Construction Environmental Management Plan

Managing FDC's Safety, Quality and Environmental requirements

Project Details	
Project Name:	Barangaroo Cutaway Cultural Facility
Project Number:	200290
Project Location:	1 Merriman St, Barangaroo NSW 2000
Client:	Infrastructure NSW
Commencement date:	April 2024
Estimated completion date:	July 2025
Name of principal contractor:	FDC Construction (NSW) Pty Limited
Company address:	22-24 Junction Street, Forest Lodge NSW 2037
ABN:	72 608 609 427

Prepared Signature: Peter Colak — Digitally signed by Peter Colak Date: 2025.02.14 10:08:49 +11'00'

Peter Colak

Senior Project Manager

Approved Signature: Emma Thomy — Digitally signed by Emma Thomy Date: 2025.02.14 10:49:53 +11'00'

Emma Thomy

Project Director

Acknowledgement of Country

This project is being undertaken on **Eora** land.

FDC are proud to acknowledge the Traditional Custodians of the land on which this project is located, and their connections to land, sea, and community.

We pay our respects to their elders past and present and extend that respect to all Aboriginal and Torres Strait Islander people and all Aboriginal and Torres Strait Islander workers on this project.

FDC Commitment

"FDC are committed to a reconciled, just and equitable Australia."
(FDC Reconciliation Action Plan)

By these acknowledgements and other actions, FDC will continue to do all we can to contribute to improving the lives and communities of our First Nations People.

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Definitions

Acronym	Term and/or Definitions
INSW	Infrastructure New South Wales
PPR	Cutaway Preconstruction Project Review
EY	Ernest Young
FDC	FDC Construction
CAR	Corrective Action Request
CEMP	Construction Environmental Management Plan
QMP	Quality Management Plan
CSG	Construction Site Safety Group
CTR	Compliance Tracking Report
ITP	Inspection and Test Plan
ITR	Inspection Test Review
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
EPA	NSW Environmental Protection Authority
GS	General Specification
INSW	Infrastructure New South Wales
KPI	Key performance Indicator
CNVMP	Construction Noise & Vibration Management Plan
N/A	Not applicable
SWMS	Safe Work Method Statement
WHS	Work Health and Safety
UFP	Unexpected Finds Procedure
CEMP	Construction Environmental Management Plan
Emergency Event	A situation in which there is an unacceptable risk, to the health and wellbeing of occupants, staff, or the public, which needs intervention by staff or emergency services to control, limit escalation, suppress or address the risk and return to normal operations.
Environmental Aspect	Element of an organisation's activities, products or services that interacts or can interact with the environment (AS/NZS ISO 140001:2016)
Environmental Impact	Change to the environment whether adverse or beneficial, wholly, or partly resulting from an organisation's environmental aspects
Environmental Policy	Statement by an organisation on its intention and principles for environmental performance
Incident	An occurrence or set of circumstances that causes, or threatens to cause, material harm to the environment, community, or many members of the community, being actual or potential hard to the health and safety of human beings or to threatened species, endangered ecological communities or ecosystems that is not trivial
Interface Contractors	Any contractor, consultant, artist, tradesperson, or other person engaged by INSW or associated that is carrying out, or that will carry out Work including: • Placemaking • Barangaroo Security
Interface Work	Any activities undertaken by an Interface Contractor which interface with or affect, or are affected by, the Contractor's Activities, the Project Works, or the Temporary Works.

Non-Compliance	Failure to comply with the requirements of the Project Approval or any applicable license, permit or legal requirements.
Non-Conformance	Failure to conform to the requirements of project system documentation including this CEMP or supporting documentation
POEO Act	*Protection of the Environment Operations Act 1997* (NSW)
Relevant Council	City of Sydney
Sensitive receiver	Includes residences, Public, Barangaroo Parkland and office surroundings

1. Introduction

FDC Construction have been engaged by Infrastructure NSW to complete design and construct of the Barangaroo Cutaway faculty.

This Construction Environmental Management Plan (CEMP) has been prepared to document the FDC constructions environmental commitments, objectives, and procedures for the project.

The CEMP is structured to provide and address the following:

- A description of the Site and project scope.
- Establishing the environmental legal framework and objectives that the project will be operating under.
- A description of the standard approach of FDC Constructions environmental management system, including reporting and monitoring.
- An outline of roles and responsibilities for the project, including site staff and FDC Senior management support teams.
- An outline of FDC Procedures will address the standard controls against each of those environmental risks (Appendix F); and
- A project risk assessment that analyses the risks under each aspect

2. Site Location

The Barangaroo Cutaway is Located under the Barangaroo Headland Park

Address– 1 Merriman's Street Barangaroo NSW

3. Project Scope

The scope includes, but is not limited to the design and construction, and testing and commissioning of:

- Primary Use Areas inclusive of the Main Entry, Entry Foyer, Event Hall, Gallery & Exhibition Space, Education Space, Waranara Terrace, and associated amenities.
- Back of House Areas inclusive of a Security Control Centre, Loading Dock, Offices, Green Rooms, Event Kitchen, Storage Spaces.
- Service and Amenity areas inclusive of a Café and Retail/merchandising space.
- Management Offices including Precinct Management Office, Cutaway Management Office, and Facilities Management Office.
- New services including upgrades, connection to and augmentation of existing services.
- New skylight structure on the existing sandstone wall (the skylight support will impact on the top of the rock shelf and the adjacent existing concrete upstand, which will require additional structural strengthening to support the new enclosure).
- Bespoke timber elements of the fit out

4. Project Plans

This CEMP and its sub plans operate under the overarching contract plans.

CEMP Category	Stand-alone management plans associated to the CEMP
Traffic (CTMP)	Appendix B
Noise and Vibration sub-plan (CNVMP)	Sub-plan to this CEMP – Appendix C
Soil & Water	Procedure in CEMP
Air Quality	Appendix I
Waste (and Recycling)	Standalone plan CWMP – Appendix F
Construction Operation Management plan	Standalone plan COMP
Environmental Audit plan	Appendix E
Flora & Fauna Plan	Appendix K

5. Construction Activities

Works will be staged within a constrained site located relatively close to Nawi Cove and other development works, of Sydney Metro which Construction works is due to be completed by circa June and nearby existing heritage structures.

Detail Construction Activities

The construction of Barangaroo Cutaway will involve the following detailed activities.

There is expected to be a peak of 150 people on site and typically up to 10 truck movements and 25 light delivery vehicle movements per day. Refer Construction Traffic Management Plan (CTMP) for details.

Component	Description of Work
Site Establishment	Establishment of the site amenities will take place on level 1 of Warana Terrance with the project Site office to be established in the Heritage Bond Store on level 3 at 1-3 Munns street, Site containment hoardings to Merriman's Street, Nawi cove, Waranara terrace and existing loading dock
Construction works	Construction of new floors to the administration and event support infrastructure Construction of new GRC/stone to entry located at Nawi cove Internal equipment and lifting gantries to ceilings for events. fit out, including commercial kitchen, bathrooms, entry façade, lift, stair. Fit out trades, building services, including lifts Platform hoists and AV equipment. Fit out of existing plant and equipment rooms. Construction of back of house cleaners and waste rooms Construction of public and staff toilets Installation of low-voltage electrical, earthing, fire, hydraulics, lighting, and mechanical systems, including earthing and bonding as associated with works. Installation of building management control system Provision of selected equipment and access provisions for Interface Contractors Installation of signage and wayfinding

	Installation of new Mechanical systems Modification and new Integrated fire systems Installation of new MSSB room and connection of electrical supply to existing substation Installation of New grease arrestor

Plant and Equipment

Plant and equipment to be utilised to undertake the project activities include Construction

Works:

- Mobile cranes as required and up to 55t.
- 25t Franna cranes.
- 10t telehandlers.
- Elevated work platform (Scissor lifts and boom lifts).
- Concrete agitator trucks.
- Concrete pump / placing boom.
- Handheld concrete vibrators.
- Delivery trucks - up to 19m articulated.
- Waste removal – short wheel-based trucks/skip bins.
- materials hoists
- Powered hand tools.
- Circular saw.
- Tile and brick saws.
- Ventilation fans.
- Demolition Works:
- 5t, excavators.
- Skid Steer.
- 13t mobile crane (for demolition).
- Bogie 10-wheeler.
- Concrete saws.
- Crusher attachments

Site Compounds

The site compound and Amenities facilities that FDC use for the purposes of carrying out construction, and to house the project work force, shown on the site establishment plans in Appendix G.

Summary Construction Activities with Key Environmental Risks

Key environmental risks, identified to be managed include:

- Minimisation of dust generated by demolition, stockpiling.
- Managing the risk of the project's proximity to Sydney Harbour and the potential for surface run off contaminated excavation material discharging into the Harbour.
- Managing surface water runoff.
- Ensuring that there are no legislative breaches or non-compliances.
- Managing noise and vibration, and especially out of hours noise, to meet regulatory limits and impact to sensitive

receivers.

The construction activities associated with the environmental risks identified above pose the key environmental risk associated with the project. Following these activities, construction activities will mainly be associated with the Cutaway fit out, the construction of skylights and front entry construction and other minor structures (HCT) in the parkland and landscape works. The environmental focus on these activities will be on impacts due to logistics and material handling such as noise and vibration, and the generation of waste.

A risk assessment has been undertaken to assess the environmental impact of construction activities. The risk assessment will be revised at 6 monthly intervals throughout the course of the works.

Timing and Scheduling

Site establishment is planned to commence in May 2024, with Bulk demolition works completed by June, structural floors and stair/lift core are being constructed from late May with fit-out works and progressing from June, GRC and feature tree construction will be towards the end of 2024 with commission and project handover first half of 2025.

Construction Hours

Construction is generally proposed to be carried out during the standard construction hours of 7am to 6pm Monday to Friday and 8am to 5pm Saturdays.

Respite periods for heavy demolition works will occur Monday to Friday between 09.30am - 10.30am and 12.30pm – 13.30pm. During these periods construction activities which generate significant noise will be ceased.

Interface Contractors

Interface Contractors will comply with this CEMP and associated sub-plans and procedures whilst carrying out client / Placemaking activities within the boundaries of the Cutaway project.

6. CEMP Purpose

This CEMP has been developed to meet the requirement of PPR, Preliminaries and Contract Documents

- Provide a single document (including required sub-plans) for managing environmental aspects of the project.
- Identify measures to protect the environment and ensure compliance with environmental legislation.
- Encourage best practice environmental management through planning, commitment, and continuous improvement.
- Identify and control potential environmental risks associated with the respective works activities.
- Identify the potential for, and respond to, environmental incidents, accidents and emergency situations and take corrective action.
- Define roles and responsibilities for personnel.
- Ensure employees and subcontractors implement the CEMP.
- Facilitate consultation and communication with external stakeholders such as the local community and government agencies.
- Identify the need for and facilitate obtaining additional approvals.
- Define environmental reporting requirements and evaluation of performance.
- Describe all monitoring procedures required to identify impacts on the environment because of the works and activities.
- Implement complaint reporting procedures and maintain records of complaints and responses to complaints; and,
- Establish and maintain programs and procedures for periodic CEMP audits to be carried out.

7. CEMP Context

The CEMP sets out how FDC Construction in their role as Principal Contractor will manage their activities for the project to reduce impacts to the environment in accordance with company environmental policy, legislation, and planning Conditions of Approval.

This CEMP was prepared in accordance with:

- The relevant SSD approval conditions Appendix – M
- PPR for the project
- Applicable legislation and regulatory requirements.
- Guideline for the Preparation of Environmental Management Plans (Department of Infrastructure, Planning and Natural Resources, 2004); and,

This CEMP explains how FDC construction will meet the environmental outcomes for the construction of the project.

In addition to the CEMP, the following sub-plans have been prepared, as set out in PPR.

- Construction Noise and Vibration Management Plan (CNVMP).
- Work Health and safety Management Plan (WHSMP)
- Waste management (CWMP)

8. Environmental Policy

FDC Environmental Policy for this project is included in Appendix H.

The Environmental Policy will be displayed at the project office, and communicated to staff, sub- contractors, and other interested parties via inductions.

9. Environmental Objectives

The environmental objectives presented in the EIS have been reviewed to assess relevance to this Project with the key objectives being as follows:

Category	Objective	Note
Dust - Air quality	Establishment of practical and robust site controls to minimise risk of dust generation in demolition, site roads, and structural works	AQMP
Contamination	Identify and minimise potential pollution from contamination when found on site	In this CEMP
Noise and Vibration	Minimise disturbance to sensitive receivers	Noise and Vibration sub plan
Traffic, Transport and Access	Ensure the safety of road users generally and manage the impact of construction traffic on the local environment	Construction Traffic Management Plan

10. CEMP Objectives and Key Performance Targets

The objectives of this CEMP and key performance targets derived from FDC Constructions Environmental Policy, core commitments will be used to measure health of the implementation of the CEMP, as follows:

Policy element	CEMP Objective	Measurement Basis	Target	Responsibility
Compliance with Legislation and regulations	Comply with all Statutory Requirements	Commonwealth, State and Local Council regulation	Zero Penalty Infringement Notices issued by Regulators. Zero Prosecutions issued Regulators	Senior Project manager & Construction Planning and Environment Project Manager
Minimise & eliminating environmental risks	Minimise the impact of the site works to the receiving environment	Internal audits conducted by Management	No more than 5 environmental Corrective Action items issues to a single project from an internal audit Zero Non-Conformances issues as a result Project is audited within 6 months of being established on site.	Senior Project manager
Quality System Compliance	Implement an EMS that meets the requirements of AS/NZS ISO 14001 and is subject to continuous improvement	Audits, management reviews	Address non-conformances and corrective actions within specific timeframes.	Construction Planning and Environment Project Manager
Compliance with Approvals	Deliver the project in accordance with environmental approvals	Audits, construction compliance reporting, management review	Full compliance with statutory approvals.	Senior Project manager
Community	Minimise complaints and respond to any complaints within an agreed timeframe	Record number of, and response times to complaints	Less than 2 complaints per month total. Each complaint will be responded to in less than 24 hours.	Senior Project manager Community Relations Manager
Reporting	Ensure all environmental management measures are effectively implemented	Results of external and internal audits and site inspections	Nil non-conformances in relation to implementation of the CEMP.	Construction Planning and Environment Project Manager
Training	Ensure environmental leadership is empowered with right knowledge of issues	Provide environmental training to all key staff managing environmental issues	Training completed onsite start	Construction Planning and Environment Project Manager

11. Distribution and Document Control

General

The CEMP will be held within Aconex and be available to all subcontractors, and workers with copy located at the Site notice Board.

FDC Construction Planning and Environment Project Manager is responsible for maintenance of the Plans and the FDC Document Controller is responsible for the issuance of the plans are distributed to all stakeholders.

12. CEMP Reviews and Re-issue

A review of the CEMP will be undertaken every six months (or earlier if deemed necessary by the nature of circumstances or opportunity for improvement) by the Construction Planning and Environment Project Manager and endorsed by FDC project Director.

The CEMP must be updated six monthly following the last approved revision. Draft changes can be reviewed, developed, and finalised in consultation Infrastructure NSW and technical reviewers. Revisions must not reduce the scope or level of management control.

Criteria for changes may include:

- Any changes in environmental legislation or regulations.
- Incorporating improvements resulting from internal and external audits.
- To address any significant project change in scope.
- INSW or FDC site team feedback or non-conformance reports; and,
- Lessons learnt or improvement initiatives from delivery team.

Initial updates to this Plan will be issued alphabetically for review. Once endorsed/approved by INSW, any subsequent Plan updates will be numbered consecutively and transmitted to holders of controlled copies.

The draft initial revision of the CEMP will be issued for review and comment utilising an alphabetical revision, starting with revision A. Once the CEMP has been endorsed by the principle in accordance the revision was changed to numeric one, starting with Revision 00. Minor amendments will be approved by the principle in accordance with the contract and the revision number ascended each time the Plan is re-issued.

13. Legislative, Licences and Other Requirements

Key Legislative and Regulatory Requirements

Legislation	Requirement	How this Act relates to the project
Water Management Act 2000	The NSW Aquifer Interference Policy (NSW Office of Water, 2012) documents the NSW Government's intention to implement the requirement for approval of 'aquifer interference activities' under the *Water Management Act 2000*. The Act stipulates not to cause water pollution (other than to a sewer) except in accordance with the conditions of an Environmental Protection Licence (EPL)	No change in groundwater is proposed by FDC. using the existing Ground water treatment system within the cutaway on B3. Where groundwater has naturally seeped in. This has been assessed under Part. 5.1 of the EP&A Act, therefore approvals are not required under Section 89 for water use, Section 90 for water management work.
Contaminated Land Management Act 1997	This Act outlines the circumstances in which notification to the Environment Protection Authority (EPA) is required in relation to the contamination of land	If contaminated land is discovered, it must be assessed in accordance with this Act. Areas on site with potential contamination subject to services trench excavation have been identified and will be assessed further. Noting using the existing Ground water

		treatment system within the cutaway on B3 will stay operational for the duration of the project.
Heritage Act 1977 (Section 146)	The Heritage Council must be notified if a relic is uncovered during construction and if it is reasonable to believe that the Heritage Council is unaware of the location of the relic.	Items of historic heritage potential within or adjacent to the Site include: – Munn Street/Dalgety Bond Store. – Merriman's street parkland Fence Areas on Site and adjacent to the Site with the potential for archaeological heritage have been assessed.
Dangerous Goods (Road & Rail Transport) Act 2008	A license is required for the storage and/or transport of prescribed quantities of dangerous goods	Quantities are expected to be low. Where threshold for quantities exceeded, specific requirements include appropriate placards on the transport vehicle, emergency procedures, personal protective equipment, cargo documentation and placement of fire extinguishers.
Protection of the Environment Operations Act 1997	The relevant objective of the Act is to prevent environmental pollution. The Act contains provisions relating to:	Construction works for the project are not listed as scheduled activities under the Act.
	• the definition of water pollution and exemptions from the offence of polluting waters under the Act, • compliance with the National Environment Protection (National Pollutant Inventory) Measure made under the National Environment Protection Council Act 1994 (Ch), • the issuing of penalty notices under the Act and certain related environmental legislation, • the appropriate regulatory authority for certain type of activities, • fees for environmental protection notices, • notification of pollution incidents.	Should an Environmental Protection Notice be issued, or an Environmental Protection Offence occur FDC will comply with the requirements of the notice in accordance with the Act.
National Environment Protection (Diesel Vehicle Emissions) Measure 2001	Ensure emissions from all internal combustion engines including diesel engines are not visible for a continuous period of 10 or more seconds. Otherwise, the vehicle must not be used until serviced.	All diesel-powered plant to be in good operation to minimise air pollution from diesel fumes

Waste Avoidance and Resource Recovery Act 2001	The Act aims to minimise the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and reuse and recycling of waste.	The relevance of the Act to this project is to implement the strategies by adopting the hierarchy of: • avoidance of unnecessary resource consumption. • resource recovery (including reuse, reprocessing, • recycling and energy recovery), & disposal (as a last resort).
Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)	Act protects fauna (threatened species, ecological community, or migratory species from any action that may result in their death, injury, keeping or moving. Obligation to notify Department of Sustainability, Environment, Water, Population and Communities.	Given the works within the park natural environment and the Correspondence with permit for use of space within the park, FDC will leverage off the Placemaking team and park area manager, to identify any Protects fauna if the case fauna establishes itself on site.
Environmental Planning & Assessment Act 1979	The objects of the Act are as follows— (a) to promote the social and economic welfare of the community and a better environment by the proper management, development, and conservation of the State's natural and other resources, (b) to facilitate ecologically sustainable development by integrating relevant economic, environmental, and social considerations in decision-making about environmental planning and assessment, (c) to promote the orderly and economic use and development of land, (d) to promote the delivery and maintenance of affordable housing, (e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities, and their habitats, (f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage), (g) to promote good design and amenity of the built environment, (h) to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants, (I) to promote the sharing of the responsibility for environmental planning	FDC will comply with SSDA / SEAR's conditions throughout the project
National Greenhouse and Energy Reporting Act 2007	The Act introduces a single national framework for reporting and disseminating company information about greenhouse gas emissions, energy production and energy consumption	FDC and subcontractors site greenhouse gas emissions associated with the project scope, must be collated reported.
Fisheries Management Act 1994	The Act governs the management of fish and their habitat in NSW including regulating activities that can impact on fish habitats.	Low Relevance FDC will follow any interactions or non-conformance issued form NSW fisheries.

Biosecurity Act 2015	The Act aims to provide for the prevention elimination, minimisation, and management of biosecurity risks.	Under Part 3 of the Act there is a general biosecurity duty to prevent, eliminate or minimise risks posed by priority weeds
Ozone Protection Act 1989	The Act aims to project the environment by reducing emission of ozone depleting substances and synthetic greenhouse gases.	The relevance of this Act will relate to the use of refrigerators and air conditioning units in site buildings and vehicles which still contain CFCs. Such items are unlikely to be found on site.
Sydney Water Act 1994	The Act establishes Sydney Water as a State-owned corporation for the supply of water, provision of sewerage and stormwater drainage systems.	Coordination is required with Sydney water during the works. Operational groundwater will be collected with the established system and discharged with the current Cutaway systems, during construction phase this will be monitored and if required additional measure will be implement if required.

FDC Senior Project Manager will review legislative and other requirements at six monthly intervals during construction as part of the management review of this CEMP and update the document with any applicable changes. The Senior Project Manager will consult with internal legal advisors, Site teams and the INSW/EY to ensure new legislation is captured in the review. Any changes made to the legal and other requirements register will be communicated to the wider project team through Aconex, where necessary through toolbox talks, specific training.

14. Environment Protection Licences

The construction activities being undertaken as part of the Barangaroo Cutaway described in this CEMP have no activities identified under Schedule 1 of the *Protection of Environmental Operation Act 1997* (POEO), and as such no Environment Protection Licence (EPL) is required or will be sought.

15. Standards and Guidelines

Standards

The following Australian standards relating to environmental management apply to the project:

- ISO 14001:2015 Environmental Management Systems – Requirements with Guidance for Use
- AS4282:2019 Control of the Obtrusive Effect of Outdoor Lighting

Standards applicable to hazardous chemicals may be utilised where applicable:

- AS1940-2017 The Storage and Handling of Flammable & Combustible Liquids
- AS4326-2008 The Storage and Handling of Oxidising Agents
- AS 3780-2008 The Storage and Handling of Corrosive Substances (similar standards exist for other classes of dangerous goods)
- AS/NZS 3833:2007 The Storage and Handling of Mixed Classes of Dangerous Goods, in Packages and Intermediate Bulk Containers

Standards applicable to noise and vibration are included in the Construction Noise and Vibration Management Plan (CNVMP) which is a sub plan to the CEMP.

Guidelines

The following guidelines relating to environmental management apply to the project:

- ANZECC 2000: Australian Water Quality Guidelines for Fresh and Marine Water Quality.
- Department of Environment and Climate Change NSW 2009: Interim Construction Noise Guidelines.
- EPA 2014: Waste Classification Guidelines.
- Landcom 2004: Managing Urban Stormwater - Soils and Construction (Blue Book), Version 4.
- SafeWork NSW 2022: Code of Practice How to Safely Remove Asbestos.
- SafeWork NSW 2022: Code of Practice How to Manage and Control of Asbestos in the Workplace.
- NSW EPA, 2016: Waste Locate Asbestos Waste Transporter User Guides.
- NSW EPA 2007: Storing and Handling Liquids: trainers manual, including Review of Best Practice and Regulation

16. Environmental Risk Assessment

The environmental assessment prepared for the project and reviewed in line with the EIS for SSD - 47498458 identifies environmental risks and safeguards to be implemented to avoid or minimise those risks. Other risks have been identified through detailed understanding of proposed construction activities.

FDC Constructions will complete risk workshop during the preparation of the CEMP and will do so each time the CEMP is revised, to collate and identify environmental risks. The risk workshops focus on first identifying and categorising the sources of risk, potential incidents, the potential consequences, and the likelihood of those risks. Each risk is assessed with 'business as usual controls' then re-evaluated with proposed management and additional controls and treatments to minimise those risks.

The environmental risk assessment for the project is included in Appendix L.

The program for ongoing analysis of the key environmental risks and a review of the environmental risk assessment in Appendix I will occur as follows:

- During the six-monthly update of the CEMP.
- At the completion of environmental audits if required and when opportunities for improvement are identified.
- As a result of changes in environmental legislation or other requirements applicable to the project; and
- If there is a change to the scope of the project which may have an environmental impact.

17. Environmental Work Method Statement

There is the potential for works to be required that are outside of the initial scope of works. Environmental Work Method Statements will be used to address the risks to the environment that are identified as part of undertaking these works, with the objective to confirm the identified risks are within the acceptable limits for both personnel and the environment.

The Environmental Work Method Statement will be a document that contains the information required to manage the potential environmental risks of the activity to be undertaken. Environmental risks identified will be rated in the same manner as the Project's Environmental Risk Assessment in Appendix L.

The Environmental Work Method Statement will provide:

- Summary of the proposed works and justification.
- A methodology for the proposed works.
- Identification of relevant Revised Environmental Mitigation Measures and Conditions of Approval
- An environmental risk assessment for the proposed works before control measures are adopted.
- Control measures applicable to the proposed activities; and,
- An environmental risk assessment for the proposed works following the implementation of the proposed controls.

18. Environmental Management Requirements

Environmental Control Maps

To assist construction planning and on-site construction management, an Environmental Control Maps has been prepared as part of this CEMP which is described below.

The CEMP identifies:

- Those environmental procedures, environmental approvals, or licences which are applicable.
- Environmentally sensitive areas and/or receivers on and adjacent to the site, including any exclusion zones.
- Waterways, including stormwater drains.
- Erosion and sediment control measures
- Significant structures, work areas, machinery and vehicle parking, spoil stockpiling and fuel/ chemical areas

- Tree protection zones
- Monitoring locations (e.g., noise, vibration, and water), and
- Location of sensitive receivers (e.g., residents, hotels, pre-schools).

Environmental Control Map located in Appendix J

19. Condition Surveys

Condition surveys of properties potentially affected by Construction have been offered to owners and, if accepted, will be carried out at owner's request prior to construction works being undertaken on the project.

A road dilapidation report has been prepared for local roads proposed to be used by heavy vehicles for the Project. Copies of the report were submitted to relevant stakeholders and COS.

The condition survey and dilapidation report were prepared by an independent consultant and will be used at the end of the high-risk activities as a base to assess possible links with any observed damage.

20. Register of Hold Points

Hold points beyond which approval is required to proceed with a certain activity are summarised in Table 6 below:

Hold Point	Release of Hold point	By Whom
Prior to ground disturbance	Erosion and Sediment controls	FDC Senior Project Manager
Prior to Vegetation Clearance	Pre- Clearance Inspection/Tree Report	Arborist
Out of Hours works	Construction Noise and Vibration Management plan and Out of Hours Works Approval	FDC Senior Project Manager
Use of Local roads by Heavy vehicles	Road dilapidation report	Project Solutions
Construction identified as affecting building (e.g., excavation and or dewatering)	Building condition survey	Structural engineering
CEMP & Sub-plans	Site specific CEMP and sub-plans have been developed, reviewed, and approved.	INSW / EY / BCA Certifier
Transport of Controlled / Hazardous waste from the site	Verification that the waste has been classified in accordance with the guidelines, transport licensing in place and landfill can lawfully receive the waste Section 143 notice or equivalent from waste receiver has been received	FDC Senior Project Manager

21. Unexpected Finds – Asbestos or Contaminated Land

In the event of an unexpected find of materials containing asbestos or potentially contaminated soil FDC Construction will utilise the following procedures:

- Summary of the required actions provided below:
- Cease work in the immediate area.
- Notify the FDC Construction Senior Project Manager.

- FDC Project Manager will initiate FDC Incident communication notices to notify any other parties such as, INSW, EY, WHS Manager, and Project Hygienist PRA.
- If potential asbestos containing materials are identified water spray will be utilised to keep dust levels down.
- Restrict affected workers from moving around Site or leaving site with potential contamination on clothes and boots.
- At the completion and closure of the Unexpected Find, clearance/closure documentation will be provided to INSW.

22. Hazardous Chemicals

Typically, only small volumes of hazardous chemical will be stored on site. Dangerous goods, as defined by the Australian Dangerous Goods Code, will be stored, and handled in accordance with:

- All relevant Australian Standards.
- For liquids, a minimum bund volume requirement of 110% of the volume of the largest single stored volume within the bund; and,
- EPA guidelines for best practice.

Safety Data Sheets (SDS) of all hazardous chemicals will be kept on Project simple, the SDS will be regularly reviewed through environmental inspections. All hazardous chemicals will be kept in locked containers, positioned away from vehicle movements, and have access to clean and dry spill kits.

Environmental Incident

Task specific emergencies identified through the Environmental Risk Assessment shall be managed by supervisors responsible for the task and supported by FDC site team. Task specific documentation including SMWS, Safety Data Sheets, safety procedures, permits or a combination of these shall be implemented by personnel with instruction and training in those procedures. The below actions shall be implemented in the event of a task specific emergencies including:

- Spills.
- Release of waste / odours.
- Failure of erosion and sediment controls.
- Contaminated material identified on-site; and
- Discovery of an item of aboriginal or heritage significance.

Immediate Response – ALL WORKERS AND VISITORS

- In the event of an emergency contact FDC management by emergency response alarm, phone or attending the site office.
- Notify emergency services via 000 if you believe it necessary.
- Notify Key staff personal.

Chief Warden

- Assess the situation and identify the nature and severity of the incident.
- If safe to do so, stop the task causing the incident.
- Call Emergency Services on 000 and advise site location and nature of the incident if not contained on site.
- If emergency not contained on site notify the Environmental Protection Authority.
- If safe to do so, implement containment measures (e.g. spill kit; suppression agents);

- Minimise disturbance to heritage or culturally sensitive areas.
- Implement controls specific on Safety Data Sheets for hazardous chemicals / dangerous goods.
- Dispose of clean-up material according to SDS and regulatory requirements.
- If required, commence evacuation of site by activating **EVACUATION PROCEDURE.**
- If required, activate the **INJURY / ILLNESS PROCEDURE.**
- Assist the Chief Warden.
- Stop work in the area and direct unnecessary personnel away from the location.

23. Roles and Responsibilities

Key Personnel

The below roles and environmental responsibilities.

Project Director	**Emma Thomy** **Phone**: 0434 221 330 **Email:** emmat@fdcbuilding.com.au
Senior Project Manager	**Peter Colak** **Phone**: 0408 314 316 **Email:** peterc@fdcbuilding.com.au
Planning and Environmental Project Manger	**Pat Trotter** **Phone**: 0413 747 767 **Email:** patt@fdcbuilding.com.au
Senior Site Manager Senior Site Manager	**Luke Trochei** **Phone**: 0447 991 251 **Email:** luket@fdcbuilding.com.au **Charlie Akle** **Phone**: 0437 611 026 **Email**: charliea@fdcbuilding.com.au
Documents Controller	**Benjamin Kelly** **Phone:** 0428 195 758 **Email:** benjamink@fdcbuilding.com.au
Independent Environmental Auditor	**NGH Consulting – Nicola Smith** **Phone** 0410 411 660 **Email**: Nicola.s@nghconsulting.com.au
Stakeholder and Community Relations Manager	**Ineco - Dave Simpfendorfer** **Phone** 0414 789 310 **Email**: dave@ineco.com.au
Contracts Manager	**Marcel Chan** **Phone:** 0466 102 174 **Email:** marcelc@fdcbuilding.com.au

Project Director

The environmental responsibility for the project is the Project Director which is to:

- Ensure the requirements of this CEMP are fully implemented, and that environmental requirements are not secondary to other construction requirements.
- Endorse and support the environmental policy.
- Liaise with INSW and other government authorities as required.
- Participate and provide guidance in the regular review of this CEMP and supporting documentation.
- Provide adequate resources (personnel, financial and technological) to ensure effective development, implementation, and maintenance of this CEMP.
- Ensure that all personnel receive appropriate induction training, including details of the environmental and community requirements.
- Ensure that complaints are investigated, and issues are resolved in accordance with the community and stakeholder engagement plan; and,
- Direct that works be stopped immediately where there is an actual or potential risk of harm to the environment, property and/or human health.

Senior Project Manager

FDC Senior Project Manager is responsible to the Project Director to ensure effective environmental controls are implemented for the duration of the project.

Specifically, the Senior Project Manager is responsible for the:

- Planning construction works so that it minimises impact to the environment.
- Implementing and maintaining the CEMP.
- Implementing the CTMP and related approvals.
- Reviewing the environmental aspects at project start-up and ensuring the CEMP addresses all requirements.
- Providing guidance, motivation, and resources to achieve the provisions of the CEMP.
- Ensuring that subcontractors and suppliers are aware of FDC environmental policy and objectives, through conditions of contract, tender interviews, scopes of work and site environmental inductions as applicable; and,
- Establishing monitoring records and ensuring the scope and frequency of monitoring activities satisfies the requirements of the CEMP.

The Senior Project Manager shall have sufficient authority and independence to:

- Identify and record any environmental problems.
- Initiate solutions to the environmental problem.
- Stop the works, if such a decision becomes necessary, to prevent or mitigate adverse environmental conditions, or if corrective measures recommended are not being carried out; and,
- Provide recommendations for CEMP.

Planning and Environment Project Manager

FDC Planning and Environment Project Manager is responsible for establishing and maintaining the Company's Environment Management System for the project and represents FDC on all environmental matters pertinent to the CEMP.

The Planning and Environment Manager is responsible for:

- Reports to the Project Director on performance and implementation of the CEMP and associated sub- Plans.
- Assisting the Site Managers with the implementation of the CEMP.

- Providing support and technical assistance to the Project Site Coordinators.
- Monitoring the effectiveness of the Environmental Management System.
- Primary contact with INSW, EY and the Environmental Representative and other government authorities on environmental and approvals issues.
- Ensures CEMP reviews are carried out in accordance with the CEMP.
- Monthly environmental reports.
- Compliance Tracking Reporting and collating of evidence.
- Register of Hold Points and Records of release
- Has authority to stop the works, if such a decision becomes necessary, to prevent or mitigate adverse environmental conditions, or if corrective measures recommended are not being carried out.
- Assists stakeholder and community manager on environmental issues.
- Attend environmental inspections, report on environmental incidents and non-compliances against the PPR and close out of related actions; and,
- Continually assess environmental risks.

The Planning and Environment Project Manager is authorised to require all employees, including Senior Project Manager to comply with the provisions of the CEMP and EMS and may issue directions to that effect.

Senior Site Manager

FDC Site Manager is responsible to the Senior Project Manager to ensure effective environmental controls are implemented for the duration of the project.

Specifically, the Site Manager is responsible for the:

- Planning construction works so that it minimises impact to the environment.
- Implementing and maintaining the CEMP.
- Implementing the CTMP and related approvals.
- Providing guidance, motivation, and resources to achieve the provisions of the CEMP.
- Ensuring that subcontractors and suppliers are aware of FDC environmental policy and objectives, through conditions toolbox talks, Daily prestart, change management procedures, and site environmental inductions as applicable.
- Maintaining monitoring records and ensuring the Completion of task as required.
- Drive positive compliance to the CEMP to ensure the workforce is aware of their obligations under the CEMP.
- The Site Manager shall have sufficient authority and independence to:
  - Identify and record any environmental problems.
  - Initiate solutions to the environmental problem.
  - Stop the works, if such a decision becomes necessary, to prevent or mitigate adverse environmental conditions, or if corrective measures recommended are not being carried out; and,
  - Provide recommendations for CEMP.

Document Controller

FDC Project Document Controller with respect to environmental issues reports to the Planning and Environment Project Manager. Responsibilities include:

- Uploading and maintaining controlled versions of the CEMP, and other document submissions, for approval and evidence for compliance tracking on the Principal and Contractor's
- Notices to the Principal regarding audits, corrective actions, and environmental audit reports; and,
- Upload of monthly reports.

Independent Environmental Auditor

The Independent Environmental Auditor is a stakeholder that is responsible for carrying out environmental audits of the project on behalf of FDC to ensure compliance to FDC SSDA, PPR and contractual commitments, The Independent Environmental Auditor will undertake external audits on environmental management in accordance with thew SSDA requirements AT 26 weeks or after a major Environmental incident.

Stakeholder and Community Relations Manager

With respect to environmental issues the Stakeholder and Community Relations Manager is responsible for:

- Ensuring communities are informed in accordance with the Project requirements.
- Report to the Planning and Environment Project Manager of any issues raised by the community.
- Reporting to the Senior Project Manager.
- Maintaining 24-hour complaints hotline.
- Maintaining the project website and reviews/endorses all content provided to that website.
- Drafting and issuing community notifications for works taking place out of hours; and,
- Representing FDC Constructions at meetings with local stakeholders and community groups.

Refer to the Community Communications Strategy Plan.

Contracts Manager

The Contracts Manager shall be responsible to the Senior Project Manager to ensure proper procedures are followed for the procurement of goods and services to ensure that FDC Constructions environmental policy and objectives and the requirements of the CEMP are achieved.

Direct Labour

Each tradesperson, trades assistant, operator and employee shall be responsible for carrying out their work in accordance with FDC Constructions stated Environmental Policy and objectives, the CEMP and as instructed by their supervisor.

Subcontractors, and Suppliers (service suppliers)

FDC Constructions will ensure all subcontractors and suppliers are responsible for conducting their activities in an environmentally sensitive manner and in compliance with the requirements of this CEMP and sub- plans, Environmental Control Maps.

Site inductions will include detailed and site-specific environmental information. Any trade likely to have a high impact on the environment is required to submit an EMP, which is assessed to ensure it is comprehensive.

All personnel shall notify the FDC Site Manager of any activity or incident, or any deviations from workplace practices and procedures set out in this CEMP.

Contractors shall ensure their personnel working at the site:

- Have the appropriate environmental awareness training and / or qualification for the task undertaken; and,
- Are aware of the potential environmental impacts of their activities on the Site and the procedures by which such impacts are to be minimised or prevented.

The mechanical subcontractor is responsible for the delivery, storage and installation of duct work for the project and ensure the following is carried out:

- Provide photographic evidence of seals while transporting.
- Provide photographic evidence of seals in place prior to installation.
- Provide photographic evidence of seals in place after installation in location with exposed duct work.

<table>
<tr><th>Requirements</th><th>Responsibility</th><th>Accountability</th><th>Tools</th></tr>
<tr><td>Potential environmental obligations and risks associated with the project shall be identified prior to the start of the project by commencing the Environmental Risk Assessment. The Environmental Risk Assessment identifies project specific aspects and impacts, and operational controls used to manage and monitor environmental issues.

The Environmental Risk Assessment shall be developed, approved, and issued to subcontractors and be reviewed for ongoing suitability during the monthly project review. Where updates are required, these shall be made, approved, and reissued to relevant parties.</td><td>Peter Colak</td><td>Peter Colak</td><td>Environmental Risk Assessment F010</td></tr>
<tr><td>Information of hazardous materials, including material's potential impact on the environment and measures to be taken in the event of accidental release will be managed via the Hazardous Chemical Register.</td><td>Peter Colak</td><td>Peter Colak</td><td>Hazardous Chemical Register F086</td></tr>
<tr><td>FDC shall notify as soon as possible the statutory authority in the event of pollution incidents that have occurred during its activities that has caused or is likely to cause serious or material environmental harm from pollution. Failure to notify may lead to a maximum penalty of $5,500 for an individual or $27,500 for a company.</td><td>Taylor Bertram</td><td>Peter Colak</td><td>Incident Report F035</td></tr>
<tr><td>Requirements</td><td>Responsibility</td><td>Accountability</td><td>Tools</td></tr>
<tr><td>Licences and approvals required for the project are listed below (Insert relevant local authorities):

<table><tr><th>Licence/Approval:</th><th>Number:</th></tr><tr><td></td><td></td></tr><tr><td>OEH</td><td>(02) 9995 5000</td></tr><tr><td>Water Authority</td><td>(02) 8281 7777</td></tr><tr><td>Roads and Transport Authority</td><td>13 22 13</td></tr><tr><td>Ausgrid</td><td>1800 440 924</td></tr><tr><td></td><td></td></tr></table></td><td>Peter Colak</td><td>Luke Trochei/ Charlie Akle</td><td>Licence/approval documents</td></tr>
<tr><td>In addition to key aspects and impacts identified through the Environmental Risk Assessment additional Sub Plans may be required by the contract, Development Application or as deemed necessary by the Project Manager shall be developed. The following environmental sub plans are available for FDC workers on the Vault > Manage My Project > Project Set Up > Plans:

▪ Air Quality Management Plan
▪ Flora and Fauna Management Plan
▪ Hazardous Materials Management Plan
▪ Infection Control Management Plan
▪ Noise and Vibration Management
▪ Noise Management and Communication Plan
▪ Soil and Water Management Plan
▪ Waste Management Plan
▪ ESD and WOL Management Plan</td><td>Peter Colak</td><td>Luke Trochei/ Charlie Akle</td><td>Environmental Risk Assessment F010; Sub plans</td></tr>
<tr><td>Requirements</td><td>Responsibility</td><td>Accountability</td><td>Tools</td></tr>
</table>

Projects undertaken on contaminated sites shall undergo a Contaminated Site Assessment (CSA) by an external consultant. A report of the CSA shall be provided as part of planning approvals process of a proposed development. All relevant CSA reports, documents and approvals will be obtained and reviewed prior to site activities commencing. Operational controls may include any specific procedures described in the report or approvals.	Peter Colak	Luke Trochei/ Charlie Akle	CSA Report
Where required, ITPs and/or SWMS will be developed to address requirements of CSAs and to ensure verification of the works being completed safely and with minimal impact as described.	Peter Colak	Luke Trochei/Charlie Akle	SWMS; ITP's
The site workforce shall be made aware of potential contamination issues through the site induction, toolbox, or prestart meetings. Advice shall be provided should problems be identified. Spoil disposal records shall be maintained.	Luke Trochei/Charlie Akle	Lucas Arenga	Site Induction – Site Rules (F018). Toolbox Talks (F050).
Requirements	Responsibility	Accountability	Tools
The Australian Building Greenhouse Rating (ABGR) scheme assists office building owners and tenants to reduce energy use, reduce energy costs and reduce greenhouse emissions.	Peter Colak	Peter Colak	ABGR records
Green Star rating system is a comprehensive, national, voluntary environmental rating scheme that evaluates the environmental design and achievements of buildings. Green Star is Australia's trusted mark of quality for the design and construction of sustainable buildings, fit outs, and communities. Green Star rating tools help the property industry to reduce the environmental impact of buildings, improve occupant health and productivity and achieve real cost savings, while showcasing innovation in sustainable building practices. New Generation Green Star rating tools include Green Start – Communities; Green Star - Design and As Built; Green Star – Interiors; and Green Star – Performance. Potential risks to Green Star including controls measures and responsible parties shall be documented in the Environmental Risk Assessment. The Green Star rating for this project is 6 Star.	Peter Colak	Peter Colak	Environmental Risk Assessment (F010).
Requirements	Responsibility	Accountability	Tools
FDC is committed to responsible and sustainable environmental management practices and has developed processes to embed sustainability into the design and construction of our projects. The purpose of the ESD/WOL Plan is to describe the systems and processes that FDC shall implement to embed sustainability into the construction of our projects, as specified and as required. The ESD/WOL Plan and ESD & WOL Measures Matrix (F011) may be used to complement the FDC Project Management Plan, as specified and as required.	Peter Colak	Peter Colak	FDC ESD & WOL Management Plan. F011 - FDC ESD & WOL Measures Matrix

24. Specialist Consultants

FDC Constructions will engage consultants as per below for environmental matters.

Environmental Category	Consultant	Scope
Geotechnical / Contamination / Soil	Stantec	Geotech report Temps and reaction loads for Project
Water	TTW	Civil Water management
Noise & vibration	Acoustic Studio	Refer CNVMP
Sustainability	Northrop	Refer ESD
Community	Ineco	Refer CCS
Air pollution	Property Risk Australia (PRA)	Refer AQMP

25. Environmental Training

As part of their Site induction all personnel engaged in the works shall be made aware of the provisions of this CEMP to promote a general awareness of the environment and to minimise any potential impact upon it.

Targeted environmental training programs will be appropriately commensurate with their roles and environmental responsibilities in the project. Specifically, the following environmental training will be undertaken by FDC Construction personnel:

- Use of noise monitoring equipment.
- Use of Air quality sampling equipment; and,
- Use of spill kits.

Contractors shall be responsible for providing evidence to FDC Constructions, as applicable, prior to commencing work that:

- Environmental training needs of their personnel working at the site been assessed and satisfied; and,
- Contractor personnel have received the appropriate environmental awareness training and / or qualification for the task to be undertaken.

Training requirements for FDC personnel are identified and planned on appointment to their role, and for each project. The Senior Project Manager in consultation with the Planning and Environment Project Manager will monitor the skills required by FDC personnel and contractors to effectively implement the CEMP and its procedures on Site.

All project personnel including subcontractors will be required to attend a general induction prior to commencement on site. General inductions will also have a structured component focussing on environmental issues and management.

The environmental induction will include:

- Relevant details of the CEMP.
- General environmental management requirements; and,
- Incident response and reporting requirements.

26. Toolbox Talks

To assist with ongoing awareness, Site Managers and delegated representatives are to include relevant environmental specific management issues in toolbox talks.

Toolbox talks will be tailored to specific environmental issues including (but not limited to):

- Erosion and sedimentation control.
- Hours of work.
- Emergency and spill response.
- Noise.
- Housekeeping and waste.
- Concrete washout.
- Excavation dewatering.
- Dust control.
- General procedures for site preparation prior to absence or significant rain events.
- Out of hour work approval processes.
- Working outside of standard construction hours (including monitoring of noise and light spill).
- Dealing with members of the public and/or stakeholders.
- Respite periods.

Toolbox talk attendance is mandatory, and attendees of Toolbox talks are required to sign an attendance form. Records of toolbox talk attendance will be maintained by the Site Safety Coordinator.

27. Implementation

Environmental Monitoring, Inspections and Auditing

FDC Construction Planning and Environment Project Manager will facilitate the following program of monitoring, reviews, and audits, to satisfy conditions in the contract, SSDA Conditions

Activity	Sub-category	Responsibility	Frequency
Environmental Site Surveillance	Erosion and sediment controls	Site Manager	Weekly and before and after any heavy rainfall event
	Dust - Air quality	Site Manager	Daily
	Noise control	Site Manager	Continuous
	Visual amenity	Site Manager	Daily for damage and graffiti
Review of environmental actions and controls	All site environmental controls	Construction Planning and Environment Project Manager	Between weekly and an as needs basis dependent on level of onsite work activities and environmental risk profile
Independent Environmental Auditing	Refer to Audit Plan	Independent Auditor accompanied with Construction Planning and Environment Project Manager	As per the Independent Audit Schedule
	Dust - Air quality	Independent auditor accompanied with Construction Planning and Environment Project Manager	Annually
	Noise control	Refer CNVMP	Six monthly
Contractor Review	CEMP & Sub Plan	Construction Planning and Environment Project Manager	Six monthly and 4 weeks prior to site review
Contractor Review	Environmental Risk Register and Risk assessment	Construction Planning and Environment Project Manager	Six monthly or at any time initiated by the Planning & Environmental Project Manager to address new or changed construction activities
Contractor Review	Environmental Management System	Construction Planning and Environment Project Manager	Annually or at any time initiated by the Planning & Environmental project Manager to address new or changed construction activities
Contractor Internal Audits	All site environmental aspects	Construction Planning and Environment Project Manager	Six monthly
Contractor Review	CEMP & Sub Plans	Construction Planning and Environment Project Manager	Six monthly.

Environmental Management System Audit

Auditing of the project Environmental Management System will be carried out in accordance with ISO14001:2015 Environmental Management Systems and AS/NZS ISO 19011:2014 - Guidelines for Auditing Management Systems

The audit will evaluate compliance with this CEMP and associated documentation including:

- Compliance with any approval, permit or licence conditions.
- Compliance with the EMS, CEMP, CVNMP, sub-plans and procedures.
- Community consultation and complaint response.
- Environmental training records; and,
- Environmental monitoring and inspection results.

The audits will be conducted by FDC Quality Manager, or an independent consultant engaged by FDC.

An audit report will be issued by the Quality Manager to the Planning and Environment Project Manager for action. Actions will be followed up for close-out of actions within one month of the issue of the audit report.

Environmental Audit Schedule

Item	Timing	Scope
First Construction Independent Audit	12 weeks from construction commencement (21 April 2024 to be confirmed) Friday 12 July 2024	Audit compliance of all State Significant Development (SSD) environmental conditions as identified in Appendix A of this audit program, relevant to the stage of works and check implementation of measures in management plans and sub plans.
Second Audit	No greater than 26 weeks from the date of the initial Independent Audit Friday 10 January 2025	Audit compliance of all relevant SSD environmental conditions as identified in Appendix A of this audit plan, relevant to the stage of works and check implementation of measures in management plans and sub plans.
Third Audit	No greater than 26 weeks from the date of the second Independent Audit Friday 11 July 2025	Audit compliance of all relevant SSD environmental conditions as identified in Appendix A of this audit plan, relevant to the stage of works and check implementation of measures in management plans and sub plans.

Subsequent audits	No greater than 26 weeks from the date of the subsequent Independent Environmental Audit until the end of construction.	Audit compliance of all relevant SSD environmental conditions as identified in Appendix A of this audit plan, relevant to the stage of works and check implementation of measures in management plans and sub plans.

Management Review

The Project Management Team will check the status and adequacy of the CEMP to ensure that it meets current with INSW / EY and FDC national updates requirements as well as relevant environmental standards.

The CEMP and an analysis of key environmental risks will be reviewed during the contract when the following situations arise:

- INSW / EY recommendations for changes (particularly following initial review).
- Changes to the EMS; and,
- Opportunities for improvement or deficiencies in the project system are identified.

Environmental Audits

The audit frequencies noted above must be aligned with the Project Audit Program. FDC Constructions will provide INSW / EY all documentation relating to the Barangaroo Cutaway construction activities. The Planning and Environment Project Manager must notify the principal about audits timing with 10 days advance notice to enable opportunity to attend.

The Planning and Environmental Project Manager will be responsible for maintaining a controlled register of environmental issues arising from internal and external reviews and formal audits. The register will be updated within 24 hours of new information and reviewed monthly prior to the production of the monthly progress report.

The Environmental issues register will be structured as follows:

- Item No.
- Source (Observation, internal review, external review, internal audit, external audit).
- Notice type (improvement request, noncompliance, incident etc).
- Date logged.
- Date targeted for closing out.
- Environmental category.
- Description of the issue.
- Action owner (as directed/authorised by the Planning and Environmental Project Manager or Project Director).
- Proposed action.
- Referenced evidence of action.
- Date closed.
- Findings & improvement identification (e.g., update inductions, training, CEMP, EMS etc); and
- Comments on closeout and improvements.

Independent Auditors will require, and be granted access to, all relevant environmental procedure and records of which access will be facilitated by the Planning and Environmental Project Manager or as directed and delegated FDC resource.

28. Environmental Non-Conformances, Corrective and Preventive Actions and Planning Non-Compliances

FDC Constructions Planning and Environment Manager will identify and evaluate all non-conformances with legal requirements; applicable permits; specifications and the requirements with this CEMP.

Non-conformance Reports shall be raised as appropriate to clearly identify the nature of the non-conformance and document the proposed remedial action and the person responsible.

The Planning and Environment Manager will work with the Site / senior Project Manager to verify that the follow- up action is implemented and effective. Reports will be distributed and filed on Aconex.

Corrective and Preventive Action Requests will be raised, where appropriate, to correct and/or prevent non-conformances in construction activities and in the operation.

Actions because of Corrective and Preventive Action requests will be implemented, followed-up and recorded in the Project records.

29. Environmental Records and Compliance Reporting

Records

The following records are to be retained:

- Environmental Inspection Reports.
- Environmental Incident and Complaint Reports.
- Environmental Non-conformance Reports.
- Environmental Corrective and Preventive Action Requests.
- Environmental Reports from Specialist consultants.
- Copies of all applicable Environmental Permits.
- Environmental Monitoring Records.
- Induction and Training Records.
- Environmental Audit Reports.
- Any correspondence regarding environmental issues relating to the Site; and,
- Environmental documents maintained and kept electronically include:
- Environmental Control Maps (controlled revisions).
- Erosion and Sediment control Plans (controlled revisions); and,
- The CEMP, sub-plans, and corresponding risk assessments.

Records and their summaries form key baseline information for monthly reports generated as detailed Below.

Records will be retained onsite for the duration of works and following completion, records will be retained by FDC Constructions.

Monthly Reporting

FDC monthly progress report will contain a standalone section specifically for environmental reporting which has the following structure:

- Executive summary.
- Summary performance against the environmental management requirements of this CEMP.
- Status of the CEMP and all sub-plans.

- Identification and management of any consistency reviews to comply with the EP&A Act (NSW).
- Performance against environmental KPIs and targets.
- Summarised details of environmental incidents, Near misses or emergencies.
- Summary of environmental inspection reports.
- Summary of risks and opportunities
- Corrective Actions
- The results, findings, and any environmentally relevant actions of any internal or external reviews and audits carried out.
- Summary of the number of employees that have received environmental training and the type of training they received; and,
- Corrective and preventive action taken for Non-conformance.

Monthly reports will focus on activities and records from that month prior, and if no change from previous month will not repeat that information.

Construction Monitoring Program

Construction monitoring programs have been developed by specialist consultants for monitoring of noise and vibration. Details of the noise and vibration monitoring program are included in the CNVMP. As required by the monitoring program will include the following:

- Details of baseline data available.
- Details of baseline data to be obtained and when.
- Details of all monitoring of the project to be undertaken.
- The parameters of the project to be monitored.
- The frequency of monitoring to be undertaken.
- The location of monitoring.
- The reporting of monitoring results.
- Procedures to identify and implement additional mitigation measures where results of monitoring are unsatisfactory; and,
- Any consultation to be undertaken in relation to the monitoring programs captured in a Consultation Matrix.

30. Communication

Internal Communication

Environmental management will be included in the monthly agenda of FDC Construction Project leadership meetings attended by the Project Director, Senior Project Managers, Commercial Manager, HSEQ Manager, Planning and Environment Project Manager and other required key managers.

These are structured monthly meetings to share insights and issues as to how the project is being managed, how subcontractors are performing and agree on actions to formalise with rest of the team.

CEMP feedback from Stakeholders

Comments received from stakeholder reviews will be logged in a register maintained FDC. The register will record the author, date raised, the issue, the response to the issue and status.

FDC Planning and Environmental Project Manager will be responsible for the maintenance and inclusion of the register in subsequent CEMP updates.

Incident and Emergency Management

In the Event of an emergency or Incident the use of the Emergency Management plan is to be used to close out all communication and system deliverables.

Definition

An incident is defined as "*an occurrence or set of circumstances that causes, or threatens to cause, material harm to the environment, community or any member of the community, being actual or potential harm to the health or safety of human beings or to threatened species, endangered ecological communities or ecosystems that is not trivial*".

Response

In the event of an environmental incident causing or threatening 'material harm' to the environment the following general process would be followed:

- All potential or actual environmental incidents would be verbally notified to the Site manager / Senior Project Manager immediately.
- All works on the site, in the vicinity of the incident, are to cease immediately and the Site teams would immediately notify the Project Manager and Planning & Environment Project Manager of the incident.
- The Senior Project or Planning and Environment Project Manager would direct actions to contain and/or minimise material harm caused by the incident and protect the environment and community where safe to do so. - An exception to this would be where such action would result in additional material harm to the environment.
- The Planning & Environment Manager would document detailed information regarding the incident including:
- Time, date, nature, duration, and location of the incident.
- Location of the place where pollution is occurring or is likely to occur.
- Nature, the estimated quantity or volume and the concentration of any pollutants involved (if known).
- Circumstances in which the incident occurred (including the cause of the incident, if known); and,
- Any action taken or proposed to be taken to deal with the incident and any resulting pollution or threatened pollution.

Notify the Incident

The Planning & Environment Project Manager, or Site / Project Managers will immediately notify the INSW, EY, of any environmental incident occurring on site the items within notification will include the time and date of the incident, details of the incident and will identify any non- compliance.

FDC Construction, INSW, EY would work together to immediately determine if the incident is to be notified to the regulatory authorities as per environmental legislative requirements. If the incident is deemed to be required to be notified, relevant authorities must be notified immediately as required based on the nature of the incident:

- EPA.
- NSW Health.
- SafeWork NSW.
- Local council
- INSW; and,
- Fire and Rescue NSW

Manage the Incident

The Planning & Environment Project Manager (or delegate) would arrange to attend the site as soon as possible to inspect the environmental incident and advise the Project Director on additional management and monitoring measures to be implemented in addition to initial clean up measures previously implemented.

If required, the Planning & Environment Project Manager would liaise with INSW and EY to determine response measures for the control and management of the environmental incident.

Record the Incident

The Planning & Environment Project Manager will confirm recorded details of the environmental incident. Incident reports will be provided to INSW within 24 hours of becoming aware of the incident, including a root cause analysis and lessons learnt from each environmental incident and proposed measures to prevent the occurrence of a similar incident. Incidents will be closed out as quickly as possible and all required actions taken to resolve each environmental incident recorded.

Emergency Response Plan

The response procedures, emergency contact numbers, responsibilities and required actions for responding to environmental emergencies have been integrated into the Incident Emergency Management Plan (sub plan to the WH&S Management Plan). Environmental Emergency Management Protocols are outlined below:

Emergency Management Protocols	
Objective	The Site Manager shall ensure that: • A spill kit is always available on site. • All reasonable measures are taken to prevent environmental emergencies. • The project emergency plan is readily accessible to all site personnel. • Emergency plans are part of site inductions
Reporting	All emergency situations to be reported, investigated, and recorded
In the event of an environmental incident	Stop work and secure the area if safe to do so. Prevent the incident from escalating. Notify applicable management, emergency services and authorities Clean up the affected area. Engage specialist help if required Investigate the circumstances. Record the incident. Implement actions to prevent a recurrence. Follow-up to ensure the actions were correctly implemented and effective
Extreme Wet Weather	Alert site personnel and stop all external work on if applicable. Check site for plant, equipment and materials on site and secure anything not in immediate use. Check water outlets, water catchments, stormwater, and sedimentation controls
Unplanned Interruptions to Existing Services	Shut down and isolate plant if safe to do so. Immediately notify relevant emergency services and service providers Secure the area and erect hazard markers as required. Protect stormwater outlets, implement controls if required. Do not recommence work until approved by the relevant authority
High Wind Warning	Alert outdoor workers of potential dangers and stop all external work Secure any loose object that could become missiles. Ensure stockpiles are covered

Dangerous goods spill or leak	In the event of spill: • Assess: evaluate the spill to determine if it can be dealt with by an individual, the spill response team or if outside assistance is required • Secure: make the site safe for all personnel and the public • Contain: spill response equipment such as spill booms, drain covers or bunding can be used to contain the spill. for solids, tarps may be used to cover and prevent dampness to granules or possible dispersion by wind. • PPE: identify the liquid and check the MSDS to ascertain the required PPE. • Absorb: once the liquid is contained, it will need to be converted to a solid by absorption. Use the appropriate absorbing pads or absorbent to soak up the spill by placing them over the Liquid. remove the saturated pads and replace as necessary. on porous surfaces, sprinkle loose absorbent over the spill and broom through until surface appears dry. • Dispose: place the spent absorbent in the disposal bags. correctly dispose of contaminantsoff site using a licensed contaminated waste disposal contractor • Report: document the incident and include what happened, when it happened, where it happened; and what was done to eliminate or minimise the impact • Restock: order and replace used up PPE and absorption materials

31. Environmental Management

Sub Plans

Construction Noise and Vibration Management Plan

FDC will undertake noise and vibration monitoring as outlined in the Construction Noise and Vibration Management Sub plan (CNVMP) – included in Appendix C of this CEMP.

Other Environmental Management Categories

Soil and Water Management Plan

As required by of the Staging Report, soil and water management has been addressed as an activity specific soil and water procedure in Appendix D.

Air Quality Management Plan

FDC Constructions Air Quality Management Plan (AQMP) will be active throughout the project Appendix I

Excavation Risk to Services and Buildings

FDC Construction have engaged a Geotechnical consultant to provide construction phase services such as monitoring of excavations and confirmation of bearing pressure capacities of excavated areas associated with services trenching. This is to ensure that the works are constructed in accordance with the design, and that potential impacts to nearby structures and services are mitigated.

In-ground Services Identification Survey

In-ground services have been identified on the design drawings, however there is a risk that the information is incomplete. Prior to any excavation activities in areas with potential live services, FDC will undertake Dial before you Dig desktop services search and non-destructive pothole surveys to locate underground utilities. The Site and Project teams is responsible for authorising this work and ensuring information is distributed to Subcontractors, relevant subcontractors, and the project team. Site services information and photo overlay will be displayed in the site office and included in inductions.

Construction Traffic Management

Refer to the Construction Traffic Management Plan (CTMP) which is separate to this CEMP.

Flora and Fauna Management

As required by of the Staging Report, Flora and Fauna / Biodiversity management has been addressed as an activity specific procedure in Appendix K.

Waste Management and Recycling

Reference the CWMP for details relation to Construction Waste management Guides – Appendix F

WHS Management Plan

Within this section is the safe work method statement and OHS / WHS management

This plan is to be Accessed through Aconex or by contacting FDC Personal

Communications Plan (CCS)

The Communication plan is in place to manage the communication, consultation, complaints, and flow of Information to the Public.

This plan is to be Accessed through Aconex or by contacting FDC Personal

Workplace Relations Plan

This plan is to be accessed through Aconex or by contacting FDC Personal

Quality Management Plan QMP

The QMP can be accessed through Aconex or by contacting FDC Personal

Design Management Plan

The QMP can be accessed through Aconex or by contacting FDC Personal

32. APPENDIX A – Revision Table

Rev.:	Rev. Date	REVISION DESCRIPTION	PM's INITIALS (approval of changes)
0	09/02/2024	Original Issue	PC
A	10/4/2024	Updated Version	HP
C1	28/4/2024	Updated Version	HP
C2	29/07/2024	Reviewed and inclusion of mechanical subcontractor responsibilities as per Green Star requirements	HP
C3	09/02/2025	Updated to incorporate comments from Section J/Greenstar consultant	HP

33. APPENDIX C – Construction noise and Vibration Management Plan

ACOUSTIC STUDIO

The Cutaway

Construction Noise and Vibration Management Sub-Plan – CNVMP

18 April 2024

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Document Information

Project & Number	The Cutaway	FDC3564
Title	Construction Noise and Vibration Management Sub-Plan – CNVMP	
Reference	20240418 FDC3564 Rep.0001-CNVMP_v1.0.docx	
Client	FDC Construction (NSW) Pty Limited	

Organisation	Circulation	Delivered via
FDC	Hilton Palmer	Email: hiltonp@fdcbuilding.com.au
FDC	Emily Slabbert	Email: emilys@fdcbuilding.com.au

Revision History

Revision	Date	Description	Prepared by	Reviewed by
1.0	18/04/2024	Updated with FDC comments	Laura Lapena	Jason Cameron
0.1	5/04/2024	Draft	Laura Lapena	Jason Cameron

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Contents

Appendices

Summary of Noise and Vibration Management and Mitigation Measures

Overview

The Proposal is a state significant development (Application Number SSD 47498458) for the transformation of the concrete shell Cutaway space into a new cultural facility with extended uses. At times, there will be high noise and vibration emitting construction works (e.g. demolition and excavation), but these are not expected to last for long periods of time (i.e. days instead of weeks). We note that the project site is in an area in Barangaroo between parkland and residential areas, and there are also other construction sites in the vicinity (e.g. Barangaroo Metro Train Station).

For this Project, no construction work is proposed during the noise sensitive evening or night-time periods. No construction will occur on Sundays or Public Holidays.

Background noise levels

Background noise levels in the area (long-term) were measured and presented in the original NVIA for the Proposal as:

- 52 dBA daytime
- 48 dBA evening
- 42 dBA night-time

Project hours

Proposed hours of work for this project are:

- 7am to 6pm Monday to Friday
- 8am to 5pm Saturday

These project hours are as per the Development Consent for the Proposal, with no works anticipated during the sensitive late evening and night periods, or on Sundays and Public Holidays.

Noise Management Levels as per ICNG

Noise Management Levels at sensitive receivers are calculated from the ICNG noise criteria table as follows:

- 62 dBA for residential receivers during ICNG standard hours of 7am to 6pm Monday to Friday
- 62 dBA for residential receivers during ICNG standard hours of 8am to 1pm Saturday
  Note: Highly noise affected level for residences during standard hours is 75 dBA
- 53 dBA for residential receivers during outside of ICNG standard hours of 1pm to 5pm Saturday
- 70 dBA for commercial receivers when in use
- 60 dBA for passive recreation areas when in use

Plant and equipment

Concrete trucks, concrete pumps, cranes, excavators and other plant and equipment used on the site is to be in good condition, maintained in good condition, and operated in a proper and efficient manner.

Quieter equipment (e.g. drum cutter, rotary head attachments for excavators) are to be used as a priority when feasible during demolition / excavation stages. Noisier plant, such as excavator with hammer attachments, are to be locally screened for noise reduction when in use and where possible (e.g. Hushtec shroud).

Trucks

Trucks bringing construction materials to the site, and removing construction waste material from the site, will travel to and from the site via specific routes, avoiding local roads. Where possible, they will enter and leave the site's materials delivery zone in a forward direction, eliminating the need for reversing alarms. Trucks will be loaded and unloaded from the loading docks work zone to the north (undercover) and south of the site, which will minimise noise emissions from truck loading. Trucks will be staged or staggered and called to site when space is available so that they do not park up or stand idling in surrounding streets.

Vibration

Vibration is not expected to be a major issue for surrounding sensitive receivers during the demolition/excavation stages of the project due to the short duration of these works in the program. However, vibration monitoring is recommended in this Plan to protect the residential receivers and structures on Merriman Street - in close vicinity to the rock face and site boundary.

Community consultation

Occupants of the residential terraces to the east of the site and commercial offices to the south of the site will be notified and informed at intervals of the project hours, duration and site management contact details.

Complaints and non-compliances

A complaints and non-compliance system is included in this plan, to provide a means of communication for surrounding sensitive receivers that may be affected by noise and vibration impacts during the construction stage of the Proposal.

Training

Contractors and visitors to site will be required to complete an induction. There will be regular training and toolbox talks. These will include, as relevant, providing awareness of:

- This plan
- Project hours
- Specific noise mitigation measures
- Being respectful and considerate of neighbours
- Minimising noise and vibration generation

Note: This will include requirements to avoid trucks using exhaust braking when approaching the site, not using vehicle horns for signalling, keeping radio volumes to a reasonable level and not shouting.

Monitoring

An unattended long-term noise and vibration monitoring program is included in this plan, to provide protection and accountability for surrounding sensitive receivers that may be affected by noise and vibration impacts during the construction stage of the Proposal.

1 Introduction

FDC (the Contractor) has engaged Acoustic Studio (ACS) to prepare a Construction Noise and Vibration Management Sub-Plan (CNVMP) for the new Cutaway Cultural Facility construction project (the Proposal).

At this stage, it has not yet been established whether an Environment Protection License (EPL) will be required for the Proposal. Should it be required in future, this Plan will be updated for EPL conditions.

1.1 Purpose of this CNVMP

Condition B59 of the Development Consent for the Proposal (Application Number SSD 47498458) requires that, prior to the commencement of construction, a CNVMP be prepared by a suitably qualified acoustic consultant and approved by the Certifier. ACS and its personnel are suitably qualified acoustic consultants as noted in Section 1.2.

This CNVMP documents how noise and vibration impacts will be managed during construction activities, in accordance with relevant legislation, codes, guidelines and standards listed in Section 1.4.

As per Condition B59, the CNVMP must include, but not be limited to, the items presented in Table 1 below. For clarity, Table 1 replicates the condition items with the corresponding section(s) where each condition is addressed in this plan.

Table 1 Consent condition B59 items, as addressed in this CNVMP, and relevant sections / references

Item in Condition B59	Completed?	CNVMP Section
(a) any recommendations made in the Noise and Vibration Impact Assessment prepared by ARUP and dated 26 January 2023 including specification of the actual equipment to be used during construction and updated estimates of the likely noise and vibration impacts[1]	Yes	Section 6.1
(b) identification of the specific activities that will be carried out and associated noise sources at the site	Yes	Sections 5.2, 5.3
(c) identification of all potentially affected sensitive residential receiver locations	Yes	Section 3.2
(d) a representative background noise measurement (LA90, 15 minute) should be submitted, assessed in the vicinity of any potentially affected receiver locations and measured in accordance with AS 1055:1.2.1997	Yes	Section 3.3
(e) the construction noise, ground-borne noise and vibration objectives derived from an application of the EPA Interim Construction Noise Guideline (ICNG), as reflected in conditions of approval	Yes	Section 4
(f) what plant and equipment is to be used on site and proposed number of high noise intrusive appliances intended to be operated onsite	Yes	Sections 5.2, 5.3
(g) prediction and assessment of potential noise, ground-borne noise (as relevant) and vibration levels from the proposed construction methods expected at sensitive receiver premises against the objectives identified in the ICNG and conditions of approval	Yes	Section 5
(h) where objectives are predicted to be exceeded, an analysis of feasible and reasonable noise mitigation measures that can be implemented to reduce construction noise and vibration impacts	Yes	Section 6

Item in Condition B59	Completed?	CNVMP Section
(i) the required scheduling of activities and works having regard to the nearest sensitive receivers	Yes	Section 5.1
(j) the preferred location of plant and equipment to behind structures to maximise shielding of receivers	Yes	Sections 6.1, 6.2 Appendix C.4
(k) use and maintenance of the preferred equipment	Yes	Section 6.7
(l) description of management methods and procedures, and specific noise mitigation treatments/measures that can be implemented to control noise and vibration during construction	Yes	Section 6
(m) where objectives cannot be met, additional measures including, but not necessarily limited to, the following must be implemented; reduce hours of construction, the provision of respite from noise/vibration intensive activities, acoustic barriers/enclosures, alternative excavation methods or other negotiated outcomes with the affected community	Yes	Section 6
(n) where night-time noise management levels cannot be satisfied, a report must be submitted to the Planning Secretary outlining the mitigation measures applied, the noise levels achieved and justification that the outcome is consistent with best practice	Yes	Section 6.5
(o) measures to identify non-conformances with the requirements of the Sub-Plan, and procedures to implement corrective and preventative action	Yes	Sections 6.9, 7
(p) suitable contractual arrangements to ensure that all site personnel, including sub-contractors, are required to adhere to the noise management provisions in the Sub-Plan	Yes	Sections 1.3, 6.10, 7
(q) procedures for notifying residents of construction activities that are likely to affect their noise and vibration amenity	Yes	Section 6.8
(r) confirmation of the level of community consultation that has/is and will be undertaken with Building Managers/ occupiers of the main adjoining noise sensitive properties likely to be most affected by site works and the operation of plant/machinery particularly during the demolition and excavation phase	Yes	Section 6.8
(s) measures to monitor noise performance	Yes	Section 7
(t) measures to respond to complaints, including what course of action will be undertaken following receipt of a complaint concerning offensive noise	Yes	Section 6.9
(u) measures to reduce noise related impacts associated with offsite vehicle movements on nearby access and egress routes from the site	Yes	Section 6.3
(v) procedures to allow for regular professional acoustic input to construction activities and planning	Yes	Section 7
(w) effective site induction, and ongoing training and awareness measures for personnel (e.g. toolbox talks, meetings etc).	Yes	Section 6.10 Appendix C.1

1. Refer to Table 19 in Section 6.1 for recommendations included in Arup's NVIA [12]

1.2 Qualified personnel preparing this plan

ACS is member of the of the Association of Australasian Acoustical Consultants. ACS personnel involved in preparation of this plan and their qualifications are in Table 2. Details of their experience is available on request.

Table 2 Qualifications of personnel preparing this plan

Personnel	Qualifications	Involvement in plan
Jason Cameron	B.Eng.	Project Director and internal peer reviewer
Laura Lapena	B.Eng., Member of Australian Acoustical Society	Plan preparation

1.3 Responsibilities

FDC, as the nominated Contractor, will be responsible for implementation of this plan:

- Ensuring all works are undertaken in accordance with the requirements of this CNVMP.
- Ensuring procurement documents specify any requirements in relation to the management of noise and vibration, and suitable contractual arrangements are made to ensure that all site personnel, including sub-contractors, are required to adhere to the noise management provisions in this CNVMP.
- Appointing a named member of the site staff who will act as the Responsible Person with respect to noise and vibration.
- Ensuring project personnel and sub-contractors employed are aware of their responsibilities in regard to the management of noise and vibration during construction and assume the responsibilities assigned to them within this Plan.
- Consulting with the occupants of neighbouring premises and buildings to inform them of the nature of the work, to determine any specific noise and vibration sensitivity they may have and to negotiate respite times during noisier works.
- Monitoring and managing noise and vibration impacts on receivers, in accordance with the requirements of the relevant guidelines and standards listed in Section 7.
- Ensuring that any complaints regarding noise and vibration are investigated and appropriately responded to in accordance with the recommendations provided in this document in Section 6.9 and 7.1.1.

Note: This plan has been prepared with the information provided by the currently engaged Contractor, namely FDC. Where there are any changes to the Contractor or updates to the proposed works, methodology or hours of work, this plan should be reviewed and updated as required to reflect an up-to-date works strategy.

1.4 References, relevant documents, legislation, codes, guidelines and standards

FDC, as the nominated Contractor, will be responsible for implementation of this plan which has been developed in accordance with:

[1] Development Consent (Application Number SSD 47498458).

[2] NSW Department of Environment and Climate Change (DECC) “Interim Construction Noise Guideline”, 2009.

[3] NSW Department of Environment and Conservation (DEC) “Assessing Vibration: A Technical Guideline”, 2006.

[4] The City of Sydney “Construction Hours / Noise within the Central Business District – Code of Practice”, 1992.

[5] Australian Standard “AS 2436 : Guide to Noise Control on Construction, Maintenance & Demolition Sites”, 2010.

[6] Australian Standard “AS 2670.2 : Evaluation of human exposure to whole-body vibration – Part 2: Continuous and shock-induced vibration in buildings (1 to 80Hz)”, 1990.

[7] British Standards Institution “BS 6472–Evaluation of human exposure to vibration in buildings (1 to 80Hz)”, 1992.

[8] German Institution for Standardisation “DIN 4150.3 : Structural vibration – Effects of vibration on structures”, 1999.

[9] Australian Standard “AS 1055 : Acoustics – Description and Measurement of Environment Noise”, 1997.

[10] Protection of the Environment Operations Act 1997.

[11] EPA NSW Road Noise Policy (RNP) 2011.

[12] ARUP’s “Barangaroo – Cutaway Cultural Facility Noise and Vibration Impact Assessment” (NVIA) Rev. 5 dated 26 January 2023 (document ref. 289692 ACD02)

2 Overview of Construction

2.1 Background

Infrastructure NSW seeks to establish a new cultural facility within the Cutaway – currently a large concrete shell space located in Barangaroo.

Infrastructure NSW has engaged FDC to conduct the fitout of the Proposal including:

- Internal alterations and fit-out of the existing Cutaway space over three levels to accommodate event and gallery spaces, back of house areas, amenities, commercial kitchen, offices and ancillary retail and café.
- Enclosure of existing roof openings/voids.
- New façade and entry treatment from the forecourt adjacent to Nawi Cove, including new landscaping.

2.2 Description of works

The works associated with the Proposal, as per FDC program, are listed below. More details are provided in Table 15.

- Site Establishment
  - Reconfiguring of key life safety fire corridors and exits
  - Installation of external hoarding
  - Installation of perimeter and internal scaffolding
  - Installation of lunch rooms, offices, temporary services and hoist
- Demolition
  - Internal partitions (e.g. walls, doors, windows, ceilings, bulkheads, risers, balustrades, car parking spaces)
  - Ausgrid substation
  - Lift pit
  - Forecourt access and bench (external)
  - Concrete hobs around skylights (external)
  - Security and Toilet blocks
- Excavation
  - Lift pit
  - New eastern fire stair (sandstone excavation)
  - Skylights-side cutaway rock face
- Structural
  - Skylights (steelwork)
  - Substation airshaft and access extension
  - Lift pit construction
  - Stair 3 footings and core construction
  - General structural steel installation
  - Concrete slab installation
  - Feature tree steel installation
- Construction
  - Skylights (lifting and installation)
  - Concrete pours and works
  - Façade works
  - Feature tree structures
  - Internal works (base building and fitout)
- Landscape
  - Sandstone walls installation
  - Soft landscape works

3 Site details and Existing Noise Environment

Information presented in this section has been obtained via desktop review (Google Earth Maps and Street View) in conjunction with the information detailed within the ARUP NVIA [12] for the Proposal, as referenced in the Conditions of Development Consent[1].

3.1 Site description

The site is located along the Wulugul Walk, underneath Barangaroo Reserve. Merriman Street is to the east, both the Central Barangaroo and Crown Towers adjacent to the south and Darling Harbour to the west.

A map showing the location of the Proposal site and the composition of the surrounding area is presented in Figure 1.

Adjacent to Merriman St lies predominantly medium density residential premises. Areas south of the Proposal are predominantly commercial.

3.2 Sensitive receivers

In accordance with the NVIA [12] for the Proposal, the sensitive receivers are presented in Figure 1 and Table 3. The assessment presented in this Plan is at the most-affected receivers as per Section 5.5.

Figure 1 Surrounding land uses, sensitive receivers and environmental noise survey monitoring locations

Source: ARUP[12] / ACS

Table 3 Representative sensitive receivers surrounding the Proposal

Receiver ID [Name]	Type	Address	No of Floors
R1	Residential	20A Munn St, Millers Point	2
R2	Residential	48 Merriman St, Millers Point	2
R3	Residential	28 Merriman St, Millers Point	2
R4	Residential	1A Rhodes Ln, Millers Point	1
R5	Residential	6 Dalgety St, Millers Point	2
C1 [Blythe & Co]	Commercial	1 Munn St, Millers Point	3
H1 [Hotel Palisade]	Commercial – Hotel	35 Bettington St, Millers Point	6
P1 [Barangaroo Reserve]	Passive recreation	Barangaroo Reserve	0

Source: ARUP[12]

3.3 Noise survey results

3.3.1 Unattended monitoring locations

The unattended noise monitoring location in the NVIA [12] is shown in Figure 1. This location is considered representative of the worst-affected sensitive residential receivers.

3.3.2 Ambient and background noise

Table 4 presents the Rating Background Level (RBL) and L_{Aeq} ambient noise levels for the day, evening and night period in accordance with the NVIA [12].

Table 4 Long-term unattended noise monitoring results at Barangaroo Reserve across from 22 Merriman St

Time period	Log Average, dBL_{Aeq}			Rating Background Level (RBL), dBL_{A90}		
	Day[1]	Evening[2]	Night[3]	Day[1]	Evening[2]	Night[3]
Representative Weekday	61	54	51	52	48	42
Representative Weekend	56	55	50	50	50	42
Representative Week	60	54	50	51	50	42

1. Day is defined as 7:00 am to 6:00 pm, Monday to Sunday & Public Holidays.
2. Evening is defined as 6:00 pm to 10:00 pm, Monday to Sunday & Public Holidays.
3. Night is defined as 10:00 pm to 7:00 am, Monday to Sunday & Public Holidays

Source: ARUP [12]

4 Noise and Vibration Management Levels

4.1 Conditions of consent items

4.1.1 Hours of construction

Conditions C5 to C9 in [1] set the requirements for this plan in relation to approved construction hours. For clarity, Table 5 replicates these condition items with the corresponding section(s) where each condition is addressed in the plan.

Table 5 Consent conditions C5 to C9 items, as addressed in this CNVMP, and relevant sections / references

Item in Conditions C5 to C19	Completed?	CNVMP Section
C5. All work, including demolition, excavation and building work, and activities in the vicinity of the site generating noise associated with the commencement of work (e.g. loading and unloading of goods, transferring of tools, delivery of materials or machinery to and from the site), may only be carried out between the following hours: (a) between 7am and 6pm, Mondays to Fridays inclusive; and (b) between 8am and 5pm, Saturdays.	Yes	Section 5.1
C6. No work may be carried out on Sundays or public holidays.	Yes	Section 5.1
C7. Activities may be undertaken outside of these hours if required: (a) by the Police or a public authority for the delivery of vehicles, plant or materials; or (b) in an emergency to avoid the loss of life, damage to property or to prevent environmental harm.	Yes	Section 5.1
C8. Notification of activities undertaken in the circumstances in Condition C7 must be given to affected residents before undertaking the activities or as soon as is practical afterwards.	Yes	Section 5.1
C5. The operation of high noise emission appliances, plant and/or machinery such as pile drivers, rock breakers and hydraulic hammers and those which are not listed in Groups B, C, D, E and F of Schedule 1 of the City of Sydney Code of Practice for Construction Hours/Noise 1992 and Australian Standard 2436-2010 Guide to Noise Control on Construction, Maintenance and Demolition Sites and/or any other work generating high noise impact (i.e. work exceeding a NML of 75dB(A)) are restricted to the following hours: (a) 9am to 12pm, Monday to Friday; (b) 2pm to 5pm Monday to Friday; and (c) 9am to 12pm, Saturday. Where these activities are undertaken for a continuous three-hour period and exceed the construction noise management levels at noise sensitive receivers, a minimum respite period of at least one hour must be scheduled before activities recommence. For the purposes of this condition, 'continuous' includes any period during which there is less than a one-hour respite between ceasing and recommencing any of the work the subject of this condition.	Yes	Section 4.2.4 Section 5.1

4.1.2 Notification requirements – High-emission works

Condition C10 in [1] sets the requirements for this plan in relation to notification of high-emission works. For clarity, Table 6 replicates the condition items with the corresponding section(s) where each condition is addressed in the plan.

Table 6 Consent conditions C10 items, as addressed in this CNVMP, and relevant sections / references

Item in Condition C10	Completed?	CNVMP Section
C10. The immediately adjoining neighbours must be given a minimum of 48 hours' notice that excavation, shoring or underpinning works or use of high noise emission appliances / plant are about to commence.	Yes	Section 6.8

4.1.3 Construction noise limits

Conditions C11 to C15 in [1] set the requirements for this plan in relation to construction noise emissions . For clarity, Table 7 replicates those conditions items with the corresponding section(s) where each condition is addressed in the plan.

Table 7 Consent conditions C11 to C15 items, as addressed in this CNVMP, and relevant sections / references

Item in Conditions C11 to C15	Completed?	CNVMP Section
C11. The development must be constructed to achieve the construction noise management levels detailed in the Interim Construction Noise Guideline (DECC, 2009). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the management and mitigation measures identified in the approved CNVMP.	Yes	Section 4.2 Section 6
C12. The Applicant must ensure construction vehicles (including concrete agitator trucks) do not arrive at the subject site or surrounding residential precincts outside of the construction hours of work outlined under this consent.	Yes	Section 6.3
C13. The Applicant must implement, where practicable and without compromising the safety of construction staff or members of the public, audible movement alarms of a type that would minimise noise impacts on surrounding noise sensitive receivers.	Yes	Section 4.2.4 Appendix C.1, C.4
C14. The Applicant must ensure that any work generating high noise impact (i.e. work exceeding a NML of LAeq 75dBA) as measured at any sensitive receiver is only undertaken in continuous blocks of no more than 3 hours, with at least a 1 hour respite between each block of work generating high noise impact, where the location of the work is likely to impact the same receivers. For the purposes of this condition 'continuous' includes any period during which there is less than 1 hour respite between ceasing and recommencing any of the work the subject of this condition.	Yes	Sections 5.1, 0
C15. Any noise generated during construction of the development must not be offensive noise within the meaning of the Protection of the Environment Operations Act 1997 or exceed approved noise limits for the site.	Yes	Section 6.9

4.1.4 Vibration criteria

Conditions C16 and C17 set the requirements for this plan in relation to vibration criteria . For clarity, Table 8 replicates those conditions items with the corresponding section(s) where each condition is addressed in the plan.

Table 8 Consent conditions C11 to C15 items, as addressed in this CNVMP, and relevant sections / references

Item in Condition C16 and C17	Completed?	CNVMP Section
C16. Vibration caused by works at any residence or structure outside the Site must be limited to: (a) for structural damage, the latest version of DIN 4150-3 (1992-02) Structural vibration - Effects of vibration on structures (German Institute for Standardisation, 1999) (b) for human exposure to vibration, the evaluation criteria set out in the Environmental Noise Management Assessing Vibration: a Technical Guideline (Department of Environment and Conservation, 2006).	Yes	Sections 4.5.2, 4.5.1, 6.4
C17. Vibratory compactors must not be used within 30 metres of residential or heritage buildings unless vibration monitoring confirms compliance with the vibration criteria specified above. These limits apply unless otherwise outlined in the CNVMP required by under Condition B59 of this consent.	Yes	Section 6.4

4.2 Airborne noise

4.2.1 Residential

The ICNG [2] recognises that construction noise is temporary, and that noise control measures applied to industrial processes may not be suitable for construction noise. With this in mind the ICNG focusses on work practices to minimise construction noise impacts, rather than noise criteria or limits.

The principal noise control measure for construction noise is to restrict construction to daytime hours when most people are least sensitive to noise, and to avoid Sundays and Public Holidays, which most people expect to be quieter than weekdays and Saturdays, as a form of respite.

Section 4 of the ICNG recommends standard hours of work, and noise management levels above which feasible and reasonable noise mitigation measures should be applied and potentially affected residents should be informed of the works. The standard hours represent a balance between providing respite from construction noise and minimising the duration of other effects of construction, such as disruption to access and parking.

Table 9, reproduced from the ICNG, nominates Noise Management Levels for residential receivers surrounding the Proposal.

Table 9 ICNG's noise management levels at residences for airborne noise

Time of Day	Management level $L_{Aeq(15min)}$ (*)	How to Apply
Recommended standard hours (SH) Monday to Friday 7am to 6pm Saturday 8am to 1pm No work on Sundays or public holidays	Noise affected RBL + 10dB	The noise affected level represents the point above which there may be some community reaction to noise. • 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 residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
	Highly noise affected 75 dBA	The highly noise affected level represents the point above which there may be strong community reaction to noise. • Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account: 1 Times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning or mid-afternoon for works near residences 2 if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
Outside recommended standard hours (OOH)	Noise affected RBL + 5dB	• A strong justification would typically be required for works outside the recommended standard hours. • The proponent should apply all feasible and reasonable work practices to meet the noise affected level. • Where all feasible and reasonable practices have been applied and noise is more than 5 dB(A) above the noise affected level, the proponent should negotiate with the community. • For guidance on negotiating agreements reference should be made to section 7.2.2 of the ICNG [12].

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

4.2.2 Non-residential

The ICNG recommends construction noise management levels for sensitive land uses, other than residences, and for commercial and industrial premises. The relevant to the Proposal are:

- For commercial/offices/hotel : $L_{Aeq(15min)}$ 70 dBA (external)
- For passive recreation areas : $L_{Aeq(15min)}$ 60 dBA (external)

4.2.3 Summary of proposed airborne Noise Management Levels

Based on Table 9, the measured noise levels at the site in Arup's NVIA [12] for the Proposal, the rating background levels (RBLs) and the corresponding Noise Management Levels (NMLs) for residential airborne noise are shown in Table 10 below.

Table 10 Noise management levels for airborne noise during proposed working hours

Location	Period		Rating Background Level (RBL) in dBA[1]	Noise Management Level (NML) in dBA		Highly Noise Affected
Residential (All, as shown in Table 3)	SH[2]	7am-6pm Monday to Friday 8am-1pm Saturdays	52	RBL + 10dB	**62**	**75**
	OOH[3]	1pm-5pm Saturdays	48	RBL + 5dB	**53**	N/A
Commercial (All, including Hotel, as shown in Table 3)	When in use		N/A		**70**	N/A
Passive recreation areas	When in use		N/A		**60**	N/A

1. In accordance ARUP's NVIA [12]
2. In accordance with ICNG [2] and Development Consent [1] condition C5
3. As per proposed construction works hours shown in Table 14 Section 5.1

4.2.4 Plant and equipment noise level limits

Table 11 shows the City of Sydney "Construction Hours / Noise within the Central Business District Code of Practice" (CoS-CP) [4] allowable L_{A10} noise levels for construction plant and equipment.

Condition C9 in [1] refers to those appliances in Table 11 Group A, plus any other works generating high noise impact (i.e. works exceeding an NML of 75 dBA), to be controlled as per "restricted" hours shown in Table 14 in Section 5.1.

Table 11 Listed appliances and allowable noise levels relevant to the Project as per CoS-CP [4]

Group A (see Note 2)	Group B 90 dBA	Group C 85 dBA	Group D 80 dBA	Group E 75 dBA	Group F 70 dBA
Pile drivers Hydraulic hammers Machine mounted rock breakers Sand blasters Steam cleaners Mole borers	Earthmoving equipment of engine capacity above 200kW NEP Warning sirens* Reversing alarms+ Trucks	Impulsive tools – air, electric or hydraulic Earthmoving equipment of engine capacity between 100kW and 200kW NEP Explosive power tools Impact wrenches Refuse chutes* Scabblers Chain saws Rock drills	Concrete agitators Concrete pumps Concrete saws Cranes (fixed) Cranes (mobile) Earthmoving equipment up to and including engine capacity of 100kW NEP Concrete vibrators Portable hand tools Vibratory compactors	Air compressors above 170L/s capacity Construction dumpers over 1m^3 capacity Public address system* Internal combustion or electrically driven equipment (unless grouped elsewhere) over 14kW NEP	Air compressors up to 170L/s capacity Fluid pumps Internal combustion or electrically driven equipment (unless grouped elsewhere) up to 14kW NEP

* To be measured at the site boundary closest to the affected area

\+ Reversing alarms must be controlled so that noise levels produced do not exceed the background sound level by more than 10dBA

1 All noise levels are to be $L_{A10,1minute}$ measured at 7 metres from the point nearest to an appliance

2 A Certificate of Acoustic Performance (Form D in CoS-CoP [4]) shall be provided if required

4.3 Ground-borne noise considerations

The ICNG recommends noise management levels for ground-borne noise, which is caused by vibration transmitted through the ground into a structure. Ground-borne noise is usually a factor for consideration for underground works when the airborne noise is less noticeable than the ground-borne noise.

Having said that, the ICNG [2] management levels for ground-borne noise are applicable for evening and night-time periods only.

Construction at the Proposal site will not take place during the evening or night, so ground-borne noise management levels are not applicable and ground-borne noise is not considered further in this plan.

4.4 Construction traffic noise

The RNP [11] provides criteria for traffic noise from new roads or additional traffic generated on roads from land use development. The criteria may apply to additional traffic generated on public roads from construction vehicles / traffic.

When considering land use redevelopment and the impact on sensitive land uses (residential / schools / hospitals / recreational) the RNP guideline states that:

> *"... In assessing feasible and reasonable mitigation measures, an increase of up to 2dB... in relation to existing noise levels... represents a minor impact that is considered barely perceptible to the average person..."*.

It is noted that this approach to assess impacts of construction traffic noise for the Proposal is consistent with the NVIA [12].

4.5 Vibration

There are two key items that should be considered in the assessment of vibration impacts from the Proposal works. These are vibration impacts in terms of:

- Human Comfort
- Building Damage

Relevant criteria for each of these are detailed in the sections that follow.

4.5.1 Human comfort

DEC's "Assessing Vibration: A Technical Guideline" (AVTG) [3] is based on the guidelines contained in BS 6472.1:2008, Guide to evaluation of human exposure to vibration in buildings - Vibration sources other than blasting.

This guideline presents preferred and maximum vibration values for use in assessing human responses to vibration and provides recommendations for measurement and evaluation techniques.

Vibration in buildings can be caused by many different external sources, including industrial, construction and transportation activities. The vibration may be:

- Continuous (with magnitudes varying or remaining constant with time)
  Excavation and demolition are the components of the Proposal that may generate continuous vibration if continuous operations during extended periods of time are to occur. Examples of works that could generate continuous vibration include significant cutaway rock face. It is noted that the proposed works are not likely to generate continuous vibration for extended periods of time.
- Impulsive (such as dropping of heavy items)
  Demolition is the component of this project likely to generate impulsive vibration, for example when sections of existing structures are pulled down and removed, and when large material blocks are dropped to a dump truck bed taking the spoil away from site.

- Intermittent
  Demolition is the component of this project likely to generate intermittent vibration, for example when excavators with rock breaker attachments are used to remove elements from existing areas (lift pit, forecourt bench, etc).

The AVTG [3] cites a construction or excavation project as an example of a situation where vibration above preferred values can be acceptable. In such situations, the main management measures are to restrict vibration-generating activities to times that people are least sensitive to vibration, and to notify potentially affected persons of the times when they might experience vibration and the duration over which the vibration will occur.

The relevant criteria for human exposure to continuous and impulsive vibration are detailed in Table 12. Vibration levels are assessed through the consideration of the summation of effects for vibration levels at frequencies from 1 to 80 Hz for all axes.

Table 12 Preferred and maximum weighted rms values for continuous and impulsive vibration velocity, (mm/s) 1-80 Hz

Location	Assessment Period	Daytime		Night-time	
		z-axis	x & y axis	z-axis	x & y axis
Continuous Vibration					
Critical areas[2]	Day or night time	0.10	0.072	0.20	0.14
Residences	Day time	0.20	0.14	0.40	0.28
Offices, schools, educational institutions and places of worship	Night time	0.14	0.10	0.28	0.2
Workshops	Day or night time	0.40	0.28	0.80	0.56
Impulsive Vibration					
Critical areas[2]	Day or night time	0.10	0.072	0.20	0.14
Residences	Day time	6.0	4.2	12.0	8.4
Offices, schools, educational institutions and places of worship	Night time	2.0	1.4	4.0	2.8
Workshops	Day or night time	13.0	9.2	26.0	18.4

1. Daytime is 7.00am to 10.00pm and night-time is 10.00pm to 7.00am
2. Examples include hospital operating theatres and precision laboratories where sensitive operations are occurring. These criteria are only indicative, and there may be a need to assess intermittent values against the continuous or impulsive criteria for critical areas.

Source: AVTG [3].

Human exposure to intermittent vibration is assessed using the Vibration Dose Value (VDV). The VDV accumulates the vibration energy experienced over an extended period (daytime and night-time periods) from intermittent events. Table 13 sets out the acceptable VDV values for intermittent vibration.

Table 13 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
Critical areas[2]	0.10	0.20	0.10	0.20
Residences	0.20	0.40	0.13	0.26
Offices, schools, educational institutions and places of worship	0.40	0.80	0.40	0.80
Workshops	0.80	1.60	0.80	1.60

1. Daytime is 7.00am to 10.00pm and night-time is 10.00pm to 7.00am
2. Examples include hospital operating theatres and precision laboratories where sensitive operations are occurring. These criteria are only indicative, and there may be a need to assess intermittent values against the continuous or impulsive criteria for critical areas.

Source: AVTG [3].

4.5.2 Building damage

Criteria to prevent building damage and disruption to equipment and processes are discussed in Appendix B.

Potential building damage from vibration can range from cosmetic cracks in plaster or masonry to more significant structural effects. Building damage is unlikely at neighbouring buildings based on the nature and location of the works and proximity to those neighbouring buildings.

For managing the potential for vibration-induced damage, the following precautionary approach for vibration criteria is recommended and consistent with the values suggested in DIN 4150 Part 3:

- 3 mm/s (130 dB $^{re\ 10\text{-}6\ mm/s}$) for heritage buildings
  Note: This applies to commercial receiver C1 [Blythe & Co], as per Table 3, sited at 1 Munn St, Millers Point, to the South-east of the Proposal.
- 5 mm/s (134 dB $^{re\ 10\text{-}6\ mm/s}$) for residential dwellings.
- 20 mm/s (146 dB $^{re\ 10\text{-}6\ mm/s}$) for non-heritage commercial premises.

These project-specific criteria are consistent with the limits outlined in DIN 4150 Part 3 as per Appendix B.1.

5 Construction Noise and Vibration Assessment

5.1 Proposed hours

FDC's proposed construction hours for the Proposal are shown in Table 14 together with ICGN [12] standard hours.

Table 14 Proposed construction hours

Day	Standard Construction Hours[1]	Proposed Construction Hours[2]	Restricted Construction Hours for High-Noise Emission Appliances[3]
Monday to Friday	7am to 6pm	**7am to 6pm**	**9am to 12pm; and 2pm to 5pm**
Saturday	8am to 1pm	**8am to 5pm**	**9am to 12pm**
Sunday or Public Holiday	No construction	**No construction**	**No construction**

1. As per ICNG [2]
2. As per Development Consent [1] conditions C5 and C6
3. As per Development Consent [1] condition C9, where these activities are undertaken for a continuous three-hour period and exceed the construction noise management levels at noise sensitive receivers, a minimum respite period of at least one hour must be scheduled before activities recommence.

The following comments are made in relation to the proposed Proposal construction hours:

- On Saturdays, they are slightly different from the ICNG standard hours as those include a later finish on Saturday (relevant to the proposed hours of 1pm to 5pm).
  Note: The extended times are generally consistent with those in the City of Sydney 1992 Code for Construction Noise [4] and can be considered to reasonably balance minimising impact for this site and project whilst optimising work times.
- The extension of work on Saturdays is in the afternoons (1pm to 5pm), which is not a more sensitive time period than 8am to 9am Saturdays, which are ICNG standard hours.
  Note: This is proposed in order to take advantage of reduced road traffic on Saturdays for truck routes and deliveries, as noted in ARUP's NVIA [12].

Further to the above, activities outside FDC's proposed work hours will only occur if;

- required by the police or a public authority for the delivery of vehicles, plant or materials, or
- required in an emergency to avoid the loss of life, damage to property or to prevent environmental harm.

Note: Notification of activities undertaken outside of proposed work hours must be given to affected residents before undertaking the activities or as soon as is practical afterwards.

5.2 Description of construction activities

The Contractor has developed a construction program that outlines the key construction activities for each stage / zone as shown in Table 15. It is noted that all works presented in the table are to generally be undertaken during Standard Construction Hours as per ICNG [2], refer to Table 14 for detailed project work hours.

The proposed site zoning plan, showing the works areas in Table 15, is shown in Figure 2.

Table 15 Summary of proposed works

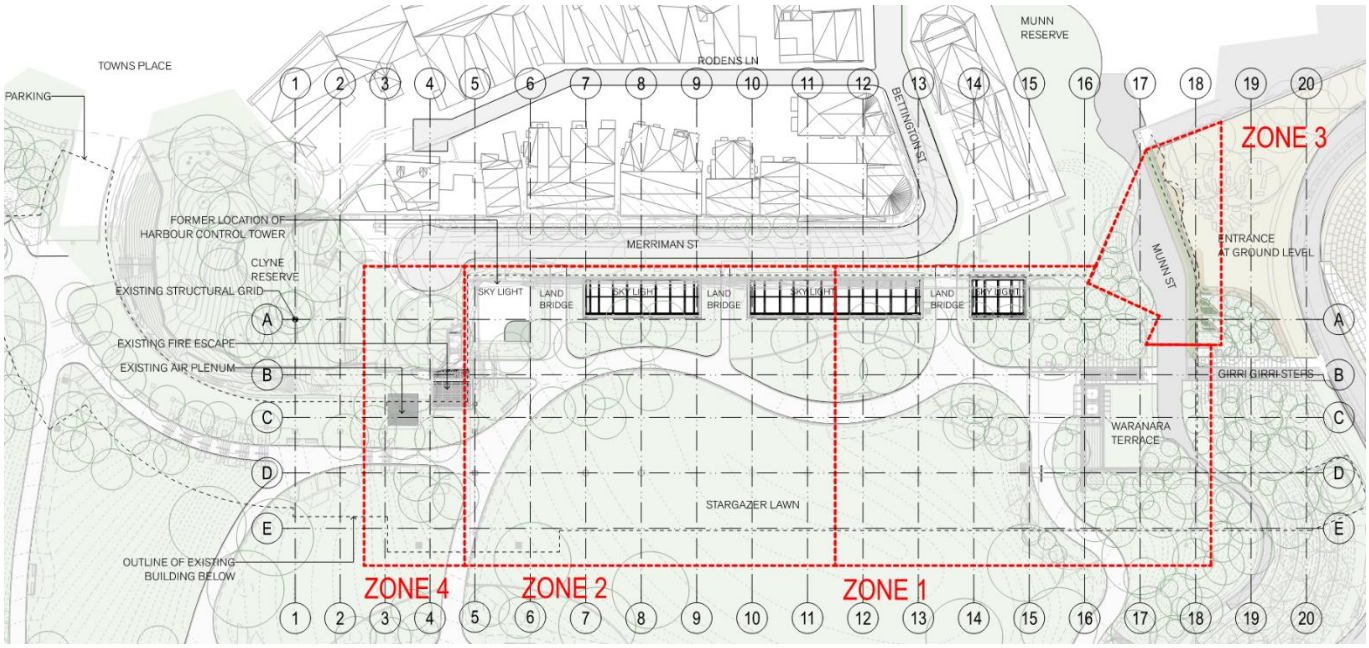
Stage	Works description	Level/Zone	Equipment/Plant	Duration	Concurrent with	Vehicle movements
SITE ESTABLISHMENT	Reconfiguring of key life safety fire corridors and exits	Basement	Hand tools	5 days	Other site establishment works	2
	Installation of external hoardings	Street and Ground	Hand tools	15 days	Other site establishment works	6
	Installation of perimeter and internal scaffolding	All levels	Hand tools, Forklift	20 days	Demolition works	20
	Installation of lunch rooms, offices, temporary services and hoist	L1	Hand tools, Forklift	20 days	Other site establishment works	4
DEMOLITION	Internal partitions (walls, doors, windows, ceilings, bulkheads, etc)	All levels	Hand tools (sledgehammer), Forklift	10 days	-	2
	Around Ausgrid substation	GF Zones 1&3	Hand tools, Concrete saw, Mobile crane	2 days	-	3
	Lift pit	GF Zone 2	Hand tools, 6T Excavator with drum cutter, 6T Excavator with rock breaker + shroud	10 days	Other demolition works	6
	Forecourt access and bench	GF Zone 3	Hand tools, 6T Excavator with drum cutter, 6T Excavator with rock breaker + shroud	2 days	-	2
	Concrete hobs around skylights	Street and park	Hand tools, 6T Excavator with drum cutter, 6T Excavator with rock pulveriser	6 days	-	7
	Security and Toilet blocks	GF Zone 2	Hand tools, 6T Excavator with rock pulveriser, Bobcat	5 days	-	15

Stage	Works description	Level/Zone	Equipment/Plant	Duration	Concurrent with	Vehicle movements
EXCAVATION	Lift pit	GF Zone 2	Hand tools, 6T Excavator with drum cutter, 6T Excavator with rock breaker + shroud	8 days	Demolition works	4
	New eastern fire stair (sandstone)	GF Zone 2	Hand tools, 6T Excavator with drum cutter, 6T Excavator with rock breaker + shroud	4 days	Demolition works	11
	Skylights-side cutaway rock face	Roof	Hand tools, 6T Excavator with drum cutter	4 days	-	3
STRUCTURAL WORKS	Skylights steelwork	Roof	Hand tools, Masonry drill, 30T Mobile crane, 60ft EWP	10 days	-	3
	Substation airshaft and access extension	GF Zone 3	Hand tools, Concrete pump, Concrete vibrator	6 days	-	1
	Lift pit construction	GF Zone 2	Hand tools, Concrete pump, Concrete vibrator	6 days	-	1
	Stair 3 footings and core construction	GF Zone 2	Hand tools, Concrete pump, Concrete vibrator	2 days	-	4
	General structural steel installation	GF/L1/L2 Zones 1&2	Hand tools, Masonry drill, 30T Mobile crane, 60ft EWP	4 weeks	-	4
	Concrete slab installation	GF/L1/L2 Zones 1&2	Hand tools, Concrete pump, Concrete vibrator	2 weeks	--	70
	Feature tree steel installation	GF/L1/L2 Zones 1&2	Hand tools, Masonry drill, 30T Mobile crane, 60ft EWP	4 weeks		15

Stage	Works description	Level/Zone	Equipment/Plant	Duration	Concurrent with	Vehicle movements
CONSTRUCTION	Skylights (lifting and installation)	Roof	Hand tools, Masonry drill, 30T Mobile crane, 60ft EWP	23 days	-	4
	Concrete pours and works	GF/L1/L2 Zones 1&2	Concrete pump	13 days	-	80
	Façade works	GF Zone 3	Hand tools, Masonry drill, 20T Mobile crane, 60ft EWP	2 weeks	-	30
	Feature tree structures	GF/L1/L2 Zones 1&2	Hand tools, 30T Mobile crane, 60ft EWP	9 weeks	Internal works	40
	Internal works (base building and fitout)	GF/L1/L2 Zones 1&2	Hand tools, Electric saws, Drills, Sanders, Screw guns, Masonry drills	20 weeks	Feature tree structures	150
LANDSCAPE	Sandstone walls installation	GF Zone 3	Hand tools, Masonry drill, 20T Mobile crane, 60ft EWP	4 weeks	-	6
	Soft landscape works	GF Zone 3 Roof	Hand tools, 6T Excavator	4 weeks	-	7

Source: FDC

Figure 2 Site zoning map



Source: FJC

5.3 Noise and vibration sources

The key construction noise sources for the Proposal works and the associated noise levels are listed in Table 16 below. These values are based on ACS's sound level database plus Australian and International Standards.

Table 16 Anticipated airborne noise levels for construction noise equipment / plant

Equipment Type	Item	Typical Noise Level $L_{Aeq,15min}$ SWL
Heavy vehicles	Dump truck / skip truck	117
	Concrete mixer/delivery/agitator truck	109
	Delivery trucks (semi-trailers, rigid trucks)	107
Site machinery	6T Excavator with rock breaker (with Hushtec shroud)	118[1]
	6T Excavator with drum cutter	113
	20-30T Mobile crane	110
	6T Excavator with pulveriser	108
	Concrete pump	108
	6T Excavator with bucket	107
	Forklift	105
	60ft Elevated work platform (EWP)	105
	Bobcat	104
	5T Mobile crane	104
	Concrete vibrator	103
Handheld Tools	Concrete saw (hand held)	117[1]
	Masonry drill	113
	Hand tools (general)	99

1. With 5 dB penalty applied due to the annoying nature of the noise emissions, as per ICNG [2]

Potential sources of vibration during the construction works include:

- Demolition and Excavation: excavators with rock breaker attachment, and possibly drum cutter

5.4 Noise and vibration controls already included in the program

The noise and vibration controls already included for this Project are as follows:

1 Installation of 2.4 metre high solid timber hoardings around the site perimeter. Solid hoardings to act as noise screening between the site and surrounding sensitive receivers.
2 Installation of sound blanket-style sound-absorptive layer (e.g. Echobarrier) to the internal side of hoarding sections around skylights openings between Merriman Street and Barangaroo Reserve. This additional sound-absorptive layer on the internal face of skylights hoardings is to provide additional attenuation for construction noise generated in the Cutaway cavity - that will leak/spill via the open skylights early on in the works (i.e. before the final skylight covers are installed).
3 Scheduling of high-impact noise and vibration activities (such as demolition/excavation with large plant items) within the restricted hours, and respecting the respite provisions in Development Consent [1] condition C9 – refer to Table 14 for details.

4 Typically, demolition / excavation works will be conducted with quieter attachment types, such as drum cutters, rotary head excavators and pulverisers, in lieu of rock breaker attachments.
5 Where works require that rock breakers are used, the demolition / excavation plant with rock breaker attachment will be provided with local noise screening for the duration of the high-noise impact works (e.g. Hushtec shroud).
6 Consideration is be given to the use of a concrete saw instead of rock breaker, if feasible, during demolition works of the Ausgrid substation - to minimise noise and vibration impacts to the south of the site (commercial receivers and parkland).
7 Allocated parking for heavy vehicles (including concrete trucks) and concrete pumps will be provided to the north of the site - underground via the existing loading dock.

5.5 Most-affected sensitive receivers

From the nearest sensitive receivers to the site presented in Section 3.2, those that will be potentially the most-affected by noise and vibration associated with the Proposal construction works are shown in Table 17 below.

Table 17 Most-affected noise and vibration sensitive receivers and approximate distance to Project site

Receiver type [ID in Table 3]	Location description	Approximate distance from construction site (closest point to boundary)
Residential [R1 to R4]	Terraces along Merriman Street	12
Commercial [C1]	Office tenancies in 1 Munn St	5
Passive Recreation [P1]	Barangaroo Reserve	2

5.6 Noise Assessment

5.6.1 Methodology

An assessment of the likely noise impacts of the proposed works on residential, commercial and recreational receivers surrounding the site has been carried out. The assessment has considered the following:

- Typical construction activities considered in the noise impact assessment are as detailed in Table 15.
- Project specific criteria at each sensitive receiver location as outlined in Table 10.
- Noise level predictions are calculated using the noise data provided in Table 16 for equipment / plant.
- Noise level predictions consider:
  - Distance attenuation
  - Ground and building reflections
  - Shielding / screening from existing Cutaway underground space, buildings surrounding the site and structures erected as part of the construction works (e.g. hoardings) where there is not direct line-of-sight between the works and the receiver(s)
- $L_{Aeq,15minite}$ noise levels are predicted for the operations of the nearest construction area on the site to each sensitive, most-affected receiver location in Table 17.
- The predictions consider a range from individual tasks and associated equipment up to the cumulative noise contribution from all key activities and corresponding equipment with plant running simultaneously for each phase and main task.
- The predictions are “reasonable worst-case”, being based on the closest part of the construction activity to the closest part of the noise sensitive receiver location.
- The predictions assume continuous operation of equipment / plant over the 15-minute assessment period.
- For internal construction works once the skylight covers are in place, a conservative minimum loss of 45 dB from the glazed skylights has been assumed, as per transmission loss modelled data presented in ARUP’s NVIA [12].

5.6.2 Airborne construction noise assessment results

This section presents the results of the construction noise assessment carried out for internal and external construction works programmed for the Proposal.

This construction noise assessment determines the potential noise impact of activities and associated plant and equipment at the most affected receivers.

Table 18 below presents the predicted construction noise levels at the nearest affected locations, with comparison against the relevant criteria in IGNG [2] as presented in Table 10.

Table 18 Predicted equipment/plant noise levels at most-affected sensitive receiver locations during standard hours

	Location	Residential	Commercial	Passive Recreational
	NMLs in $dBL_{Aeq,15min}$	**62 (SH)**	**70**	**60**
Stage	**Works description**	**Predicted noise levels, in $dBL_{Aeq,15min}$**		
SITE ESTABLISHMENT	Reconfiguring of key life safety fire corridors and exits	60	50	60
	Installation of external hoardings	74	80	74
	Installation of perimeter and internal scaffolding	70	60	70
	Installation of lunch rooms, offices, temporary services and hoist	65	60	65
DEMOLITION	Internal partitions (walls, doors, windows, ceilings, bulkheads, etc)	79	71	79
	Around Ausgrid substation	80	70	80
	Lift pit	80	67	80
	Forecourt access and bench	57	70	57
	Concrete hobs around skylights	91	74	91
	Security and Toilet blocks	68	63	68
EXCAVATION	Lift pit	80	67	80
	New eastern fire stair (sandstone)	82	70	82
	Skylights-side cutaway rock face	76	64	76

	Location	Residential	Commercial	Passive Recreational
	NMLs in $dBL_{Aeq,15min}$	**62 (SH)**	**70**	**60**
Stage	**Works description**	**Predicted noise levels, in $dBL_{Aeq,15min}$**		
STRUCTURAL WORKS	Skylights steelwork	**78**	68	**78**
	Substation airshaft and access extension	**71**	63	**71**
	Lift pit construction	**71**	58	**71**
	Stair 3 footings and core construction	**68**	58	**68**
	General structural steel installation	**76**	66	**76**
	Concrete slab installation	**68**	61	**68**
	Feature tree steel installation	**78**	68	**78**
CONSTRUCTION	Skylights (lifting and installation)	**78**	63	**78**
	Concrete pours and works	**73**	65	**73**
	Façade works	**78**	68	**78**
	Feature tree structures	**73**	65	**73**
	Internal works (base building and fitout, after skylight covers are installed)	<40	<40	<40
LANDSCAPE	Sandstone walls installation	53	**81**	53
	Soft landscape works	**80**	**75**	**80**

Note: Works predicted to exceed the daytime standard working hours NMLs are highlighted in ORANGE
Works predicted to exceed the "Highly-affected noise levels" (i.e. 75 dBA) are highlighted in RED

From the results presented in the table above the following conclusions can be made:

- Residences on Merriman Street
  Noise impacts are anticipated to exceed the "highly affected noise levels" of 75 dBA during the demolition, excavation and some activities of the structural works stage. This is expected due to the proximity of the high noise-emission works to the residences, and the fact that the skylights covers are not to be installed until later in the program. For these activities, the Contractor is to keep work hours to the standard hours and provide respite as indicated in the Development Consent [1]. In addition, the Contractor is to further explore opportunities for additional noise control measures that are feasible and reasonable to implement – in addition to those described in Section 6.2 and in Appendix C.
- Commercial on Munn St
  Most works are predicted to be below the NML for this receiver, with the exception of some demolition/excavation and landscape works in close the proximity to the receiver boundary. Communication of works scheduling with the occupants of the commercial tenancies should suffice to adequately manage noise impacts.

- Barangaroo Reserve above Cutaway space
  Most works are anticipated to exceed the NML for passive recreation areas when the receiver point is assumed to be within the vicinity of the Proposal site boundary / hoardings. However, it is anticipated that noise levels will decrease with distance and impacts will be less in the park areas closer to the water, where most park users are most-likely to congregate.

5.6.3 Summary of required respite periods

As shown in Table 18, predicted noise levels at the most-affected residences at times exceed the “highly-affected noise levels” (i.e 75 dBA) stated within the ICNG [2]. This is mainly for demolition and excavation works before the skylight covers are installed.

In accordance with Development Consent [1] condition C9, respite periods for the occupants of neighbouring residential properties will be:

- Where works predicted to exceed 75 dBA at residences, these are to be scheduled to occur only within the “restricted hours” in Table 14.
- Where these activities are undertaken for a continuous three-hour period and exceed the construction noise management levels at noise sensitive receivers, a minimum respite period of at least one hour must be scheduled before activities recommence.
  Note: For the purposes of this condition, ‘continuous’ includes any period during which there is less than a one-hour respite between ceasing and recommencing any of the subject works.

5.6.4 Construction traffic noise assessment

Heavy vehicles will access the site for:

- Drop off and materials
- Dump trucks collecting waste
- Concrete trucks and pumps

Traffic routes for heavy vehicles accessing the site are shown in Figure 3.

Figure 3 Construction Traffic Routes

Figure 4 - Northern Approach

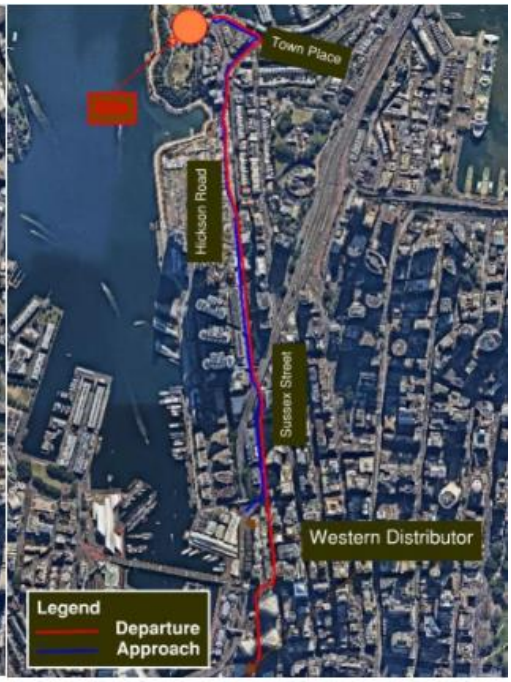


Figure 5 - Western Approach

Figure 6 - Southern Access

Source: TTW's Preliminary Traffic Management Plan, as referenced in Cutaway Fitout Works – PCEMP for SSDA, December 2022

The key potential noise sensitive receivers along the proposed construction traffic routes include:

- Residencial receivers along Towns Place

We make the following comments in relation to construction traffic:

- We understand that the typical traffic movements will be limited to 1-2 vehicle per hour as a worst case.
  Note: This is consistent with construction traffic noise assumptions in ARUP's NVIA [12] as no additional traffic report has been issued since the NVIA was produced.
- Based on the expected number of construction vehicle movements, the additional noise generation will be below the 2 dB increase that is considered a minor impact in the EPA NSW Road Noise Policy.

5.6.5 Cumulative noise impacts

Cumulative construction impacts should be considered and assessed as appropriate as part of the CNVMP, as per ARUP's NVIA [12] recommendations referred to in Development Consent [1] condition B59(a).

Projects to be considered and cumulative impacts addressed include Barangaroo Metro Station, and other works within Central Barangaroo and Barangaroo South.

It is noted that Barangaroo Metro Station is the closest of these projects to the Proposal site. The closest distance from the Barangaroo Metro Station Site to the sensitive receivers affected by the Proposal are:

- Approximately 100 m to nearest residential receivers on Munns and Merriman Streets
- Approximately 30 m to nearest commercial office premises on 1 Munns St

Due to the intervening distances noted above, the risk of cumulative noise impacts from adjacent construction sites not associated to the Cutaway proposal is low.

Having said this, practical measures to mitigate cumulative impacts may include:

- Coordination with adjacent sites so that the respite periods for high-emission works from the Proposal are not negated by works from other sites at those times.
- Scheduling of high-emission works to avoid overlapping programs and cumulative increases.
- Alternatively, consolidating works to reduce the overall construction programs may be preferred, and should be discussed as part of any community consultation.
- Acknowledge the "construction fatigue" that some of the sensitive receivers to the Proposal may be experiencing after being subjected to construction in their area over extended periods of time. Address the risk/impact of "construction fatigue" by committing to all of the feasible and reasonable noise and vibration measures in this Plan, particularly monitoring (refer to Section 7) and to taking corrective action if construction noise or vibration objectives for the Proposal are not met.

5.7 Vibration assessment

The levels of vibration generated by the construction activities associated with the Proposal will be site-specific and will depend upon the type of activity, the particular equipment used, and the proximity of the construction activity to the nearest occupied spaces within the affected properties and heritage structures.

A detailed vibration assessment has not been carried out at this stage, as actual vibration levels experienced will be dependent upon;

- site characteristics, and
- specific construction equipment used.

Pre-demolition vibration testing is recommended to be carried out at the commencement of demolition and excavation activities prior to works commencing on site (refer to Section 7.2.1).

The pre-demolition testing will be used to establish site laws and determine whether the vibration levels justify a more detailed investigation, and the exact requirements for ongoing vibration monitoring.

Vibration surveys on site will determine the actual vibration levels generated by each activity, and whether a means of vibration mitigation will be necessary for any equipment or processes on the site.

If the pre-demolition testing indicates that vibration levels might exceed the relevant criteria then vibration mitigation and management measures will need to be put in place to ensure vibration impacts are minimised as far possible.

A more detailed investigation will involve methods of constraining activities generating high vibration levels. The appropriate method of monitoring vibration levels can then be put in place. Consideration of reasonable and feasible vibration mitigation measures plus a review of vibration criteria will also be necessary.

The Contractor will carry out an ongoing review of vibration generated by the demolition activities and assess these against the criteria for human comfort and building damage provided in Section 4.5.

Given the nature of the works and the distance to the closest affected off-site receivers, we consider that vibration levels at the surrounding off-site buildings is;

- at times likely to exceed amenity (human comfort) levels at the closest residential buildings immediately adjacent to the site on Merriman (most likely during demolition and excavation using rock breakers on the rock face or in its vicinity),
- not likely to exceed levels that might result in cosmetic or structural damage.

6 Noise and Vibration Management Procedures

6.1 Required management measures as per NVIA

Table 19 below presents the recommended construction noise and vibration mitigation measures in ARUP's NVIA [12] and the relevant sections where those are addressed in this Plan. The Contractor is to acknowledge and implement the detail of all the items listed in Table 19, if feasible and reasonable, in the construction program.

Table 19 Summary of Arup's NVIA [12] recommended construction noise and vibration mitigation measures, as addressed in this CNVMP, and relevant sections / references

Item in NVIA [12] as called for in Condition B59(a)	Detail	Completed?	CNVMP Section
Noise and vibration management plan	A Construction Noise and Vibration Management Plan shall be prepared prior to the issuing of a Construction Certificate. This will specify the actual plant to be used and will include updated estimates of the likely levels of noise and the scheduling of activities.	Yes	All, with particular emphasis on Sections 5.2, 5.3 and 5.6
Staffing	Appointing a named member of the site staff who will act as the Responsible Person with respect to noise and vibration; Regularly train workers and contractors (such as at toolbox talks) to use equipment in ways to minimise noise; Ensuring good work practices are adopted to avoid issues such as noise from dropped items, noise from communication radios is kept as low as is practicable; Avoid the use of radios or stereos outdoors; and Avoid shouting and minimise talking loudly and slamming vehicle doors.	Yes	Section 1.3 Appendix C.1
Plant and equipment	Where possible stationary equipment should be located behind structures such as demountable buildings or stockpiles to maximise shielding to receivers; Consider using electric / hydraulic equipment where possible; Using the smallest equipment as is practical; All plant and equipment used on site must be: • maintained in a proper and efficient condition; and • operated in a proper and efficient manner. Turn off all vehicles, plant and equipment when not in use; and Ensuring that the Responsible Person checks the conditions of the powered equipment used on site daily to ensure plant is properly maintained and that noise is kept as low as practicable.	Yes	Section 6.7 Appendix C.3, C.4, C.6
Scheduling – hours of work	Ensure that the Responsible Person controls the working hours on site to ensure that work is only done during the acceptable periods (7am to 6pm on weekdays and 8am to 5pm on Saturdays. No work on Sundays or public holidays)	Yes	Sections 1.3, 5.1

Item in NVIA [12] as called for in Condition B59(a)	Detail	Completed?	CNVMP Section
Scheduling – high noise activities	High noise activities, such as saw cutting, will be programmed to occur during the standard construction hours wherever possible and will be scheduled with due consideration to the nearest sensitive receivers.	Yes	Section 5.1
Work site training	'Toolbox talks' will be held at regular intervals with the contractor workers, including discussion of noise and vibration mitigation, monitoring and assessment. These topics will also be covered under induction processes. Operate two-way radios at the minimum effective volume and avoid shouting or whistling at the site. Identification of all reasonable and feasible noise mitigation methods will be conducted by the Responsible Person on a daily basis during noisy works. The Responsible Person will have the authority to modify work practices in response to complaints, where this is considered appropriate.	Yes	Sections 1.3, 6.10 Appendix C.1
Community liaison	Ensuring that the Responsible Person keeps the local community advised on expected activities and coordinates scheduling and locations of noisy works around any critical user events where practicable. This shall include face to face meetings with nearby receivers if requested and a letter box drop and shall include close liaison with neighbours during construction. Maintaining appropriate records of complaints to include timing, reported issues, actions taken and measures to be included for on-going works. The complaints log will need to be filed with the Responsible Person.	Yes	Sections 6.8, 6.9 Appendix C.2
Reversing alarms	The use of audible movement alarms of a type that would minimise noise impacts on surrounding noise sensitive receivers must be implemented. Where practicable, broadband, non-tonal reversing alarms should be utilised on site equipment. Ensure that the difference in volume between the reversing warning devices and the base machine noise level (at maximum governed speed under no load at any given test location) is minimised (in accordance with International Standard ISO9533:1989) and ensure that warning devices are no more than 5 dB above the Australian Standard level.	Yes	Section 4.2.4 Appendix C.1, C.4
Material handling	Avoid dropping equipment/materials from a height or into trucks. Where practicable, use sound dampening material to cover the surfaces on to which any materials must be dropped.	Yes	Appendix C.1

Item in NVIA [12] as called for in Condition B59(a)	Detail	Completed?	CNVMP Section
Equipment Location	Site noisy equipment away from noise-sensitive areas. Plant known to emit noise strongly in one direction is to be orientated so that the noise is directed away from noise-sensitive areas; Locate site access roads and site compounds as far away as possible from noise sensitive receptors; Plan truck movements to avoid residential streets where possible;	Yes	Appendix C.1, C.4
Construction traffic	Although impacts from additional traffic associated with construction are predicted to be below the 'minor impact' criteria, routing construction traffic along Towns Place is recommended to avoid direct exposure to residences along Dalgety Road. Scheduling of large deliveries to the middle of the day to minimise impacts during more sensitive morning and late afternoon periods should also be implemented.	Yes	Section 6.3 Appendix C.5
Cumulative impacts	Cumulative construction impacts should be considered and assessed as appropriate as part of the CNVMP, once activities, program and construction hours are finalised. Projects to be considered and cumulative impacts addressed include Barangaroo Metro Station, and other works within Central Barangaroo and Barangaroo South. Measures to mitigate cumulative impacts may include scheduling of works to avoid overlapping programs and cumulative increases. Alternatively consolidating works to reduce overall construction programs may be preferred and should be discussed as part of community consultation.	Yes	Sections 5.6.5, 6.8

6.2 Specific controls for construction airborne noise dominant sources

Based on the findings from the noise assessment in Section 5.6, and following discussions with the Contractor before the commencement of works, additional specific airborne noise controls should be implemented, in addition to those presented in Sections 5.4 and 6.1, in order to apply all feasible and reasonable noise management measures for those activities where exceedances of NMLs are anticipated. These are:

- Locate plant and equipment behind structures to maximise shielding to sensitive receivers (i.e. behind hoardings).
- Introduce engineering controls within the methodology, such as acoustic mobile/temporary enclosures to confine high emissions plant / equipment – when operating within the Cutaway underground space and/or at street level – where practical and if it is considered safe to do so.
- Promote the use of audible movement alarms of the type that minimise noise impacts at surrounding receivers (such as broadband or "quacker" alarms instead of beepers), where practical and available for equipment and without compromising the safety of staff or members of the public.
- Implement a system of work to notify truck drivers, and other plant operators, so that horns will not be used for signalling. The system will use mobile phones, radios, hand signals or a combination of any of these.
- Employees will receive training which will enable them to recognise areas where noise levels are likely to exceed 85 dBA.

- Where additional personnel protection equipment is required, the areas shall be identified by signage. The appropriate noise protection devices are to be issued to the affected personnel.

6.3 Specific controls for construction traffic noise

Noise from construction traffic should be dealt with by appropriate management measures that minimise noise impact. This includes:

- Ensuring that construction vehicles (including concrete agitator trucks) do not arrive at the subject site or surrounding residential precincts outside of the proposed construction hours of work outlined in Table 14.
- Concrete pump truck and agitator trucks will be road-registered vehicles, complying with the existing noise rules and regulations for such vehicles.
- Staging and managing arrival of trucks to avoid queueing and idling on public streets.
- Arriving at and departing from the site via designated routes that avoid or minimise the use of local roads.
- Minimising reversing to minimise the use of movement alarms (“reversing beepers”) and / or incorporating quacker alarms.
- Minimise the use of engine braking and to avoid noise actions such as slamming doors, loud radios, shouting or the use of truck horns for signalling.

6.4 Specific controls for construction vibration dominant sources

After review of the program, the site layout and the proposed plant and equipment, ACS considers that specific controls will not be required to control vibration to surrounding off-site buildings other than those already included in the program (such as minimising the use of rock breakers and the use of alternative less vibration-intensive equipment as noted in Section 5.4).

It is also noted that vibratory compactors are not currently in the program and, as such, compliance with Development Consent [1] condition C17 is achieved by omitting their use.

Notwithstanding the above, the Contractor may carry out preliminary attended vibration assessments at the commencement / during use of intensive vibration-generating plant to determine whether the existence of significant vibration levels justifies a more detailed investigation or vibration measurements / monitoring in areas other than those identified in this plan (refer to Section 7.2.1).

Where vibration levels are found to exceed the relevant criteria, one or more of the following measures will be taken:

- Modifications to demolition equipment used
- Modifications to methods of demolition

If the measures given above cannot be implemented, or have no effect on problematic vibration levels detected or impact generated, a review of the vibration criteria will be undertaken and the vibration management strategy amended. The following considerations will be taken into account:

- The layout of the site, including the location of static sources of vibration.
- Modifications to construction equipment used.
- Techniques used in construction to minimise generated vibration levels, including saw cutting and removal of structure wherever possible – as an alternative to hammers and hydraulic crushers.
- Hours of work with regard to the nature of operations in the affected buildings and the duration of the works.

6.5 Outside of Standard Hours works

At this stage, there are no OOH works planned for the Proposal.

6.6 Other general controls for noise and vibration

As a general rule, minimising noise and vibration will be applied as universal work practice at any time of day, but especially for noise sources or equipment that is found to exceed the construction noise limits.

The reduction of noise and vibration at the source and the control of the transmission path between the construction site and the receiver(s) will be the preferred options for noise minimisation. Providing treatments at the affected receivers will only be considered as a last resort.

When any plant/activity is anticipated to exceed the noise emission and vibration limits (as outlined in Sections 5.6 and 5.7) the strategies in Appendix C can be implemented, where reasonable and feasible, to further manage construction noise and vibration impacts, in addition to the specific noise controls for the Proposal presented in Sections 6.1, 6.2 6.3 and 6.4.

6.7 Plant and equipment maintenance program

Plant and equipment will be inspected regularly and maintained to ensure that mufflers are not defective, other fitted noise and vibration reduction devices are present and operating effectively, that engine cowlings are present and plant items are not loose and rattling or making other unnecessary noise.

6.8 Community consultation

The noise sensitive receivers listed and described in Section 3.2, and any other affected stakeholders, will be notified of the project by the Contractor and will be kept informed of the project status throughout the project duration.

The following measures are to be incorporated into the Communication and Stakeholder Plan currently being prepared:

- The Contractor will distribute letters to surrounding residents and business owners, describing the construction hours, potential high noise works/hours, the noise management measures being implemented and providing contact details for further information or complaints. The letters will be distributed at regular time intervals or project milestones.
- The Contractor will keep the receivers closest to, and most affected by, noise from demolition and excavation works informed of the works schedule – namely residential dwellings along Munn, Merriman, Rhodes and Dalgety Streets, hotel on Bettington Street and commercial office tenancies at 1 Munn Street.
- The immediately adjoining neighbours must be given a minimum of 48 hours' notice that excavation, shoring or underpinning works, or use of high noise emission appliances / plant, are about to commence.
- Site hoarding or notices on the hoarding will also identify the Contractor as the site operator and the project escalation contact details are to be clearly displayed.

6.9 Complaints, non-compliances and offensive noise

Complaints will be logged and response actions documented.

Upon receipt of a complaint the Contractor will decide whether the complaint is in relation to offensive noise. Offensive noise is described in legislation and discussed in the Noise Guide for Local Government. In the context of this proposal, offensive noise is noise from this proposal that is as a result of:

- Works outside the proposed and high-emissions restricted work hours in Section 5.1.
  Note: Offensive noise includes noise outside of the work hours as a result of arrival or departure of trucks and any site personnel or contractors parking on the surrounding streets and not entering or leaving the parking spaces dedicated to project vehicles.
- Works generating noise above the levels predicted in this document.
- Works generating noise above 75 dBA that extends for longer than 3 hours without a minimum one-hour respite break.

- Plant or equipment not maintained or operated in a proper and efficient manner, for example with defective mufflers or other fitted noise attenuation devices.
- Road registered trucks and other vehicles that are unusually loud, indicating faulting muffler or other noise attenuating components, or are operated in a manner that causes unnecessary noise, such as use of noisy engine brakes.
- Loud radios, shouting (particularly swearing), and other unnecessary noise.
- Site gates left open other than for entry or exit of a vehicle.

On receipt of a complaint of offensive noise, or of becoming aware of offensive noise, the contractor will take immediate action to stop the offensive noise.

For complaints about noise or vibration from this proposal other than offensive noise, the contractor will:

- Try to ascertain from the complainant which activity is causing the problem (i.e. inside or outside the site and in what position).
- If required, establish from the monitoring equipment and or attended monitoring if the predicted noise or vibration levels have been exceeded. Attended monitoring may be required to determine this.
- Check that the activities and equipment are being operated in a proper and efficient manner.
- Immediately rectify any faulty equipment.

6.10 Training and awareness

The Contractor shall provide all project personnel and subcontractors with training on the environmental obligations through project inductions, toolbox talks and through Safety Works Methods (SWMS).

Project personnel and subcontractors shall undergo a general project induction prior to commencing work. This will include a noise and vibration component reinforcing that works should be done in a manner that minimises noise and vibration impacts and is respectful of neighbours and mindful of their amenity.

The Contractor shall put in place suitable contractual arrangements to ensure that all site personnel, including sub-contractors, are required to adhere to the noise management provisions in this plan.

6.11 Worker health and safety (WHS)

Personnel involved in the project operations should be issued with ear plugs or hearing protection, which must be used whenever noise levels interfere with normal speech when individuals are standing at a distance of 1 m from each other, or when the eight-hour equivalent continuous A-weighted sound pressure level, $L_{Aeq,8hr}$, measured with a properly calibrated sound level meter, exceeds 85 dB.

Signs should be erected and made visible at the entry to all areas where noise levels will exceed 85 dBA.

7 Monitoring Program

Noise and vibration monitoring will be used as a measure to identify non-conformances with the requirements of this plan. Any non-conformances found will trigger the Contractor to implement corrective and preventative actions in accordance with this plan.

All monitoring, reporting and on-going planning of noise and vibration mitigation measures triggered by the monitoring outcomes will be undertaken and/or supervised by a suitably qualified acoustic engineer.

7.1 Noise monitoring

7.1.1 Ongoing unattended noise monitoring

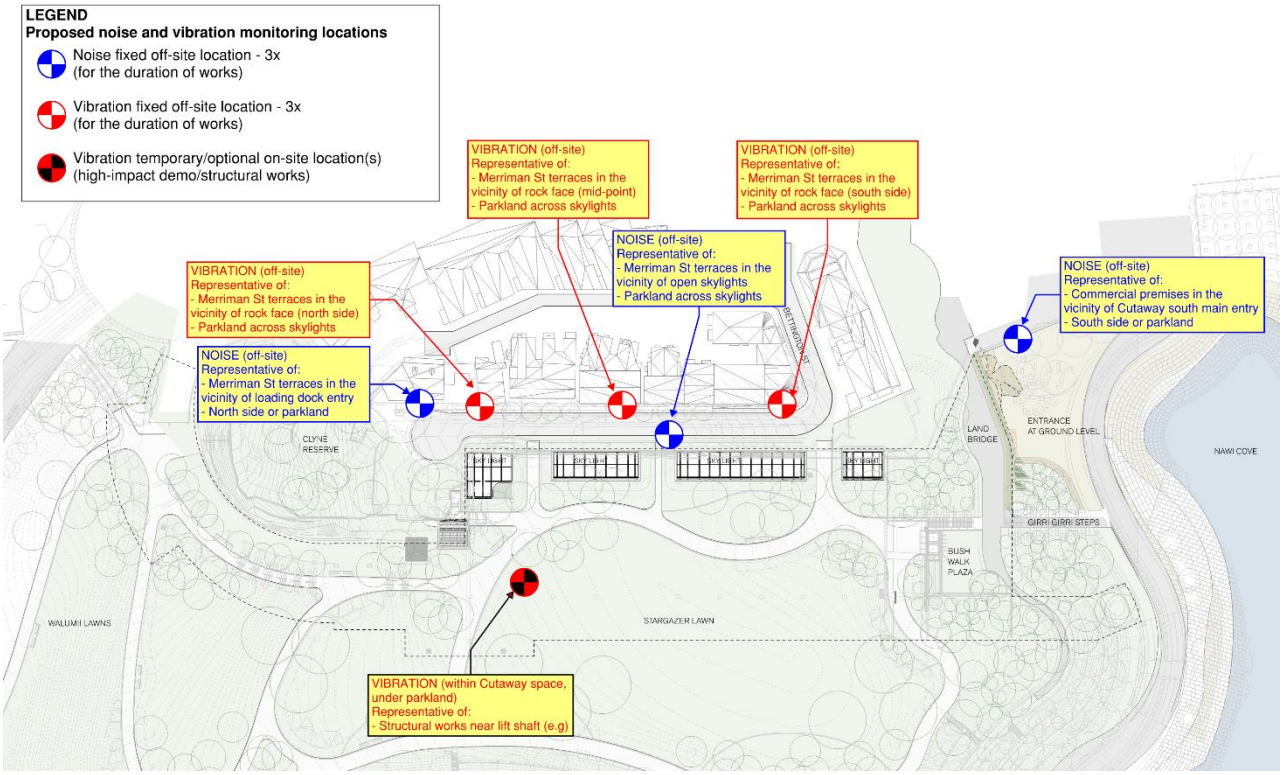
Noise monitoring is important to the success of this plan and of the completion of construction works. Hence, noise monitoring should be carried out from the commencement of heavy main works on-site (i.e. demolition and excavation).

The main purpose of the noise monitoring is to assess the risk of exceedance of the highly-affected noise levels (i.e. above 75 dBA) at the most-affected residential dwellings along Merriman Street for lengthy periods of time and, if so, to demonstrate compliance with the respite periods to be observed as part of the Development Consent [1] condition C9 for high-emissions works. To a lesser extent, noise monitoring at Merriman St locations will also provide valuable information to evaluate construction noise impacts in parkland directly above the construction site.

Noise monitoring is also recommended at the commercial office building at 1 Munn St, to ascertain the impacts of demolition works to the south of the site, including parkland.

The proposed three (3) noise monitoring locations are shown in Figure 4 in blue-white markers. Locations have been chosen taking into account the current works program and most-affected areas. However, these locations are subject to slight modification in case there are access or safety issues to locate the noise monitors.

Figure 4 Proposed monitoring locations



Source: ACS/FJC

Equipment

It is recommended that noise monitors are accessible via a remote connection and live results can be displayed live at the site office using a proprietary software (e.g. Sitehive) - so that noise complaints can be quickly investigated on-site. However, it is not recommended to set alarm levels for noise monitors, as extraneous noises such as birds, loud vehicles pass-bys or people shouting near the noise monitor microphones could easily trigger false alarms.

7.1.2 Attended noise monitoring for complaints

Attended noise monitoring will be conducted and reported in the event of noise complaints.

During any such follow-up monitoring, the operational activities and specific plant items of concern will be measured, including typical maximum noise levels associated with these activities, so that rectification strategies can be assessed and implemented where relevant.

7.2 Vibration monitoring

7.2.1 Commencement of high-emissions works attended monitoring (optional)

Pre-demolition testing may be carried out at the commencement of demolition and excavation activities prior to works commencing on site at the rock face / lift pit areas.

The pre-demolition testing will be used to establish site laws and determine whether the vibration levels justify a more detailed investigation, and the exact requirements for ongoing vibration monitoring.

Vibration surveys on site will determine the actual vibration levels generated by each activity, and whether a means of vibration mitigation will be necessary for any equipment or processes on the site.

If the pre-demolition testing indicates that vibration levels might exceed the relevant criteria then vibration mitigation and management measures will need to be put in place to ensure vibration impacts are minimised as far possible.

A more detailed investigation will involve methods of constraining activities generating high vibration levels. The appropriate method of monitoring vibration levels can then be put in place. Consideration of reasonable and feasible vibration mitigation measures plus a review of vibration criteria may also be necessary.

7.2.2 Ongoing unattended vibration monitoring

Vibration monitoring is critical to the success of this plan and of the construction works. Hence, vibration monitoring should be carried out from the commencement of heavy main works on-site (i.e. demolition and excavation).

The purpose of this monitoring is to assess the risk of potential exceedances to the vibration human comfort criteria and, to a lesser extent, structural damage to nearby residents.

Unattended vibration monitoring will be carried out at a minimum of three (3) locations on residential dwellings in Merriman Street to protect sensitive receivers nearest to the work. Nominated locations are shown in Figure 4 in red-white markers.

In addition to the vibration monitors at residences, an optional vibration monitoring location may also be set within the site for the duration of particularly intensive demolition works around the lift pit in Zone 2.

Vibration limits at residential vibration monitoring locations

Vibration limits (as an overall level) will initially be set as follows (based on Section 4.5):

- Warning : 2 mm/s (for heritage buildings); 4 mm/s (for residential buildings)
- Alarm : 3 mm/s (for heritage buildings); 5 mm/s (for residential buildings)

Equipment

The vibration monitors shall be capable of sending SMS and email when the warning or alarm level is exceeded.

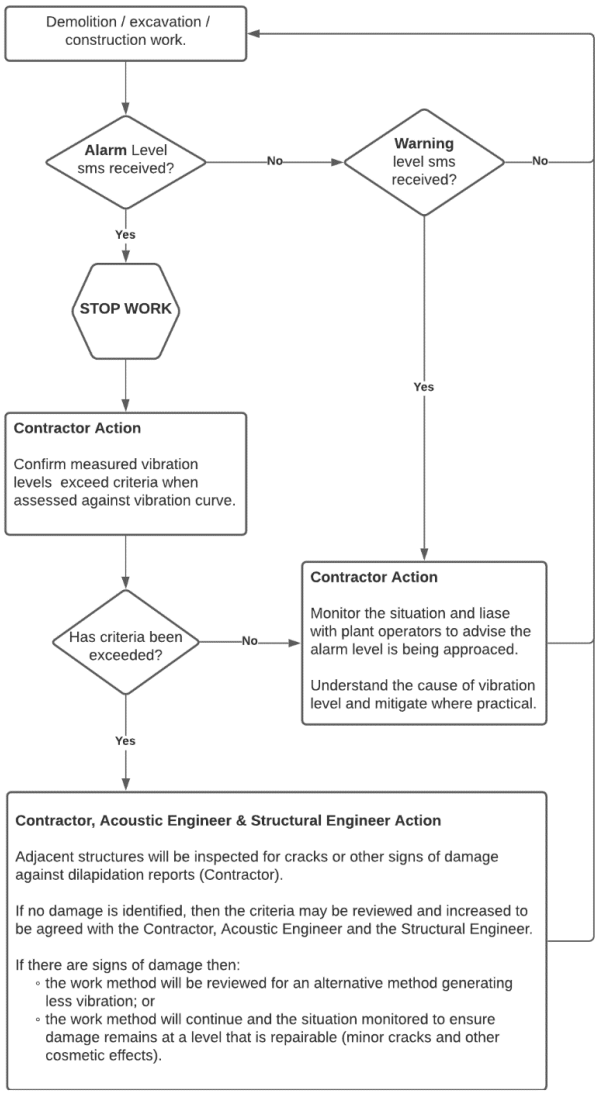
The SMS and emails should be sent to the following contacts:

- Primary (SMS)
  - The Contractor
  - Acoustic Engineer
- Secondary (Email)
  - The Contractor
  - Acoustic Engineer

Methodology

Figure 5 below summarises the vibration methodology.

Figure 5 Vibration monitoring methodology



7.2.3 Attended vibration monitoring for complaints

Attended vibration monitoring may be conducted and reported in the event of vibration-induced complaints.

During any such follow-up monitoring, the operational activities and specific plant items of concern will be measured, including typical rms and dose vibration levels associated with these activities, so that rectification strategies can be assessed and implemented where relevant.

7.3 Reporting

The Contractor will maintain records on site of:

- Noise and vibration monitoring
- Remedial actions taken to minimise, reduce or eliminate noise and vibration
- Daily and weekly inspections of plant and equipment, hoardings and other noise management measures
- Monthly Construction Noise and Vibration report

Appendix A Glossary and Initialisms

Table A.1 Glossary

Term	Definition
dB	Decibel is the unit used for expressing sound pressure level (SPL) or power level (SWL).
dBA	Decibel expressed as an 'A – weighted' sound pressure level, based on the frequency response of the human ear and has been found to correlate well with human subjective reactions to various sounds. It is noted that an increase or decrease of approximately 10 dB corresponds to a subjective doubling or halving of the loudness of a noise, and a change of 2 to 3 dB is subjectively barely perceptible.
Frequency	The rate of repetition of a sound wave. Frequency is measured Hertz (Hz), or cycles per second. Human hearing ranges approximately from 20 Hz to 20 kHz (2000 Hz).
Ground-borne noise	The transmission of noise energy as vibration of the ground. The energy may then be re-radiated as airborne noise.
L1(period)	The sound pressure level that is exceeded for 1% of a measurement period. This is commonly accepted as the maximum noise level.
L10(period)	The sound pressure level that is exceeded for 10% of a measurement period. This is commonly accepted as the maximum noise levels.
L90(period)	The sound pressure level that is exceeded for 90% of a measurement period. This is commonly accepted as the background noise level.
LAeq(period)	The equivalent continuous sound pressure level. The level of noise equivalent to the energy average of noise levels occurring over a measurement period.
LAmax	The highest sound pressure level recorded over a measurement period.
Octave Band Centre Frequency	The most commonly used frequency bands are octave bands, in which the centre frequency of each band is twice that of the band below it.
Rating Background Level (RBL)	Rating background level is the overall single-figure background level representing each assessment period (day/evening/night) over a measurement period.
Sound Power Level (SWL)	Expressed in dB, it is the total acoustic energy radiated by a plant or equipment to the environment.
Sound Pressure Level (SPL)	Expressed in dB, it is the level of noise measured by a standard sound level meter and requires a description of where the noise was measured relative to the source.
Vibration	Vibration may be expressed in terms of displacement, velocity and acceleration. Velocity and acceleration are most commonly used when assessing structure-borne noise or human comfort issues respectively.

Table A.2 Initialisms

INITIALISM	Definition
CNVMP	Construction Noise and Vibration Management Sub-Plan
SSDA	State Significant Development Application
EPA	Environment Protection Authority
ICNG	Interim Construction Noise Guideline
CoS-CP	City of Sydney Code of Practice (1992) Construction Hours/Noise within the Central Business District
NML	Noise Management Level
NPI	Noise Policy for Industry
STD	Standard Hours
OOH	Out of hours
PNTLs	Project Noise Trigger Levels
RBL	Rating Background Level
VML	Vibration Management Level

Appendix B Building Damage Vibration Criteria

There is little reliable data on the threshold of vibration-induced damage in buildings. Although vibrations induced in buildings by ground-borne excitation are often noticeable, there is little evidence that they produce even cosmetic damage. This lack of data is one of the reasons that there is variation between international standards, why the British Standards Institution (BSI) did not provide guidance before 1992 and why there are still no International Organisation for Standardisation (ISO) guidance limits.

There are however several standards that can be referred to, as listed below.

B.1 German Standard

The relevant German standard is DIN 4150: Part 3: 19862. This standard gives guidelines for short-term and steady state structural vibration. For short-term vibration in buildings the following limits are given:

Table B.1 Guideline Values of Vibration Velocity, vi, for Evaluating the Effects of Short-term Vibration

Structural type	Vibration Velocity, vi, in mm/s			
	Foundation			Plane of floor of uppermost full storey
	less than 10 Hz	10 to 50 Hz	50 to 100 Hz	Frequency mixture
Commercial, industrial or similar	20	20 to 40	40 to 50	40
Dwellings or Similar	5	5 to 15	15 to 20	15
Particularly Sensitive	3	3 to 8	8 to 10	8

The guideline state that:

> *"Experience to date has shown that, provided the values given in Table B.1 are observed, damage due to vibration, in terms of a reduction in utility value, is unlikely to occur. If the values of Table B.1 are exceeded, it does not necessarily follow that damage will occur. Should these values be significantly exceeded, further investigation is necessary."*

B.2 British Standard

The relevant standard is BS7385: Part 2: 1993[1].. This standard was developed from an extensive review of UK data, relevant national and international documents and other published data, which yielded very few cases of vibration-induced damage. This standard contains the most up-to-date research on vibration damage in structures. Part 2 of the standard gives specific guidance on the levels of vibration below which building structures are considered to be at minimal risk.

The Standard proposes the following limits on the foundations of the building:

[1] British Standards 7385:1993 Part 2 "*Evaluation and Measurement for vibration in Buildings. Guide to damage levels from ground-borne vibration*"

Table B.2 Guideline values of vibration velocity, vi, for evaluating the effects of short-term vibration

Structural type	Vibration Velocity, vi, in mm/s	
	less than 10Hz	50 to 100 Hz
Unreinforced or light framed structures	15 mm/s @ 4 Hz increasing to 20 mm/s @ 15 Hz	20 mm/s @ 15 Hz increasing to 50 mm/s @ 40 Hz and above
Residential or light commercial type buildings		

The standard states in Annex A, that ... *the age and existing condition of a building are factors to consider in assessing the tolerance to vibration. If a building is in a very unstable state, then it will tend to be more vulnerable to the possibility of damage arising from vibration or any other ground-borne disturbance*. It is recommended that buildings of importance be considered on a case-by-case basis with detailed engineering analysis being carried out if necessary.

Annex B of the Standard gives a breakdown of data that should be recorded. Included in this are details of the building structure, such as general condition of the structure, list of defects, photographs, details of all major extensions, repairs and renovations. A crack exposure report should be prepared both pre and post exposure, both internally and externally.

B.3 Australian Standard

There is no specific Australian Standard referring to structural vibration in buildings. There is however AS 2187.2 - 1993[2], which, in Appendix J, recommends maximum peak particle velocities, measured at the ground surface due to blasting. The lower recommended peak particle velocity is 10 mm/s. The standard states however, that structures that may be particularly susceptible to ground-borne vibration should be examined on an individual basis. It is suggested that in the absence of a particular site-specific study then a maximum peak particle velocity of 5 mm/s is used.

[2]AS 2187.2 - 1993 Explosives - Storage, transport and use. Part 2: Use of explosives

Appendix C ICNG's Work Practices for Noise and Vibration Management

The ICNG[2] focuses on achieving desired environmental outcomes – there are no prescribed noise controls for construction works. Instead, all feasible and reasonable work practices should be implemented to minimise noise impacts. This approach gives construction site managers and construction workers the greatest flexibility to manage noise.

The sections below, extracted from the ICNG [2], provide guidance on selecting work practices to minimise noise impacts at residences and other sensitive land uses, as well as information on contact with neighbours and the community. Not all the work practices discussed in this section may be applicable to a particular project, and they should be considered on a case-by-case basis.

C.1 Strategy 1 – Universal work practices

Many complaints about construction noise are due to preventable activities at any time of day or night.

Work practices at any time of day

- Regularly train workers and contractors (such as at toolbox talks) to use equipment in ways to minimise noise.
- Ensure site managers periodically check the site and nearby residences and other sensitive land uses for noise problems so that solutions can be quickly applied.
- Include in tenders, employment contracts, subcontractor agreements and work method statements clauses that require minimisation of noise and compliance with directions from management to minimise noise.
- Avoid the use of radios or stereos outdoors where neighbours can be affected.
- Avoid the overuse of public address systems.
- Avoid shouting and minimise talking loudly and slamming vehicle doors.
- Keep truck drivers informed of designated vehicle routes, parking locations, acceptable delivery hours or other relevant practices (for example, minimising the use of engine brakes, and no extended periods of engine idling).
- Develop a one-page summary of approval or consent conditions that relate to relevant work practices and pin it to a noticeboard so that all site operators can quickly reference noise information.
- Workers may at times need to discuss or negotiate practices with their managers.

Additional work practices at night

- Avoid the use of equipment which generates impulsive noise.
- Minimise the need for reversing or movement alarms as described in Appendix Section C.4.
- Avoid dropping materials from a height.
- Avoid metal-to-metal contact on equipment.
- Schedule truck movements to avoid residential streets if possible.
- Avoid mobile plant clustering near residences and other sensitive land uses.
- Ensure periods of respite are provided in the case of unavoidable maximum noise level events.

C.2 Strategy 2 – Consultation and notification

The community is more likely to be understanding and accepting of noise if the information provided is frank, does not attempt to understate the likely noise level, and if commitments are firmly adhered to.

Notification before and during construction

- Provide, reasonably ahead of time, information such as total building time, what works are expected to be noisy, their duration, what is being done to minimise noise and when respite periods will occur. For works outside standard hours, inform affected residents and other sensitive land use occupants between five and 14 days before commencement.
- Provide information to neighbours before and during construction through media such as letterbox drops, meetings or individual contact. In some areas, the proponent will need to provide notification in languages other than English. A website could also be established for the project to provide information.
- Use a site information board at the front of the site with the name of the organisation responsible for the site and their contact details, hours of operation and regular information updates. This signage should be clearly visible from the outside and include afterhours emergency contact details.
- Maintain good communication between the community and project staff.
- Appoint a community liaison officer where required.
- For larger projects consider a regular newsletter with site news, significant project events and timing of different activities.
- Provide a toll-free contact phone number for enquiries during the works.
- Facilitate contact with people to ensure that everyone can see that the site manager understands potential issues, that a planned approach is in place and that there is an ongoing commitment to minimise noise.

Complaints handling

- Provide a readily accessible contact point, for example, through a 24 hour toll-free information and complaints line.
- Give complaints a fair hearing.
- Have a documented complaints process, including an escalation procedure so that if a complainant 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.
- Provide a quick response to complaints, with complaint handling staff having both a good knowledge of the project and ready access to information.
- Implement all feasible and reasonable measures to address the source of complaint.
- Keep a register of any complaints, including details of the complaint such as date, time, person receiving complaint, complainant's contact number, person referred to, description of the complaint, work area (for larger projects), time of verbal response and timeframe for written response where appropriate.

C.3 Strategy 3 – Plant and equipment

In terms of both cost and results, controlling noise at the source is one of the most effective methods of minimising the noise impacts from any construction activities.

Use quieter methods

- Examine and implement, where feasible and reasonable, alternatives to rock-breaking work methods, such as hydraulic splitters for rock and concrete, hydraulic jaw crushers, chemical rock and concrete splitting, and controlled blasting such as penetrating cone fracture. The suitability of alternative methods should be considered on a case-by-case basis.
- Use alternatives to diesel and petrol engines and pneumatic units, such as hydraulic or electric-controlled units where feasible and reasonable. Where there is no electricity supply, use an electrical generator located away from residences.
- Examine and implement, where feasible and reasonable, alternatives to transporting excavated material from underground tunnelling off site at night. For example, stockpile material in an acoustically treated shed at night and load out the following day.

Use quieter equipment

- Examine different types of machines that perform the same function and compare the noise level data to select the least noisy machine. For example, rubber wheeled tractors can be less noisy than steel tracked tractors.
- Noise labels are required by NSW legislation for pavement breakers, mobile compressors, chainsaws and mobile garbage compactors. These noise labels can be used to assist in selecting less noisy plant.
- Pneumatic equipment is traditionally a problem – select super silenced compressors, silenced jackhammers and damped bits where possible.
- When renting, select quieter items of plant and equipment where feasible and reasonable.
- When purchasing, select, where feasible and reasonable, the most effective mufflers, enclosures and low-noise tool bits and blades. Always seek the manufacturer's advice before making modifications to plant to reduce noise.

Operate plant in a quiet and efficient manner

- Reduce throttle setting and turn off equipment when not being used.
- Examine and implement, where feasible and reasonable, the option of reducing noise from metal chutes and bins by placing damping material in the bin.

Maintain equipment

- Regularly inspect and maintain equipment to ensure it is in good working order. Also check the condition of mufflers.
- Equipment must not be operated until it is maintained or repaired, where maintenance or repair would address the annoying character of noise identified.
- For machines with enclosures, check that doors and door seals are in good working order and that the doors close properly against the seals.
- Return any hired equipment that is causing noise that is not typical for the equipment – the increased noise may indicate the need for repair.
- Ensure air lines on pneumatic equipment do not leak.

C.4 Strategy 4 – On site

Barriers and acoustic sheds are most suited to longer-term fixed works, as in these cases the associated cost is typically outweighed by the overall time savings.

Location of plant

- Place as much distance as possible between the plant or equipment and residences and other sensitive land uses.
- Restrict areas in which mobile plant can operate so that it is away from residences and other sensitive land uses at particular times.
- Locate site vehicle entrances away from residences and other sensitive land uses.
- Carry out noisy fabrication work at another site (for example, within enclosed factory premises) and then transport to site.

Alternatives to reversing alarms

- Avoid use of reversing alarms by designing site layout to avoid reversing, such as by including drive-through for parking and deliveries.
- Install where feasible and reasonable less annoying alternatives to the typical 'beeper' alarms taking into account the requirements of the Occupational Health and Safety legislation; examples are smart alarms that adjust their volume depending on the ambient level of noise and multifrequency alarms that emit noise over a wide range of frequencies.
- In all circumstances, the requirements of the relevant Occupational Health and Safety legislation must be complied with. For information on replacing audible warning alarms on mobile plant with less annoying alternatives, see Appendix C in the ICNG [12].

Maximise shielding

- Reuse existing structures rather than demolish and reconstruct.
- Use full enclosures, such as large sheds, with good seals fitted to doors to control noise from night-time work.
- Use temporary site buildings and materials stockpiles as noise barriers.
- Schedule construction of permanent walls so that they can be used as early as possible as noise barriers.
- Use natural landform as a noise barrier – place fixed equipment in cuttings, or behind earth berms.
- Note large reflecting surfaces on and off site that might increase noise levels and avoid placing noise-producing equipment in locations where reflected noise will increase noise exposure or reduce the effectiveness of mitigation measures.

C.5 Strategy 5 – Work scheduling

Scheduling noisy work during periods when people are least affected is an important way of reducing noise impact.

Provide respite periods

- Consult with affected schools to ensure that noise-generating construction works in the vicinity of affected school buildings are not scheduled to occur during examination periods, unless other arrangements (such as relocation to an alternative location) acceptable to the affected schools can be made.
- Where night work near residences cannot be feasibly or reasonably avoided, restrict the number of nights per week and/or the number of nights per calendar month that the works are undertaken, in consultation with residents who will be most affected.

Schedule activities to minimise noise impacts

- Organise work to be undertaken during the recommended standard hours where possible.
- Schedule work to avoid times when there are special events, such as international sporting competitions, if the construction site is in the vicinity of the venue. When works outside the recommended standard hours are planned, avoid scheduling on Sundays or public holidays.
- Schedule work when neighbours are not present (for example, commercial neighbours, colleges and schools may not be present outside business hours or on weekends).
- Schedule noisy activities around times of high background noise (local road traffic or when other local noise sources are active) where possible to provide masking or to reduce the amount that the construction noise intrudes above the background.
- For tunnelling works examine and implement, where feasible and reasonable, the possibility of stockpiling excavated material overnight in an enclosure and restrict load-out to the recommended standard hours only.
- Consult with affected neighbours about scheduling activities to minimise noise impacts.
- Care should be taken to minimise noise from any refuelling at night.

Organise deliveries and access

- Nominate an off-site truck parking area, away from residences, for trucks arriving prior to gates opening.
- Amalgamated loads can lead to less noise and congestion in nearby streets.
- Optimise the number of vehicle trips to and from the site – movements can be organised to amalgamate loads rather than using a number of vehicles with smaller loads.
- Designate access routes to the site, through consultation with potentially noise-affected residences and other sensitive land uses and make drivers aware of nominated vehicle routes.
- Provide on-site parking for staff and on-site truck waiting areas away from residences and other sensitive land uses. Truck waiting areas may require bunding or walls to minimise noise.
- Schedule deliveries to nominated hours only.

C.6 Strategy 6 – Transmission path

Physical methods to reduce the transmission of noise between the construction works and residences or other sensitive land uses are generally suited to works where there is longer-term exposure to the noise.

- Reduce the line-of-sight noise transmission to residences or other sensitive land uses using temporary barriers.
- Temporary noise barriers can be constructed from hoarding (plywood boards, panels of steel sheeting or compressed fibre cement board) with no gaps between the panels at the site boundary. Stockpiles, shipping containers and site office transportables can be effective barriers.
- Erect temporary noise barriers before work commences to reduce noise from works as soon as possible.
- Where high-rise dwellings adjoin the construction site, the height of a barrier may not be sufficient to effectively shield the upper levels of the residential building from construction noise. Check whether this is a consideration for the project and examine alternative means of mitigation where needed.
- Consult with most affected neighbours about how effective the proposed noise mitigation measures will be in addressing their concerns.

C.7 Strategy 7 – At residences or other sensitive land uses

Providing treatments at the affected residence or other sensitive land use should only be a last resort.

Temporary relocation

- Examine and implement, where feasible and reasonable, the option of relocating noise-affected occupants for short periods of time, such as when high noise levels from construction occur at night and there are no feasible and reasonable ways of reducing noise levels. For example, the proponent could offer alternative accommodation or other respite measures (such as movie tickets) where mitigation is sought and there are no feasible and reasonable work methods available.

Architectural treatments

- Examine and implement, where feasible and reasonable, the option of acoustical treatment to residences affected by construction noise, such as to windows at the building façade – however, alternative means of ventilation may be needed where windows are closed and airflow into a building does not meet building requirements. Note that the effectiveness of closing existing windows may be limited by the performance of the window seals.

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34. APPENDIX D - Soil and Water Management Plan

Soil and Water Management Plan

Project Details	
Project Name:	Barangaroo Cutaway Cultural Facility
Project Number:	200290
Project Location:	1 Merriman St, Barangaroo NSW 2000
Client:	Infrastructure NSW
Name of principal contractor:	FDC Construction (NSW) Pty Limited
Company address:	22-24 Junction Street, Forest Lodge NSW 2037
ABN:	72 608 609 427

Revision Date	REVISION DESCRIPTION	PM's INITIALS (revision approval)
11/04/2024	Barangaroo Cutaway – Revision 1	HP
23/04/2024	Barangaroo Cutaway – Revision 2	JK
26/04/2024	Barangaroo Cutaway – Revision C1	HP
04/02/2025	Barangaroo Cutaway – Revision C2 – 6-Monthly Review	HP

Soil and Water Management Plan

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CONTENTS

GLOSSARY / ABBREVIATIONS	
CoA	Minister's Conditions of Approval
ANZECC	The Australian and New Zealand Environmental Conservation Council
ASS	Acid Sulfate Soils
AQMP	Air Quality Management Plan
EMP	Environmental Management Plan
SWQMP	Soil and Water Quality Management Plan
WMP	Waste Management Plan
DEC	Department of Environment and Conservation
DECCW	Department of Environment, Climate Change and Water
DP&E	Department of Planning and Environment
DLWC	Department of Land and Water Conservation
DNR	Department of Natural Resources
DPI	Department of Primary Industries (Fishing and Aquaculture)
DSEWPC	Department of Sustainability, Environment, Water ,Population and Communities
EA	Environmental Assessment
EEC	Endangered Ecological Community
EPA	Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPL	Environment Protection License
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
ER	Environmental Representative
EWMS	Environmental Work Method Statement
FM Act	*Fisheries Management Act 1994*
NOW	NSW Office of Water
OEH	Office of Environment and Heritage
PASS	Potential Acid Sulfate Soils
PESCP	Progressive Erosion and Sediment Control Plan
POEO Act	*Protection of the Environment Operations Act 1997*
RMS	Roads and Maritime Services
Secretary	Secretary of the Department of Planning and Environment
SDS	Safety Data Sheet
Water Act	*Water Act 1912*
WM Act	*Water Management Act 2000*

1 Introduction

1.1 Purpose

a) This Soil and Water Quality Management Plan (SWQMP) describes how FDC will manage potential environmental impacts on surface and groundwater during construction.

b) This SWQMP has been prepared to address the requirements of applicable guidelines and legislation.

1.2 Background

a) FDC have assessed the impacts of construction and operation of the Project on soil and water quality.

b) The implementation of the mitigation measures in this SWQMP will assist the substantially reduce the potential impacts on surface and groundwater quality in the Project area.

2 Legal and Other Requirements

2.1 Legislation

a) Legislation relevant to soil and water management includes:

i. Environmental Planning and Assessment Act 1979 (EP&A Act)
ii. Environmental Planning and Assessment Regulation 2000
iii. Protection of the Environment Operations Act 1997 (POEO Act)
iv. Water Management Act 2000 (WM Act)
v. Fisheries Management Act 1994 (FM Act)
vi. Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)
vii. Water Act 1912 (Water Act)

2.2 Guidelines

a) The main guidelines, specifications, and policy documents relevant to this SWQMP include:

i. Acid Sulfate Soil Manual (ASSMAC 1998)
ii. *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC and ARMCANZ 2000)
iii. *National Water Quality Management Strategy* (NWQMS) (Department of Sustainability, Environment, Water, Population and Communities (DSEWPC), 1994)
iv. *NSW Water Quality and River Flow Objectives* (DECCW, 2006)
v. Department of Environment and Conservation (DEC): *Bundling & Spill Management. Insert to the Environment Protection Manual for Authorised Officers – Technical section "Bu" November 1997*
vi. *Managing Urban Stormwater: Soils and Construction.* Landcom, (4th Edition) March 2004 (reprinted 2006) (the "Blue Book"). Volume 1 and Volume 2.
vii. DLWC, 1998. *Construction Wetlands Manual*
viii. *Approved Methods for the Sampling and Analysis of Water Pollutants in NSW* (EPA, March 2004)
ix. *Guidelines for the Management of Acid Sulfate materials: Acid Sulfate Soils, Acid Sulfate Rock and Monosulphidic Black Ooze* (RTA 2005)
x. The relevant targets within the *State Water Management Outcomes Plan* (NOW, 2003)
xi. *State Groundwater Policy Framework Document* (Department of Land and Water Conservation (DLWC), 1997)
xii. The NSW State *Groundwater Quality Protection Policy* (DLWC, 1998)
xiii. (Draft) NSW State *Groundwater Quantity Management Policy* (DLWC, n.d.)
xiv. NSW State *Groundwater Dependent Ecosystems Policy* (DLWC, 2002)
xv. *National Water Quality Management Strategy Guidelines for Groundwater Protection in Australia* (Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) and ANZECC, 1995)
xvi. *Guidelines for the Assessment and Management of Groundwater Contamination* (NSW DEC, 2007).

3 Existing Environment

The proposal is located under the Barangaroo Reserve within the City of Sydney Local Government Area (LGA). The extent of the Cutaway is shown in Figure 2 below and is approximately 6,500m². It is bounded by Wulugul Walk to the north and west, Merriman Street to the east, and Munn Street to the South.

The proposal is approximately 250m north of Central Barangaroo. A summary of the surrounding development is provided below:

- **North and West:** The site is bounded by Wulugul Walk which is a 300-metre-long and 15-metre-wide shared walking and cycling path. It is a part of an 11-kilometre harbourside walk from Woolloomooloo to the Anzac Bridge.
- **East:** The site is bounded by Merriman Street to the east with a range of low-density residential buildings.
- **South:** Immediately south of the site is the Munn Street Reserve with plenty of shaded seating and lush green areas.

An existing stormwater network is located at ground level along the eastern end of the site that collects runoff from falling onto the slab through the open roof void (open to the sky). It runs from the northern end falling to the south along the eastern wall before eventually connecting to a stormwater pit located south of the site within proximity to the Nawi Cove entrance. This stormwater pit eventually discharges to the harbour.

The existing stormwater network is shown schematically in Figure 3. The scope of works that affects the stormwater is limited to the eastern side of the development where the new works is being proposed.

4 Environmental Aspects and Impacts

a) The key construction activities and the associated potential sources of erosion, sedimentation and water pollution were identified through a risk management approach. The consequence and likelihood of each activity's impact on the environment was assessed to prioritise its significance. The results of this risk assessment are included in the PMP and Environmental Risk Assessment (F010).

5 Environmental Mitigation Measures

Specific mitigation measures to address impacts on soil and water quality are outlined in Table 1 below:

Mitigation Measure		Responsibility	Complete
5.1 General			
SWQMP1	Engage a specialist soil conservationist where required to provide expert assistance with key aspects of design of the erosion and sediment controls both before and during construction.	Site Manager	X
SWQMP2	Install erosion and sediment controls in all construction areas where soil disturbance is going to occur, prior to soil disturbance occurring.	Site Manager, Project Engineers, Foreman	X
SWQMP3	Install all erosion and sediment controls in accordance with the *Erosion and Sediment Control Plan (ESCP)* included in Appendix A of this plan.	Site Manager, Project Engineers, Foreman	X
SWQMP4	Consult relevant government agencies in relation to control measures in watercourses and creeks and the design of waterway crossings (e.g. NSW Office of Water, DPI (Fishing & Aquaculture), Office of Environment and Heritage).	Site Manager	X
SWQMP5	Prepare Progressive Erosion and Sediment Control Plans (PESCPs) prior to commencing each stage or parcel of work. Prepare, review and issue the PESCPs in accordance with the *Project Document and Data Control Procedure* to ensure their currency and relevance at all times.	Site Manager, Project Engineers	X
SWQMP6	Implement appropriate erosion and sediment control measures for each particular section of works in accordance with the PESCP, prior to the commencement of any clearing, stripping or earthworks.	Project Engineers Foreman	X
SWQMP7	Install hydraulic structures and controls (i.e. clean and dirty water diversion drains, pipes and culverts) early (i.e. prior to clearing and stripping) to promote successful erosion and sediment control during construction (principally, during clearing, stripping and earthworks).	Project Engineers Foreman	X
SWQMP8	The Site Project Team will monitor weather conditions and forecasts (including rainfall prediction maps) daily and pass on relevant information to the Site Superintendent / Foremen to allow for adequate planning for significant rain events.	Site Manager	X
SWQMP9	Implement relevant documentation and systems for recording erosion and sediment control activities in accordance with the procedure for site environmental inspections outlined in the PMP.	Site Manager	X
5.2 Minimising Disturbance			
SWQMP10	Establish clearing limits and work boundaries that are well defined using barrier tape (or equivalent) prior to any construction, clearing or stripping works commencing.	Site Manager, Project Engineers, Foreman	X
SWQMP11	Minimise the extent of clearing as much as possible.	Project Engineers, Foreman	X
SWQMP12	Clearly mark all vegetation that is to be retained.	Site Manager, Project Engineers, Foreman	X

Mitigation Measure		Responsibility	Complete
SWQMP13	Clear land progressively and clear the areas associated with the current section / stage of works only.	Project Engineers, Foreman	X
SWQMP14	Initially clear and grubb leaving the soil surface in a reasonably rough condition with some surface vegetative cover.	Project Engineers, Foreman	X
5.3 Drainage Control			
SWQMP15	Maximise the separation of 'clean' (offsite) run-on water from 'dirty' (onsite) (e.g. turbid) construction area runoff as much as possible.	Site Manager, Project Engineers, Foreman	X
SWQMP16	Construct drainage structures early in the project including: - Catch drains, and - Culverts / pipes and associated inlet and outlet protection (e.g. dissipaters)	Project Engineers, Foreman	X
SWQMP17	Maximise the diversion of turbid construction runoff into sediment traps.	Project Engineers, Foreman	X
SWQMP18	Control runoff during the construction of embankments (e.g. fill shaping and the construction of temporary dykes and batter drains).	Project Engineers, Foreman	X
SWQMP19	Divert formation runoff into pits and the stormwater drainage system as soon as practical to reduce surface flow lengths.	Project Engineers, Foreman	X
SWQMP20	Divert off site run-on water around the works site as much as possible. Use permanent cut-off drains to achieve this as much as possible.	Project Engineers, Foreman	X
SWQMP21	Maintain slope lengths at appropriate lengths (refer to the standard drawings in the Primary ESCP) to slow flows down and minimise erosion. Use catch drains to collect and divert runoff from the slopes.	Project Engineers, Foreman	X
SWQMP22	Use geotextile linings to provide temporary surface protection in areas where appropriate (e.g. batter drains, culvert construction).	Project Engineers, Foreman	X
SWQMP23	Use check dams within diversion drains where required to slow flows down and minimise erosion within the drains.	Site Manager, Project Engineers, Foreman	X
SWQMP24	Locate stockpiles in accordance with the *Stockpile Management Protocol* included in Appendix C of this SWMP to ensure that e.g. the number of stockpile sites is minimised, and stockpiles are at least 50mm from a waterway.	Project Engineers, Foreman	X
5.4 Erosion and Sediment Control			
SWQMP25	Undertake progressive stabilisation of ground surfaces as they are completed rather than at the end of the works program.	Project Engineers, Foreman	X
SWQMP26	Where using cover crop species to progressively revegetate disturbed areas, use native plants similar to those found in the surrounding area.	Project Engineers, Foreman	X
SWQMP27	Immediately commence stabilisation of waterways, including their beds and banks, after the completion of any works within these areas. All stabilised areas to mimic a naturalised creek system and the disturbed areas are planted with native species.	Project Engineers, Foreman	X
SWQMP28	Control dust through progressive revegetation techniques and by watering unsealed areas.	Project Engineers, Foreman	X
SWMP29	Use temporary ground covers such as soil stabilisers (e.g. Gluon polymer emulsion), hydroseed or hydro mulch as much as possible to stabilise batters, stockpiles and large surface areas.	Project Engineers, Foreman	X
SWQMP30	Construct sediment control measures as close to the potential source of sediment as possible.	Site Manager, Project Engineers, Foreman	X

Mitigation Measure		Responsibility	Complete
SWQMP31	Control the tracking of mud and soil material onto local roads using shakers, rubble pads or washdown areas.	Foreman	X
SWQMP32	Provide sediment fencing or equivalent downslope of disturbed areas that can't be directed into a designated sediment trap or bund unless completely impractical (e.g. Works within watercourses). Implement alternative controls (i.e. sit curtains and enhanced erosion controls) in these locations.	Site Manager, Project Engineers, Foreman	X
~~SWQMP33~~	~~Use mulch bunds or straw bales as alternatives to sediment fencing where appropriate. Do not use mulch in concentrated flow areas or where it has the potential to result in tannin leachate into waterways.~~	~~Site Manager, Project Engineers, Foreman~~	☐
SWQMP34	Treat water accumulating within any excavation, trap or low point on site that cannot be re-used in construction or dust suppression.	Site Manager, Project Engineers, Foreman	X
SWQQMP35	Install sediment controls around stormwater inlet pits where appropriate and where they won't cause or exacerbate flooding. Consider traffic management and safety if installing such devices on live traffic roads.	Site Manager, Project Engineers, Foreman	X
SWQMP36	Remove sediment controls only after adequate stabilisation of disturbed surfaces is achieved.	Site Manager, Project Engineers, Foreman	X
SWQMP37	Carry out dust suppression whenever necessary to minimise sediments becoming air borne due to wind erosion. Use site water for dust suppression whenever practicable.	Foreman	X
5.5 Site De-watering and Water Re-use			
SWQMP38	Wherever possible, water detained onsite will be re-used for dust control and other non-potable uses. This includes water accumulating within any excavation, trap, trench or low point on site.	Site Manager, Project Engineers, Foreman	X
~~SWQMP39~~	~~When necessary, sediment will be settled out of any water to be discharged using a flocculent.~~	~~Site Manager, Project Engineers, Foreman~~	☐
~~SWMP40~~	~~Apply flocculent to settle sediments within 24 hours of the conclusion of the last rainfall event.~~	~~Site Manager, Project Engineers, Foreman~~	☐
SWQMP41	Undertake all dewatering on site in accordance with the Environmental Risk Assessment (F011) located within the PMP. Prepare and implement a *Construction Site Dewatering Environmental Work Method Statement* to ensure that the waters being discharged meet the specified water quality criteria.	Site Manager, Project Engineers, Foreman	X
SWQMP42	Issue a *Dewatering Permit* prior to any dewatering on site. EM will liaise with WDA and the Office of Water prior to dewatering and will provide details on expected groundwater inflows. The volume of groundwater likely to be dewatered and whether long term dewatering will be required will be determined.	Site Manager, Project Engineers, Foreman	X
5.6 Stabilisation of Disturbed Areas			
~~SWQMP43~~	~~Commence stabilisation of waterways, including their beds and banks, immediately after the completion of any works within these areas.~~	~~Project Engineers, Foreman~~	~~X~~
~~SWQMP44~~	~~Control dust through progressive revegetation techniques and by watering unsealed areas.~~	~~Project Engineers, Foreman~~	☐
SWQMP45	Use temporary ground covers such as soil stabilisers (e.g. Gluon polymer emulsion), hydroseed or hydro mulch as much as possible to stabilise batters, stockpiles and large surface areas.	Project Engineers, Foreman	X
5.7 Management of Contaminated Materials			

Mitigation Measure		Responsibility	Complete
SWQMP46	In the event that contamination is identified, the contingency is to implement the *Unexpected Finds Protocol*, found in Appendix B of this plan.	Site Manager	X
~~SWQMP47~~	~~Develop a remedial action plan if contamination is found to pose unacceptable risks to the environment or human health. Undertake remediation works in consultation with the EPA.~~	~~Site Manager~~	☐
SWQMP48	Should the presence of ASS (Acid Sulfate Soils) be confirmed, follow *ASS Management Procedure* in Appendix D of this plan.	Site Manager, Project Engineers, Foreman	X
~~SWQMP49~~	~~Prepare an ASSMP if required, to identify strategies to remove or reduce the risks associated with ASS.~~	~~Site Manager~~	☐
5.8 Surface Water Quality Management			
SWQMP50	Test and, if required, treat water before it is released into the environment from any discharge points. Do not release water until the following parameters are met: - Ph 6.5-8.5 - TSS < 50mg/L - No visible oil or grease	Site Manager	X
SWQMP51	If water is to be re-used for dust suppression or construction purposes, the above criteria do not apply providing water does not leave the site (either directly or indirectly via runoff).	Site Manager	X
SWQMP52	Record and retain the results of any monitoring for at least 4 years after the monitoring or recording event to which they relate took place.	Site Manager	X
SWQMP53	Check weather forecasts daily and implement the *Heavy Rainfall Event Procedure* included in Appendix D of this plan.	Site Manager	X
SWQMP54	Manage vegetation stockpiles to minimise the impact of tannins leaching into the surrounding environment.	Site Manager, Project Engineers, Foreman	X
SWQMP55	Prior to forecast rainfall events, end-of-day controls will be implemented throughout the worksite to help reduce erosion and control sediment. These will include one or more of the following: - Check dams - Slope breaks - Batter chutes - Temporary ground covers	Site Manager, Project Engineers, Foreman	X
SWQMP56	Prior to forecast rainfall, the Planning and Environment Project Manager or their representative will inspect the site and note any areas requiring additional management measures.	Site Manager, Project Engineers, Foreman	X
SWQMP57	Prior to forecast rainfall, temporary ground covers such as fabrics, mats or polymer sprays will be deployed in high risk areas.	Site Manager, Project Engineers, Foreman	X
SWQMP58	Any areas where a sediment basin should ideally be provided but cannot be installed due to space constraints will adopt enhanced erosion controls. These will be deployed prior to forecast rainfall.	Site Manager, Project Engineers, Foreman	X
5.9 Groundwater Management			
SWQMP59	Should any groundwater be encountered and need to be disposed during construction, disposal would be undertaken in accordance with the Environmental Risk Assessment (F010) located within the CEMP for construction site dewatering.	Site Manager, Project Engineers, Foreman	X
5.10 Management of Other Activities with Potential Water Quality Impact			
Concrete and Saw Cutting			
SWQMP60	Wash concrete mixers. Pumps, concrete tools and other equipment at specially designated washout areas that are constructed in a manner that will prevent stormwater surface run-off from being contaminated.	Site Manager, Foreman	X
SWQMP61	Locate washout areas within an area that is not subject to natural surface stormwater run-off and away from drainage lines. Post signs to advise workers of their location.	Site Manager, Foreman	X

Mitigation Measure		Responsibility	Complete
SWQMP62	Construct the washout areas with an impermeable type material capable of retaining any contaminated water and concrete residue.	Site Manager, Foreman	X
SWQMP63	Monitor the washout areas to ensure that they are not getting over-full and that the washing activity is not contaminating the surrounding area.	Site Manager, Foreman	X
SWQMP64	As part of the project induction program, advise all personnel performing concreting or saw cutting activities of the concrete washout areas and their obligations to: - Clean their plant, tools and equipment within the designated area - Ensure that contaminated water associated with their activities is appropriately controlled and prevented from reaching natural stormwater surface drainage areas.	Site Manager	X
Storage and Handling of Fuels and Chemicals			
SWQMP65	Where practicable, do not locate storage areas within 50m of natural surface drainage areas, storm drainage systems, poorly drained or flood prone areas or any area with a slope steeper than 10%.	Project Engineers, Foreman	X
SWQMP66	Maintain the Safety Data Sheet (SDS) and Hazardous Chemical Register (F086) and copies of all SDS documents in the site office within a special SDS Folder.	Safety Manager	X
SWQMP67	Clearly label, use and handle liquid and dry chemicals (including oils and fuels) in accordance with the instructions provided in the respective SDS document.	Foreman	X
~~SWQMP68~~	~~Keep liquid chemicals and fuels in bunded storage areas or sheds that have the capacity to contain spills from leaky containers or from an incident involving a decanting activity. Ensure the bunded capacity is at least 120% of the total capacity of all containers stored inside the bunded storage area.~~	~~Foreman~~	~~☐~~
SWQMP69	Where practicable, locate designated plant refuelling areas, plant / service maintenance areas and concrete / plant wash down areas at least 5m from vegetation and 50m from the following: - A natural surface drainage area, and - A built drainage structure such as a stormwater pipe or culvert.	Foreman	X
SWQMP70	During site induction, advise all personnel of the following: - The location of bunded storage areas, liquid absorbent materials and other spill contaminated materials and kits. - Storage of large quantities of fuel for construction plant is not permitted. - Licensed Fuel Trucks carrying emergency fuel spill kits must be used to service plant and equipment. - All drums and decanted containers must be labelled and stored within bunded areas wherever they are not in use.	Site Manager	X

6 Compliance Management

6.1 Roles and Responsibilities

a) FDC's Project Team organisational structure and overall roles and responsibilities are outlined below. Specific responsibilities for the implementation of environmental controls are detailed in Table 1 of this SWMP.

Project Director

The soil and waste management plan responsibility for the project is the Project Director which is to :

- Ensure the requirements of this SWQMP are fully implemented, and that environmental requirements are not secondary to other construction requirements;
- Endorse and support the environmental policy
- Liaise with INSW and other government authorities as required;
- Participate and provide guidance in the regular review of this SWMP and supporting documentation;
- Provide adequate resources (personnel, financial and technological) to ensure effective development, implementation and maintenance of this SWQMP;
- Ensure that all personnel receive appropriate induction training, including details of the environmental and community requirements.
- Ensure that complaints are investigated, and issues are resolved in accordance with the community and stakeholder engagement plan; and,
- Direct that works be stopped immediately where there is an actual or potential risk of harm to the environment, property and/or human health.

Senior Project Manager

FDC Senior Project Manager is responsible to the Project Director to ensure effective environmental controls are implemented for the duration of the project.

Specifically, the Senior Project Manager is responsible for the:

- Planning construction works so that it minimises impact to the environment;
- Implementing and maintaining the SWQMP;
- Implementing the CTMP and related approvals;
- Reviewing the environmental aspects at project start-up and ensuring the SWQMP addresses all requirements;
- Providing guidance, motivation and resources to achieve the provisions of the SWQMP;
- Ensuring that subcontractors and suppliers are aware of FDC environmental policy and objectives, through conditions of contract, tender interviews, scopes of work and site environmental inductions as applicable; and,
- Establishing monitoring records and ensuring the scope and frequency of monitoring activities satisfies the requirements of the SWQMP;

The Senior Project Manager shall have sufficient authority and independence to:

- Identify and record any environmental problems;
- Initiate solutions to the environmental problem;
- Stop the works, if such a decision becomes necessary, in order to prevent or mitigate adverse environmental conditions, or if corrective measures recommended are not being carried out; and,

Planning and Environment Project Manager

FDC Planning and Environment Project Manager is responsible for establishing and maintaining the Company's Environment Management System for the project and represents FDC on all environmental matters pertinent to the SWQMP

The Planning and Environment Manager is responsible for:

- Reports to the Project Director on performance and implementation of the CEMP and associated sub-Plans;
- Assisting the Site Managers with the implementation of the SWQMP;
- Providing support and technical assistance to the Project Site Coordinators;
- Monitoring the effectiveness of the Environmental Management System;
- Primary contact with INSW , EY and the Environmental Representative and other government authorities on environmental and approvals issues;
- Ensures SWMP reviews are carried out in accordance with the SWQMP;
- Monthly environmental reports;
- Compliance Tracking Reporting and collating of evidence;
- Register of Hold Points and Records of release
- Has authority to stop the works, if such a decision becomes necessary, in order to prevent or mitigate adverse environmental conditions, or if corrective measures recommended are not being carried out;
- Assists stakeholder and community manager on environmental issues;
- Attend environmental inspections, report on environmental incidents and non-compliances against the PPR and close out of related actions; and,
- Continually assess environmental risks.

The Planning and Environment Project Manager is authorised to require all employees, including Senior Project Manager to comply with the provisions of the SWQMP and EMS and may issue directions to that effect.

Site Manager

FDC Site Manager is responsible to the Senior Project Manager to ensure effective environmental controls are implemented for the duration of the project.

Specifically, the Site Manager is responsible for the:

- Planning construction works so that it minimises impact to the environment;
- Implementing and maintaining the SWQMP;
- Implementing the CTMP and related approvals;
- Providing guidance, motivation and resources to achieve the provisions of the SWMP;
- Ensuring that subcontractors and suppliers are aware of FDC environmental policy and objectives, through conditions toolbox talks, Daily prestarts, change management procedures, and site environmental inductions as applicable;

- Maintaining monitoring records and ensuring the Completion of task as required.
- Drive positive compliance to the SWMP to ensure the workforce is aware of their obligations under the SWMP
- The Site Manager shall have sufficient authority and independence to:
  - Identify and record any environmental problems;
  - Initiate solutions to the environmental problem;
  - Stop the works, if such a decision becomes necessary, in order to prevent or mitigate adverse environmental conditions, or if corrective measures recommended are not being carried out; and,

Document Controller

FDC Project Document Controller with respect to environmental issues reports to the Planning and Environment Project Manager. Responsibilities include:

- Uploading and maintaining controlled versions of the SWQMP, and other document submissions, for approval and evidence for compliance tracking on the Principal and Contractor's
- Notices to the Principal regarding audits, corrective actions, and environmental audit reports; and,
- Upload of monthly reports.

Independent Environmental Auditor

The Independent Environmental Auditor is a stakeholder that is responsible for carrying out environmental audits of the project on behalf of FDC to ensure compliance to FDC SSDA, PPR and contractual commitments, The Independent Environmental Auditor will undertake external audits on environmental management in accordance of thew SSDA requirements AT 26 weeks or after a major Environmental incident.

Stakeholder and Community Relations Manager

With respect to environmental issues the Stakeholder and Community Relations Manager is responsible for:

- Ensuring communities are informed in accordance with the Project requirements;
- Report to the Planning and Environment Project Manager of any issues raised by the community;
- Reporting to the Senior Project Manager ;
- Maintaining a 24-hour complaints hotline;
- Maintaining the project website and reviews/endorses all content provided to that website;
- Drafting and issuing community notifications for works taking place out of hours; and,
- Representing FDC Constructions at meetings with local stakeholders and community groups.

Refer to the Community Communications Strategy Plan.

Contracts Manager

The Contracts Manager shall be responsible to the Senior Project Manager to ensure proper procedures are followed for the procurement of goods and services to ensure that FDC Constructions environmental policy and objectives and the requirements of the SWQMP are achieved.

Subcontractors, and Suppliers (service suppliers)

FDC Constructions will ensure all subcontractors and suppliers are responsible for conducting their activities in an environmentally sensitive manner and in compliance with the requirements of this SWQMP and sub- plans, Environmental Control Maps.

Site inductions will include detailed and site-specific environmental information. Any trade likely to have a high impact on the environment is required to submit an EMP, which is assessed to ensure it is comprehensive .

All personnel shall notify the FDC Site Manager of any activity or incident, or any deviations from workplace practices and procedures set out in this SWQMP.

Contractors shall ensure their personnel working at the site:

- Have the appropriate environmental awareness training and / or qualification for the task undertaken; and,
- Are aware of the potential environmental impacts of their activities on the Site and the procedures by which such impacts are to be minimised or prevented.

6.2 Training

a) All employees, contractors and utility staff working on site will undergo site induction training relating to soil and water management issues, including:

   i. Existence and requirements of this SWQMP.

   ii. Relevant legislation.

   iii. Roles and responsibilities for soil and water management.

   iv. Water quality management and protection measures.

   v. Groundwater issues.

   vi. Procedure to be implemented in the event of an unexpected discovery of contaminated land.

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

i. Working near or in drainage lines and creeks.

ii. Emergency response measures in high rainfall events.

iii. Preparedness for high rainfall events.

iv. Lessons learnt from incidents and other events e.g. high rainfall or flooding.

v. Spill response.

vi. Stockpile location criteria.

vii. Identification of potentially contaminated spoil and fill material.

6.3 Monitoring and Inspections

a) Regular monitoring and inspections will be undertaken during construction in accordance with the CEMP.

6.4 Environmental Non-conformances and Contingency Planning

a) Any environmental non-conformances will be dealt with and documented in accordance with the PMP.

b) In the event that adverse impacts to ground or surface water quality are identified as a result of construction activities, the following contingency mitigation and remediation strategies will be implemented:

i. Implement stop works process.

ii. Ensure the area of impact is contained, pump out any contaminated water and dispose it off site to an appropriately licensed facility.

iii. Remediate disturbed / affected areas in consultation with ER and relevant agencies.

iv. Review and amend relevant construction method statements.

v. Use alternative plant and equipment.

vi. Identify any additional water quality monitoring requirements and increase the frequency of monitoring and site inspections if warranted.

c) The works will recommence once the corrective actions have been implemented and preventative actions determined and agreed.

6.5 Complaints

a) Complaints, as defined in the Australian and New Zealand Standard Guidelines for complaint management in organisations (AS/NZS 10002:2014), are "*expressions of dissatisfaction made to or about an organisation related to its products, services, staff or the handling of a complaint, where a response or resolution is explicitly or implicitly expected or legally required*."

b) Complaints are recorded in Consultation Manager (CM) and are filed as “avoidable” or “unavoidable”.

a) Type	b) Definition	c) Examples
d) Avoidable	e) Could be prevented	• Non-compliance with respite periods • Worker parking across resident driveways
f) Unavoidable	g) Inevitable, not able to be prevented	• High noise works • Traffic changes in accordance with project requirements and permits

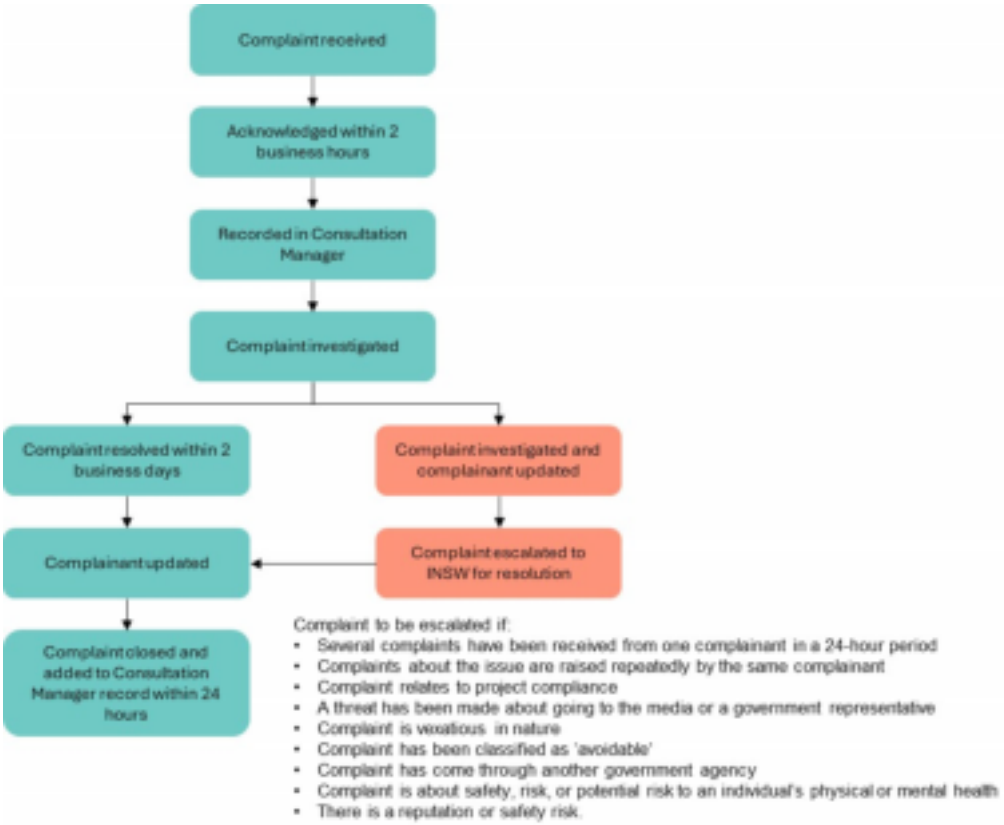
Reports on complaints can be generated from Consultation Manager at will. However, if a consolidated report format is required, Appendix B contains the proposed complaints reporting format.

c) **Target timeframes** – FDC is committed to the prompt and reasonable resolution of complaints through fair processes regardless of how a complaint is received. FDC also understands that these timeframes are an INSW expectation for enquiry and complaint response and resolution, where a CCS or other project documentation isn't clear, to ensure complaints are managed promptly.

h) Type	i) Method	j) Acknowledgement	k) Resolution
l) Complaint	m) In-person n) Phone o) Email p) Letter q) SMS	r) Within 2 hours of receipt s) (Monday – Friday, Business hours)	t) Within 2 working days u) (Keep complainant updated if this can't be met)

d) Managing Complaints including unresolved complaints escalation process

Standard complaints managing flow chart



e) Managing Complaints for on-site personnel. On site personnel including Traffic Controllers sometime face hostile and unreasonable conduct from members of the public. The flow chart below details the complaint-handling procedure for on-site personnel. The hand off of the complaint to the FDC Community Manager will trigger the standard complaints procedure detailed above.

f) Where the complainant is unsatisfied by the resolution offered by FDC, the INSW Communications and Engagement Manager will manage the complaint escalation process. Generally, complaints requesting to change an approved project scope of works and/or works operating within project approvals would not be referred for mediation.

6.6 Audits

a) Audits (both internal and external) will be undertaken to assess the effectiveness of environmental controls, compliance with this SWMP, CoA and other relevant approvals, licenses and guidelines.

b) Audit requirements are detailed below;

Activity	Sub-category	Responsibility	Frequency
Review of soil and waste actions and controls	All site environmental controls	Site Manager and Environment Project Manager	Between weekly and an as needs basis dependent on level of onsite work activities and environmental risk profile
Severe Weather Event Review	All site environmental controls	Site Manager and Environment Project Manager	Immediately after severe weather events
Accidental Breach of Controls	All site environmental controls	Site Manager and Environment Project Manager	Immediately after breach of controls

7 Review and Improvement

a) The SWMP will be reviewed every 6 months to ensure compliance with legislative requirements and its suitability and effectiveness for the project.

b) The review may be in the form of:

i. A formal management review

ii. A second party audit, and/or

iii. An inclusion as a separate item at a site meeting.

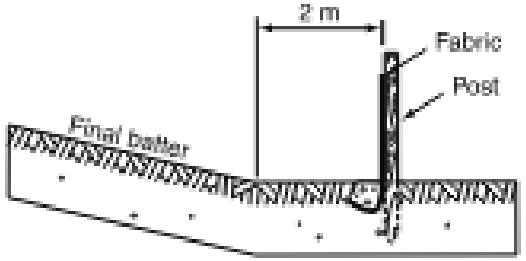
c) The Project Manager can review and update the SWMP more regularly where:

i. Significant changes in construction activities occur.

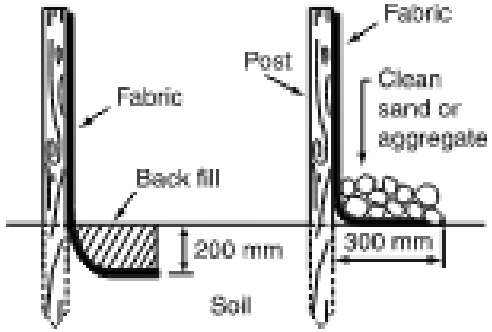
ii. Where targets are not being achieved, or

iii. In response to audits and nonconformity reports.

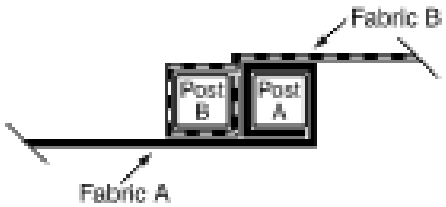
8 **Appendix A:** Erosion and Sediment Control Plan



(a) Location of fence relative to base of slope

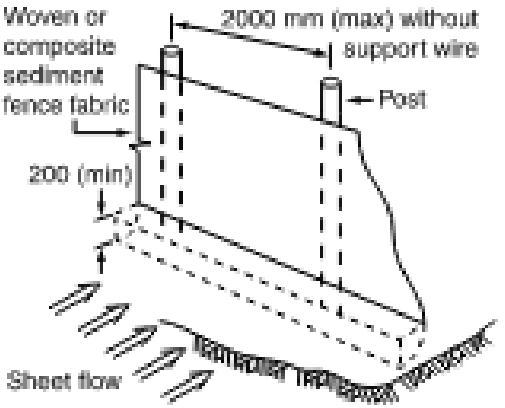


(b) Anchoring base of fabric

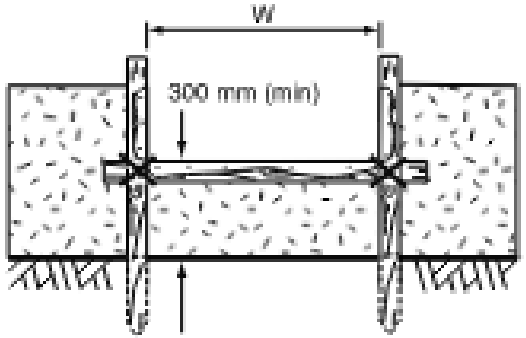


Fabric to fold around each stake one full turn.
Stake B to be drive tightly against Stake A.
The tops of both stakes to be secured with wire.

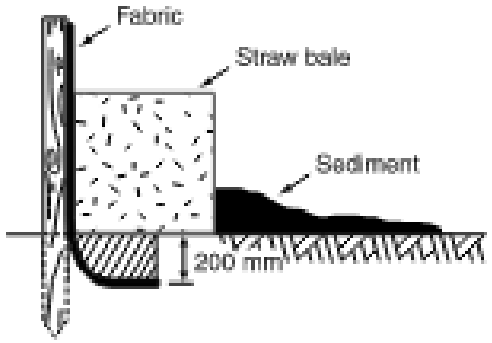
(c) Joining fabric - Method 1



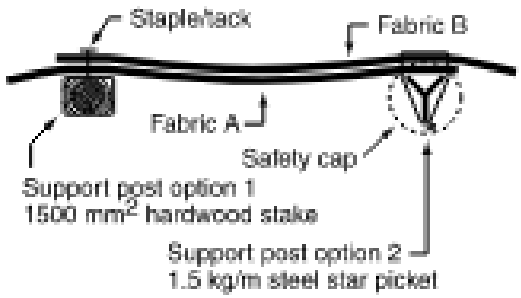
(d) Installation without backing support



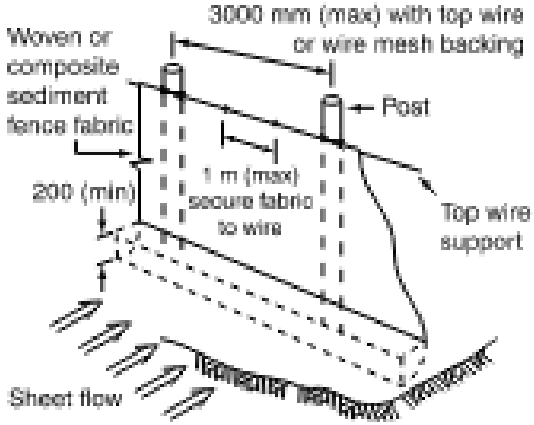
(e) Spill-through weir



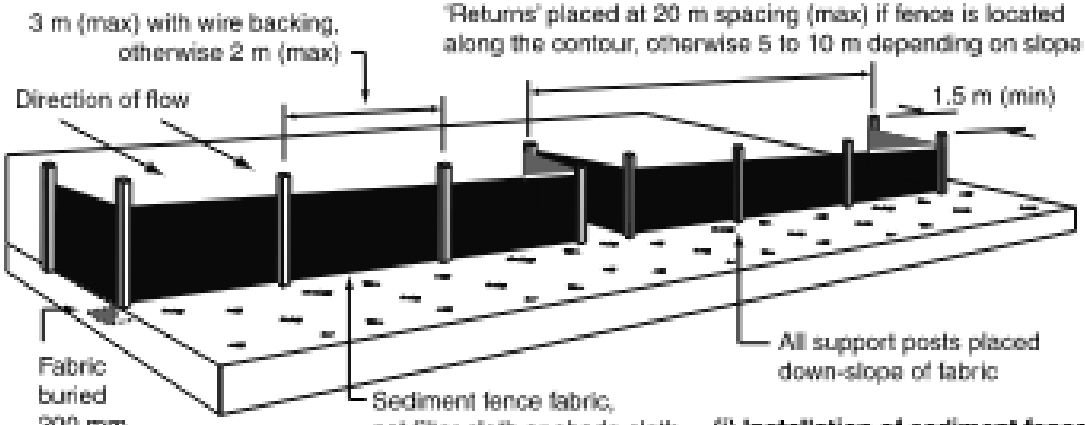
(f) Placement of up-slope straw bale



(g) Joining fabric - Method 2



(h) Installation with top wire support



(i) Installation of sediment fence

Notes:

1. Sediment fence to be installed along a line of constant ground elevation wherever practical.
2. Both end of the sediment fence to extend up the slope at least 1m.
3. Support post to be spaced a maximum 2m unless the fence is supported by a top wire or wire mesh backing, in which case 3m maximum spacing.
4. Fence 'returns' shall be installed at maximum 20m spacing if fence is installed along the contour, otherwise 5 to 10m maximum spacing.
5. Minimum 4 staples or tie wires per stake.

Drawn:	Date:		
GMW	Dec-09	Sediment Fence	SF-01

MATERIALS

FABRIC (LIGHT TRAFFIC AREAS): HEAVY-DUTY, NEEDLE-PUNCHED, NON-WOVEN FILTER CLOTH ('BIDIM' A34 OR EQUIVALENT).

FABRIC (HEAVY TRAFFIC AREAS): POLY-PROPYLENE, POLYAMIDE, NYLON, POLYESTER, OR POLYETHYLENE WOVEN OR NON-WOVEN REINFORCED FABRIC. THE FABRIC WIDTH SHOULD BE AT LEAST 700mm, WITH A MINIMUM UNIT WEIGHT OF 140g/m^2. FABRICS SHOULD CONTAIN ULTRAVIOLET INHIBITORS AND STABILISERS TO PROVIDE A MINIMUM OF 6 MONTHS OF USEABLE CONSTRUCTION LIFE (ULTRAVIOLET STABILITY EXCEEDING 70%).

INSTALLATION

1. REFER TO APPROVED PLANS FOR LOCATION AND DIMENSIONAL DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, DIMENSIONS OR METHOD OF INSTALLATION CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.

2. ENSURE THAT THE INSTALLATION OF THE SEDIMENT TRAP WILL NOT CAUSE UNDESIRABLE SAFETY OR FLOODING ISSUES.

3. SELECT THE APPROPRIATE FABRIC FOR THE SITE CONDITIONS.

4. WRAP THE FABRIC AROUND OR OVER THE STORMWATER INLET GRATE IN SUCH A MANNER THAT PREVENTS ANY WATER ENTERING THE STORMWATER INLET WITHOUT PASSING THROUGH THE FABRIC.

5. ENSURE ALL OTHER FLOW ENTRY POINTS ARE COVERED WITH FABRIC SUCH THAT WATER CANNOT ENTER THE STORMWATER INLET WITHOUT PASSING THROUGH A SUITABLE FILTER.

6. TAKE ALL NECESSARY MEASURE TO MINIMISE SAFETY OR FLOODING RISK CAUSED BY OPERATION OF THE SEDIMENT TRAP.

MAINTENANCE

1. INSPECT THE BARRIER AFTER EACH RUNOFF-PRODUCING RAINFALL EVENT AND MAKE REPAIRS AS NEEDED TO THE SEDIMENT TRAP.

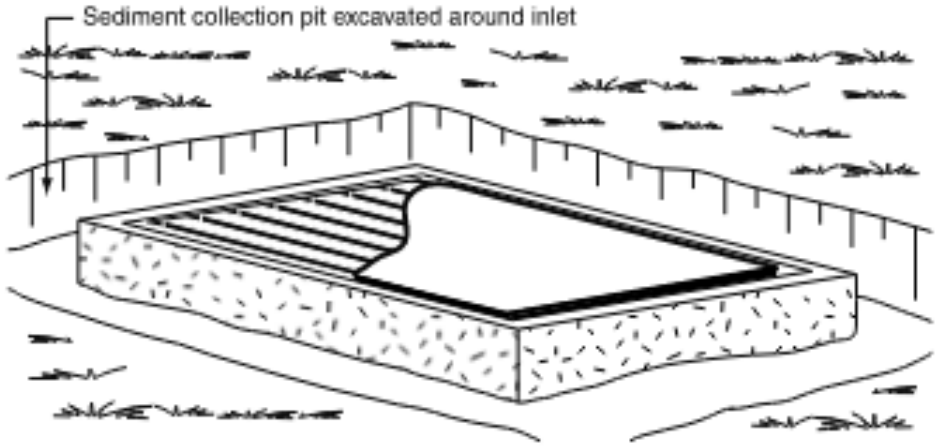
2. REMOVE COLLECTED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.

3. REPLACE THE FABRIC IF IT IS TORN OR DAMAGED.

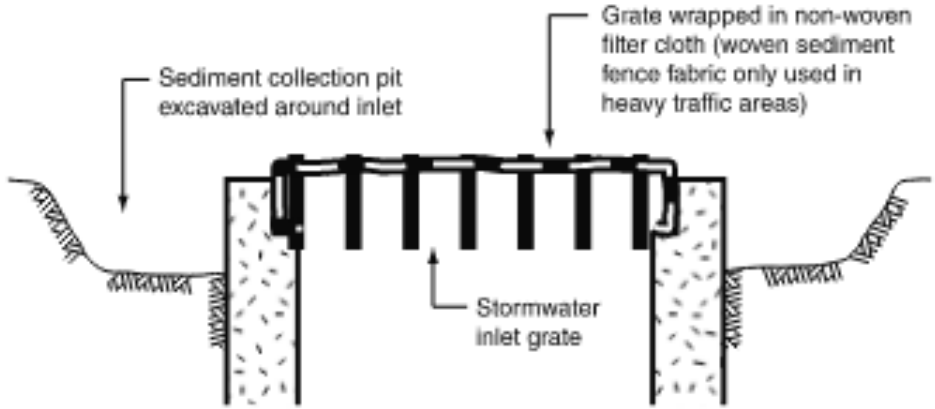
4. SEDIMENT DEPOSITS SHOULD BE REMOVED IMMEDIATELY IF THEY REPRESENT A SAFETY RISK.

REMOVAL

1. WHEN THE UP-SLOPE DRAINAGE AREA HAS BEEN STABILISED, REMOVE ALL MATERIALS INCLUDED DEPOSITED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.



(a) Fabric wrap drop inlet protection with trench



(b) Typical details of excavated sediment collection trench

Drawn:	Date:		
GMW	May-10	Grated Stormwater (Field) Inlet Sediment Trap	ESC-02

MATERIALS

FABRIC: POLYPROPYLENE, POLYAMIDE, NYLON, POLYESTER, OR POLYETHYLENE WOVEN OR NON-WOVEN FABRIC, AT LEAST 700mm IN WIDTH AND A MINIMUM UNIT WEIGHT OF 140GSM. ALL FABRICS TO CONTAIN ULTRAVIOLET INHIBITORS AND STABILISERS TO PROVIDE A MINIMUM OF 6 MONTHS OF USEABLE CONSTRUCTION LIFE (ULTRAVIOLET STABILITY EXCEEDING 70%).

FABRIC REINFORCEMENT: WIRE OR STEEL MESH MINIMUM 14-GAUGE WITH A MAXIMUM MESH SPACING OF 200mm.

SUPPORT POSTS/STAKES: 1500mm^2 (MIN) HARDWOOD, 2500mm^2 (MIN) SOFTWOOD, OR 1.5kg/m (MIN) STEEL STAR PICKETS SUITABLE FOR ATTACHING FABRIC.

INSTALLATION

1. REFER TO APPROVED PLANS FOR LOCATION, EXTENT, AND REQUIRED TYPE OF FABRIC (IF SPECIFIED). IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, EXTENT, FABRIC TYPE, OR METHOD OF INSTALLATION CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.

2. TO THE MAXIMUM DEGREE PRACTICAL, AND WHERE THE PLANS ALLOW, ENSURE THE FENCE IS LOCATED:
(i) TOTALLY WITHIN THE PROPERTY BOUNDARIES;
(ii) ALONG A LINE OF CONSTANT ELEVATION WHEREVER PRACTICAL;
(iii) AT LEAST 2m FROM THE TOE OF ANY FILLING OPERATIONS THAT MAY RESULT IN SHIFTING SOIL/FILL DAMAGING THE FENCE.

3. INSTALL RETURNS WITHIN THE FENCE AT MAXIMUM 20m INTERVALS IF THE FENCE IS INSTALLED ALONG THE CONTOUR, OR 5 TO 10m MAXIMUM SPACING (DEPENDING ON SLOPE) IF THE FENCE IS INSTALLED AT AN ANGLE TO THE CONTOUR. THE 'RETURNS' SHALL CONSIST OF EITHER:
(i) V-SHAPED SECTION EXTENDING AT LEAST 1.5m UP THE SLOPE; OR
(ii) SANDBAG OR ROCK/AGGREGATE CHECK DAM A MINIMUM 1/3 AND MAXIMUM 1/2 FENCE HEIGHT, AND EXTENDING AT LEAST 1.5m UP THE SLOPE.

4. ENSURE THE EXTREME ENDS OF THE FENCE ARE TURNED UP THE SLOPE AT LEAST 1.5m, OR AS NECESSARY, TO MINIMISE WATER BYPASSING AROUND THE FENCE.

5. ENSURE THE SEDIMENT FENCE IS INSTALLED IN A MANNER THAT AVOIDS THE CONCENTRATION OF FLOW ALONG THE FENCE, AND THE UNDESIRABLE DISCHARGE OF WATER AROUND THE ENDS OF THE FENCE.

6. IF THE SEDIMENT FENCE IS TO BE INSTALLED ALONG THE EDGE OF EXISTING TREES, ENSURE CARE IS TAKEN TO PROTECT THE TREES AND THEIR ROOT SYSTEMS DURING INSTALLATION OF THE FENCE. DO NOT ATTACH THE FABRIC TO THE TREES.

7. UNLESS DIRECTED BY THE SITE SUPERVISOR OR THE APPROVED PLANS, EXCAVATE A 200mm WIDE BY 200mm DEEP TRENCH ALONG THE PROPOSED FENCE LINE, PLACING THE EXCAVATED MATERIAL ON THE UP-SLOPE SIDE OF THE TRENCH.

8. ALONG THE LOWER SIDE OF THE TRENCH, APPROPRIATELY SECURE THE STAKES INTO THE GROUND SPACED NO GREATER THAN 3m IF SUPPORTED BY A TOP SUPPORT WIRE OR WEIR MESH BACKING, OTHERWISE NO GREATER THAN 2m.

9. IF SPECIFIED, SECURELY ATTACH THE SUPPORT WIRE OR MESH TO THE UP-SLOPE SIDE OF THE STAKES WITH THE MESH EXTENDING AT LEAST 200mm INTO THE EXCAVATED TRENCH. ENSURE THE MESH AND FABRIC IS ATTACHED TO THE UP-SLOPE SIDE OF THE STAKES EVEN WHEN DIRECTING A FENCE AROUND A CORNER OR SHARP CHANGE OF DIRECTION.

10. WHEREVER POSSIBLE, CONSTRUCT THE SEDIMENT FENCE FROM A CONTINUOUS ROLL OF FABRIC. TO JOIN FABRIC EITHER:
(i) ATTACH EACH END TO TWO OVERLAPPING STAKES WITH THE FABRIC FOLDING AROUND THE ASSOCIATED STAKE ONE TURN, AND WITH THE TWO STAKES TIED TOGETHER WITH WIRE; OR
(ii) OVERLAP THE FABRIC TO THE NEXT ADJACENT SUPPORT POST.

11. SECURELY ATTACH THE FABRIC TO THE SUPPORT POSTS USING 25 X 12.5mm STAPLES, OR TIE WIRE AT MAXIMUM 150mm SPACING.

12. SECURELY ATTACH THE FABRIC TO THE SUPPORT WIRE/MESH (IF ANY) AT A MAXIMUM SPACING OF 1m.

13. ENSURE THE COMPLETED SEDIMENT FENCE IS AT LEAST 450mm, BUT NOT MORE THAN 700mm HIGH. IF A SPILL-THOUGH WEIR IS INSTALLED, ENSURE THE CREST OF THE WEIR IS AT LEAST 300mm ABOVE GROUND LEVEL.

14. BACKFILL THE TRENCH AND TAMP THE FILL TO FIRMLY ANCHOR THE BOTTOM OF THE FABRIC AND MESH TO PREVENT WATER FROM FLOWING UNDER THE FENCE.

ADDITIONAL REQUIREMENTS FOR THE INSTALLATION OF A SPILL-THROUGH WEIR

1. LOCATE THE SPILL-THROUGH WEIR SUCH THAT THE WEIR CREST WILL BE LOWER THAN THE GROUND LEVEL AT EACH END OF THE FENCE.

2. ENSURE THE CREST OF THE SPILL-THROUGH WEIR IS AT LEAST 300mm THE GROUND ELEVATION.

3. SECURELY TIE A HORIZONTAL CROSS MEMBER (WEIR) TO THE SUPPORT POSTS/ STAKES EACH SIDE OF THE WEIR. CUT THE FABRIC DOWN THE SIDE OF EACH POST AND FOLD THE FABRIC OVER THE CROSS MEMBER AND APPROPRIATELY SECURE THE FABRIC.

4. INSTALL A SUITABLE SPLASH PAD AND/OR CHUTE IMMEDIATELY DOWN-SLOPE OF THE SPILL-THROUGH WEIR TO CONTROL SOIL EROSION AND APPROPRIATELY DISCHARGE THE CONCENTRATED FLOW PASSING OVER THE WEIR.

MAINTENANCE

1. INSPECT THE SEDIMENT FENCE AT LEAST WEEKLY AND AFTER ANY SIGNIFICANT RAIN. MAKE NECESSARY REPAIRS IMMEDIATELY.

2. REPAIR ANY TORN SECTIONS WITH A CONTINUOUS PIECE OF FABRIC FROM POST TO POST.

3. WHEN MAKING REPAIRS, ALWAYS RESTORE THE SYSTEM TO ITS ORIGINAL CONFIGURATION UNLESS AN AMENDED LAYOUT IS REQUIRED OR SPECIFIED.

4. IF THE FENCE IS SAGGING BETWEEN STAKES, INSTALL ADDITIONAL SUPPORT POSTS.

5. REMOVE ACCUMULATED SEDIMENT IF THE SEDIMENT DEPOSIT EXCEEDS A DEPTH OF 1/3 THE HEIGHT OF THE FENCE.

6. DISPOSE OF SEDIMENT IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.

7. REPLACE THE FABRIC IF THE SERVICE LIFE OF THE EXISTING FABRIC EXCEEDS 6-MONTHS.

REMOVAL

1. WHEN DISTURBED AREAS UP-SLOPE OF THE SEDIMENT FENCE ARE SUFFICIENTLY STABILISED TO RESTRAIN EROSION, THE FENCE MUST BE REMOVED.

2. REMOVE MATERIALS AND COLLECTED SEDIMENT AND DISPOSE OF IN A SUITABLE MANNER THAT WILL NOT CAUSE AN EROSION OR POLLUTION HAZARD.

3. REHABILITATE/REVEGETATE THE DISTURBED GROUND AS NECESSARY TO MINIMISE THE EROSION HAZARD.

Drawn:	Date:		
GMW	Apr-10	Sediment Fence	SF-02

9 **Appendix B:** Unexpected Finds Protocol

Unexpected Finds Procedure

Project Details	
Project Name:	Barangaroo Cutaway Cultural Facility
Project Number:	200290
Project Location:	1 Merriman St, Barangaroo NSW 2000
Client:	Infrastructure NSW
Name of principal contractor:	FDC Construction (NSW) Pty Limited
Company address:	22-24 Junction Street, Forest Lodge NSW 2037
ABN:	72 608 609 427

Prepared Signature: Peter Colak Digitally signed by Peter Colak Date: 2025.02.10 12:23:23 +11'00'

Peter Colak

Senior Project Manager

Approved Signature: Emma Thomy Digitally signed by Emma Thomy Date: 2025.02.10 13:22:59 +11'00'

Emma Thomy

Project Director

Revision Date	REVISION DESCRIPTION	PM's INITIALS (revision approval)
5 / 2 / 2025	Unexpected Finds Update	HP

CONTENTS

1 FDC PROJECT PERSONNEL CONSULTATION AND SIGN OFF

We, the undersigned, confirm that we have been consulted on the contents of this document, read and understood the contents of this document, and agree to implement the requirements of this Plan on this project site

1.1 Personal sign off

Name	Position	Signature	Date
Peter Colak	Senior Project Manager		5 / 02 / 2025
Charlie Akle	Senior Site Manager		5 / 02 / 2025
Colin Darmody	Senior HSE Advisor (HSE)		5 / 02 / 2025

2 Introduction

2.1 Management System and Documentation

System documents which are referenced in this Plan or any associated Plan is only accessible to FDC personnel. Additional information can be obtained from the Senior Project Manager.

2.2 FDC Site Management

FDC project personnel will be inducted into the requirements of this Plan and any associated Plan or Risk Register by the relevant Project Manager. Evidence of induction and discussion will be recorded within section FDC Project Personnel Consultation and Sign off.

2.3 Information supplied to Subcontractors

This Plan and any associated Plan or Risk Register (including any future revisions) will be supplied to subcontractors for review through the Aconex portal or another approved format.

2.4 Site filing

A hard copy of this Plan and any associated Plan or Risk Register including any future revisions will be held on site. On completion of the project, all relevant plans and documents will be archived.

3 Project information

3.1 Project description

The Cutaway project is located under the Barangaroo parkland built by Balderstone (Lendlease) and completed in 2015, the Harbour control tower which was located on ground floor and extended through open void in the roof was demolished by Liberty international demolition.

4 Plan overview

4.1 General Principles for asbestos containing material (ACM)

FDC Construction asbestos management have been set in accordance with current and relevant Codes of Practice and statutory obligations

- Assuming Asbestos or ACM is present – What next!
- Arrange for sampling and testing
- Indicating the presence of Asbestos or ACM
- Assessing the risk of exposure
- Populating an Asbestos Register
- Reviewing and revising the Asbestos Register
- Accessing the Asbestos Register
- Transferring the Asbestos Register
- Populating an Asbestos Management Plan / Removal Plan
- Reviewing and revising the Asbestos Management Plan / Removal Plan
- Accessing the Asbestos Management Plan / Removal Plan
- Managing other Asbestos related risks
- Contaminated sites – Clearance Certificates
- Demolition works
- Asbestos related work
- Disposing of Asbestos or ACM
- Managing exposure to Asbestos or ACM
- Health monitoring
- Training workers about Asbestos and ACM
- Equipment uses
- Controlling risk – Hierarchy of control
- Safe Work Practices
- Personal Protective Equipment

4.2 Unexpected Heritage Finds (UHF)

An Unexpected Heritage Find can be defined as any unanticipated discovery that has not been identified during a previous assessment or is not covered by an existing permit under relevant legislation. The find may have potential cultural heritage value which may require some type of statutory cultural heritage permit or notification if any interference of the heritage item is proposed or anticipated.

The range of potential archaeological discoveries can include but are not limited to:

- Aboriginal or European stone artefacts, shell middens, burial sites, engraved rock art, scarred trees.
- Remains of rail infrastructure including buildings, footings, stations, signal boxes, rail lines, bridges and culverts.
- Remains of other infrastructure including sandstone or brick buildings, wells, cisterns, drainage services, conduits, old kerbing and pavement, former road surfaces, timber and stone culverts, bridge footings and retaining walls;
- Artefact scatters including clustering of broken and complete bottles, glass, ceramics, animal bones and clay pipes; Archaeological human skeletal remains.
- Animal skeletal remains

5 Training

5.1 Asbestos and Heritage Awareness Training

Asbestos awareness training provides participants with a general overview of asbestos including history and background; asbestos types and properties; common asbestos situations; health effects; risk in perspective and management of asbestos. Training is provided both internally and by external providers.

5.2 Asbestos and Heritage Removal Training

This course is typically provided by an external registered training organisation (RTO) to personnel who intend to remove bonded ACM, pre-requisite for obtaining a SafeWork recognised license.

6 Procedure in the event of Unexpected Find

Should an unexpected find of potential contamination be encountered during the works, the following procedure (Steps 1 to 13) should be followed with reference to the *Incident Response Flow Chart*.

It must additionally be ensured that implemented procedures are in accordance with other adopted site documentation, such as the Environmental Management Plan, Health and Safety Management Plan

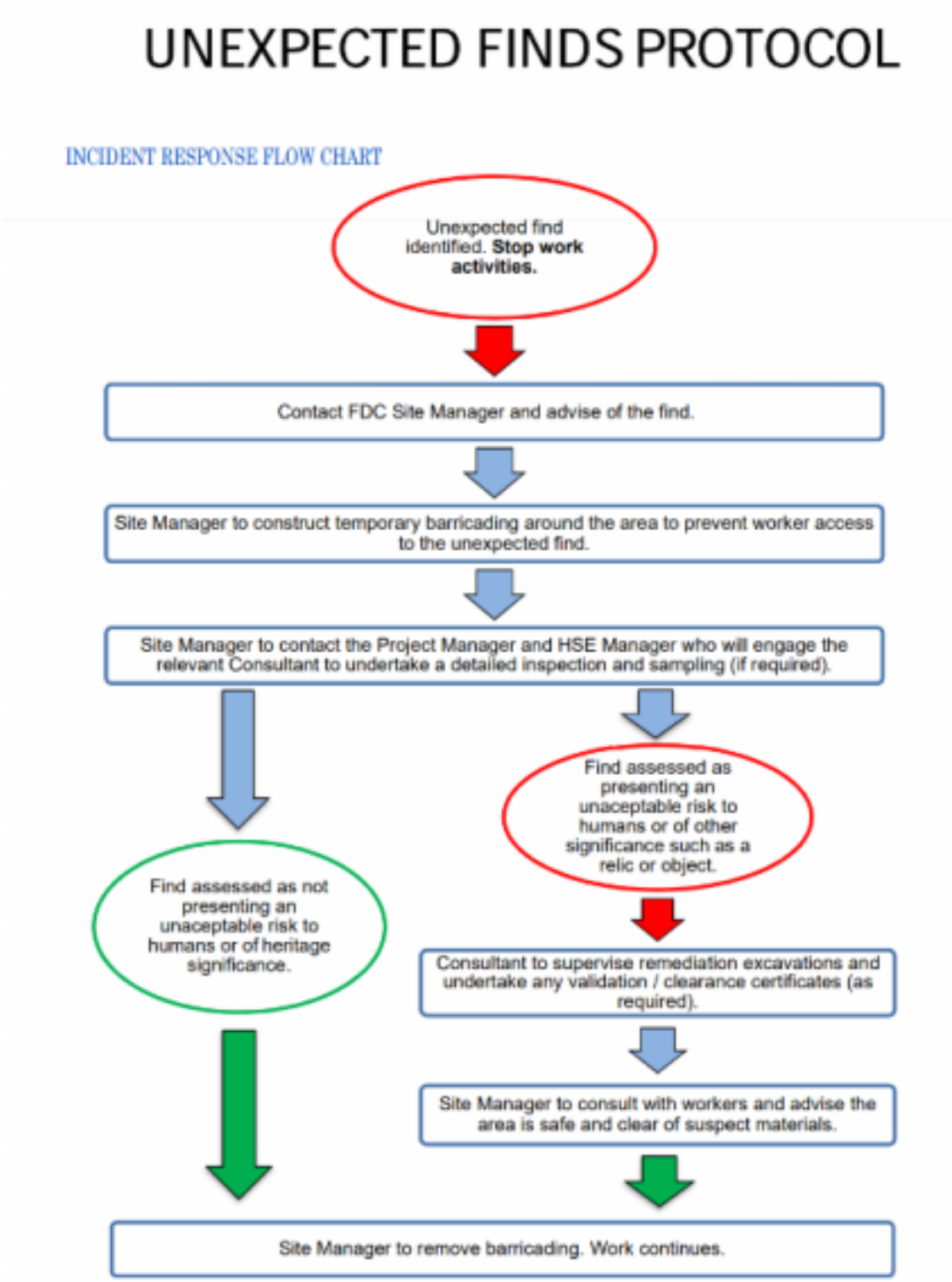
Identified finding by worker

1. Cease work as soon as safe to do so and move clear of the finding.
2. Do not tamper or attempt to remove the finding.
3. Contact FDC Management immediately.
4. Site Management to delineate an exclusion or quarantine zone around the area using fencing and or appropriate barriers and signage.
5. If not already done, Site Manager is to notify the Project Manager and or Project Director.
6. Cover area with tarps if practicable to preserve finding.
7. The site manager or Senior project manager will initially assess the potential risk to health or the environment by the finding and asses if evacuation or emergency services need to be contacted.
8. Project Manager will arrange inspection by an external Environmental / Heritage Consultant to assess the finding and provide advice as follows:
    - Preliminary assessment of the find and need for immediate management controls.
    - What further assessment and/or remediation works are required and how such works are to be undertaken in accordance with contaminated site regulations and guidelines.
    - Preparation of a remedial action plan for large scale contamination or specification for smaller or minor volumes of material
    - Remediation works required
    - Validation works required following remediation works
9. Works will not recommence in the affected area until appropriate advice has been obtained from the consultant or suitably qualified person with approval to recommence.
10. Any excavation works will not recommence until the extent of any contamination has been assessed and, if necessary, a remedial action plan (RAP) has been prepared.
11. Air monitoring requirements are to be advised by the consultant and implemented as required.
12. If safe to do so, the consultant will provide clearances for words to proceed in

the affected area (subject to conditions). If it is not considered to be safe, works will remain on hold until appropriate approval is provided.

13. Excavated material from remedial activities will be separated from other materials and stockpiled for assessment. Sampling of the materials will be undertaken in accordance with the relevant guidelines or professional judgement where justification is applied. Samples will be analysed for a range of analytes as required for beneficial reuse or offsite disposal.
14. For materials requiring offsite disposal, laboratory results will be assessed to determine the appropriate waste classification of the material in accordance with the NSW EPA Waste Classification Guidelines. Depending on the classification, materials will be transported to an appropriate waste facility that is licensed to accept waste of the relevant classification or beneficially reused if appropriate.
15. A waste tracking system recording the volume of material, waste classification / beneficial reuse status, removal documentation and truck and receiving landfill facility det aids will be recorded to ensure all waste is accounted for and disposed or appropriately in accordance with NSW EPA requirements.
16. Any unexpected finds must be documented, and records of volumes and types of materials identified removed from the site must be kept on file.
17. Keep a record of the unexpected find. The record must include exact location of the find. Documentation on the removal of any contaminated materials from the site must be kept on file
    - Volume of material removed,
    - The type (classification) of material,
    - Licensed facility that the material was disposed to,
    - Receipt documentation from the licensed facility confirming volume received.

7 Flow Chart


UNEXPECTED FINDS PROTOCOL
INCIDENT RESPONSE FLOW CHART
Unexpected find identified. Stop work activities.
Contact FDC Site Manager and advise of the find.
Site Manager to construct temporary barricading around the area to prevent worker access to the unexpected find.
Site Manager to contact the Project Manager and HSE Manager who will engage the relevant Consultant to undertake a detailed inspection and sampling (if required).
Find assessed as presenting an unaceptable risk to humans or of other significance such as a relic or object.
Find assessed as not presenting an unaceptable risk to humans or of heritage significance.
Consultant to supervise remediation excavations and undertake any validation / clearance certificates (as required).
Site Manager to consult with workers and advise the area is safe and clear of suspect materials.
Site Manager to remove barricading. Work continues.

8 Legal and Other requirements

8.1 Project Org Chart

8.2

9 Roles and Responsibilities

Person / Party	Responsibility
Project Director (PD), Senior Project Manager (PM)	• Ensure all staff and contractors are aware of and comply with the plan. • Project management • Identification and bringing to the attention of appropriate staff, any suspect material • Ensure all contractors working on asbestos are aware of and meet the requirement of the plan. • Monitor and review compliance
Site Manager (SM), Senior HSE Advisor (HSE)	• Obtain from Subcontractor, copy of SafeWork Notification (Requirement of FDC Asbestos removal permit) • Ensure project personnel (including contractors) are inducted • Surveying, identification and arranging for sampling of suspected asbestos containing materials by competent persons. • Training and awareness • Manage the asbestos works program and removal program • Respond to incidents • Document preparation, recording and filing • Manage asbestos inspection contractor • Monitor and review compliance
Contractors (C) and Trades Staff (TS)	• Not to impact on an ACM without complying with the plan • To bring to the attention of the SM/HSE any suspect material • Refer to the plan for guidance to identify, manage, and remove asbestos • Apply for Asbestos Permit to Work when performing asbestos removal work that requires notification. • Undergo FDC Contractor Induction • Develop a site-specific asbestos removal control plan, SWMS AND Risk Assessment prior to performing the asbestos removal work

10 Environmental Risk Register

Refer to Workplace Safety Australia to assist in the identification of Legislation and Codes of Practice that apply to FDC operations and project / site activities undertaken. Applicable Legislation and Codes of Practice are to be identified in the reference section below.

Refer to Workplace Safety Australia for a detailed register of applicable Australian Standards. Access to Australian Standards is available through SAI Global

11 Reference Legislation

11.1 Acts and Regulations

- Environment Protection and Biodiversity Conservation Act 1999
- Environmental Protection and Biodiversity Conservation Regulations 2000
- Environmental Protection Act 1994
- Environmental Protection Regulation 2008
- Contaminated Land Act 1991
- Protection of the Environmental Operations (POEO) Act 1997
- Protection of the Environmental Operations (Clean Air) Regulation 2002
- Protection of the Environmental Operations (Waste) Regulation 2005
- Protection of the Environmental Operations (General) Regulation 2009
- Contaminated Land Management Act 1997
- Waste Avoidance and Resource Recovery Act 2001
- Contaminated Land Management Regulation 2008
- Environmental Protection Act 1997
- Environmental Protection Regulation 2005
- Environmental Protection Act 1970
- Environmental Protection Act 1993
- Environmental Protection Regulation 2009
- Environmental Protection Act 1986
- Environmental Protection Regulation 1987
- Environmental Protection (Noise) Regulations 1997
- Contaminated Sites Act 2003
- Contaminated Sites Regulations 2006

11.2 Policy

- Environmental Protection (Waste Management) Regulation 2000
- Environmental Protection (Air) Policy 2008
- Environmental Protection (Waste Management) Policy 2000
- Plant Protection Regulation 2002
- Environmental Protection (Noise) Policy 2008
- Nature Conservation Act 1992
- Environmental Protection (Water) Policy 2009
- General Environmental Protection Policy 2007
- Contaminated Sites 2009
- Noise 2010
- Hazardous Material 2010
- Air 1999
- Water Quality 2008
- State Environment Protection Policy (Ambient Air Quality) 1999

- State Environment Protection Policy (Groundwater's of Victoria) 1997
- Industrial Waste Management Policy (Waste Acid Sulphate Soils) 1999
- State Environment Protection Policy (Air Quality Management) 2001.
- State Environment Protection Policy (Control of Noise from Commerce, Industry and Trade) 1989
- State Environment Protection Policy (Prevention and Management of Contamination of Land) 2002
- State Environment Protection Policy (Waters of Victoria) 1988
- Code of Practice for the Building and Construction Industry – Stormwater Pollution Prevention 1999

11.3 Cultural Heritage

- The Native Title Act 1993 (Cth)
- Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cth)
- Aboriginal Cultural Heritage Act 2003
- Torres Strait Islander Cultural Heritage Act 2003
- Queensland Heritage Act 1992
- National Parks and Wildlife Amendment (Aboriginal Ownership) Act 1996
- Heritage Act 1977
- Aboriginal Land Rights Act 1983
- Heritage Objects Act 1991
- Heritage Act 2004
- Aboriginal Heritage Act 2006
- Aboriginal Heritage Regulations 2007
- Aboriginal Heritage Act 1988
- Heritage Act 1994
- Heritage Places Act 1993
- Aboriginal Heritage Act 1972

11.4 HSE System References

General Requirements

- Erosion and Sediment Management
- Air Quality Management
- Water Quality Management
- Noise and Vibration Management
- Contaminants
- Heritage Management
- Waste Management
- Spills Management
- Fauna and Flora Protection
- Potable Water Management
- Non-potable Water Management

10 **Appendix C:** Stockpile Management Protocol

PURPOSE

This protocol describes the requirements for the monitoring and managing of spoil and fill including details of how excavated materials would be handled, stockpiled, reused and disposed. This protocol outlines the locational criteria used to guide the placement of stockpiles and provides both standard and site-specific mitigation measures to be implemented in order to minimise impacts on the environment.

Stockpile sites may typically be required to store material including, but not limited to:

a) Excavated materials to be used in fill embankments and other design features.

b) ASS subject to treatment prior to reuse.

c) Excavated material unsuitable for reuse in the formation.

d) Excess concrete, pavement, rock, steel and other material stored for either future use in the Project, or prior to removal from site.

e) Topsoil, mulch, excess timber for landscaping and revegetation works.

SCOPE

This protocol applies to the sitting and placement of all stockpiles within the Project footprint.

PROTOCOL

Prior to the establishment of any stockpile on site as part of the Project, ensure that:

a) Materials will be stockpiled outside the drip line of trees or native vegetation, and never pushed up around the base of trees.

b) Installation of erosion and sedimentation controls in accordance with the approved progressive erosion and sediment control plan.

c) Short-term stockpiles are covered with plastic or kept damp to control dust where required. Long-term stockpiles (i.e. unused for linger than 1 month) will be revegetated with cover-crop or similar.

d) Potentially affected residents within 200m of stockpiles will be notified regarding the location of the stockpile areas, the potential impact from constructing the stockpile (including visual and odour impacts) and proposed mitigation measures. Should a resident be dissatisfied with the proposed mitigation measures, the stockpile location or associated mitigation measures would be reviewed accordingly.

11 **Appendix D:** Heavy Rainfall Event Procedure

PURPOSE

To detail the actions to be taken in the event of a 'heavy' or 'violent' rainfall forecast as defined by the Australian Government Bureau of Meteorology. The procedure outlines how to monitor rainfall forecast and prepare site to minimise impacts as much as practicable.

DEFINITIONS OF RAIN OR SHOWER INTENSITY

This protocol applies to the sitting and placement of all stockpiles within the Project footprint.

Category	Description
Light	Up to 2mm per hour. Individual drops easily identified, puddles form slowly, small streams may flow in gutters.
Moderate	2.2mm to 6mm per hour. Rapidly forming puddles, down pipes flowing freely, some spray visible over hard surfaces.
Heavy	6.2mm to 50mm per hour. Falls in sheets, misty spray over hard surfaces. May cause roaring noise on roof.
Violent	Over 50mm per hour. Gutters and downpipes overflowing, spray to height of several centimetres over hard surfaces. May cause roaring noise on roof.

TRAINING

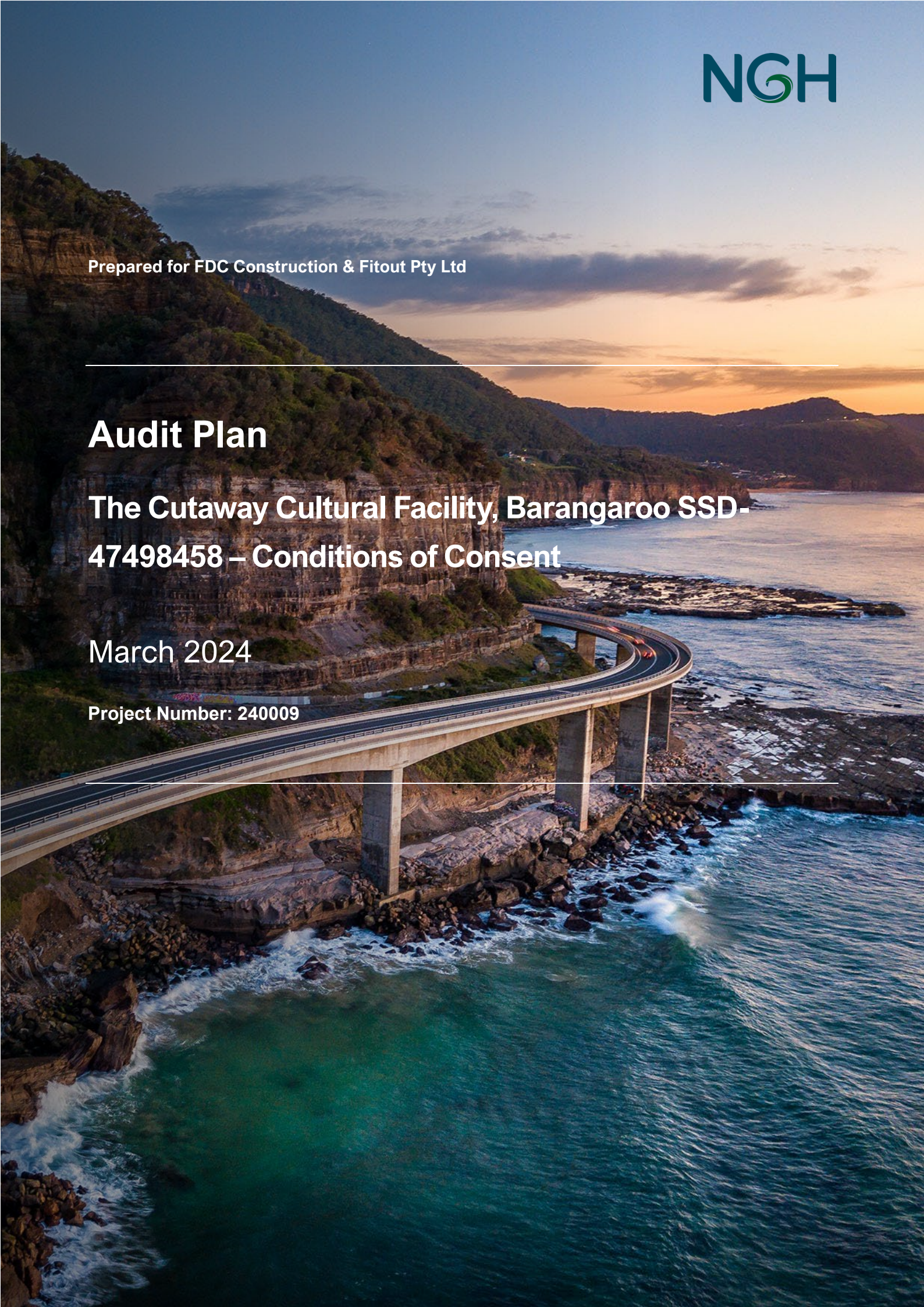
All FDC Foremen and Engineers will be trained in this Procedure.

PROCEDURE

1. Monitoring of 'heavy' or 'violent' rain or shower events (through the Australian Government Bureau of Meteorology):
    a) On each working day, the Site Manager or Project Engineer or delegate will log on to the Australian Government Bureau of Meteorology website: http://www.bom.gov.au/nsw/index.shtml, review the weather forecast for the next three days and notify the project team of the results by email.
    b) When rain or showers are described as 'heavy' or 'violent', the Site Manager or Project Engineer or delegate will highlight that:
        i. Rain or showers are described as 'heavy' or 'violent', as applicable.
        ii. The Heavy Rainfall Event Procedure must be followed.
    c) The Site Manager or Project Engineer or delegate will keep a record of all weather forecast emails.
    d) The daily weather forecast may be discussed at Prestart Meetings as deemed required by FDC's Foreman / Manager.
2. When rain or showers are described as 'heavy' or 'violent' the FDC Site Manager will notify the site team of personnel who will monitor and maintain erosion and sediment controls if required.
3. The Foreman will ensure that there is an adequate supply of erosion and sediment control measures on site.

4. Prior to the ‘heavy’ or ‘violent’ rainfall or shower event, the Foreman or Site Manager or delegate will inspect erosion and sediment measures, focusing on the critical areas first. These may include stockpile areas, chemical storage areas and sediment basins.
5. The Site Manager and Foreman will ensure maintenance is performed, focusing on the critical areas first, as described above.
    a. Site Manager or Project Engineer or delegate to enter items (that cannot be immediately actioned) into the Environmental Risk Assessment (F010).
    b. Site Manager or Project Engineer or delegate to issue relevant part of the Environmental Risk Assessment (F010) to the responsible Engineers and Foremen.
    c. Responsible Engineers and Foremen to notify Site Manager or Project Engineer or delegate upon completion of actions.
    d. Completed actions to be verified by the Site Manager or Project Engineer or delegate and actions closed out in the Environmental Risk Assessment (F010).

35. APPENDIX E – Environmental Audit Plan



Prepared for FDC Construction & Fitout Pty Ltd

Audit Plan

The Cutaway Cultural Facility, Barangaroo SSD-47498458 – Conditions of Consent

March 2024

Project Number: 240009

Document verification

Project Title:	The Cutaway Cultural Facility, Barangaroo SSD-47498458 – Conditions of Consent
Project Number:	240009
Project File Name:	240009 Audit Plan IEA 1 Final V1.0

Revision	Date	Prepared by	Approved by
Draft	27/03/2024	N. Smith	N. Arens
Final V1.0	28/03/2024	N. Smith	N. Arens

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Audit details

Independent Audit	
AUDITED ORGANISATION	**PREMISES**
FDC Construction & Fitout Pty Ltd (FDC) Infrastructure NSW	29 – 51 Hickson Road, Barangaroo (Part Lot 52 DP 1213772, Part Lot 4 DP 876514, Part Lots 1, 2 and 5 DP 912271, Part Lot 7 DP 43776).
LOCATION OF AUDIT	**DATE OF AUDITS**
29 – 51 Hickson Road, Barangaroo (Part Lot 52 DP 1213772, Part Lot 4 DP 876514, Part Lots 1, 2 and 5 DP 912271, Part Lot 7 DP 43776).	**Audit 1** Within 12 weeks of the notified commencement date of construction. **Audit 2** No greater than 26 weeks from the date of the initial construction Independent Audit. **Subsequent Audits** At intervals no greater than 26 weeks following the last audit until the completion of construction.
DEPTH OF AUDIT	**SCOPE OF AUDIT**
Environmental compliance	The audit report would follow the requirements of Independent Audit – Post Approval Requirements (2020). The audit report would include: (a) A summary of the findings undertaken during the assessment of all conditions (b) Assessment of the environmental performance of the development, and its effects on the surrounding environment including the community (c) A review of the adequacy of any management plans and other documents required under the consent (d) Recommendations to improve the environmental performance of the development, and improvements to any document required under this consent (e) An audit table with all the conditions of consent and an assessment of whether the development is complying with

Independent Audit	
	these. The audit table will be appended to the report.
AUDIT CRITERIA	**AUDIT DETAILS**
(a) Relevant environmental conditions of Development Consent, State Significant Development consent conditions (SSD 9838218) (b) Any other permits, licences or approvals in place at the time of the audit (except any Environmental Protection Licence).	**Day 1 – offsite** (date to be confirmed) Document review and desktop audit. **Day 2 – site audit** (date to be confirmed) (a) Opening Meeting (b) Site Inspection (c) Document Review (d) Interviews (e) Closing meeting. **Day 3 – offsite** (a) Audit analysis (b) Audit reporting.
PROJECT REPRESENTATIVES	**AUDIT TEAM**
Peter Colak FDC Senior Project Manager, Fitout & Refurbishment, NSW	Natascha Arens, **NGH** – Lead Auditor (Technical advice and review) Nicola Smith **NGH** – Auditor
AUDIT REPORT	
A draft Audit Report will be submitted to the Principal Contractor within two weeks of completion of the audit and receipt of all Request for Information (RFI) documentation. If no response from the Client is received within 10 business days, the report will be issued as final. The final Audit Report is required to be submitted to Department of Planning, Housing and Industry (DPHI) by the proponent no later than two months from completion of the audit.	

1. Introduction

1.1. Background

This Independent Environmental Audit Plan has been prepared to address the environmental requirements of conditions listed in the Signed Instrument of Approval for the fit out and operation of the Cutaway Cultural Facility (SSD-47498458, the Project).

The fit out and operation of the Cutaway Cultural Facility is located at 29 – 51 Hickson Road, Barangaroo (Part Lot 52 DP 1213772, Part Lot 4 DP 876514, Part Lots 1, 2 and 5 DP 912271, Part Lot 7 DP 43776). The Project includes:

- Internal alterations and fit-out of the existing Cutaway space over three (3) levels to accommodate event and gallery spaces, back of house areas, amenities, commercial kitchen, offices and ancillary retail and café
- Enclosure of existing roof openings/voids
- New façade and entry treatment from the forecourt adjacent to Nawi Cove, including new landscaping
- Varied hours of operation for a range of events, exhibitions, cultural uses, festivals and installations.

Construction is proposed to commence on 21 April 2024 with an estimated completion date within 15 to 16 months (July - August 2025).

1.2. Purpose of this report

The development approval for the project (SSD-47498458) includes the following requirements for independent environmental auditing.

The requirements of the Independent Environmental Audit conditions are listed in Table 1-1.

Table 1-1 Conditions applicable to the audit

CoC #	Condition	NGH Approach
Independent Environmental Audit		
C45.	Independent Audits of the development must be conducted and carried out in accordance with the Independent Audit Post Approval Requirements.	The audit report would follow the requirements of Independent Audit Post Approval Requirements. An audit table has been prepared and will be included in the audit report. The audit table includes all conditions of consent and an assessment of whether the development is complying with these would be undertaken at each audit. The audit report would include: a) summary of the findings undertaken during the assessment of all conditions

CoC #	Condition	NGH Approach
		b) assessment of the environmental performance of the development, and its effects on the surrounding environment including the community c) a review the adequacy of any management plans and other documents required under the consent d) recommendations to improve the environmental performance of the development, and improvements to any document required under this consent.
C46.	Proposed independent auditors must be agreed to in writing by the Planning Secretary prior to the commencement of an Independent Audit.	The CVs and Declarations of Independence for the independent audit team of Natascha Arens and Nicola Smith have been supplied to FDC for endorsement by DPHI.
C47.	The Planning Secretary may require the initial and subsequent Independent Audits to be undertaken at different times to those specified above, upon giving at least 4 weeks' notice (or timing) to the Applicant of the date upon which the audit must be commenced.	Noted
C48.	In accordance with the specific requirements in the Independent Audit Post Approval Requirements, the Applicant must: (a) Review and respond to each Independent Audit Report prepared under this consent; (b) submit the response to the Planning Secretary; and (c) make each Independent Audit Report, and response to it, publicly available 60 days after submission to the Planning Secretary.	The proponent would be responsible for reviewing and responding to the audit findings and making the report publicly available.

CoC #	Condition	NGH Approach
C49.	Independent Audit Reports and the Applicant's response to audit findings must be submitted to the Planning Secretary within 2 months of undertaking the independent audit site inspection as outlined in the Independent Audit Post Approval Requirements (2020), unless otherwise agreed by the Planning Secretary.	The proposed audit schedule is provided in Section 2.1.
C50.	Notwithstanding the requirements of the Independent Audit Post Approval Requirements (2020), the Planning Secretary may approve a request for ongoing operational Independent Audits to be ceased, where it has been demonstrated to the Planning Secretary's satisfaction that Independent Audits have demonstrated consistent operational compliance.	Noted

2. Audit plan

This section sets out the audit schedule (Section 2.1) and the audit table (Appendix A).

2.1. Audit schedule

Table 2-1 outlines the required frequency of the independent environmental audits.

Table 2-1 Audit schedule

Item	Timing	Scope
First Construction Independent Audit	12 weeks from construction commencement (21 April 2024 to be confirmed) Friday 12 July 2024	Audit compliance of all State Significant Development (SSD) environmental conditions as identified in Appendix A of this audit program, relevant to the stage of works and check implementation of measures in management plans and sub plans.
Second Audit	No greater than 26 weeks from the date of the initial Independent Audit Friday 10 January 2025	Audit compliance of all relevant SSD environmental conditions as identified in Appendix A of this audit plan, relevant to the stage of works and check implementation of measures in management plans and sub plans.
Third Audit	No greater than 26 weeks from the date of the second Independent Audit Friday 11 July 2025	Audit compliance of all relevant SSD environmental conditions as identified in Appendix A of this audit plan, relevant to the stage of works and check implementation of measures in management plans and sub plans.
Subsequent audits	No greater than 26 weeks from the date of the subsequent Independent Environmental Audit until the end of construction.	Audit compliance of all relevant SSD environmental conditions as identified in Appendix A of this audit plan, relevant to the stage of works and check implementation of measures in management plans and sub plans.

Appendix A Audit table

Condition of Consent	Part/ Sub-Part		Condition	Evidence Collected	Comment	Audit Status
Part A - Administrative Controls						
Obligation to Minimise Harm to the Environment						
A1.			In addition to meeting the specific performance measures and criteria in this consent, all reasonable and feasible measures must be implemented to prevent, and if prevention is not reasonable and feasible, minimise, any material harm to the environment that may result from the construction and operation of the development.			
Terms of Consent						
A2.			The development may only be carried out:			
	a)		in compliance with the conditions of this consent;			
	b)		in accordance with all written directions of the Planning Secretary;			
	c)		in accordance with the EIS, RtS and any RRFI;			
	d)		in accordance with the approved plans in the table below (except where amended by the conditions of consent):			
A3.			The Applicant must comply with all written requirements or directions of the Planning Secretary, including in relation to:			
	a)		the environmental performance of the SSD;			
	b)		any document or correspondence in relation to the SSD;			
	c)		any notification given to the Planning Secretary under the terms of this approval;			
	d)		any audit of the construction or operation of the SSD;			
	e)		the terms of this approval and compliance with the terms of this approval (including anything required to be done under this approval);			
	f)		the carrying out of any additional monitoring or mitigation measures; and			
	g)		in respect of ongoing monitoring and management obligations, compliance with an updated or revised version of a guideline, protocol, Australian Standard or policy required to be complied with under this approval.			
A4.			The conditions of this consent and directions of the Planning Secretary prevail to the extent of any inconsistency, ambiguity or conflict between them and a document listed in Condition A2. In the event of an inconsistency, NSW Government 6 The Cutaway Cultural Facility, Barangaroo Department of Planning and Environment (SSD 47498458) ambiguity or conflict between any of the documents listed in Condition A2, the most recent document prevails to the extent of the inconsistency, ambiguity or conflict.			
Limits on Consent						
A5.			This consent will lapse five years from the date the consent is published on the NSW Planning Portal unless the works associated with the development have physically commenced.			
A6.			The consent does not approve the following:			
	a)		any future entry marker structure for the site, including the general location, size and form			

	b)		any interpretation device associated with the former Harbour Control Tower			
	c)		the detailed fit-out and operation of the café on level two			
	d)		the installation of external signage.			
			Where required, separate approvals must be obtained from the relevant consent authority (except where exempt and/or complying development applies).			
Prescribed Conditions						
A7.			The Applicant must comply with all relevant prescribed conditions of development consent under Part 4, Division 1 of the EP&A Regulation.			
Planning Secretary as Moderator						
A8.			In the event of a dispute between the Applicant and a public authority, in relation to a requirement in this approval or relevant matter relating to the Development, either party may refer the matter to the Planning Secretary for resolution. The Planning Secretary's resolution of the matter will be binding on the parties.			
Legal Notices						
A9.			Any advice or notice to the consent authority must be served on the Planning Secretary at the Planning Secretary Address for Service.			
Evidence of consultation						
A10.			Where conditions of this consent require consultation with an identified party, the Applicant must:			
	a)		consult with the relevant party prior to submitting the subject document to the Planning Secretary for information or approval; and			
	b)		provide details of the consultation undertaken including:			
		i)	the outcome of that consultation, matters resolved and unresolved; and			
		ii)	details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved.			
Structural Adequacy						
A11.			All new buildings and structures, and any alterations or additions to existing buildings and structures, that are part of the development, must be constructed in accordance with the relevant requirements of the NCC.			
			Notes: • Part 8 of the EP&A Regulation sets out the requirements for the certification of the development. • Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021 sets out the requirements for the certification of the development.			
Operation of Plant and Equipment						
A12.			All plant and equipment used on site, or to monitor the performance of the development must be:			
	a)		maintained in a proper and efficient condition; and			
	b)		operated in a proper and efficient manner.			
Applicability of Guidelines						

A13.			References in the conditions of this consent to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as at the date of this consent.			
A14.			However, consistent with the conditions of this consent and without altering any limits or criteria in this consent, the Planning Secretary may, when issuing directions under this consent in respect of ongoing monitoring and management obligations, require compliance with an updated or revised version of such a guideline, protocol, Standard or policy, or a replacement of them.			
Monitoring and Environmental Audits						
A15.			However, consistent with the conditions of this consent and without altering any limits or criteria in this consent, the Planning Secretary may, when issuing directions under this consent in respect of ongoing monitoring and management obligations, require compliance with an updated or revised version of such a guideline, protocol, Standard or policy, or a replacement of them.			
			Note: For the purposes of this condition, as set out in the EP&A Act, "monitoring" is monitoring of the development to provide data on compliance with the consent or on the environmental impact of the development, and an "environmental audit" is a periodic or particular documented evaluation of the development to provide information on compliance with the consent or the environmental management or impact of the development.			
Incident Notification, Reporting and Response						
A16.			The Department must be notified in writing to compliance@planning.nsw.gov.au immediately after the Applicant becomes aware of an incident. The notification must identify the development (including the development application number and the name of the development if it has one), and set out the location and nature of the incident.			
A17.			Subsequent notification must be given and reports submitted in accordance with the requirements set out in Appendix 1.			
Non-Compliance Notification						
A18.			The Department must be notified in writing to compliance@planning.nsw.gov.au within seven days after the Applicant becomes aware of any non-compliance. The Certifier must also notify the Department in writing to compliance@planning.nsw.gov.au within seven days after they identify any non-compliance.			

A19.			The notification must identify the development and the application number for it, set out the condition of consent that the development is non-compliant with, the way in which it does not comply and the reasons for the noncompliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.			
A20.			A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.			
Compliance						
A21.			The Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development.			
Revision of Strategies, Plans and Programs						
A22.			Within three months of:			
	a)		the submission of a compliance report under this consent;			
	b)		the submission of an incident report under this consent;			
	c)		the submission of an Independent Audit under this consent;			
	d)		the approval of any modification of the conditions of this consent (excluding modifications made under section 4.55(1) of the EP&A Act); or			
	e)		the issue of a direction of the Planning Secretary under this consent which requires a review,			
			the strategies, plans and programs required under this consent must be reviewed, and the Department must be notified in writing that a review is being carried out.			
A23.			If necessary, to either improve the environmental performance of the development, cater for a modification or comply with a direction, the strategies, plans and programs required under this consent must be revised, to the satisfaction of the Planning Secretary. Where revisions are required, the revised document must be submitted to the Planning Secretary for approval within six weeks of the review.			
			Note: This is to ensure strategies, plans and programs are updated on a regular basis and to incorporate any recommended measures to improve the environmental performance of the development.			
Compliance Reporting						
A24.			Compliance Reports of the project must be carried out in accordance with the Compliance Reporting Requirements outlined in the Compliance Reporting Post Approval Requirements.			
A25.			Compliance Reports must be submitted to the Department in accordance with the timeframes set out in the Compliance Reporting Post Approval Requirements, unless otherwise agreed to by the Planning Secretary.			
A26.			The Applicant must make each Compliance Report publicly available 60 days after submitting it to the Planning Secretary, unless otherwise agreed by the Planning Secretary.			

A27.			Notwithstanding the requirements of the Compliance Reporting Post Approval Requirements, the Planning Secretary may approve a request for ongoing annual operational compliance reports to be ceased, where it has been demonstrated to the Planning Secretary's satisfaction that an operational compliance report has demonstrated operational compliance.			
Waste and Recycling Management - General						
A28.			The proposal must comply with the relevant provisions of Council's Guidelines for Waste Management in New Developments 2018 which requires facilities to promote the efficient storage, separation, collection and handling of waste to maximise resources recovery.			
Paving Materials						
A29.			The surface of any material used or proposed to be used for the paving of colonnades, thoroughfares, plazas, arcades and the like which are used by the public must comply with AS/NZS 4586:2004 (including amendments) "Slip resistance classification of new pedestrian surface materials".			
Harbour Control Tower Void						
A30.			The final design of the northern most void area shown on the Roof Plan (Drawing Number 20003, rev. J, dated 30 November 2023) in the approved location of the future Harbour Control Tower interpretive structure must be developed in consultation with Council, Heritage NSW, PMNSW and the SDRP in conjunction with the final resolution of the HCT interpretive structure and submitted to the Planning Secretary for approval.			
			Note: The final design must be accompanied by confirmation from a Suitably Qualified Noise Consultant that the acoustic assumptions and noise criteria outlined in the Noise and Vibration Impact Assessment, prepared by Arup dated 26 January 2023 remain relevant or a revised Noise and Vibration Impact Assessment which reflects the revised design.			
Part B - Prior to the Commencement of Construction						
Crown Building Work						
B1.			Crown building work cannot be commenced unless the relevant Crown Building work is certified by or on behalf of the Crown to comply with the technical provisions of the State's building laws in force as at:			
	a)		the date of the invitation for tenders to carry out Crown building work; or			
	b)		in the absence of tenders, the date on which the Crown building work commences.			
Notice of Commencement						
B2.			The Department must be notified in writing of the dates of commencement of physical work and operation at least 48 hours before those dates.			
B3.			If the construction or operation of the development is to be staged, the Department must be notified in writing at least 48 hours before the commencement of each stage, of the date of commencement and the development to be carried out in that stage.			

Access to Information						
B4.			At least 48 hours before the commencement of any works and until the completion of all works under this consent, or such other time as agreed by the Planning Secretary, the Applicant must:			
	a)		make the following information and documents (as they are obtained or approved) publicly available on its website:			
		i)	the documents referred to in Condition A2 of this consent;			
		ii)	all current statutory approvals for the development;			
		iii)	all approved strategies, plans and programs required under the conditions of this consent;			
		iv)	regular reporting on the environmental performance of the development in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent;			
		v)	a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs;			
		vi)	a summary of the current stage and progress of the development;			
		vii)	contact details to enquire about the development or to make a complaint;			
		viii)	a complaints register, updated monthly;			
		ix)	audit reports prepared as part of any independent environmental audit of the development and the Applicant's response to the recommendations in any audit report;			
		x)	any other matter required by the Planning Secretary; and			
	b)		keep such information up to date, to the satisfaction of the Planning Secretary.			
	c)		address any other matter relating to compliance with the terms of this consent or requested by the Planning Secretary.			
Entrance Design						
B5.			Prior to the commencement of construction works at the entrance adjacent to Nawi Cove, the Applicant must submit revised plans of the entrance design to the Planning Secretary for approval. The revised plans must show the detailed design of the entrance forecourt area, including etchings and engravings, and be developed in consultation with Bangawarra and Jake Nash Design and reviewed by Council, PMNSW and the SDRP. The revised plans must be accompanied by evidence demonstrating how the advice from Council, PMNSW and the SDRP has been addressed.			
Design Excellence and Intergrity						
B6.			The architectural design team comprising fjcstudio (the Design Team) is to have direct involvement in the design documentation, contract documentation and construction stages of the project. In addition:			

	a)		evidence of the Design Team's engagement is to be provided to the Certifier prior to the commencement of construction, and			
	b)		the design team is not to be changed without prior written notice and approval of the Planning Secretary.			
B7.			The Planning Secretary is to determine whether any proposed modifications to the approved architectural drawings require review by the State Design Review Panel or other appropriate person(s).			
Materials and Finishes						
B8.			Prior to the commencement of construction works at the entrance, the Applicant must submit to the satisfaction of the Planning Secretary details of final materials and finishes. The details must include:			
	a)		evidence that the following elements have been reviewed by the SDRP and how their advice has been addressed:			
		i)	a sample board showing the proposed timber finishes to be used for the entry sculptural tree			
		ii)	3D digital visualisations that show the detailing and connection of the entry sculptural tree to the existing concrete column			
		iii)	full-scale mock-ups that show the proposed sandstone and GRC finishing at the entrance, including jointing and junction details			
	b)		specifications and sample boards for all external finishes, colours and glazing including annotated drawings and computer-generated imagery of their application			
	c)		confirmation of the process and methods in arriving at the final choice for all materials and finishes			
	d)		detailed architectural drawings of the façade details. This must include snapshots at different points in the facade in plan, elevation and section to a scale of 1:20 or 1:50 as necessary.			
			The plans lodged to satisfy this consent must include final specifications of colour, material and, where relevant, manufacturer.			
Long Service Levy						
B9.			Prior to the commencement of construction, the Applicant must submit to the satisfaction of the Certifier details confirming payment of a Long Service Levy. For further information on the current levy rate and methods of payment, please contact the Long Service Payments Corporation Helpline on 131 441 or visit https://www.longservice.nsw.gov.au/bci/levy/about-the-levy.			
Structural Details						
B10.			Prior to the commencement of construction, the Applicant must submit to the satisfaction of the Certifier structural drawings prepared and signed by a suitably qualified practising Structural Engineer that demonstrates compliance with:			
	a)		the relevant clauses of the NCC; and			
	b)		this development consent.			

External Walls and Cladding						
B11.			The external walls of all buildings including additions to existing buildings must comply with the relevant requirements of the NCC.			
B12.			Prior to the commencement of construction, the Applicant must submit to the satisfaction of the Certifier documented evidence that the products and systems proposed for use or used in the construction of external walls including finishes and claddings such as synthetic or aluminium composite panels comply with the requirements of the NCC.			
Access and Facilties for people with disabilities						
B13.			Prior to the commencement of construction, the Applicant must submit to the satisfaction of the Certifier details prepared by a suitability qualified professional demonstrating that the building has been designed and will be constructed to provide access and facilities for people with a disability in accordance with the NCC.			
Mechanical Ventilation						
B14.			The premises must be ventilated in accordance with the NCC and applicable Australian Standards.			
B15.			Prior to the commencement of construction, the Applicant must submit to the satisfaction of the Certifier details that any mechanical ventilation and/or air conditioning system for the development complies with the NCC and applicable Australian Standards, prepared by a suitably qualified person certified in accordance with clause A2.2(a)(iii) of the NCC, to ensure adequate levels of health and amenity to the occupants of the building and to ensure environment protection			
Site Stability and Construction Work						
B16.			Prior to the commencement of construction, the Applicant must submit to the satisfaction of the Certifier a report obtained from a suitably qualified and experienced professional engineer/s, which includes the following:			
	a)		geotechnical details which confirm the suitability and stability of the site for the development and relevant design and construction requirements to be implemented to ensure the stability and adequacy of the development and adjacent land			
	b)		details to demonstrate that the proposed methods of support and construction in relation to the bulk excavation and demolition works that are the subject of this consent are suitable for the site and will not result in any damage to the adjoining premises, buildings or any public place, as a result of the works and any associated vibration			
	c)		the adjoining land and buildings located upon the adjoining land must be adequately supported at all times throughout building work			
	d)		details of written approvals that have been obtained from the owners of the adjoining land to install any ground or rock anchors underneath the adjoining premises (including any public roadway or public place).			
Crime Prevention through Environmental Design						

B17.			Prior to the commencement of construction, the Applicant must submit to the satisfaction of the Certifier evidence demonstrating that the design of the development has incorporated the Crime Prevention Through Environmental Design Assessment (CPTED) management and mitigation measures included within the CPTED report prepared by Urbis and dated 16 February 2023.			
Ecologically Sustainable Development						
B18.			Prior to the commencement of construction, the Applicant must submit to the satisfaction of the Certifier evidence demonstrating the development incorporates all design, construction and operation measures as identified in the Barangaroo Cutaway SSDA Report - ESD prepared by ARUP, dated 25 January 2023.			
B19.			Prior to the commencement of construction, the Applicant must submit to the satisfaction of the Certifier evidence demonstrating that the development will achieve a minimum 6 Star Green Star Buildings v1 rating in accordance with the Green Star Design and As-Built V.1.3 (Green Building Council Australia).			
Installation of Water Efficient Fixtures and Fittings						
B20.			Prior to the commencement of construction, the Applicant must submit to the satisfaction of the Certifier evidence demonstrating:			
	a)		all toilets installed within the development will be of water efficient dual-flush capacity with at least 4-star rating under the Water Efficiency and Labelling Scheme (WELS)			
	b)		all taps and shower heads installed within the development will be water efficient with at least a 3-star rating under the WELS, where available			
	c)		new urinal suites, urinals and urinal flushing control mechanisms installed within the development will utilise products with at least a 4-star rating under the WELS.			
	d)		systems will reduce unnecessary flushing and will not involve the use of continuous flushing systems.			
Mechanical Plant Noise Mitigation						
B21.			Prior to the commencement of construction, the Applicant must submit to the satisfaction of the Certifier details of noise mitigation measures for all mechanical plant (as detailed on relevant drawings) and certification from an appropriately qualified acoustic engineer that the proposed measures will achieve compliance with the Noise Policy for Industry and other guidelines applicable to the development.			
Sydney Water Assets						

B22.			Prior to the commencement of construction, the approved plans must be submitted to the Sydney Water Tap in™ online service, to determine whether the development will affect Sydney Water's wastewater and water mains, stormwater drains and/or easements, and if any further requirements need to be met. All building, plumbing and drainage work must be carried out in accordance with the requirements of the Sydney Water Corporation.			
			Note: Sydney Water's Tap in™ in online service is available at: https://www.sydneywater.com.au/SW/plumbing-building-developing/building/sydney-water-tap-in/index.htm			
			A Water Servicing Coordinator must be engaged as soon as possible and a feasibility application must be lodged with Sydney Water prior to development. The feasibility application should include a detailed concept servicing proposal. An inception meeting should be held with Sydney Water after the Applicant has prepared a detailed concept servicing proposal for potable water and wastewater services.			
Construction and Fit-out of Food Premises						
B23.			The construction, fit-out and finishes of the food premises must comply with Standard 3.2.3 of the Australian and New Zealand Food Standards Code under the Food Act 2003 and AS 4674 – 2004 Design, Construction and Fitout of Food Premises.			
			Note: Copies of AS 4674-2004 may be obtained from the Standards Australia Customer Service on telephone 1300 65 46 46 or by visiting the website www.standards.com.au.			
			Copies of the Food Standards Code (Australia) may be obtained by contacting the Food Standards Australia and New Zealand Authority on telephone (02) 6271 2222, email info@foodstandards.gov.au or by visiting the website www.foodstandards.gov.au			
Sanitary Facilities - Food Premises						
B24.			The sanitary facilities must be separated from all food handling areas via an airlock, self-closing door or mechanical ventilation in accordance with the provisions of the National Construction Code (previously known as Building Code of Australia), Part F 3.1, 4.8 and 4.9.			
Personal Lockers						
B25.			Clothing lockers or change rooms for staff must be provided in the premises or a dedicated, separate and isolated space for personal items must be provided in a separate location to the food handling and storage areas, in accordance with AS4674 - Design, Construction and Fit out of Food Premises.			
Waste Storage Area						

B26.			Prior to the commencement of construction on the ground floor, detailed plans and specifications for the construction of the waste storage area mut be submitted to and approved by the Certifier. To ensure the adequate storage and collection of waste from the food premises, all garbage and recyclable materials emanating from the premises must be stored in a designated waste storage area. The waste storage area must be designed and constructed in accordance with AS 4674 – Design, Construction and Fit-out of Food Premises, Australia New Zealand Food Standards Code 3.2.3 – Food Premises and Equipment and comply with the Council Policy for Waste Minimisation in New Developments, and must be:			
	a)		Provided with a hose tap connected to the water supply.			
	b)		Paved with impervious floor materials.			
	c)		Coved at the intersection of the floor and walls.			
	d)		Graded and drained to a waste disposal system in accordance with the requirements of the relevant regulatory authority (Sydney Water).			
	e)		Adequately ventilated (mechanically or naturally) so that odour emissions do not cause offensive odour or air pollution as defined by the Protection of the Environment Operations Act 1997 or a nuisance.			
	f)		Provided with the appropriate number and size of bins adequate for the storage of waste generated by the business, including recycling.			
	g)		Appropriately managed to PMNSW's satisfaction so that it does not attract pests or create litter.			
			Note: Fitted with appropriate interventions to meet fire safety standards in accordance with the Building Code of Australia.			
Coolrooms						
B27.			Coolrooms, refrigerated chambers and strong-rooms must be constructed in accordance with G 1.2 of the National Construction Code (previously known as Building Code of Australia), and:			
	a)		The floor of the coolroom must be graded to the door and a floor trapped waste outlet must be located outside the coolroom as near as possible to the door opening.			
	b)		All proposed shelving in the coolroom must be free-standing, constructed of galvanised steel angle section or other approved material with the lowest shelf at least 150mm clear of the floor.			
	c)		The floor of the coolroom must be constructed of impermeable concrete or coated, topped or otherwise finished with an impervious material to a smooth even surface and coved at the intersections with the walls to a minimum radius of 25mm.			
	d)		Must be fitted with a door that can be opened at all times from inside without a key.			
	e)		An approved audible alarm device must be located outside the coolroom(s) but controllable only from within the coolroom(s) and must be able to achieve a sound pressure level outside the chamber or coolroom(s) of 90 dB(A) when measured 3 metres from a sounding device.			

Grease and Liquid Waste Traps						
B28.			Prior to the commencement of construction, plans and details of a grease trap installed in accordance with the relevant Sydney Water requirements are to be submitted to and approved by the Registered Certifier showing the following:			
	a)		The grease trap is not located in any kitchen, food preparation or food storage areas;			
	b)		The grease trap is constructed and installed in a location which allows it to be easily and effectively cleaned and emptied; and			
	c)		The grease trap is constructed and located as not to encourage the harbourage of pests and be effectively pest proofed.			
			Note: In-sink and in-floor waste bucket traps must be installed in all sinks and floor wastes in all commercial kitchens and food preparation areas. The installation of any grease traps and treatment equipment must be carried out by a suitably qualified and licensed plumber in accordance with the Plumbing Code of Australia.			
Waste Rooms (General Waste Areas)						
B29.			Prior to the commencement of construction, detailed plans and specifications for the construction of the waste storage area must be submitted to and approved by the Certifier. To ensure the adequate storage and collection of waste from the occupation of the building, all garbage and recyclable materials emanating from the premises must NSW Government 13 The Cutaway Cultural Facility, Barangaroo Department of Planning and Environment (SSD 47498458) be stored in the designated waste storage area. The waste storage area must be designed and constructed in accordance with the following requirements to minimise odours, deter vermin, and protect surrounding areas:			
	a)		Provided with a hose tap connected to the water supply.			
	b)		Paved with impervious floor materials.			
	c)		Coved at the intersection of the floor and walls.			
	d)		Graded and drained to a waste disposal system in accordance with the relevant regulatory authority (Sydney Water).			
	e)		Adequately ventilated (mechanically or naturally) so that odour emissions do not cause offensive odour as defined by the Protection of the Environment Operations Act 1997.			
	f)		An adequate lighting system must be provided (natural or artificial) to the waste room to aid with cleaning and the detection of pest activity.			
	g)		Fitted with appropriate interventions to meet fire safety standards in accordance with the National Construction Code (previously known as Building Code of Australia).			
B30.			A design certification report for floor levels of buildings and structures must be submitted to the Registered Certifier prior to the commencement of construction.			
Survey Infrastructure - Identification and Recovery						

B31.			Under Section 24 of the Surveying and Spatial Information Act 2002, it is an offence to remove, damage, destroy, displace, obliterate or deface any survey mark unless authorised to do so by the Surveyor-General. Accordingly, the applicant must, where possible, ensure the preservation of existing survey infrastructure undisturbed and in its original state or else provide evidence of the Surveyor-General's authorisation to remove or replace marks.			
B32.			Prior to the commencement of construction, documentary evidence must be prepared by a Registered Surveyor and submitted to and approved by the Certifier. This evidence must include either:			
	a)		A copy of any Surveyor-General's Approval for Survey Mark Removal granted by NSW Spatial Services for the subject site, including all documentation submitted as part of that application (for example the survey mark audit schedule, strategy plan and strategy report); or			
	b)		A letter, signed by a current NSW Registered Land Surveyor and including his or her Board of Surveying and Spatial Information (BOSSI) identification number, stating that all investigations required under Surveyor-General's Direction No.11 have been made for the subject site and that no survey infrastructure will be affected by the proposal.			
Heritage Interpretation						
B33.			Prior to the commencement of construction, plans identifying opportunities for heritage interpretation (in accordance with the Barangaroo Heritage Interpretation Plan 2022, prepared by Curio Projects) including opportunities to integrate First Nations culture and history into the proposal such as through naming and wayfinding must be submitted to and approved by the Certifier.			
Green Travel Plan						
B34.			Prior to the commencement of construction, the Applicant must update the Green Travel Plan (GTP) in consultation TfNSW. The GTP must consider:			
	a)		Bicycle Parking and end of trip facilities for use by staff			
	b)		Parking - Reduce car parking usage by encouraging use of sustainable modes such as public transport;			
	c)		Initiatives to encourage more staff and visitors to participate in sustainable transport options;			
	d)		A Travel Access Guide (TAG) - TAG as an appendix for staff, performers and visitors who will be using the proposed development.			
B35.			The Applicant must submit a copy of the final plan via development.sco@transport.nsw.gov.au for TfNSW, three (3) months prior to the occupation. The GTP must be approved by the Certifier prior to the commencement of construction.			

B36.			The GTP must be implemented and updated as required to ensure sustainable transport outcomes and achieve the overall strategic planning objectives in the Future Transport 2056 and provide an Implementation Strategy that commits to specific management actions, including operational procedures to be implemented along with timeframes.			
Utilities and Services						
B37.			Prior to the construction of any utility works associated with the development, the Applicant must obtain relevant approvals from service providers. Any costs in the relocation, adjustment or support of services are the responsibility of the Applicant.			
B38.			Prior to the commencement of any works written advice must be obtained from the electricity supply authority, an approved telecommunications carrier and an approved gas carrier (where relevant) stating that satisfactory arrangements have been made to ensure provisions of adequate services.			
Dial Before You Dig Service						
B39.			Prior to the commencement of any excavation on or near the site, the Applicant must submit to the satisfaction of the Certifier written confirmation from NSW Dial Before You Dig Service that the proposed excavation will not conflict with any underground utility services or rail services.			
B40.			While building work is being carried out, a registered surveyor is to measure and mark the positions of the following and provide them to the Certifier —			
	a)		All footings/ foundations			
	b)		At other stages of construction – any marks that are required by the principal certifier.			
B41.			Prior to the commencement of works, the Applicant must submit to the satisfaction of the Certifier a Registered Surveyor's certificate detailing the setting out of the proposed building on the site, including the relationship of the set out building to property boundaries.			
No Obstruction of the Public Domain without Approval						
B42.			A Work Zone Permit must be sought and issued by the relevant roads authority to allow any obstructions of the public way, footpaths, road reserves and the like, by any mobile cranes, materials, vehicles, refuse, skips, loading and unloading or the like. Where supported by the relevant authority, the Work Zone Permit should be given for the shortest possible time, so as to not restrict movement or use of the public domain. Consideration should be given to issuing the permit for a specific time period(s) or specific works.			
Community Consultation Strategy						

B43.			Before the commencement of works, the Applicant must update the Community Communication Strategy (CCS) for the development to provide mechanisms to facilitate communication between the Applicant, the relevant Council and the community (including adjoining affected landowners and businesses, and others directly impacted by the development), during the construction of the development and for a minimum of 12 months following the completion of construction.			
B44.			The CCS for the development must:			
	a)		identify people to be consulted during the construction phases;			
	b)		set out procedures and mechanisms for the regular distribution of accessible information about or relevant to the development;			
	c)		provide for the formation of community-based forums, if required, that focus on key environmental management issues for the development;			
	d)		set out procedures and mechanisms: • through which the community can discuss or provide feedback to the Applicant; • through which the Applicant will respond to enquiries or feedback from the community; and • to resolve any issues and mediate any disputes that may arise in relation to construction and operation of the development, including disputes regarding rectification or compensation			
B45.			The updated CCS must be submitted to the Planning Secretary for approval no later than one month before the commencement of construction.			
B46.			Construction must not commence until the updated CCS has been approved by the Planning Secretary, or within another timeframe agreed with the Planning Secretary.			
B47.			The CCS, as approved by the Planning Secretary, must be implemented for a minimum of 12 months following the completion of construction.			
Demolition						
B48.			Demolition work must comply with Australian Standard AS 2601-2001 The demolition of structures (Standards Australia, 2001). The work plans required by AS 2601-2001 must be accompanied by a written statement from a suitably qualified person that the proposals contained in the work plan comply with the safety requirements of the Standard. The work plans and the statement of compliance must be submitted to the Certifier before the commencement of works			
Pre-construction Dilapidation Reports						
B49.			Prior to the commencement of any construction, the Applicant must submit to the satisfaction of the Certifier a Pre-Construction Dilapidation Report, prepared by a suitably qualified person.			

B50.			The Pre-Construction Dilapidation Report is to detail the current structural condition of all adjoining buildings, infrastructure and roads (including the public domain site frontages, the footpath, kerb and gutter, driveway NSW Government 15 The Cutaway Cultural Facility, Barangaroo Department of Planning and Environment (SSD 47498458) crossovers and laybacks, kerb ramps, road carriageway, street trees and plantings, parking restrictions and traffic signs, and all other existing infrastructure along the street) within the 'zone of influence'. Any entry into private land is subject to the consent of the owner of the land and any inspection of buildings on privately affected land must include details of the whole building where only part of the building may fall within the 'zone of influence'. A copy of the report is to be forwarded to each of the affected property owners.			
B51.			In the event that access for undertaking a Pre-Construction Dilapidation Report is denied by an adjoining owner, the Applicant must demonstrate, in writing, to the satisfaction of the Certifier that all reasonable steps have been taken to obtain access and advise the affected property owner of the reason for the report and that these steps have failed.			
B52.			Any damage to the public way including trees, footpaths, kerbs, gutters, road carriageway and the like must be made safe and functional by the Applicant to the satisfaction of the public authority responsible for the public way.			
B53.			Prior to a Certificate of Completion being issued for Public Domain Works or prior to occupation, whichever is the sooner, the damage must be fully rectified by the Applicant in accordance with:			
	a)		Council's standards for Council owned adjoining buildings, infrastructure and roads			
	b)		INSW's standards for INSW owned adjoining buildings, infrastructure and roads.			
Protection of Public Infrastructure and Street Trees						
B54.			Prior to the commencement of any works, the Applicant must:			
	a)		consult with the relevant owner and provider of services that are likely to be affected by the development to make suitable arrangements for access to, diversion, protection and support of the affected infrastructure			
	b)		prepare a dilapidation report identifying the condition of all public infrastructure in the vicinity of the site (including roads, gutters and footpaths) and submit a copy of the dilapidation report to the Certifier and Council			
	c)		ensure all street trees directly outside the site not approved for removal are retained and protected in accordance with the applicable Australian Standards.			
Construction Environmental Management Plan						

B55.			Prior to the commencement of any works, the Preliminary Construction Environmental Management Plan (CEMP) prepared by EY and dated 22 December 2022 must be updated, submitted to and approved by the Certifier. The CEMP must address, but not be limited to, the following matters where relevant:			
	a)		Details of:			
		i)	hours of work			
		ii)	24 hour contact details of the site manager			
		iii)	community consultation and complaint handling procedure			
		iv)	traffic management			
		v)	noise and vibration management, prepared by a suitably qualified person			
		vi)	management of dust and odour to protect the amenity of the neighbourhood (vii) stormwater control and discharge, including measures to ensure that sediment			
		vii)	stormwater control and discharge, including measures to ensure that sediment and other materials are not tracked onto the roadway by vehicles leaving the site			
		viii)	contamination management, including any unexpected contamination finds protocol			
		xi)	waste management			
		x)	external lighting in compliance with applicable Australian Standards			
		xi)	flora and fauna management.			
	b)		Construction Traffic and Pedestrian Management Sub-Plan			
	c)		Construction Noise and Vibration Management Sub-Plan			
	d)		Air Quality Management Sub-Plan			
	e)		Construction Waste Management Sub-Plan			
	f)		Construction Soil and Water Management Sub-Plan			
	g)		an unexpected finds protocol for contamination and associated communications procedure			
	h)		an unexpected finds protocol for Aboriginal and non-Aboriginal heritage and associated communications procedure			
	i)		waste classification (for materials to be removed) and validation (for materials to remain) to be undertaken to confirm the contamination status in these areas of the site.			
Construction Pedestrian and Traffic Management Plan						
B56.			Prior to commencement of any works, the Applicant must submit to the satisfaction of TfNSW a final detailed Construction Pedestrian and Traffic Management Plan (CPTMP), prepared by a suitably qualified person in consultation with TfNSW, Sydney Metro and PMNSW. The CPTMP must be endorsed by TfNSW and submitted to the Planning Secretary for information prior to the commencement of works. The CPTMP must address, but not be limited to, the following matters:			
	a)		a description of the development			
	b)		proposed construction program and construction methodology			
	c)		proposed construction hours			

	d)		a detailed plan of any proposed hoarding and/or scaffolding			
	e)		details of crane arrangements, including location of any crane(s)			
	f)		location(s) where it is proposed to park construction vehicles			
	g)		location of any proposed work zone(s)			
	h)		haulage routes			
	i)		predicted number of construction vehicle movements, detail of vehicle types and demonstrate that proposed construction vehicle movements can work within the context of road changes in the surrounding area, noting that construction vehicle movements are to be minimised during peak periods			
	j)		measures to avoid construction worker vehicle movements			
	k)		measures to ensure the arrival of construction vehicles to the site do not cause additional queueing on public roads			
	l)		pedestrian and traffic management measures			
	m)		details of construction vehicle routes and entry and exit to and from the site, including evidence of consultation with TfNSW and PMNSW on preferred construction routes and routing construction traffic and deliveries along Towns Place where possible to minimise exposure to residences			
	n)		details of roads that may be excluded from use by construction traffic i.e. roads with load limits, quiet residential streets or access/turn restricted streets			
	o)		details of the monitoring regime for maintaining the simultaneous operation of buses, light rail and construction vehicles on roads surrounding the site			
	p)		consultation strategy for liaison with surrounding stakeholders, including other developments under construction			
	q)		identify any potential impacts to general traffic, cyclists, pedestrians, bus services within the vicinity of the site from construction vehicles during the construction of the proposed works			
	r)		cumulative construction impacts of projects within Barangaroo. Existing CPTMPs for developments within or around the development site should be referenced in the CPTMP to ensure the coordination of work activities are managed to minimise impacts on the surrounding road network, and			
	s)		should any impacts be identified, the duration of the impacts and measures proposed to mitigate any associated general traffic, public transport, pedestrian and cyclist impacts should be clearly identified and must be enforced throughout the duration of works.			
B57.			The CPTMP approved under Condition B56 must be complied with during any works associated with this consent.			

B58.			Provide the builder's direct contact number to small businesses adjoining or impacted by the construction work and the Transport Management Centre and Transport for NSW (development.CTMP.CJP@transport.nsw.gov.au) to resolve issues relating to traffic, public transport, freight, servicing and pedestrian access during construction in real time. The Applicant is responsible for ensuring the builder's direct contact number is current during any stage of construction.			
Construction Noise and Vibration Management Sub-Plan						
B59.			Prior to the commencement of any works, a Construction Noise and Vibration Management Sub-Plan (CNVMP) must be prepared by a suitably qualified acoustic consultant and approved by the Certifier. The CNVMP must include but not be limited to the following:			
	a)		any recommendations made in the Noise and Vibration Impact Assessment prepared by ARUP and dated 26 January 2023 including specification of the actual equipment to be used during construction and updated estimates of the likely noise and vibration impacts;			
	b)		identification of the specific activities that will be carried out and associated noise sources at the site;			
	c)		identification of all potentially affected sensitive residential receiver locations;			
	d)		a representative background noise measurement (LA90, 15 minute) should be submitted, assessed in the vicinity of any potentially affected receiver locations and measured in accordance with AS 1055:1.2.1997			
	e)		the construction noise, ground-borne noise and vibration objectives derived from an application of the EPA Interim Construction Noise Guideline (ICNG), as reflected in conditions of approval;			
	f)		what plant and equipment is to be used on site and proposed number of high noise intrusive appliances intended to be operated onsite			
	g)		prediction and assessment of potential noise, ground-borne noise (as relevant) and vibration levels from the proposed construction methods expected at sensitive receiver premises against the objectives identified in the ICNG and conditions of approval;			
	h)		where objectives are predicted to be exceeded, an analysis of feasible and reasonable noise mitigation measures that can be implemented to reduce construction noise and vibration impacts;			
	i)		the required scheduling of activities and works having regard to the nearest sensitive receivers			
	j)		the preferred location of plant and equipment to behind structures to maximise shielding of receivers			
	k)		use and maintenance of the preferred equipment			
	l)		description of management methods and procedures, and specific noise mitigation treatments/measures that can be implemented to control noise and vibration during construction;			

	m)		where objectives cannot be met, additional measures including, but not necessarily limited to, the following must be implemented; reduce hours of construction, the provision of respite from noise/vibration intensive activities, acoustic barriers/enclosures, alternative excavation methods or other negotiated outcomes with the affected community;			
	n)		where night-time noise management levels cannot be satisfied, a report must be submitted to the Planning Secretary outlining the mitigation measures applied, the noise levels achieved and justification that the outcome is consistent with best practice;			
	o)		measures to identify non-conformances with the requirements of the Sub-Plan, and procedures to implement corrective and preventative action;			
	p)		suitable contractual arrangements to ensure that all site personnel, including sub-contractors, are required to adhere to the noise management provisions in the Sub-Plan;			
	q)		procedures for notifying residents of construction activities that are likely to affect their noise and vibration amenity;			
	r)		confirmation of the level of community consultation that has/is and will be undertaken with Building Managers/ occupiers of the main adjoining noise sensitive properties likely to be most affected by site works and the operation of plant/machinery particularly during the demolition and excavation phase			
	s)		measures to monitor noise performance			
	t)		measures to respond to complaints, including what course of action will be undertaken following receipt of a complaint concerning offensive noise;			
	u)		measures to reduce noise related impacts associated with offsite vehicle movements on nearby access and egress routes from the site;			
	v)		procedures to allow for regular professional acoustic input to construction activities and planning; and			
	w)		effective site induction, and ongoing training and awareness measures for personnel (e.g. toolbox talks, meetings etc).			
Air Quality Management Plan						
B60.			Prior to the commencement of any works, the Applicant must submit to the satisfaction of the Certifier an Air Quality Management Sub-Plan (AQMP) for the development. The Sub-Plan must include, as a minimum, the following elements:			
	a)		be prepared by a suitably qualified and experienced expert in accordance with the EPA's Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (the Approved Methods);			
	b)		relevant environmental criteria to be used in the day-to-day management of dust and volatile organic compounds (VOC/odour);			
	c)		mission statement;			
	d)		dust and VOCs/odour management strategies consisting of:			
		i)	objectives and targets;			

		ii)	risk assessment;			
		iii)	suppression improvement plan;			
		iv)	monitoring requirements including assigning responsibility (for all employees and contractors);			
		v)	communication strategy; and			
		vi)	system and performance review for continuous improvements.			
B61.			The AQMP must detail management practices to be implemented for all dust and VOC/odour sources at the site. The AQMP must also detail the dust, odour, VOC and semi-volatile organic compounds (SVOC) monitoring program (eg. frequency, duration and method of monitoring) to be undertaken for the project.			
B62.			The Applicant must also develop and implement an appropriate comprehensive Reactive Air Quality and Odour Management Plan which will incorporate an Ambient Air Monitoring Program and Reactive Management Strategy to ensure that the assessment criteria are met during the works.			
Construction Waste Management Sub-Plan						
B63.			Prior to the commencement of any works, the Applicant must submit to the satisfaction of the Certifier a final Construction Waste Management Sub-Plan (CWMP) for the development. The Sub-Plan must include, as a minimum, the following elements:			
	a)		require that all waste generated during the project is assessed, classified and managed in accordance with the EPA's "Waste Classification Guidelines Part 1: Classifying Waste";			
	b)		demonstrate that an appropriate area will be provided for the storage of bins and recycling containers and all waste and recyclable material generated by the works;			
	c)		procedures for minimising the movement of waste material around the site and double handling;			
	d)		waste (including concrete waste, rinse litter, debris or other matter) is not caused or permitted to enter any waterways;			
	e)		any vehicle used to transport waste or excavation spoil from the site is covered before leaving the premises;			
	f)		the wheels of any vehicle, trailer or mobilised plant leaving the site are cleaned of debris prior to leaving the premises;			
	g)		details in relation to the transport of waste material around the site (on-site) and from the site, including (at a minimum): • a traffic plan showing transport routes within the site; • a commitment to retain waste transport details for the life of the project to demonstrate compliance with the Protection of the Environment Operations Act 1997; and • the name and address of each licensed facility that will receive waste from the site (if appropriate)			
	h)		on-site general waste and co-mingled recycling waste bins are available for waste generated by workers and suitably located (e.g. break out areas)			

	i)		all waste generated by the development is treated and/or disposed of at a facility that has sufficient capacity to and may lawfully accept that waste.			
Construction Soil and Water Management Sub-Plan						
B64.			Prior to the commencement of any works, the Applicant must submit to the satisfaction of the Certifier a Construction Soil and Water Management Sub-Plan (CSWMP) which must be prepared by a suitably qualified expert and address, but not be limited to, the following:			
	a)		describe all erosion and sediment controls to be implemented during construction			
	b)		provide a plan of how all construction works will be managed in a wet-weather event (i.e. storage of equipment, stabilisation of the Site)			
	c)		detail all off-Site flows from the Site			
	d)		describe the measures that must be implemented to manage stormwater and flood flows for small and large sized events, including, but not limited to 1 in 1-year ARI, 1 in 5-year ARI and 1 in 100-year ARI.			
Landscaping Plans						
B65.			Prior to the commencement of construction, a detailed landscape design including plans and details drawn to scale and technical specification by a registered landscape architect is to be prepared in consultation with Council and PMNSW and approved by PMNSW. These documents must include:			
	a)		Location of existing and proposed planting on the site including existing and proposed trees, and planting in natural ground, on structure and in pots;			
	b)		Location and details of existing and proposed surface materials and structures on the site including, but not limited to, paved areas, infill pit lids, furniture, removable bollards, bike racks, light poles, signage, drainage, services, shade structures, other features, and all associated footings;			
	c)		Coordinated services plan including location and approximate depth of all existing and proposed pits, services (electricity, gas, sewer, potable water), proposed plaza drainage, sculptural tree, wall and fence footings, sign posts, lights and GPO if applicable;			
	d)		Detailed grading plan with existing and proposed levels, falls, and pits;			
	e)		Details of GRC cladding to walls including capping, GRC specification and samples to colour match sandstone;			
	f)		Interface details for landscape to skylights in Stargazer Lawn;			
	g)		Details of earthworks and soil depths including finished levels and any mounding. The minimum soil depths for planting on slab must be 1000mm for trees, 450mm for shrubs and 200mm for groundcovers, excluding mulch and drainage layers;			

	h)		Planting details, and location, numbers, type and supply size of plant species, with reference to Australian Standards and preference for drought resistant species that contribute to habitat creation and biodiversity;			
	i)		Landscape maintenance plan. This plan is to be complied with during occupation of the property; and			
	j)		Details of drainage, waterproofing and watering systems.			
Tree Protection Plan / Arborist Report						
B66.			Prior to the commencement of construction, the Applicant must submit to the satisfaction of the Certifier a detailed site-specific Tree Protection Plan (TPP) prepared by a qualitied Arborist (minimum AQF Level 5) and must identify all potentially impacted trees and appropriate protection measures. The TPP is to be prepared in accordance with the Australian Standards AS4970 'Protection of trees on development sites' and implemented throughout all construction and development works.			
Compliance with Acoustic Asessment						
B67.			Prior to the commencement of construction, the Applicant must submit evidence to the Certifier from a Suitably Qualified Acoustic Consultant which confirms that the design of the development has incorporated all performance parameters, requirements, engineering assumptions and recommendations contained in the Noise and Vibration Impact Assessment, prepared by ARUP, dated 26 January 2023.			
Construction Parking						
B68.			Prior to the commencement of any works, the Applicant must submit to the satisfaction of the Certifier evidence that sufficient off-street parking has been provided for heavy vehicles and for site personnel (where required), to ensure that construction traffic associated with the development does not utilise on-street parking or public parking facilities.			
Compliance						
B69.			Prior to the commencement of any works, the Applicant must ensure that all of its employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the conditions of this consent relevant to activities they carry out in respect of the development.			
Outdoor Lighting						
B70.			Prior to commencement of any lighting installation, evidence must be submitted to the satisfaction of the Certifier that all outdoor lighting within the site has been designed to comply with AS 1158.3.1:2005 Lighting for roads and public spaces – Pedestrian area (Category P) lighting – Performance and design requirements and AS 4282-2019 Control of the obtrusive effects of outdoor lighting.			
Public Liability Insurance						

B71.			Prior to the commencement of any earthwork or construction over, on or below Council land, the Applicant must submit to the satisfaction of the Certifier evidence of Public Liability Insurance, with a minimum liability of $10 million. A copy of the Insurance cover is to be provided to Council.			
Remediation - Unexpected Finds Protocol						
B72.			Prior to the commencement of any earthwork or remediation works, the Applicant must submit to the satisfaction of the Certifier an Unexpected Finds Protocol which has been reviewed and endorsed by an EPA accredited site auditor. The protocol must outline contingency measures and the procedures to be followed in the event unexpected finds of contaminated material are encountered during works.			
Barricade Permit						
B73.			Where construction/building works require the use of a public place including a road or footpath, approval under section 138 of the Roads Act 1993 for a Barricade Permit is to be obtained from the relevant authority prior to the commencement of work. Details of the barricade construction, area of enclosure and period of work are required to be submitted to the satisfaction of the relevant authority.			
Hoarding						
B74.			Prior to the commencement of works, the final design and masterplan for the construction hoarding is to be provided to PMNSW for review and endorsement.			
B75.			An application under section 138 of the Roads Act 1993 is to be made to the relevant road authority to erect a hoarding and/or scaffolding in a public road (if required) and such application is to include:			
	a)		architectural, construction and structural details of the design as well as any proposed artwork			
	b)		structural certification prepared and signed by an appropriately qualified practising structural engineer.			
B76.			Where an approval (Permit) is granted allowing the placement of temporary structures on or above a public road the structures must comply fully with the conditions of approval (Permit) granted including:			
	a)		maintaining a current and valid approval for the full duration that the temporary structure/s is in place;			
	b)		maintaining temporary structure/s in a structurally sound and stable condition for the full duration of installation (Clause 2.11.1);			
	c)		bill posters and graffiti being removed within 24 hours of their placement (Clause 2.11.2);			
	d)		maintaining temporary structures and the public place adjoining the work site in a clean and tidy condition including repainting and/or repair of graphics (Clauses 2.11.1, 2.11.4, 2.14.1 and 3.9.3);			

	e)		maintaining a watertight deck (Type B hoardings) to prevent liquids including rainwater, falling onto the footway/roadway surfaces (Clauses 3.9.1 and 3.9.4);			
	f)		approved site sheds on the decks of a Type B hoarding being fully screened from the public place (Clause 3.9.5);			
	g)		material and equipment not being placed or stored on the deck of Type B hoardings, unless specifically approved (Clause 3.9.4);			
	h)		providing and maintaining operational artificial lighting systems under Type B hoardings including at highbay truck entry points (Clause 3.9.9); and			
	i)		ensuring all required signage, artwork or historic images are provided and fully maintained (Clauses 3.4, 3.9.3, 3.9.6, 3.9.8, 3.10.1 and 4.2).			
B77.			If it is proposed to operate a hoisting device including a building maintenance unit above a public road which swings, hoists material/equipment and/or slews/wind vanes any part of the device over the public road, a separate application under Section 68 of the Local Government Act 1993 and Sections 138/139 of the Roads Act 1993 must be made to Council to obtain approval.			
			Note: 'Building maintenance unit' means a power-operated suspended platform and associated equipment on a building specifically designed to provide permanent access to the faces of the building for maintenance (Work Health and Safety Regulation 2017).			
Part C - During Construction						
Approved Plans to be On-Site						
C1.			A copy of the approved and certified plans, specifications and documents incorporating conditions of approval, modifications and certification must be kept on the Site at all times and must be readily available for perusal by any officer of the Department, PMNSW or the Certifier.			
Site Notice						
C2.			A site notice(s) must be erected in a prominent position on the site for the purposes of informing the public of project details including, but not limited to the details of the Builder, Certifier and Structural Engineer. The notice(s) is to satisfy all, but not be limited to, the following requirements:			
	a)		state the name, address and telephone number of the principal certifier for the work			
	b)		state the name of the principal contractor (if any), its address and 24-hour contact phone number for any inquiries, including construction/noise complaints			
	c)		state the approved hours of work			
	d)		state that unauthorised entry to the work site is prohibited			
	e)		the minimum dimensions of the notice are to measure 841 mm x 594 mm (A1) with any text on the notice to be a minimum of 30-point type size			
	f)		the notice is to be durable and weatherproof and is to be displayed throughout the works period			

	g)		the notice(s) is to be mounted at eye level on the perimeter hoardings/fencing.			
Contact Telephone Number						
C3.			The 24-hour contact telephone number must be continually attended by a person(s) with authority over the works for the duration of the development.			
Implementation of Management Plans / Compliance with Management Plans						
C4.			The Applicant must ensure the requirements and recommendations outlined in the following plans are complied with:			
	a)		Construction Environmental Management Plan and all appendices required by Condition B55			
	b)		Construction Pedestrian and Traffic Management Sub-Plan required by Condition B56			
	c)		Construction Noise and Vibration Management Sub-Plan required by Condition B59			
	d)		Air Quality Management Sub-Plan required by Condition B60			
	e)		Construction Waste Management Sub-Plan required by Condition B63			
	f)		Construction Soil and Water Management Sub-Plan required by Condition B64.			
Hours of Construction						
C5.			All work, including demolition, excavation and building work, and activities in the vicinity of the site generating noise associated with the commencement of work (e.g. loading and unloading of goods, transferring of tools, delivery of materials or machinery to and from the site), may only be carried out between the following hours:			
	a)		between 7am and 6pm, Mondays to Fridays inclusive; and			
	b)		between 8am and 5pm, Saturdays.			
C6.			No work may be carried out on Sundays or public holidays.			
C7.			Activities may be undertaken outside of these hours if required:			
	a)		by the Police or a public authority for the delivery of vehicles, plant or materials; or			
	b)		in an emergency to avoid the loss of life, damage to property or to prevent environmental harm.			
C8.			Notification of activities undertaken in the circumstances in Condition C7 must be given to affected residents before undertaking the activities or as soon as is practical afterwards.			
C9.			The operation of high noise emission appliances, plant and/or machinery such as pile drivers, rock breakers and hydraulic hammers and those which are not listed in Groups B, C, D, E and F of Schedule 1 of the City of Sydney Code of Practice for Construction Hours/Noise 1992 and Australian Standard 2436-2010 Guide to Noise Control on Construction, Maintenance and Demolition Sites and/or any other work generating high noise impact (i.e. work exceeding a NML of 75dB(A)) are restricted to the following hours:			
	a)		9am to 12pm, Monday to Friday;			
	b)		2pm to 5pm Monday to Friday; and			
	c)		9am to 12pm, Saturday.			

			Where these activities are undertaken for a continuous three-hour period and exceed the construction noise management levels at noise sensitive receivers, a minimum respite period of at least one hour must be scheduled before activities recommence. For the purposes of this condition, 'continuous' includes any period during which there is less than a one-hour respite between ceasing and recommencing any of the work the subject of this condition.			
Notification of Excavation Works or use of High Noise Emission Appliances / Plant						
C10.			The immediately adjoining neighbours must be given a minimum of 48 hours' notice that excavation, shoring or underpinning works or use of high noise emission appliances / plant are about to commence.			
Construction Noise Limits						
C11.			The development must be constructed to achieve the construction noise management levels detailed in the Interim Construction Noise Guideline (DECC, 2009). All feasible and reasonable noise mitigation measures must be implemented and any activities that could exceed the construction noise management levels must be identified and managed in accordance with the management and mitigation measures identified in the approved CNVMP.			
C12.			The Applicant must ensure construction vehicles (including concrete agitator trucks) do not arrive at the subject site or surrounding residential precincts outside of the construction hours of work outlined under this consent.			
C13.			The Applicant must implement, where practicable and without compromising the safety of construction staff or members of the public, audible movement alarms of a type that would minimise noise impacts on surrounding noise sensitive receivers.			
C14.			The Applicant must ensure that any work generating high noise impact (i.e. work exceeding a NML of LAeq 75dBA) as measured at any sensitive receiver is only undertaken in continuous blocks of no more than 3 hours, with at least a 1 hour respite between each block of work generating high noise impact, where the location of the work is likely to impact the same receivers. For the purposes of this condition 'continuous' includes any period during which there is less than 1 hour respite between ceasing and recommencing any of the work the subject of this condition.			
C15.			Any noise generated during construction of the development must not be offensive noise within the meaning of the Protection of the Environment Operations Act 1997 or exceed approved noise limits for the site.			
Vibration Criteria						
C16.			Vibration caused by works at any residence or structure outside the Site must be limited to:			

	a)		for structural damage, the latest version of DIN 4150-3 (1992-02) Structural vibration - Effects of vibration on structures (German Institute for Standardisation, 1999)			
	b)		for human exposure to vibration, the evaluation criteria set out in the Environmental Noise Management Assessing Vibration: a Technical Guideline (Department of Environment and Conservation, 2006) (as may be updated or replaced from time to time).			
C17.			Vibratory compactors must not be used within 30 metres of residential or heritage buildings unless vibration monitoring confirms compliance with the vibration criteria specified above. These limits apply unless otherwise outlined in the CNVMP required by under Condition B59 of this consent.			
Air Quality						
C18.			The Applicant must take all reasonable steps to minimise dust generated during all works authorised by this consent. During construction, the Applicant must ensure that:			
	a)		exposed surfaces and stockpiles are suppressed by regular watering;			
	b)		all trucks entering or leaving the site with loads have their loads covered;			
	c)		trucks associated with the development do not track dirt onto the public road network;			
	d)		public roads used by these trucks are kept clean; and			
	e)		land stabilisation works are carried out progressively on site to minimise exposed surfaces.			
Construction Lighting						
C19.			Any construction lighting must be designed to comply with AS 1158.3.1:2005 Lighting for roads and public spaces – Pedestrian area (Category P) lighting – Performance and design requirements and AS 4282-2019 Control of the obtrusive effects of outdoor lighting.			
C20.			Lighting of the site while any work is undertaken outside of Council's standard hours of construction must ensure that at no time must the intensity, hours of illumination or location of the lighting cause objectionable glare or injury to the amenity of the neighbourhood or Obtrusive Light in accordance with the definition in Australian Standard AS4282-1997 Control of the obtrusive effects of outdoor lighting. If in the opinion of Council, injury is likely to be caused, the intensity, hours of illumination and location of the lighting must be varied so that it does not cause injury to nearby residents			
SafeWork Requirements						
C21.			To protect the safety of work personnel and the public, the work site must be adequately secured to prevent access by unauthorised personnel, and work must be conducted at all times in accordance with relevant SafeWork requirements			
Tree Protection						
C22.			No street tree is to be trimmed or removed unless prior written approval from Council is obtained or is required in an emergency to avoid the loss of life or damage to property.			

C23.			All street trees must be protected at all times during construction. Any tree on the footpath, which is damaged or removed during construction due to an emergency, must be replaced, to the satisfaction of Council.			
Erosion and Sediment Control						
C24.			All erosion and sediment control measures must be effectively implemented and maintained at or above design capacity for the duration of the construction works and until such time as all ground disturbed by the works have been stabilised and rehabilitated so that it no longer acts as a source of sediment. Erosion and sediment control techniques, as a minimum, are to be in accordance with the publication Managing Urban Stormwater: Soils & Construction (4th edition, Landcom, 2004) commonly referred to as the 'Blue Book'.			
Cut and Fill						
C25.			While building work is being carried out, the Certifier must be satisfied all soil removed from or imported to the Site is managed in accordance with the following requirements:			
	a)		all excavated material removed from the site must be classified in accordance with the EPA's Waste Classification Guidelines before it is disposed of at an approved waste management facility and			
	b)		the classification and the volume of material removed must be reported to the Certifier.			
C26.			All fill material imported to the site must be Virgin Excavated Natural Material as defined in Schedule 1 of the Protection of the Environment Operations Act 1997 or a material identified as being subject to a resource recovery exemption by the EPA.			
Stockpiles						
C27.			All stockpiles of soil or other materials must:			
	a)		not be placed on footpaths or nature strips unless prior approval has been obtained from Council			
	b)		be placed away from drainage lines, gutters or stormwater pits or inlets.			
	c)		be covered if likely to generate dust or odours			
	d)		if contaminated, be stored in a secure area and be covered if remaining for more than 24 hours.			
Covering of Loads						
C28.			All vehicles involved in the excavation and / or demolition process and departing from the site with materials, spoil or loose matter must have their loads fully covered before entering the public roadway.			
Vehicle Cleansing						
C29.			Prior to the commencement of work, suitable measures are to be implemented to ensure that sediment and other materials are not tracked onto the roadway by vehicles leaving the Site. It is an offence to allow, permit or cause materials to pollute or be placed in a position from which they may pollute waters.			
Disposal of Seepage and Stormwater						

C30.			Any seepage or rainwater collected on-site during construction or groundwater must not be pumped to the street stormwater system unless separate prior approval is given in writing by the EPA in accordance with the Protection of the Environment Operations Act 1997. Options for the disposal of groundwater include disposal to sewer with prior approval from Sydney Water or off-site disposal by a liquid waste transporter for treatment/disposal to an appropriate waste treatment/processing facility.			
C31.			Adequate provisions must be made to collect and discharge stormwater drainage during construction of the development. Prior written approval of Council must be obtained to connect or discharge site stormwater to Council's stormwater drainage system or street gutter.			
C32.			A separate written approval from Council is required to be obtained in relation to any proposed discharge of groundwater into Council's drainage system external to the site, in accordance with the requirements of section 138 of the Roads Act 1993.			
Construction Traffic						
C33.			All construction vehicles are to be contained wholly within the Site, except if located in an approved on-street work zone, and vehicles must enter the Site before stopping.			
C34.			All loading and unloading associated with the works must be accommodated on-site, unless in accordance with a Work Zone Permit (see Condition B42).			
Road Occupancy Licence						
C35.			A Road Occupancy Licence must be obtained from the relevant transport authority for any works that impact on traffic flows during construction activities.			
No Obstruction of Public Way						
C36.			The public way must not be obstructed by any materials, vehicles, refuse skips or the like, under any circumstances. Non-compliance with this requirement may result in the issue of a notice by the Planning Secretary to stop all work on site.			
Damage to the Public Way						
C37.			Any damage to the public way including trees, footpaths, kerbs, gutters, road carriageway and the like must be made safe and functional by the Applicant to the satisfaction of the public authority responsible for the public way.			
Protection of Public Infrastructure						
C38.			Unless the Applicant and the applicable authority agree otherwise, the Applicant must:			
	a)		repair, or pay the full costs associated with repairing any public infrastructure that is damaged by the carrying out of the development; and			
	b)		relocate, or pay the full costs associated with relocating any infrastructure that needs to be relocated as a result of the development.			
Uncovering Relics or Aboriginal Objects						

C39.			All works in the immediate area must cease immediately if a relic or Aboriginal object is unexpectedly discovered. The Applicant must notify the Heritage Council of NSW and PMNSW in respect of a relic and notify the Planning Secretary, PMNSW and the Heritage Council of NSW in respect of an Aboriginal object. Building work may recommence at a time confirmed by either the Heritage Council of NSW or the Planning Secretary.			
C40.			In this condition: "relic" means any deposit, artefact, object or material evidence that:			
	a)		relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and			
	b)		is of State or local heritage significance; and			
C41.			"Aboriginal object" means any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction and includes Aboriginal remains.			
Notification - New Contamination Evidence						
C42.			The Planning Secretary must be notified of any new information which comes to light during remediation, demolition or construction works which has the potential to alter previous conclusions about site contamination.			
Asbestos and Hazardous Waste Removal						
C43.			The Applicant must ensure that any asbestos or hazardous waste encountered on site is monitored, handled, transported and disposed of by appropriately qualified and licensed contractors in accordance with the requirements of SafeWork NSW and relevant guidelines, including:			
	a)		Work Health and Safety Regulation 2017;			
	b)		SafeWork NSW Code of Practice – How to Manage and Control Asbestos in the Workplace September 2016;			
	c)		SafeWork NSW Code of Practice – How to Safely Remove Asbestos September 2016; and			
	d)		Protection of the Environment Operations (Waste) Regulation 2014.			
Contamination Evidence						
C44.			The Applicant must implement the Unexpected Finds Protocol outlined within the CEMP required by Condition B55 for the duration of works. Should any new information come to light during demolition which has the potential to alter previous conclusions about site contamination, the Planning Secretary must be immediately notified and works must cease. Works must not recommence on the site until the Planning Secretary confirms works can recommence.			
Independent Environmental Audit						
C45.			Independent Audits of the development must be conducted and carried out in accordance with the Independent Audit Post Approval Requirements.			
C46.			Proposed independent auditors must be agreed to in writing by the Planning Secretary prior to the commencement of an Independent Audit.			

C47.			The Planning Secretary may require the initial and subsequent Independent Audits to be undertaken at different times to those specified above, upon giving at least 4 weeks' notice (or timing) to the Applicant of the date upon which the audit must be commenced.			
C48.			In accordance with the specific requirements in the Independent Audit Post Approval Requirements, the Applicant must:			
	a)		review and respond to each Independent Audit Report prepared under this consent;			
	b)		submit the response to the Planning Secretary; and			
	c)		make each Independent Audit Report, and response to it, publicly available 60 days after submission to the Planning Secretary.			
C49.			Independent Audit Reports and the Applicant's response to audit findings must be submitted to the Planning Secretary within 2 months of undertaking the independent audit site inspection as outlined in the Independent Audit Post Approvals Requirements (2020) unless otherwise agreed by the Planning Secretary.			
C50.			Notwithstanding the requirements of the Independent Audit Post Approvals Requirements (2020), the Planning Secretary may approve a request for ongoing independent operational audits to be ceased, where it has been demonstrated to the Planning Secretary's satisfaction that independent operational audits have demonstrated operational compliance.			
Part D - Prior to Occupation or Commencement of Use						
Resolution of Harbour Control Tower Void						
D1.			The design resolution of the void area, in the location of the former Harbour Control Tower (approved under Condition A30) must be implemented prior to the occupation or commencement of use.			
Works-as-Executed Plans and any other Documentary Evidence						
D2.			Prior to the occupation or commencement of use, works-as-executed drawings signed by a registered surveyor demonstrating that the stormwater drainage and finished ground levels have been constructed as approved, must be submitted to the satisfaction of the Certifier.			
Notification of Occupation						
D3.			The Department must be notified in writing at least one month prior to the proposed occupation of the development.			
D4.			If the occupation or use of the development is to be staged, the Department must be notified in writing at least one month before the commencement of the occupation of each stage, of the date of commencement of the occupation of the relevant stage.			
External Walls and Cladding Flammability						

D5.			Prior to the occupation or commencement of use, evidence must be submitted to the Certifier demonstrating all external walls of the new building, including cladding, comply with the relevant requirements of the NCC, consistent with the requirements of this consent.			
D6.			The Applicant must provide a copy of the documentation to the Planning Secretary within seven days after the Certifier accepts it.			
Heritage Interpretation						
D7.			Prior to the occupation or commencement of use, the Applicant must provide evidence to the Certifier that heritage interpretation has been implemented in accordance with Condition B33.			
Operational Waste Management						
D8.			Prior to the occupation or commencement of use, PMNSW must prepare an Operational Waste Management Plan (OWMP) for the development in consultation with Council and endorsed by INSW. The OWMP must:			
	a)		be prepared in consultation with Council			
	b)		confirm the location of waste collection and establish appropriate routes to the collection point			
	c)		provide confirmation of the engagement of a qualified private waste collection contractor			
	d)		detail the type and quantity of waste to be generated during operation of the development			
	e)		describe the handling, storage and disposal of all waste streams generated on site, consistent with the Protection of the Environment Operations Act 1997, Protection of the Environment Operations (Waste) Regulation 2014 and the Waste Classification Guideline (EPA)			
	f)		detail the materials to be reused or recycled, either on or off site			
	g)		include the Management and Mitigation Measures included in the EIS.			
Waste Sttorage Area						
D9.			Prior to the occupation or commencement of use, evidence that waste storage areas associated with the development have been constructed in accordance with the detailed plans and specifications outlined in Condition B26 must be submitted to and approved by the Certifier.			
Survey Infrastructure - Restoration						
D10.			Prior to the occupation or commencement of use, documentary evidence of restoration must be prepared by a Registered Surveyor and submitted to and approved by the Surveyor-General. This evidence must include:			
	a)		Certification that all requirements requested under the Surveyor-General's Approval for Survey Mark Removal or by the City's Principal Surveyor under condition "Survey Infrastructure – Identification and Recovery" have been complied with;			

	b)		Certification that all requirements requested under any Surveyor-General's Approval for Deferment of Survey Marks from condition "Survey Infrastructure – Pre Subdivision Certificate works" have been complied with and;			
	c)		Time-stamped photographic records of all new survey infrastructure relating to the site clearly showing the mark itself and sufficient context to aid in identifying the mark on site.			
Protection of Public Infrastructure						
D11.			Unless the Applicant and the applicable authority agree otherwise, the Applicant must:			
	a)		repair/reconstruct, or pay the full costs associated with repairing/reconstructing, any public infrastructure that is damaged by carrying out the development;			
	b)		relocate, or pay the full costs associated with relocating any infrastructure that needs to be relocated as a result of the development.			
	c)		infrastructure includes, but is not limited to, ramps, footpaths, kerb and gutter, light poles, kerb inlet pits, service provider pits, street trees or any other infrastructure in the street footpath area.			
Mechanical Ventilation						
D12.			Prior to occupation or commencement of use, the Applicant must provide evidence to the satisfaction of the Certifier that the installation and performance of the mechanical ventilation systems complies with:			
	a)		any conditions of this consent			
	b)		the NCC			
	c)		any applicable Australian Standards			
	d)		any dispensation granted by Fire and Rescue NSW.			
Post-Construction Dilapidation Report						
D13.			Prior to the occupation or commencement of use, a suitably qualified engineer must prepare a post-construction dilapidation report, to the satisfaction of the Certifier, detailing whether:			
	a)		after comparing the pre-construction dilapidation report to the post-construction dilapidation report required under this condition, there has been any structural damage to any adjoining buildings, infrastructure or roads; and			
	b)		where there has been structural damage to any adjoining buildings, infrastructure or roads, that it is a result of the building work approved under this development consent; and			
	c)		relevant authorities have confirmed that there is no adverse structural damage to their infrastructure and roads.			
D14.			Prior to the occupation or commencement of use, the Certifier is to provide a copy of the post-construction dilapidation report to the consent authority and to the relevant adjoining property owner(s).			
Road Damage						

D15.			Prior to the occupation or commencement of the use, the cost of repairing any damage caused to Council or other public authority's assets in the vicinity of the site as a result of construction works associated with the approved development is to be paid in full by the Applicant.			
Fire Safety Certification						
D16.			Prior to the occupation or commencement of use, a Fire Safety Certificate must be obtained for all the relevant Essential Fire or Other Safety Measures forming part of the development. A copy of the Fire Safety Certificate must be submitted to the relevant authority and Certifier and be prominently displayed in the building.			
Structural Inspection Certificate						
D17.			Prior to the occupation or commencement of use, a Structural Inspection Certificate or a Compliance Certificate must be submitted to the satisfaction of the Certifier. A copy of the Certificate with an electronic set of final drawings must be submitted to the Planning Secretary after:			
	a)		the site has been periodically inspected and the Certifier is satisfied that the structural works is deemed to comply with the final design drawings; and			
	b)		the drawings listed on the Inspection Certificate have been checked with those listed on the final Design Certificate/s.			
Outdoor Lighting						
D18.			Prior to the occupation or commencement of use, the Applicant must submit evidence from a suitably qualified practitioner to the Certifier that demonstrates that installed lighting associated with the development achieves the objective of minimising light spillage to any adjoining or adjacent sensitive receivers and:			
	a)		complies with the latest version of AS 4282-2019 - Control of the obtrusive effects of outdoor lighting (Standards Australia, 1997); and			
	b)		has been mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network.			
Sydney Water Compliance						
D19.			Prior to the occupation or commencement of use, the Applicant must submit to the satisfaction of the Certifier a Section 73 Compliance Certificate under the Sydney Water Act 1994, obtained from Sydney Water Corporation.			
Utility Providers						
D20.			Prior to the occupation or commencement of use, the Applicant must ensure any adjustment or augmentation of any public utility services including gas, water, sewer, electricity, street lighting and telecommunications, required as a result of the development, is completed to the satisfaction of the relevant authority.			
D21.			Prior to the occupation or commencement of use, the Certifier must receive written confirmation from the relevant authority that the relevant services have been completed.			
Environmental Performance						

D22.			Prior to the occupation or commencement of use, the Applicant is to provide documentation to the Certifier demonstrating the development has incorporated, and would operate in accordance with, the environmental sustainability objectives, measures and initiatives required under this consent.			
Acoustic Verification Report						
D23.			Prior to the occupation or commencement of use, the Applicant must submit a written Acoustic Verification Report, prepared by a Suitably Qualified Acoustic Consultant, to the satisfaction of the Certifier that the noise mitigation recommendations in the report titled 'Barangaroo – Cutaway Cultural Facility Noise and Vibration Impact Assessment' prepared by ARUP and dated 26 January 2023 (as amended by conditions of this consent) have been incorporated into the design to ensure the development will not exceed the recommended operational noise levels. All physical aspects of the building's structure installed to meet the performance parameters must be maintained at all times.			
Operational Noise Management Plan						
D24.			Prior to the occupation or commencement of use, an Operational Noise Management Plan (ONMP) must be prepared in consultation with Council and approved by the Planning Secretary which includes, but is not limited to:			
	a)		Details of how the operational noise management measures recommended in the report titled 'Barangaroo – Cutaway Cultural Facility Noise and Vibration Impact Assessment' prepared by ARUP and dated 26 January 2023 (as amended by conditions of this consent) have been incorporated into the design			
	b)		Compliance with all other operational conditions of this consent, hours of operation, noise and security management			
	c)		Mitigation measures to manage operational noise impacts, including from events, bump in and out activities, use of the loading dock, and patrons entering and exiting the venue			
	d)		Provide a definitive list of streets for which residents and businesses whom occupy the adjacent land will be notified prior to any Major Event, New Years Event or Single Day Medium Event			
	e)		A community notification and complaints handling procedure.			
Transport Access Guide						
D25.			The Applicant must prepare a Transport Access Guide in consultation with TfNSW, implemented and maintained by the operators of the premises and be made available to staff, guests, clients, customers and visitors at all times. The following information must be submitted to the Certifier prior to the occupation or commencement of use: The Transport Access Guide is to include (but not be limited to) the following:			

	a)		information regarding lack of off-street car parking and passenger pick-up and set down areas at the development site;			
	b)		suitable nearby drop-off/pick-up locations;			
	c)		identify areas where drop-off/pick-up is prohibited and instruct visitors to avoid use of these areas; and			
	d)		suitable nearby Taxi Zones.			
Landascape Practical Completion Report						
D26.			Prior to the occupation or commencement of use, the Applicant must submit to the satisfaction of the Certifier a Landscape Practical Completion Report prepared by the consultant responsible for the landscape design plan. The Report is to verify that all landscape works have been carried out generally in accordance with the comprehensive landscape design plan and specifications that were required under Condition B65 and is to verify that an effective maintenance program has been commenced.			
Loading and Servicing Management Plan						
D27.			Prior to the occupation or commencement of use, the Applicant must submit to the satisfaction of the Certifier, a Loading and Servicing Management Plan prepared by a suitably qualified professional in consultation with TfNSW and PMNSW. The Plan needs to specify, but not be limited to, the following:			
	a)		details of the development's loading and servicing profile, including the forecast loading and servicing traffic volumes by vehicle size, frequency, time of day and duration of stay;			
	b)		details of measures to manage any potential traffic and safety impacts of the loading dock operation; and			
	c)		details of how vehicles larger than a 6.4m SRV delivering to the site must be managed.			
			The Loading and Servicing Management must be implemented by the Applicant following the issue of the Occupation Certificate.			
Events and Operations Management Plan						
D28.			Prior to the occupation or commencement of use, the draft Operational Management Plan must be updated by PMNSW in consultation with INSW and Council and approved by the Planning Secretary. The final Events and Operational Management Plan (EOMP) must include, but not be limited to:			
	a)		patron capacity and operational hours			
	b)		public access			
	c)		special events including bump in/bump out procedures and management			
	d)		event management including a description of the events to be held at the site, relevant patron capacities for each event, programming, activation principles and event layouts of internal spaces			
	e)		a clear strategy to coordinate community access and use of the forecourt with events within the Cutaway			
	f)		strategies for encouraging First Nations access and use of the site through the programming of the site			

	g)		strategies for providing First Nations employment opportunities (both direct and indirect)			
	h)		noise management including noise limits, noise monitoring, community consultation and complaints handling procedure			
	i)		security management including general security measures and event security			
	j)		emergency management and incident response			
	k)		management of food and alcohol			
	l)		work health and safety practices and considerations			
	m)		waste management including waste storage and event waste management			
	n)		transport and parking management, including for events			
	o)		sustainability, including a ventilation strategy to support mixed-mode ventilation			
	p)		stakeholder and community engagement procedure.			
Landscape Management Plan						
D29.			Prior to the occupation or commencement of use, the Applicant must prepare a Landscape Maintenance Plan in consultation with PMNSW and to the satisfaction of the Certifier.			
Additional Requirements on Plans - Sinks and Hand Wash Basins						
D30.			Prior to the commencement of operation, amended scale plans confirming the position of all sinks and hand wash basins within the food premises must be submitted to and approved by Council's Health and Building Unit. The location and accessibility of sinks and hand wash basins must comply with the requirements of AS4674 Design, Construction and Fit-out of Food Premises and Australia New Zealand Food Standards Code 3.2.3 – Food Premises and Equipment			
Toilets for Food Handlers						
D31.			Prior to the commencement of operation, details of the location of toilets which are provided exclusively for the use of food handlers and staff working at the business must be submitted to and approved by the Certifier. The Certifier must confirm that:			
	a)		toilets and associated facilities are provided in accordance with AS4674 – Design, Construction and Fit-out of Food Premises and the Australia New Zealand Food Standards Code, 3.2.3 - Food Premises and Equipment.			
	b)		the toilet(s) are provided with a hand wash basin, with hot and cold running water mixed through a common spout, hand wash soap, hygienic hand drying facilities and hands-free taps.			
Food premises - Detailed Plans						

D32.			Prior to the commencement of operation, detailed and scaled plans of all kitchen, bar, food preparation, waste and storage areas, food handler toilets and all areas associated with the food business must be prepared in accordance with the Australia New Zealand Food Standards Code – 3.2.3 – Food Premises and Equipment under the Food Act 2003 and AS 4674 - Design, Construction and Fit-out of Food Premises and approved by the Certifier.			
Part E - Occupation and Ongoing Use						
Patron Capacity						
E1.			The maximum number of persons (including staff, patrons and performers) permitted in the Cutaway premises at any one time is 2,995 persons. The manager/licensee is responsible for ensuring the number of persons in the premises does not exceed that specified above.			
E2.			A sign in letters not less than 25mm in height must be fixed at the main entry point to the premises alongside the Licensee's name stating the maximum number of persons, as specified in the development consent, that are permitted in the building. Details are to be provided to the satisfaction of the Certifier prior to issue of a Construction Certificate and the Principal Certifier is to confirm compliance prior to the issue of an Occupation Certificate.			
			Note: Clause 73 of the Environmental Planning and Assessment Regulation 2021 requires a sign specifying maximum number of persons permitted in the building to be displayed in a prominent position for the following types of premises:			
	a)		entertainment venue,			
	b)		function centre,			
	c)		pub,			
	d)		registered club,			
	e)		restaurant.			
Hours of Operation						
E3.			24-hour operation is allowed for overnight cleaning, kitchen operation and security. Noise impacts during 24-hour operations must comply with the Project Noise Trigger Levels based on the Noise Policy for Industry outlined in the Noise and Vibration Impact Assessment prepared by Arup and dated 26 January 2023.			
E4.			Events are permitted to operate for the following hours and in accordance with the noise criteria specified in Condition E5 to Condition E9:			
	a)		General events: 8am to 6pm, any day of the week			
	b)		5-hour Medium Scale Event: 10am to 11pm, up to a maximum of 15 times per year			
	c)		Single Day Medium Event: 10am to 10pm, up to a maximum of 6 times per year			
	d)		Major Events: 7am to 11pm, up to a maximum of 4 times per year			

	e)		New Years Events: 10am to 2am, once per year.			
General Events (Catergory 3)						
E5.			General events must operate in accordance with the following conditions:			
	a)		General events must occur between 8am and 6pm, any day of the week.			
	b)		The cumulative, broadband LAeq, 10 minute noise level emitted from entertainment, patrons and amplified noise associated with the use must not exceed the project noise trigger levels outlined in the Noise and Vibration Impact Assessment prepared by Arup and dated 26 January 2023 between the hours of 8am and 6pm when assessed at the boundary of any noise sensitive receivers identified in this report.			
5-Hour Duration Medium Scale Events (Catergory 4)						
E6.			5-Hour Duration Medium Scale Events must operate in accordance with the following conditions:			
	a)		5-Hour Duration Medium Scale Events must operate between 10am and 11pm, any day of the week, with a maximum of 5 hours overall event duration.			
	b)		There must be no more than 15 5-Hour Duration Medium Scale Events per calendar year.			
	c)		The cumulative, broadband LAeq, 10 minute noise level emitted from entertainment, patrons and amplified noise associated with the use must not exceed the following at the boundary of any noise sensitive commercial premise or residential premise:			
		i)	55 dB(A) during the hours of 10am to 10pm on any day. As a guideline to resolving low frequency noise issues, the LCeq, 10 minute must not exceed 65 dB(C) during these times.			
		ii)	50 dB(A) between the hours of 10pm and 11pm. As a guideline to resolving low frequency noise issues, the LCeq, 10 minute must not exceed 60 dB(C) during these times.			
Single Day Medium Scale Events (Catergory 2)						
E7.			Single Day Medium Scale Events must operate in accordance with the following conditions:			
	a)		Single Day Medium Scale Events must operate between 10am and 10pm, any day of the week.			
	b)		There must be no more than 6 Single Day Medium Scale Events per calendar year.			
	c)		The cumulative, broadband LAeq, 10 minute noise level emitted from entertainment, patrons and amplified noise associated with the use must not exceed the following at the boundary of any noise sensitive commercial premise or residential premise:			
		i)	55 dB(A) during the hours of 10am to 10pm on any day. As a guideline to resolving low frequency noise issues, the LCeq, 10 minute must not exceed 65 dB(C) during these times.			
		ii)	Amplified noise, music and other entertainment noise (excluding patron noise) is to be inaudible outside the above hours at all times.			
Major Event (Catergory 1)						

E8.			Major Events must operate in accordance with the following conditions:			
	a)		Major Events must operate between 7am and 11pm, any day of the week.			
	b)		There must be no more than 4 Major Events per calendar year.			
	c)		The cumulative, broadband LAeq, 10 minute noise level emitted from entertainment, patrons and amplified noise associated with the use must not exceed the following at the boundary of any noise sensitive commercial premise or residential premise:			
		i)	65 dB(A) during the hours of 10am to 10pm on any day. As a guideline to resolving low frequency noise issues, the LCeq, 10 minute must not exceed 75 dB(C) during these times.			
		ii)	55 dB(A) during the hours of 7am to 10am and 10pm to 11pm. As a guideline to resolving low frequency noise issues, the LCeq, 10 minute must not exceed 65 dB(C) during these times.			
		iii)	Amplified noise, music and other entertainment noise (excluding patron noise) is to be inaudible outside the above hours at all times.			
New Years Events (Catergory 1)						
E9.			New Years Events must operate in accordance with the following conditions:			
	a)		New Years Events must operate between 7am to midnight, on the last day of the year, and midnight to 2am on the first day of the year.			
	b)		There must be no more than one New Years Event per calendar year.			
	c)		The cumulative, broadband LAeq, 10 minute noise level emitted from entertainment, patrons and amplified noise associated with the use must not exceed the following at the boundary of any noise sensitive commercial premise or residential premise:			
		i)	65 dB(A) during the hours of 10am and midnight on New Years Eve. As a guideline to resolving low frequency noise issues, the LCeq, 10 minute must not exceed 75 dB(C) during these times.			
		ii)	55 dB(A) during the hours of midnight and 2am on new Years Day. As a guideline to resolving low frequency noise issues, the LCeq, 10 minute must not exceed 65 dB(C) during these times.			
		iii)	Amplified noise, music and other entertainment noise (excluding patron noise) is to be inaudible outside the above hours at all times.			
Loading Dock / Bump in and out Activities						
E10.			Heavy and medium vehicle movements associated with the loading dock must only be undertaken between 7am and 10pm.			
E11.			Deliveries are restricted to between 7am and 10pm.			

E12.			Notwithstanding Condition E10 and Condition E11, time critical bump in and bump out activities may be undertaken for events up to a maximum of four times per calendar year between 10pm and 7am. All work associated with bump in and bump out activities must comply with the noise limits prescribed by the City of Sydney Code of Practice for Construction Hours/Noise 1992 and methodologies and be in accordance with the Australian Standard 2436 – 2010 Guide to Noise Control on Construction, Maintenance and Demolition Sites. This noise criteria is applicable at any residential or commercial premise.			
All Events to be planned and approved by PMNSW, a Register of Details kept and Notifications are to occur.						
E13.			All event operations held at the Cutaway premise must be planned and organised and operated in consultation with and to the satisfaction of PMNSW.			
E14.			Prior to, during the occurrence of, and after any event being held at the Cutaway, PMNSW must ensure the following is carried out:			
	a)		An accurate and documented hard copy record of events are kept and available for review by any person during normal business hours at the PMNSW offices. The record is to include the following at a minimum:			
		i)	The Event type (i.e. general event, major event, medium event)			
		ii)	The details of the organisation or individual who held the event, including a contact person			
		iii)	The date the event is/was scheduled and held			
		iv)	An overview of the activities the planned event will encapsulate.			
	b)		In addition to the above, PMNSW is to establish and maintain the following on its website:			
		i)	An overview of planned events to be held in the next three calendar months. Planned Major Events, New Years Events and Single Day Medium Events are to be marked with an asterisk (*) referencing potential audible noise off-site and referring the reader to the events hotline.			
		ii)	An overview of planned events held in the calendar year to date.			
PMNSW to Establish Record of Complaints						
E15.			PMNSW is to establish a written record of complaints which is to be kept for the duration of this consent. The following details of all complaints received in relation to the operation of or bump-in and bump-out of any event are to be kept:			
		i)	The complainants name, address and a return phone number (where provided),			
		ii)	The nature of the complaint e.g. music, noise, noise from patrons, noise from setup, crowds of people blocking the road etc			
		iii)	The results of an investigation conducted into the complaint, inclusive of whom actioned the			

		iv)	An overview of any information conveyed to the complainant in discussion following an investigation into their complaint.			
Complaints Handling						
E16.			The Applicant must operate a noise complaint handling procedure for the operation of the site in accordance with the approved Operational Noise Management Plan (Condition D24). The Applicant must provide a bi-annual (six monthly) register of complaints received by the public to the Department. The register shall detail the date the complaint was received and the actions taken to address the source of the complaint. Should a noise complaint be received by PMNSW and/or the Department that is substantiated, the use of the site for events must cease until the noise emissions from the use can comply with the noise criteria outlined in this consent.			
E17.			Prior to any planned Major Events or New Years Events, the Applicant must notify and consult with neighbouring noise sensitive receivers in accordance with Condition D24.			
E18.			The Applicant is responsible for investigating and reacting to any complaints made during events.			
Noise Monitoring and Reporting						
E19.			Prior to any Major Event, New Years Event or Single Day Medium Scale Event being held with an amplified noise aspect (excluding public announcement systems used for crowd announcements), the Applicant must appoint a Suitably Qualified Acoustic Consultant. The Acoustic Consultant must:			
a)			Review and familiarise themselves with:			
		i)	the 'Barangaroo – Cutaway Cultural Facility Noise and Vibration Impact Assessment' prepared by ARUP and dated 26 January 2023			
		ii)	the Operational Noise Management Plan prepared in accordance with Condition D24			
		iii)	the proposed event and surrounding environment.			
b)			Provide advice as to the setup of the proposed event for the purpose of minimising noise impact			
c)			Undertake appropriate attended noise monitoring on the day of the event and verify that the noise emanating from the event, at the nearest residential boundary, does not exceed the noise criteria established in this consent.			
d)			If necessary, make recommendations to ensure that the noise emanating from the premises complies with the noise criteria established in this consent			
e)			Additionally, the Suitably Qualified Acoustic Consultant, the site operator and the proprietor of the planned event must:			
		i)	Ensure that the planned event complies with the noise criteria			

		ii)	The site operator and the proprietor of the planned event must follow all instructions given by the Suitably Qualified Acoustic Consultant in relation to noise control			
		iii)	Adequately staff the event to ensure compliance with (i) and (ii) above			
		iv)	Respond to any complaints in accordance with the complaints handling procedure developed as part of Condition D24			
		v)	Report on the event to the site operator.			
	f)		Prepare an Acoustic Report detailing the results of acoustic monitoring during the event which must be submitted to PMNSW within 7 days after the event.			
	g)		If the Acoustic Consultant recommends that additional treatment or works be undertaken to satisfy part (d) above, those recommendations must be implemented to the Acoustic Consultant's satisfaction within one (1) month of the date of the Acoustic Consultant's report.			
			If the Acoustic Consultant's recommendations are not implemented in accordance with this condition, no Major Events, New Years Events or Single Day Medium Scale Events may occur until such time as the recommendations are implemented and verified. N			
Noise - Commercial Plant / IndustriaL Development						
E20.			Noise from commercial plant must not exceed a project amenity/intrusiveness noise level or maximum noise level in accordance with relevant requirements of the NSW EPA Noise Policy for Industry 2017 (NPfI). Further:			
	a)		background noise monitoring must be carried out in accordance with the long-term methodology in Fact Sheet B of the NPfI			
	b)		commercial plant is limited to heating, ventilation, air conditioning, refrigeration and energy generation equipment.			
E21.			An LAeq,15 minute (noise level) emitted from the commercial plant associated with the development must not exceed the LA90, 15 minute (background noise level) by more than 3dB when assessed inside any habitable room of any affected residence or noise sensitive commercial premises at any time. Further:			
	a)		the noise level and the background noise level must both be measured with all external doors and windows of the affected residence closed.			
	b)		background noise measurements must not include noise from the development but may include noise from necessary ventilation at the affected premise.			
			Note: Corrections in Fact Sheet C of the NPfI are applicable to relevant noise from the development measured in accordance with this condition, however duration corrections are excluded from commercial noise.			
No Speakers or Music outside						

E22.			Speakers and/or noise amplification equipment must not be installed and music must not be played in any of the outdoor areas associated with the premises. Speakers located within the premises must not be placed so as to direct the playing of music towards the outdoor areas associated with the premises.			
Noise from Glass Removal						
E23.			Glass must not be emptied or transferred from one receptacle to another anywhere in a public place. All glass must be emptied / transferred inside of the building on the premises and removed in containers.			
Implementation od Operational Management Plans						
E24.			The following operational management plans (and any updates to those plans) must be implemented and adhered to at all times by the Applicant following the occupation or commencement of use:			
	a)		Operational Waste Management Plan (Condition D8)			
	b)		Operational Noise Management Plan (Condition D24)			
	c)		Green Travel Plan (Condition B34)			
	d)		Loading and Servicing Management Plan (Condition D27)			
	e)		Events and Operations Management Plan (Condition D28)			
	f)		Landscape Maintenance Plan (Condition D29).			
E25.			The use must always be operated and managed in accordance with the approved final Events and Operations Management Plan (Condition D28). In the event of any inconsistency, the conditions of this consent prevail over the Operational Management Plan.			
Annual Fire Safety Statement						
E26.			During occupation and ongoing use of the building(s), the Applicant must provide an annual fire safety statement to Council and the Commissioner of Fire and Rescue NSW in accordance with Environmental Planning and Assessment (Development Certification and Fire Safety) Regulation 2021.			
Fire Safety Certification						
E27.			The development must operate in accordance with the Fire Safety Certificate obtained in accordance with Condition D16.			
Maintenance of Wastewaterand Stromwater Treatment Device						
E28.			During occupation and ongoing use of the building, the Applicant must ensure all wastewater and stormwater treatment devices (including drainage systems, sumps and traps, and on-site detention) are regularly maintained, to remain effective and in accordance with any positive covenant (if applicable).			
Storage and Handling of Waste						
E29.			All waste management and waste collection services must be undertaken in accordance with this consent and the requirements of the Operational Waste Management Plan approved under Condition D8.			
E30.			The collection of waste and recycling must only occur between 7:00am and 8:00pm weekdays and 9:00am and 5:00pm weekends and public holidays, to avoid noise disruption to the surrounding area.			

E31.			Prior to the occupation or commencement of use, whichever is earlier, the building owner must ensure that there is a contract with a licensed contractor for the removal of all waste. Waste is to be stored and collected from within the curtilage of the site at all times.			
E32.			Waste storage and the collection of waste and recycling must only occur during the designated zone collection times as outlined in the City's Waste Policy – Local Approvals Policy for Managing Waste in Public Places 2017.			
E33.			Waste and recycling bins must not be placed on the street for collection. Services must be conducted within the property boundary or as a wheel-out/wheel-back service.			
E34.			Waste must not be placed for collection in a public place e.g. footpaths, roadways and reserves under any circumstances.			
E35.			Unimpeded access must be provided for collection vehicles to set down within 10 metres of waste storage areas during zone collection times on collection days			
E36.			Adequate provisions are to be made within the premises for the storage, collection and disposal of waste and recyclable materials, to the satisfaction of Council.			
E37.			Trade/commercial waste materials must not be disposed via council's domestic garbage service. All trade/commercial waste materials must be collected by Council's Trade Waste Service or a waste contractor authorised by the Waste Service of New South Wales and details of the proposed waste collection and disposal service are to be submitted to the satisfaction of Council prior to commencing operation of the business.			
Loading and Servicing Management						
E38.			All loading and unloading operations associated with the site must be carried out in accordance with the Loading and Servicing Management Plan approved under Condition D27, and:			
	a)		within the confines of the site, at all times and must not obstruct other properties or the public way; and			
	b)		in a manner so as not to cause inconvenience to the public or detrimentally impact the amenity of the locality			
E39.			The service vehicle docks, car parking spaces and driveways must be kept clear of goods at all times and must not be used for storage purposes, including waste storage.			
Environmental Amenity nd Environmental Health						
E40.			External lighting to the premises must be designed and located to minimise light-spill beyond the property boundary or cause a public nuisance. Notwithstanding this consent, should any outdoor lighting result in any residual impacts on the amenity of surrounding sensitive receivers, the Applicant must provide mitigation measures in consultation with affected landowners to reduce the impacts to an acceptable level.			
E41.			The use and operation of the premises must not give rise to an environmental health or public nuisance.			

E42.			There are to be no emissions or discharges from the premises which give rise to a public nuisance or result in an offence under the Protection of the Environment Operations Act 1997 and Regulations.			
E43.			Signs must be placed in clearly visible positions within the premises requesting patrons upon leaving the premises to do so quickly and quietly, having regard to maintaining the amenity of the area. The signage must be in bold letters not less than 25mm in height on a contrasting background.			
E44.			The management/licensee must ensure that the behaviour of patrons entering and leaving the premises does not detrimentally affect the amenity of the neighbourhood.			
Operation of Plant and Equipment						
E45.			All plant and equipment used in the development, or used to monitor the performance of the development must be:			
	a)		maintained in a proper and efficient condition; and			
	b)		operated in a proper and efficient manner.			
Community Communication Strategy						
E46.			The CCS, as approved by the Planning Secretary, must be implemented for a minimum of 12 months following the completion of construction.			
Ecologically Sustainable Development						
E47.			Unless otherwise agreed by the Planning Secretary, within 18 months of commencement of operation, Green Star certification must be obtained demonstrating the development operating in accordance with this consent achieves the minimum ESD sustainability targets in accordance with Condition B18. Evidence of the certification must be provided to the Certifier and the Planning Secretary.			
Green Travel Plan						
E48.			The Green Travel Plan and Transport Access Guide approved in accordance with Condition B34 and Condition D25 must be implemented following occupation of the development and must be displayed throughout the site. The plans are to be reviewed and updated annually.			
External Lighting						
E49.			All outdoor lighting must operate in compliance with AS 1158.3.1-2005 Pedestrian Area (Category P) Lighting and AS 4282: 1997 Control of the Obtrusive Effectives of Outdoor Lighting.			
Odour Requirements						
E50.			The use of the premises must not give rise to the emission of gases, vapours, dusts or other impurities which are a nuisance, injurious or prejudicial to health.			
E51.			Gaseous emissions from the development must comply with the requirements of the Protection of the Environment Operations Act, 1997 and Regulations. Uses that produce airborne particulate matter must incorporate a dust collection system.			
Treatment of Runoff						

E52.			Any run-off from, either from stormwater or irrigation systems, must be captured and treated on-site to ensure that chemical products are not discharged to the stormwater network.			
Parking and Drop-off Review						
E53.			Parking (including accessible parking), drop-off and traffic needs of the development must be reviewed within 12 months and three years of occupation.			
Public Way to be Unobstructed						
E54.			The public way must not be obstructed by any materials, vehicles, refuse, skips or the like under any circumstances.			
Incidents - Recording and Notification						
E55.			The manager/licensee must ensure that all incidents involving staff members (including security personnel) are recorded in the incident register maintained on site, including incidents involving physical contact between staff and patrons, physical restraint of patrons and/or the ejection of patrons from the premises.			
Copies of Consent and Management Plans						
E56.			A full and current copy of all current development consents for the operation of the licensed premises, and the Operational Management Plan (Condition D28) must be kept on-site and made available to Police or Special Investigator upon request.			
Surveillance Cameras						
E57.			CCTV surveillance cameras must be strategically installed, operated and maintained throughout the premises with particular coverage to:			
	a)		principal entrance/s and exits;			
	b)		all areas within the premise occupied by the public (excluding toilets);			
	c)		staircases in multilevel premises; and			
	d)		the area within a 10m radius external to the public entrance(s) to the premise.			
E58.			Suitable and clearly visible signage must be displayed at the principal entrance(s) to the premise and in a prominent position on each floor accessible to the public, in lettering not less than 50mm in height with the words "Closed Circuit Television in use on these premises".			
E59.			All CCTV recording equipment and cameras must be of high grade digital quality capable of establishing the population and identification of patrons, offenders and incidents within the depth of field view of the cameras. In this NSW Government 36 The Cutaway Cultural Facility, Barangaroo Department of Planning and Environment (SSD 47498458) respect each surveillance camera must be capable of recording a minimum rate of 10 frames per second and at high resolution.			

E60.			CCTV recording discs or hard drive recordings must be retained for 28 days before being re-used, destroyed or deleted. Time and date must be auto recorded on the disc or hard drive. The CCTV recording equipment must be capable of reproducing a CD, DVD, USB or other appropriate digital copy of recorded footage on demand of PMNSW or Police Officers either immediately or within 12 hours of the request being made. Stored digital copies of CCTV recordings must be handed to Council, Police Officer or Special Inspectors as required.			
E61.			All CCTV recording devices and cameras must be checked daily to ensure the equipment is operating correctly. The Licensee must record this daily checking activity in the security/incident register book that meets the standards required by the Licensing Police and PMNSW. If it is discovered at any time that the equipment is not in full operating order all reasonable steps must be taken to repair the system as soon as practicable. Where the system will not be functioning in full operating order for a period of longer than 24 hours the manager/licensee is to notify the relevant Local Area Commander of the NSW Police.			
E62.			All CCTV recording devices and cameras must be operated at all times when the premises are open to the public and, where premises do not operate 24 hours a day, continuously for at least 1 hour prior to opening and closing times of the premises.			
E63.			The CCTV recording device must be secured within the premises and only be accessible to senior management personnel so as to maintain the integrity of the recorded footage. When the premises is operating there must be at least one staff member present at the premises who is authorised to access the CCTV system and able to immediately review recordings and produce copies.			
E64.			Camera views are not to be obstructed by temporary or permanent structures, signage or other impediments.			
Ventilation - Minor Works						
E65.			The premises must be ventilated in accordance with the Building Code of Australia and AS1668.1-1998 and AS1668.2-1991.			
General Site Requirements						
E66.			Access for emergency vehicles shall be provided to and within the site area at all times for the duration of the event, including bump in and bump out periods.			

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36. APPENDIX F - Construction Waste Management Plan – C1

Construction Waste Management Plan

Project Details	
Project Name:	Barangaroo Cutaway
Project Number:	200290
Project Location:	1 Merriman Street, Barangaroo NSW
Client:	Infrastructure NSW
Commencement date:	April 2024
Estimated completion date:	July 2025
Name of principal contractor:	**FDC Construction (NSW) Pty Limited**
Company address:	22-24 Junction St, Forest Lodge NSW 2037
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1 SCOPE

A Waste Management Plan (WMP) is to be submitted with all development applications for new and change-of-use developments that will generate construction, demolition, and operational waste.

This WMP applies only to the **construction** and **demolition** phases of the proposed development. The requirements outlined in this WMP must be implemented on site during construction and demolition and may be subject to review upon any change to the design. Construction and demolition waste management requirements will also be subject to review as part of the Construction Management Plan.

The waste management for the **operational** phase of the development is not addressed in this report. An operational WMP will need to be provided separately.

2 REVISION REFERENCE

Revision	Date	Prepared by	Reviewed by	Description
A	18/03/2024	R.Jayaratnam	J.Parker	Draft
B	28/03/2024	R.Jayaratnam	J.Parker	Final
C1	26/4/2024	H.Palmer	P.Colak	Updated to construction
C2	09/01/2025	H.Palmer	P.Colak	Update from Environmental Audit

3 CONTENTS

Acknowledgement of Country

This project is being undertaken on **Eora Land**.

FDC are proud to acknowledge the Traditional Custodians of the land on which this project is located, and their connections to land, sea and community. We pay our respects to their elders past and present and extend that respect to all Aboriginal and Torres Strait Islander people and all Aboriginal and Torres Strait Islander workers on this project.

FDC Commitment

"FDC are committed to a reconciled, just and equitable Australia"
(FDC Reconciliation Action Plan)
By these acknowledgements and other actions, FDC will continue to do all we can to contribute to improving the lives and communities of our First Nations People.

1 INTRODUCTION

1.1 Background

EFC has been tasked to prepare the following waste management plan for FDC Construction for the management of construction waste generated by the Cutaway Facility development located at 29-51 Hickson Road, Barangaroo.

As summarised in the table 1 below, this report has also been prepared to address the SSDA Consent requirements for - SSD47498458 – The Cutaway.

Table 1 SSDA requirements

Item	Description of Requirement	Report Reference
B63	require that all waste generated during the project is assessed, classified and managed in accordance with the EPA's "Waste Classification Guidelines Part 1: Classifying Waste";	Section 4.6
B63	demonstrate that an appropriate area will be provided for the storage of bins and recycling containers and all waste and recyclable material generated by the works;	Section 4.10
B63	Procedure for minimizing the movement of waste material around the site and double handling	Section 4.5
B63	waste (including concrete waste, rinse litter, debris or other matter) is not caused or permitted to enter any waterways;	Section 4.8
B63	Address the City of Sydney Guidelines for Waste Management in New Developments 2018	Section 1.3
B63	any vehicle used to transport waste or excavation spoil from the site is covered before leaving the premises;	Section 4.9
B63	the wheels of any vehicle, trailer or mobilised plant leaving the site are cleaned of debris prior to leaving the premises;	Section 4.9
B63	details in relation to the transport of waste material around the site (on-site) and from the site, including (at a minimum): • a traffic plan showing transport routes within the site; • a commitment to retain waste transport details for the life of the project to demonstrate compliance with the Protection of the Environment Operations Act 1997; and • the name and address of each licensed facility that will receive waste from the site (if appropriate).	Section 4.8 Appendix A Section 2.2

B63	on-site general waste and co-mingled recycling waste bins are available for waste generated by workers and suitably located (e.g. break out areas)	Section 4.8
B63	all waste generated by the development is treated and/or disposed of at a facility that has sufficient capacity to and may lawfully accept that waste.	Section 4.6
Section 6.3 preliminaries	Monitor and record the volumes of waste and the methods and locations of disposal. Submit a progress report no later than the fifth (5th) Business Day of every second month and a summary report before Completion of the Works, addressing the checklist factors/ questions in tables 1 to 5 in Section 3 Management of waste on construction and demolition projects of the EPA 'Construction and demolition waste'	Section 2.2

Waste management strategies and auditing are a requirement on construction sites to promote strong sustainability outcomes. It is EFC's belief that a successful waste management strategy contains three key objectives:

i. ***Promote responsible source separation*** to reduce the amount of waste that goes to landfill, by implementing convenient and efficient waste management systems.

ii. ***Ensure adequate waste provisions and robust procedures*** that will cater for potential changes during the operational phase of thedevelopment.

iii. ***Comply*** with all relevant Australian Standards, council codes, policies, and guidelines.

1.2 Site Summary

The site is located at Central Barangaroo, within the broader Barangaroo Precinct. The Barangaroo precinct comprises a total land holding of approximately 22ha and is located on the north-western edge of the Sydney CBD within the City of Sydney Local Government Area (LGA). Barangaroo runs north-south between Hickson Road and the western foreshore of Sydney Harbour, connecting the north-west edge of the city's business centre with the historic and cultural precincts of Millers Point and Walsh Bay.

The Central Barangaroo site comprises approximately 5.2 hectares of land within the Barangaroo Precinct. The site forms an irregular shaped land parcel in between Barangaroo South and Barangaroo Reserve.

The location of the site in the surrounding context is illustrated in Figure 1.

The proposal is for the development of a cultural facility which compromises of the following:

- Internal alterations and fit-out of the existing Cutaway Space over three levels to accommodate event and gallery spaces, back of house areas, amenities, commercial kitchen, offices and ancillary retail and café.
- Enclosure of existing roof openings/voids
- New façade and entry treatment from the forecourt adjacent to the Nawi Cove, including new landscaping and ancillary retail and café.

All figures and calculations are based on area schedules as advised by our client and shown on architectural drawings.

Figure 1: Site Plan

1.3 Legislation and Guidance

Information provided in this WMP comes from a wide range of construction and demolition waste management guidance at the local, state, and federal levels. The primary sources of guidance include:

- Sydney Development Control Plan 2012
- Australian Government, Department of Sustainability, Environment, Water, Population and Communities. *Construction and Demolition Waste Guide – Recycling and Re-use Across the Supply Chain*. (2014, November).
- NSW Waste Avoidance and Resource Recovery (WARR) Strategy 2014-2021
- NSW Waste Classification Guidelines 2014
- Australia's National Waste Policy 2018
- City of Sydney Guidelines for Waste Management in New Developments 2018

1.4 Waste Diversion Targets

To quantify and measure this sustainable approach to waste management, the NSW WARR Strategy 2014-2021 outlines specific targets in order to clarify the state's long-term goals and priorities. These targets were supported by industry, community, state, and local governments during the Strategy's consultation phase, and include:

- Increasing construction and demolition recycling rates to 80%
- Increasing waste diverted from landfill to 75%
- Reducing litter by40%
- Reduce illegal dumping incidents by 30%

1.5 Report Objectives

Throughout this report, EFC aims to encourage where practical, having regard to the design, the nature of the material to be demolished and the site constraints, the following waste management practices for the duration of the demolition and construction stages of the development:

- Re-use of excavated material on-site and disposal of any excess to an approved site;
- Green waste mulched and re-used on-site as appropriate, or recycled off-site;
- Bricks, tiles and concrete re-used on-site as appropriate, or recycled off-site;

- Plasterboard waste returned to supplier for recycling;
- Framing timber re-used on site or recycled off-site;
- Windows, doors and joinery recycled off-site;
- All asbestos, hazardous and/or intractable wastes are to be disposed of in accordance with WorkCover Authority and EPA requirements;
- Plumbing, fittings and metal elements recycled off site;
- Ordering accurate quantities of materials and prefabrication of materials where possible;
- Re-use of formwork;
- Careful source separation of off-cuts to facilitate re-use, resale or recycling.

1.6 Limitations

This report has been prepared by EFC for the sole purpose of providing a Construction Waste Management Plan (C&D WMP) to support a development application. The report is provided with the following limitations:

- This report is for the sole use of FDC Construction Pty Ltd (including their officers, employees and advisers) and should not be used or relied upon by any other party without prior written consent from EFC;
- Drawings, estimates and information contained in this report have been prepared by analysing information, plans and documents supplied by the client, or nominated third parties. Any assumptions based on the information contained in the report are outside the control of EFC;
- The calculations presented in the report are estimates only. The amount of waste generated will be dependent on the approach taken by site management, including the levels of training and education offered to site staff and the actions and attitudes of staff themselves.
- The site manager will make adjustments as required based on actual waste volumes (e.g. if waste volumes are greater than estimated, then waste storage capacity and collection frequencies will increase accordingly) and increase the amount of waste storage and collection frequency accordingly;
- The report has been prepared with all due care and attention; however, no assurance or representation is made that the WMP reflects the actual outcome. EFC will not be liable to for any plans or outcomes that are not suitable for purpose, whether as a result of incorrect or unsuitable information or otherwise;
- EFC offer no warranty or representation of accuracy or reliability of the WMP unless specifically stated;
- Examples of equipment provided in this report should be reviewed by the appropriate equipment supplier who will assess the correct equipment for supply. Reference to any other business or product besides EFC and EFC equipment is for information purposes only and is not officially endorsed or recommended by EFC.

2 GENERAL WASTE MANAGEMENT PROVISIONS

2.1 Stakeholder Roles and Responsibilities

All stakeholders have a responsibility for their own environmental performance and compliance with all legislation.

FDC Construction pty ltd will be responsible for implementing this WMP, although site staff have a responsibility to always ensure their own compliance. Where possible, an Environmental Management Representative (EMR) should also be appointed for the project to help ensure compliance. The following table demonstrates the primary roles and responsibilities of the respective stakeholders:

Table 2: Stakeholder Roles and Responsibilities

Roles	Responsibilities

Construction Site Management	• Organise waste collections as required; • Organise replacement or maintenance requirements for bins; • Investigate and ensure prompt clean-up of illegally dumped waste materials; • Notify the Principal Certifying Authority (Council) of the appointment of waste removal, transport or disposal contractors for waste tracking purposes; • Ensure waste related equipment is well maintained; • Ensue accurate calculations so only the required amount of materials are ordered; • Ensure segregation of materials to maximise reuse and recycling; • Check waste sorting and storage areas routinely for cleanliness, hygiene, contamination and OH&S issues; • Ensure all monitoring and audit results are well documented and are carried out as specified in the WMP; • Ensure effective signage, communication and education is provided to site staff/contractors; • Provide staff/contractors with equipment manuals, training, health and safety procedures, risk assessments, and PPE to control hazards associated with all waste management activities; • Assess any manual handling risks and prepare a manual handling control plan for waste and bin transfers;
Site Staff/Contractors	• Ensure adequate separation and disposal of waste streams in compliance with the WMP; • Abide by all relevant OH&S legislation, regulations, and guidelines; • Attend training and inductions as required; • Clean and transport bins as required; • Carry out daily visual inspections of waste storage areas; • Organise, maintain and clean the waste storage areas;
Environmental Management Representative (EMR)	• Approach and establish the local commercial reuse of materials where reuse on-site is not practical; • Establish separate skips and recycling bins for effective waste segregation and recycling purposes; • Ensure staff and contractors are aware of site requirements; • Provision of training of the requirements of the WMP and specific waste management strategies adopted for the development; • Contaminated waste management and approval of off-site waste transport, disposal locations and check licensing requirements; • Arrange assessment of suspicious potentially contaminated materials, hazardous materials and liquid waste; • Monitor, inspect and report requirements.
Waste Collection Contractors	• Provide a reliable and appropriate waste collection service; • Provide feedback to site management regarding contamination of waste streams; • Work with site management to customise waste systems where possible.

2.2 Monitoring and Reporting

FDC Constructions endeavor to improve demolition and construction waste management in future projects by provide more reliable waste generation figures:

- Compare projected waste quantities with actual waste quantities produced.

- Conduct waste audits of current projects (where feasible).
- Note waste generated and disposal methods.
- Look at past waste disposal receipts.
- Record this information to help in waste estimations for future waste management plans.

Records of waste volumes recycled, reused or contractor removed are to be maintained. Additionally, dockets/receipts verifying recycling/disposal in accordance with the WMP must be kept and presented to Council or the EPA if and when required.

During the project FDC construction will monitor and record the volumes of waste and the methods and locations of disposal, Each month FDC Constructions will submit - a progress report no later than the fifth (5th) Business Day of every month and a summary report before Completion of the Works, addressing the checklist factors/ questions in tables 1 to 5 in Section 3 Management of waste on construction and demolition projects of the EPA 'Construction and demolition waste' with each summary report will be the waste disposal certificates and/or company certification confirming appropriate, lawful disposal of waste.

Each monthly report will be achieved to retain waste transport details for the life of the project to demonstrate compliance with the Protection of the Environment Operations Act 1997; and

Including the name and address of each licensed facility that will receive waste from the site (if appropriate). See appendix A

Daily visual inspections of waste storage areas will be undertaken by site personnel and inspection checklists/logs recorded for reporting to the Site Manager on a weekly basis or as required. These inspections will be used to identify and rectify any resource and waste management issues.

All environmental incidents are to be dealt with promptly to minimise potential impacts. An incident register must be maintained on-site at all times and should include the contact details of the 24-hour EPA Pollution line. Likely incidents to occur during the construction and demolition stage of the development may involve fuel or chemical spills, seepage or mishandling of hazardous waste, or unlicensed discharge of pollutants to environment.

2.3 Opportunities for Reuse and Recycling

There are many opportunities to reduce the volume of waste generated during demolition and construction. Adaptive reuse of building materials should be encouraged, with significant consideration given to methods of reusing or recycling materials onsite as well as sourcing used or recycled materials from elsewhere to be used on site.

The site should facilitate where practical reuse and recycling by 'deconstruction', whereby various materials are carefully dismantled and sorted. Any unwanted reusable materials can be taken to a second-hand building centre, reducing waste disposal costs.

Materials that are individually wrapped should also be avoided where possible, with preference given for materials that can be delivered in returnable packaging such as timber pallets.

The table below gives examples of potential reuse and recycling options for the materials likely to be used/generated in construction and demolition at this development:

Table 3: Potential Reuse/Recycling Options for Construction Materials

Material	Reuse/Recycling Potential
Asphalt	Hot in-place recycling or reprocessed into Reclaimed Asphalt Pavement (RAP).
Bricks	Cleaned and/or rendered for reuse, crushed for fill, sold or provided to a recycled materials yard
Cardboard Packaging	Recycled at a paper/cardboard recycling facility
Carpet	Cleaned and reused for the same purpose, reused in landscaping or garages/sheds, recycled at an appropriate processing facility
Concrete, Masonry, Spoil	Reused on-site as fill, levelling or crushed for road base
Doors, Windows, Fittings	Reused in new or existing buildings or sent to second-hand supplier
Glass	Recycled at a glass recycling facility, aggregate for concrete production, crushed for termite barrier, reused as glazing
Green Waste (Organics)	Mulched, composted for reuse, trees chipped for use in landscaping or removed carefully and reused onsite or sold
Hardwood Beams	Reused as floorboards, fencing, furniture or sent to second-hand timber supplier

Insulation Material	Reprocessed to remove impurities and reused for the same purpose or as off-cuts, compressed for ceiling tile manufacture
Metal, Steel/Copper Pipe	Recycled at a metal recycling facility, melted into secondary materials for structural steel, roofing, piping etc. copper sold for re-use
Other Timber	Reused in formwork, ground into mulch for garden or sent to second-hand timber supplier
Plasterboard	Crushed for reuse in manufacture of new plasterboard, returned to supplier or used in landscaping
Plastics	Reused as secondary materials for playgrounds, park benches etc.
Roof Tiles	Cleaned and reused, crushed for reuse for landscaping and driveways or sold or provided to a recycled materials yard
Soil	Stockpiled onsite for reuse as fill
Synthetic & Recycled Rubber	Reused for the same purpose or reprocessed for use in manufacture/construction of safety barriers, speed humps
Topsoil	Stockpiled onsite for reuse in landscaped areas

2.4 Management of Hazardous Waste Materials

For the purpose of this report, hazardous waste materials include any waste that poses a hazard or potential harm to human health or the environment, particularly asbestos waste and asbestos containing material (ACM). The general advice provided in this report is superseded by any specific hazardous materials or remediation control plans prepared for the project.

During the construction phase of the development, there must be a commitment to engage qualified and certified contractors to remove all contaminated/hazardous materials (e.g. asbestos) and dispose of all contaminated/hazardous waste at an appropriately licenced facility, where applicable.

In the event that any contaminated or hazardous materials are unexpectedly uncovered during demolition or excavation works, the Site Manager is to stop work immediately in that location and contact the relevant hazardous waste contractor prior to further works being undertaken in the area.

The following general mitigation measures will apply:

- Contaminated material stockpiled on site will be minimised as far as possible and should be stored on HDPE liner, in a bunded location which is protected from inclement weather;
- Sediment fences should be installed around the base of stockpiles and the stockpiles should be covered. Where excavated material requires validations, samples should be taken for NATA laboratory testing as per the requirements of the contamination assessment prior to restoration works, backfilling exercises and disposal;
- Any trucks carrying contaminated materials should be securely and completely covered immediately after loading the materials (to prevent windblown emissions and spillage) and must be licensed by the NSW Environmental Protection Authority (EPA);
- Decontamination of all equipment prior to demobilisation from the site is important so that contaminated materials are not spread off-site.

2.5 Management of Excavation Waste

For the purpose of this report, excavation waste consists of any unwanted material generated from excavation activities such as a reduced level dig, site preparation and levelling and the excavation of foundations, basements, tunnels and service trenches. This will typically consist of soil and rock. The general advice provided in this report is superseded by any specific hazardous materials or remediation control plans prepared for the project.

All excavated material generated on this site may be re-used in the landscaping or used on other sites as fill material, provided no contamination is present. If sandstone is found to be present, this may be sold or incorporated into the building design.

The following measures and safeguards will apply to the development for excavated material:

- Wherever practical, excavation material will be reused as part of the development;
- Excavation material that is not natural (virgin) material will be transported to an approved landfill site or off-site recycling depot;
- A waste classification assessment of the fill material should be undertaken prior to it being acceptable for waste disposal purposes;
- Transportation routes for excavation material removed from site will be identified and used.

3 SITE SPECIFIC WASTE MANAGEMENT PROVISIONS

3.1 CONSTRUCTION WASTE VOLUMES AND MANAGEMENT

Waste generated during the construction stage of the development will be managed by the principal contractor and sub-contractors, with materials being reused and recycled wherever possible. Where neither reuse nor recycling are possible, waste will be disposed of as general waste at a licensed landfill site.

Recyclable material generated during construction will largely consist of off-cuts and discarded bricks, timber, steel, concrete, tiles, plasterboard, and piping, as well as packaging materials.

It is important to note that source separation of waste on-site may offer cost savings when compared to the disposal of mixed waste at landfill sites. Further cost savings may be achieved through the use of reusable and recycled-content materials and by reusing materials salvaged from the demolition stage of the development.

The table below illustrates the anticipated volumes of materials generated at this development during the construction stage. Volumes have been advised by our client.

Table 4: Construction Waste Conversion

Material	Volume (m3)	*Tonnes (t)	**Approx. Percentage Recovered
Excavation Material	0	0	99.8%
Green waste	0	0	80%
Bricks	4.3	5.2	100%
Tiles	1.3	1.3	100%
Concrete	11.8	17.6	100%
Timber	3.3	0.6	33%
Plasterboard	37.4	7.5	50%
Metals	106.0	53.0	100%
Other waste	0	0.0	50%
Totals	**164.1**	**85.2**	

**The conversion of materials from volume to tonnes is based on the information provided in a consultation paper published by WA Department of Water and Environmental Regulation <https://www.der.wa.gov.au/images/documents/our-work/consultation/current-consultation/Consultation%20Sheet%20-Approved%20method%20for%20recyclers.pdf>*

***The percentage of recycled waste is estimated by BINGO, and is based on the average quantities of materials received and recovered at their facilities.*

The table below illustrates how the construction materials will be managed, and estimates percentage of materials diverted from landfill.

Table 5: Construction Waste Management

			How Waste will be Managed			
Type of Material	**Less than 10m³**	**Estimated Tonnage**	**Reuse On-Site**	**Recycle**	**Landfill**	**Estimated Tonnage of Material Diverted from Landfill**
Excavation Material	☐	0	☐	☐	☐	0
Green Waste	☐	0	☐	☐	☐	0

Bricks	☒	5.2	☒	☒	☐	5.2
Tiles	☒	1.3	☒	☒	☐	1.3
Concrete	☐	17.6	☒	☒	☐	17.6
Timber	☒	0.6	☒	☒	☒	0.2
Plasterboard	☐	7.5	☒	☒	☒	3.7
Metals	☐	53.0	☒	☒	☐	53.0
Other	☐	0.0	☐	☐	☐	0.0
	Total	**85.2**		**Total**		**81.0**
Total Diversion of Waste from Landfill (Minimum 80%)						**95.1%**

3.2 Recycling Directory

Construction and demolition materials removed from site will need to be managed in accordance with the provisions of current legislation and may include segregation by material type classification in accordance with NSW EPA (2014) *Waste Classification Guidelines, Part 1: Classifying Waste* and disposal at facilities appropriately licensed to receive the particular materials.

Please find the below recommendations for recycling drop off locations for all materials likely to be generated at this development. Only the nearest locations are provided. See www.businessrecycling.com.au for additional locations:

Table 6: Recycling Directory

	Business Name	Suburb	Distance (km)
Excavation Material	Bingo Recycling Centre	Artarmon	5.7
	Cleanaway Ryde Resource Recovery Centre	North Ryde	10.3
	Bingo Recycling Centre	Banksmeadow	10.9
Green Waste	Bingo Recycling Centre	Alexandria	5.7
	Bingo Recycling Centre	Artarmon	5.7
	Banksmeadow Recycling	Banksmeadow	10.9
Bricks	Bingo Recycling Centre	Alexandria	5.7
	Bingo Recycling Centre	Artarmon	5.7
	Metropolitan Demolition and Recycling	St Peters	6.9
Tiles	Bingo Recycling Centre	Artarmon	5.7
	Metropolitan Demolition and Recycling	St Peters	6.9
	Cleanaway Ryde Resource Recovery Centre	North Ryde	10.3
Concrete	Bingo Recycling Centre	Alexandria	5.7
	Metropolitan Demolition and Recycling	St Peters	6.9

	Cleanaway Ryde Resource Recovery Centre	North Ryde	10.3
Timber	Ironwood Australia	Rozelle	3.1
	Bingo Recycling Centre	Alexandria	5.7
	Bingo Recycling Centre	Artarmon	5.7
Plasterboard	Bingo Recycling Centre	Artarmon	5.7
	Banksmeadow Recycling	Banksmeadow	10.9
	Bingo Recycling Centre	Greenacre	13.1
Metals	Cleanaway Artarmon Resource Recovery Centre	Artarmon	4.9
	Australian Metal Co. Pty Ltd	Alexandria	5
	Bingo Recycling Centre	Artarmon	5.7

4 Site-Specific Operational Measures

4.1 Training/Site Inductions

All staff employed during the demolition and construction stages of the development must undertake site-specific induction training regarding the procedures for waste management. Employees of the head contractor will undertake a specific induction outlining their duties and how they are to enforce the waste management procedures.

Induction training will include the following at a minimum:

- Legal obligations;
- Emergency response procedures on site;
- Waste storage locations and separation of waste;
- Litter management in transit and on site;
- The implications of poor waste management practices;
- Correct use of general-purpose spill kits;
- Responsibility and reporting (including identification of personnel responsible for waste management and individual responsibilities).

4.2 Materials Selection and Ordering

- Selection of all materials will be undertaken by architectural designers;
- Prefabrication of materials off-site where possible;
- Materials requirements are to be accurately calculated to minimise waste from over- ordering;
- Materials ordering process is to aim at minimisation of materials packaging;
- Material Safety Data Sheets (MSDS) are to accompany all materials delivered to site, where required, to ensure that safe handling and storage procedures are implemented.

4.3 Waste Avoidance Opportunities

- Limiting unnecessary excavation;
- Selection of construction materials taking into consideration to their long lifespan and potential for reuse;
- Ordering materials to size and ordering pre-cut and prefabricated materials;
- Reuse of formwork;
- Planned work staging;
- Use of naturally ventilating buildings to reduce ductwork;
- Reducing packaging waste on-site by returning packaging to suppliers where possible, purchasing in bulk and requesting cardboard or metal drums rather than plastics;
- Requesting metal straps rather than shrink wrap and using returnable packaging such as pallets and reels;
- Reduction of PVC use;
- Use of low VOC (volatile organic compounds) paints, floor coverings and adhesives;
- Use of fittings and furnishings that have been recycled or incorporate recycled materials;
- Use of building materials, fittings and furnishings with consideration to their longevity, adaptation, disassembly, reuse and recycling potential.

4.4 Site Procedures

- Excavated materials will be used onsite where practical;
- Green waste will be mulched and reused in landscaping either onsite or offsite;
- Concrete, tiles and bricks will be reused or recycled offsite;
- Steel will be recycled offsite; all other metals will be recycled where economically viable;
- Framing timber will be reused on-site or recycled off-site;

- Windows, doors and joinery will be recycled off-site where possible;
- Plumbing, fittings and joinery will be recycled off-site where possible;
- Plasterboard will be re-used in landscaping on-site or returned to the supplier for recycling where possible;
- All used crates will be stored for reuse unless damaged;
- All glass that can be economically recycling will be;
- All solid waste timber, brick, concrete, rock, plasterboard and other materials that cannot be reused or recycled will be taken to an appropriate facility for treatment to recover further resources or for disposal to landfill in an approved manner;
- All asbestos, hazardous and/or intractable wastes are to be disposed of in accordance with WorkCover Authority and EPA requirements;
- Provision for the collection of batteries, fluorescent tubes, smoke detectors and other recyclable resources will be provided on site;
- Beverage container recycling will be provided on-site for employee use;
- All waste and recycling will be disposed of via council approved systems.

4.5 Location and Design of Waste Management Facilities

General Requirements

All waste management facilities onsite should:

- Be conveniently located to enable easy access for on-site movement and collection;
- Be incorporated with other loading/unloading facilities;
- Have sufficient space for the quantity of waste generated and careful source separation of recyclablematerials;
- Have sufficient space to contain any on-site treatment facilities, such as compaction equipment;
- Have adequate weather protection and, where required, be enclosed or undercover;
- Be secure andlockable;
- Be well-ventilated and drained to the sewer;
- Be clearly sign-marked to ensure appropriate use.

4.6 Waste and RecyclingReceptacles

Enough skip bins should be provided for the separate storage of each type of C&Dmaterialgeneratedonsite.Thiswill assist maximising source separation and resource recovery, while reducing the costs and quantity of materials disposed of at landfill.

The size of the receptacles should be appropriate to the nature of waste generated and the available storage area. In general, the following options would be acceptable:

Source: Aussie Bins

FDC Construction will adopt a traditional waste management strategy, whereby waste is deposited into comingled skip bins to be sorted offsite classified and managed in accordance with the EPA's "Waste Classification Guidelines Part 1: Classifying Waste";, a single skip bin would be considered sufficient for purpose. However, if the site is to pursue source separation, dedicated skips for the following materials are recommended:

- Concrete;
- Bricks;
- Scrap metal;
- General waste.

Separate receptacles for the safe disposal of hazardous waste types (i.e. light bulbs, batteries, etc) will also be provided where applicable. Where possible, additional bins will be provided in common areas for the collection of commingled recyclables such as beverage containers (glass, plastic, aluminum), paper products, recyclables food containers, etc. Specialised bins for cigarette butts should also be provided. Within the site amenities co-mingle receptacles will be used to manage recyclable wastes.

4.7 Safety and Signage

- The following safety measures should be considered for the waste storage area:

  - Location should not interfere with sight lines of drivers entering or leaving the site;
  - Skip bins should be clearly visible and located in well-lit areas;
  - Safe paths of travel should be designated using reflective tape, barriers and cones;
  - Skip bins must be secured and must not be over-filled to reduce risk of injury through bins moving and falling objects.

Standard signage will be installed in all waste areas, with all skip bins colour coded and labelled appropriately on all sides to allow clear identification of the type of waste to be deposited into eachbin.

Refer to the EPA's website for standard construction waste and recycling signs:

www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm

4.8 Space and Site Requirements

The waste storage area will be located adjacent to the loading dock entrance to the site to enable access and allow sufficient space for the required skip bins and servicing requirements. Thestorage area will also be flexible to cater for change of use throughout demolition and construction works.

Where space is restricted, dedicated stockpile areas will be allocated onsite, with regular transfers to the dedicated skip bins for sorting and collections.

The position of the designated waste holding area onsite may change according to building works and the progression of the development. Access, visual amenity and WHS will always be integral to the selection of waste storage area locations. Any stockpile locations will take into account slope and drainage factors to avoid contamination of stormwater drains during rain events.

When Rubbish bins are being removed around site the bins will be covered using tarp or the bin lids on the 660LT bins when tipping the site bins into the Main rubbish bins a wet down procedure will be adopted.

Within the Lunchroom and Site office general waste and co-mingled recycling waste bins are available for waste generated by workers these bins will be removed form site using commercial waste procedures.

4.9 Servicing and Transport

The frequency of waste removal from site will be determined by the volume of materials deposited into the dedicated skip bins. Skip bins will be monitored on a daily basis by the Site Manager to ensure they do not overflow. If skip bins are reaching capacity, removal and replacement should be organised for within 24 hours.

All Trucks and skip bins leaving the site will be covered with a suitable tarpaulin to reduce spillage of waste while in transit.

wheels of any vehicle, trailer or mobilised plant leaving the site are cleaned of debris prior to leaving the premise once vehicle is cleaned a electric ride on Floor scrubber is to be used to clean up mess from cleaning all dirty water to be discarded In the site wash box.

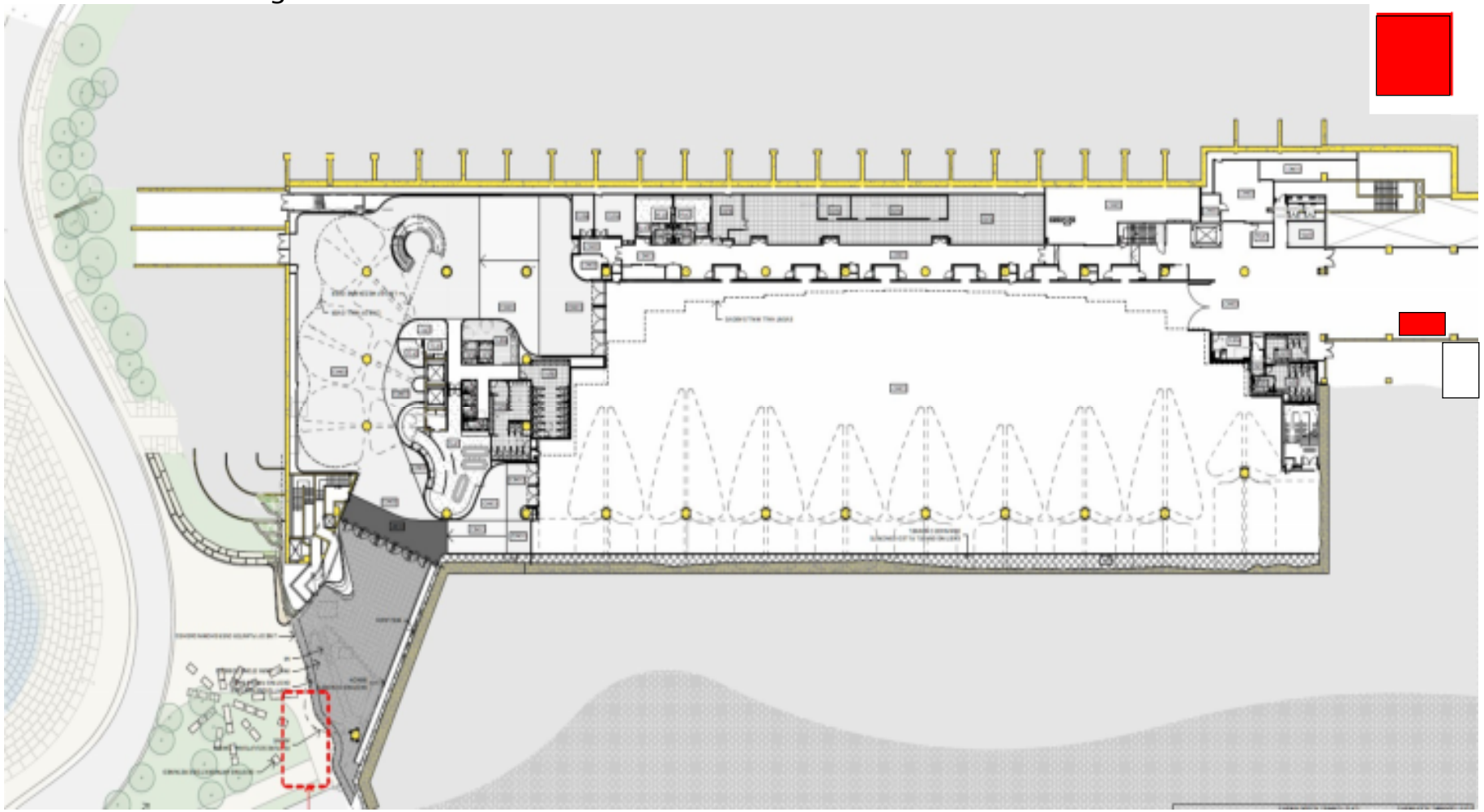
All waste collection for construction works will be conducted between approved hours as per Council requirements (typically between 7am and 7pm Monday to Friday, and between 7am and 1pm on Saturdays). All waste generated on site will be transported to an approved and appropriately licensed resource recovery facility and/or landfill site.

4.1 Site Plans

Existing Structures

Note: the proposed bin location is indicative only, this may change based on site logistics.
Source: Google Maps

4.10 Site Waste Storage



Note: the proposed bin location is indicative only, this may change based on site logistics.

5 Appendix A – Bingo Waste EPA Management License

Environment Protection Licence

Licence - 20121

Licence Details	
Number:	20121
Anniversary Date:	08-June

Licensee

DIAL-A-DUMP (EC) PTY LTD

PO BOX 7535

SILVERWATER NSW 2128

Premises

EASTERN CREEK RECYCLING ECOLOGY PARK

HONEYCOMB DRIVE

EASTERN CREEK NSW 2766

Scheduled Activity

Composting

Resource recovery

Waste storage

Fee Based Activity	Scale
Composting	> 5000-50000 T annual capacity to receive organics
Recovery of general waste	Any general waste recovered
Waste storage - other types of waste	Any other types of waste stored

Contact Us

NSW EPA

6 Parramatta Square

10 Darcy Street

PARRAMATTA NSW 2150

Phone: 131 555

Email: info@epa.nsw.gov.au

Locked Bag 5022

PARRAMATTA NSW 2124

Environment Protection Licence

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Licence - 20121

Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Environment Protection Licence

The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

DIAL-A-DUMP (EC) PTY LTD
PO BOX 7535
SILVERWATER NSW 2128

subject to the conditions which follow.

Environment Protection Licence

Licence - 20121

1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Composting	Composting	> 5000 - 50000 T annual capacity to receive organics
Resource recovery	Recovery of general waste	Any general waste recovered
Waste storage	Waste storage - other types of waste	Any other types of waste stored

A2 Premises or plant to which this licence applies

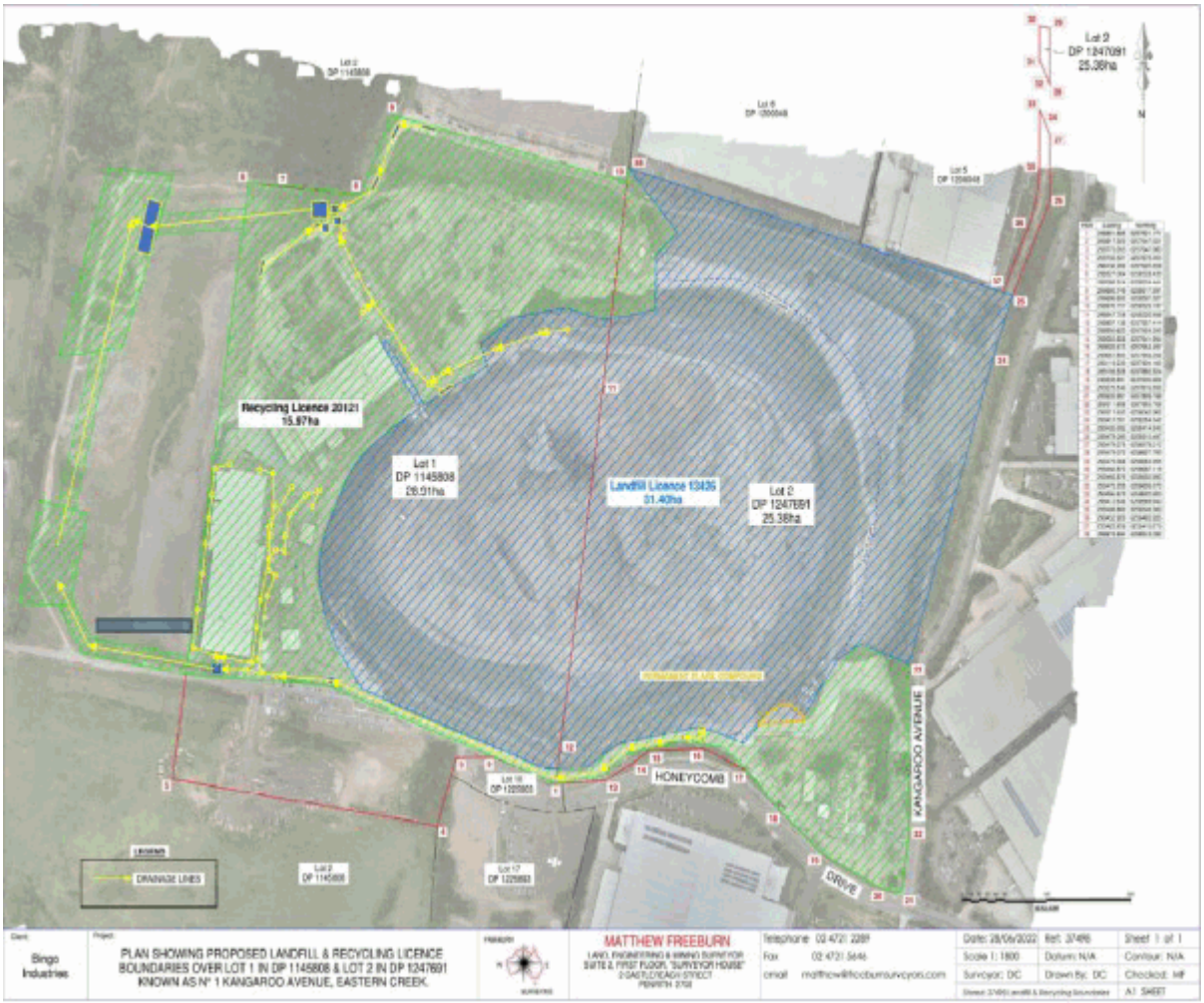
A2.1 The licence applies to the following premises:

Premises Details
EASTERN CREEK RECYCLING ECOLOGY PARK
HONEYCOMB DRIVE
EASTERN CREEK
NSW 2766
PART LOT 1 DP 1145808, PART LOT 2 DP 1247691
SHOWN AS THE AREA ENCOMPASSED BY THE SHADED GREEN COLOR ON PLAN NUMBER 798 PREPARED BY MATTHEW FREEBURN - FREEBURN SURVEYORS AND DATED 28 JUNE 2022.

A2.2 The premises location is shown on the map below.

Environment Protection Licence

Licence - 20121



A2.3 The boundary of the premises is defined within the light green shaded area on the aerial map at Condition A2.2

A3 Other activities

A3.1 This licence applies to all other activities carried on at the premises, including:

Ancillary Activity
Resource recovery (recovery of waste tyres)
waste processing (non-thermal treatment of waste tyres)

A4 Information supplied to the EPA

A4.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
a) the applications for any licences (including former pollution control approvals) which this licence replaces

under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

Scheduled Development Works

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

Air

EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Dust monitoring point - North		Northern boundary near to the M4 Motorway
2	Dust monitoring point - East		Eastern boundary
3	Dust monitoring point - South		Southern boundary
4	Dust monitoring point - West		Western boundary near Archibold Rd

P1.2 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

P1.3 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
5	Surface water quality monitoring		North-west onsite surface water detention basin
6	Surface water quality monitoring		South-west onsite surface water detention basin
7	Surface water overflow	Surface water overflow	Overflow (weir) from north-west surface water detention basin
8	Surface water overflow	Surface water overflow	Overflow (weir) from south-west surface water detention basin

P1.4 The following points referred to in the table below are identified in this licence for the purposes of weather

and/or noise monitoring and/or setting limits for the emission of noise from the premises.

Noise/Weather

EPA identification no.	Type of monitoring point	Location description
9	Noise monitoring	Nearest affected receiver 1-6 Eber Place Minchinbury
10	Noise monitoring	Nearest affected receiver 2-44 Warbler Street Erskine Park

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L1.2 The licensee must operate the premises in a manner that ensures that all stormwater from all areas of the premises which has the potential to mobilise sediments and other material is controlled and diverted through appropriate erosion and sediment control/pollution control measures and sedimentation ponds.

L2 Concentration limits

L2.1 For each monitoring/discharge point or utilisation area specified in the table/s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L2.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\s.

L2.4 The licensee is not taken to have exceeded a concentration limit specified in this licence, for monitoring points 5 and 6, if the discharge has occurred solely as a result of a rainfall event at the premises exceeding a total of 45 millimetres over any consecutive five day period and the licensee has taken all practical measures to avoid or minimise water pollution.

L2.5 Water and/or Land Concentration Limits

Environment Protection Licence

Licence - 20121

POINT 5,6,7,8

Pollutant	Units of Measure	50 Percentile concentration limit	90 Percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Ammonia	milligrams per litre				1
pH	pH				6.5 - 8.5
Total suspended solids	milligrams per litre				50

L3 Waste

L3.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled “Waste” and meeting the definition, if any, in the column titled “Description” in the table below.
Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled “Activity” in the table below.
Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled “Other Limits” in the table below.
This condition does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	Household waste from municipal clean-up that does not contain food waste	As defined in Schedule 1 of the POEO Act, as in force from time to time	Resource recovery Waste storage	
NA	Virgin excavated natural material	As defined in Schedule 1 of the POEO Act, as in force from time to time	Waste storage	
NA	Asphalt waste (including asphalt resulting from road construction and waterproofing works)	As defined in Schedule 1 of the POEO Act, as in force from time to time.	Resource recovery Waste storage	
NA	Virgin excavated natural material	As defined in Schedule 1 of the POEO Act, as in force from time to time	Waste storage	
NA	Wood waste	As defined in Schedule 1 of the POEO Act, as in force from time to time.	Resource recovery Waste storage	
NA	Garden waste	As defined in Schedule 1 of the POEO Act, as in force from time to	Resource recovery Waste storage Composting	No more than 20,000 tonnes of Garden Waste

		time.		may be stored at the premises at any one time.
NA	Building and demolition waste	As defined in Schedule 1 of the POEO Act, as in force from time to time	Resource recovery Waste storage	
NA	Waste tyres	As defined in Schedule 1 of the POEO Act, as in force from time to time	Resource recovery Waste storage	No more than 50 tonnes permitted to be stockpiled on site at any one time
NA	Soils	Soils that meet the CT1 thresholds for General Solid Waste in Table 1 of the Waste Classification Guidelines as in force from time to time with the exception of the maximum threshold values for contaminants specified in the 'Other Limits' column	Resource recovery Waste storage	Arsenic 40mg/kg; Cadmium 2mg/kg; Copper 200mg/kg; Mercury 1.5mg/kg; Zinc 600mg/kg; Petroleum Hydrocarbons C6-C9 150mg/kg; Petroleum Hydrocarbons C10-C36 1600mg/kg; Polycyclic Aromatic Hydrocarbons 80mg/kg; Polychlorinated Biphenyls (individual) 1mg/kg. No Acid Sulfate Soil or Potential Acid Sulfate Soil is to be received at the Premises. Soil thresholds will be subject to review from time to time.
NA	General solid waste (non-putrescible)	As defined in Schedule 1 of the POEO Act, as in force from time to time	Resource recovery Waste storage	Limited to bricks, concrete, ceramics, metal, glass, plastic, paper, cardboard, rubber and sandstone or a combination of the above.

L3.2 No disposal or landfilling of waste may occur at the premises.

L3.3 The applicant must have in place and implement procedures to identify and prevent the acceptance of any waste not permitted by condition L3.1 to be accepted at the premises.

L3.4 No asbestos waste is to be accepted or stored at the premises.

L3.5 Each individual wood waste stockpile both processed and unprocessed will be limited in size to < 2000 tonnes.

L3.6 The authorised amount of waste permitted on the premsies cannot exceed 667000 tonnes at any one time.

L4 Noise limits

L4.1 Noise generated at the premises that is measured at each noise monitoring point established under this licence must not exceed the noise levels specified in Column 4 of the table below for that point during the corresponding time periods specified in Column 1 when measured using the corresponding measurement parameters listed in Column 2.

POINT 10

Time period	Measurement parameter	Measurement frequency	Noise level dB(A)
Day	Day Shoulder-LAeq (15 minute)	Continuous	42
Evening	Evening-LAeq (15 minute)	Continuous	42
Night	Night-LAeq (15 minute)	Continuous	39
Night	Night-LA1 (1 minute)	Continuous	44
Morning-Shoulder	Morning Shoulder-LAeq(15 minute)	Continuous	39
Morning-Shoulder	Morning Shoulder-LA1 (1 minute)	Continuous	44

POINT 9

Time period	Measurement parameter	Measurement frequency	Noise level dB(A)
Day	Day-LAeq (15 minute)	Continuous	48
Evening	Evening-LAeq (15 minute)	Continuous	47
Night	Night-LAeq (15 minute)	Continuous	44
Night	Night-LAeq (period)	Continuous	41
Night	Night-LA1 (1 minute)	Continuous	53
Morning-Shoulder	Morning Shoulder-LAeq(15 minute)	Continuous	47

Morning-Shoulder	Morning Shoulder-LA1 (1 minute)	Continuous	53

Note: For the purpose of condition L4.1;

- Daytime is defined as the period from 6am to 6pm Monday to Friday, and 6am to 4pm Saturday, Sunday and public holidays;
- Night is defined as 6pm tp 6am;
- Point 9 includes the residence location of 1-6 Eber Place, Minchinbury NSW 2770, Lot 1152 DP 263722 as the nearest affected receiver; and
- Point 10 includes the residence location of 2-44 Warbler Street, Erskine Park NSW 2759, Lot 103 DP 706344 as the nearest affected receiver.

Note: "Noise" refers to sound pressure levels for the purposes of condition L4.1 to L4.7.

L4.2 The noise limits set out in condition L4.1 apply under all meteorological conditions except for the following:
The noise emission limits identified apply under meteorological conditions of:
a) Wind speed up to 3m/s at 10 metres above ground level: or
b) Temperature inversion conditions of up to 3°C/100m and wind speed of up to 2m/s at 10 metres

L4.3 For the purposes of condition L4.2:
a) Data recorded by the nearest Bureau of Meteorolgy station must be used to determine meteorological conditions; and
b) Temperature inversion conditions (stability category) are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the NSW Industrial Noise Policy.

L4.4 To determine compliance:
a) with the LAeq (15 minute) noise limits in condition L4.1, the noise measurement equipment must be located as follows:
Noise from the operation is to be measured at the most affected point or within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary, to determine compliance with the LAeq (15 minute) noise limits.
Where it can be demonstrated that direct measurement of noise from the operation is impractical, the EPA may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).

L4.5 A non-compliance of condition L4.1 will still occur where noise generated from the premises in excess of the appropriate limit is measured:

- at a location other than an area prescribed by conditions L4.1(A) and L4.1(B); and/or
- at a point other than the most affected point at a location.

L4.6 For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.

Environment Protection Licence

Note: NSW Industrial Noise Policy refers to the document entitled " New South Wales Industrial Noise Policy" published by the NSW Environment Protection Authority in January 2000."

L4.7 Noise monitoring must be conducted as per licence conditions with additional monitoring times to reflect the extended operating hours.

L5 Hours of operation

L5.1 Operating hours for activities at the Premises must be limited to the following:

Activity	Day	Hours
Construction	Monday - Friday	7:00am to 6:00pm
	Saturday	8:00am to 4:00pm
	Sunday & Public Holidays	Nil
Materials Processing Centres and Pre-Sort Enclosure (Operation, waste receival, chute use and maintenance)	Monday - Friday	24 hours
	Saturday	24 hours
	Sunday & Public Holidays	24 hours
Segregated Materials Area - Crushing and Screening	Monday - Friday	6:00am to 6:00pm
	Saturday	8:00am to 4:00pm
	Sunday & Public Holidays	8:00am to 4:00pm
Segregated Materials Area - Receipt of segregated materials	Monday - Friday	24 hours
	Saturday	8:00am to 4:00pm
	Sunday & Public Holidays	8:00am to 4:00pm

L6 Potentially offensive odour

L6.1 No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the Protection of the Environment Operations Act 1997.

Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

L7 Other limit conditions

L7.1 a. stockpiles of processed garden waste within the Green Waste/Timber Waste Area will not exceed the height of the existing surrounding concrete walls (2.5 metres).

b. stockpiles of unprocessed garden waste and processed and unprocessed wood waste will not exceed 2.5 metres above the height of the existing surrounding concrete walls (2.5 metres).

L7.2 No stockpile at the premises is to exceed the height of the Amenity Berms at 10 meters.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.
This includes:
a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
a) must be maintained in a proper and efficient condition; and
b) must be operated in a proper and efficient manner.

O3 Dust

O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

O3.2 The licensee must ensure that all activities conducted at the premises are carried out in a manner which minimises or prevents the generation of dust.

O3.3 Trucks entering and leaving the premises that are carrying loads must be covered at all times, except during loading and unloading.

O3.4 The Licensee must ensure that all stockpiles are kept wet during the transfer of waste to and from stockpiles and during processing to minimise the generation of dust.

O3.5 The licensee must ensure that no material, including sediment or oil, is tracked from the premises.

O4 Emergency response

O4.1 The Licensee must maintain, and implement as necessary, a current emergency response plan for the premises. The Licensee must must keep the emergency response plan on the premises at all times. The emergency response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. If a current emergency response plan does not exist at the date on which this condition is attached to the licence, the licensee must develop an emergency response plan within three months of that date.

O5 Processes and management

O5.1 The licensee must ensure that waste that has been recovered is stockpiled separately.

O5.2 The licensee must:

a) Implement suitable measures to manage pests, vermin and declared noxious weeds on site;

b) Inspect the site on a regular basis to ensure that these measures are working effectively, and that pests, vermin or noxious weeds are not present on site in sufficient numbers to pose an environmental hazard, or cause the loss of amenity in the surrounding area; and

c) Perform ongoing monitoring of weed infestation on and adjoining the site.

Note: For the purposes of this condition, noxious weeds are those species subject to an order declared under the Biodiversity Act 2015.

O5.3 The licensee must have in place and implement procedures to minimise the risk of fire at the premises.

O5.4 The licensee must take all practicable steps to control entry to the premises.

O5.5 The licensee must ensure that no material, including waste, sediment, mud or oil, is tracked from the premises.

O5.6 The Licensee must ensure that all waste stored or processed at the premises is assessed and classified in accordance with the EPA Waste Classification Guidelines as in force from time to time.

O5.7 All stormwater and stormwater treatment devices (including drainage systems, sumps and traps) must be reguarly maintained.

O5.8 Sediment ponds must be maintained in a manner that ensures these retain an appropriate freeboard to minimise the potential for any turbid discharge. Depth indicators must be installed and maintained within these ponds that indicate the required freeboard to be maintained.

O5.9 The Licensee must comply with all requirements of its exemption from using a weighbridge, granted on 30 May 2022 via Notice No. 1619077. This exemption expires on 30 May 2024.

O6 Waste management

Tyre Waste Management

O6.1 The licensee must ensure that stockpiles of waste tyres are located in a clearly defined area.

O6.2 The licensee must ensure that stockpiles of waste tyres are managed so as not to cause or to be likely to cause the spread of disease by vermin.

O6.3 The licensee must ensure that measures are taken to prevent stockpiles of waste tyres from catching on fire.

O6.4 Without limiting the above conditions, any area(s) used for the storage of waste tyres at the premises must:

a) be surrounded by a fire break of at least six (6) metres, which is kept clear of combustible material; and
b) be fenced or otherwise secured to prevent any unauthorised access to the waste tyres and the fire break.

Leachate Management

O6.5 Water which contacts waste in the garden waste area or the Materials Processing Centre, other than virgin excavated natural material, must be managed as leachate. Leachate must only be disposed of by: a) disposal to sewer via a trade waste agreement, b) disposal at a facility licensed to accept such waste.

O6.6 Lechate must not be irrigated and/or used for dust control at the premises.

O6.7 The Licensee must not cause or permit any leachate to pool at the premises.

Asbestos Waste Management

O6.8 The Licensee must ensure that at no time is asbestos waste (as defined in the POEO Act) is permitted to be placed in the conveyor/chute system for conveyance to the base of the landfill.

Weighbridge Operation

O6.9 The licensee must have in place and operate a calibrated weighbridge to record the volume of all waste brought into the premises.

O6.10 The licensee must continuously operate video surveillance cameras at all weighbridges associated with the conveyor belt transfer system.

O6.11 All vehicles entering and exiting the premises must be recorded as they pass across the weighbridges or pass through a dedicated vehicle access point that has video monitoring and electronic recorded 'boom gates'.

Waste Incineration

O6.12 There must be no incineration or burning of any waste at the premises.

Volumetric Survey

O6.13 The licensee must submit to the EPA's Waste Operations every 6 months, a volumetric survey of the Premises carried out by a registered surveyor:

a) During June each year and provided to the EPA in the approved form and manner by no later than 31 July in that year; and
b) During December each year and provided to the EPA in the approved form and manner by no later than 31 January in that year.

Composting

O6.14 The licensee shall manage windrow composting operations in accordance with AS 4454-2003: Composts, Soil Conditioners and Mulches, Appendix N, Best practice guidelines for Composting Systems, the EPA Environmental Guidelines for Composting & Related Organics Processing Facilities, or other practices approved by the EPA.

O6.15 Each gardenwaste windrow must have an individual cover and aerobic equipment fitted to reduce odour and the generation of leachate.

O6.16 The licensee will construct and maintain designated bays of approximately 5m x 15m separated by concrete walls in the Garden Waste/ Timber Waste area generally in accordance with the document "LHBC Environment Assessment Report " dated August 2010 before composting.

O7 Other operating conditions

Bunding Requirements

O7.1 Bunding must be maintained for the leachate storage tanks that:
- is impervious to the fluids contained; and
- has sufficient capacity to contain 110% of the of the largest vessel; and
- will contain all pressurised leaks or spills.

O7.2 The licensee shall store all chemicals, fuels and oils used on site in an appropriately designed impervious bunded area that contains 110 percent of the largest container contained within the bund. These bunds shall be designed and installed in accordance with the requirements of all relevant Australian standards, and/or EPA's Environment Protection Manual *Technical Bulletin Bunding and Spill Management.*

Litter and Pest Management

O7.3 The licensee must:
a) Implement suitable measures to prevent unnecessary proliferation of litter both on and off site; and
b) Inspect and clear the site and surrounding area of litter on a daily basis.

O7.4 The applicant must control pests and vermin at the premises.

Staff Training

O7.5 The licensee must ensure that adequately trained staff are available at the premises in order to administer the requirements of this licence.

Wheel Wash

O7.6 All vehicles leaving the premises must be first put through an operating wheel wash except those that have not been in the material processing and storage areas.

Environment Protection Licence

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.

M1.4 The licensee must record the date, duration and volume of any leachate discharge to surface water.

M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified in the table\s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

M2.2 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

M2.3 Air Monitoring Requirements

POINT **1,2,3,4**

Pollutant	Units of measure	Frequency	Sampling Method
Particulates - Deposited Matter	grams per square metre per month	Quarterly	Australian Standard 3580.10.1-2003

M3 Testing methods - concentration limits

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:

a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2022* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M4 Environmental monitoring

M4.1

Wind strength and wind direction at the premises must be measured and recorded in degrees and knots/kmh at least every 15 minutes.

M4.2

Rainfall at the premises must be measured and recorded in millimetres per 24 hour period, at the same time each day.

M5 Recording of pollution complaints

M5.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M5.2 The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M5.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M5.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M6 Telephone complaints line

M6.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M6.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M6.3 The preceding two conditions do not apply until either the date of the issue of this licence.

M7 Other monitoring and recording conditions

M7.1 Soil Classification Records

The licensee must keep a record of each load of Soil, as referred to under Condition L3.1, that is received at the premises. The record must include, but not necessarily be limited to, the following:
(a) a copy of the waste classification report in accordance with the Waste Classification Guidelines, including the classification and the limits specified in the L3.1 table;
(b) the quantity (in tonnes) of the Soil received;
(c) the date and time that the Soil were received;
(d) the registration number of the vehicle transporting the Soil to the premises;
(e) the source(s) and address from where the Soil were received; and
(f) the name and contact details of the company or individual delivering the Soil to the premises.
The record must be retained at the premises for at least 4 years after the receipt of the load of the soil. The record must be produced to any authorised officer of the EPA upon request.

M7.2 The proponent must provide an annual audit of the design, operation and odour management practices of the operation with the primary aim of identifying improvements that lead to attainment of best practice in regard to minimising odour emitted from the premises. The proponent must implement all reasonable audit recommendations. The scope of such an audit to be regularly reviewed in consultation with the EPA.

M7.3 The EPA may require the proponent to conduct assessments or investigations that identify the extent of any potentially offensive odour emissions beyond the boundary of the premises. The scope of such investigations to be agreed to by the EPA and may include revised air dispersion modelling based on actual site emissions data, well designed field investigations according to German standards, and/ or use of field olfactometers, and analysis of detailed complaints records and on-site meteorological data.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee notification that the Annual Return is due.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:
a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect *EPA* or by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R2 Notification of environmental harm

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which they became aware of the incident.

R2.3 If the results of surface water quality monitoring in the sediment pond(s) required by condition M2.2 indicate

ammonia concentrations greater than 1mg/L the licensee must contact the EPA within 24 hours and advise of the results of that monitoring.

R2.4 If leachate is discharged to surface waters from the premises the licensee must notify the event to the EPA in accordance with condition R3.1.

R2.5 The licensee must provide written details of any leachate discharge(s) referred to in Condition 2.3 to the EPA within 7 days of the date on which the incident occurred.

The written details referred to in the above condition must be provided as a report. The report must include the following information:

a) the volume of the leachate discharged and over what time period the discharge occurred;
b) the date and time of the commencement of the overflow;
c) the weather conditions at the time of the discharge, specifying the amount of rainfall on a daily basis that had fallen:
- on the day(s) of the discharge; and
- for the one week period prior to the discharge;
d) the most recent monitoring results of the chemical composition of the leachate;
e) an explanation as to why the discharge occurred;
f) the location(s) of the discharge; and
g) a plan of action to prevent a similar discharge in the future.

R2.6

In the event of a fire at the facility the licensee must record:

a) the time and date when the fire was deliberately started or reported;
b) whether the fire was authorised by the licensee, and, if not, the circumstances which ignited the fire;
c) the time and date that the fire ceased and whether it burnt out or was extinguished;
d) the location of fire;
e) the prevailing weather conditions;
f) any observations made in regard to smoke direction and dispersion;
g) the amount of waste that was combusted by the fire; and
h) the action taken to extinguish the fire.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
a) where this licence applies to premises, an event has occurred at the premises; or
b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
a) the cause, time and duration of the event;
b) the type, volume and concentration of every pollutant discharged as a result of the event;

c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

8 Special Conditions

E1 Requirement to maintain financial assurance

E1.1 (a) A financial assurance in the form of an unconditional and irrevocable and on demand guarantee from a bank, building society or credit union operating in Australia as "Authorised Deposit-taking Institutions" under the banking Act 1959 of the Commonwealth of Australia and supervised by the Australian Prudential Regulatory Authority (APRA) must be provided to the EPA prior to the issue of an environment protection licence for the premises. The financial assurance must be in favour of the EPA in the amount of two hundred thousand dollars ($200,000). The finanical assurance is required to secure or guarantee funding for works or programs required by or under this licence. The financial assurance must contain a term that provides that any monies claimed can be paid to the EPA or, at the written of direction of the EPA, to any other person.

(b) A financial assurance in the form of an unconditional and irrevocable and on demand guarantee from a bank, building society or credit union operating in Australia as "Authorised Deposit-taking Institutions" under the banking Act 1959 of the Commonwealth of Australia and supervised by APRA must be provided to the EPA by 31 May 2013. The financial assurance must be in favour of the EPA in the amount of two hundred thousand dollars ($200,000).

Note that this total financial assurance is inclusive of that required in E1.1a) and E1.1b).

(c) The licensee must provide to the EPA, along with the original counterpart guarantee, confirmation in writing that the financial institution providing the guarantee is subject to supervision by APRA.

E1.2 An adjustment to the financial assurance must be calculated, each licence review period, in line with the Consumer Price Index for the number of years since the financial assurance was last paid. The financial assurance must be replenished to the full amount plus CPI adjustments each licence review period.

E1.3 The financial assurance must be replenished by the full amount claimed or realised if the EPA has claimed on or realised the financial assurance or any part of it to undertake a work or program required to be carried out by the licence which has not been undertaken by the licence holder.

E1.4 The financial assurance must be maintained during the operation of the facility and thereafter until such time as the EPA is satisfied the premises is environmentally secure.

E1.5 The EPA may require an increase in the amount of the financial assurance at any time as a result of reassessment of the total likely costs and expenses of rehabilitation of the premises.

E1.6 The licensee must provide to the EPA the original counterpart guarantee within five working days of the issue of:
a) the financial assurance being required by condition E1.1, or
b) the adjusted financial assurance as required by condition E1.2 and E1.3.

E2 Claims on financial assurance

E2.1 The EPA may claim on a financial assurance under s303 of the POEO Act if a licensee fails to carry out any work or program required to comply with the conditions of this licence.

E3 Environmental Obligations of Licensee (Works and Programs)

E3.1 While the licensee's premises are being used for the purpose to which the licence relates, the licensee must:
a) Clean up any spill, leak or other discharge of any waste(s) or other material(s) as soon as practicable after it becomes known to the licensee or to one of the licensee's employees or agents.
b) In the event(s) that any liquid and non-liquid waste(s) is unlawfully deposited on the premises, such waste(s) must be removed and lawfully disposed of as soon as practicable or in accordance with any direction given by the EPA.
c) Provide all monitoring data as required by the conditions of this licence or as directed by the EPA.

E3.2 In the event of an earthquake, storm, fire, flood or any other event where it is reasonable to suspect that a pollution incident has occurred, is occurring or is likely to occur, the licensee (whether or not the premises continue to be used for the purposes to which the licence relates) must:
a) make all efforts to contain all firewater on the licensee's premises,
b) make all efforts to control air pollution from the licensee's premises,
c) make all efforts to contain any discharge, spill or run-off from the licensee's premises,
d) make all efforts to prevent flood water entering the licensee's premises,
e) remediate and rehabilitate any exposed areas of soil and/or waste,
f) lawfully dispose of all liquid and solid waste(s) stored on the premises that is not already securely disposed of,
g) at the request of the EPA monitor groundwater beneath the licensee's premises and its potential to migrate

from the licensee's premises,
h) at the request of the EPA monitor surface water leaving the licensee's premises; and
i) ensure the licensee's premises is secure.

E3.3 After the licensee's premises ceases to be used for the purpose to which the licence relates or in the event that the licensee ceases to carry out the activity that is the subject of this licence, that licensee must:
a) remove and lawfully dispose of all liquid and non-liquid waste stored on the licensee's premises and;
b) rehabilitate the premises, including conducting an assessment of and if required remediation of any site contamination.

E4 Waste movement and weighbridge operations

E4.1 The licensee must cease to use stored tares and weigh all vehicles into and out of the premises.

E4.2 The licensee must ensure there is video or photographic monitoring of the weighbridge that captures vehicles being weighed in and out of the premises. The video or photographic monitoring must be retained for a minimum of 6 months.

E4.3 The licensee is to engage a suitably qualified independent consultant to conduct an audit of the licensed facility's weighbridge data, Waste Contribution Monthly Reports (WCMRs) and related operations to ensure that it complies with the *Protection of the Environment Operations Act 1997*, so far as they are relevant to weighbridge data and WCMRs and Part 2 and Part 3 of the Protection of the En*vironment Operations (Waste) Regulation 2014* (Audit).

The Audit must be conducted for each quarter's data (commencing with 1 January 2022-31 March 2022) and a report provided to the EPA by 2 weeks after the end of each quarter. Each report should include (at a minimum):

a) reconciliation between the weighbridge data and WCMRs of waste received and waste transported by waste type;

b) compliance review to determine whether the facility is compliant with Part 2 and Part 3 of the *Protection of the Environment Operations (Waste) Regulation* 2014.

E4.4 The licensee must engage a suitably qualified independent consultant to conduct 6-monthly density testing of all stockpiles at the premises. The first density testing period is to commence on 1 July 2022, with the results of the density testing to be provided to the EPA by 31 July 2022.

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environmen t Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder describe d at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 mo nths. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.

Environment Protection Licence

Licence - 20121

TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste
Wellhead	Has the same meaning as in Schedule 1 to the Protection of the Environment Operations (General) Regulation 2021.

Ms Julie Currey

Environment Protection Authority

(By Delegation)

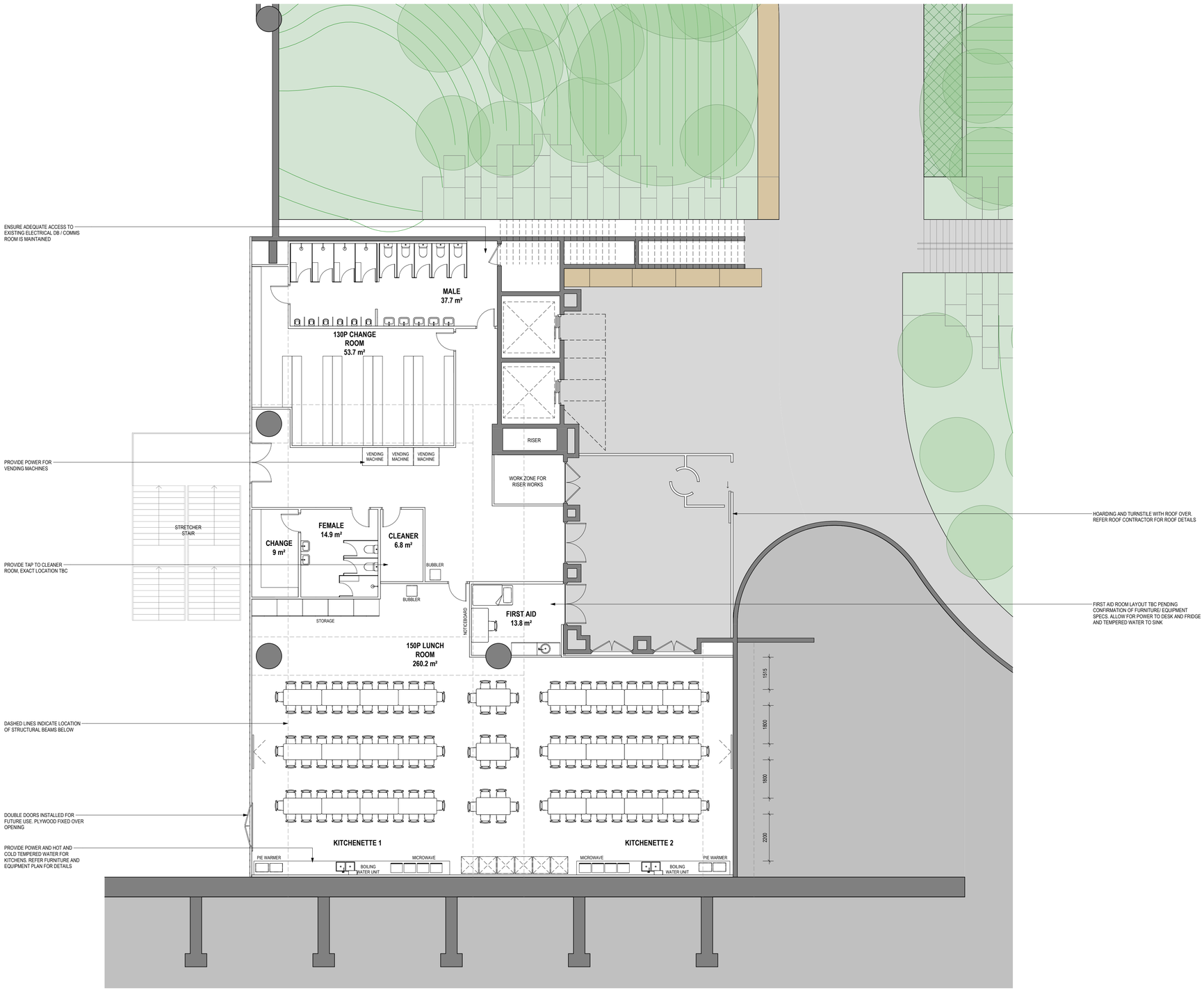
Date of this edition: 08-June-2012

End Notes

2	Licence varied by notice	1508582 issued on 21-Dec-2012
3	Licence varied by notice	1508582 issued on 21-Dec-2012
4	Licence varied by notice	1519395 issued on 05-Jun-2014
5	Licence varied by notice	1532263 issued on 24-Sep-2015
6	Licence varied by notice	1548441 issued on 12-Apr-2018
7	Licence varied by notice	1595139 issued on 25-Jun-2020
8	Licence varied by notice	1618923 issued on 20-Jun-2022
9	Licence varied by notice	1619894 issued on 09-Mar-2023

37. APPENDIX G - Site Lunchroom / Toilet

THE DISTANCE BETWEEN THESE MARKS SHOULD MEASURE EXACTLY 100MM WHEN SHEET IS PRINTED AT ORIGINAL PAGE SIZE. SHEET IS TO BE PRINTED IN COLOUR



01 GENERAL ARRANGEMENT PLAN
1 : 100

GENERAL NOTES

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL, SERVICES AND CONSULTANT DOCUMENTATION
- VERIFY ALL LEVELS, DIMENSIONS AND SITE CONDITIONS PRIOR TO COMMENCEMENT OF ANY WORKS AND PREPARATION OF SHOP DRAWINGS. ANY DISCREPANCIES TO BE REPORTED TO FDC AND RESOLVED IN WRITING BEFORE PROCEEDING. ALL DIMENSIONS ARE IN MILLIMETRES U.N.O
- SUB-CONTRACTOR TO ENSURE ALL WORKS EXECUTED ARE COMPLIANT WITH STATUTORY CODES AND NCC STANDARDS

1:100
0 0.5 1 2 4 m N

NO.	DATE	DESCRIPTION	BY
A	20/03/24	FOR REVIEW	DW

NOT FOR CONSTRUCTION

CLIENT
CLIENT NAME

PROJECT NAME - ADDRESS
BARANGAROO CUTAWAY CULTURAL FACILITY

1 MERRIMAN STREET
BARANGAROO NSW 2000

PROJECT NO: 200290
DRAWING NAME
GENERAL ARRANGEMENT PLAN - LUNCHROOMS

DRAWING NUMBER	SHEET SIZE	REVISION
A304	A1	A

38. APPENDIX H - FDC Environmental Policy

Environmental Policy

The environmental elements within FDC's integrated management system manage the provision of project and construction management for residential, industrial and commercial building, including ground up construction refurbishment or additions and interior fitout to existing buildings.

FDC shall:

- "Reduce, re-use and recycle" wherever possible, be it on site or within the office environment;
- Promote environmentally friendly solutions;
- Ensure that environmental considerations form part of our business planning and decision-making processes;
- Promote a culture of responsible environmental management;
- Protect the natural environment and social surroundings, preserve biodiversity, prevent pollution and minimize waste;
- Comply with applicable environmental laws;
- Continually improve our environmental performance;
- Establish measurable objectives and targets; and
- Communicate with stakeholders on environmental matters.

FDC encourage, on a personal and corporate basis, sound environmental considerations for protection of our natural resources.

We discourage any practice or product selection that is knowingly detrimental to environmental protection. FDC Management and staff are committed to the implementation and maintenance of an environmental management system based on ISO14001.

Bentley Cottle
Managing Director

39. APPENDIX I – Air Quality Management Plan

AIR QUALITY MANAGEMENT SUB PLAN

THE CUTAWAY CULTURAL FACILITY FITOUT, BARANGAROO

FDC BUILDING PTY LTD

PROPERTY RISK AUSTRALIA

Property Risk Australia Pty Ltd
ABN: 65 611 579 223
PO Box 95, Mascot NSW 1460
www.propertyrisk.com.au

STATEMENT OF LIMITATIONS

This report has been prepared by Property Risk Australia Pty Ltd (PRA) for the benefit of FDC Building Pty Ltd (hereafter the 'Client') in accordance with the agreement/contract between PRA and the Client. The works carried out in preparing this report have been performed in accordance with the proposal, scope of works, general terms and conditions and special terms and conditions, agreed in consultation with the Client.

This report has been prepared with information available at the time of report preparation and within the time and budgetary constraints imposed by the Client. PRA does not accept responsibility for inaccurate or incomplete information provided by the Client or third parties, nor for updates or changes to information made after the preparation of this report.

This report is solely for the use of the Client and has not been prepared for use by any other person or third party. This report must only be presented in full and may not be used by any person or third party, other than the Client, unless agreed to in writing by PRA. This will allow PRA to ensure that the intended use or interpretation of the report is fit for purpose and agreed to by the Client. PRA accepts no responsibility for damages arising from use of this report or supplementary information.

PRA CONTACT DETAILS

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DOCUMENT QUALITY CONTROL

Report Title:	Air Quality Management Sub Plan
Site Name:	The Cutaway Cultural Facility Fitout, Barangaroo
Site Address:	Hickson Road, Sydney NSW 2000
Client Name:	FDC Building Pty Ltd
Job Number:	J-02337

Revision Number	Revision Date	Author(s)	Reviewer(s)	Status
V1	5 April 2024	Wayne Duffy	Scott Bamford	Final

CONTENTS

1 INTRODUCTION

1.1 Background

This Air Quality Management Sub Plan (AQMP) has been prepared by PRA on behalf of FDC Building Pty Ltd (FDC).

This AQMP details prevention and management measures for air quality issues associated with FDC's works are carried out to minimise potential air quality impacts to the environment. It defines mitigation measures to be implemented during relevant construction activities, a monitoring program that enables assessment of the impacts of construction activities on potentially affected areas, and contingency measures that may be implemented if complaints are received or exceedances are measured.

Implementing the AQMP will ensure that the Project meets regulatory requirements in a systematic manner and continually improves its performance.

1.2 Mission Statement

FDC will undertake its works to minimise impacts to the local air quality to protect its workers, the adjacent stakeholders, and the environment.

1.3 Objectives and Targets

FDC's objectives and targets for air quality management are:

- To effectively manage air quality throughout the works to protect the environment, local community and worker safety;
- Minimise gaseous and particulate pollutant emissions from construction activities as far as feasible and reasonable; and
- Identify and control potential dust and air pollutant sources.

2 PROJECT DESCRIPTION

FDC has been awarded the contract to deliver a bespoke fit-out of the new Cutaway Cultural Facility at Barangaroo. The fit-out is set to transform the Cutaway from concrete shell, exposed to the elements, into one of Sydney's premier cultural facilities. The Cutaway is positioned under Barangaroo Reserve and adjacent to the new Barangaroo Metro Station.

The new design, which spans 3 levels will include:

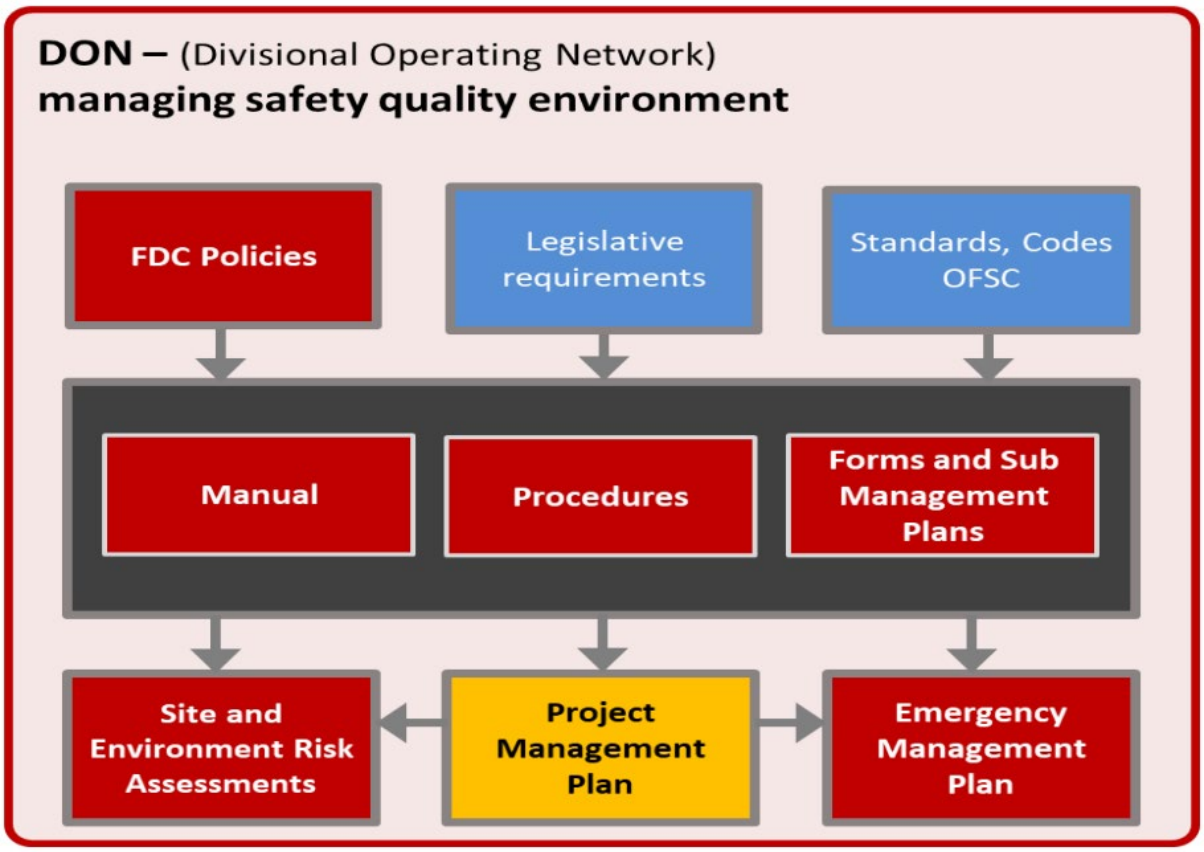
- New event and gallery spaces;
- Enclosure of the open ceiling voids with soundproof, glass skylights;
- Improved acoustics;
- Improved entry and forecourt;
- On site-amenities; and
- Back of house facilities (including commercial kitchen).

FDC's works will include:

- Enabling works;
- Demolition; and
- Structural and Detailed Fitout

3 RELATIONSHIP WITH OTHER MANAGEMENT PLANS

FDC's management system that has third party certification to ISO9001, ISO14001, and ISO45001 and is accredited with the OFSC Accreditation Scheme. FDC's Divisional Operating Network (DON) integrates FDC's health, safety, quality and environmental requirements and external requirements as illustrated below:



4 REVIEW PROCESS

At least one hard copy of the Environmental Management Plan and associated Sub Plans shall be available and accessible on site in addition to the electronic copy retained in the Project drive and provided to stakeholders where requested. The EMP and associated Sub Plans shall also be issued to subcontractors, together with the Site Risk Assessment, prior to them commencing work on site.

The ongoing suitability of the EMP and Sub Plans shall be reviewed during the monthly site audit. Changes due to reviews, meetings, site-specific outcomes and recommendations through inspections, reports, audits etc. shall be reviewed in consultation with Divisional HSEQ representatives and approved as above prior to re-issue.

The relevant revision table in each plan shall record revisions and the Project Manager shall be responsible for communicating changes to holders of copies and other stakeholders as required and recorded through project correspondence.

5 LEGAL AND OTHER REQUIREMENTS

The primary legislation, guidelines, specifications, and policy documents relevant to the air quality management include, but are not limited to:

- *Protection of the Environment Operations Act 1997*;
- *Protection of the Environment Operations (Clean Air) Regulation 2010;*
- *Work Health and Safety Act 2011;*
- Guidance on the assessment of dust from demolition and construction v1.1 (IAQM, 2014);
- Guidance on Monitoring in the Vicinity of Demolition and Construction Sites (IAQM, 2018);
- National Environment Protection Council's (NEPC) – National Environment Protection Measure (NEPM) for Ambient Air Quality; (2021; F2021C00475);
- AS/NZS 3580.1.1:2016 Methods for sampling and analysis of ambient air - Guide to siting air monitoring equipment;
- AS/NZS 3580.12.1:2015 Methods for sampling and analysis of ambient air - Determination of light scattering - Integrating nephelometer method;
- NSW EPA 2016 Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales; and
- FDC Barangaroo Cutaway Environmental Risk Assessment

6 CONDITIONS OF CONSENT

This AQMP complies with the requirements of the Consent Conditions issued by the Minister for Planning and Public Spaces for the State Significant Development (SSD) 47498458 for the fit out of the Cutaway Cultural Facility, Barangaroo. The Consent Conditions relevant to air quality management and where they are addressed are outlined in **Table 1**.

Table 1. Conditions of Consent relating to air quality management

No.	Requirement	Reference
B55	Prior to the commencement of any works, the Preliminary Construction Environmental Management Plan (CEMP) prepared by EY and dated 22 December 2022 must be updated, submitted to and approved by the Certifier. The CEMP must address, but not be limited to, the following matters where relevant: (d) Air Quality Management Sub-Plan	This Plan
B60	Prior to the commencement of any works, the Applicant must submit to the satisfaction of the Certifier an Air Quality Management Sub-Plan (AQMP) for the development. The Sub-Plan must include, as a minimum, the following elements:	This Plan
	(a) be prepared by a suitably qualified and experienced expert in accordance with the EPA's Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (the Approved Methods);	Prepared by suitably qualified and experienced expert
	(b) relevant environmental criteria to be used in the day-to-day management of dust and volatile organic compounds (VOC/odour);	Table 7
	(c) mission statement;	Section 1.2
	(d) dust and VOCs/odour management strategies consisting of:	
	(i) objectives and targets;	Section 1.3
	(ii) risk assessment;	Section 9
	(iii) suppression improvement plan;	Table 7

No.	Requirement	Reference
	(iv) monitoring requirements including assigning responsibility (for all employees and contractors);	Table 5 and Section 7
	(v) communication strategy; and	Section 8.1
	(vi) system and performance review for continuous improvements.	Section 4
B61	The AQMP must detail management practices to be implemented for all dust and VOC/odour sources at the site. The AQMP must also detail the dust, odour, VOC and semi-volatile organic compounds (SVOC) monitoring program (e.g. frequency, duration and method of monitoring) to be undertaken for the project.	Section 10
B62	The Applicant must also develop and implement an appropriate comprehensive Reactive Air Quality and Odour Management Plan which will incorporate an Ambient Air Monitoring Program and Reactive Management Strategy to ensure that the assessment criteria are met during the works.	Section 10
C18	The Applicant must take all reasonable steps to minimise dust generated during all works authorised by this consent. During construction, the Applicant must ensure that:	Incorporated into Table 4
	(a) exposed surfaces and stockpiles are suppressed by regular watering;	AQ01
	(b) all trucks entering or leaving the site with loads have their loads covered;	AQ02
	(c) trucks associated with the development do not track dirt onto the public road network;	AQ13
	(d) public roads used by these trucks are kept clean; and	AQ14
	(e) land stabilisation works are carried out progressively on site to minimise exposed surfaces.	AQ03

7 ROLES AND RESPONSIBILITIES

Table 2 below provides the key roles and responsibilities for air quality management under the AQMP. A complete list of roles and responsibilities, including interfaces between the various roles, is provided in the Construction Environmental Management Plan.

Table 2 Key Roles and Responsibilities

Project Role	Responsibilities
Project Director	• Primary contact with the Principal's Representative on all aspects of the Project. • Approve and ensure implementation of this AQMP.
Senior Project Manager	• Implement the AQMP. • Organise on-site personnel with regard to their responsibilities within the AQMP. • Carry out periodic audits of air quality management processes. • Manage non-conformances and initiate corrective action as required. • Lead by example and promote best air quality management practices. • Review reports and follow up on recommendations.
Site Managers	• Implement the AQMP. • Provide advice and assistance on the AQMP to employees.

Project Role	Responsibilities
	• Decide when training is required. • Undertaking inspection of the contracted or planned works to ensure that AQMP measures are implemented and effective. • Lead by example and promote best air quality management practices. • Carry out weekly toolbox talks.
HSEQ Coordinator	• Maintain the AQMP. • Ensure relevant information from the AQMP is incorporated into project inductions. • Prepare reports as required. • Identify air quality management opportunities and support those identified by others. • Communicate the requirements of the AQMP and ensure these are implemented. • Ensure subcontractor documentation captures the requirements of the AQMP. • Conduct audits and inspections of the site. • Participate in site audits. • Update the AQMP as required. • Attend toolbox meetings and inductions as required. • Ensure that air quality management defects are identified, actioned and closed out. • Lead by example and promote best air quality management practices. • Attend on-site meetings to ensure air quality is raised for review.

8 COMMUNICATION

8.1 Communication of the Plan

The site workforce shall be made aware of the site requirements for air quality management through the site rules, site induction, toolbox, or prestart meetings.

8.2 Complaints Handling

All complaints related to air quality will be managed in accordance with the project Communication and Stakeholder Plan.

9 RISK ASSESSMENT

The following risk assessment for dust has been undertaken generally in accordance with the Guidance on the assessment of dust from demolition and construction (IAQM, 2014) v1.1.

9.1 Summary of the Works

For the purposes of this risk assessment the works are broken down into enabling works, demolition and excavation, construction, fitout and landscaping.

9.1.1 Enabling Works

- TV screen removal
- Security and Facility staff relocation
- Hoarding installation
- Egress path reconfiguration
- Service room relocations
- Protection of existing heritage and building elements

- Possession of Carpark spaces for new infrastructure and temp construction works

9.1.2 Demolition and Excavation

- Soft strip out prior to demolition
- Demolition of structural elements and services
  - Ausgrid Substation
  - Lift pit
  - Skylight
  - Eastern Fire stair
- Excavation of sandstone to accommodate footings and other structural elements

9.1.3 Construction

- Installation of structural elements of steel and concrete

9.1.4 Fitout

- Internal installation of the final detailed designs

9.1.5 Landscaping

- Importing and placing appropriate landscaping material and plants

9.2 Potential Sources of Air Emissions

The primary source of air pollution likely to be expected from the demolition works on site are as follows:

- Particulates and dust:
  - Generated by most construction activities;
  - Hardstand demolition and groundbreaking/excavation may generate dust deposition on surfaces, visible dust plumes and temporary elevation of particulate matter (PM10 and PM2.5) concentrations.
- Exhaust emissions – carbon monoxide (CO), sulfur dioxide (SO2), oxides of nitrogen (NO/NO2) and particulates:
  - Generated by machinery and vehicles used on site as well as delivery vehicles; and
  - May cause elevation of atmospheric concentrations of greenhouse gases, visible smoke plumes, odours, temporary elevation of exhaust gas and fine particulate concentrations.
- Volatile Organic Compounds (VOCs) and semi volatile VOCs (SVOCs)
  - Unlikely to be a primary source of air pollution during the works.
  - Minor potential for localised VOCs and SVOCs associated with the use of waterproofing and epoxy products.
- Odour:
  - Unlikely to be a primary source of air pollution during the works.

9.3 Sensitive Receivers

The site is located along the Wulugul Walk, underneath Barangaroo Reserve. Merriman Street is to the east, both the Central Barangaroo and Crown Towers adjacent to the south and Darling Harbour to the west.

Directly adjacent to the site lies Merriman Street, which predominantly medium density residential premises. Areas south of the Barangaroo Cutaway, are predominantly commercial, also interspersed with some residential premises.

9.4 IAQM Risk Assessment Process

The results of risk assessment detailed in **Tabe 3** below has been based on Step 2 of the IAQM, 2014 (v1.1). This is a stepped process to assess the risks associated with dust arising in sufficient quantities during demolition and construction to cause annoyance and/or health and/or ecological impacts.

Table 3 Risk Assessment Steps 2A and 2B of the IAQM, 2014 (v1.1)

Step	Assumptions	Assessed Risk
2A – Define the Potential Dust Emission Magnitude by Activity		
Demolition	o The demolition is targeted to portions of the overall structure. o A significant proportion of the demolition will be undertaken within the Cutaway.	Medium
Earthworks (excavation)	o Although the required earthworks will not require significant bunding, the requirement to scabble and saw cut sandstone raises the risk profile. o The earthworks associated with enabling works and landscaping are unlikely to be high risk.	Medium
Construction	o The structural construction activities are generally with steel and concrete (wet form) and are unlikely to generate significant dust emissions.	Small
Trackout	o There are moderate numbers of truck movements with the potential for dust and debris on site during the works there is commensurate potential for tracking of material off site.	Medium
2B - Define the Sensitivity of the Area		
Sensitivity Receptor of Surround Land	o There are multiple sensitive receivers within close proximity to the works (some within 20m).	High
Sensitivity of the Area to Human Health Impacts	o Annual average of the NSW EPA Cook and Phillip air monitoring data shows PM10 annual average of 14.2µg/m^3.	Medium
Sensitivity of the Area to Ecological Impacts	o All adjacent stormwater drains connect directly to Sydney Harbour.	High

Based on the risk assessment process above, the final risk ratings for potential dust impacts have been given for the various components of the work in **Table 4**. The risk assessment outcome reflects the level of mitigation required and has been captured within **Section 10**.

Table 4 Risk of Dust During Works

Activity	Assessed Risk		Risk of Dust Impacts
	Dust Emission Magnitude	Sensitivity of the Area	
Demolition	Medium	High	Medium
Earthworks (excavation)	Medium		Medium
Construction	Small		Low
Trackout	Medium		Medium

10 MANAGEMENT PRACTICES

Site specific controls, monitoring, reporting and performance measurements have been identified in this AQMP to minimise and where possible, prevent air quality impacts resulting from construction on the environment and community. The mitigation measures have been prepared in accordance with the requirements of the CEMP and Consent Condition C18. These "Mitigation Measures" are described in **Table 5** below.

FDC is committed to reducing potential impacts to air quality associated with the project. In addition to the mitigation measure, **Table 5** also describes the reactive management strategy should there be a potential impact to air quality identified either by project personnel and/or complaints raised from outside the project.

Table 5 Mitigation Measures, reporting and reactive management strategy

Ref.	Mitigation Measure	Applicable Works								Responsibility (R) Accountability (A)	Monitoring and Reporting	Targets	Reactive Mgt. Strategy
			Internal			External							
		Enabling	Soft Strip	Demolition	Construction	Demolition	Construction	Landscaping	Fitout				
AQ01.	Exposed surfaces and stockpiles will be suppressed by regular watering	✓		✓		✓		✓		Site Manager, Sub-contractors	Daily surveillance. Site Diary or Weekly inspection checklist	No visible dust beyond site boundary. No dust related complaints.	Re-assess and implement dust controls.
AQ02.	All trucks entering or leaving the site with loads have their loads covered	✓	✓	✓	✓	✓	✓	✓	✓	Site Manager, Sub-contractors			
AQ03.	Land stabilisation works are carried out progressively on site to minimise exposed surfaces						✓	✓		Site Manager, Sub-contractors			
AQ04.	Dust suppression strategies to be used, i.e. water sprays, soil binders, hydro mulching, controlled speed onsite, road base and shaker grids	✓	✓	✓	✓	✓	✓	✓	✓	Site Manager, Sub-contractors			
AQ05.	Stockpiled topsoils and rubble will be restricted to 4m high. Stabilise if in situ for >4-6 months					✓	✓	✓		Site Manager, Sub-contractors			
AQ06.	On site drilling or coring operations will be undertaken by equipment fitted with air filtration equipment.			✓	✓	✓	✓			Site Manager, Sub-contractors			
AQ07.	Saw cutting and lifting process for demolition of the ground floor concrete slab where practical.			✓		✓				Site Manager, Sub-contractors			
AQ08.	Install shade cloth on perimeter fencing.	✓	✓	✓	✓	✓	✓	✓	✓	Site Manager, Sub-contractors			
AQ09.	Minimise the amount of excavated or demolition waste stockpiled outside the cutaway. If required, position external stockpiles away from surrounding receivers where possible					✓	✓	✓		Site Manager, Sub-contractors			
AQ10.	Installation and maintenance of a dust proof hoarding to the carpark area			✓		✓				Site Manager, Sub-contractors			
AQ11.	Undertake additional dust suppression if needed during dust generating conditions (e.g. dry and windy weather) or during longer non-working periods (e.g. long weekends, holidays).			✓		✓		✓		Site Manager, Sub-contractors	Daily surveillance. Site Diary or Weekly inspection checklist		
AQ12.	Breakers and crushing equipment to be fitted with dust filtration equipment or water sprays to control dust emissions.			✓		✓				Site Manager, Sub-contractors	Daily surveillance. Site Diary or Weekly inspection checklist	No visible dust beyond site boundary. No dust related complaints.	Re-assess and implement dust controls.
AQ13.	Trucks associated with the development are not to track dirt onto the public road network	✓	✓	✓	✓	✓	✓	✓	✓	Site Manager, Sub-contractors	Daily surveillance. Site Diary or Weekly inspection checklist	No visible tracking of debris beyond site boundary associated with the works.	Sweep and water hardstand haul routes, materials handling areas, site entry points and
AQ14.	Public roads used by trucks will be kept clean	✓	✓	✓	✓	✓	✓	✓	✓	Site Manager, Sub-contractors			

Ref.	Mitigation Measure	Applicable Works								Responsibility (R) Accountability (A)	Monitoring and Reporting	Targets	Reactive Mgt. Strategy
			Internal			External							
		Enabling	Soft Strip	Demolition	Construction	Demolition	Construction	Landscaping	Fitout				
													other areas as needed.
AQ15.	Plant and equipment would be maintained in a proper and efficient manner. Visual inspections of emissions from plant to ensure that visible emissions are not emitted for more than 10 consecutive seconds as part of pre-acceptance checks.	✓	✓	✓	✓	✓	✓	✓	✓	Site Manager, Sub-contractors	FDC plant and equipment check	Emissions not visible for >10secs (as a general rule).	Perform maintenance on plant or remove from site.
AQ16.	Operate plant in a proper and efficient manner.	✓	✓	✓	✓	✓	✓	✓	✓	Site Manager, Sub-contractors	Plant onboarding procedure. Daily surveillance. Site Diary or Weekly inspection checklist		
AQ17.	Turn engines off while parked and not in use on site.	✓	✓	✓	✓	✓	✓	✓	✓	Site Manager, Sub-contractors	Daily surveillance. Site Diary or Weekly inspection checklist	Engines not left idling while not in use.	Rectify with the operator of the machinery
AQ18.	Vehicle corridors will be clearly identified and restricted to control vehicle access onsite.	✓	✓	✓	✓	✓	✓	✓	✓	Site Manager, Sub-contractors	Daily surveillance. Site Diary or Weekly inspection checklist	No visible dust beyond site boundary. No dust related complaints.	Re-assess and implement dust controls.
AQ19.	Limit vehicle speed onsite to 10km/hr	✓	✓	✓	✓	✓	✓	✓	✓	Site Manager, Sub-contractors	Daily surveillance. Site Diary or Weekly inspection checklist		
AQ20.	Real-time PM_{10} & $PM_{2.5}$ air monitoring with provision for alarms.			✓		✓				Site Manager, Sub-contractors	Real-time PM_{10} & $PM_{2.5}$ monitoring and reporting.	See **Table 7** below.	See **Table 7** below.
AQ21.	If odorous materials uncovered, recover immediately.	✓	✓	✓	✓	✓	✓	✓	✓	Site Manager, Sub-contractors	Daily surveillance Site Diary or Weekly inspection checklist	No offensive odour outside the site boundary related to the works.	Cover odorous material Seek advice from consultant regarding soil /materials management.
AQ22.	An Occupational Hygienist will determine the monitoring required for: o VOCs and SVOCs; and o Exhaust emissions	✓	✓	✓	✓	✓	✓	✓	✓	Site Manager, Sub-contractors	To be determined by an Occupational Hygienist		

11 MONITORING

11.1 Air Quality Monitoring

Air quality monitoring, site action levels and response is to be undertaken in accordance with **Table 7** throughout the works. Real-time monitoring of PM_{10} & $PM_{2.5}$ is to be undertaken by the Occupational Hygienist/Environmental consultant in the monitoring locations as identified in **Appendix A**.

12 REPORTING

Air quality reporting will be undertaken in accordance with **Table 6**. Noting that a monthly report will Where real time dust monitoring has been undertaken, the air monitoring data will be summarised and documented with a monthly report.

Table 6 Air quality reporting

Parameter	Report	Frequency
$PM_{2.5}$ and PM_{10}	Monthly Air Quality Monitoring Report	Monthly
	Real-time alerts sent to the project team via email or text message	As required
Summary of: Visible observations (by exception) Odour (by exception) Meteorological (by incident)	Monthly Air Quality Monitoring Report	Monthly
Air Quality Incident	FDC Incident Report (F035)	As required
VOCs and SVOCs	As advised by the project Occupational Hygienist	As advised by the project Occupational Hygienist
Exhaust emissions	As advised by the project Occupational Hygienist	As advised by the project Occupational Hygienist

Table 7 - Air Quality Monitoring

Parameter	Data Source	Frequency	Method	Applicable Works	Site Action Level	Suppression Improvement
Visible Exhaust	Site Inspection	Daily	Site inspection Plant and equipment onboarding	All works	Emitting smoke for more than 10 seconds continuously	Maintenance requirements reviewed. Remove plant/equipment from site if unable to be rectified.
Visible Dust	Site Inspection Complaint	Daily	Site inspection Plant and equipment onboarding	All works	Visible dust identified onsite or leaving the boundary	Review possible dust sources, review effectiveness of controls and implement existing and additional controls (if identified).
Odour	Site Inspection Complaint	Daily	Site inspection	All works	Offensive odour outside the site boundary related to the works.	Review possible odour sources, review effectiveness of controls and implement existing and additional controls (if identified).
$PM_{2.5}$	Light Scatter Instrument (e.g., DustTrak) or laser-based optical particle monitor (e.g., Airmet DX)	Continuous	Real time monitoring	See **Tabe 5** above for applicable works. See **Appendix A** for indicative monitoring locations. The monitoring locations are to be sited, as far as practical, in accordance with AS/NZS 3580.1.1.	150 µg/m^3 averaged over a 1-hour period. 25 µg/m^3 24-hour average[1] 8 µg/m^3 annual average.	Review possible dust sources operating during the average period. Compare background data sources, such as the nearest NSW EPA air quality monitors. Effectiveness of controls to be reviewed and improved where appropriate.
PM_{10}					190 µg/m^3 averaged over a 1-hour period (UK IAQM Oct. 2018) Monthly Reporting criteria (NEPM Ambient Air Quality 2021) 50 µg/m^3 24-hour average[1] 25 µg/m^3 annual average.	

Parameter	Data Source	Frequency	Method	Applicable Works	Site Action Level	Suppression Improvement
Meteorological	BOM	Daily	Daily forecast from BOM or weather alerts and onsite observations	External Demolition or Construction	Elevated wind levels coupled with dry weather forecast or observed with the potential to cause or is causing visible dust or elevated $PM_{2.5}$ or PM_{10} readings.	Adjust intensity of work. Review effectiveness of controls and implement existing and additional controls (if identified).

Note: The requirements for monitoring VOCs and SVOCs, and exhaust emissions will be advised by the Occupational Hygienist. If required, it would be targeted towards monitoring for the protection of workers health.

APPENDIX A – FIGURES

PROPERTY RISK AUSTRALIA

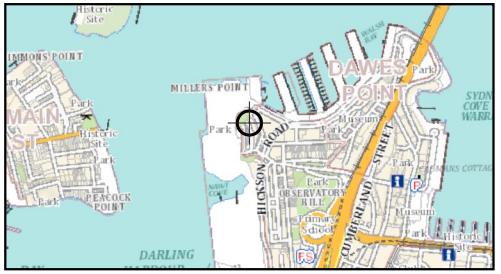
Title:	Air Quality Management Sub Plan
Project ID:	J-02337
Project Location:	The Cutaway, Barangaroo 29-51 Hickson Road, Barangaroo (Part Lot 52 DP 1213772, Part Lot 4 DP 876514, Part Lots 1, 2 and 5 DP 912271, Part Lot 7 DP 43776)
Figure Number:	01
Client:	FDC Building Pty Ltd
Map Scale:	1:1,700
CRS:	GDA 2020/MGA Zone 56
Source:	SixMaps
Prepared By:	Wayne Duffy
Reviewed By:	Brendon Phan
Date:	21/03/2024
Revision:	V1

Legend

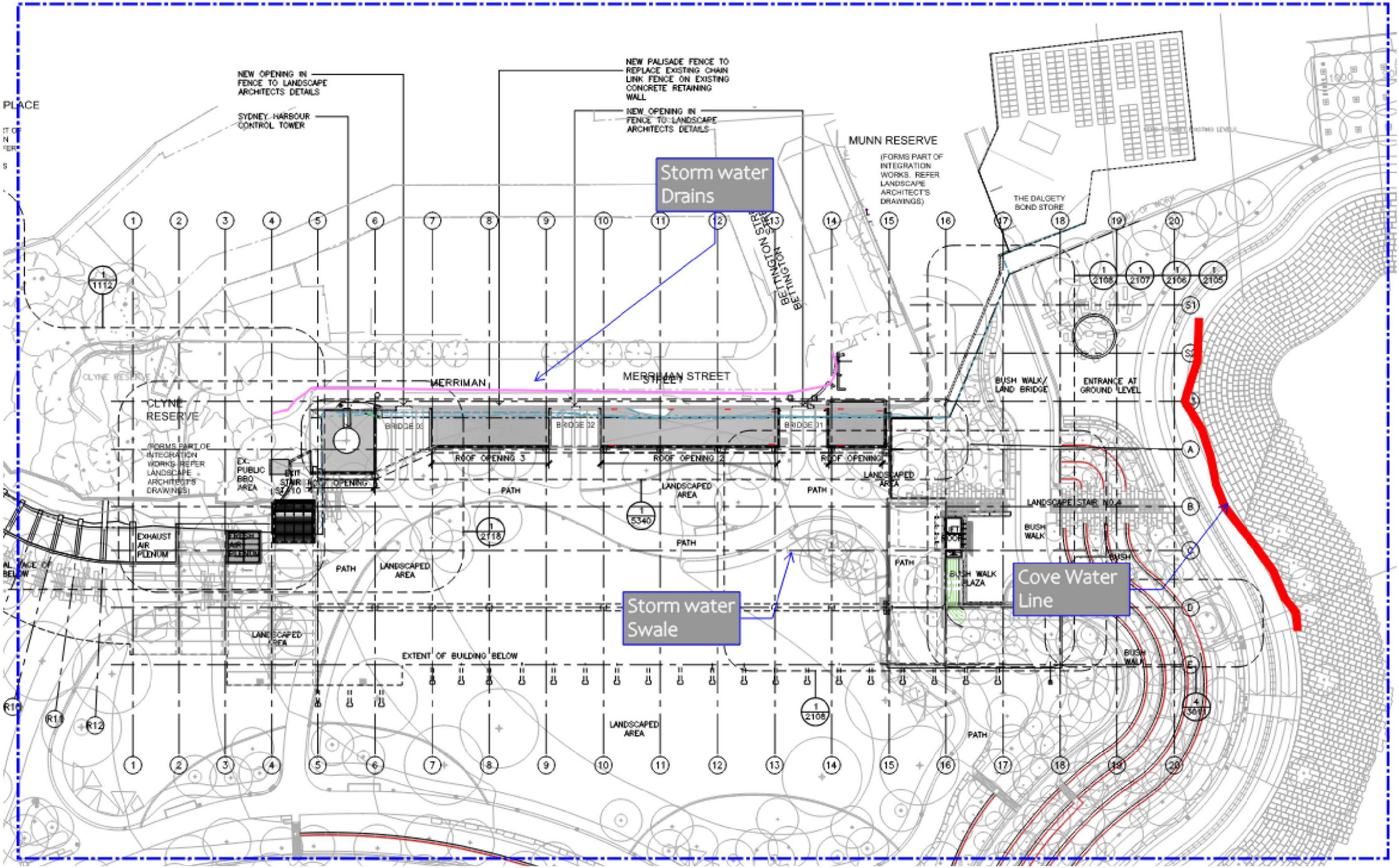
Points of Interest

- Air Quality Monitoring Point
- Residential Receiver
- Approximate Extent of Cutaway

All extents and locations are approximate. The proposed monitoring locations are subject to change based on site requirements.



40. APPENDIX J – Environmental Control Map



Cutaway - Environmental Control Map

10/4/2024

41. APPENDIX K– Flora & Fauna Management Plan

Flora and Fauna Management Plan

Project Details	
Project Name:	Barangaroo Cutaway Cultural Facility
Project Number:	200290
Project Location:	1 Merriman St, Barangaroo NSW 2000
Client:	Infrastructure NSW
Name of principal contractor:	FDC Construction (NSW) Pty Limited
Company address:	22-24 Junction Street, Forest Lodge NSW 2037
ABN:	72 608 609 427

To be read and implemented in accordance with the Construction Environmental Management Plan

Revision Date	REVISION DESCRIPTION	PM's INITIALS (revision approval)
10/4/2024	Revision A – Original Issue	HP

Glossary of Terms

Term / Acronym	Definition
CoA	Condition of Approval
D&C	Design and Construct
DP&E	Department of Planning and Environment
DPI	NSW Department of Primary Industries
ECM	Environmental Constraints Map – consolidation of environmental and socially sensitive areas, sites or places shown on a series of map-based sheets that extend the length of the site, used to assist with the planning and management of Work Under the deed.
EIS	Environmental Impact Statement
EMM	Environmental management measures (proposed in the Environmental Impact Assessment)
Environmental aspect	Element of an organisations activities, products or services that can interact with the environment
Environmental impact	Any change to the environment, whether adverse or beneficial, wholly, or partially resulting from an organisations activities, products, or services.
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
ER	Environmental Representative
FFMP	Flora and Fauna Management Plan
FM Act	*Fisheries Management Act 1994*
NOW	NSW Office of Water, now called NSW Department of Primary Industries – Water (DPI (Water))
NPW Act	*National Parks and Wildlife Act 1974*
NV Act	*Native Vegetation Act 2003*
NW Act	*Noxious Weeds Act 1993*
POEO Act	*Protection of the Environment Operations Act 1997*
EMM	Environmental management measure
SSI	State significant infrastructure
SWMP	Construction Soil and Water Management Plan
TSC Act	*Threatened Species Conservation Act 1995*
Work Procedure	A document that provides a detailed step-by-step description for how work activities will be carried out. May document Risks & Controls associated with each step

CONTENTS

1 Introduction

1.1 Scope of Works

a) This Flora and Fauna Management Sub Plan (FFMP) shall be read and implemented in accordance with the Project Management Plan (PMP) developed for this project. This FFMP describes how FDC will protect and manage flora and fauna during this project.

1.2 Objectives and Targets

a) The primary objective of the FFMP is to ensure that impacts to flora and fauna are minimised and are within the scope permitted by the local authority. The FFMP will address the management of all flora and fauna, including aquatic and riparian habitats, during construction of the project. Key flora and fauna management objectives for the project are:

i. To ensure impacts to flora, fauna and habitat features only occur within the approved areas of clearing.
ii. To minimise removal of vegetation within the approved areas of clearing.
iii. To consider the welfare of fauna potentially affected during clearing.
iv. To rehabilitate cleared areas in order to reinstate habitat areas and promote connectivity, where possible.
v. To determine appropriate flora species for rehabilitation.
vi. To manage weeds in the project area.
vii. To encourage the recovery and reuse of existing natural resources (i.e. cleared vegetation, bush rock, topsoil, leaf litter) and to reduce material disposal offsite.
viii. To determine the nature and extent of the replanting required to maintain the habitat.
ix. To provide a clear description of pre-clearing methods.
x. To minimise and mitigate potential impacts on riparian zones during the construction phase.
xi. Avoid impacts on threatened species, populations and ecological communities.
xii. To describe monitoring and reporting strategies to monitor impacts on flora and fauna and assess the effectiveness of any mitigation measures during construction.

b) To achieve these objectives, targets have been proposed by FDC for the management of flora and fauna impacts during the project and are listed in Table 1.

Metric / Measure	Target	Timeframe	Accountability	Documentation / Reporting
Number of native fauna injured as a result of procedures not being adhered to	Zero	At all times	Project Managers	Fauna Spotter Catcher procedure
Area of land cleared or disturbed outside authorisation (m^2)	Zero	At all times	Project Managers	Monitoring records Site Environmental Plans
Environmental Representative Stop Work Recommendations	Zero	At all times	Project Manager	ER reports

Table 1: Proposed project targets for the management of flora and fauna

1.3 Training

a) All personnel, including employees, contractors and subcontractors, are required to complete a project induction containing relevant environmental information before they are authorised to work on the project. Flora and fauna specific information to be covered in the project induction will include:

i. Obligations under the project Conditions of Approval (including FFMP) including vegetation clearing practices to minimise impacts on species, including threatened species, at the site.
ii. Responsibilities pertaining to the protection of flora and fauna under the *Threatened Species Conservation Act 1997,* the *Environmental Protection and Biodiversity Conservation Act 1999* (Commonwealth) and the *National Parks and Wildlife Act 1974*.
iii. Responsibilities under the other relevant legislation outlined in Section 2.1 of this plan.
iv. Procedures and project limitations for vegetation clearance and habitat removal.
v. Response procedures in the event of an unexpected threatened species find.
vi. Incident response procedures.

b) FDC will provide information (e.g. project inductions, toolbox talks on appropriate environmental risks or management measures) so that project personnel can competently perform their duties and meet environmental obligations. Toolbox talks are to include limits of clearing, clearing procedures, weed identification and control measures and fauna handling protocols where relevant.

c) Records of all training activities, including inductions, will be maintained on site.

2 Legal and Other Requirements

2.1 Legislation

a) Legislation relevant to flora and fauna management shall be confirmed through the Legal Register and typically for this project includes:

i. *Environmental Planning and Assessment Act 1979* (EP&A Act)
ii. *National Parks and Wildlife Act 1974* (NPW Act)
iii. *Threatened Species Conservation Act 1995* (TSC Act)
iv. *Fisheries Management Act 1994* (FM Act)
v. *Noxious Weeds Act 1993* (NW Act)
vi. *Native Vegetation Act 2003* (NV Act)
vii. *Pesticides Act 1999*
viii. *Animal Research Act 1985*
ix. *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth) (EPBC Act)

2.2 Environmental Management Measures

No.	Revised Environmental Management Measure
FF1	A Flora and Fauna Management Plan will be developed for the initial phase of the project to confirm potential impacts and provide details of biodiversity management measures and procedures to be undertaken during construction so as to minimize and manage impacts on biodiversity.
FF2	The project footprint will be clearly delineated to minimize impacts on adjacent vegetation.
FF3	
FF4	
FF5	
FF6	
FF7	
FF8	
FF9	
FF10	
FF11	
FF12	
FF13	
FF14	
FF15	
FF16	

Table 2: Environmental management measures relevant to flora and fauna

3 Environmental Aspects and Impacts

3.1 Existing Environment

a) The Environmental Risk Assessment shall be used to identify potential aspects and impacts for this project and identify monitoring and inspection requirements. The below table identifies threatened fauna within this project:

Species	Potential for impact	Likely significant impact
Grey-headed Flying-fox (*Pteropus poliocephalus*) TSC Act and EPBC Act – Vulnerable	Low. Project would remove a small area of planted trees that may be used for foraging when flowering or fruiting.	No
Eastern Bentwing-bat (*Miniopterus schreibersii oceanensis*) TSC Act – Vulnerable	Low. Project would remove a small area of planted vegetation that may be used for foraging habitat on occasion. The project may temporarily disturb potential artificial roosting sites. No evidence of roosting bats was observed during the survey.	No
Large-footed Myotis (*Myotis macropus*) TSC Act – Vulnerable	Low. The project may temporarily disturb potential artificial roosting sites. No evidence of roosting bats was observed during the survey.	No
Black-tailed Godwit (*Limosa limosa*) TSC Act – Vulnerable EPBC Act – Migratory	Low. Potential for indirect impacts from changes to water quality if not mitigated.	No
Curlew Sandpiper (*Callidris ferruginea*) TSC Act – Endangered EPBC Act – Critically endangered and migratory	Low. Potential for indirect impacts from changes to water quality if not mitigated.	No
Little Tern (*Sterna albifrons*) TSC Act – Endangered EPBC Act – Migratory	Low. Potential for indirect impacts from changes to water quality if not mitigated.	No
White-fronted Chat (*Epthianura albifrons*) TSC Act – Vulnerable and endangered population	Low. Potential for indirect impacts from changes to water quality if not mitigated.	No

Table 3: Threatened fauna within the biodiversity study area

3.2 Environmental Aspects and Impacts

a) Activities of FDC that have the potential to impact on flora and fauna as identified in Table 4.

Environmental Aspect	Potential Environmental Impacts (Risk)
Site establishment and demolition • Vegetation clearance • Removal of and/or disturbance to bridges and culverts	• Loss or damage to planted vegetation including clearing outside of approved areas. • Inadequate erosion and sediment control leading to increased sedimentation in waterways. • Spread of weeds, including noxious weeds. • Loss of planted vegetation adjacent to waterways leading to increased risk of erosion and sedimentation. • Injury or mortality of native fauna species. • Removal of and/or disturbance to fauna habitat, including: - Foraging habitat (trees) for threatened fauna (Grey-headed Flying-fox and Eastern Bent-wing Bat). - Temporary roosting (bridges and culverts) and foraging (waterways) habitat for Eastern Bent-wing Bat and Large-footed Myotis. • Impacts on unexpected threatened species.
Earthworks and excavation • Surface water runoff in areas subject to ground disturbance activities • Generation of dust during earthworks and/or as a result of wind and vehicle/plant movements on exposed soils	• Sediments transported off-site impacting on water quality of downstream waterways / wetland habitats. • Dust / sediment deposition on adjacent vegetation or into waterways leading to loss of plant viability and/or weed infestation.
Ancillary facility / construction compound operations • Generation of construction water • Use and storage of fuels and chemicals • Use of plant, equipment and construction lighting • Transport of soils, water and other materials on and off-site and between sites	• Unauthorised vehicle and plant movements in adjoining vegetation outside the approved clearing areas. • Inappropriate construction of temporary and permanent waterways crossings. • Contamination of soils and water from uncontrolled releases of chemicals, fuels or construction water leading to impacts on flora, fauna, and associated habitats. • Erosion and sedimentation impacts on soils and water due to ground disturbance and water discharges. • Light and noise disturbance to nearby species / habitats, including nocturnal species. • Facilitation of spread of pathogens and weeds. • Inappropriate waste disposal encouraging feral animals and pests to frequent the project area and adjacent areas.

Table 4: Potential impacts to flora and fauna

4 Vegetation, Fauna and Habitat Management

4.1 Timing of Habitat Management Measures

a) The timing of implementation of habitat management measures are divided into pre-clearance, clearance and post-clearance phases. Table 5 summarises the habitat management strategies proposed in this FFMP to mitigate impacts on flora and fauna during each phase.

Pre-clearance	Clearance	Post-clearance
• Establish flagging guidelines • Definition of the clearing areas and areas to avoid • Establish weed management procedures • Determine the location of potential natural resources to be repurposed • Pre-clearing surveys • Definition of the impact areas and areas to avoid • Habitat protection measures • Nest Box Management Plan (if required) • Bat Management Plan (if required)	• Clearing and Grubbing • Relocation of repurposed natural resources • Weed management • Vegetation management • Landscaping and habitat rehabilitation • Fauna recovery procedures • Monitoring and reporting	• Monitoring and reporting • Weed Management

Table 5: Summary of habitat management measures

4.2 Pre-clearing

a) Pre-clearing surveys will be undertaken prior to commencement of any clearing activities to determine the presence and location of habitat features in vegetation to be removed for the project and any bridges and culverts to be disturbed by the project. The surveys will be undertaken by a suitably qualified and experienced Ecologist and in accordance with standards and local regulations.

b) These surveys will inform the preparation of Clearing and Grubbing Plans and habitat management during clearing operations. If hibernating bats and/or hollow bearing trees are identified during the pre-clearing surveys, a Nest Box Management Plan and/or a Bat Management Plan must be prepared by a qualified ecologist prior to impacting these areas. These plans will be prepared in consultation with the Office of Environment and Heritage, if their preparation is required.

c) A qualified Ecologist will conduct pre-clearing surveys to identify:

i. Fauna species likely to be encountered during construction and potential impacts to fauna during vegetation clearing.
ii. Potential fauna habitat in the project area.
iii. An estimate for the number of trees (with reference to the tree definition in Section 4.4.1) to be removed from each area to inform tree replacement / rehabilitation works at the completion of construction (this estimate will also be confirmed during the clearing phase).
iv. A list of tree species required to be planted, where feasible, in each area to compensate for the loss of foraging habitat for Grey-Headed Flying-Fox.
v. Significant weed infestations.
vi. Areas of high risk for roadkill incidents.
vii. Preferred locations to relocate fauna habitat or the repurpose of cleared vegetation.

4.3 Clearing and Grubbing

a) Clearing is defined as the removal of all vegetation (both living and dead). Prior to any land disturbance during construction, a Land Disturbance Permit is required when an area is identified as requiring vegetation clearing and must be obtained by the Site Supervisor.

b) Where required by Permit conditions, and where any vegetation clearance is proposed, a Clearing and Grubbing Plan must be prepared in accordance with standards and local regulations.

c) The Clearing and Grubbing Plan is required to identify weeds, outline a procedure for weed removal, the location of habitat trees or threatened flora and a procedure for staged habitat removal. The Clearing and Grubbing Plan is to include where relevant:

   i. Methods used to identify and mark areas of weeds to be removed and methods for their removal.
   ii. Procedure(s) for the disposal and control of weeds and exotics.
   iii. Procedure(s) for protecting threatened flora species and trees marked for preservation.
   iv. Methods used for identifying, marking and removing or pruning unsound trees likely to fall upon the roadway or onto private property.
   v. Procedure for identifying and removing any trees, stumps and logs within the area to be cleared and the final location for any such relocated items.

d) Where required to inform the Clearing and Grubbing Plan, an Ecologist and/or Arborist report should be obtained, where required, to identify:

   i. The location of weeds in the area to be cleared.
   ii. The location of any threatened flora or habitat trees to be retained.
   iii. The location of any trees outside the limits of clearing likely to fall onto infrastructure or private property.
   iv. The location of nearby habitat suitable for the release of fauna that may be encountered during the pre-clearing process.
   v. Procedures for the staged habitat removal process if required.

4.3.1 Tree Definition

a) To ensure a net increase in the number of trees impacted by the project, trees to be removed will be documented during pre-clearing surveys as discussed in Section 4.3. A tree is defined for the project in accordance with Australian Standard AS4970-2009 as a long lived woody perennial plant greater than (or usually greater than) 3m in height with one or relatively few main stems or trunks.

b) The number of trees to be removed will be documented in accordance with the definition above for each area to be cleared.

4.4 Fauna Recovery

4.4.1 Pre-clearing Inspection

a) Immediately prior to any vegetation clearing and/or works requiring disturbance to bridges and culverts (no more than 2 hours prior), an inspection will be undertaken by an Ecologist to identify any fauna that may be encountered during clearing operations. The inspection will consist of:

   i. Checks in trees for any new nests constructed since the pre-clearing surveys; and
   ii. Checks in hollow logs for the presence of any sheltering fauna.

4.4.2 Single-Stage Clearing

a) Where no areas of habitat have been identified, clearing can be undertaken in a single-stage process, and includes the under-scrubbing of non-habitat trees, shrubs and other vegetation using a combination of a forestry harvester and excavator.

b) Vegetation cleared during single-stage clearance shall not be stockpiled on-site as it may provide temporary habitat for displaced fauna.

4.4.3 Two-Stage Clearing

a) Where clearing is to be conducted in an area containing potential fauna habitat (e.g. nests, hollow bearing trees and large woody debris), a two-stage clearing process must be implemented as specified below:

i. Stage One clearing is undertaken to clear non-habitat trees as described in Section 4.4.2.
ii. Stage Two clearing of the remaining habitat/hollow bearing trees must be conducted 24 hours or more after Stage One clearing has been completed.
iii. The Ecologist will complete an inspection no more than two hours prior to the commencement of Stage Two clearing (Section 4.4.1).
iv. Any relocation of roosting bats will be undertaken in accordance with the Bat Management Plan (if the preparation of the plan is required).
v. Habitat trees shall be carefully felled under the supervision of the Project Ecologist or Fauna Spotter/Catcher:
    a. Hollow-bearing trees or trees with nests will be mechanically shaken or agitated prior to felling to encourage any remaining animals to either leave the tree or show themselves and subsequently be removed prior to felling.
    b. Felling will involve gently pushing the tree and lowering or felling using a forestry harvester (and not with the use of an excavator mounted closed chipper) to avoid sudden falling as this is likely to injure wildlife.
vi. Subsequent to felling, habitat trees will be systematically checked from the ground for any remaining fauna.
vii. Felled habitat trees will be left overnight (in an adjacent habitat area if required) to allow any undetected fauna further opportunity to escape.
viii. Hollow bearing limbs, woody debris and bush rocks marked for relocation should be moved to fauna translocation sites or other recipient sites as identified in the Clearing and Grubbing Plan.
ix. Remove all remaining materials cleared, primed and grubbed for recycling or disposal.
x. If any habitat tree is found or suspected (based on fresh tree markings or scats) to contain any threatened species, the tree should be left in place for a minimum of two days and, if possible, be re-inspected no more than two hours prior to felling.
xi. In the event that arboreal animals do not move or they cannot be captured because the tree hollow is too large, high or its recovery would breach WH&S requirements. The tree would then be felled (in the direction o f other tree debris if possible) and animals recovered post-felling in accordance with the Fauna Spotter Catcher Procedure (Annexure B).

4.5 Vegetation Management

a) Vegetation clearing will be minimised where possible. Where possible no plant, including motor vehicles, would be operated within 2x of the dripline/canopy of retained trees, i.e. if the tree canopy is four metres in diameter, then an eight metre buffer will be placed around the tree trunk where the plant access is excluded Compaction of soil and trampling of tree roots by machinery may lead to damage and the death of retained trees and should be avoided.
b) All site offices, compounds and stockpile areas would be located within the limits of clearing or otherwise away from existing drainage lines and existing vegetation. Clearing of native vegetation would be restricted to inside the identified limits of clearing, and should be minimised where possible, particularly in areas with screening vegetation or significant trees.
c) Construction vehicle movements would be restricted to the existing road network or previously disturbed areas at all times. Construction vehicles should not enter into vegetation retained beyond the approved impact areas. At no point is cleared vegetation to be bulldozed into adjacent bushland retained beyond the limits of clearing.
d) All other cleared native vegetation would be mulched for reuse in rehabilitation works and erosion control. Mulch should not be stockpiled in adjacent vegetated areas.

e) All vegetation clearing must be undertaken in accordance with the Vegetation Clearing Procedure and the Fauna Spotter Catcher Procedure (Annexure A & B).

4.6 Landscaping and Habitat Rehabilitation

a) Revegetation will play an important role in mitigating the impact of the project on flora values. Revegetation incorporates both landscaping and habitat rehabilitation. The objectives of these two forms of revegetation are different and call for different revegetation techniques and plant selection.

b) Habitat rehabilitation aims to maintain / increase fauna habitat values in the project area and to compensate for the loss of habitat from clearing Plant species used in landscaping will be mainly local endemic species. No species which display characteristics of environmental weeds will be used.

c) The overall objective of habitat rehabilitation will be to restore or recreate vegetation the same as originally occurring in the project area with the following considerations:

i. The need to control erosion and sedimentation processes demands rapid revegetation of cleared riparian areas.
ii. Disturbed edges create opportunities for weed establishment and expansion.
iii. Plantings should use locally sourced plants to maintain and enhance genetic integrity of local populations.
iv. In cleared areas, strips of native vegetation along road corridors can facilitate the movement of fauna through the landscape.
v. Placement of tall screening vegetation is recommended as a means to raise flight paths of birds and bats crossing the road and thus reduce road kills.

d) It is recommended that species native to the Sydney region (i.e. Old Man Banksia, Coast Banksia, Spotted Gum, Blackbutt, Swamp Mahogany, Sydney Peppermint and Sydney Blue Gum) are sourced from a nursery that carries seed stock collected from within the Sydney region.

e) The remaining species (Silky Oak, Lemon- scented Gum and Brush Box) are not local to the Sydney region, but are regularly planted landscape trees. Therefore, these trees can be purchased from any nursery that stocks the species. It is recommended that these species are planted as tube stock or advanced natives to expedite the rehabilitation process.

f) A vegetation monitoring and maintenance program will be implemented upon completion of works in each area, as outlined in Table 6.

Monitoring / Maintenance Activity	Frequency	Duration
Follow up watering to prevent plant losses and promote rapid establishment	2-3 times/week during dry periods	6 weeks
Hand removal of weeds that colonise rehabilitated areas, and monitoring of plant survival	Monthly during establishment period	6 months initially; thereafter biannually
Replacement planting (e.g. to replace plant losses)	As/when required	

Table 6: Monitoring & Maintenance Program

5 Consolidated Environmental Safeguards

a) Environmental safeguards to manage flora and fauna impacts and reduce the risk of impacts to species, communities and habitats that are not captured by other management plans or procedures are identified in Table 7.

b) Elimination of the hazard is the first preference of control, followed by engineering, then administrative controls. These controls include the relevant legal and project requirements identified in the environmental mitigation measures (EMM), Conditions of Approval (CoA) and FDC standard practice measures.

FDC Reference	Control	Responsibility	Training / Induction / Toolbox	Monitoring / Inspection / Audit
SM-Site Manager, SF-Site Foreman, CA-Contracts Administrator, CRM-Community Relations Manager, PM-Project Manager, EHSM-National EHS Systems Manager				
FF1.	Ensure all risks to flora and fauna are considered as part of the development of Construction Area Plans.	PM		
FF2.	The location of any threatened species or other important flora, fauna and habitat features identified during pre-clearing surveys will be identified on the Site Environmental Plans.	CA, SM		
FF3.	Ensure Work Packs include relevant environmental control information including an Environmental Management Plan where required.	EHSM		
FF4.	All personnel to receive Environmental Induction and toolbox talks as per the Environmental Management Plan.	SM, SF	✓	
FF5.	Ensure soil and water management measures are implemented and maintained in accordance with the Soil and Water Management Plan.	PM, SM		✓
FF6.	Areas of disturbance are to be located away from waterways / riparian areas where feasible.	SM, SF		
FF7.	The clearing of vegetation will be minimised with the objective of reducing impacts to all flora and fauna, including threatened species, to the greatest extent practicable.	PM, SM	✓	
FF8.	At least one week prior to the commence of clearing, pre-clearing surveys will be undertaken by a qualified and experienced Ecologist to determine the presence and on-site location of any habitat features, threatened species and any weed infestations in vegetation to be cleared for the project. The surveys will be undertaken within and adjacent to the construction footprint and will include inspections of any culverts to be disturbed by the project.	PM, CA		✓
FF11.	Pre-clearing surveys must document the number of trees to be removed (in accordance with the project definition of a tree).	PM, CA, Project Ecologist		✓
FF12.	Flagging of sensitive trees/areas and trees/areas to be cleared are to be in accordance with the project guidelines.	PM, SM, Project Ecologist	✓	✓

FDC Reference	Control	Responsibility	Training / Induction / Toolbox	Monitoring / Inspection / Audit
SM-Site Manager, SF-Site Foreman, CA-Contracts Administrator, CRM-Community Relations Manager, PM-Project Manager, EHSM-National EHS Systems Manager				
FF13.	Prior to any disturbance, clearing or grubbing activities in any locations, the following must be in place as per the Vegetation Clearance Procedure: • Limits of clearing and No-Go zones for significant flora and fauna must be established, fenced, flagged and sign posted prior to commencement of clearing. • An Ecologist or experience fauna handler needs to conduct a search for any wildlife that may need to be removed and relocated.	PM, SM	✓	
FF14.	Where no areas of habitat have been identified, clearing can be undertaken in a single-stage process. Where clearing is to be conducted in an area containing habitat, a two-stage clearance process must be implemented.	SM, SF		✓
FF15.	If grubbing is to be undertaken, then erosion and sediment controls must be in place (refer to the Environmental Management Plan) prior to grubbing to ensure that sediment laden water does not run off site.	SM, SF, EHSM	✓	✓
FF16.	Tree removal / clearing is to be undertaken by a suitably experienced person.	CA, SF	✓	
FF17.	Environmental advisor to be contacted and present onsite if excavation works are within the critical root zone to confirm if an arborist is required.	SM, SF	✓	✓
FF18.	Non-structural roots should be pruned by a clean diagonal cut and not exposed to air for more than 24 hours.	SF, SM	✓	
FF19.	All plant should remain on haul roads as much as possible so as to minimise damage to vegetation. Where possible, no plant or vehicles should be operated within a distance of 2x the dripline/canopy of trees (i.e. a tree of 4m canopy requires an 8m buffer zone)	SM, SF	✓	✓
FF20.	All site offices, compounds and stockpile areas are to be located within the limits of clearing or otherwise away from existing drainage lines and vegetation.	CA, PM, SM		✓
FF21.	Stockpiling / storage of cleared timber, mulch and other equipment is to be in areas designated and outside the critical root zone of remaining trees in accordance with the Environmental Management Plan. Cleared vegetation is not to be bulldozed into adjacent bushland beyond the limits of clearing.	SM, SF	✓	✓
FF22.	Cleared / removed weed-free vegetation will be used either on or off the project where possible (e.g. for habitat, chipped for mulch and reused).	CA, SM		
FF23.	Immediately prior to clearing and / or disturbance of culverts, a pre-clearance inspection for fauna, and any necessary relocations, shall be undertaken by a suitably qualified and experienced ecologist or fauna handler. Inspections, relocations and any associated management / offset measures will be undertaken in accordance with the Vegetation Clearance Procedure and Fauna Spotter Catcher Procedure.	CA, SM	✓	✓
FF24.	If hibernating bats are identified during the pre-construction surveys or pre-clearance inspections, a Bat Management Plan will be prepared prior to impacting on these areas.	HSEQM		

FDC Reference	Control	Responsibility	Training / Induction / Toolbox	Monitoring / Inspection / Audit
SM-Site Manager, SF-Site Foreman, CA-Contracts Administrator, CRM-Community Relations Manager, PM-Project Manager, EHSM-National EHS Systems Manager				
FF25.	If a threat to an animal is evident onsite, the Site Manager and / or Project Environmental Representative must be notified immediately. Works may need to cease if the animal is in danger or harmed until it has been relocated.	SM, HSEQM	✓	✓
FF26.	The site speed limits (maximum of 15 km per hour) must be obeyed at all times, especially areas where vehicle / fauna interactions are identified as high risk.	SM, SF	✓	✓
FF27.	Report any injured fauna to the Site Foreman or Site Manager and if safe to do so put the injured animal in a fauna bag (pillowcase, jumper etc.) and in a dark quiet place on the advice of the Ecologist. SM to notify injured wildlife to the WIRES (PH: 1300131554) if appropriate.	SM, SF	✓	
FF28.	At the completion of construction, complementary landscaping using locally endemic species (in the first instance) and locally native species to the greatest extent practicable will be undertaken in areas of construction ancillary facilities abutting creeks, canals and open space areas, where feasible and in accordance with a rehabilitation site plan.	CA, PM		
FF29.	Rehabilitation must ensure a net increase in the number of trees impacted by the project. The location of replacement trees must be determined in consultation with the relevant council(s) and the replacement trees are to have a minimum pot size of 75 litres.	CA, PM		
FF30.	Weed and pathogen management and control would be undertaken in accordance with the PMP.	PM, CA	✓	✓

Table 7: Project Controls for the Management of Flora and Fauna during project duration

6 Review and Improvement

6.1 Monitoring and Reporting

a) Inspections, observations, monitoring and reporting requirements relevant to the management of flora and fauna are identified in Table 8.

Item	Frequency	Standards	Reporting	Responsibility
Inspection				
Pre-clearance survey	Prior to any clearance of a potential habitat area	*Section 4.2* Biodiversity Guidelines	Ecologist report to include items listed in Section 4.2 of this Plan	PM, CA
Pre-clearance inspection	Maximum of 2 hours prior to vegetation clearance	*Section 4.4.1* Vegetation Clearance Procedure Biodiversity Guidelines Clearing and Grubbing Plan	Pre-clearance Checklist (including fauna capture / relocation records)	CA, SM
Site inspections	Weekly	All flora and fauna management measures in place, maintained and effective Monitor health of retained vegetation	Environmental Inspection Checklist	CA, SM, Environment Advisor (EA)
Visual surveillance	Daily	No-go zone fencing and signage in place and undamaged Erosion and sedimentation controls in place and maintained as per Erosion and Sediment Control Plans Storage and stockpile areas maintained and being used appropriately Weed and hygiene controls in place Site speed limits obeyed at all times Any threats to animals or unexpected finds of flora and fauna	Site Supervisor's logbook	Site Supervisor / Foreman
Monitoring				
Attendance of ecologist or fauna spotter/catcher during habitat clearance	As required by Land Disturbance Permit Duration of clearance	*Section 4.4* Biodiversity Guidelines	Vegetation/habitat clearance records Fauna records (including details of any fauna relocations)	CA, SM
Attendance of EA or arborist during excavations in critical root zone	Duration of excavation	This plan	Vegetation/habitat clearance records	CA, SM
Water Quality Monitoring	As per Water Quality Monitoring Program (SWMP)			
Rehabilitation monitoring	Weekly after rehabilitation works commence	Until area is stabilized. Weed and hygiene controls in place. No new weed incursion / establishment.	Environmental Inspection Checklist	CA, SM

Table 8: Monitoring requirements relevant to the management of flora and fauna

6.2 Non-Conformance Management, Corrective and Preventative Action

a) Environmental inspection, observation and monitoring results are interpreted to identify actual and potential non-compliances conformances and events that may result in nuisance, environmental harm and unacceptable loss of amenity or community complaints.
b) Where non-conformances are identified during regular inspections, corrective actions are raised, documented, issued to the non-conforming party and closed out through the FDC's non-conformance procedure.
c) Following the identification of a non-conformance, corrective and/or preventative actions will be identified and assigned to the appropriate person with set timeframes. Timeframes will be set to ensure any damage incurred is rectified and any chance of recurrence is eliminated as soon as practicable.

6.3 Complaints

a) Complaints will be recorded in accordance with the Project Management Plan. Information to be recorded will include location of complaint, time(s) of occurrence of alleged breach and perceived source.
b) Resident complaints will be responded to in a timely manner and action taken and recorded in accordance with the Project Management Plan.

6.4 Revision of this Plan

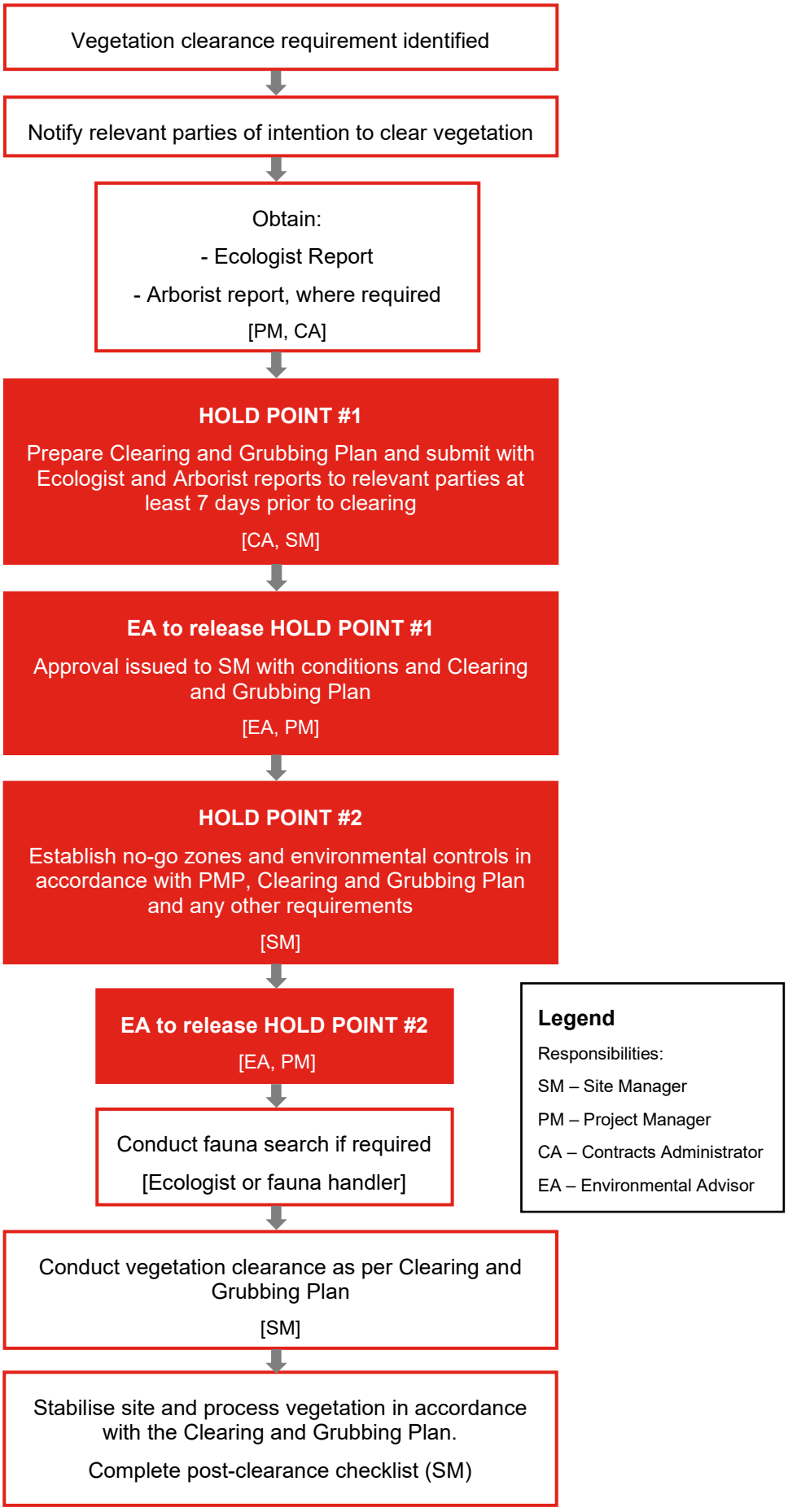
a) Continual improvement is achieved through constant measurement and evaluation, audit and review of the effectiveness of the plan, and adjustment and improvement of the PMP, project environmental outcomes and FDC integrated management system. Monthly reviews undertaken by the Project Manager and Site Manager and monthly Project Reviews provide specific opportunities to identify improvements in the environmental management system and / or this FFMP.
b) This plan will be updated as required:
    i. To take into account changes to the environment or generally accepted environmental management practices, new risks to the environment or changes in law;
    ii. Where requested or required by local authorities; or
    iii. In response to internal or external audits.

c) Updates to this plan shall be conducted in consultation with the HESEQ team and approved by the Project Manager.

APPENDIX A: VEGETATION CLEARANCE PROCEDURE

Project:	
Project Number:	
Revision Date:	

DOCUMENT APPROVAL					
Rev	**Date**	**Prepared by**	**Reviewed by**	**Approved by**	**Remarks**


Vegetation clearance requirement identified
Notify relevant parties of intention to clear vegetation
Obtain:
- Ecologist Report
- Arborist report, where required
[PM, CA]
HOLD POINT #1
Prepare Clearing and Grubbing Plan and submit with Ecologist and Arborist reports to relevant parties at least 7 days prior to clearing
[CA, SM]
EA to release HOLD POINT #1
Approval issued to SM with conditions and Clearing and Grubbing Plan
[EA, PM]
HOLD POINT #2
Establish no-go zones and environmental controls in accordance with PMP, Clearing and Grubbing Plan and any other requirements
[SM]
EA to release HOLD POINT #2
[EA, PM]
Conduct fauna search if required
[Ecologist or fauna handler]
Conduct vegetation clearance as per Clearing and Grubbing Plan
[SM]
Stabilise site and process vegetation in accordance with the Clearing and Grubbing Plan.
Complete post-clearance checklist (SM)
Legend
Responsibilities:
SM – Site Manager
PM – Project Manager
CA – Contracts Administrator
EA – Environmental Advisor

APPENDIX A: VEGETATION CLEARANCE PROCEDURE

1 Vegetation Clearing

1.1 Objectives

a) To ensure that all vegetation Clearing and Grubbing that may be required for the project is conducted in accordance with Project approvals.

b) To ensure that all Clearing and Grubbing is minimised within the approved areas whilst ensuring that impacts on biodiversity and the surrounding environment are minimised.

1.2 Training

a) All personnel to receive Environmental Induction and toolbox talks.

2 Vegetation clearance procedure

2.1 Pre-Clearing

a) When an area is identified to require vegetation clearing, the Site Manager is to notify the EA, PM and prepare and submit a clearing and grubbing plan to the EA.

i. A pre-clearance survey will be completed by the Project Ecologist to identify any hollow trees, hollow logs, significant weed infestations or threatened plant species. The Project Ecologist will provide a pre-clearing report that identifies the locations of the above (if recorded). An arborist is to report on any unsound trees that should be removed.

ii. The EA prepares a **Clearing and Grubbing Plan** in accordance with Construction Flora and Fauna Management Plan. The plan will include methods to identify weeds, a procedure for weed removal, the location of habitat trees or threatened flora and a procedure for staged habitat removal.

iii. Clearance near waterways is to be avoided as much as practicable. All existing trees and other vegetation must be retained within 15 metres of waterways and drainage lines until immediately before construction commences in the area.

iv. No-go Zones must be established, fenced or flagged, and sign posted at least 7 days prior to the commencement of clearing. All hollow bearing and habitat trees shall be flagged as per flagging guidelines (FFMP) and either fully fenced off or flagged/sign-posted with an identification number.

v. Erosion and sedimentation controls must be in place as per site PMP prior to clearing.

vi. Once all environmental controls are in place in accordance with the Clearing and Grubbing Plan, the Site Manager completes a re-clearance checklist and submits it to the EA for sign off.

2.2 During Cleaning

a) Clearing is to be in accordance with the requirements of the Clearing and Grubbing Plan.

b) A pre-clearance inspection for fauna is to be undertaken by an Ecologist or qualified and experienced fauna handler. Fauna searches should occur no more than two hours prior to the commencement of clearing and the time allocated to searching should be commensurate with the likelihood of finding fauna and the complexity of habitat features. Searches should include checks for signs of fauna such as fresh scats, scratches and remains of prey.

c) A pre-clearance inspection of structures, e.g. bridges and culverts.

d) The fauna handler or ecologist must be present during clearing and is to direct clearing in a manner that encourages and allows fauna to safely flee the clearing area. Where animals are unable to flee as a result of injury or otherwise, they will be captured and placed in adjacent areas of analogous habitat in accordance with the Fauna Spotter / Catcher procedure. Injured animals will also be cared for in accordance with this procedure.

e) Trees within 15 metres of watercourses should be felled manually. Where practicable, cut vegetation low to ground and leave roots and ground vegetation cover in place near watercourses to minimise erosion impacts.

f) Pruning shall be in accordance with AS 4373 – Pruning of Amenity Trees. It should be carried out by a qualified arborist using only the appropriate tools (e.g. loppers, chainsaw or vehicle mounted pole saw).

2.3 Post Cleaning

a) Post-clearance Checklist to be completed at completion of clearing.

b) Stabilise all disturbed areas with revegetation or other material immediately to prevent erosion.

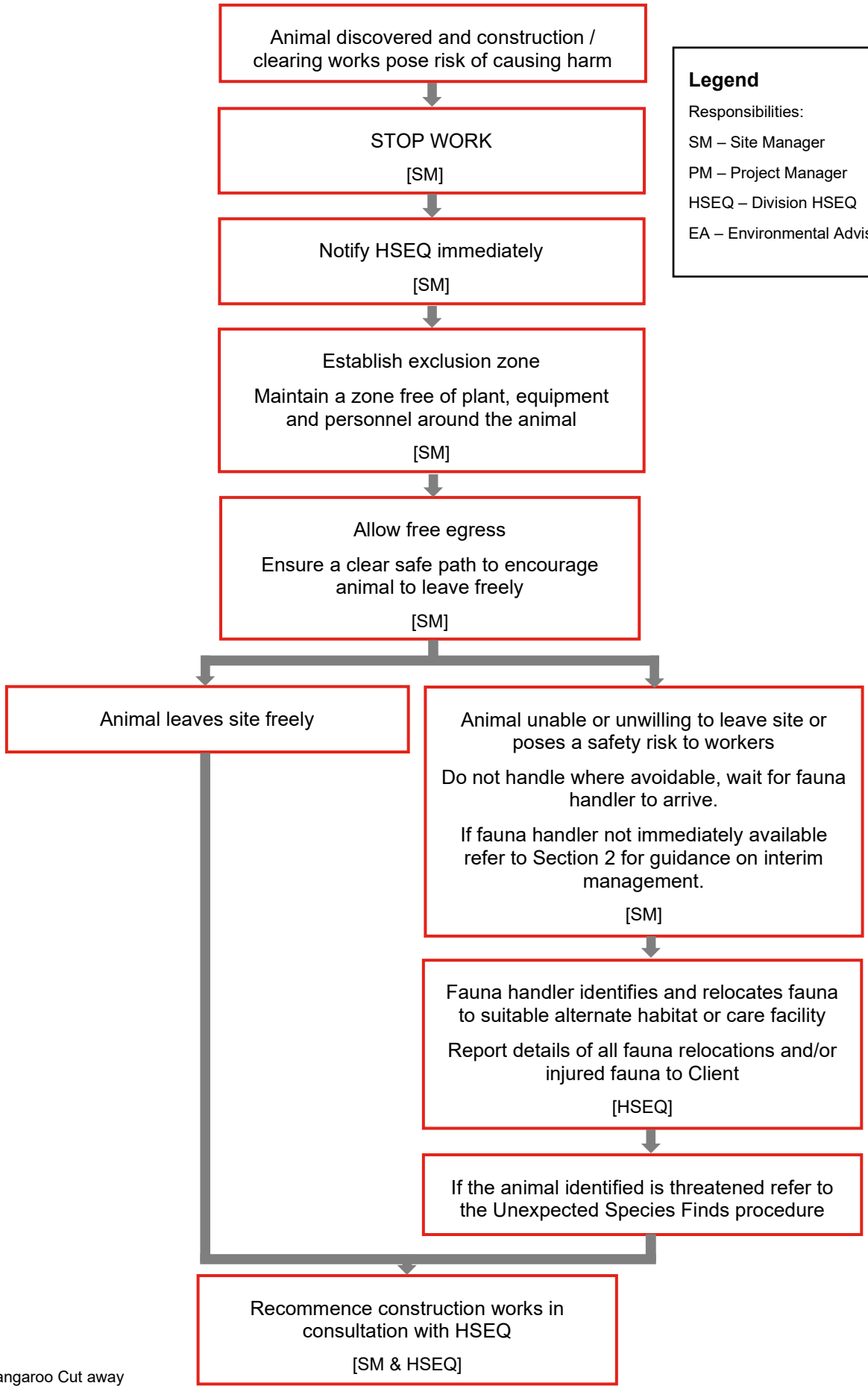
c) Any damage to vegetation to be retained must be reported to the Site Supervisor or EA immediately and rectified with the advice of an Ecologist or Arborist.

d) Holes remaining after tree removal must be backfilled and vegetated. Backfill material must prevent the infiltration and ponding of water and be compacted to at least the relative compaction of adjacent ground.

APPENDIX B: FAUNA SPOTTER AND CATCHER PROCEDURE

Project:	
Project Number:	
Revision Date:	

DOCUMENT APPROVAL					
Rev	**Date**	**Prepared by**	**Reviewed by**	**Approved by**	**Remarks**


Animal discovered and construction / clearing works pose risk of causing harm
STOP WORK
[SM]
Notify HSEQ immediately
[SM]
Establish exclusion zone
Maintain a zone free of plant, equipment and personnel around the animal
[SM]
Allow free egress
Ensure a clear safe path to encourage animal to leave freely
[SM]
Animal leaves site freely
Animal unable or unwilling to leave site or poses a safety risk to workers
Do not handle where avoidable, wait for fauna handler to arrive.
If fauna handler not immediately available refer to Section 2 for guidance on interim management.
[SM]
Fauna handler identifies and relocates fauna to suitable alternate habitat or care facility
Report details of all fauna relocations and/or injured fauna to Client
[HSEQ]
If the animal identified is threatened refer to the Unexpected Species Finds procedure
Recommence construction works in consultation with HSEQ
[SM & HSEQ]
Legend
Responsibilities:
SM – Site Manager
PM – Project Manager
HSEQ – Division HSEQ
EA – Environmental Advisor

APPENDIX B: FAUNA SPOTTER AND CATCHER PROCEDURE

1 Introduction

1.1 Objectives

a) To ensure all impacts on fauna, including threatened and protected fauna, are minimised during construction of the Project. This procedure covers the process to be implemented when an animal is unexpectedly discovered onsite.

1.2 Training

a) All personnel to receive Environmental Induction and toolbox talks.

2 Fauna Considerations

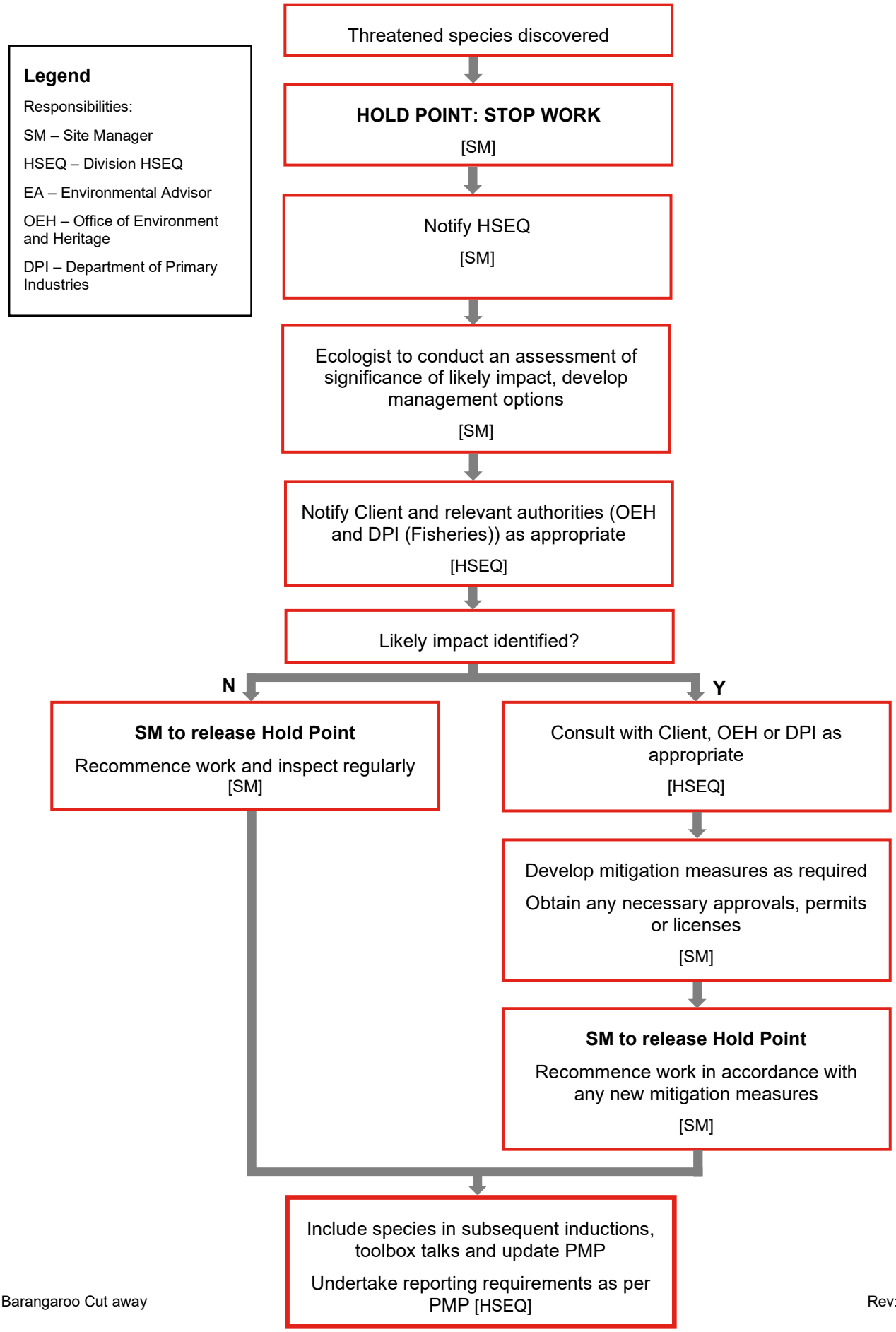
(Example, change to be site specific)

Fauna type / activity	Consideration
Handling of snakes	Handling of snakes can be unsafe and bites from these species can result in serious illness, damage to organs or even death. Some monitor species also have anticoagulants that result in excessive bleeding. Handling of these species should be attempted by appropriately qualified personnel and utilise no-direct contact handling techniques (i.e. use of snake hook and bag opposed to handing the animal).
Handling of bats and microbats during removal of structures (e.g. bridges and culverts)	Some species of bats carry the Australian Bat Lyssavirus which is a form of rabies. Anyone handing bats should be vaccinated. Bats that are held should be stored in a calico bag or sealed bat nest box. Prior to clearing of existing structures, an assessment for microbats and other fauna residing in the structure shall be completed. If the assessment determines that microbats are likely roost it the structure, a site-specific bat management strategy is to be developed to manage staged exclusion of the bats from the structure prior to removal.
Handling of frogs	Handling of frogs can result in the spread of the Amphibian Chytrid Fungus and shall be undertaken in accordance with the *DECC Hygiene Protocol for Control of Disease in Frogs* (DECC 2008). Plastic gloves will be worn by the fauna spotter-catcher when handling frogs. Frogs will be placed into plastic bag (zip lock) or other plastic containers with a small amount of
Handling of mammals and birds	Mammals and birds are capable of causing injury to handlers (e.g. bites, scratches) or themselves if handled incorrectly. They should be placed into a calico/hessian bag or a cardboard box. Possums which can easily rip through calico bags and should be placed within double lined canvas bags.
Arboreal animals	In the event that arboreal animals do not move or they cannot be captured because the tree hollow is too large, high or its recovery would breach safety requirements then the tree will be felled, and animals recovered post-felling.
Handling of fish and aquatic species	Ensure that containers for holding aquatic species provide sufficient amount of water and adequate aeration.
Relocation and release of animals	Animals should only be released at a time and place that is suitable to the species and provides it with a likely chance of survival (i.e. release should not increase the risk of stress or predation to the species). Release should not take place during periods of heavy rainfall.
Release of nocturnal species	Nocturnal animals captured during the day will be immediately taken to adjacent bushland and placed into a relocated tree hollow or nest box or held until the evening and released shortly after dusk (see below for holding of animals).
Temporarily holding animals	Collected animals may be held for a short period of time (preferably less than 24 hours prior to release). Animals kept for any purpose will be secured in a container and stored in a quiet, ventilated and preferably dark location away for construction activities.
Injured Animals	Injured animals will be cared for according to specific animal care and ethics guidelines and be given appropriate veterinary care, and if available, the services of one of the local animal welfare
Euthanasia	In some instances, severely injured and pest animals may need to be euthanized. Any undertaking to euthanasia animals will only be undertaken using a suitable technique (i.e. cervical dislocation for small mammals and ice slurry for introduced fish) done by personnel trained and competent (e.g. Project Ecologist) in the use of acceptable methods of euthanasia or will be taken to a veterinarian for euthanasia. Personnel required to euthanize animals shall consider methods that are humane, painless, and rapid.
Pest species	Pest animals are not to be released and should be euthanized (see above).
Release site selection	During the preliminary pre-clearing assessments, the EA or ecologist is to identify suitable release sites for fauna adjacent to the project area.

APPENDIX C: UNEXPECTED SPECIES FINDS PROCEDURE

Project:	
Project Number:	
Revision Date:	

DOCUMENT APPROVAL					
Rev	**Date**	**Prepared by**	**Reviewed by**	**Approved by**	**Remarks**


Legend
Responsibilities:
SM – Site Manager
HSEQ – Division HSEQ
EA – Environmental Advisor
OEH – Office of Environment and Heritage
DPI – Department of Primary Industries
Threatened species discovered
HOLD POINT: STOP WORK
[SM]
Notify HSEQ
[SM]
Ecologist to conduct an assessment of significance of likely impact, develop management options
[SM]
Notify Client and relevant authorities (OEH and DPI (Fisheries)) as appropriate
[HSEQ]
Likely impact identified?
N
Y
SM to release Hold Point
Recommence work and inspect regularly
[SM]
Consult with Client, OEH or DPI as appropriate
[HSEQ]
Develop mitigation measures as required
Obtain any necessary approvals, permits or licenses
[SM]
SM to release Hold Point
Recommence work in accordance with any new mitigation measures
[SM]
Include species in subsequent inductions, toolbox talks and update PMP
Undertake reporting requirements as per PMP [HSEQ]

APPENDIX C: UNEXPECTED SPECIES FINDS PROCEDURE

1 Introduction

1.1 Objectives

a) The objective of this procedure is to describe the actions to be taken when a threatened flora or fauna species is unexpectedly encountered on site.

2 Training

a) All personnel to receive Environmental Induction and toolbox talks.

3 Threatened species likely to occur in the area

3.1 Flora species

(Insert flora species identified and pictures of what they look like).

3.2 Fauna species

(Insert fauna species identified and pictures of what they look like).

APPENDIX D: WEED MANAGEMENT PROCEDURE

Project:	
Project Number:	
Revision Date:	

DOCUMENT APPROVAL					
Rev	**Date**	**Prepared by**	**Reviewed by**	**Approved by**	**Remarks**

Assess site [SM, EA]

- Undertake weed audit of site
- Prepare weed maps for project area

Establish environmental controls [SM, EA]

- Establish exclusion areas where necessary to separate areas of significant weed infestation.
- Install wheel wash and rumble grids at construction sites.
- Program works from least to most weed infested areas, where possible.

Determine weed removal methods [SM, EA]

- Treatment methods and timing to be determined by species' ecology and construction requirements.
- They are also to be informed by an Ecologist or weed specialist.
- Weed removal requirements to be provided in the Clearing and Grubbing Plan.

Undertake weed control / removal [SM, EA]

- Undertake slashing / mowing of weed infestations prior to seeding
- Weed removal management to be in accordance with a Clearing and Grubbing Plan, prepared in accordance with the Vegetation Clearing Procedure.

Ongoing management [SM]

- Clean machinery, vehicles and footwear when moving between sites.
- Ensure topsoil imported onto site is free of weed propagules (test at a NATA-approved laboratory if required).
- Minimise soil disturbance within weed infested areas.
- Monitor disturbed and rehabilitated sites for presence of weeds.

Dispose of weeds [SM]

- Dispose of weeds and weed contaminated material, including soil, at an appropriately licensed waste management facility in accordance with the Waste and Resource Management Plan.
- Cover loads that contain weed material.
- Do not use weeds as mulch.
- Do not reuse vegetation or topsoil containing weed material on site unless appropriately treated.

Stabilise area [SM]

- All bare soil areas should be stabilized to minimize erosion and further weed

Legend

Responsibilities:

SM – Site Manager

HSEQ – Division HSEQ

EA – Environmental Advisor

APPENDIX D: WEED MANAGEMENT PROCEDURE

1 Introduction

1.1 Objectives

a) To detail weed management and control practices that are to be implemented throughout construction so as to minimise the risk of the spread of weed species into, and out of the project area and between construction sites.

1.2 Training

a) All personnel to receive Environmental Induction and toolbox talks.

2 Weed management procedure

2.1 Weed mapping

a) Detailed weed identification and mapping will be undertaken of construction sites and adjacent areas by the Project Ecologist during pre-clearing surveys, and/or person trained in weed management prior to the commencement of construction.

2.2 Weed control

a) Weed control is to be undertaken in accordance with the Vegetation Clearance Procedure. Weed control methods will also consider Council requirements, where feasible.

Timing

a) Where possible, weed removal should be undertaken prior to development of seed (early spring is generally the best time for most weed treatment and removal)
b) If weeds have produced seed, seeds should be contained and removed prior to or during weed removal where feasible.
c) All works are to be undertaken from least to worst weed affected areas where feasible.

Weed control techniques

a) A guide to weed removal techniques for each weed species will be developed by a weed specialist once detailed weed mapping has been undertaken.
b) Weed control techniques to be applied in each case will depend on the species, time of year and extent of infestation. Hand removal and other minimal impact techniques should be the first preference where practical.
c) Requirements for weed control and disposal will be detailed in the site-specific Clearing and Grubbing Plan.
d) In areas of high weed infestation identified during the pre-clearing surveys, ensure all plant, vehicles and footwear are washed down in an allocated wash-down area prior to departing site for the duration of construction to avoid the spread of weeds.
e) Application of herbicides and/or pesticides should be undertaken by suitably trained and certified personnel in accordance with SafeWork NSW requirements.

2.3 Ongoing management

a) Disturbed and/or rehabilitated sites are to be monitored for new weeds and weed infestations during the weekly environmental inspection and any observations recorded on the weekly environmental inspection checklist. Any further weed control activities required are to be actioned in accordance with the PMP.

2.4 Weed Disposal

a) Where weeds cannot be effectively destroyed prior to topsoil stripping, contaminated topsoil will be isolated and either sterilised, encapsulated by deep burying, or disposed of at an approved off-site facility. Weeds are to be segregated and bagged (where possible) when disposing off site. Transport must be covered to further reduce the potential for spread of weed propagules.

Attachment 1: Noxious and environmental weeds known to occur in the project area

Table 1 identifies all weed species identified during vegetation surveys undertaken

Weed status i.e. Noxious (N) or Environmental (E) is provided as well as noxious weed class.

(Example, make project specific)

WEED SPECIES		Weed status	Class	
Scientific name	Common Name			Image
	Moth Vine	N	4	
Asparagus aethiopicus	Asparagus Fern	N	4	
Asparagus plumosus	Climbing Asparagus Fern	N	4	
Bidens pilosa	Cobbler's Pegs	E	4	
Bromus catharticus	Prairie Grass	E	4	

Table 1: Noxious and environmental weeds

Control class	Example control requirements
Class 1	The plant must be eradicated from the land and the land must be kept free of the plant. The weeds are also "notifiable" and a range of restrictions on their sale and movement exist.
Class 2	The plant must be eradicated from the land and the land must be kept free of the plant. The weeds are also "notifiable" and a range of restrictions on their sale and movement exist.
Class 3	The plant must be fully and continuously suppressed and destroyed.
Class 4	The growth of the plant must be managed in a manner that continuously inhibits the ability of the plant to spread.
Class 5	There are no requirements to control existing plants of Class 5 weeds. However, the weeds are "notifiable" and a range of restrictions on their sale and movement exists.

Table 2: Noxious weed classifications

42. APPENDIX L– Environmental Risk Assessment

ENVIRONMENTAL RISK ASSESSMENT

Date:	29/07/2024		
Project:	Barangaroo Cutaway	**Project No.**	200290
Address:	1 Merriman Street, Barangaroo		

Environmental Aspect/Impact	Legal Requirements	Environmental Actions, Controls and Criteria	Operational Controls			Monitoring			Checking, Corrective & Preventative Action
			Induction and/or toolbox	FDC	Subcont. SWMS & contracts	Type	Frequency	Responsibility	NCR/ Refer PMP
Dust Generation Particulate Emissions (General)	NSW - POEO Act (Sections 124-126)	• Install shade cloth on perimeter fencing. • Vehicle corridors will be clearly identified and restricted to control vehicle access onsite. • Limit vehicle speed onsite to 10km/hr. • Fixed and mobile (water tanker) water sprays. • Reduce work activities /stop work during moderate to high wind velocity periods. • Maintain equipment. Smokey plant to be stopped until repair works completed. • Turn off vehicle engines whilst not in use (no long periods of idling).	Y	Y	Y	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist	As required
Dust Generation (Demolition)	*NSW - POEO Act* (Sections 124-126)	• Breakers and crushing equipment to be fitted with dust filtration equipment or water sprays to control dust emissions.	Y	Plant/ Machinery Register	Y	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist	As required
Dust Generation (Construction)	*NSW - POEO Act 1997* (s 124-126)	• Minimise areas of site disturbed and stage works where possible. • Dust suppression strategies to be used, i.e. water sprays, soil binders, hydro mulching, controlled speed onsite, road base + shaker grids. • Stockpiled topsoils and rubble will be restricted to 4m high. Stabilise if insitu for >4-6months. • On site drilling or coring operations will be undertaken by equipment fitted with air filtration equipment.	Y	Y	N	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist	As required

Environmental Aspect/Impact	Legal Requirements	Environmental Actions, Controls and Criteria	Operational Controls			Monitoring			Checking, Corrective & Preventative Action
			Induction and/or toolbox	FDC	Subcont. SWMS & contracts	Type	Frequency	Responsibility	NCR/ Refer PMP
Odour	NSW - (POEO Act 1997 s 142	• If odorous materials uncovered, recover immediately. • Seek advice from consultant regarding soil /materials management.	N	Y	N	Visual	Daily	Diary	As required
Emissions to Air	NSW (*POEO Act* 1997, s 124-125	• Ensure machinery is maintained correctly.	Y	Y	Y	Visual	Daily	Diary	As required
Stormwater (Discharge from sedimentation basins, flooding)	*NSW - POEO Act* (Section 120) ANZECC Water Quality Guidelines NSW Department of Housing's Managing Urban Stormwater (2004)	• Water quality to meet ANZECC Water Quality Guidelines. → **PH 6.5- 8.5, Turbidity <50NTU, No visible oil & grease.** • Obtain advice for use of flocculants to settle sediment from water. • Sedimentation pond to be maintained at low levels to ensure capacity during rainfall event. • DO NOT DISCHARGE IF CONTAMINANTS SUSPECTED. Obtain advice.	Y	Stormwater & Sediment Control Plan	Y	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist	As required
Adjoining waterways (dewatering, soil erosion & runoff)	*NSW - POEO Act 1997(s 120, 122)* *NSW - PEO (General) Regulation 1998,cl 55;* *NSW - Local Government Act 1993, s 638]* NSW Department of	• Temporary drainage systems will be established to divert clean waters around the land development areas as appropriate. • Erect silt fences, bunds and construct swale drains. • Inspect at least weekly and after rainfall. • Maintain and/or replace as required. • Street sweepers will be employed on regular basis. • Install erosion and sediment controls before work starts. • Leave as much vegetation as possible. • Install temporary fences to define 'no go' areas in those areas that are not to be disturbed. Include the	Y	Stormwater & Sediment Control Plan	Y	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist	As required

Environmental Aspect/Impact	Legal Requirements	Environmental Actions, Controls and Criteria	Operational Controls			Monitoring			Checking, Corrective & Preventative Action
			Induction and/or toolbox	FDC	Subcont. SWMS & contracts	Type	Frequency	Responsibility	NCR/ Refer PMP
	Housing's Managing Urban Stormwater (2004) ANZECC Water Quality Guidelines	area under the canopy of trees so that tree roots will not be damaged by soil compaction. • Divert run-off from upslope away from the site, but ensure that you do not flood your neighbours. For example, dig drainage channels (catch drains sized to accommodate the upslope catchment). • Install sediment controls downslope of the site to catch sediment. • Check the erosion and sediment controls every day and keep them in good condition. • Leave or lay a kerbside turf strip (for example, the nature strip) to slow the speed of water flows and to trap sediment. • Limit vehicle entry and exit to one point, and lay geotextile and blue metal to stabilise it for all-weather access. • Clearly mark the access point and give an access map to all suppliers. • Protect all drains with a gravel sausage made from geotextile filled with blue metal. • Save the topsoil and stockpile it for use later in revegetation. Never place it around trees as this will kill them. • Store all stockpiles and building materials behind sediment fences. Cover them with plastic to prevent erosion by wind. • Get council approval before placing stockpiles or other materials on the nature strip or footpath. • Connect downpipes from the guttering to the stormwater drain as soon as the roof goes on. • Build a dam below the area used for cutting tiles, concrete and bricks. • Surround the wash-out area with a sediment fence that slows down the water flow. Site this area upslope of another sediment control.							

Environmental Aspect/Impact	Legal Requirements	Environmental Actions, Controls and Criteria	Operational Controls			Monitoring			Checking, Corrective & Preventative Action
			Induction and/or toolbox	FDC	Subcont. SWMS & contracts	Type	Frequency	Responsibility	NCR/ Refer PMP
		• Fill in all trenches immediately after services have been laid. • Spread the topsoil back when the work is finished and revegetate the site as soon as possible to control erosion. • Remove the sediment and erosion controls only after this is done. • Sweep the road and footpath every day. Washing down is unacceptable. • Never place any materials in the gutter or on the road. You will be fined for this. • Filter or settle-out all water pumped off the site. The water must be clear before it enters the stormwater system or creeks. Gypsum can be applied to muddy (turbid) water to help clay particles settle.							
Sewer (Trade waste)	Comply with the conditions of the trade waste consent or permit, or the local council approval, including acceptance standards	• No paints or other chemical to be poured down drains. • If required, obtain trade waste licence for discharge or local council approval.	Y	Stormwater & Sediment Control Plan	Y	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist	As required
Land (Acid sulphate soils, contaminated soils, imported fill)	NSW - Contaminated Land Management Act 1997, s 60; NSW - Contaminated Land Management	• Stop work if unexpected potentially **contaminated soils** are encountered. • Obtain waste classification from consultant in accordance with OEH\EPACW\EPA guidelines Environmental Guidelines: Assessment, Classification & Management of Liquid & Non-Liquid Wastes (June 2004) www.environment.nsw.gov.au/waste/envguidlns/index.htm. • Where required a Remediation Action Plan will be developed and implemented.	Y	Acid Sulphate Soils Management Plan	Y				As required

Environmental Aspect/Impact	Legal Requirements	Environmental Actions, Controls and Criteria	Operational Controls			Monitoring			Checking, Corrective & Preventative Action
			Induction and/or toolbox	FDC	Subcont. SWMS & contracts	Type	Frequency	Responsibility	NCR/ Refer PMP
	Regulation 1998, cl 3 Acid Sulfate Soils Management Advisory Committee	• Sign off by Site Auditor may be required to validate cleanup. • Any groundwater or ponded rainwater will be tested and classified by consultants prior to disposal. • Check Geotech requirements. Ensure soil classification suitable for land use i.e. Schools, residential, commercial etc.							
Land	NSW - Contaminated Land Management Act 1997, s 60 NSW - Contaminated Land Management Regulation 1998, cl 3	• Potential for **acid sulphate soils** will be assessed based on the sites proximity to low-lying coastal areas e.g. Coastal plains, wetlands and mangroves where the surface elevation is less than five metres above mean sea level. • If odorous soils (rotten egg gas) or grey/yellowed mottled soils encountered, stop work. • If suspected, consultant to prepare Acid Sulphate Soil Management Plan (ASSMP). • Excavation and neutralisation to be supervised by consultants as per ASSMP. • The requirements to **import fill** will be minimised by utilising on site cut material wherever possible. • All analysis certificates shall be handed over as part of the completion documents to the client. • Record all imported fill on Form F067 – Imported Fill Register. • Mark up locations where fill compacted in site plan. Survey if required		Y	Y				As required
Resources – water, materials, energy		• For design and construct jobs, refer to the design specification for ESD requirements and product choices. • Buy local wherever possible to reduce impacts of transport on environment.		Y					As required
Noise	NSW - POEO Act (Sections 139, 140)	• Refer to DA for noise restrictions and working hours. • Use hoarding or acoustic mats as required.	Y	Noise Management Plan	Y	Visual Inspection	Daily Weekly	Diary	As required

Environmental Aspect/Impact	Legal Requirements	Environmental Actions, Controls and Criteria	Operational Controls			Monitoring			Checking, Corrective & Preventative Action
			Induction and/or toolbox	FDC	Subcont. SWMS & contracts	Type	Frequency	Responsibility	NCR/ Refer PMP
		• Situate generators and plant away from sensitive receivers. • Turn off machinery. Maintain equipment and stop noisy plant until repaired. • No early deliveries.						Site Inspection Checklist	
Vibration		• Conduct dilapidation report prior to work starting. • Limit the use of vibratory rollers, rock breakers, impact piling etc. adjacent to buildings (>7m). • Regenerated noise may also transfer through bedrock and building structures. • Obtain advice if required.	Y		Y				As required
Community Concerns		• Provide information (e.g. Signage, letterbox drops) to community on programmed works. • Provide contact name for inquires. • Advice locals of “noisy” work. • If required in noise sensitive areas and/or in response to complaints, engage consultants to undertake monitoring at nominated receivers. • Vehicles will not be permitted to queue outside the site or in residential areas unless a defined area is established which does not adversely impact on neighbours.	Y	Y					As required
Flora	NSW - State Environmental Planning Policy No 14 - Coastal Wetlands, s 7(1, 5), 7A; NSW - Native Vegetation Act 2003, s 12; Forestry Act 1916, s27(1);	• Review planning documentation to determine the presence of any protected, threatened or significant flora. Obtain approvals as required. • Engage arborist to develop tree management plan or refer DA and arborist reports. • Education and training at site toolbox meetings and induction. • Report all sightings to the Site Manager. • Fence or barricade protected flora at the drip zone. Erect Keep Out signage. • Do not stack materials under/against trees.	Y	Y Consultant Report		Visual Inspection	Daily Weekly	Diary Site Inspection Checklist	As required

Environmental Aspect/Impact	Legal Requirements	Environmental Actions, Controls and Criteria	Operational Controls			Monitoring			Checking, Corrective & Preventative Action
			Induction and/or toolbox	FDC	Subcont. SWMS & contracts	Type	Frequency	Responsibility	NCR/ Refer PMP
	NSW - National Parks and Wildlife Act 1974, s 117(1), 118(1)] Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth), s 12, 15B, 16, 18, 20, 21, 23	• The potential for reuse of vegetative wastes by mulching, chipping or on-site placement of trunks or limbs shall be reviewed for each project.							
Fauna	NSW Environmental Planning and Assessment Act 1979, s 5A, 78A(8))(b), 79B, 111 & 112-112E NSW - Threatened Species Conservation Act NSW - 1995; National Parks and Wildlife Act 1974, Part 8A Environment Protection and Biodiversity Conservation Act 1999	• All native animals protected. • Review planning documentation to determine the presence of any protected, threatened or significant fauna. Obtain approvals as required. • Site rules/induction to include information regarding of the • For injured animals, to relocate call WIRES.	Y	Y Consultant Report		Visual Inspection	Daily Weekly	Diary Site Inspection Checklist	As required

Environmental Aspect/Impact	Legal Requirements	Environmental Actions, Controls and Criteria	Operational Controls			Monitoring			Checking, Corrective & Preventative Action
			Induction and/or toolbox	FDC	Subcont. SWMS & contracts	Type	Frequency	Responsibility	NCR/ Refer PMP
	(Commonwealth), s 12, 15B, 16, 18, 20, 21, 23								
Waste Litter	*NSW - POEO Act (Section 116, 142),* *NSW - Waste Avoidance and Resource Recovery Act 2007* *NSW – PEOAAct 1997, s 143, 144-146* *NSW Crown Lands Act 1989, s 155* *NSW Management of Waters and Waterside Lands Regulations - N.S.W., cl 13;* *NSW - PEO (Waste) Regulation 2005, cl 49*	• Hazardous materials surveys to be completed. • Materials to be removed prior to demolition. • Registers and waste disposal requirements as per WorkCover and OEH\EPACW\EPA requirements for removal, storage, transport and disposal. • General site wastes –use one bin system and sort in contractors yard to produce quantities of material for recycling, reuse, disposal etc. • Empty drums are to be taken off-site for disposal. • Empty drums shall be crushed prior to recycling/disposal. • Do not overfill skip bins. Provide plenty for use. Cover where potential for windblown litter.	Y	Waste Management Plan	Y	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist	As required
Landfilling	*NSW - POEO Act (Section 116, 142)*	• Reduce, reuse, and then dispose. • Dispose of hard construction wastes for recycled gravels and sands.	Y	Y					As required

Environmental Aspect/Impact	Legal Requirements	Environmental Actions, Controls and Criteria	Operational Controls			Monitoring			Checking, Corrective & Preventative Action
			Induction and/or toolbox	FDC	Subcont. SWMS & contracts	Type	Frequency	Responsibility	NCR/ Refer PMP
		• Do not send soil to landfill until alternatives for beneficial reuse have been explored as per consultants advice. • Consideration should be given to chipping of the vegetation and reuse. • Reuse packaging to protect works.							
Chemicals	*NSW - POEO Act (Section 116, 142,)* *NSW - Occupational Health and Safety Regulation 2001*	• Chemicals to be **stored** in bunded areas (impervious + 110% of largest container) away from stormwater drains & pits. • Refer Workcover Code of Practice for Storage & Handling of Dangerous Goods, OEH\EPACW\EPA Guidelines for Bunding & Spill Management. Appropriate chemicals storage is in conformance with: → AS 1940 The Storage and Handling of Flammable and Combustible Liquids → Storage and Handling of Dangerous Goods WorkCover Code of Practice 2005– refer p. 86 • OEH\EPA requirements *http://www.environment.nsw.gov.au/water/bundingspill.htm* • Ponded water within **bunds** will not be discharged to stormwater. • **Fuel and hydraulic leaks** to be cleaned up immediately. • **Drilling muds** to be contained within bunds and reused. • **Liquid paints** NOT to be poured down drains. Spread on waste cardboard or similar and leave to dry. Paint brushes to be rinsed and paint solids allowed to settle. Container of paint solids to be disposed to liquid waste facility. • Construct **concrete washout** pit for washout, away from stormwater drains. Send back to batch plant where possible.	Y	Y	Y	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist	As required

Environmental Aspect/Impact	Legal Requirements	Environmental Actions, Controls and Criteria	Operational Controls			Monitoring			Checking, Corrective & Preventative Action
			Induction and/or toolbox	FDC	Subcont. SWMS & contracts	Type	Frequency	Responsibility	NCR/ Refer PMP
		• **Concrete cuttings** to be contained and wetvac to prevent runoff into stormwater drains. • Storage of **bulk fuels** (>200L) on site is prohibited. All refueling shall be undertaken by a mobile facility with appropriate spill control and containment control equipment. • MSDS's must be provided to the Foreman prior to a chemical being received on site and by subcontractors using chemicals/products.							
Traffic	*Local Government Requirements*	• Develop and implement traffic management plans. Submit to local council as required. • Signage and notices regarding disruptions. • Use crushed concrete, mulches etc. along site access roads. • Install shakers and wheel wash as required. • Organise regular street sweeping. • Haulage routes and rules will be provided to subcontractors prior to commencing on site. • All loads of soil, demolition wastes, general wastes etc. are to be tarped	Y	Traffic Management Plan	Y	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist	As required
~~Hazardous Materials (Lead paint)~~	~~*NSW - POEO Act* (Section 142)~~	~~• If disturbing or removing dust or paint that could contain lead, wear a respirator or dust mask and protective clothing.~~ ~~• Seal the rooms with plastic.~~ ~~• Do not use open-flame torches on lead paint as they create lead fumes. If you must use a heat gun, use it on the lower setting to keep the paint temperature below 370 degrees C.~~ ~~• Avoid using dry-sanding techniques: keep the surface wet to minimise dust.~~ ~~• Don't sweep or use a domestic vacuum cleaner to clean up; lead dust will pass right through it. Use a high-efficiency particulate air (HEPA) vacuum cleaner. These can be hired.~~	~~Y~~	~~Consultants Report~~	~~Y~~				

Environmental Aspect/Impact	Legal Requirements	Environmental Actions, Controls and Criteria	Operational Controls			Monitoring			Checking, Corrective & Preventative Action
			Induction and/or toolbox	FDC	Subcont. SWMS & contracts	Type	Frequency	Responsibility	NCR/ Refer PMP
		• ~~When finished, wipe all surfaces with a damp cloth and high-phosphate detergent.~~ • ~~Wash face and hands before eating, drinking, or smoking.~~ • ~~Refer to **Lead Safe: A Renovator's Guide to the Dangers of Lead** and the Australian Standard AS4361.2 Guide to Lead Paint Management: Part 2 Residential and Commercial Buildings 1998.~~							
Hazardous Materials (Asbestos)	NSW - POEO Act (Section 142) NSW PEO (Waste) Regulation 2005, cl 42	• A licence subcontractor must be used to demolish, remove, repair or disturb asbestos. • A WorkCover asbestos licence is required to remove 10 square metres or more of bonded asbestos. • A Workcover licence is required to remove, repair or disturb friable asbestos.	Y		Y				
Aboriginal heritage	National Parks and Wildlife Act 1974, s 90-91 NSW - Heritage Act 1977, s 146	• Education and training at site toolbox meetings and induction. • **It is illegal to destroy heritage items.** • Review local or regional environmental plans, or on the State Heritage Register is to be consulted prior to work starting onsite. • Obtain excavation permit issued by the Heritage Council of NSW if required. • Any heritage relics or sites discovered during construction shall be reported to the Office of Environment and Heritage. • Work in the subject area to cease until specialist advice is obtained. • The area will be fenced, and signs erected to restrict access. • Heritage consultants may be required to provide advice on demolition/construction processes and finishes.	Y	Consultant Report	Y	Visual Inspection	Daily Weekly	Diary Site Inspection Checklist	As required

Environmental Aspect/Impact	Legal Requirements	Environmental Actions, Controls and Criteria	Operational Controls			Monitoring			Checking, Corrective & Preventative Action
			Induction and/or toolbox	FDC	Subcont. SWMS & contracts	Type	Frequency	Responsibility	NCR/ Refer PMP
~~European heritage~~	~~NSW Heritage Act 1977~~	• ~~Education and training at site toolbox meetings and induction.~~ • ~~**It is illegal to destroy heritage items.**~~ • ~~Check the OEH\EPACW\EPA Aboriginal Heritage Information Management System (AHIMS).~~ • ~~Also check the register of the National Estate.~~ • ~~Obtain approval from NPWS (Section 90 consent).~~ • ~~Any evidence of Aboriginal relics discovered during construction shall be reported to the National Parks and Wildlife Service.~~ • ~~Local Land Council representatives may be required to monitor stripping/excavation.~~ • ~~Work in the subject area to cease until specialist advice is obtained.~~ • ~~The area will be fenced, and signs erected to restrict access.~~	~~Y~~	~~Consultant Report~~	~~Y~~	~~Visual Inspection~~	~~Daily Weekly~~	~~Diary Site Inspection Checklist~~	~~As required~~
Emergency Preparedness		• Spill kit onsite. • Refer to the MSDS for advice and procedures. • All spills must be reported to the Site Manager & cleaned up. **Complete FDC Incident Report (F035).** • ~~Sediment pond pumped out regularly to maintain capacity in case of emergency.~~ • ~~Ensure you know where stormwater drains are and have materials to block them in case of a fire.~~	Y	Y	Y	Inspection	Weekly	Site Inspection Checklist	As required

43. APPENDIX M – SSDA Conditions

Refer to Appendix E - Environmental Audit Plan for SSDA conditions

44. APPENDIX N – ISO 14001 Certification

Sustainable Certification™

CERTIFICATE OF REGISTRATION

FDC Group of Companies
22-24 Junction Street
Forest Lodge
2037
NSW
Australia

has been assessed and certified as meeting the requirements of:

ISO 14001:2015

Environmental Management Systems.

For the following activities:

Project and /or construction management for residential, industrial and commercial building, including ground up constructions, refurbishment or additions and interior fit out to existing buildings; project management, design management, installation, industrial, commercial and civil buildings.

Certificate Number: 2023-5419

Certified Date: 9-6-2023

Expiry Date: 20-9-2026

Issue Date: 30-7-2024

This Certificate is valid subject to successful completion of surveillance audits.

Please visit www.sustainablecertification.com.au/verify to verify the validity of this certificate

This is a Multi Site Certification

Authorised By

Swami Nathan
Director
Sustainable Certification Pty Ltd
Level 5, 326 William Street
Melbourne 3000
Australia

SUSTAINABLE CERTIFICATION
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Endorsed
Environmental
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CERTIFICATE OF REGISTRATION

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Forest Lodge
2037
NSW
Australia

ISO 14001:2015

Environmental Management Systems.

Additional Information

FDC Construction & Fitout Pty Ltd
FDC Construction & Fitout (QLD) Pty Ltd
FDC Construction & Fitout (VIC) Pty Ltd
FDC Construction & Fitout (WA) Pty Ltd
FDC Construction & Fitout (SA) Pty Ltd
FDC Construction & Fitout (ACT) Pty Ltd
FDC Construction (NSW) Pty Ltd
FDC Fitout & Refurbishment (NSW) Pty Ltd
FDC Mechanical Services Pty Ltd
FDC Nyamba Pty Ltd

Additional Facilities

22-24 Junction Street, Forest Lodge, NSW, 2037, Australia
1010 Latrobe Street, Melbourne, VIC , 3008, Australia
Level 3, 1 Breakfast Creek Road, Newstead, QLD, 4006, Australia
2 / 45 Gilbert Street, Adelaide, SA, 5000
Level 4, 10 Moore Street, Canberra, ACT, 2601

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