 - **From West:** Approach to Charles Street or George Street via Kamilaroi Highway
- Departure
 - **To East:** Depart via Charles Street or George Street turn left onto Kamilaroi Highway
 - **To West:** Depart via Charles Street or George Street, turn right onto Kamilaroi Highway

The Kamilaroi Highway provides connection to Narrabri and Walgett. The construction vehicle routes are illustrated in Figure 4.1.



Figure 4.1: Construction Vehicle Routes

4.4 Sensitive Receivers

With the exception of the final approach road (George Street), all roads along the nominated construction access routes are within the classified road network. The classified road network is the nominated road network for high-volume vehicle movements and these areas are therefore already expected to experience heavy vehicle or construction traffic movements. Sensitive receivers along these routes will therefore not be subject to any unexpected impacts.

Sensitive receivers along the state road network may include:

- Wee Waa Public School
- Wee Waa Sporting Complex
- Residential properties fronting George Street

Given the anticipated traffic volumes and the nature of the nominated construction vehicle routes, no unexpected or undue impacts are expected to sensitive receivers subject to compliance with the consent conditions.

4.5 Vehicle Management

During days of high estimated vehicle movements, communication between the site and incoming vehicles will be maintained to stagger the arrival of vehicles, in order for them to be accommodated within the worksite and to minimise traffic disruptions or idling on any public road.

Loading and unloading activities will occur within the site. All deliveries are to be made within the approved construction work hours. Truck movements to and from the site will be scheduled outside peak hours where possible to reduce impacts to the local and state road network.

Construction vehicle access points to the site will be secured by gates to ensure no unauthorised or unsafe access is permitted for vehicles or pedestrians. All construction vehicles are to enter and exit the site in a

forward direction unless in specific exceptional circumstances under the supervision of accredited traffic controller/s.

Non-tonal reversing beepers (or an equivalent mechanism) shall be fitted and used on all construction vehicles and mobile plants regularly used on-site (i.e., greater than one day) and for any out of hours work.

4.6 Works Zones

No on-street Works Zone is proposed to facilitate the works subject to this Construction Traffic and Pedestrian Management Sub Plan. A Section 138 is to be submitted separately for works outside of the school boundary and a separate Traffic

4.7 Contractor Parking

Where possible, it is advised that workers utilise parking within the site. This may be staged as the separate early works and main works scopes are likely to cover separate areas of the site. No contractor parking is to occur within the existing school pick up and drop off zone as per the Construction Worker Transportation Strategy.

During construction the High School is to continue operation from the Primary School site, and pick up/drop off vehicle and bus zones will continue in operation. Parking south of Mitchell Street adjacent to this site should be discouraged.

4.8 Traffic Control Measures

The Traffic Guidance Scheme (TGS) outlines the proposed traffic management to inform road users of changed traffic conditions in the vicinity of the construction site. High-Level concept TGS have been prepared and included in Appendix A.

As shown in the TGS, no impact to the operation of George Street will occur as a result of the works. Drivers must wait until a suitable gap in traffic allows them to enter or exit the site and this will occur under the supervision of accredited traffic controller(s).

5.0 Project Impact

5.1 Local Traffic

Local traffic patterns during construction are expected to remain consistent with the existing conditions. All public roads will remain in operation at full capacity. Traffic impacts from the construction works are expected to be limited to the volume of construction vehicles only, with minimal contractor traffic. As previously discussed, truck movements to and from the site will be scheduled outside the network peak hours where possible which will reduce impacts to the surrounding road network. All deliveries and construction works are to take place within the site, with no impact to passing traffic.

Intersection modelling undertaken as part of the SSSDA process indicated that the surrounding intersections were operating at a good Level of Service A. As such it is anticipated that construction vehicles will have a minimal impact to surrounding intersection performance.

If, upon arrival, a vehicle cannot be accommodated within the site, vehicles are not to queue on the roadway. In this instance, vehicles may be turned away and rescheduled if there is no suitable waiting area within the construction site. If recirculating to the site, vehicles shall only park legally in designated parking zones and in accordance with any relevant road rules, and only for as long as necessary. Vehicles are not to wait on public roads and deliveries must be scheduled accordingly.

The pick-up and drop-off zone on Cowper Street will not be impacted by the construction works, as construction vehicle movements will not travel on Cowper Street.

5.2 Safety

5.2.1 Construction Vehicle Access Points

The access driveway to the site is along George Street and Charles Street which links pedestrians living north of Mitchell Street with the current existing High School and Primary School site. This will likely create some level of potential conflict between construction vehicle movements and pedestrian movements, particularly during the peak before and after school periods. Traffic control will be in place at the entry driveways into the site which will allow for safe movement of pedestrians along George Street and Charles Street.

5.2.2 Construction Vehicle Routes and Intersections

Access to the site will be via George Street and Charles Street. As Mitchell Street is a state road and therefore the primary access point to Wee Waa, routes will involve a single turn at the George Street - Mitchell Street or Charles Street – Mitchell Street unsignalised intersections.

5.2.3 Pedestrians

During school peak hours, significant pedestrian activity is expected near the primary school site as students and staff arrive and depart. While deliveries will occur within school hours, there will be no parking adjacent or opposite the existing temporary school to ensure pedestrian safety. Manoeuvres into and out of the construction site will occur under traffic control to ensure safety of pedestrians on George Street and Charles Street.

Pedestrians will be prohibited from entering or passing through the site during construction, enforced by fencing around the perimeter. Signage will be fitted to communicate to students and staff the site location. Any changes to external pedestrian routes will also be communicated with signage and detours clearly marked.

5.2.4 Cyclists

Signage will be installed on approach to warn both drivers and cyclists of the changed traffic conditions ahead. This is important for construction vehicle drivers and workers who are often unfamiliar with local traffic conditions and need to be prepared for the presence of cyclists.

It should be noted that due to the age of students, it is likely that changes to pedestrian infrastructure are more likely to impact student cyclists than changed road conditions and should therefore be accounted for during pedestrian rerouting.

5.3 Parking

It is expected that some impacts to on street parking will occur as a result of the works due to construction workers parking on the street. It is noted that there is ample unrestricted on street parking near to the site and particularly at the site's frontage that will reduce impact to adjoining neighbours.

5.4 Pedestrians and Cyclists

The construction works will have no impact on pedestrian or cyclist movements externally, other than the construction driveway crossovers which will be fully traffic controlled during all construction hours.

5.5 Public Transport

There will be no change to the existing bus services due to construction works.

5.6 Public Infrastructure

On infrequent occasions when particularly large vehicles are required to access the site, some mounting or crossing of public kerbs and medians may be necessary. In line with the consent conditions, the builder shall repair any damage to this infrastructure if large vehicles are required to mount the devices. Any other road markings damaged as a result of vehicles associated with the construction shall be repaired as a responsibility of the builder.

5.7 Emergency Services

The proposed traffic control arrangements do not propose the closure of any local roads. Any emergency vehicles requiring access to the site will do so via the available site access points. Emergency services access to the construction site will be facilitated as required in the event of an emergency.

5.8 Cumulative Local Impact

There are no publicly available planned construction works in the vicinity of the site at this time during the delivery timeframes set for the construction of this project. Should construction works commence near the site, the site manager shall be responsible for liaising with the site manager of the nearby site. In particular, communication across sites should ensure:

- Overall project programs are to be identified and shared
- High-volume days or periods (such as concrete pours) are to be communicated, and where possible are to be coordinated to avoid excessive impact to the road network and commenced so as to complete works within the permitted construction hours
- Oversize / overmass delivery days are to be communicated, and where possible are to be coordinated to avoid excessive impact to the road network
- Traffic control measures (including Traffic Control Plans / Traffic Guidance Schemes) are to be shared if

these may be relevant to construction vehicle routes for surrounding projects

5.9 Communicating Impacts

Community notification shall be undertaken as per the Community Communication Strategy required for the site under condition B16. Community consultation is anticipated to occur through ongoing face to face meetings, communications collateral and digital engagement methods.

6.0 Hazards and Risks

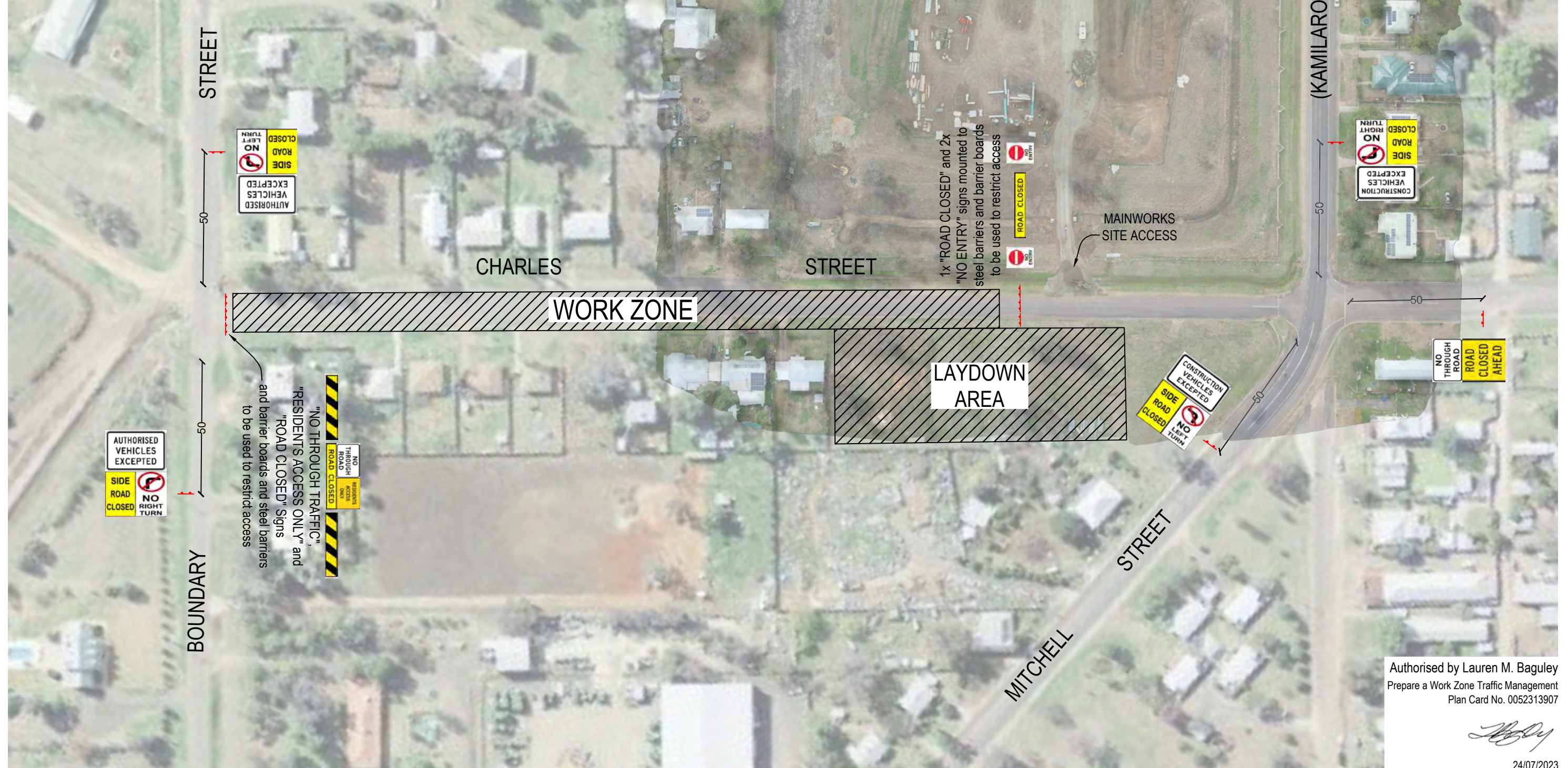
Hazard / Risk	Mitigation Measure
<p>Construction traffic interacting with school traffic</p> <p>Construction traffic and local traffic activity will occur across Mitchell Street.</p>	<p>Traffic controller to be implemented at the George Street and Charles Street entry points to manage construction traffic activity. Construction traffic and local traffic starts at 7am and construction traffic will continue to occur during permitted construction hours.</p>
<p>General traffic / construction vehicle interaction</p> <p>General public traffic would share the local roads with construction vehicles.</p>	<p>Temporary signage and a communications plan are recommended to advise about changes in the area. This will be in accordance with the Community Communication Strategy and Traffic Guidance Schemes.</p> <p>Traffic guidance schemes have been prepared which include advance warning signage showing that construction vehicles are active in the area.</p>
<p>Pedestrian activity near construction site</p> <p>The construction site is near to the existing schools and the access point is located on a pedestrian desire line on George Street.</p>	<p>All pedestrian desire lines adjacent to the site will be fully separated from the construction site by site fencing. Traffic movements into and out of the George Street and Charles Street access points are to provide full priority to pedestrian movements.</p>

Appendix A

Traffic Guidance Scheme

Notes:

1. The speed limit in this area is 50km/h.
2. This Traffic Control Plan is intended for long term use on a project which will have an approximate duration of 12 weeks.
3. Charles Street from immediately north of the site access will be barricaded for the duration of the project to prevent any traffic from entering the work zone via this end.
4. Residents will be given one weeks' notice prior to any work commencing.
5. During working hours, residents will be escorted through the workzone for access and egress of their properties, from the North (Boundary Street) end only.
6. Outside of working hours, the road will be left in a state sufficient to allow residents to bypass the road closure for access and egress of their properties wherever possible. Arrangements to be made with individual residents when this cannot be achieved.
7. The laydown area will be fenced off to prevent public access.



Authorised by Lauren M. Baguley
 Prepare a Work Zone Traffic Management
 Plan Card No. 0052313907

24/07/2023

Traffic Control Plan
 for Charles Street Roadworks
 Stage B Flood Mitigation Work (Stage 2)
 WTC-J155-TCPLAN-04-220921[1] 1 : 1,500 @ A3

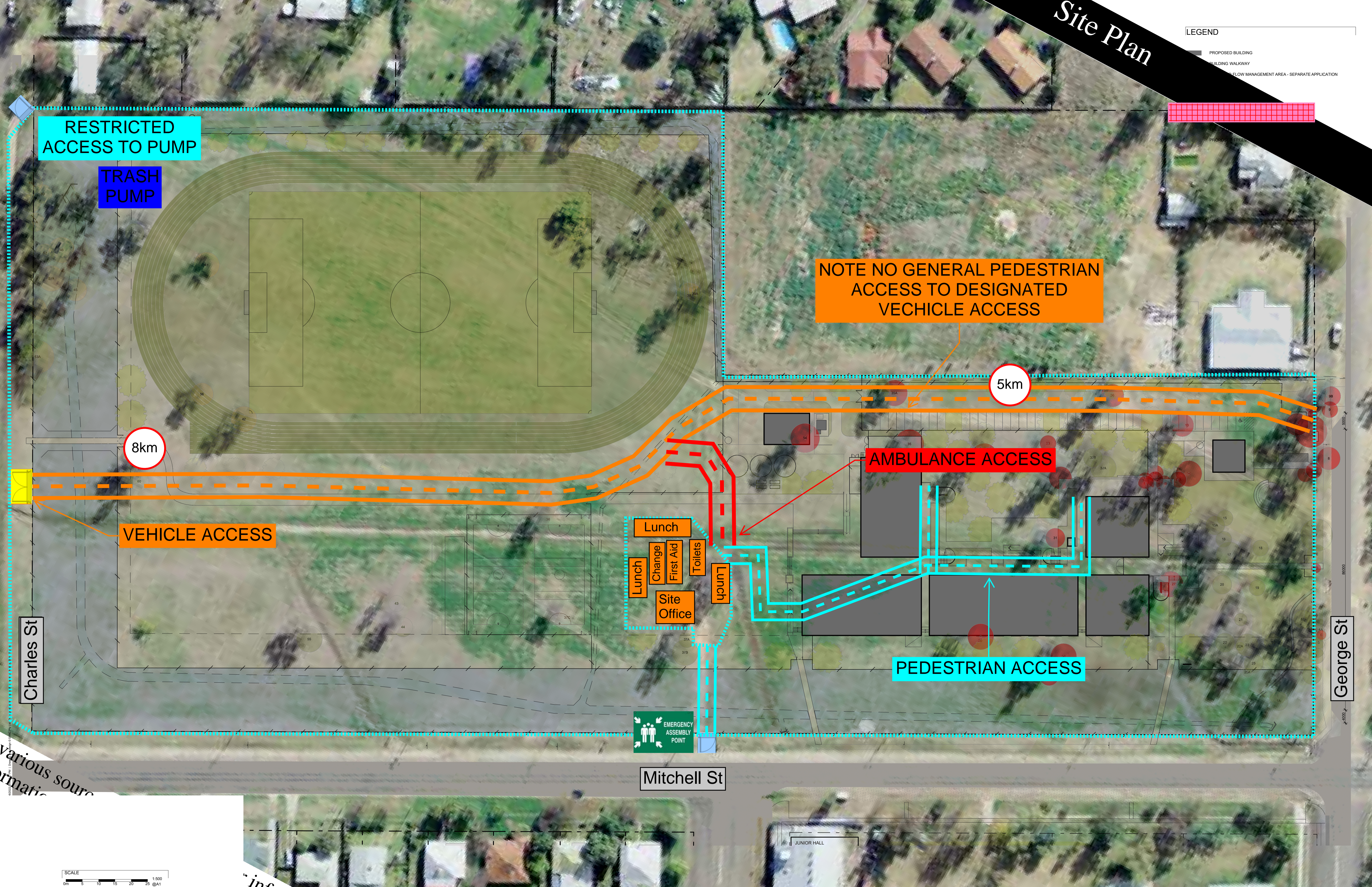
WTC GROUP AUST PTY LTD ABN: 12 645 330 454
 P (02) 6792 5157
 E admin@wtcgroup.com.au
 A 147 Yarrie Lake Road Narrabri NSW 2390
 W www.wtcgroup.com.au

Wee Waa High School Project
 Main Contractor : **Built.**

Rev.	Date	Revision Type	Dr. By	Ch. By
1	24/07/2023	Mainworks site access added	LB	CJ
0	21/09/2022	Original Issue	LB	CJ

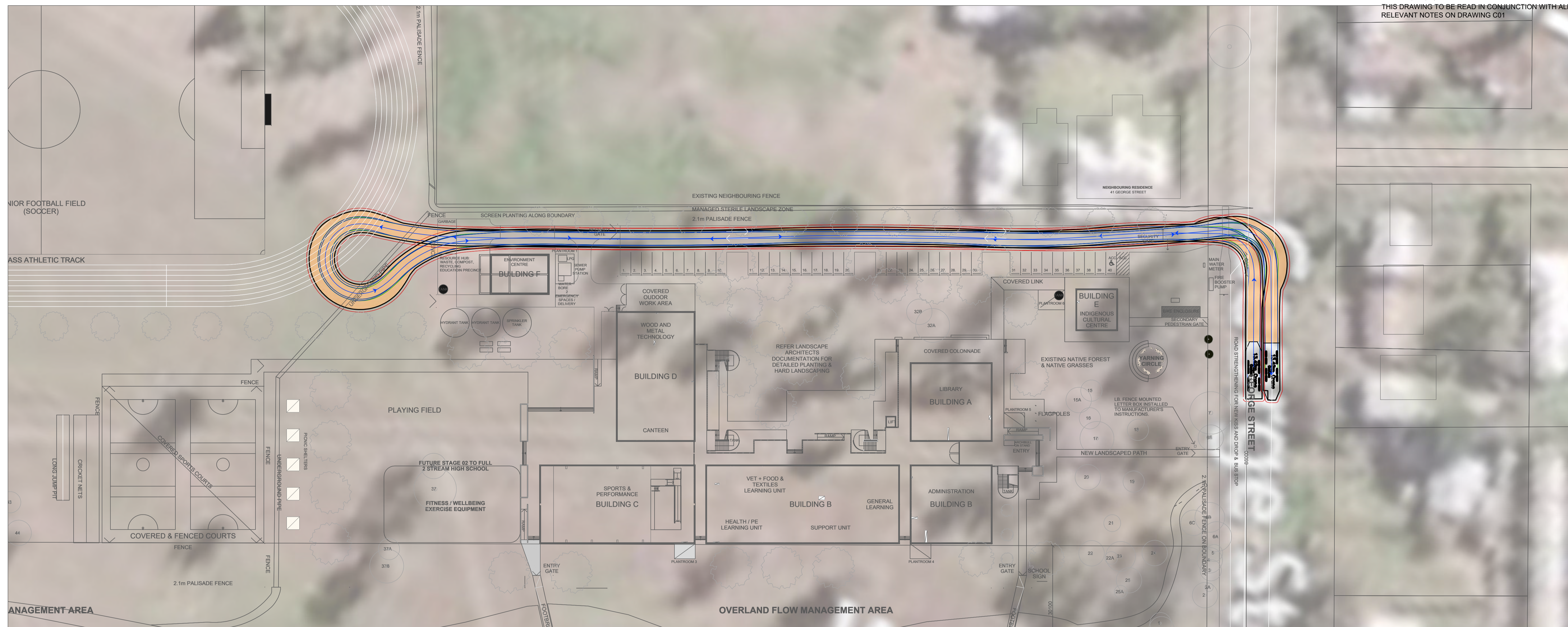
Appendix B

Site Layout

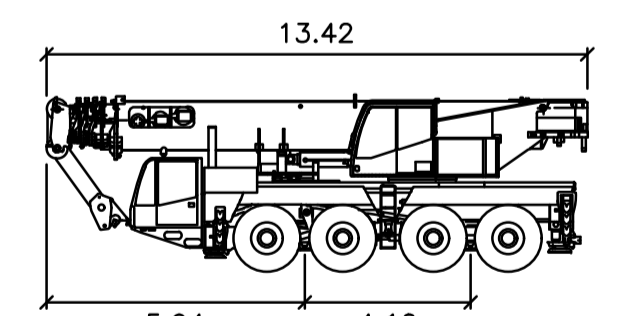
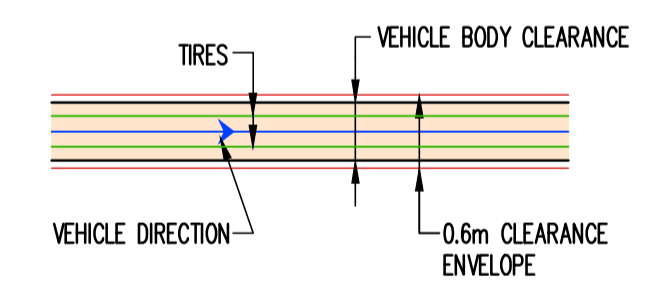


Appendix C

Swept Path Analysis



SWEPT PATH LEGEND:



13.42m Crane
 meters
 Width : 3.83
 Track : 3.00
 Lock to Lock Time : 6.0
 Steering Angle : 14.4

VEHICLE PROFILE
 13.4m CRANE

PRELIMINARY
 NOT TO BE USED
 FOR CONSTRUCTION

Reference: SK17.dwg - USER: iohm - Plot File Created: Sep 29, 2022 - 1:50pm

A1 0 1 2 3 4 5 6 7 8 9 10

Rev	Description	Eng	Draft	Date	Rev	Description	Eng	Draft	Date	Rev	Description	Eng	Draft	Date
P2	PRELIMINARY	GC	LW	30.09.22										
P1	PRELIMINARY	GC	GC	22.08.22										

Architect
SHAC
 24 Maitland Road
 Islington NSW 2296

TTW Taylor Thomson Whitting
 612 9439 7288 | 48 Chandos Street St Leonards NSW 2065
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Project
WEE WAA HIGH SCHOOL

Sheet Subject
**SWEPT PATH ANALYSIS
 13.4m CRANE**

Scale : A1 1:500	Drawn GC	Authorised PY
Job No 211022	Drawing No SKT17	Revision P2
Plot File Created: Sep 29, 2022 - 1:50pm		

Appendix D

Driver Code of Conduct

Safe Driving Policy for Wee Waa High School

Objectives of the Drivers Code of Conduct

- To minimise the impact of earthworks and construction on the local and regional road network;
- Minimise conflict with other road users;
- Minimise road traffic noise; and
- Ensure truck drivers use specified routes

To minimise the impact of earthworks and construction on the local and regional road network

- Always obey all applicable road rules and laws
- Drivers to obey road speed limit and reduce the speed while approaching nearby intersections (e.g. Mitchell Street/George Street). Heavy breaks can damage the roads
- Drivers should stay away from the surrounding local and narrow roads

Minimise conflict with other road users

- Drivers should be mindful of pedestrians and cyclists walking/cycling along Mitchell Street and George Street.
- Drivers should not obstruct access to any public roads, site entry, or pedestrian footpath
- Drivers should not park on either side of George Street. All heavy construction vehicles should be parked within the site
- Drivers should check their left and right twice while entering/exiting the site to ensure the safety of pedestrians, cyclists and vehicles on George Street is maintained
- Truck drivers must wait until a suitable gap in traffic allows them to assist trucks. The Roads Act does not give any special treatment to trucks leaving a construction site, the vehicles already on the road have the right-of-way.
- Drivers should obey the traffic controllers guide while accessing/egressing the site
- Drivers should be aware of the site's surrounding conditions including speed limits, other traffic controls and pedestrian routes. This can be done in the site induction
- Drivers should be aware of the restricted time for construction vehicle movements for the student's safety. The construction heavy vehicle movement is to be restricted between 8am to 9:30am and 2:30pm to 4pm on school days.

Minimise road traffic noise

- Drivers should reduce vehicle speed to reduce instances and severity of compression breaking
- No excessive or unnecessary use of horns, in particular outside of approved working hours
- Drivers should reduce speed when approaching speed humps or raised zebra crossings

Ensure truck drivers use specified routes

- Drivers should follow approved truck routes and they should stay away from narrow local roads as much as possible
Copy of approved truck routes should be distributed to the truck drivers prior to travel to/from the site and drivers should follow these routes only

Appendix E

Curriculum Vitae



Paul Yannoulatos

Technical Director

BE(Hons) Grad Dip LGE CPEng

paul.yannoulatos@ttw.com.au

Experience

1996 – Current
Technical Director, TTW

1989 – 1996
Executive Engineer - Chief Engineer,
Botany Bay Council

1980 – 1989
Snr Design Engineer, Waverley
Municipal Council

1979 – 1980
Surveying Engineer, Denny Linker &
Co

1978 – 1979
Engineer Surveyor, Panos
Constructions Pty Ltd

Technical Director of Civil and Traffic Engineering at TTW, Paul Yannoulatos has a fervent approach to every project. His work is informed by his experience as a surveyor in local government before he transitioned to engineering in 1980. With 20 years at TTW, Paul's dedication has grown the TTW Civil and Traffic division to be a major player in NSW.

His expertise extends across a folio of sectors including industrial, commercial, education, government projects, expert witness, healthcare, public buildings, parks, residential, subdivisions, traffic and transportation.

Paul has outstanding long-term relationships with both the private and government sectors and has a collaborative approach to ensure that clients receive the target civil and traffic solution.

Accommodation

UNSW – Kensington and Coogee
Colleges, Student Accommodation

Education

USyd Faculty of Law
USyd Camperdown Public Domain
CSU Wagga Campus Civil and Traffic
CSU National Life Sciences Hub
CSU Port Macquarie
USyd Darlington Public Domain
USyd Nanoscience
USyd St Paul's College
Kurrabee School
Trinity Grammar School
Ravenswood School for Girls, Gordon
Rouse Hill School
Glenbrook Primary School
Emanuel School
Charles Sturt University Master
Planning
UNSW Bioscience Renewal
UNSW – Scientia (Great Hall), Dalton
Upgrade

Civil

Accessways + Car Parks

Macquarie University
Science and Humanities Campus,
Canberra

Traffic and Transport

Transportation Study – Westmead Hospital
Master Plan
Sydney Airport Ground Transport
Interchange and Hotel
Wagga Wagga Transportation and Traffic
Study
North Sydney CBD Access Study
Redfern Traffic Management Scheme
Ryde Traffic Management Study
Liverpool CBD – 40km/hr study
Camden Town Centre

Traffic and Transport (Con't)

St Vincent's Research and Biotechnology
Precinct
Kings Avenue Bridge, Canberra
Canada Bay Residential Parking Scheme
Balfour Park
Woolwich Function Centre
La Perouse – Loop road and park improvements
Ravenswood School for Girls
TfNSW – Commuter Car Parks - Blacktown,
St Marys, Warwick Farm, Seven Hills, Granville

Sports + Leisure

Sydney Grammar Prep School, multi-
purpose sports court
Abbotsleigh School - multi-purpose sports
hall and hockey fields



Grace Carpp

Associate

BE(Hons) Road Safety Auditor (Level 1)

grace.carpp@ttw.com.au

Experience

Current - 2021
Associate

2019 – 2021
Senior Traffic and Civil Engineer, TTW

2015 – 2019
Traffic and Civil Engineer, TTW

Traffic Impact Assessments

Arts & Culture

Australian Museum Master Plan
Museum of Applied Arts and Sciences
Mosman Civic Centre

Hospitals & Health

Hornsby Ku-ring-gai Hospital
Redevelopment
Goulburn Hospital and Health Services
Redevelopment
Bulli Aged Care Centre of Excellence

Universities & Schools

UOW Molecular Life Sciences Building
Master Plan
UOW Arts and Social Sciences Building
UNSW Electrical Engineering Building
Capital Renewal and Modernisation
Project
UNSW Sciences and Engineering
Building
UNSW Mulwaree Avenue Student
Housing
Shore Physical Education Centre

Commercial

Rosenthal Avenue Carpark
Redevelopment

Aged Care

Schofields Age Exclusive Village
Uniting Coombah Epping Village

Road Safety Audits

Concept Design

Jannali Train Station
Merrylands Commuter Carpark
Edgecliff Station Transport Assess
Program

Detailed Design

Ashfield Commuter Carpark
Mitchell Street Plaza

Pre-Opening

Ashfield Commuter Carpark
Penrith Commuter Carpark
Jannali Train Station

Construction Traffic Management Plans

Site 12A and 12B Green Square
Opal Fernleigh

Appendix F

Consultation with Council and TfNSW

Paul Nelson

From: Paul Nelson
Sent: Monday, 7 November 2022 10:38 PM
To: 'council@narrabri.nsw.gov.au'
Cc: Rebecca Deegan; Britney Pereira; 'michelleh@narrabri.nsw.gov.au'; 'Grace Carpp'
Subject: RE: SSD 21854025 Wee Waa High School Conditions B21, B30, B31 & B32

Hi NSC,

Just checking in to see if there were any comments on the below submission.

We had requested feed back for Friday (noting I incorrectly put the date as today).

If we don't hear back on this correspondence, we will proceed based on no comments.

Regards,
Paul

From: Paul Nelson
Sent: Monday, 31 October 2022 2:06 PM
To: council@narrabri.nsw.gov.au
Cc: Rebecca Deegan <rebeccadeegan@built.com.au>; Britney Pereira <britneypereira@built.com.au>; michelleh@narrabri.nsw.gov.au; 'Grace Carpp' <grace.carpp@ttw.com.au>
Subject: SSD 21854025 Wee Waa High School Conditions B21, B30, B31 & B32

Dear Narrabri Shire Council,

RE: Wee Waa High School – SSD 21854025

We submitted the attached Construction Traffic & Pedestrian Management Plan for NSC review & consultation in the development of this report for the above project.

If you have any comments, can you please advise by 12:30pm on Friday 7th November 2022.

We welcome any feedback and happy discuss further prior to this date for any reason council may deem necessary.

Kind Regards,

Paul Nelson

From: Paul Nelson
Sent: Wednesday, 16 November 2022 10:53 PM
To: development.west@transport.nsw.gov.au
Cc: Rebecca Deegan; Britney Pereira
Subject: RE: Wee Waa High School - CTPMP

Hello,

Please be advised that we are yet to receive any commentary back from the TfNSW department and will proceed based on the information provided in the subsequent CTPMP.

Thank you for your involvement in this project.

Regards,
Paul Nelson
0438 574 752

From: Paul Nelson
Sent: Friday, 11 November 2022 2:55 PM
To: development.west@transport.nsw.gov.au
Cc: Rebecca Deegan <rebeccadeegan@built.com.au>; Britney Pereira <britneypereira@built.com.au>
Subject: Wee Waa High School - CTPMP

Hi Howard,

Please find attached Construction Traffic and Pedestrian Management Plan for the Wee Waa High School. This document addresses conditions B21, B30, B31 & B32 of the SSD21854025.

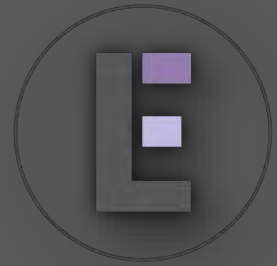
If you or your team could please provide a review or any comments for this document by 16th November or earlier, that would be greatly appreciated.

Thank you for your time and we welcome all comments relevant to the project.

Regards,
Paul

Built

APPENDIX E - Construction Noise and Vibration Management Sub- Plan



Wee Waa High School (SSD 21854025)

Construction Noise and Vibration Management Sub-Plan

Project No.	P00145
Revision	003
Issued	01 November 2022
Client	Built

E-LAB Consulting

Where science and engineering inspire design.

Document QA and Revisions

ISSUE	DATE	COMMENTS	ENGINEER	REVIEWER
1	06/09/2022	For Review	Kanin Mungkarndee	Tom Candalepas
2	18/10/2022	For SSDA	Kanin Mungkarndee	Tom Candalepas
3	01/11/2022	For SSDA	Kanin Mungkarndee	Tom Candalepas
4				
5				

Confidentiality:

This document contains commercial information which has been prepared exclusively for the use by The Principal. The document in its entirety is confidential. No information contained in this document may be released in part or whole to any third party without the approval of the Author or The Principal.

Authorised by:

E-LAB Consulting



Tom Candalepas | Technical Director
BEng, CPEng, NER, MIEAust, MAAS, RPEQ

Acoustics & Vibration



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1 INTRODUCTION

This Noise and Vibration Management Sub-Plan (CNVMSP) has been prepared by E-LAB Consulting (E-LAB) to accompany a State Significant Development Application (SSDA) for Wee Waa High School.

This CNVMSP provides:

- Criteria for the noise and vibration generated during development of Wee Waa High School
- A quantitative assessment of the airborne and ground-borne noise generated by the work for the proposed development and its impact on nearby receivers
- Strategies to mitigate the noise and vibration generated during the construction works phases
- Complaints handling and community liaison procedures

This assessment discusses the predicted impact of the construction noise and vibration generated by the construction equipment on the nearest most-affected receivers.

This report has been prepared with the following references:

- SSDA Conditions of Consent
- Interim Construction Noise Guideline, NSW DECC, 2009 (ICNG)
- Construction Noise and Vibration Strategy, Transport for NSW, 2018 (TfNSW CNS)
- Noise Policy for Industry, NSW EPA, 2017 (NPI)
- Assessing Vibration: A Technical Guideline, NSW DEC, 2006 (AVTG)
- AS 2436:2010 Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites (AS2436)
- British Standard BS 5228: Part 1:1997 Noise and Vibration Control on Construction and Open Sites (BS5228)
- British Standard BS 7358:1993 Evaluation and Measurement for Vibration in Buildings – Part 2: Guide to Damage Levels from Ground-borne Vibration (BS7358)
- German Standard DIN 4150-Part 3 Structural vibration in buildings – Effects on structures

The predicted noise levels are based on the proposed construction program and equipment lists provided in this report.



2 SSSA CONDITION

This report has been prepared in response to the requirements contained within the Wee Waa SSSA Conditions of Consent. Table 1 below summarises the SSSA requirements and outlines the appropriate mitigation measures and the corresponding section within this report where the mitigation has been considered.

Table 1: SSSA requirements and report section reference

ITEM	DESCRIPTION OF REQUIREMENT	SECTION REFERENCE (THIS REPORT)
B22	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	Tom Candalepas is a Technical Director of E-LAB and an experienced noise expert. Tom's relevant NSW qualifications include, BEng (Mechanical), CPEng, NER, MIEAust and is a member of the AAS. Refer to Appendix B for Tom's CV.
	(b) describe procedures for achieving the noise management levels in EPA's Interim Construction Noise Guideline (DECC, 2009);	Refer to Section 7.1 and 7.2
	(c) describe the measures to be implemented to manage high noise generating works such as piling, in close proximity to sensitive receivers;	Refer to Section 7.1 and 7.2
	(d) include strategies that have been developed with the community for managing high noise generating works;	Refer to Section 7.2.3
	(e) describe the community consultation undertaken to develop the strategies in condition B22(c)(d);	Refer to Section 7.2.3
	(f) include a complaints management system that would be implemented for the duration of the construction	Refer to Section 7.2.4
	(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 B19	Refer to Section 7.3.4
	(h) include a noise validation assessment that considers all equipment to be used and all mitigation measures to be implemented at the site. If predicted construction noise levels still exceed the calculated noise management levels, then further feasible and reasonable work practices and/or mitigation measure that should be applied to minimise noise levels.	Refer to Section 6 and 7

3 PROJECT DESCRIPTION

The proposed development involves the construction of a new high school with a capacity of up to approximately 200 students in a series of two-storey buildings, an Indigenous learning centre, sporting fields and associated civil and utilities works, with future capacity for 300 students subject to funding & service need.

As a summary, the development consists of:

- Two-stream high School catering for 200 students with the capacity to grow to 300 students subject to funding & service need.
- Two-storey built forms, fully accessible and equitable, including:
 - General Learning spaces & Learning Support Unit
 - Specialist spaces, including Art, Science, TAS, Hospitality, Performance
 - Indigenous Cultural Centre
 - Associated civil & utilities works
 - Sporting Fields, & Outdoor Sports Courts
 - 40 Carparking spaces, Bus Bays, Kiss & Drop
 - Wayfinding & Signage
 - Fencing and Security

The boundaries of the overall site are presented in Figure 1 below as a dashed red line.



4 SITE NOISE INVESTIGATIONS

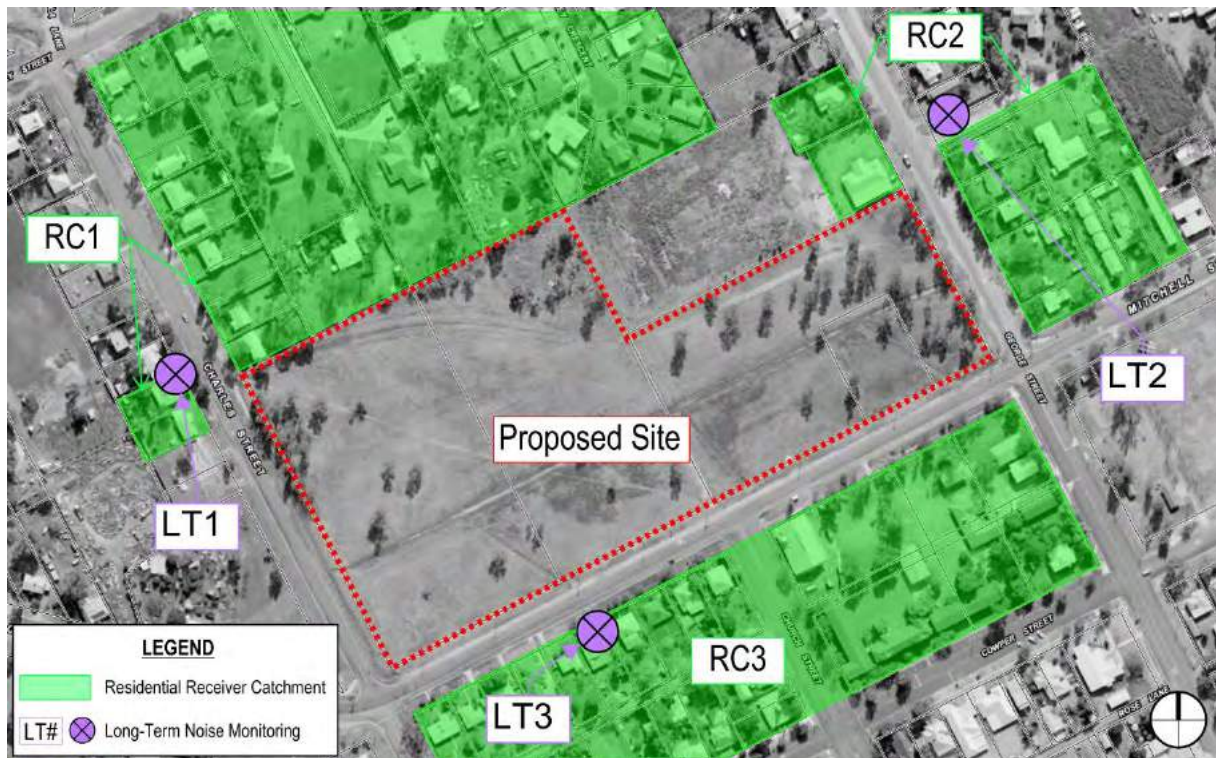
4.1 IMPLEMENTATION OF PREVIOUS NOISE MONITORING

Long-term background and ambient noise monitoring for the development have been conducted and are presented within Day Design’s *Acoustic Assessment Report* (with report no. 7284-1.1R Rev B, dated 5 November 2021, which was prepared to accompany the SSDA.

4.2 LOCATIONS

The site location, measurement positions (conducted by Day Design) and surrounding noise and vibration sensitive receivers are shown in Figure 1

Figure 1: Overview of the site, surrounding noise-sensitive receivers and measurement locations conducted by Day Design



4.3 LONG-TERM (UNATTENDED) NOISE SURVEYS

4.3.1 Background Noise

Long-term noise monitoring was conducted by Day Design (locations presented in Figure 1). Background noise levels and subsequent Rating Background Noise Level (RBL) have been established in accordance with the Noise Policy for Industry 2017.

The description of time of day is outlined within the Noise Policy for Industry and described as follows:

- Day – the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays
- Evening – the period from 6pm to 10pm
- Night – the remaining periods

Table 2: Unattended noise monitoring results (conducted by Day Design)

LOCATION	MEASURED RATING BACKGROUND NOISE LEVELS - dB(A)
LT1	39
LT2	39
LT3	40



5 PROJECT NOISE AND VIBRATION CRITERIA

5.1 CONSTRUCTION NOISE CRITERIA

5.1.1 Interim Construction Noise Guideline (ICNG)

In the absence of construction noise management levels at surrounding noise-sensitive receivers from council's DCS, the noise management levels outlined within the ICNG has been adopted for the assessment of noise emissions from the construction of the proposed redevelopment to use as a guideline for council.

Airborne Noise – Residential Receiver Catchments

The airborne noise criteria for surrounding residential receiver catchments (RC1, RC2 and RC3) have been extracted from Table 2 in the ICNG and is presented in Table 3 below.

Table 3: NSW ICNG construction noise criteria for surrounding residential receiver catchments (RC1, RC2 and RC3)

TIME OF DAY	MANAGEMENT LEVEL $L_{Aeq,15min}^1$	HOW TO APPLY
Recommended Standard Hours: Monday – Friday 7am – 6pm	Noise Affected RBL + 10dB	<p>The noise-affected level represents the point above which there may be some community reaction to noise.</p> <ul style="list-style-type: none"> ▪ Where the predicted or measured $L_{Aeq,15min}$ 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 residences of the nature of works to be carried out, the expected noise levels and duration as well as contact details.
Saturday 8am – 1pm No work on Sundays or public holidays	Highly Noise Affected 75 dB(A)	<p>The highly noise affected level represents the point above which there may be strong community reaction to noise.</p> <ul style="list-style-type: none"> ▪ 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 in, taking into account: <ul style="list-style-type: none"> – 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) – If the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.

TIME OF DAY	MANAGEMENT LEVEL $L_{Aeq,15min}^1$	HOW TO APPLY
Outside Recommended Standard Hours	Noise Affected RBL + 5dB	<ul style="list-style-type: none"> ▪ 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(A) above the noise affected level, the proponent should negotiate with the community. ▪ For guidance on negotiating agreements see section 7.2.2. of the ICNG.

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 30m of the residence. Noise levels may be higher at upper floors of the noise affected residence.

Ground-borne Noise – Residential Receiver Catchments

Ground-borne noise is noise generated by vibration transmitted through the ground into a structure, such as an excavator with a hydraulic hammer attachment, or impact/bore piling. The following ground-borne noise levels for residences have been extracted from Section 4.2 of the ICNG and indicate when management actions should be implemented.

- Evening (6pm to 10pm) – Internal Noise Level: $L_{Aeq,15min}$ 40 dB(A); and
- Night-time (10pm to 7am) – Internal Noise Level: $L_{Aeq,15min}$ 35 dB(A).

An assessment of ground-borne noise to these levels is only required when the ground-borne noise levels are higher than airborne noise levels, and for surrounding residential receiver catchments. The ground-borne noise levels are for evening and night-time periods only. The levels shall be assessed at the centre of the most affected habitable room.

5.2 CONSTRUCTION VIBRATION CRITERIA

It is important for vibration emissions from vibration-intensive equipment utilised during the works be managed to maintain appropriate levels of human comfort, and to avoid both cosmetic and structural damage. The vibration limits proposed in the ensuing sub-sections aid in achieving this outcome.

5.2.1 Human Comfort

The office of Environment and Heritage (OEH) developed a document, “Assessing vibration: A technical guideline” in February 2006 to assist in preventing people from exposure to excessive vibration levels from construction and operation of a development within buildings. The guideline does not however address vibration induced damage to structures or structure-borne noise effects. Vibration and its associated effects are usually classified as continuous, impulsive or intermittent.

Continuous and Impulsive Vibration

Structural vibration in buildings can be detected by occupants and can affect them in many ways including reducing their quality of life and also their working efficiency. Complaint levels from occupants of buildings subject to vibration depend upon their use of the building and the time of the day.

Maximum allowable magnitudes of building vibration with respect to human response are shown in Table 4. It should be noted that the human comfort for vibration is more stringent than the building damage criteria.

Table 4: Preferred and maximum weighted RMS values for continuous and impulsive vibration acceleration (m/s²) 1-80 Hz

LOCATION	ASSESSMENT PERIOD ¹	PREFERRED VALUES		MAXIMUM VALUES	
		z-axis	x- and y-axes	z-axis	x- and y-axes
Continuous vibration					
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
Impulsive vibration					
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

Note 1: Daytime is 7:00am to 10:00pm and night time is 10:00pm to 7:00am

Intermittent Vibration Criteria

Disturbance caused by vibration will depend on its duration and its magnitude. This methodology of assessing intermittent vibration levels involves the calculation of a parameter called the Vibration Dose Value (VDV) which is used to evaluate the cumulative effects of intermittent vibration. Various studies support the fact that VDV assessment methods are far more accurate in assessing the level of disturbance than methods which is only based on the vibration magnitude.

Table 5: Acceptable vibration dose values for intermittent vibration ($m/s^{1.75}$)

LOCATION	DAYTIME ¹		NIGHT-TIME ¹	
	PREFERRED VALUE	MAXIMUM VALUE	PREFERRED VALUE	MAXIMUM VALUE
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

Note 1: Daytime is 7:00am to 10:00pm and night time is 10:00pm to 7:00am

5.2.2 Cosmetic Damage

Structural vibration thresholds are set to minimize the risk of cosmetic surface cracks and lie below the levels that have the potential to cause damage to the main structure. Table 6 presents guide values for building vibration, based on the vibration thresholds above which cosmetic damage has been demonstrated outlined within BS7385-Part 2:1993. These values are evaluated to give a minimum risk of vibration-induced damage, where minimal risk for a named effect is usually taken as 95% probability of no effect.

Table 6: Transient vibration guide values for cosmetic damage – BS 7385-2:1993

TYPE OF BUILDING	PEAK PARTICLE VELOCITY IN FREQUENCY RANGE OF PREDOMINANT PULSE (PPV)	
	4 Hz TO 15 Hz	15 Hz AND ABOVE
Reinforced or framed structures Industrial or light commercial type buildings	50mm/s	N/A
Unreinforced or light framed structures Residential or light commercial type buildings	15mm/s	20mm/s (50mm/s at 40Hz and above)

5.2.3 Structural Damage

Ground vibration criteria is defined in terms of the levels of vibration emission from the construction activities which will avoid the risk of damaging surrounding buildings or structures. It should be noted that human comfort criteria are normally expressed in terms of acceleration whereas structural damage criteria are normally expressed in terms of velocity.

Most specified structural vibration levels are defined to minimize the risk of cosmetic surface cracks and are set below the levels that have the potential to cause damage to the main structure. Structural damage criteria are presented in German Standard DIN4150-Part 3 “Structural vibration in buildings – Effects on structures” and British Standard BS7385-Part 2: 1993 “Evaluation and Measurement for Vibration in Buildings”. Table 7 indicates the vibration limits presented in DIN4150-Part 3 to ensure structural damage doesn’t occur.

Table 7: Guideline value of vibration velocity, v_i , for evaluating the effects of short-term vibration – DIN4150-3

LINE	TYPE OF STRUCTURE	VIBRATION VELOCITY, V_i , IN mm/s				PLANE OF FLOOR OF UPPERMOST FULL STOREY
		FOUNDATION			ALL FREQUENCIES	
		AT A FREQUENCY OF				
		LESS THAN 10HZ	10 TO 50HZ	50 TO 100HZ*		
1	Buildings used for commercial purposes, industrial buildings and buildings of similar design	20	20 to 40	40 to 50	40	
2	Dwellings and buildings of similar design and/or use	5	5 to 15	15 to 20	15	
3	Structures that, because of their particular sensitivity to vibration, do not correspond to those listed in lines 1 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	

*For frequencies above 100Hz, at least the values specified in this column shall be applied

5.2.4 Project Construction Vibration Limits

Table 8 indicates the vibration criteria for the surrounding sensitive receivers to the development.

Table 8: Acceptable vibration dose values for intermittent vibration ($m/s^{1.75}$)

RECEIVER	PERIOD	HUMAN COMFORT VIBRATION OBJECTIVES			BUILDING DAMAGE OBJECTIVES mm/s
		CONTINUOUS mm/s (RMS)		INTERMITTENT $m/s^{1.75}$ (VDV)	
		Z-AXIS	X- AND Y-AXIS		
RC1, RC2 and RC3	Day	10 - 20	7 – 14	0.20 – 0.40	5
	Night	7 - 14	5 – 10	0.13 – 0.26	



6 CONSTRUCTION NOISE AND VIBRATION ASSESSMENT

6.1 PROPOSED ACTIVITIES

In this assessment the noise and vibration impact from the main works have been considered, being the following stages:

- Bulk / detailed excavation and groundworks of the site (2 months)
- Piling and foundation works (1 month)
- Construction and assembly of structures (12 months)

All site work is to only occur during the approved hours of work within the SSDA Conditions of Consent, being:

- Monday to Friday: 7:00am to 6:00pm
- Saturday: 8:00am to 1:00pm
- Sunday and public holidays: no work

Work outside the above hours shall not be undertaken without the prior approval of the certifying engineer and council.

6.2 EXPECTED EQUIPMENT

The noise sources likely to be associated with the works listed in the previous section of this report are presented in Table 9. The equipment noise levels have been extracted from AS2436:2010 "Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites".



Table 9: Cumulative impact – construction equipment noise levels

STAGES	ESTIMATED TIME	EQUIPMENT	SOUND POWER LEVEL – dB(A)
Excavation	2 Months	Excavators (30t)	103
		Excavators (15t)	101
		Dump trucks	107
Piling and Foundation	1 Month	Screw Piling Rig	108
		Excavators (15t)	101
		Concrete Pump	106
		Concrete Truck	103
		General Trucks	103
Construction	12 Months	Powered Hand Tools	102
		Franna Cranes	98
		Lifting Platforms	95
		General Trucks	103

6.3 NOISE MODELLING AND ASSUMPTIONS

To assess noise impact from the site during the demolition works, a noise model was prepared using commercial software SoundPLAN v8.2, which is a comprehensive software package for conducting three-dimensional complex noise propagation modelling. Using the software, a 3D model of the site and its surroundings was constructed including the nearby buildings, and the construction plant and equipment were positioned as noise sources. Within the model, the effects of the environment (built and natural) on propagation of sound were considered to reliably estimate the resulting noise effects on the surrounding noise sensitive receivers.

The noise model represents the reasonably 'worst-case' periods of activities, meaning that all the equipment of each stage is operating simultaneously during a 15-minute observation period.

The assumptions that were made within the assessment include the following:

- The predicted noise levels represent the worst-case scenario for each receiver
- The mitigation measures outlined in Section 7 are implemented
- Neutral weather conditions

6.4 PREDICTED NOISE LEVELS

The reasonably 'worst-case' predicted noise levels at surrounding noise-sensitive receivers have been presented in Table 10 and have been assessed to the ICNG construction noise management levels established in Section 5.1, during the approved hours of work. The noise contour maps produced by the three-dimensional noise propagation modelling are provided in Appendix A.



Table 10: Predicted 'worst-case' noise levels at surrounding noise-sensitive receivers (with mitigation)

STAGE	RECEIVER CATCHMENT	PREDICTED NOISE LEVEL RANGE (dB(A) $L_{Aeq,15min}$)	NOISE MANAGEMENT LEVEL (dB(A) $L_{Aeq,15min}$)	NOISE MANAGEMENT LEVEL EXCEEDANCE (dB)	EXCEEDS HIGHLY NOISE AFFECTED LEVEL (YES / NO)
Excavation	RC1	46 – 54	49	0 – 5	No
	RC2	46 – 50	49	0 – 1	No
	RC3	46 – 54	50	0 – 4	No
Piling and Foundation	RC1	46 – 48	49	0	No
	RC2	46 – 56	49	0 – 7	No
	RC3	46 – 54	50	0 – 4	No
Construction	RC1	46 – 50	49	0 – 1	No
	RC2	46 – 58	49	0 – 9	No
	RC3	46 – 56	50	0 – 6	No

7 NOISE & VIBRATION MANAGEMENT STRATEGIES

7.1 PROJECT SPECIFIC RECOMMENDATIONS

7.1.1 Noise

In relation to noise impact at surrounding noise-sensitive receivers, predicted noise levels are expected to be under the “highly noise affected” levels from the ICNG during all stages of work.

Due to the relatively low background noise levels in the area, noise from project site works is predicted to exceed the “noise affected” management levels (between 0 – 9 dB), though these are during intensive activities (multiple works occurring simultaneously). Where works are not concentrated near the boundary of the site, noise levels at surrounding noise-sensitive receivers are expected to generally not exceed this management level.

Notwithstanding the above, the following noise mitigation strategies are recommended to protect the amenity of surrounding noise-sensitive receivers:

- At least a one-hour respite period, for example between 12:00pm – 1:00pm (or other period to coincide with construction workers lunch time(s)), should be offered per day during the most intensive periods of noisy activities. Limiting these activities outside of sensitive hours (e.g. no noisy works, such as piling, between 7:00am – 8:00am on weekdays) should also be considered.
- Frequent and proactive communication with the surrounding residents is also encouraged and shall be in accordance with the Community Consultation Strategy developed by School Infrastructure NW (SINSW). This will allow occupants of surrounding residents to arrange their schedules to accommodate possible noise sensitive activities (like online meetings and phone calls). More details regarding communication with the community can be found in Section 7.2.3

7.1.2 Vibration

There are generally no highly vibration intensive activities expected for the project site works. The method of piling has been selected to be screw piling, which is lower in vibration generation compared to alternative methods like vibratory or hammer piling.

Upon any complaints from surrounding residents, the following shall be undertaken:

- Vibration monitoring is recommended to be conducted at surrounding sensitive receivers (or at the location of complaint) in accordance with the monitoring program strategy proposed in Section 7.3
- Reasonable and feasible measures should be considered to lessen the impact, such as alternative methods or equipment for activities which are causing complaints to achieve the vibration levels required

To further diminish the vibration impact, the one-hour respite period, for example between 12:00pm – 1:00pm (or other period to coincide with construction workers lunch time(s)), recommended for noise mitigation shall also apply for vibration mitigation.

We recommend that dilapidation reports be prepared on surrounding sensitive receivers and buildings which will be in close proximity to heavy machinery. Guidance for this may be provided by the geotechnical engineer and controlled by ground composition.



7.2 GENERAL ACOUSTIC RECOMMENDATIONS

According to AS 2436 – 2010 “Guide to noise and vibration control on construction, demolition and maintenance sites” the following techniques could be applied to minimize the spread of noise and vibrations to the potential receivers.

7.2.1 Noise

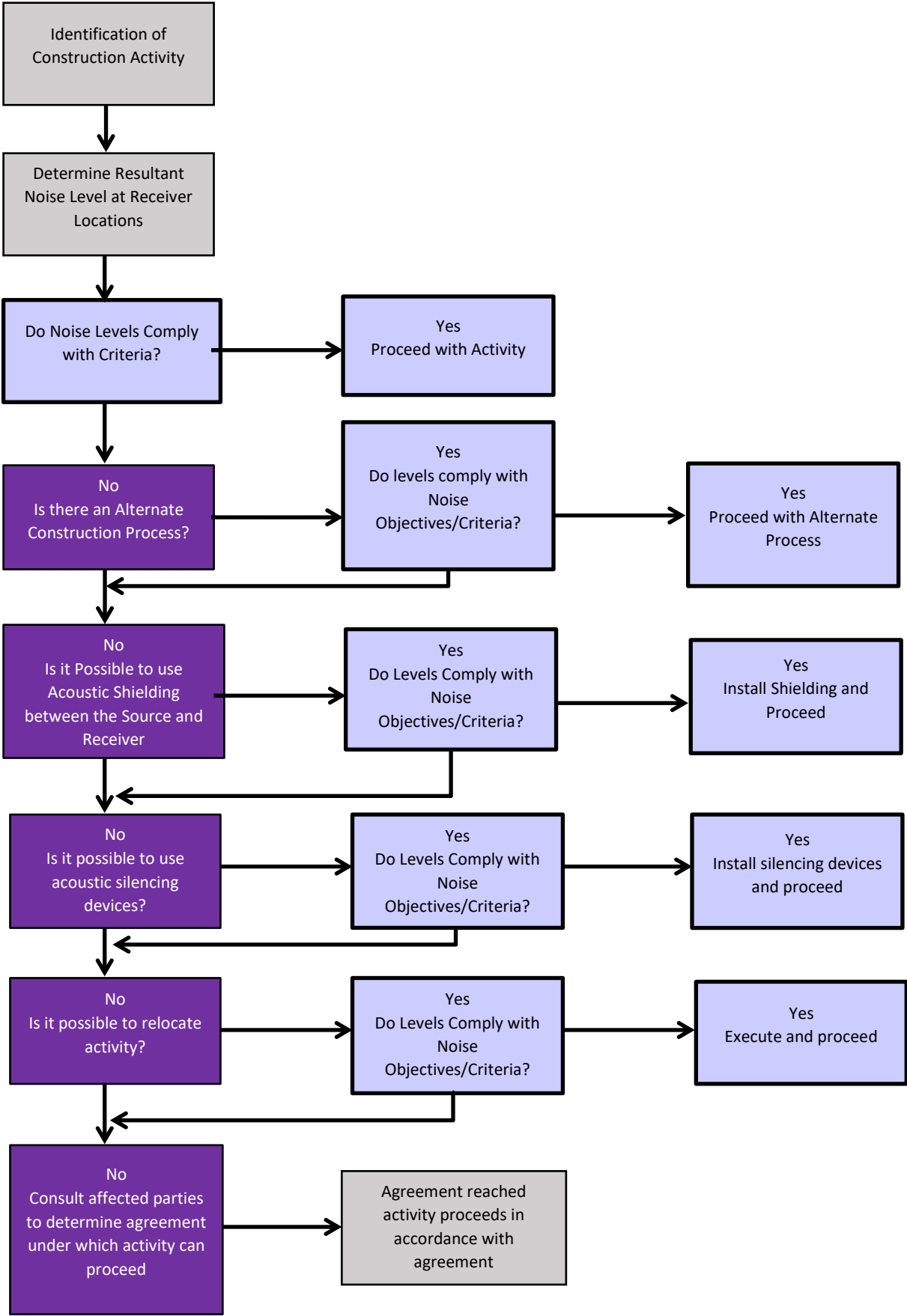
Figure 2 demonstrates the preferred order of actions taken to mitigate excessive construction noise emissions. If a process that generates significant noise levels cannot be avoided, the amount of noise reaching the receiver should be minimized. Two ways of achieving this are to either increase the distance between the noise source and the receiver or to introduce noise reduction measures such as screens. Practices that will reduce noise from the site include:

- Increasing the distance between noise sources and sensitive receivers.
- Reducing the line-of-sight noise transmission to residences or other sensitive land uses using temporary barriers (stockpiles, shipping containers and site office transportables can be effective barriers).
- Constructing barriers that are part of the project design early in the project to introduce the mitigation of site noise.
- Installing purpose-built noise barriers, acoustic sheds and enclosures.

Physical methods to reduce the transmission of noise between the site works and residences, or other sensitive land uses, are generally suited to works where there is longer-term exposure to the noise. A few of these methods have been introduced below.



Figure 2: Noise mitigation management flow chart



Screening

Hoarding: Another way of implementing screening is to build hoarding that includes a site office on an elevated structure. This option offers superior noise reduction when compared with a standard, simple hoarding. The acoustic performance is further enhanced when the hoarding is a continuous barrier.

General remarks:

In many cases, it is not practical to screen earthmoving operations effectively, but it may be possible to partially shield a construction plant at the early stages of the project with protective features required to screen traffic noise.

The usefulness of a noise barrier will depend upon its length, its height, its position relative to the source and the receiver, and the material of which it is made. A barrier designed to reduce noise from a moving source should extend beyond the last property to be protected by at least ten times the shortest distance from the said property to the barrier. A barrier designed to reduce noise from a stationary source should, where possible, extend beyond the direct line of sight between the noise source and the receiver by a distance equal to ten times the effective barrier height, which is the height above the direct line between source and receiver.

If the works are already predominantly located within nominally closed structures, careful consideration should be given to reducing noise breakout at any openings.

Cranes

For the early works construction phases, any craneage will be limited to mobile cranes where the engines are typically enclosed in an acoustically treated housing.

Reversing and warning alarms

Community complaints often involve the intrusive noise of alarms commonly used to provide a safe system of work for vehicles operating on a site. Beeper reversing alarm noise is generally tonal and may cause annoyance at significant distances from the work site.

There are alternative warning alarms capable of providing a safe system of work that are equal to or better than the traditional “beeper”, while also reducing environmental noise impacts. The following alternatives should be considered for use on construction sites as appropriate (and combined where appropriate):

- Broadband audible alarms incorporating a wide range of sound frequencies (as opposed to the tonal-frequency ‘beep’) are less intrusive when heard in the neighbourhood.
- Variable-level alarms reduce the emitted noise levels by detecting the background noise level and adjusting the alarm level accordingly.
- Proximity alarms that use sensors to determine the distance from objects, such as people or structures, and generate an audible alarm in cabin for the driver.
- Spotters or observers.

Selection of Alternate Equipment

As part of the Contractor’s Construction Methodology and Construction Management Plan, the noise and vibration impact of each equipment / machinery should be considered. Where feasible and practical, quieter equipment (lower Sound Power Level) shall be selected for the task. The Contractor can review the manufacturer’s equipment sound data or utilise AS2436:2010 “Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites” and the “Construction Noise Strategy, Transport for NSW, 2013” as guides in understanding what the typical Sound Power Levels are for alternative types of machinery.

Attended short-term noise measurements can also be conducted to either compare the noise levels of machinery, or to understand what the noise level at surrounding noise sensitive receivers are.

The same consideration shall be taken for vibration intensive machinery, which are expected to be only rock hammering and piling. Where feasible and practical, less vibration intensive equipment shall be selected for the task such as favouring pulverising and sawing methods rather than hydraulic hammering for rock breaking.



As with noise, attended short-term vibration measurements can be conducted at start of vibration intensive works to ensure vibration criteria (see Section 5.2) at surrounding receivers are not exceeded.

As a guide, the Contractor can also refer to AS2436:2010 “Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites” and the “Construction Noise Strategy, Transport for NSW, 2013” to use as a guide in understanding vibration intensive activities and their alternate methods, based on minimum working distances.

Machinery shall be selected based on the noise criteria and vibration criteria as presented in Section 5.1 and 5.2.

7.2.2 Vibration

Vibration can be more difficult to control than noise, and there are few generalizations that can be made about its control. It should be kept in mind that vibration may cause disturbance by causing structures to vibrate and radiate noise in addition to perceptible movement.

Impulsive vibration can, in some cases, provide a trigger mechanism that could result in the failure of building components that had previously been in a stable state. Vibrations can also trigger annoyance, which might get elevated into action by occupants of exposed buildings and should therefore be included in the planning of communication with impacted communities.

It should be remembered that failures, sometimes catastrophic, can occur as a result of conditions not directly connected with the transmission of vibrations, e.g. the removal of supports from retaining structures to facilitate site access. BS 7385-2 provides more information on managing ground-borne vibration and its potential effects on buildings. Where site activities may affect existing structures, a thorough engineering appraisal should be made at the planning stage.

General principles of seeking minimal vibration at receiving structures should be followed in the first instance. Predictions of vibration levels likely to occur at sensitive receivers are recommended when they are relatively close, depending on the magnitude of the source of the vibration or the distance associated. Relatively simple prediction methods are available in textbooks, codes of practice and standards, however, it is preferable to assess site transmission and propagation characteristics between source and receiver locations through measurements.

Guidance for measures available for the mitigation of vibration transmitted can be sought in more detailed standards, such as BS 5228-2 or policy documents, such as the NSW DEC *Assessing Vibration: A technical guideline*. Identifying the strategy best suited to the control of vibration follows a similar approach to that of noise: avoidance, control at the source, control along the propagation path, control at the receiver, or a combination of these. It is noted that vibration sources can include stationary plants (pumps and compressors), portable plants (jackhammers and pavement vibrators), mobile plants, pile-drivers, tunnelling machines and activities, and blasting, amongst others. Unusual ground conditions, such as a high water-table, can also cause a difference to expected or predicted results, especially when considering the noise propagated from piling.

7.2.3 Community Consultation to be Undertaken

The builder shall directly contact adjacent noise sensitive receivers and provide them with the following information:

- The contact details for a nominated representative in order to make noise / vibration complaints
- Explain the timeframe for the construction works and the proposed activities, i.e. the proposed start / stop dates of work and a description of the noise producing equipment that will be used
- Notify the noise sensitive receivers and relevant local / state authority in a timely manner should there be any need for an extension to the proposed arrangements
- Provide them with a copy of this report as approved by the relevant local / state authority
- Where noise is demonstrated as being compliant with criteria, this should not limit the proponent in undertaking further additional reasonable and feasible steps to reduce noise emissions.



Further, a Community Consultation Strategy (CCS) document is being developed by School Infrastructure NSW (SINSW) which will also provide mechanisms to facilitate communication between the Applicant, the relevant Council and the community during the design and construction of the development.

The builder shall also ensure that community consultation is being undertaken in accordance with the CSS once this has been fully developed and finalised.

7.2.4 Complaint Handling Procedures and Community Liaison

To assist in the management of noise and vibration complaints various procedures are to be followed. These include:

- Clearly visible signage identifying any key personnel along with their contact details to be erected along the perimeter of the building site including:
 - A 24-hour contact name, phone number and email address provided for the resident to address any complaint. The signage will declare; “For any enquiry, complaint or emergency relating to this site at any time please contact...”
- Give complaints a fair hearing
- Relevant local / state authority should be notified of the nature and details of complaints received (time, complainant etc.) and what remedial action has taken place, if any
- Have a documented complaints process, including an escalation procedure so that if a complaint is not satisfied there is a clear path to follow
- Call back as soon as possible to keep people informed of action to be taken to address noise problems. Call back at night time only if requested by the complainant to avoid further disturbance
- Implement all feasible and reasonable measures to address the source of the complaint
- A register is to be kept by the contractor to keep a record of complaints and detail any information associated with them. The contents of the register will include:
 - The name and the address of the complainant
 - Time and date of the complaint
 - The nature of the complaint (Noise/Vibration)
 - Subsequent details
 - Remedial action undertaken

The contents of the register will be maintained and updated on a monthly basis with any new complaint without delay. The complaints will be reported to both the relevant local / state authority and the Contractor. The investigation of the complaint and any remedial actions will be performed by the builder and/or client representative on a monthly basis. In the event of noisy works scheduled, the builder will notify residents 5 business days in advance.

In addition to the above, complaint handling and community liaison shall also be in accordance with the procedures outlined in Section 4.1 and 6.5 within the SINSW CSS.

7.2.5 Site Induction Process to be Undertaken

A site induction process is to be included as part of the Contractor’s Construction Management Plan for the induction of employees, sub-contractors, visitors, etc.

This Construction Management Plan shall be referred to for details of site induction.



7.2.6 Construction Traffic Route Process to be Undertaken

The assessment and planning of construction traffic route is to be in accordance with the Construction Traffic and Pedestrian Management Sub-Plan (CTPMSP) prepared for the development and included as part of the Contractor's Construction Management Plan and selected, where feasible and practical, to minimise disruption and intrusiveness to surrounding noise sensitive receivers.

7.3 NOISE & VIBRATION MONITORING STRATEGY

7.3.1 General Methodology

Monitoring may be in the form of regular checks by the builder or indirectly by an acoustic consultant engaged by the builder and in response to any noise or vibration complaints. Where noise and vibration criteria are being exceeded or in response to valid complaints, noise and / or vibration monitoring should be undertaken. This would be performed inside the premises of the affected property and on site adjacent to the affected receivers.

Monitoring is to be undertaken by an experienced noise and vibration monitoring professional or an acoustic consultant. The results of any noise or vibration monitoring are to be provided to the relevant party or person in a timely manner allowing the builder to address the issue and respond to the complaints.

Noise and vibration monitoring can take two forms:

- Short-term monitoring
- Long-term monitoring

Both of these approaches are elaborated below.

7.3.2 Short-term Monitoring

Short-term monitoring consists of attended monitoring when critical stages of the construction are occurring. This normally provides real-time assistance and guidance to the subcontractor on site, telling them when the noise and vibration criteria are exceeded. Thus, the selection of alternative method on construction or equipment selection is allowed in order to minimise noise and vibration impacts.

Short-term monitoring may also be undertaken prior to start of works to ensure noise levels emitted from machinery and equipment are within the manufacturer's tested data / tolerance. This check can be implemented periodically throughout the construction program as a maintenance routine to ensure machinery and equipment stay within the manufacturer's data / tolerance and are not faulty.

7.3.3 Long-term Monitoring

Similarly, to short-term monitoring, long-term monitoring provides real-time alerts to the builder / site manager when the noise and vibration criteria are exceeded. Instead of someone being on site measuring, noise and vibration loggers are used.

Typically, the noise and vibration loggers stay on site for a period of several months for the critical construction stages of the project, such as the demolition and excavation phases.

Both methodologies are complementary and normally used simultaneously providing a significant amount of data via the long-term monitoring, but also providing information on the sources of noise and vibration generating exceedances via the short-term or attended monitoring.

Long-term noise monitoring reports shall be prepared and presented in accordance with the recommendations of the NSW ICNG (Section 8.2 of the ICNG).



7.3.4 Noise & Vibration Monitoring Programme

Based on the predicted noise levels which indicate no exceedances to the “highly noise affected” level and general exceedances (0-9dBA) to the “noise affected” level during intensive works, the following noise monitoring strategy may be considered and determined based on equipment selections. We note that the sound power levels presented in Table 9 are estimates and monitoring may be required if noisier equipment is used.

A monitoring programme is proposed in Table 11. The monitoring programme is to be carried out during the most noise / vibration intensive periods during each construction phase as agreed with the Acoustic Engineer and Contractor.

Refer to Figure 3 for the recommending monitoring type and locations. Locations shall be discussed and agreed between the Acoustic Engineer and Contractor prior to start of works and shall be reviewed regularly as construction works progress.

Figure 3: Proposed monitoring locations



Table 11: Monitoring programme

LOCATION REFERENCE	MONITORING RECOMMENDED ¹
N1	Noise
N2	Noise
N3	Noise

Note 1: Monitoring to be considered and determined based on equipment selection and community consultation

8 CONCLUSION

This CNVMSP has been prepared by E-LAB to accompany a State Significant Development Application (SSDA) for Wee Waa High School in accordance with Condition B22 of the SSDA Conditions of Consent.

The details of the noise and vibration modelling and assessment undertaken to predict the impacts on sensitive receivers have been presented in Sections 6.

To reduce the noise and vibration impacts on the sensitive receivers, noise and vibration mitigation measures have been proposed in Section 7.

The information presented in this report shall be reviewed if any modifications to the features of the development specified in this report occur, including and not restricted to selection of equipment/machinery and modifications to the construction program.

Appendix A **Construction Noise Emissions Modelling**





E-LAB CONSULTING

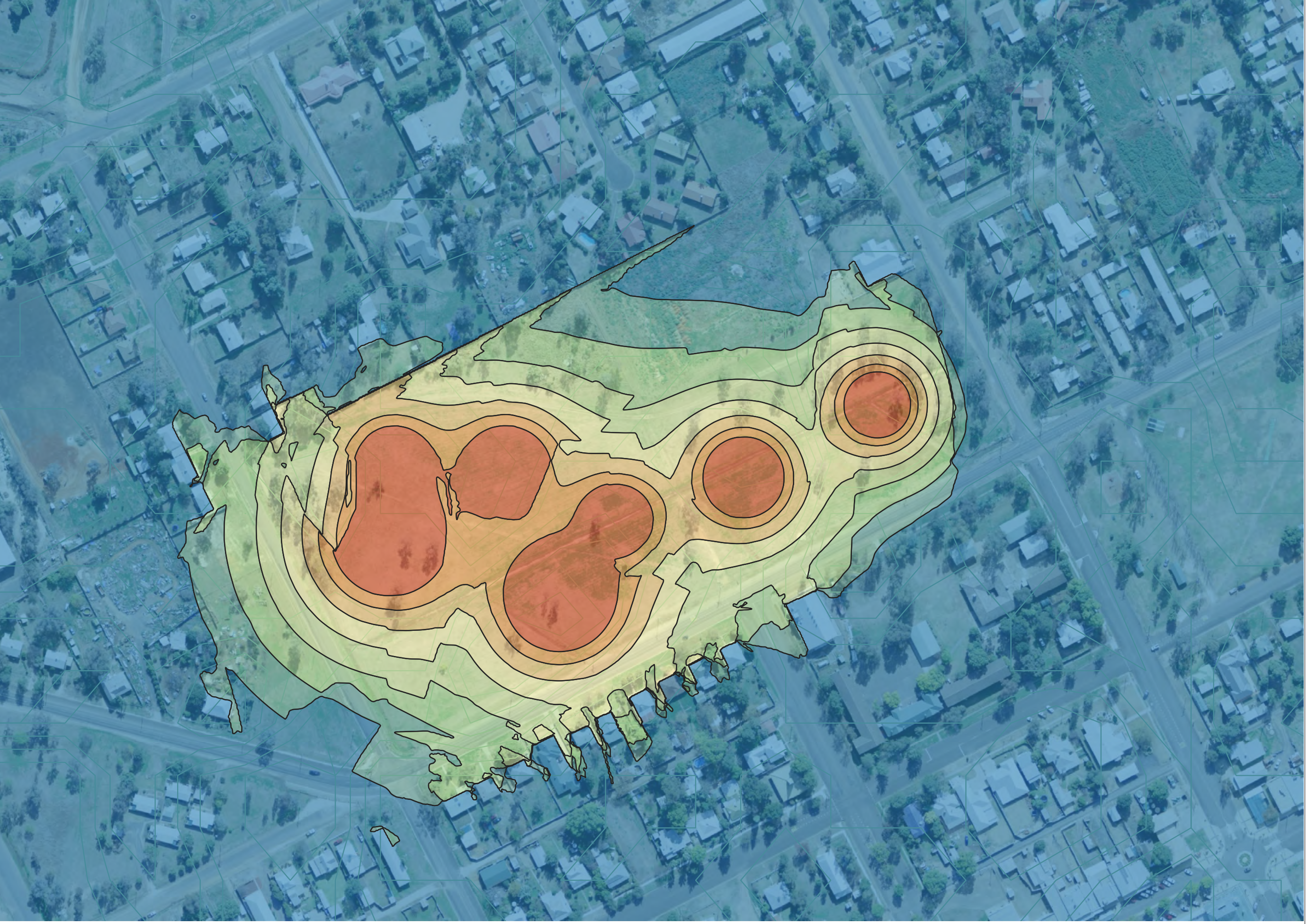
ISSUE	DATE	STATUS
1	26/09/2022	For Review
2	14/10/2022	For SSDA
3	01/11/2022	For SSDA

LEGEND

Predicted Noise Level - $L_{Aeq,1hr}$ dB(A)

	< 46
	46 - 48
	48 - 50
	50 - 52
	52 - 54
	54 - 56
	56 - 58
	> 58

NOTES



PROJECT
WEE WAA HIGH SCHOOL

PROJECT NO.
P00145

ARCHITECT
SHAC

CLIENT
BUILT

SCALE
NTS

STATUS
FOR SSDA

DRAWING
NOISE EMISSION MAP

EXCAVATION STAGE

DISCIPLINE
ACOUSTICS AND VIBRATION

DRAWING NUMBER
AC-DWG-100-01-01

REVISION
003



E-LAB CONSULTING

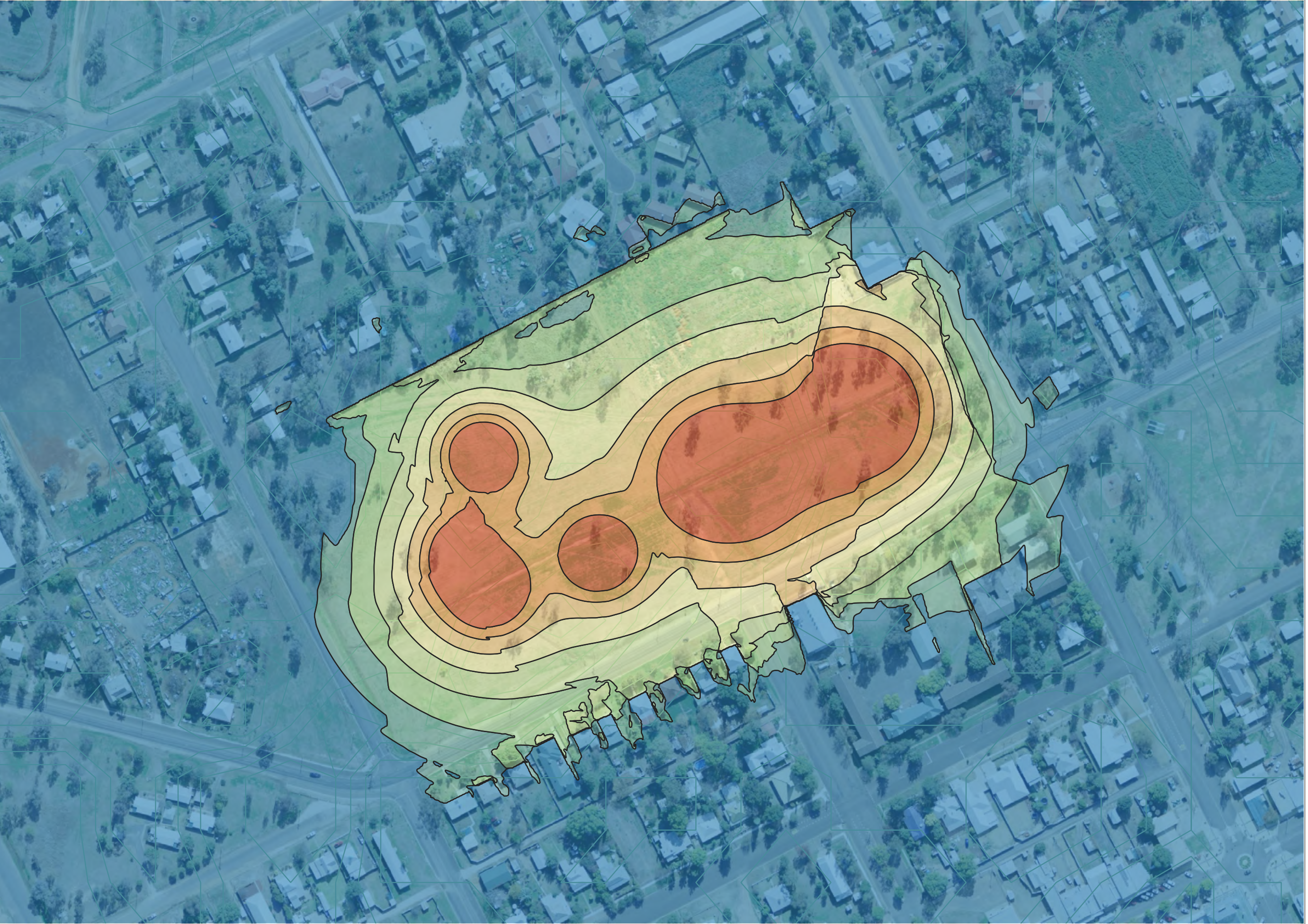
ISSUE	DATE	STATUS
1	26/09/2022	For Review
2	14/10/2022	For SSDA
3	01/11/2022	For SSDA

LEGEND

Predicted Noise Level - $L_{Aeq,1hr}$ dB(A)

< 46
46 - 48
48 - 50
50 - 52
52 - 54
54 - 56
56 - 58
> 58

NOTES



PROJECT
WEE WAA HIGH SCHOOL

PROJECT NO.
P00145

ARCHITECT
SHAC



CLIENT
BUILT

SCALE
NTS

STATUS
FOR SSDA

DRAWING
NOISE EMISSION MAP
PILING AND FOUNDATION STAGE

DISCIPLINE
ACOUSTICS AND VIBRATION

DRAWING NUMBER	REVISION
AC-DWG-100-02-01	003



E-LAB CONSULTING

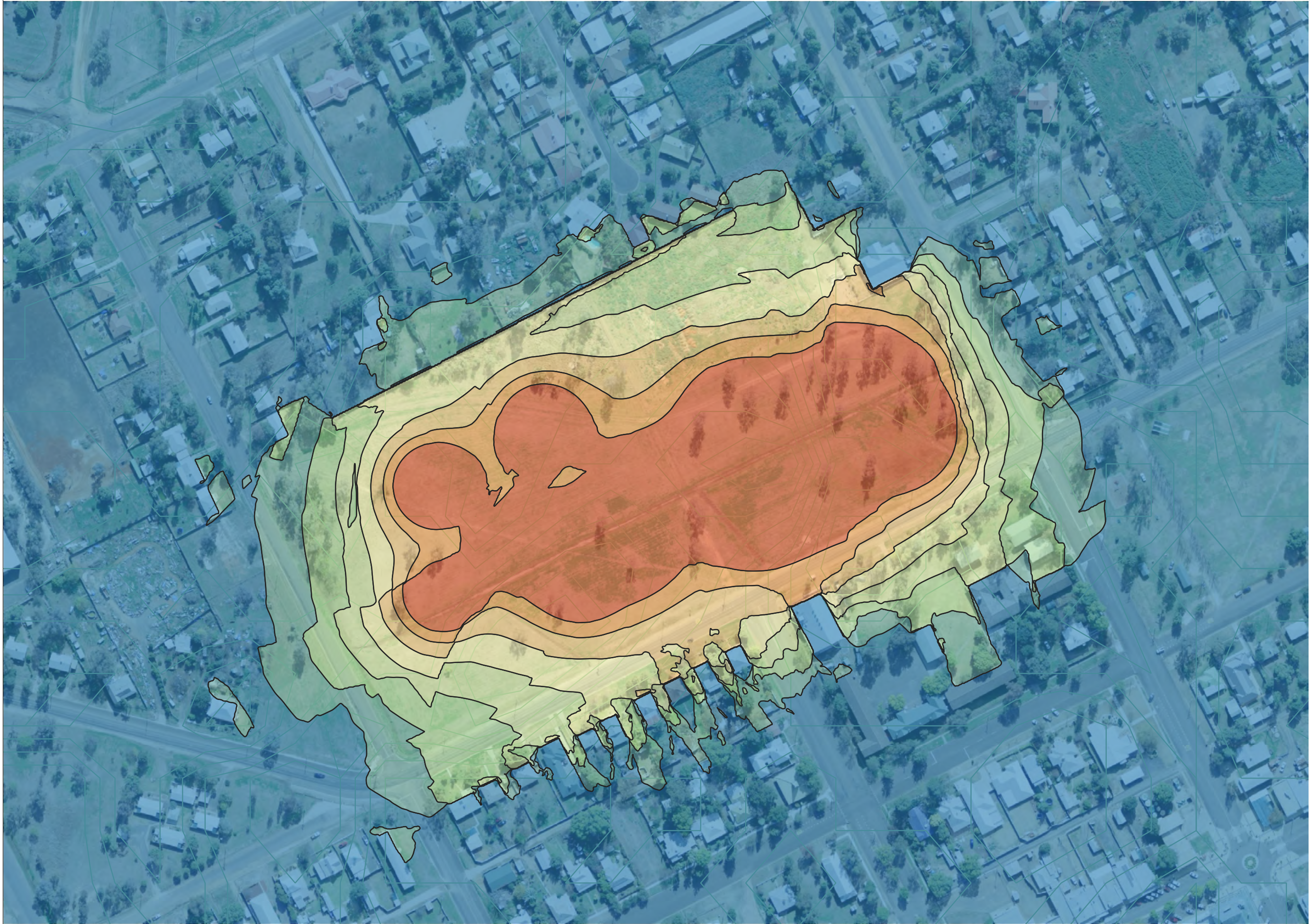
ISSUE	DATE	STATUS
1	26/09/2022	For Review
2	14/10/2022	For SSDA
3	01/11/2022	For SSDA

LEGEND

Predicted Noise Level - $L_{Aeq,1hr}$ dB(A)

< 46
46 - 48
48 - 50
50 - 52
52 - 54
54 - 56
56 - 58
> 58

NOTES



PROJECT
WEE WAA HIGH SCHOOL

PROJECT NO.
P00145

ARCHITECT
SHAC

SHAC

CLIENT
BUILT

SCALE
NTS

STATUS
FOR SSDA

DRAWING
NOISE EMISSION MAP
CONSTRUCTION STAGE

DISCIPLINE
ACOUSTICS AND VIBRATION

DRAWING NUMBER
AC-DWG-100-03-01

REVISION
003

Appendix B **Tom Candalepas CV**





“Successful project outcomes are driven by the delivery of specialist designs where the ‘why’ and the ‘what’ can be explained in simple terms.”

Tom Candalepas | Technical Director Acoustics

BEng, M.AAS, CPEng, NER, RPEQ

Tom has a great ability to provide his clients with the ‘why’ and the ‘what’ in simple terms, allowing clients to reach project milestones with his vast experience in the design, construction, and commissioning supervision of acoustic services in buildings and almost every aspect of noise and vibration design analysis. With a proven track record of successful project management on both Australian and International large-scale projects, Tom has worked in landmark projects including: 1PSQ, Parramatta, NSW, One Central Park, Sydney, NSW, W Hotel, Amman, Jordan, Unilever Headquarters, Indonesia, O’Brien Group Arena, Docklands, Melbourne and Channel 7 Studios in Eveleigh, NSW.

Personal Project Highlights

TS11 Noise and Vibration Requirements Advice, NSW Health	LaTrobe University Medical Centre, Bundoora	Heart Research Institute, Newtown
Ashford Private Hospital, SA	Genesis Care, Frenches Forest	Shellharbour Hospital
Westmead Children’s Hospital	Armidale Hospital Redevelopment	Healius, Orange & Tweed Heads
Broken Hill Hospital	Bowral Hospital	Maitland Hospital
Griffith Base Hospital	St George Hospital – Stage 3	Wyvern Private Hospital
Eastwood Private Hospital	Westmead PSB	Central Park, Chippendale
Infinity Tower, Brisbane	130 Elizabeth St, Sydney	148-160 King St, Sdney
Site 18, Green Square	Menara Astra, Jakarta, Indonesia	W-Hotel, Amman, Jordan
Bankstown Central	Eden Gagens	72-84 Foveaux St, Surry Hills
Darwin International Airport	T1 Bifurcation, Sydney Airport	Novotel, Darling Square
Malcolm Frazer Library, University of Melbourne	Dame Phyllis Frost Medical & Holding Centre, Deer Park	Paddington Town Hall, Chauvel Cinemas
NSW State Theatre Expansion	One PSQ WSU, Parramatta	NSW State Library of Victoria
Moore Theological College, Newtown	UWS Buildings EQ & ER Parramatta	Channel 7 and Global Studios
Yamaha Music, Willoughby	VISA Fitout, L39 Barangaroo T2	Australian Hearing Hub, Macq Park
80 Collins St, Melbourne	Armidale TAFE Dubbing Facility	Taronga Zoo Lecture Theatre





Built

APPENDIX F - Construction Waste Management Sub-Plan

Construction Waste Management Plan

PROPOSED WEE WAA HIGH SCHOOL

105-107 Mitchell Street

WEE WAA, NSW 2388



FOR:

BUILT

November 2022


Manage-Design-Engineer DOCUMENT CONTROL

PROJECT: 105-107 Mitchell Street Wee Waa

CLIENT: BUILT

AUTHOR: Andrew Smith

REVISION HISTORY

REVISION	DATE	CHECKED BY	
		NAME	SIGNATURE
0	06/10/2021	Troy Ryden	
1	12/10/2021	Troy Ryden	
2	17/10/2022	Troy Ryden	
3	08/11/2022	Troy Ryden	
4	16/11/2022	Troy Ryden	

DISTRIBUTION RECORD

DATE	REVISION	TO	FORMAT
06/10/2021	0	NSW Department of Education	Electronic
12/10/2021	1	NSW Department of Education	Electronic
17/10/2022	2	BUILT	Electronic
08/11/2022	3	Built	Electronic
16/11/2022	4	BUILT	Electronic

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1 INTRODUCTION

1.1 BACKGROUND

Manage-Design-Engineer Pty Ltd have been engaged to undertake a Construction Waste Management Plan (CWMP) for a proposed high school development at 105-107 Mitchell Street Wee Waa. The site consists of the following Lots:

Lot 125 DP:757125

Lot 124 DP:757125

Lot 2 DP:550633

Lot 1 DP:577294

The total area of the site is 60,300m² with the proposed development involving the construction of a school, sports fields, and livestock paddocks.

1.2 PROJECT DETAILS

APPLICANT DETAILS	
Name	Manage-Design-Engineer
Address	1/64 Ballina Street, LENNOX HEAD NSW
Phone number(s)	0499 993 340
Email	troy@mde.au
PROJECT DETAILS	
SSD No.	21854025
Client Details	BUILT
Contractor Details	TBA
Address of development	105-107 Mitchell Street Wee Waa

Existing buildings and other structures currently on the site	Nil
Description of proposed development	Construction of a school buildings , sports fields, car parking & bus bays, upgrades to street kerb and gutter, and livestock paddocks.
Through implementing this CWMP, the development will achieve the waste objectives and intentions for minimising waste relating to this project. All records shall be kept onsite by the nominated construction contractor, demonstrating lawful disposal of waste. Documents will be required to be readily accessible for inspection by regulatory authorities such as council, DECC or WorkCover NSW.	
Contractor/Supervisor	
Signature	
CWMP document control and revision updates	Andrew Smith
Date	16/11/2022

1.3 SSSA CONDITIONS

SSD-21854025 – Wee Waa High School		
Condition Number	Description	Page Reference
B23	The Construction Waste Management Sub-Plan (CWMSPP) must address, but not be limited to, the procedures for the management of waste including the following:	N/A
B23 (a)	the recording of quantities, classification (for materials to be removed) and validation (for materials to remain) of each type of waste generated during construction and proposed use;	Section 4.7
B23 (b)	information regarding the recycling and disposal locations; and	Section 2.7
B23 (c)	confirmation of the contamination status of the development areas of the site based on the validation results.	Section 3.3

2 SITE CHARACTERISTICS

2.1 SITE LOCATION

105-107 Mitchell Street Wee Waa, has a total site area of 60,300m² and is bounded by residential lots to the north, Mitchell Street (Kamilaroi Hwy) to the south, Charles Street to the East and George Street to the West.



FIGURE 1 - SITE LOCALITY AERIAL IMAGE (SIXMAPS, 2021)

2.2 CONSTRUCTION TYPOLOGY

The Wee Waa High School is being constructed using the principals of Design for Manufacture and Assembly (DfMA). The main structural and building envelope will be manufactured off-site and delivered in order to assemble on-site without the need for conventional waste generating activities during the construction of these elements.

2.3 OBJECTIVES OF THE CWMP

The objectives of the CWMP include:

- a) Identify, quantify and classify waste streams to be generated during demolition, excavation and construction to address the Waste Classification Guidelines (EPA, 2014);
- b) Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site;
- c) To describe measures to be implemented to manage, reuse, and recycle and safely dispose of the waste;
- d) To maximise reuse and recycling of construction materials and materials from the school;
- e) To encourage building design techniques in general which minimise waste generation; and

- f) To minimise the amount of waste being deposited to landfill with targets to reuse or recycle at least 90% of construction and demolition waste as per the EFSG DG02 2.7.1 Construction and demolition waste requirements

2.4 NSW LEGISLATIVE REQUIREMENTS AND GUIDELINES.

Relevant key legislation and guidelines applicable to the project include:

- NSW Environmental Planning and Assessment Act 1979 (EP&A Act)
- Protection of the Environment Operations Act 1997;
- Protection of the Environment (General) Operations Act 1998;
- Waste Avoidance and Resource Recovery Act 2014;
- Protection of the Environment Operations (Waste) Regulation 2014;
- Waste Classification Guidelines (EPA, 2014);
- NSW Department of Planning and Environment, Secretary's Environmental Assessment Requirements (SEARs); and
- Tweed Shire Development Control Plan 2008 (DCP, 2008) – Section A15 Waste Minimisation and Management.

2.5 WASTE CONTRACTOR REQUIREMENTS

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 and demolition contractors to construction contractors 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, the demolition, excavation and construction 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 licensed waste facility that the waste is transferred to; and
- The vehicle registration and the name of the waste contractor's company.

The Waste Data File will be made available for inspection to any authorised 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.

Arrangements will be made with the waste contractor to increase bin supply if there is an unexpected increase in waste generation.

2.6 WASTE MANAGEMENT STRATEGIES.

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 the below table

Management Strategies	Responsibilities
Construction On-site	
Use of modular components in the design	Builder & Subcontractors
Use of prefabricated components in the design	Builder & Subcontractors
Design of materials to standard sizes	Builder & Subcontractors
Use the avoid, reuse, reduce, recycle principles	Builder
Minimisation of recurring packaging materials	Subcontractors
Returning packaging to the supplier	Builder & Subcontractors
Separation of recycling of materials off-site	Builder & Waste Disposal operator
Audit & monitor the correct usage of bins	Builder & Waste Disposal operator
Audit & monitor the Waste disposal location to ensure demolition and construction waste is recycled and taken to a licensed facility	Builder

2.7 NARRABRI WASTE MANAGEMENT FACILITY

The local waste contractor will make use of the Narrabri Waste Management Facilities in order to manage the recycling and disposal of construction waste. This facility is located at Yarrie Lake road and Dump Road, Narrabri



FIGURE 2 – NARRABRI WASTE FACILITY – YARRIE LAKE

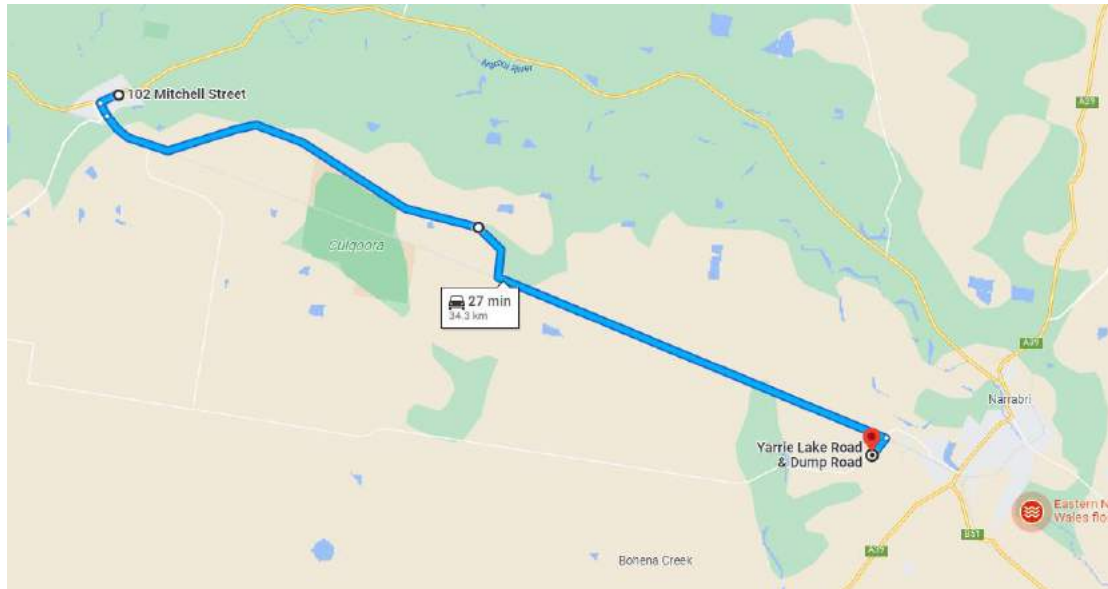


FIGURE 3 - TRAVEL TIME TO WASTE FACILITY – YARRIE LAKE ROAD AND DUMP ROAD, NARRABRI

3 EXCAVATION AND FILLING

3.1 SITE EXCAVATION AND FILLING

The entire site generally will be stripped and cut or filling operations will occur. There is a small area in the eastern side of the site that existing site features will be retained.

The intention is to use the 100mm stripped sandy silty material as fill for the proposed swale batters and other landscaped areas.

3.2 STOCK PILING LOCATIONS

Stockpile locations have been indicated on the Erosion & Sediment Drawings. Consideration into alternate stockpile locations are possible provided sufficient erosion and sediment control devices are implemented, and the stock pile is not in an area that can lead to dirty water runoff into the existing or proposed stormwater channels and swale.

3.3 CONTAMINATION

Contamination has been identified on the site and a Remediation Action Plan 'RAP' has been separately developed to manage the Remediation of this project site. Please refer to the Project Specific RAP for the process relating to the disposal of this material.

4 CONSTRUCTION

4.1 TYPES OF WASTE DISPOSAL BINS

Narrabri waste disposal businesses generally supply up to 10-15m³ steel bins. Collection is undertaken by 7.5m long 30t GVM trucks. Bin sizes are 2.5m x 6.0m

4.2 ON-SITE WASTE MANAGEMENT & STORAGE REQUIREMENTS

There will be a designated waste storage area for the disposal and storage of demolition, excavation and construction waste prior to collection. This area will be located conveniently for the work team to use the bins as well as for waste contractors to collect. An indicative location has been provided in section 4.5 of this report. Requirements include

- Construction waste storage is contained wholly within the site identified in Section 4.5
- 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 pulling up vehicles, turning or reversing 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 works.
- No waste will be left on-site unless it is part of a valid reuse on-site, which is integral to and in place in the design.
- All vehicles entering and leaving the site must have their loads covered.
- All vehicles before leaving the site are 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.

4.3 SIGNAGE REQUIRED FOR SKIP BINS

To ensure adequate separation of building materials, use large signage to clearly indicate bins for steel waste and general building waste. If steel bins are contaminated with general waste the load will be charged at the general waste rate. It is recommended that at pre-starts, construction crews are reminded of the correct waste disposal process.

4.4 ACCESS FOR WASTE COLLECTION

Construction vehicle access is to remain at the final design entry location. No temporary access is permitted off Mitchell Street / Kamilaroi Highway.

Provide a sufficient turning circle arrangement for the intended location of skip bins, allowing for a 10m turning radius.



FIGURE 4 - SKIP BIN PICK UP LOCATION

4.5 SEPARATION OF WASTE

Steel waste is accepted for free at the Narrabri Waste Management Facility (NWMF), and thus a separate bin is recommended in order to prevent unnecessary disposal of steel material into land fill. Other waste streams that are to be collated and disposed of at the NWMF include:

- Paper
- Cardboard
- Aluminium
- Glass

4.6 REUSE OF CONSTRUCTION MATERIALS

Construction Materials and off-cuts can be reused onsite where practicable. An allocated area in the materials lay-down area can be allocated for the storage of materials to be reused.

These items include:

- Plastic buckets
- Timber crates
- Timber off cuts
- Paint brushers and rollers (wrapped in plastic to maintain moisture)
- Plasterboard offcuts
- Carboard boxes.

The Waste Data File will be made available for inspection to any authorised 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.

4.7 WASTE GENERATED

MOST FAVOURABLE ←  LEAST FAVOURABLE

	REUSE	RECYCLING	DISPOSAL	
Type of waste generated	Estimate Volume (m3) , (%), Weight (t)	Estimate Volume (m3) , (%), Weight (t)	Estimate Volume (m3) , (%), Weight (t)	Specify method of on site reuse, contractor and recycling outlet and /or waste depot to be used
Site Stripping (Topsoil)	1500m3	-	-	All Cut to be used as Fill onsite
Cut to Fill for buildings	9000m3	-	-	All Cut to be used as Fill onsite
Timber (treated pine)	Landscaping Offcuts reused where possible	-	3%	Treated pine is not accepted at the recycling centre. As such will be added to land fill. Re-use where possible
Timber (untreated)	-	1%	-	Untreated timber will be accepted at the recycling centre. Where possible segregate in separate bin
Concrete	3%	-	-	All concrete overpours to be broken up and used in deep fill
Modular panels	>1%	-	-	Anticipated no waste. All panels made to order
Fibro/plaster board	-	-	1%	General waste skip bin
Scrap metal	-	Approx. 1t	-	Skip bin operators will pick up clean scrap metal for free, to be processed at the recycling centre
Glass	-	-	0.1%	General waste skip bin
Cladding metal sheets	-	1%	-	Off cuts to be added to steel bin
Fixtures and fittings	-	-	0.1%	Damaged goods to returned

Floor coverings	-	-	5%	General waste skip bin
Used pallets	-	0.25 t	-	Used pallets are to be made available to local business. Site engineer to contact local manufacturing or distribution to offer bulk pick up of pallets
Garden organics	2m ³			Estimated 2m ³ turf to be re-used onsite to stabilise batters
Containers (cans, plastic, glass)	-	-	-	Reused / Recycled
Cardboard	-	-	Approx.. 4m ³	General waste skip bin
Residual waste			2 m ³	General waste skip bin
Hazardous/asbestos waste (specify)	-	-		Green build site. If asbestos is uncovered in filling operations. Site supervisor to follow correct procedures to process lawfully
Paving			3%	Offcuts to be taken to the waste station
Stormwater pipe			3%	Offcuts to be taken to the waste station. Where possible concrete pipe reinforcement steel to be separated.
Sediment fencing posts	100%			Pegs reusable. Also accepted at the recycling centre.
Sediment fencing mesh	100%			Ideally reuse sediment cloth/mesh on future jobsites.

4.8 CHECKLISTS

Explain how the waste management systems have been designed and will be operated to prevent the potential risk or injury or illness associated with collection, storage and disposal of waste. Outline how measures for waste avoidance have been incorporated into the design, material purchasing and construction techniques of the development
Selected Garbage and Recycling systems:
Supplier? (Name & Contact)
Education and Communication: All construction crews will be made aware of waste management practices (Y/N)
Security: Waste management collections services will occur within the development. No bins to be placed in the road reserve.
Access to bins and/or storage areas:
Level access to screened bin area (Y/N)
Storage space and location: (Attach an Illustration)
Proposed locations to be shown on plans/drawings if locations changed (Y/N)
Collection points and presentation of bins: Waste bin locations indicated on the plans/drawings.
Cleaning, Odour and Noise:
Bins will be cleaned on a regular basis. Collection of bins not before 7am and not after 5pm
Ongoing Waste Management: Once developed, the school is expected to maintain a

Consistent level of waste generation. New recycling opportunities will be taken advantage of as they become available to further reduce waste.
Further information regarding better practice in the design, establishment, operation and ongoing management of waste services in residential multi-unit developments (MUDs) can be found in the Better Practice Guide for Waste Management in Multi-Unit Dwellings. Refer to https://www.epa.nsw.gov.au/resources/warrlocal/080042-MUD-waste-mgt.pdf

Plans and drawings (all developments)

The following checklists are designed to help ensure WMPs are accompanied by sufficient information to allow assessment of the application.

Drawings are to be submitted to scale, clearly indicating the location of and provisions for the storage and collection of waste and recyclables during:

- Construction
- Ongoing operation

Do the site plans detail/demonstrate:

Construction	Yes/No/NA
Areas to be excavated	Y
Size and location(s) of waste storage area(s)	Y
Access for waste collection vehicles	Y
Types and numbers of storage bins likely to be required	Y
Signage required to facilitate correct use of storage facilities	Y

Further information regarding types of waste, state regulations, illegal dumping, litter prevention tools and resources can be obtained at <http://www.epa.nsw.gov.au/waste/>

Plans and drawings (all developments).....continued

Ongoing operation	Yes/No/NA
Space	
Size and location(s) of waste storage areas	
Size and location(s) of waste bins	
Space provided for access to and the manoeuvring of bins/equipment	
Any additional facilities such as lifters, compactors and bulky waste storage	
Access	
Moving bins to and from the storage point to the collection point on collection day	
Direction of traffic flow for internal access driveways and roads sufficient for bin collection	
Design allows for the waste collection vehicle to move in a forward direction with no (or minimal) need to reverse	
Location of final collection point or presentation of bins	
Height clearance and slope, geometric design and strength of internal access driveways and roads	
Amenity	
Aesthetic design of waste storage areas	
Signage – type and location	
Arranging for the prompt removal of dumped rubbish	
All bins and containers used confirm to the Australian Standard for mobile waste containers (AS 4213)	

Built

**APPENDIX G - Construction Soil
and Water Management Sub-Plan**



22nd January 2024

CIVIL ENGINEERING SERVICES

Wee Waa High School Construction Soil & Water Management Plan



DOCUMENT CONTROL

01	21 st October 2022	Issue for Review	Superseded
02	28 th October 2022	Revised	Superseded
03	8 th November 2022	Revised	Superseded
04	16 th November 2022	Updated to suit SINSW comments	Superseded
05	17 th November 2022	Minor comments addressed	Superseded
06	25 th November 2022	Inclusion of FIA	Superseded
07	1 st February 2023	Incorporate of internal audit	Superseded
08	17 th August 2023	Incorporate External Audit items, updated entrance off Charles street	Superseded
09	27 th September	Incorporate External Audit Items	Superseded
10	22 nd January 2024	Review of Document with Built	FINAL
Rev #	Date	Description of Change	Status

APPROVALS

01	R.XU		
02	R.XU	James Georgiades	
03	R.XU	James Georgiades	
04	R.XU	James Georgiades	
05	R.XU	James Georgiades	
06	R.XU	James Georgiades	
07	R.XU	James Georgiades	
08	R.XU	James Georgiades	
09	R.XU	James Georgiades	
10	R.XU <i>Engineer – Civil and Water Engineering</i>	James Georgiades <i>Team Leader – Civil and Water Engineering</i>	
Rev #	Author	Reviewer	Approver

PREPARED BY:

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CIVIL ENGINEERING SERVICES

1. INTRODUCTION

Warren Smith Consulting Engineers (WSCE) has been engaged by Built to prepare the SSDA Compliance Letter in support of the SSDA submission for the proposed development at 105-107 Mitchell Street, Wee Waa NSW 2388.

WSCE has undertaken design and documentation including the following civil engineering services:

- Construction Soil and Water Management Sub-Plan (CSWMSP)

2. DESIGN DOCUMENTATION

The following WSCE civil design documentation (Job No: 7490000, Title: Wee Waa High School Main Works) form part of the SSDA submission:

Drawing No.	Title	Rev. #
C2.01	Construction Soil & Water Management Plan - Stage 1	B
C2.02	Construction Soil & Water Management Plan - Stage 2	B
C2.03	Construction Soil & Water Management Plan - Stage 3	B
C2.04	Construction Soil & Water Management Plan Details Sheet 1	A
C2.05	Construction Soil & Water Management Plan Details Sheet 2	A

3. SSD CONDITIONS MATRIX – SSD 21854025 – Wee Waa High School

Condition No.	Description	Reference
B24 (a)	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;	CV included in Schedule 2 Consultation Evidence included in Schedule 3
B24 (b)	B. Measures to ensure that sediment and other materials are not tracked onto the roadway by vehicles leaving the site;	Section 4.2 & Drawing C2.01,C2.02, C2.03
B24 (c)	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'	Section 4.1 & 4.2 & Drawings C2.01, C2.02 & C2.03
B24 (d)	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);	Section 4.3
B24 (e)	E. Detail all off-site flows from the site;	Drawing C2.01
B24 (f)	F. Provide a construction methodology to address management of flood related impacts, supported by a Flood Impact Assessment prepared by a suitably qualified practising Engineer, addressing the following (but not limited to):	Note only
B24(f)(ii)	(i) Describe the measures that must be implemented to manage stormwater and flood flows for small and large sized events, including, but not limited to 1 in 5-year ARI and 1 in 100-year ARI	Section 4.2 & drawing C2.01 & C2.03 & Schedule 3
B24(f)(iii)	(ii) detailed construction staging plans and additional flood modelling to confirm that the construction would not result in unacceptable flooding conditions on adjoining properties and infrastructure, as certified by a suitably qualified practising Engineer; and	Schedule 3
B24(f)(iii)	(iii) compliance with the recommendations of the 'Remedial Action Plan Version V2 Final' prepared by EMM and dated 8 November 2021 relating to stockpiling of excavated material.	Section 4.2.1

4. Erosion and Sediment Control

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

- Adequate erosion and sediment control measures are applied prior to the commencement of construction and are maintained throughout the construction.
- Construction site runoff is appropriately treated in accordance with Narrabri Shire Council requirements and
- Mitigate dust or polluted water entering the local waterways.

As part of the works, the erosion and sedimentation control will be constructed in accordance with Council requirements and the NSW Department of Housing manual, "Managing Urban Stormwater Soil & Construction" 2004 (Blue Book) prior to any earthworks commencing on site. The concept sediment and erosion control measures are documented in Warren Smith's design drawings C2.01, C2.02 & C2.03 incorporating the various construction methodology staging in order to complete the approved works.

4.1. Sediment Basin

one temporary sediment basin has been designed to capture site runoff during construction and have been located at logical points in relation to the existing terrain of the site. Construction of the basins will allow for maximum runoff capture assisted by diversion swales and direct run off to the basin.

Calculations to determine the concept design basin sizes have been based on available geotechnical information regarding soil types and through the use of Soils and Construction Volume 1 Manual.

To ensure the sediment basin is working effectively it will be maintained throughout the construction works. Maintenance includes ensuring adequate settlement times or flocculation and pumping of clean water to reach the minimum storage volume at the lower level of the settling zone. The settling zone will be identified by pegs to clearly show the level at which design storage capacity is available.

The pumped water from the sediment basin can be reused for dust control during construction.

Overflow weirs are to be provided to control overflows for rainfall events in excess of the design criteria which caters for a storm event up to and including the 1% AEP storm event.

The concept sediment basin sizing is noted on drawing C2.01 with reference to the overflow pumps approved under a separate s138 application with Narrabri Shire Council.

4.2. Sediment and Erosion Control Measures

Prior to any earthworks commencing on site, sediment and erosion control measures shall be implemented generally in accordance with the Construction Certificate drawings and the "Blue Book" to manage flows from the 1 in 5 year to 1 in 100 year storm event where appropriate. The measures shown on the drawings are intended to be a minimum treatment only as the contractor will be required to modify and stage the erosion and sedimentation control measures to suit the construction program, sequencing and techniques. These measures include:

- A Temporary site security/safety fence is to be constructed around the site and 1m high fencing to proposed sediment basins when a depth of sitting water is expected to exceed 300mm.
- Sediment fencing provided downstream of the disturbed areas, including any topsoil stockpiles.
- Dust control measures including covering stockpiles, installing fence hessian and watering exposed areas.
- Placement of hay bales or mesh and gravel inlet filters around and along proposed catch drains and around existing stormwater inlet pits or equivalent silt fences. Inspections of silt fences is to occur weekly and cleaned if deemed via visual monitoring to need corrective action;
- The construction of a temporary sediment basin as noted above in section 2.2
- Stabilised site access at the construction vehicle entry / exits

All stockpiles and embankment formations shall be stabilised by hydroseeding or hydro mulching on formation utilising such products as aqua tarp.

These measures will be incorporated to also mitigate dust or polluted waters entering the overland flow channels surrounding the site.

4.2.1. Stockpiling of material from unexpected find's protocol.

Upon commencing works related to removal of unexpected finds protocols, the following advise has been received within the Remediation action plan for stockpiling of material associated with these isolated works.

Given the proximity of the site to stormwater drainage systems which discharge to the Namoi River, and to minimise contaminated soil loss in the event of heavy rainfall or flooding, the use of stockpiles should be minimised and where possible should be temporary in nature. Soils that are contaminated or not suitable for reuse at the site should be classified in-situ, then excavated and loaded directly onto trucks for disposal. Soils that are contaminated but can reused at the site (based on the results of additional investigations and validation sampling) should be classified/validated in-situ, then excavated and placed in the final location. Material movements will be tracked via the Materials Tracking System

For non-contaminated ('clean') material, stockpiling will be minimised to the extent practical with material temporarily stockpiled in designated stockpile areas located on elevated ground and not flood prone areas (unless approved otherwise by the projects flood consultant).

Any temporary stockpiles are to be appropriately located and tracked to avoid mixing of difference classes of material (eg soil types, evidence of contamination). Bunding and sediment controls, including geofabric and/or wetting agents will be installed as appropriate to minimise runoff from stockpiles to surrounding areas. All stockpiles should be formed in a manner that reduces the potential for erosion.

4.3. Air Quality

The project will implement air quality measures to mitigate airborne dust particles.

The following measures will be implemented by the project team for the duration of the construction works:

- Shade cloths are to be implemented to all site fences.
- A maximum speed-limit of 20km/h is to be enforced for all internal roads and work areas during construction.
- Weather events are to be monitored in order to limit activities during adverse weather (Hot, dry, and windy conditions). Visual monitoring of conditions to also occurring through the day when activities are occurring.
- Dust suppression via water cart will be used during civil activities at regular intervals.

- For long term stockpile management, Aqua tarp or similar stockpile treatments will be used to bind the surface material to both mitigate wind and water erosion but also preventing dust particulars from emitting into the surrounding atmosphere.
- Any works on road surfaces are to be cleaned regularly to remove any sitting debris on the surface. Avoid dry sweeping of large areas. Vehicles to be inspected prior to leaving site in order to manage “track-out” of materials when leaving site.

4.4. Wet-Weather Management

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

- The suitability of pedestrian access to the amenities and into the construction work areas
- The Suitability of access for plant and equipment
- The suitability of ground conditions for plant and equipment to operate
- Nominate the construction zones suitable for work to commence

Actions to remediate those areas deemed not suitable for work to commence (de-water; prepare ground conditions and access ways etc.) SCHEDULE 1 – WSCE CIVIL DRAWINGS

SCHEDULE 1 – WSCE Civil Drawings

LEGEND

- BOUNDARY
- BULK EARTHWORKS CONTOURS
- TEMPORARY CONSTRUCTION ACCESS
- SITE GATE
- SEDIMENT FENCE
- DIVERSION BANK AND CHANNEL
- DISCHARGE FROM BASIN
- SEDIMENT BASIN
- SITE STOCKPILE (TBC ON-SITE)
- CHECK DAMS
- INDICATIVE OVERLAND FLOW ROUTE

SEDIMENT BASIN NOTE:
 SEDIMENT BASINS HAVE BEEN SIZED BY USING PROCEDURES DETAILED IN THE 'BLUE BOOK - MANAGING URBAN STORMWATER' FOR TYPE D BASINS. A SUMMARY OF THE CALCULATED AND PROVIDED VOLUMES IS PROVIDED BELOW.

SEDIMENT BASIN 1:
 REQUIRED VOLUME = 1000 m³ (100-YEAR ARI)
 BASE AREA = 1622 m²
 TOP AREA = 2376 m²
 DEPTH = 0.6 m
 MAX SIDE SLOPE = 1V:5H
 VOLUME PROVIDED = 1200 m³

PROVIDE 5 m WIDE X 0.15 m DEEP SPILLWAY.

SOIL AND WATER MANAGEMENT NOTES:

- ALL EROSION CONTROL MEASURES TO BE INSTALLED IN ACCORDANCE WITH LANDCOM MANAGING URBAN STORMWATER: SOILS AND CONSTRUCTION ('BLUE BOOK').
- SEDIMENT FENCING TO BE PROVIDED IN ACCORDANCE WITH STANDARD DETAILS AS REQUIRED TO PREVENT SEDIMENT FROM LEAVING THE SITE. TEMPORARY CONSTRUCTION ENTRY/ EXIT SEDIMENT TRAPS ARE TO BE PROVIDED AT ENTRY/ EXIT LOCATIONS.
- DIVERSION DRAINS TO BE PROVIDED TO DIVERT RUNOFF FROM DISTURBED AREAS TO THE SEDIMENT BASIN.
- PIT INLET SEDIMENT TRAPS ARE TO BE PROVIDED AT ALL EXISTING STORMWATER INLET PITS LOCATION WITHIN AREA OF WORK.

SEDIMENT CONTROL CONDITIONS:

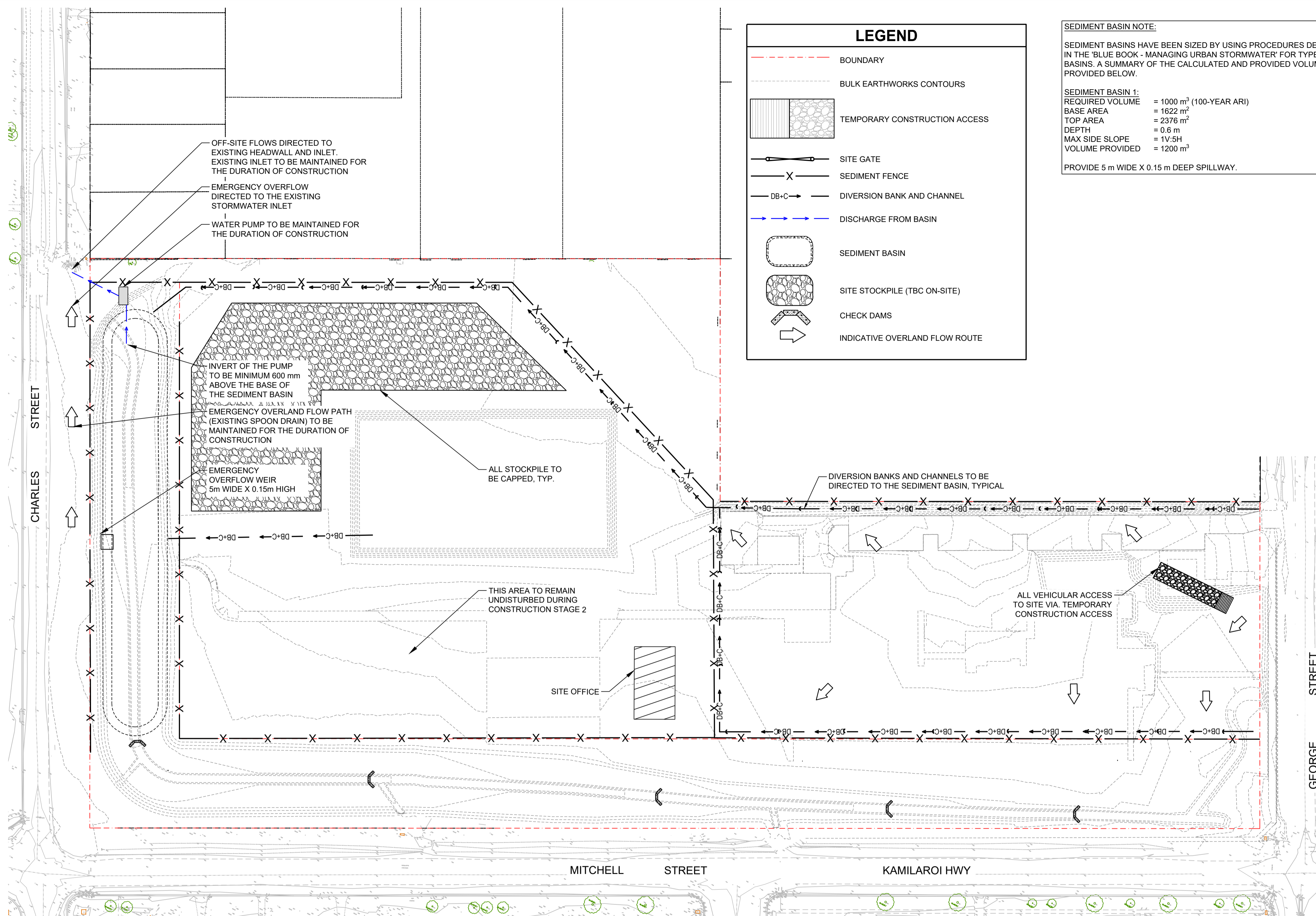
- SEDIMENT FENCES WILL BE INSTALLED AS SHOWN AND ELSEWHERE AT THE DISCRETION OF THE SITE MANAGER TO CONTAIN COARSER SEDIMENT FRACTIONS INCLUDING AGGREGATED FINES AS CLOSE TO THE SOURCE AS PRACTICABLE.
- SEDIMENT REMOVED FROM ANY TRAPPING DEVICE WILL BE RELOCATED WHERE FURTHER POLLUTION TO DOWNSTREAM LANDS AND WATERWAYS CANNOT OCCUR.
- STOCKPILES WILL BE PLACED WHERE SHOWN ON PLAN OR ELSEWHERE AT THE DISCRETION OF THE SITE MANAGER, NOT WITHIN 5m OF ANY HAZARDOUS AREAS INCLUDING LIKELY AREAS OF HIGH VELOCITY FLOWS SUCH AS WATERWAYS, PAVED AREAS & DRIVEWAYS.
- PIT INLET FILTERS (SEE DETAILS) WILL PREVENT WATER FROM DIRECTLY ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS FREE OF SEDIMENT.
- TEMPORARY SEDIMENT TRAPS WILL BE RETAINED UNTIL AFTER THE LANDS THEY ARE PROTECTING ARE COMPLETELY REHABILITATED.
- CONTRACTOR TO CONSTRUCT TEMPORARY SEDIMENT BASIN. WATER SHOULD BE ALLOWED TO SETTLE BEFORE DISCHARGE. CONTRACTOR MUST VERIFY THAT WATER QUALITY MEETS AUTHORITIES REQUIREMENTS PRIOR TO DISCHARGE. ACCUMULATED SEDIMENT SHOULD THEN BE REMOVED & DISPOSED OF IN ACCORDANCE WITH ENVIRONMENTAL MANAGEMENT PROCEDURES.

GENERAL NOTES:

- STOCKPILE LOCATION SHOWN INDICATIVELY SHALL BE DETERMINED ON SITE DURING CONSTRUCTION STAGE.
- IMPACTS AROUND EXISTING TREES TO BE MINIMISED DURING CONSTRUCTION. PROPOSED LEVEL CHANGES IN THE VICINITY OF EXISTING PROTECTED TREES TO BE REVIEWED AND APPROVED BY PROJECT ARBORIST.
- ALL WORKS AROUND EXISTING TREE ROOT PROTECTION ZONES TO BE CONFIRMED WITH THE PROJECT ARBORIST PRIOR TO COMMENCEMENT ON SITE. REFER TO PROJECT ARBORIST REPORT FOR TREE REMOVAL AND PROTECTION PLAN.

CONSTRUCTION WORK MANAGEMENT IN WET-WEATHER EVENTS:

- ALL STOCKPILES TO BE CAPPED
- THE CARPARK MAY BE UTILISED AS TEMPORARY MATERIALS HANDLING AND STORAGE AREA. THE AREA IS TO BE TEMPORARILY STABILISED BY DGB AND SEALED
- DURING WET WEATHER, ALL PLANT AND EQUIPMENT TO BE STORED ON THE CARPARK
- AFTER EVERY RAIN EVENT, SAFETY INSPECTIONS TO BE CARRIED OUT PRIOR TO WORKS COMMENCING



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DO NOT SCALE FROM DRAWINGS. CHECK & VERIFY ALL DIMENSIONS & LEVELS BEFORE COMMENCEMENT OF ANY WORK.

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NORTH

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SCALE 1:750 A1 SHEET

REVISION	AMENDMENT	DATE	REVISION	AMENDMENT	DATE
A	ISSUE FOR CONSTRUCTION	31/01/23			

Built

PROJECT

WEE WAA HIGH SCHOOL
MAIN WORKS

PREPARED BY

WARREN SMITH CONSULTING ENGINEERS
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Hydraulic Fire Civil Utilities Infrastructure

CONSTRUCTION SOIL &
WATER MANAGEMENT PLAN -
STAGE 1

SCALE AS SHOWN	DRAWN I.K.	DESIGNED R.X.	CHECKED J.G.	APPROVED J.G.
JOB No. 7490000	DRAWING No. C2.01		ISSUE A	
DATE MARCH 2022	STATUS ISSUED FOR CONSTRUCTION			

