BESIX Watpac

Construction Environmental Management Plan NSW

N231

Bank Street Park

6 February 2026

Revision History

Version	Date	Revision Description	Project Manager/Senior Site Supervisor Sign off
CMS REV 08	29/10/25	Legislation Update (WHS Reg 2025 / POEO 2022).	Catriona Monaghan
01	03/11/25	Rev 1 – Initial PEMP	Fay Crawford
02	06/02/2025	Rev 2 – Updates as per SSDA Requirements	Fay Crawford

Table 1 SSDA Requirement

Requirement	Reference
C28. Prior to the commencement of works, a Construction Environmental Management Plan (CEMP) must be submitted to 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	Section 5.3
(iii) consultation strategy for liaison with surrounding stakeholders, including other developments under construction, and a complaint handling procedure	Section 6.7
(iv) traffic management	Protocol 7.19
(v) noise and vibration management, prepared by a suitably qualified person	Protocol 7.4 & 7.5
(vi) management of dust and odour to protect the amenity of the neighbourhood	Protocol 7.3
(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	Protocol 7.7
(viii) contamination management, including any unexpected contamination finds protocol	Protocol 7.12, 7.20, 7.22 and Section 8
(ix) waste management	Protocol 7.17
(x) external lighting in compliance with applicable Australian Standards, and positioning lighting or use timers/shields to not shine directly on the harbour where possible	Protocol 7.18
(xi) archaeological site induction	Protocol 7.13
(xii) terrestrial and marine flora and fauna management.	Protocol 7.9 & 7.10
(b) Construction Traffic and Pedestrian Management Sub-Plan	Appendix B
(c) Construction Noise and Vibration Management Sub-Plan	Appendix C
(d) Construction Vessel Traffic Management Plan	Appendix D
(e) Construction Waste Management Sub-Plan	Appendix E
(f) Construction Soil and Water Management Sub-Plan	Appendix F
(g) an unexpected finds protocol for contamination and associated communications procedure	Section 8.1
(h) an unexpected finds protocol for Aboriginal and non-Aboriginal heritage and associated communications procedure	Section 8.2

(i) consideration of constructing staging including the communication with, and relocation of, the existing users of the site	Section 6.7
(j) 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.	Section 7.12 and RAP

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1 System Application

1.1 Planning Environmental Management

BESIX Watpac is committed to safely construct the project, on time and on budget, without harm to the environment.

This plan, prepared by BESIX Watpac, sets out the procedures BESIX Watpac will implement to manage our site activities from an environmental perspective to:

- Ensure compliance with the Environmental Requirements and Statutory Requirements
- Maximise the achievement of the Environmental Objectives.
- The Construction Environmental Management Plan addresses:
- All Environmental Requirements
- All Statutory Requirements
- All Environmental Objectives
- The roles and responsibilities of BESIX Watpac and subcontractor personnel (including BESIX Watpac's key people) regarding the Environment
- The training and awareness programmes provided to personnel regarding the Environment
- The procedure for preparing and finalising the Construction Environmental Management Plan
- The procedure for regularly identifying, controlling and monitoring possible and actual impacts on the Environment associated with the works, including the procedures for recording, reporting, responding to and finalising:
- matters arising out of or in connection with such identification, control and monitoring
- complaints, incidents (including Environmental Incidents), near misses and other situations or accidents regarding the Environment during the works
- The procedure for regularly reviewing, updating and amending the Construction Environmental Management Plan (including as a result of any complaint, incident (including Environmental Incidents)
- The procedure for ensuring subcontractor compliance with the Construction Environmental Management Plan
- The procedure for regularly auditing or other monitoring of the Construction Environmental Management Plan, including the procedures for recording, reporting, responding to and finalising:
  - » matters arising out of or in connection with such audits or other monitoring
  - » complaints, incidents (including Environmental Incidents), near misses and other situations or accidents regarding the Environment

The additional matters specified in the Contract Particulars.

1.2 Preparation and Application

This Construction Environmental Management Plan has been prepared to document the company's environmental commitments, objectives and procedures for the project.

This document is structured in the following principles:

- 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 BESIX Watpac's environmental management system, including reporting and monitoring
- An outline of roles and responsibilities for the project, including site staff and BESIX Watpac's management support teams

- A project specific risk assessment that analyses the risks under each aspect, presenting the logic/research behind the findings or recommendations and accompanying management strategies, recommendations or controls
- An outline of BESIX Watpac's Standard Environmental Protocols (SEPs) represented in the tables at the back of the CEMP, that address the standard controls against each of those environmental risks

This document is prepared by BESIX Watpac's Environmental Manager for review and implementation by BESIX Watpac's project team.

The CEMP is a live document that may require review and update. A review of the EMP may be triggered by the following:

- Once the planning phase is complete
- Additional scope of works for which the impact to environment was not anticipated
- In response to environmental incidents, near-misses and/or other situations or accidents on Commonwealth property or the Site
- In response to complaints that have been investigated and may have some validity.

In the event the CEMP required updating, this must be reviewed and approved by the Environmental Manager and the Project Manager.

As this CEMP in referenced in all Subcontract's, it forms part of the Subcontractor's contract to comply with the requirements and obligations provided under this plan. As such it should be maintained as a controlled and accessible document, that is formally transmitted during package tenders and transmitted to them once the tenderer is successful.

1.3 Plan Review (During Project Delivery)

The Construction Environmental Management Plan, its operation and implementation, and any elements of the overarching Environmental Management System must be periodically reviewed during project delivery.

Formal review of the CEMP must be implemented for currency and applicability at least once every 6 months. Other triggers for review may include:

- Corrective or Preventative Actions are raised through the reporting process requiring amendments to the CEMP
- Changes to relative legislative, regulatory or compliance obligations
- Significant changes to any constituent of project construction
- Request by the Principal or any regulatory authority
- Significant changes to the environment
- Changes to Best Practice Environmental Management or
- Identification of new environmental risks.

The Environmental Representative (or Project Manager nominee) will be responsible for review and amendment of the CEMP. If updated at any stage of the project, a revised copy will be submitted to all relevant stakeholders.

1.4 Authorisation

The issue and use of this CEMP is approved by the Project Manager/Environment Manager

Approved by
WHSE Manager – NSW &ACT

Date 05/11/2025

Approved by
(Project Manager)

Date 04/11/2025

2 Project Description

2.1 Scope of Works

The Bank Street Park development forms part of the Blackwattle Bay Precinct, adjoining the waters of Blackwattle Bay. A critical part of the Blackwattle Bay Precinct is the high-quality public domain which includes a series of parks and open spaces connected by a foreshore promenade. Bank Street Park will bring new active and passive recreation uses into a unique park environment, catering for both existing and future communities in the vicinity.

BESIX Watpac is the designated Contractor for the development of Bank Street Park, a 1.1-hectare waterfront park that surrounds the southern pylon of the ANZAC Bridge.

The project features include waterside café area, outdoor multipurpose court, playground, outdoor fitness station, public amenities, marina office, water access for paddle craft and storage for dragon boats, harbour foreshore walkways and new cycle paths, public art, wayfinding and signage, adaptive reuse of buildings, open lawns and first nations inspired structures.

The project will involve site preparation (clearing, earthworks, remediation), demolition and adaptation of existing buildings, new and adapted community facilities, relocation of marina office, adaptive reuse of 'Building D' for storage, Dragon Boat storage with rooftop deck, public domain works, including 'Interpretation garden' in existing 'Building A ruins', foreshore promenade, muti-purpose sports court with artwork surface, nature-based inclusive play space , fitness equipment, picnic shelters with tables and BBQ's, public art, wayfinding and interpretive signage, lighting, bike parking and FFE, harbour works including kayak/ passive craft pontoon, repair to existing seawalls, works to Bank Street road including reinstatement of existing on-street parking, accessible parking space, loading zone adjacent to 1-3 Bank Street, kerb upgrades.

2.2 Site Location and Description

Bank Street Park is located at 1A – 19 Bank Street, Pyrmont NSW within the City of Sydney local government area (LGA), and the site area is approximately 1 hectare. It adjoins the foreshores of Glebe to the west and Pyrmont Bridge Road and Wentworth Park to the south.

A large amount of the site is directly under the ANZAC Bridge. There is a significant residential community of apartment buildings to the north-east.

Figure 1. Project Location

3 Construction Environmental Risk Assessment

An Environmental Risk Assessment has been developed for the project. The Environmental Risk Assessment, refer Appendix A, identifies the environmental aspects that are likely to be present on the project.

The ‘Associated Impact’ column identifies the risk associated with the aspect if the relevant controls and precautions are not fully considered or implemented.

The risk associated with each aspect is assessed using the BESIX Watpac Risk Matrix Calculator, included with the Environmental Risk Assessment.

The ‘Control’ column reflects the controls to be implemented throughout the scope of the project to eliminate or minimise the risks associated with the aspects, with measures to verify compliance identified in the ‘Verification of Compliance’ column.

Environmental aspects with a residual risk level of ‘High’ or ‘Extreme’ are considered as significant environmental aspects and are to be communicated to all personnel as part of the site induction process (refer S04-01 Induction).

The ensure that the Environmental Risk Assessment remains current for the works being conducted, it is to be reviewed and evaluated for effectiveness at intervals of no more than 4 months.

4 Project Framework and Objectives

4.1 BESIX Watpac Environment Objectives

The objective of BESIX Watpac's Environmental Management is to undertake these activities in full consideration of Environmental requirements of Contracts, applicable legislation and as an environmentally responsible organisation of the broader community.

To this end BESIX Watpac has established and maintains an Environmental Management System planned and developed with all management functions in accordance with AS/NZS ISO 14001: 2015 - Environmental Management Systems to control and minimise environmental impacts and preserve the environment through the following:

- The control and minimisation of contaminate discharges or disturbances to air, land and water
- The control and minimisation of waste
- To review and re-source component materials, as opportunity presents
- Undertake regular review of the documented Environmental Management System against performance targets with the view toward continual improvement and the prevention of pollution.

Proper adherence to the Environmental Management System and active participation in environmental issues pertinent to BESIX Watpac's activities is a requirement of all BESIX Watpac personnel and those entities engaged by BESIX Watpac in the delivery of projects.

4.2 Construction Environment Commitment

The BESIX Watpac Project Team is committed to the implementation of a comprehensive and effective EMS for the design and construction of this project.

Our Construction Environmental Management Plan will comply with all elements of the BESIX Watpac Environmental System, certified to ISO 14001. It will embrace all elements of managing the design and construction of the Project to ensure full compliance with the requirements of the current legislation and expectations of the Principal and neighbouring community.

The Construction Environmental Management Plan and its application will be continuously assessed and improved through processes of review and audit.

All participants in the project are responsible for implementing the PEMP and contributing to its improvement in order to ensure we meet our objective of providing a project which meets agreed requirements in terms of its construction and operational performance.

4.3 Key Performance Indicators

Table 2 Key Performance Indicators

Policy	Objective	Measurement Basis	Target	Responsibility
Minimise Impacts	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.	Project Manager
Compliance	Comply with all Statutory Requirements	Commonwealth, State and Local Council regulation	Zero Penalty Infringement Notices issued by Local Council or State EPA	Project Manager

Policy	Objective	Measurement Basis	Target	Responsibility
			Zero Prosecutions issued by Local Council or State EPA	

4.4 Regulatory Framework

Development on the site shall be carried out in a manner that avoids significant adverse impacts to the onsite and surrounding environment and gives appropriate regard to the following Commonwealth and NSW legislation:

Commonwealth Legislation

- Environment Protection and Biodiversity Conservation Act 1999 (Cth) – protection of matters of national environmental significance.

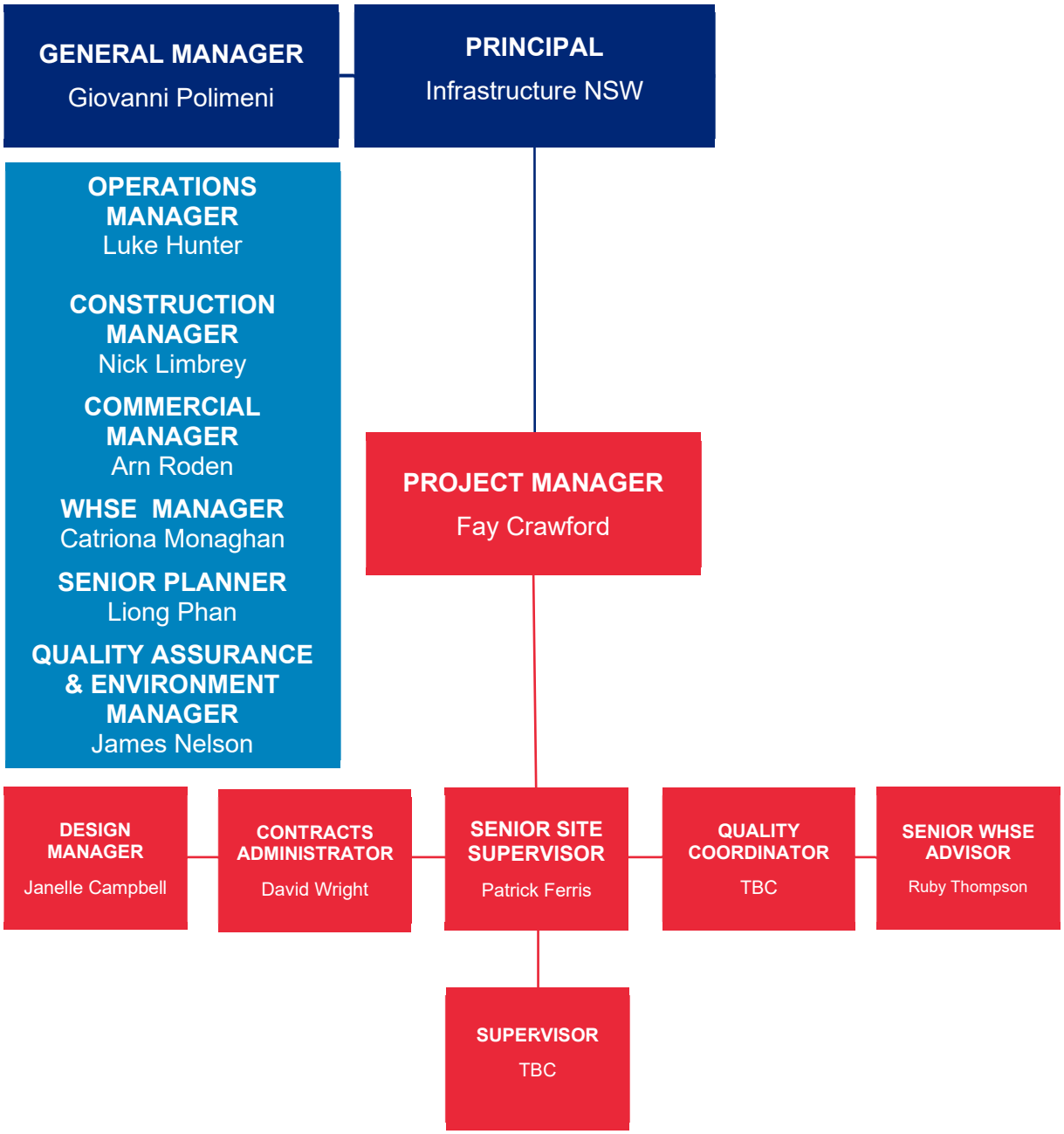
NSW Legislation and Regulations

- Protection of the Environment Operations Act 1997 (NSW)
- Protection of the Environment Operations (General) Regulation 2022 (NSW)
- Protection of the Environment Operations (Clean Air) Regulation 2022 (NSW)
- Protection of the Environment Operations (Noise Control) Regulation 2017 (NSW)
- Protection of the Environment Operations (Waste) Regulation 2014 (NSW)
- Environmental Planning and Assessment Act 1979 (NSW)
- Biodiversity Conservation Act 2016 (NSW)
- Contaminated Land Management Act 1997 (NSW)
- Waste Avoidance and Resource Recovery Act 2001 (NSW)
- Water Management Act 2000 (NSW) and Water NSW Act 2014 (NSW)
- Heritage Act 1977 (NSW) – protection of historical heritage items, places and relics
- National Parks and Wildlife Act 1974 (NSW) – protection of Aboriginal cultural heritage
- Work Health and Safety Act 2011 (NSW) and Work Health and Safety Regulation 2025 (NSW) – environmental and hazardous-substance interfaces

- Codes and Guidelines
- Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW (2010)
- Managing Urban Stormwater: Soils and Construction (“Blue Book”, 4th Edition)
- NSW EPA Approved Methods for Sampling and Analysis of Air and Water Pollutants (2022)
- AS 2436: 2010 Guide to Noise Control on Construction and Demolition Sites

5 Project Organisation

5.1 Project Organisation Chart



5.2 Roles and Responsibilities

5.2.1 Operations Manager

The Operations Manager has responsibility to:

- Ensure construction activities are undertaken in accordance with BESIX Watpac's Environmental Policy and the objectives and provisions of the CEMP
- Ensure all staff carrying out functions which may create a significant impact on the environment are appropriately trained to a level commensurate with their role and responsibilities in the project.

5.2.2 WHSE Manager

The WHSE Manager is responsible for establishing and maintaining the Company's Environment Management System and represents BESIX Watpac on all environmental matters pertinent to the EMS.

The WHSE Manager is responsible for:

- Assisting the Project Manager with the implementation of the CEMP
- Providing support and technical assistance to the Construction Environmental Coordinator
- Monitoring the effectiveness of the Environmental Management System.

The WHSE Manager is authorised to require all employees to comply with the provisions of the documented Environmental Management System and may issue directions to that effect.

5.2.3 Project Manager

The Project Manager is responsible to the State Manager through the Operations Manager to ensure effective environmental controls are implemented for the duration of the project.

Specifically, the Project Manager shall be responsible for the:

- Implementing and maintaining the CEMP
- 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 BESIX Watpac's environmental policy and objectives, through conditions of contract, tender interviews, scopes of work and site environmental inductions as applicable
- Establishing monitoring records and ensuring the scope and frequency of monitoring activities satisfies the requirements of the CEMP

The 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
- Provide recommendations for EMS and operational improvements to the WHSE Manager

5.2.4 Construction Environmental Coordinator

The Construction Environmental Coordinator is responsible to the Project Manager for the maintenance of the Construction Environmental Management system.

The Construction Environmental Coordinator is the document controller for the CEMP and shall prepare/compile registers, records, plans and forms necessary for the implementation of environmental controls. The Construction Environmental Coordinator shall review these as necessary and ensure timely distribution to all relevant parties in the Project.

Responsibilities of the Construction Environmental Coordinator shall include:

- Monitor the construction processes to ensure that appropriate environmental protection/procedures are in place
- Identify and record any environmental issues
- Recommend and initiate solutions to environmental problems and verify the implementation of solutions
- Investigate all environmental complaints (which shall be recorded on the project records)
- Control and maintain construction environmental records, including indexing records, prior to archiving
- Implement any environmental checklists, field records and procedures as applicable to the works
- Maintenance the CEMP and control of distribution
- Provide recommendations to the WHSE Manager for EMS and operational improvements.

5.2.5 Independent Verification Staff

Individual employees or consultants may be appointed to assist the Project Manager to carry out environmental testing and inspection duties. This testing and inspection may be in addition to and separate from any testing and inspection required for Environmental Management purposes.

Independent Verification staff will not be drawn from personnel who are performing or directly supervising the activities being inspected.

5.2.6 Senior Site Supervisor

The Senior Site Supervisor is responsible to the Project Manager to:

- Ensure all work under the Senior Site Supervisor's control is undertaken in accordance with statutory environmental requirements and the CEMP.
- Identify, recommend and initiate solutions to any construction environmental issues
- Ensure all workers and subcontractors under the Senior Site Supervisor's control are properly inducted in the requirements of the BESIX Watpac Environmental Policy and objectives and CEMP, and instructed in the following:
  - The role and environmental responsibilities of the project/works for which they are engaged
  - The use and understanding of any environmental documentation for the work
  - Specific environmental procedures for the project/works.

5.2.7 Supervisor

The Supervisor is responsible to the Senior Site Supervisor to:

- Ensure all work under the Supervisor's control is undertaken in accordance with statutory environmental requirements and the CEMP
- Identify, recommend and initiate solutions to any construction environmental problem.

5.2.8 Contract Administrator

The Contract Administrator shall be responsible to the Project Manager for:

- Ensuring proper procedures are followed for the procurement of goods and services to ensure that BESIX Watpac's environmental policy and objectives and the requirements of the CEMP are achieved.

5.2.9 Direct Labour

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

5.2.10 Subcontractors and Suppliers

BESIX Watpac 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; ISO 14001 and any works environment management plans.

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 using the "Subcontractor EMP assessment checklist" to ensure it is comprehensive.

All personnel shall notify the BESIX Watpac Senior Site Supervisor of any activity or incident, or any deviations from work place practices and procedures set out in this CEMP.

Subcontractor audits can be conducted. The standard audit checklist on the intranet contains environmental criteria which can be adapted to the nature of the trade work.

Contractors shall ensure their personnel working at the site:

- Have the appropriate environmental awareness training and / or qualification for the task undertaken
- 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.

5.3 General Information

5.3.1 Construction Hours

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

- Between 7 am and 5:30 pm, Mondays to Fridays inclusive; and
- Between 7:30 am and 3:30 pm, Saturdays.

5.3.2 Contacts

Email: bankstreetpark@besixwatpac.com

24h hotline: 1800 875 689

Project Manager – Fay Crawford fcrawford@besixwatpac.com

6 Senior Site Supervisor – Patrick Ferris pferris@besixwatpac.comImplementation

6.1 Legal and Other Requirements

The construction activities do not require any State Government licensing arrangements, control approvals or permits for environmental protection at this stage.

The Workplace Health, Safety and Environment Manager is responsible for identifying and assessing amendments to statutory and regulatory requirements potentially applicable to the project and initiating a review of the CEMP as warranted.

6.2 Monitoring

The Construction Environmental Coordinator shall:

- Monitor each element of the construction process to ensure that appropriate environmental protection/procedures are in place
- Undertake daily monitoring of the implementation and effectiveness of environmental controls
- Conduct and record weekly site inspections of environmental controls and direct such action as may be considered necessary to protect, minimise or rectify any environmental concerns.

The project team will use the Environmental Inspection Checklist to undertake site inspections to monitor environmental controls and direct such action as may be considered necessary to protect, minimise or rectify any environmental concerns.

6.3 Consultation

BESIX Watpac undertakes to advise adjacent property owners/managers of the timing and duration of activities likely to give rise to environmental concerns e.g. ground works or proposed out of normal hours activities.

Where applicable a list of adjoining building managers with their business and out-of-hours contact numbers will be maintained on the project records together with notations of pertinent advices.

6.4 Environmental Complaints

The Project Manager and/or the Construction Environment Coordinator will immediately investigate all environmental complaints. Details of complaints and the remedial action taken will be recorded in the project records.

BESIX Watpac will notify the Principal of all applicable complaints received. Any complaints received by will be investigated and recorded by BESIX Watpac as appropriate. The Environment Coordinator must be notified verbally immediately after the complaint, and furnished with a written report within 24 hours of the complaint.

The complaint should be recorded on SiteM8, BESIX Watpac's WHSE tool (E-PRO-002).

All complaints (from Principal or otherwise) shall be responded to within 48 hours.

6.5 Environmental Incidents

Should significant environmental harm occur during the course of the works, BESIX Watpac shall take prompt action to minimise any impact and immediately inform the Principal. Procedures to respond to an emergency incident have been documented in the Project Emergency Plan.

Subcontractors who become aware of an environmental incident shall report the matter immediately to the Senior Site Supervisor.

All incidents will be:

- Addressed as expeditiously as possible to minimise the potential environmental impacts
- Investigated; where necessary BESIX Watpac will seek the advice of relevant Authorities and comply with their instructions
- Recorded in the project records.

If environmental harm is observed, there is a legal obligation to notify the State based environmental protection authority. As with any environmental incident, the following process should be followed:

- Immediately inform the State Environmental Manager for advice.
- Record the Environmental Incident on SiteM8 , BESIX Watpac WHSE tool (E-PRO-002).
- Send report to your State Environmental Manager and Environment Coordinator within 24 hours of occurrence.
- Environmental Manager will advise if the incident is significant, at which point the report form should be issued to the Principal with the recommendation that the incident be reported to the relevant environmental body.

For significant environmental incidents, the Principal is to be notified immediately with written confirmation of the incident within 24 hours of the incident occurring.

6.6 Duty To Notify

The duty to notify is set out in section 148 of the *Protection of the Environment Operations Act 1997* (POEO Act). Pollution incidents causing or threatening material harm to the environment must be notified. A 'pollution incident' includes a leak, spill or escape of a substance, or circumstances in which this is likely to occur. 'Material harm to the environment' is defined in section 147. Material harm includes on-site harm, as well as harm to the environment beyond the premises where the pollution incident occurred.

The duty to report pollution incidents is a legal requirement that ensures that the appropriate regulatory authority (ARA) and other relevant persons are made aware of incidents that may have caused or threaten serious environmental harm or material environmental harm, and that appropriate action can be taken to minimise the extent of environmental harm caused.

Under the POEO Act, he following people have a duty to notify a pollution incident occurring in the course of an activity that causes or threatens material harm to the environment:

- the person carrying on the activity
- an employee or agent carrying on the activity
- an employer carrying on the activity
- the occupier of the premises where the incident occurs.

Notification must be given immediately, i.e. promptly and without delay, after the person becomes aware of the incident.

Only persons engaged in the activity resulting in the pollution incident, and occupiers of the land where the incident occurs, have a duty to report the incident.

Pollution incidents posing material harm to the environment should be notified to each 'relevant authority' as defined in section 148(8) of the POEO Act. 'Relevant authority' means:

- the appropriate regulatory authority (ARA)
- the Environment Protection Authority (EPA) if they are not the ARA
- the Ministry of Health
- SafeWork NSW
- the local authority, e.g. the local council, if this is not the ARA
- Fire and Rescue NSW

In general terms, sufficient detail of the incident must be reported to enable appropriate follow-up action. The information required is listed in section 150. Any required information that is not known when the incident is notified must be notified immediately once it becomes known.

If you fail to report a pollution incident posing material harm to the environment as required under Part 5.7 of the Act, you commit an offence. The maximum penalty is $2,000,000 for corporations or $500,000 for individuals.

Under the Act, BESIX Watpac is classified an employee, contractor, or agent, who causes or becomes aware of a notifiable event, must notify the person who employs them or engaged them as a contractor or agent (i.e. the Principal) within 24 hours of becoming aware of the event.

The notice must contain sufficient details to provide notice of the event, its nature, and the circumstances in which it happened (for simplicity referred to as the details of the event). BESIX Watpac must always keep a record of when and to whom they gave notice of a notifiable event.

If the Principal cannot be contacted, then BESIX Watpac must give the ARA (usually the NSW EPA) written notice with details of the event no later than 24 hours after first becoming aware of the event.

The Principal has a duty to give written notice with details of the event to the ARA no later than 24 hours after becoming aware of the event.

As soon as possible BESIX Watpac must also either:

- Give written notice with details of the event to any combination of the occupiers or registered owners of affected land; or
- Give public notice of the details of the event.

Notifications must also be made to the EPA Environment Line (131 555) and must occur immediately after becoming aware of the incident.

Relevant legislative provisions under the POEO Act include:

- section 147: Meaning of material harm to the environment
- section 148: Pollution incidents causing or threatening material harm to the environment
- section 149: Manner and form of notification
- section 150: Relevant information to be given
- section 151: Incidents not required to be reported
- section 152: Offence for breaching duty to notify pollution incidents
- section 153: Incriminating information

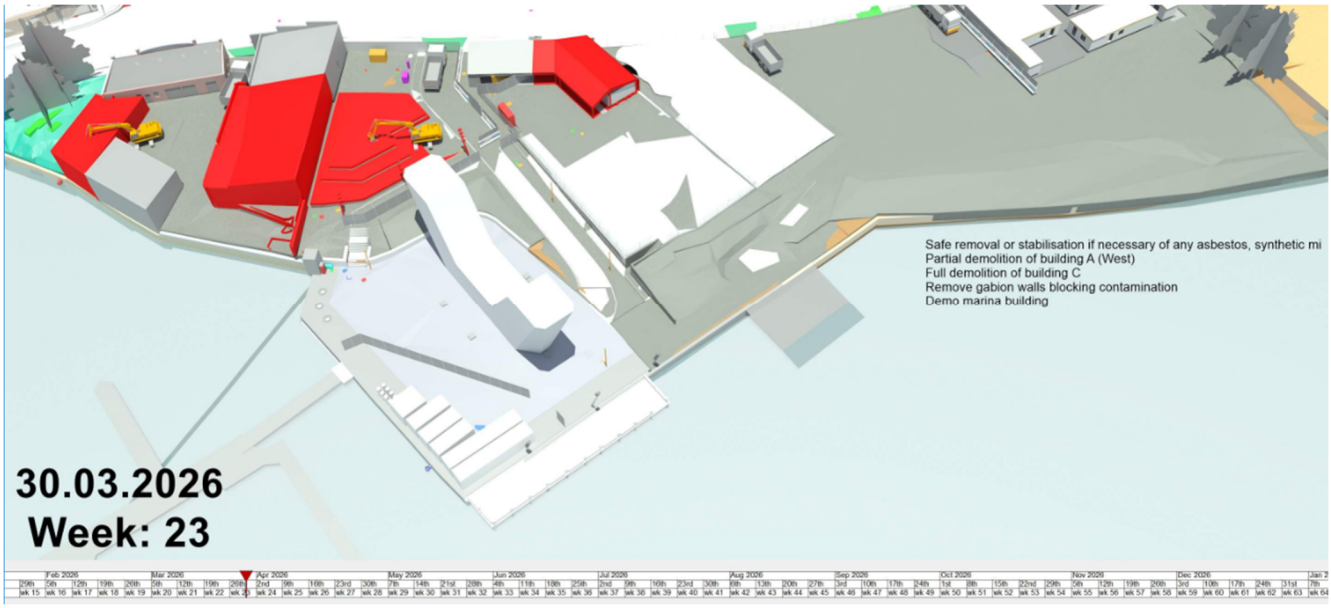
6.7 Consultation

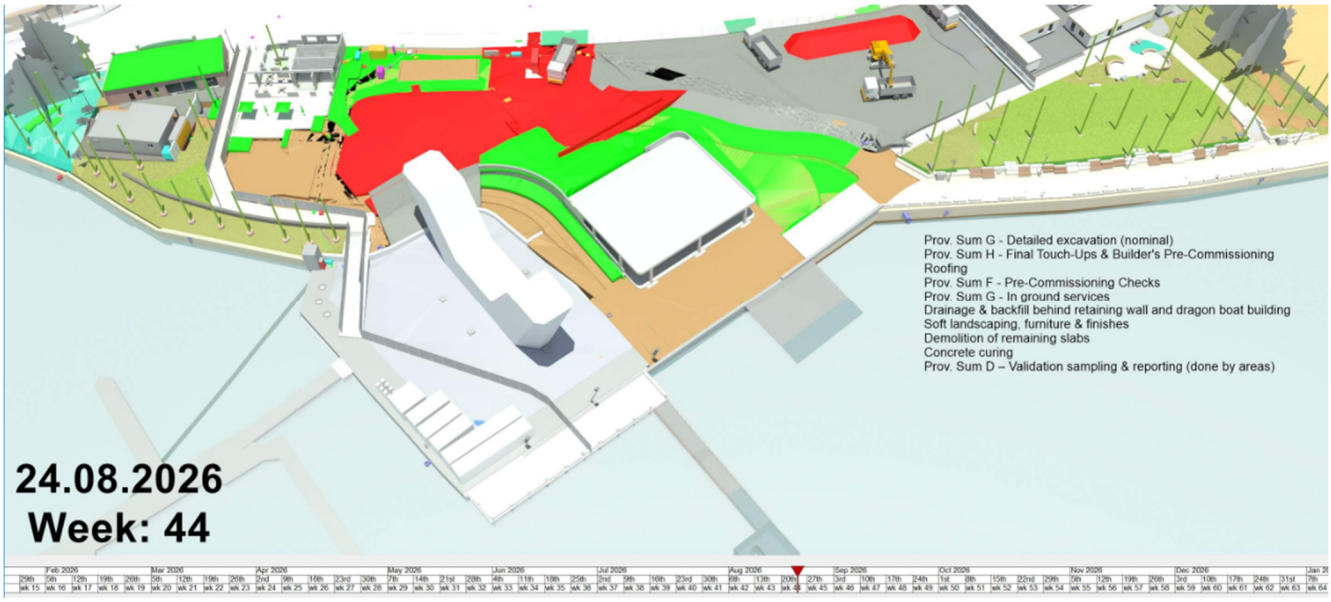
Refer to Appendix I. Communications Plan for consultation strategies with surrounding stakeholder, including other developments under construction, and a complaint handling procedure.

There will be coordination at site level between existing users of the site, All Occasion Cruises, and BESIX Watpac's Senior Site Supervisor throughout the project with communication regarding construction staging and relocation.

Communication with existing users of the site, All Occasion Cruises, will be coordinated at a site level by BESIX Watpac's Senior Site Supervisor. Construction staging to maintain access to the marina is an integral part of the methodology developed and will be coordinated closely due to shifting access pathways. Refer to example 4D Staging Plans in Figure 2 for visual demonstration of shifting access pathways for existing users.

Figure 2. Draft 4D Staging Plans





6.8 Reporting

The Principal will be notified of applicable environmental incidents and complaints, as soon as possible thereafter, including notification of the proposed corrective action.

Project Reports submitted to the Principal will report on all applicable environmental matters including environmental incidents, non-conformances, complaints, performance and the implementation and effectiveness of the CEMP.

All communication of information concerning the construction environmental performance, internally and externally, shall be in compliance with BESIX Watpac 'Environmental Communication' procedure.
Emergency Response Plan

The response procedures, emergency contact numbers, responsibilities and required actions for responding to environmental emergencies have been integrated into the Project Emergency Plan.

Table 3 Emergency Management Protocols

Emergency Management Protocols	
Objective	• The project 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 • Initiate the Project Crisis Checklist • 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
Dangerous goods spill or leak	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 general 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.

Emergency Management Protocols	
	• 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 contaminants off 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.

6.9 Environmental Training

As part of their site environmental induction/training all personnel engaged in the works shall be made aware of the provisions of this Construction Environmental Management Plan in order to promote a general awareness of the environment and to minimise any potential impact upon it.

Environmental induction and training will be appropriately commensurate with their roles and environmental responsibilities in the project.

Evidence of environmental induction and training of personnel for this project shall be maintained on the project records.

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

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

Training requirements for BESIX Watpac personnel are identified and planned on appointment to their role, and for each project. The Project Manager will monitor the skills required by BESIX Watpac personnel and contractors to effectively implement the CEMP and its procedures on site. Any further training needs will be identified, implemented and recorded in the project records.

6.10 Auditing

The Senior Site Supervisor and the BESIX Watpac WHSE Manager will conduct regular evaluations of the implementation and effectiveness of the CEMP.

In addition to the regular reviews, the Quality and Environmental Manager will conduct periodic environment audits including an audit of the implementation and effectiveness of this CEMP.

The audit will identify any deficiencies in the implementation and effectiveness of environmental management practices at the site. The WHSE Manager will issue Non-conformance Reports (NCRs) or Corrective Action Requests (CARs) as applicable.

6.11 Environmental Non-Conformances, Corrective and Preventive Actions

BESIX Watpac 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 Senior Site Supervisor will verify follow-up action is implemented and effective. Reports will be filed in the project records.

Corrective and Preventive Action Requests will be raised, where appropriate, as a result of complaints, incidents, non-conformances and deficiencies identified in the implementation of environmental practices and procedures. Corrective and Preventive Action Requests shall be raised, where appropriate, to correct and/or prevent non-conformances in construction activities and in the operation of the Environmental Management System.

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

6.12 Construction Environmental Records

The following documents are to be retained in the project records:

- Weekly Environmental Inspection Reports
- Environmental Incident and Complaint Reports
- Environmental Non-conformance Reports
- Environmental Corrective and Preventive Action Requests
- Environmental Reports
- Copies of all applicable Environmental Permits
- Environmental Monitoring Records
- Environmental Induction and Training Records
- Environmental Audit Reports
- Construction Environmental Aspects and Risk Assessment
- Any correspondence regarding environmental issues relating to the site.

6.13 Issue and Control of the Construction Environmental Management Plan

The Controlled copy of this CEMP is located in the project's environmental folder on the common drive. All hard copies of this document are uncontrolled.

Copies of the CEMP shall be distributed electronically via Aconex to all Subcontractors. The distribution list shall be maintained within Aconex and is available from the Project Document Controller.

The CEMP is to be revised with any applicable changes to the environmental requirements for this project.

7 Standard Environmental Protocol (SEP) for Identified Environmental Risks

The Project Team in conjunction with the WHSE Manager have identified and addressed the environmental aspects associated with this project. This involves:

- Reviewing the environmental requirements of the Contract and Contract Specifications
- Reviewing all environmental consent conditions including permit and development consent conditions and pollution control approvals applicable to the project
- Reviewing the site conditions and proposed construction activities
- Reviewing the BESIX Watpac Environmental Aspects Register
- Reviewing the BESIX Watpac Register of Statutory and Environmental Reference Documents to identify applicable legal and other statutory requirements
- Identifying for each activity, the environmental aspects and associated actual and potential environmental impacts and opportunities for normal and uncommon circumstances
- Assessing the inherent and residual significance of each identified environmental risk and opportunity using the probability of occurrence of the impact and the severity of the impact.
- Documenting within this CEMP project specific action plans and control measures to manage each identified environmental aspect, risk and opportunity.

Environmental Standard Operating Procedures (SOPs) have been developed to manage each environmental aspect pertinent to this project, as identified in the Environmental Risk Assessment.

These SOPs document the objective, strategy, action plan, control measures and performance targets for each identified aspect. Each SOP is outlined separately under sub-headings in the page's hereafter.

Site Accommodation	
Standard Environmental Protocol 7.1	
Objective	Control, minimise or avoid contamination or spoiling of areas in the establishment, operation and disestablishment of temporary site accommodation facilities.
Management Strategy	Establish temporary site offices, amenities and ablution facilities, including provision for sanitary waste, in accordance with the requirements of the relevant local authority, all relevant Acts and Regulations and industry best practice. Remove all temporary buildings and facilities from site when no longer needed and make good all disturbed areas, including landscaping where required.
Action	Project Manager shall ensure: • Site offices, amenities and ablution facilities are located and operated in such a manner as not to cause environmental concern • Site offices, hoarding, crossovers and fencing complies with the approved Site Plan or approved revision • Consider materials laydown area(s). Prioritise areas that will not have a deleterious effect on vegetation or stabilisation; this includes frequency of vehicle access • Spill kits should be nearby to materials laydown areas and plant access areas • Adequate firefighting equipment is provided and maintained for the works • Required permits and approvals are received prior to commencing works • Install automatic shut-off taps to water points and utilise low voltage luminaries to site facilities • No trees or vegetation is damaged or removed for site accommodation facilities. Adequate tree protection will be provided • Construction routes are cleaned regularly at weekly intervals or as required • Efficient use of energy needed for lighting, space and water heating, and equipment in the site facilities, including offices, cafeteria and washroom facilities, toilets and any other temporary accommodation and storage areas on site.
Performance Indicators	Appropriate location and operation of all facilities. Site reinstated upon completion of project
Reference	• Approved Site Plan • Australian Standard 2436-1981 Guide to Noise Control on Construction, Maintenance and Demolition Sites • Development Approval Conditions (extract as required) • Environmental Planning and Assessment Act 1979 (NSW) • Local Land Services Act 2013 (NSW) • Protection of the Environment Operations (Noise Control) Regulation 2017 (NSW) and verify local references such as Local Land Services Act 2013 (NSW) remain applicable.

Site Amenities	
Standard Environmental Protocol 7.2	
Objective	Maintain hygiene and reduce nuisance created by site accommodation.
Management Strategy	Keep site clean and tidy Monitor area
Action	Project Manager shall ensure that: <u>Ablution</u> • Septic waste issues from overflowing portable toilets and unaccounted sewerage pipe burst is avoided. • Adequate lavatory systems are provided within reasonable proximity of working areas • Septic waste removal service is scheduled • Toilet facilities are well maintained • Clean up procedures are included in induction • There is bunding around temporary septic systems • There is a suitable and adequate amount of signage • Site induction demonstrate proper site behaviour <u>Waste</u> • Paper waste from site office is collected in paper recycling bins and regularly collected. • Cardboard waste bin is provided on site. • All putrescible waste is stored in secure containers until removal and disposal off site. weekly • A daily 'sweep' of the entire area is done to remove any stray/windblown litter. • Designate specific areas on site for the temporary management of waste, i.e. general domestic waste, works waste and contaminated waste • Waste streams will be segregated to enhance recycling opportunities where practicable i.e. general domestic waste, works waste and contaminated waste • All domestic and industrial waste to be disposed of in dedicated industrial bins • Waste bin lids to be closed at all times to avoid, littering, access by birds and scavenging by vermin, birds or native wildlife • Waste oils to be recycled where practicable • No waste will be burnt on site.
Performance Indicators	No odour or vermin present
Reference	Protection of the Environment Operations (Noise Control) Regulation 2017 (NSW) and verify local references such as Local Land Services Act 2013 (NSW) remain applicable.

Air Quality (Including Dust & Odour)	
Standard Environmental Protocol 7.3	
Objective	Avoid, control or minimise contaminant emissions to the atmosphere caused by rising dust, vehicle/plant emissions, noxious fumes/odours, or paint spraying activities.
Management Strategy	Site environmental induction to address the issue of air quality and protective measures to prevent avoidable discharge of contaminant to the atmosphere Implement measures for control and suppression of dust
Action	Project Manager shall ensure: • Deposition over an averaging period not to exceed 4g/m2 /month. Visual observance of dust is low, 20km visibility is maintained • Work areas kept free of dust • Equipment to cut and grind concrete should be fitted with effective dust extractors • Cutting areas will be provided that are isolated dust extraction areas; all concrete cutting including blockwork and wall sheeting should be done in these areas • Concrete grinding should be supported an H-Class vacuum • Captured dust should be bagged and tied prior to dumping into general waste • All trades vacuum/sweep up as they go • Decks should be cleaned progressively including magnet extraction of reinforcement tailings and off-cuts to avoid a big deck blow-off prior to pouring and future-proof against strong winds • Materials deliveries such as fill, soil, sand, gravel, landscaping supplies etc, are transported to the site under covered loads • Stockpiles are stabilised with suitable materials • Site conditions are regularly inspected, and hand-held sprinklers and/or water cart are used as required to minimise dust • External paint spraying activities are undertaken in accordance with local authority requirements and not carried out during adverse weather conditions • All machinery and equipment used at the site will be maintained to relevant standards to reduce emissions to as low as possible • Disturbed areas will be re-vegetated as soon as practicable after construction of the works • Earth wetting using water cart and water sprays will be undertaken as required during construction to minimise dust generation at the site • Roads will be cleaned regularly to prevent the spread of dirt on roads surrounding the site • On-site speed restrictions and the need to control dust are formally discussed during site inductions • During the construction phase screening will be used by BESIX Watpac where necessary to prevent the spread of dust. This screening will also serve to screen the construction site from surrounding land uses and mitigate potential landscape impacts • Construction plant, machinery and vehicle access is to occur along designated access tracks only • Staff training and inductions, including: • Procedures for the application of dust suppression measures • General site management • Periodic toolbox training to be provided to relevant construction personnel to present new information or reiterate information relating to minimising potential impacts to air quality.
Performance Indicators	Visual observance of dusts levels; vehicle and plant emissions No dust complaints
Reporting	Weekly Inspections undertaken and recorded on the Weekly Environment Inspection Form
Reference	• Protection of the Environment Operations Act 1997 (NSW) • Protection of the Environment Operations (Clean Air) Regulation 2022 (NSW), and align with the National Environment Protection (Air Quality) Measure and NSW EPA Approved Methods (2022). • National Greenhouse and Energy Reporting Act 2007 (NGER Act) • National Environmental Protection Measure (NEPM) for Ambient Air Quality • Contaminated Land Management Act 1997 (NSW)

Noise	
Standard Environmental Protocol 7.4	
Objective	Control, minimise or avoid environmental nuisance caused by 'unreasonable' levels of noise.
Management Strategy	Site environmental induction to address the issue of noise and protective measures to prevent 'unreasonable' noise caused by construction activities.
Action	Project Manager shall ensure: • All construction activities will be undertaken mindful of the provisions of AS 2436:1981 - Guide to Noise Control on Construction & Demolition Sites • Out of Hours Work – BESIX Watpac will provide at least five days' notice to the Principal prior to requiring access to the Site out of the access hours. A minimum of two personnel must be present on Site when work is being conducted outside the access hours. • Each item of plant is fitted with effective noise suppression devices (generally exhaust mufflers) as applicable. • Fit mufflers/silencers to pneumatic tools (e.g. breakers) • Substitute impact piling for bored piling or hydraulic piling where possible. If impact piling is adopted, place a resilient pad (dolly) between the hammer head and the pile. Enclose the hammer head and the top of the pile in an acoustic screen. • All plant, equipment and machinery are operated and maintained in accordance with acceptable industry standards and turned off when not in use. • Two-way radios are used for site signalling and communication. • When construction work is permitted outside designated hours, notice is given to occupiers of properties within the immediate precinct of the works providing details of the work to be done, together with the hours to be worked. • Power generators used for after-hours lighting are positioned and acoustically treated, as far as practical, to minimise noise emissions. • BESIX Watpac will notify the Principal a minimum of 48 hours in advance if any of the following activities are to be undertaken on Site and are likely to disturb occupants within the adjacent facilities: – Impact drilling concrete, floors or masonry – Chasing into walls – Use of explosive powered tools – Electric sawing of any material – Any noisy activity that may need to take place outside normal business hours.
Performance Indicators	No complaints concerning noise nuisance. No fines received.
Reporting	Daily monitoring reflected in daily site diary entries Weekly Inspections undertaken and recorded on the Weekly Environment Inspection Form
Reference	• Protection of the Environment Operations Act 1997 (NSW) • Protection of the Environment Operations (Noise Control) Regulation 2017 (NSW) • Contract Specifications • Australian Standard 2436-1981 Guide to Noise Control on Construction, Maintenance and Demolition Sites • AS2436 – 2010 Guide to Noise Control on Construction, Maintenance and Demolition Sites

Refer to Appendix C. Construction Noise and Vibration Management Plan, reviewed by Acoustic Logic.

Vibration	
Standard Environmental Protocol 7.5	
Objective	Control, minimise or avoid disturbance caused by vibration in ground works or other structural activities.
Management Strategy	Site environmental induction to address the issue of vibration and protective measures to prevent disturbance/incidents caused by vibration. Identify works likely to cause high vibration—communicate this to the Principal and to neighbours.
Action	Project Manager shall ensure: • Vibration is controlled in accordance with AS 2670.2. • A survey of properties in the immediate precinct of the site is undertaken and notes made, together with a photographic record of existing conditions • All equipment and machinery is operated and maintained in accordance with industry standards • Any blasting, rock breaking, drilling or piling activities are carried out under strictly controlled conditions • The use of heavy machinery in the proximity of retained buildings or other structures will be limited to absolutory essential activities and only upon approval by the Senior Site Supervisor • Extra vigilance is to be exercised while using rock breaking equipment near structures, hoarding walls and underground services. Activity is to cease at the first sign of risk and a risk assessment is to be carried out and ratified by the Site management team prior to proceeding. • BESIX Watpac will notify the Principal a minimum of 48 hours in advance if any of the following activities are to be undertaken on Site and are likely to disturb occupants within the adjacent facilities: – Piling – Compacting – Use of explosive powered tools – Electric sawing of any material – In-ground, consider pre-drilling options to mitigate vibration.
Performance Indicators	No disturbances/incidents or complaints.
Reporting	Monitoring records to be maintained during construction activities with potential to generate vibration Daily monitoring reflected in daily site diary entries Weekly Inspections undertaken and recorded on the Weekly Environment Inspection Form
Reference	• Protection of the Environment Operations Act 1997 • Assessing vibration: a technical guideline 2006 • AS 2670.2-1990 Evaluation of human exposure to whole-body vibration Continuous and shock-induced vibration in buildings (1 to 80 Hz) • BS6472 Guide to Evaluate Exposure to Vibration in Building (1Hz to 80Hz) • DIN4150 Part 3 Structural Vibration – Effects of vibration on structures

Water Quality	
Standard Environmental Protocol 7.6	
Objective	Maintain the health of any impacted nearby waterbodies.
Management Strategy	Site environmental induction to address: The issues concerned with the conservation of water usage in construction activities. The issue of water quality and protective measures to prevent avoidable discharge into, or contamination of, waterways or established drainage systems.
Action	Project Manager shall ensure: • Any water leaving the site must be compliant with the following discharge limits: • No more than 50mg/L Turbidity, or 50 NTU, after establishing correlation • pH must be between 6.5 and 8.5 • Dissolved Oxygen must be greater than 6 mg/L or 80% saturation level for a normal 24 hr period • Temperature of the receiving waters must not rise more than 2°C above seasonal mean temperature • No visible oils, films, litter, coarse material, cement or other chemicals can be present in discharge • Wet discharge must be managed. This includes designated areas for washing out of concrete trucks, concrete pumps, paint, masonry cutting, and plaster. Refer to C-PLA-014 for more information • Use of water for wet trades' clean-up is minimal, self-contained and recycled where possible, or optionally not using any washdown at all. • Paint, solvents, oils etc. are correctly stored in bunded and contained area. • Stockpiles of bulk materials are located well clear of any waterway or drainage systems, protected by sediment fences, and covered by tarp, seed, mulch or chemical binder • Where available, a recycled water source will be used for dust suppression • Where water discharge compliance can't be achieved, contaminated wastewater is to be used as dust suppressant or collected by a licenced contractor to a licenced facility • Roadways can be swept, not washed down • Work in or around watercourses should be managed to minimise impact in accordance with BESIX Watpac plan C-PLA-014.
Performance Indicators	No incidents of inadvertent waste of water No pollution or contamination of waterways
Reporting	Weekly Inspections undertaken and recorded on the Weekly Environment Inspection Form
Applicable Permits	Trade Waste Approval – "Special Approval"
Reference	• Protection of the Environment Operations Act 1997 • Managing Urban Stormwater: Soils and Construction. Volume 1, 4th Edition. Blue Book. • NSW EPA Approved Methods for the Sampling and Analysis of Water Pollutants in NSW • Protection of the Environment Operations Act 1997 (NSW), Section 120 • Standard Methods for the Examination of Water and Wastewater, 20th Edition. American Public Health Association. • Water Management Act 2000 (NSW) and Water NSW Act 2014 (NSW). • Protection of the Environment Operations 1997 – Section 120 (Prohibition of Pollution of Waters). • Water NSW Act 2014 • Water Management (General) Regulation 2011 (NSW) • Australian and New Zealand Guidelines For Fresh and Marine Water Quality 2000 • Australian Guidelines for Water Quality Monitoring and Reporting 2000

Erosion and Sediment Control	
Standard Environmental Protocol 7.7	
Objective	Avoid, or minimise and control, contamination caused by sedimentation run-off or the discharge of pollutants into waterways or established drainage systems. Conserve the use of water to minimal requirements.
Management Strategy	Site environmental induction to address: The issue of water quality and protective measures to prevent avoidable discharge into, or contamination of, waterways or established drainage systems The site-specific Erosion and Sedimentation and Control Plans are to be implemented and maintained.
Action	Project Manager shall ensure: • Any water leaving the site must be compliant with the following discharge limits: • No more than 50mg/L Turbidity, or 50 NTU, after establishing correlation • Erosion and Sediment Control to be established in accordance with the site Erosion and Sediment Control plans, and BESIX Watpac document C-PLA-014 Erosion and Sediment Control Guide • Sediment fences are to be dug into the ground 200mm, using a bidim A34 product • Vehicle entry/exits will be established with shake-down grids, rumble rock and/or bunds. Rumble pad will be bottom lined with geotextile fabric material • Any batters that are to remain are promptly and appropriately treated/revegetated • Earth bunds, swales/ channels or sediment fencing should be set up around the perimeter of the site so as to minimally disturb the natural overland flow of the surrounding watercourse and provide minimal run-off into nearby waterways that are diverted through the site • Sediment basins: Refer to PM-PLA-014 for establishing, managing and servicing Sediment Basins • Areas for plant and construction material storage are designated • Upstream stormwater runoff is diverted around disturbed areas of the site • Disturbed areas are stabilised as soon as practicable • Stormwater quality discharging from the site is monitored, and the implement additional measures or modify existing measures if required • Transport routes are designated and marked of across the site to minimise dust disturbance • Drainage structure protection devices are installed to existing stormwater inlet structures within the site, and within the road ways adjacent to the site. • Site personnel are educated to the sediment and erosion control measures implemented on site • Where available, a recycled water source will be used for dust suppression • Refer to PM-PLA-014, Erosion and Sediment Control Guide, for a detailed manual on following ESC Plans and establishing on site.
Performance Indicators	No sedimentation run-off No pollution or contamination of waterways.
Reporting	Weekly Inspections undertaken and recorded on the Weekly Environment Inspection Form
Reference	• Protection of the Environment Operations Act 1997 • Soil and Construction, Volume 1, 4th Edition, March 2004 (Managing Urban Stormwater, Landcom) • EPA, A Resource guide for local councils: Erosion and sediment control, 2006 • AS/NZS 5667.1:1998 Water quality – Sampling – Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples

Spill Response and Management	
Standard Environmental Protocol 7.8	
Objective	Control, minimise or avoid spillage of hazardous or prohibited substances, and react quickly to contain spills in the event they occur.
Management Strategy	Induct all personnel to handle chemicals with care. Ensure spill kits are positioned near potential escape points.
Action	In 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 i.e.; hazchem, police, fire brigade, specialist spill response company. • Secure: Make the site safe for all personnel and the general 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 (according to the type of material spilled) 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 contaminants off 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. Project Manager shall ensure: • Spill containment and treatment equipment and materials will be available near storage areas of hazardous materials and escape points of the site. Spill kits and other suitable incident response equipment will also be located at other key points around the site and maintained ready for use. • Transport of chemicals is planned and controlled to minimise change of spillage. Transport is only to occur in a bunded and secure vehicle, with checks in place to ensure container lids are secure. • Subcontractors will be required to provide and maintain their own spill kits where required. • Spills of hazardous materials will be collected by licensed contractor and collected for treatment at a licensed waste disposal facility. • All regulated waste will be tracked as per the Environmental Protection (Waste) Policy 2000 • Contaminated ground is made good and contaminated material that is to be removed from site is disposed of in an approved manner. • SWMS must be submitted and approved for the handling and use of hazardous chemicals. • Any waste oils, lubricants and contaminated cloths, resulting from maintenance of plant on-site, are placed in suitable containers prior to removal and disposal at an approved waste receiving facility.
Performance Indicators	No spillages. Spill kits readily accessible.
Reporting	Immediate contact and incident reporting through Environmental Manager in event of spill. Weekly Inspections undertaken and recorded on the Weekly Environment Inspection Form
Reference	• Work Health and Safety Regulation 2011 s357 • Protection of the Environment Operations Act 1997 • Protection of the Environment Operations (Waste) Regulation 2014 • EPA Waste Classification Guidelines 2014

Protection of Flora	
Standard Environmental Protocol 7.9	
Objective	To preserve and protect native vegetation and forestry areas from injury or harm as a consequence of construction activities and as far as practical, minimise disturbance to animal habitats.
Management Strategy	Site environmental induction to address issues of potential harm to native flora. Confine site clearance to minimum requirements. Apply appropriate controls for noise abatement and dust control to minimise disturbance. Register contact telephone numbers for Parks and Wildlife Service on project records.
Action	Project Manager shall ensure: • Any tree protection or removal is to be carried out under the management plan produced by an Arborist • If trees to be removed are in a wildlife corridor, a qualified specialist should inspect for wildlife or animal habitats. Arborists, Spotter/Catchers, or Ecologists are qualified to undertake this inspection • All vegetation to be removed shall be marked and inspected on-site by the Superintendent prior to clearing. Removal shall be supervised by a qualified Arborist • All vegetation to remain will be protected with hoarding or barriers • Trees approved for removal are grubbed out, segregated for salvaging of timber or mulched for use as green waste • All rectification to retained trees is carried out by an approved Arborist • Protective fencing and Tree Protection Zones are established as required for all retained trees • Appropriate controls and monitoring are maintained for Tree Protection Zones • No deleterious materials are stored within the drip line of trees, including stockpiling of organic material that chokes the trunk • All incidents of injury or displacement of native fauna is reported to the Superintendent • No damage is incurred to Local Council property without first obtaining a permit.
Performance Indicators	No harm or damage to vegetation.
Reporting	Daily monitoring reflected in daily site diary entries Weekly Inspections undertaken and recorded on the Weekly Environment Inspection Form
Applicable Permits	All native vegetation, Significant Native Vegetation (SNV) and Waterway and Wetland Vegetation (WWV) requires a permit to clear, under the Natural Asset Local Law 2003 Clearing Permits for removal of Protected Plants may be required if triggered under the Nature Conservation (Protected Plants) Conservation Plan Approval is required under the Vegetation Management Act when clearing is to be undertaken within a declared area or within a remnant ecosystem, unless listed under the exemptions in the Sustainable Planning Regulation 2009
Reference	• Biodiversity Conservation Act 2016 No 63 • Local Land Services Act 2013

Protection of Fauna	
Standard Environmental Protocol 7.10	
Objective	To preserve and protect native wildlife from injury or harm as a consequence of construction activities and as far as practical, minimise disturbance to animal habitats.
Management Strategy	Site environmental induction to address issues of potential harm to any wildlife. Confine site clearance to minimum requirements. Apply appropriate controls for noise abatement and dust control to minimise disturbance. Register contact telephone numbers for Parks and Wildlife Service on project records.
Action	Project Manager shall ensure: • During removal of any trees, or clearing of vegetated areas, a qualified specialist should inspect for wildlife or animal habitats. Arborists, Spotter/Catchers, or Ecologists may be qualified to undertake this inspection. During the clearing works, the Spotter/Catcher must conduct a daily pre-clearance inspection and supervise progressive clearing. Sustainable zones near the site should be determined for suitability for relocation and mitigation strategies. Appropriate green zones within a radius of the site must be established. The fauna management programme must be aimed at maximising relocation effort with intent to minimise any fauna stress. • If a Koala is observed in trees close to the works, works should cease. Koalas cannot be relocated but must be allowed to move of their own accord - with clearing being managed in an appropriate manner to facilitate this. • In the event wildlife is found, either by fauna inspection or in the course of normal works, cease work immediately and wait for the animal to move on. Wildlife includes reptiles but does not include insects. • Subcontractors should notify BESIX Watpac if wildlife is at risk from the works and seek advice before continuing. Wildlife will either move away of its own volition, or it may need to be relocated by a licenced Spotter/Catcher. • A qualified fauna spotter must be present to observe all native tree trimming or clearing to ensure that wildlife is not injured. • If trenches are left exposed around habitats, ladders or steps are required to enable escape. If you find a sick or injured wild animal, contact your nearest veterinarian or wildlife carer organisation as soon as possible so that it may receive appropriate treatment. Wild animals become stressed by handling, so you should seek expert advice before handling an injured animal. Try to minimise the amount of exposure the injured animal has to people and loud noises. Keep them warm and calm, only if practical to do so. Incorrect handling of an injured animal can result in increased stress to the species and pose risks to the personnel. Do not attempt to feed or treat it unless you have specialist knowledge or training. Contact details for injured wildlife are: RSPCA Animal Ambulance: 1300 ANIMAL (1300 264 625) WILVOS (Wildlife Volunteers Association Inc): 07 5441 6200
Performance Indicators	No harm or damage to native fauna.
Reporting	Immediate contact and incident reporting through Environmental Manager in event of contact with fauna in path of works Weekly Inspections undertaken and recorded on the Weekly Environment Inspection Form
Applicable Permits	Spotter/Catcher permit required to move wildlife in from the path of works Essential Habitats for the Koala require a permit to demolish, and usually also offsets.
Reference	• National Parks and Wildlife Act 1974 • Biodiversity Conservation Act 2016 No 63

Weed Control	
Standard Environmental Protocol 7.11	
Objective	To detect and manage identified weeds and pests.
Management Strategy	Monitor site for weeds and pests
Action	Project Manager shall ensure: • An herbicide treatment strategy should be approved with the Landscape Architect/RESO if weed treatment is required. This is to ensure the planting is not affected by the weed treatment • A company with demonstrated weed management credentials would need to be engaged to provide advice on control methods and the application of herbicide if appropriate • Sweeps should be done on a week basis before, during and after works, particularly during hydromulching of ground for "on-maintenance" handover • Ensure all imported fill is certified clean • All excavated spoil leaving site should be inspected for deleterious organic material • Methods for disposal include deep burying, mulching or putting the weeds in a plastic bag and leaving in bright sunlight until they are dead • Establish a vehicle washdown bay that includes: • Swale from washdown platform • Sump pit lined with visqueen • Line banks of sump pit with gabion rock • Refer to C-PLA-15, “Weed Management Guide.” Info on establishing washdown bays can be found in C-PLA-14.
Performance Indicators	No spread or release of weeds
Reporting	REO immediately notified of any discovery Weekly Inspections undertaken and recorded on the Weekly Environment Inspection Form
Applicable Permits	It is illegal to possess, sell or release weed or pest species without a permit
Reference	• Biosecurity Act 2015 • Biosecurity Regulation 2017

Land Contamination	
Standard Environmental Protocol 7.12	
Objective	To detect and manage contaminated land, prevent leaching of contaminated materials or groundwater infiltration during earthworks, and detect services prior to commencement. Avoid or minimise contamination of land caused by the use of imported materials, or by spillage of fuels, paint, form oil, chemicals etc.
Management Strategy	• Expert Consultants are engaged to provide a detailed assessment of the quality of the earth before earthworks begin • Services will be identified before earthworks commences • Controls are in place to capture and treat tainted water and earth.
Action	Project Manager shall ensure: • Soil contamination risk for the site will be discussed in Section 3 of this Environmental Plan • Unexpected contamination may present itself during earthworks. Signs include pockets of discoloured or poorly textured soil (noticeable different from the surrounding soil); and malodours that present (e.g. oil, sulphur, chlorine, sewerage).
Performance Indicators	No release of contaminated materials or compromised water from the site.
Reporting	Immediate liaison with the Environmental Manager in event of unexpected contamination finds Incident reporting in event of release or discovery of contamination
Applicable Permits	Permits for removal and disposal of contaminated soil
Reference	• Protection of the Environment Operations Act 1997 • Protection of the Environment Operations (Waste) Regulation 2014 • EPA Waste Classification Guidelines 2014 • Contaminated Land Management Act 1997 • Contaminated Land Management Regulation 2013 • EPA Approved Methods 2022 • EPA Contaminated Sites: Guidelines for Assessing Service Station Sites 1994 • EPA Contaminated Sites Guidelines for the NSW Site Auditor Scheme (2nd edition) 2006 • EPA Guidelines for the Assessment and Management of Groundwater Contamination 2007 • EPA Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites 1997 • EPA Contaminated Sites: Sampling Design Guidelines 1995 • AS/NZS 5667.11:1998 Water quality – Sampling – Guidance on sampling of groundwaters

Refer to Waste Classification Report and Remediation Action Plan issued by JBS&G and reviewed by Ramboll.

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Protection of Cultural, Heritage and Aboriginal Artefacts	
Standard Environmental Protocol 7.13	
Objective	Avoid damage or disturbance to archaeological/cultural artefacts including skeletal remains, shell middens or other cultural artefacts.
Management Strategy	Conduct a historical investigation of the site to establish, as far as practical, the likelihood of existence of archaeological/cultural artefacts. Site environmental induction to address likelihood of discovery of archaeological/cultural artefacts. Excavation personnel to remain vigilant over ground penetration points.
Action	Project Manager shall ensure: • Where archaeological/cultural artefacts are discovered, personnel cease work in the subject area and effect practical protection measures • The Principal and DES is promptly advised of significant discoveries • Directions from DES are followed • If suspected human remains are discovered that work is ceased and the Superintendent, Police and State Coroner's Office are contacted, and if applicable, the Department of Aboriginal Affairs. • Project team have completed archaeological site induction.
Performance Indicators	No damage, or minimal disturbance, to any archaeological/cultural artefacts discovered.
Reporting	Superintendent is immediately notified of any discovery Daily monitoring reflected in daily site diary entries Weekly Inspections undertaken and recorded on the Weekly Environment Inspection Form
Reference	• Heritage Act 1977 • Aboriginal and Torres Strait Islander Heritage Protection Act 1984 • Aboriginal and Torres Strait Islander Heritage Protection Regulations 1984 • Australian Heritage Council Act 2003

Fire Protection	
Standard Environmental Protocol 7.14	
Objective	Prevent the ignition and spread of fire.
Management Strategy	Areas prone to fire will be assessed. Site inductions will address fire risk minimisation controls.
Action	Project Manager shall ensure: • Fire extinguishers will be located as per AS-2444 • Site rules and Inductions include prohibition of smoking and lighters • Combustible materials shall be stored in cool, dry locations, protected from weather • Weekly inspections to monitor build-up of flammable organic materials which may present a fire path, e.g. understorey fuels such as loose bark, fallen leaves and branches, and spear grass • Grass may need to be mowed and organic materials collected and disposed of or burned in a controlled manner • In extreme situations, fire breaks may need to be rutted out around the perimeter of the site • Fire control advantages should be identified, such as fire trails, water supply points, dams, and helipads
Performance Indicators	No fires, minimisation of fire-spreading paths.
Reporting	Daily monitoring reflected in daily site diary entries Weekly Inspections undertaken and recorded on the Weekly Environment Inspection Form.
Applicable Permits	A bushfire management plan is required in areas of high bushfire risk as per the risk overlay mapping.
Reference	• Fire and Rescue Service Act 1990, s 62, 65, 72, 67 • AS-2444-2001 Portable fire extinguishers and fire blankets - Selection and location

Unexploded Ordnance (UXOs)	
Standard Environmental Protocol 7.15	
Objective	To avoid environmental impact caused by discharge of Unexploded Ordnance (UXOs). An establishment or training area used for handling ammunition may have caused remnant unexploded ordnance.
Management Strategy	Conduct a historical investigation of the site to establish, as far as practical, the likelihood of existence of UXOs. Site environmental induction to address likelihood of discovery of UXOs.
Action	Project Manager shall ensure: • An UXO Survey will be undertaken by a member of the UXO Management Defence Panel • Where an UXO is discovered, the area is immediately isolated • Emergency evacuation procedures are implemented where appropriate • The Contract Administrator is immediately notified • The UXO Consultant must produce a Safe Work Method Statement for review and approval prior to starting work • UXO Awareness Training will be delivered to all site inductees. This slideshow has been prepared by OPEC systems • Reporting to Defence is done using Defence's "Explosive Ordnance Incident Report Form" • Ensure emergency telephone contact numbers are displayed and readily accessible • Defence UXO Specialists will identify the control measures required and treat the area • A register of all clearance certificates prepared for the Site (if any) are to be maintained by the Project Manager. These will take the form of reports that are to be filed into a register • All groundwork operations are closely monitored • Emergency evacuation procedures are implemented where appropriate • The Police/Emergency Services are immediately notified of any discoveries
Performance Indicators	No environmental impact caused by discharge of UXOs.
Reporting	Daily monitoring reflected in daily site diary entries Weekly Inspections undertaken and recorded on the Weekly Environment Inspection Form
Reference	• Work Health and Safety Regulation 2011 • Convention on Certain Conventional Weapons (International Law)

Identification and Protection of Existing Utility Services	
Standard Environmental Protocol 7.16	
Objective	Avoid damage to, or unplanned interruption of, utility services.
Management Strategy	Site environmental induction to address location of and protective measures for utility services. Identify, mark and protect utility services (electricity, water, gas etc.). Ensure all necessary interruptions to utility services are planned and communicated to all relevant persons and Authorities.
Action	Project Manager shall ensure: • Existing services plans will be studied and services will be located and marked prior to commencing any works • Services locations must be known prior to commencing earthworks • Vacuum excavation/Services Detection will be undertaken wherever services are likely to be encountered • Contact telephone numbers for emergency services for utilities are established and readily available in the Site Emergency Plan • Storage areas are located remote from utility services • Access ways, haul roads and turning points are arranged to avoid possible clashes with utility services • Overhead protection/warning is provided for high loads, vehicles, cranes etc • Spotters are provided when work is undertaken beneath overhead power lines • Where it is found necessary to temporarily interrupt, remove, divert or make connection to an existing service or other existing work beyond the control of the BESIX Watpac, written approval from the Principal will be sought prior to undertaking Works
Performance Indicators	No unplanned interruptions to any utility service.
Reporting	Notification to relevant authorities Daily monitoring reflected in daily site diary entries Weekly Inspections undertaken and recorded on the Weekly Environment Inspection Form
Applicable Permits	Dial Before You Dig Permit to Dig (BESIX Watpac NSMS Form)
Reference	• Work Health and Safety Act 2011 • Energy and Utilities Administration Act 1987 (NSW)

Waste Management	
Standard Environmental Protocol 7.17	
Objective	To control the disposal of waste generated from construction activities.
Management Strategy	Site environmental induction to address the issue of waste management and protective measures to prevent environmental incidents caused by inappropriate methods of disposal of waste. Designated bin storage locations (for both Wheelie bins & skips), and an appropriate regime for clearance.
Action	Project Manager shall ensure: • All construction waste shall be taken off site and appropriately disposed of in accordance with all relevant State/Territory regulations during or at the completion of construction. • A Waste Management Plan is developed and implemented maximise the volume of waste demolition and construction waste that is reused or recycled during the project. This shall include an assessment of alternative construction waste minimisation strategies shall be undertaken and implemented as appropriate. These alternatives could include but not be limited to initiatives such as supplier take-back of packaging and off-cuts, pre-manufacturing or on-site waste grinding to produce construction materials (e.g. grinding of bricks/concrete/wood to make aggregate and woodchips), or “Ship to point of use” techniques to minimise protective wrappings or enclosures. • All topsoil affected by the construction works shall be separated and protected from degradation, erosion or mixing with fill, contamination or waste. • The MSDS of Chemicals and Hazardous Substances should be consulted before disposal instructions, which will usually involve dropping of containers to Chemical Waste/Hazardous Collection stations. Containers must not be washed out and disposed of as normal. • All PVC products shall be recycled and/or reused when being disposed, when not available, disposed of at a licensed landfill facility. • Waste is minimised through the use of careful measurement and conservative ordering to prevent oversupply of materials. • All waste will be sorted (including that from clearing, demolition, off cuts, etc.) into appropriate categories for recycling or disposal. • BESIX Watpac will ensure that appropriate recycling receptacles are provided for scrap steel. • A recycling bin will be provided separately to the bin for Construction waste material and general waste (food scraps, cans, etc). Recyclable materials will include cardboard, glass, and plastics. • Any mulch accrued as a result of tree clearing can be used as erosion stabilisation. • Waste skips/bins are easily accessible and protected from weather dispersal. • Paper recycling bins are to be maintained in the office. Used toner cartridges should be collected and deposited at head office. • The construction site is kept free from build-up of waste materials by directing regular clean-ups by subcontractors. • No burning of waste takes place on-site. • Paint washouts will be provided and when full will be taken off-site to be filtered before discharging. • Any liquid waste, including backwash of wet trades, should be treated for adequate water quality before discharge, or collected by a liquid waste contractor.
Performance Indicators	No incidents arising from the disposal of end waste.
Reporting	Weekly Inspections undertaken and recorded on the Weekly Environment Inspection.
Reference	• NEPM (Movement of Controlled Waste between States and Territories) • Protection of the Environment Operations (Waste) Regulation 2014 • Waste Avoidance and Resource Recovery Act 2001 • EPA Waste Classification Guidelines 2014 • Construction and Demolition Waste Guide - Recycling and Reuse across the Supply Chain • National Waste Policy: less waste, more resources 2009 • National Packaging Covenant Work • AS 1940 – 2004: The Storage and Handling of Flammable and Combustible Liquids and the chemical’s Safety Data Sheet (SDS)

Artificial Lighting	
Standard Environmental Protocol 7.18	
Objective	Control or minimise disturbance caused by after-hours lighting.
Management Strategy	Site environmental induction to address the issue of after-hours lighting. Ensure all necessary after-hours work is planned and communicated to all relevant persons and authorities. As far as possible, plan all construction activities for normal daytime work.
Action	Project Manager shall ensure: • Minimising lighting pollution impact from external lighting provided during construction on neighbouring properties and their occupants and neighbouring ecological areas (external to the construction site), in accordance with Australian Standard “4282 Control of the obtrusive effects of outdoor lighting”. • Directional lighting and type of lights used will be planned and designed with the above in mind; • lights shall be positioned to shine downwards and avoid shining directly on the harbour where possible • Reduced by screening • Effective programming of work • Any lighting must be positioned to ensure light pollution does not enter the wildlife corridors. • All lighting equipment is installed in such a manner as not to cause a safety hazard to pedestrian or vehicular traffic within the immediate surrounds of the site. • Where required or deemed necessary, advisory/warning signs are posted in appropriate locations. • Relevant authorities are notified; approvals obtained and put into effect; adjoining property owners/occupiers are advised of when planned after hours lighting will occur.
Performance Indicators	No incidents or complaints.
Reporting	Monitoring records to be maintained for the duration of after-hours lighting. Daily monitoring reflected in daily site diary entries Weekly Inspections undertaken and recorded on the Weekly Environment Inspection Form.
Reference	• Protection of the Environment Operations Act 1997

Vehicular and Pedestrian Traffic Management	
Standard Environmental Protocol 7.19	
Objective	Avoid interference of, or obstruction to, roadways, footways or access points by the use of appropriate traffic control measures.
Management Strategy	Site environmental induction to address the issues of access and delivery arrangements for materials including timing and unloading of materials. Coordinate construction programme and delivery times to avoid hold-ups and traffic congestion. Provide appropriate fencing/hoardings and protection for the public.
Access	Access to the site will be determined to minimise impact.
Action	Project Manager shall ensure: • Controls documented in the approved Traffic Management Plan are implemented • Vehicle entry/exits with shakedown grids will be established to remove the potential for vehicles departing the site to deposit debris on the roads. BESIX Watpac will deploy street sweepers as required • Site fencing/hoarding is properly secured and lockable; access points are clearly designated and appropriate signage erected • Materials set-down areas are established. • All required Approvals are obtained and Traffic Controllers are engaged where necessary when temporary road closures are required. • Traffic management controls are monitored • Construction programme and delivery times are coordinated to avoid delays and possible traffic congestion • Access points for each stage of construction are unobstructed to facilitate prompt service to set–down areas within the site • Materials handling is managed to cause least disruption to traffic and local amenity.
Performance Indicators	Reports or complaints of interruption or interference with pedestrian or vehicular traffic movement around the site.
Reporting	Daily monitoring reflected in daily site diary entries Weekly Inspections undertaken and recorded on the Weekly Environment Inspection Form
Applicable Permits	Road Corridor Permit Traffic Control Permit
Reference	• Public Health Act 2010 (NSW) • Road Transport Act 2013 (NSW) • Road Transport (General) Regulation 2013 (NSW) • Roads Act 1993 (NSW)

Acid Sulfate Soil	
Standard Environmental Protocol 7.20	
Objective	To avoid significant impact caused by the disturbance of Acid Sulfate Soils (ASS).
Management Strategy	A soil investigation and analysis will be conducted to determine the extent of ASS on-site. Site environmental induction to address management of ASS. Excavations will be confined to minimum requirements. Bunds around all disturbed areas of ASS will be provided.
Action	Initial approach and planning A soil investigation and analysis will be conducted to determine the extent of ASS on site, including the possible and potential acid sulfate soils, and at what depths. An Acid Sulfate Soils Management Plan will be produced to outline the risks and liming rates to inform the earthworks contractors. <u>Field Indicators</u> • Field indicators for Actual Acid Sulfate include: • Water of pH <5.5 in groundwater or adjacent streams, drains, groundwater or ponding on the surface • Unusually clear or milky blue-green drain water within or flowing from the area (aluminium released by the acid sulfate soils acts as a flocculating agent) • Extensive iron stains on any drain or pond surfaces, iron-stained water or ochre deposits • Any jarositic (jarosite is a pale-yellow mineral deposit which can precipitate as pore fillings and coatings on fissures) horizons or iron oxide mottling in auger holes or recently dug surfaces. • With a fluctuating water table, jarosite may be found along cracks and root channels in the soil — however, jarosite is not always found in actual acid sulfate soils • Jarosite present in surface encrustations or in any material dredged or excavated and left exposed • Corrosion of concrete and/or steel structures • Dominance of mangroves, reeds, rushes and other swamp-tolerant vegetation – including estuarine occurrences of swamp trees • Field indicators for Potential Acid Sulfate include: • Typically waterlogged, soft muds (soft, buttery texture) or estuarine silty sands • Mid to dark grey to dark greenish-grey coloured soils or sediments • Offensive odour, predominantly due to ‘rotten egg gas’ (H2S). <u>Screening process</u> • Soils are usually “screened” to isolate areas of interest to test for. pHF and pHFOX indicate possible actual acid sulfate soils (AASS) or potential acid sulfate soils (PASS). • pHF — measure of soil pH of a soil:water paste. pHF <4 indicates oxidation has occurred in the past and that AASS is present. • pHFOX — measure of soil pH after rapid oxidation with hydrogen peroxide (H2O2). pHFOX <3, plus a pHFOX reading at least one pH unit below pHF, plus a strong reaction with peroxide, strongly indicates the presence of PASS. • Effervescence (or reaction rate) — a visual measure of the vigorousness of the oxidation reaction where: 1 = slight; 2 = moderate; 3 = high; and 4 = extreme. <u>Assessment Process</u> • Lab tests are the only truly definitive way of measuring for actual or potential acid sulfate. This is done by the SPOCAS or Chromium Suite method. • The SPOCAS suite is effective for coarser textured sediments. • The Chromium Suite (aka SCR suite) is effective for assessing soils with lower percentages of sulfide and for soils containing organic material. • Chromium reducible sulphur values (SCR) greater than 0.01% S indicate a significant level of sulphides, and where greater than 0.03% S then the soil has a high potential acidity level and an Acid Sulfate Soils Management Plan will be required.

Acid Sulfate Soil

- Net Acidity (TAA + SCR + SNAS – ANC/1.5) of greater than or equal to 0.03% S for soils, for greater than 1000 tonnes of disturbance.

Preparing a neutralisation zone/liming pad

- Prepare a liming pad/stockpile site of appropriate area for the volume of soil to be treated. The pad should be prepared on relatively level or gently sloping ground to minimise the risk of any potential instability issues, with a natural (or shaped) fall to the local drainage sump.
- Where the subgrade soils are other than low permeability clays, the surface of the pad should be lined with selected approved compacted clay (at least two layers to a combined compacted thickness of 0.5m) or a geosynthetic liner. Where the subgrade soils comprise low permeability clay, no clay or geosynthetic lining will be required.
- A guard layer of 'ag lime' should be applied over the clay subgrade or compacted clay liner, to neutralise downward seepage.. The guard layer of lime should be applied at a rate of approximately 5kg lime per square metre of surface area for every 1 m height of stockpiled soil.
- Liming pads should be bunded off, and a circumference drain excavated to collect and localise leachate. The drain and inner bund slopes should be covered with a layer of fine lime applied to neutralise any possible leachate migrating from the stockpiled material.

Neutralisation Process

- Supervision by a Scientist is not considered mandatory.
- Soil neutralisation can only be validated by lab tests (SPOCAS or Chromium suite).
- Aglime is the mandatory treatment material. Using aglime, overliming isn't an issue—it's not ecologically harmful as it only has neutralising properties on exposure to acid. In water it has low solubility (because water is neutral).
- Indicative liming rates can be applied before arranging lab tests, so lab tests are only done on the verification stage—rather than both the initial and verification stages.
- The excavated soil should then be spread onto the guard layer in layers of no greater than 200mm thickness, leaving a 1m flat area between the toe of the spread soil and the containment bund or drain. When spreading the first soil layer, care should be taken not to churn up the lime guard layer.
- It should be noted that saturated soil cannot be neutralised effectively with lime, particularly where it is cohesive (ie. comprises a majority of silt/clay sized particles). This is because the lime must be well mixed into the soil and this cannot be performed when the soil is overly wet and 'sticky'. Hence, the excavated soil must be dried back on a limed pad, before effective mixing can take place with earthmoving machinery. This is to enable the collection and separate treatment of any acid leachate formed during the soil drying and liming process. Wet weather will thus have a potential to delay the lime treatment process.
- Apply 'ag lime' to the stockpiled soil at the indicative liming rate given above over each spread layer and mix through with a harrow prior to spreading the next layer.
- ASS testing should be carried out on each layer to verify the lime dosing rates to be applied. This would confirm ASS soils have been neutralised and allow identification of problem material.
- Continue the spreading/liming/mixing cycle till excavation is finished.
- When testing indicates that lime neutralisation is complete, then the stockpiled soil may be removed from the liming/neutralisation pad.
- Verification testing of the soil is required to be conducted after the addition of lime to test whether or not mixing has been adequate, and to reduce the risk of acidic water being returned to other watercourses. The soil and water contained within the treatment bunds should not be removed until the target values have been achieved.
- Validation samples of soil should be collected and tested at a frequency of approximately one per 500m3 of treated soil. Similarly, additional layers of soil should not be added to the bunded stockpile for treatment until the underlying layers have been validated.

Water Run-off

- All water draining from the soil, once it is removed from the excavation, should be considered as potentially acidic and should be separated in a controlled area, such as the above referred bunded and lined pad, and not be allowed to flow back into waterways or stormwater until it has been tested for pH and for any other environmental tests required by the appropriate regulatory authority.

Acid Sulfate Soil	
	• Liming pads should be bunded off, and a circumference drain excavated to collect and localise leachate. The drain and inner bund slopes should be covered with a layer of fine lime applied to neutralise any possible leachate migrating from the stockpiled material. • The pH of all ponded drainage water around the confines of the treatment bunds should be measured daily. Soil Testing and Verification • Soil sampling for verification (and assessment) will be as soon as practically possible within 66 hours (i.e.3 nights). Large shells (>2 mm), fragments of wood, charcoal and stones will be noted before being removed from the samples in the field. Biological remnants such as small roots will not be removed from the soil sample as they may contain sulfides: • Divide the treatment pad area into areas containing a volume of soil equivalent to the nominated verification testing rate (e.g. for a treatment pad holding 2000m3 and a test rate of 1 per 1000m3, divide the pad into two sections). A treatment pad holding 500m3 at a test rate of 1 per 1000m3 is considered as 'one' treatment area/section. • Within each area, use a randomised procedure to nominate at least six random sampling locations. • Within each area, use a consistent-volume sampler to gather subsamples of treated soil from each of the pre-defined locations on the treatment pad (at least 4 x 250g subsamples). Subsamples should extend through the total depth of the treated material but avoid sampling the underlying guard layer. • Composite the subsamples thoroughly together in a container with a secure lid (e.g. clean plastic 5L plastic pail). • Subsample approximately 400g of the composited material and submit it for analysis. • Leave the soil on the treatment pad until the results are available. • Samples will be collected in laboratory supplied acid sulfate soil bags, stored on ice in a cool box and submitted to a laboratory (with chain of custody documentation) that is accredited by the National Association of Testing Authorities (NATA) for acid sulfate soil analysis. Visual and olfactory monitoring of the surrounding receiving environment to identify and report any potential concerns or impacts as a result of the activities conducted within the Acid Sulfate Soil Treatment Area. Off-Site Treatment • The following excavation procedures will be adopted during works onsite: • All excavations below the upper ASS horizon shall be programmed to ensure that the period of open excavation is kept to a minimum; • Any exposed walls of excavations shall be treated by "dusting" with fine agricultural lime prior to backfilling; • Where provisions have been made, all ASS material is to be immediately placed onto trucks and transported to a licenced treatment facility; • Where the immediate transfer to trucks is not feasible, on-site storage of untreated ASS is not permitted for more than 18 hours for sandy material, and 70 hours for peat or clays. • In the event temporary stockpiling of soils is required, the soils should be placed on bunded limestone pad approximately 300mm thick, in a location up gradient of the development area to prevent potential leaching or run off into undisturbed areas.
Performance Indicators	No acid discharge from site. Satisfactory laboratory results of tests on stockpiled ASS.
Reporting	Daily monitoring reflected in daily site diary entries Weekly Inspections undertaken and recorded on the Weekly Environment Inspection Form
Reference	• ANZECC/NHMRC Guidelines • NEPM for Assessment of Site Contamination.

Asbestos	
Standard Environmental Protocol 7.22	
Objective	To avoid threat to human health or contamination of the environment in the removal of asbestos materials.
Management Strategy	Investigation of the site to determine the extent and type of asbestos contaminated materials. Site environmental induction to make personnel aware of the presence of asbestos contaminated materials and procedures for their identification and removal. Engagement of a certified, licensed asbestos removal contractor in terms of Environmental Protection regulations.
Action	Generally speaking, asbestos management requires: • Asbestos Management Plan by an Environmental Scientist-- • Asbestos Removal Control Plan by a Licenced Asbestos Removalist—the plan for how to safely undertake the works by the people actually doing it. • BESIX Watpac's Project Safety Management Plan. Project Manager shall ensure: • Asbestos contaminated areas are identified and restricted to authorised personnel until the contaminated materials have been removed and the area declared safe. • The project hygienist is engaged to assess materials suspected of containing asbestos • The project hygienist is engaged to develop a fully documented Asbestos Management Plan to detail the requirements and controls for removal of all asbestos containing materials • A licensed asbestos removal contractor is engaged to manage the removal and disposal of all asbestos contaminated materials • The licensed Asbestos Removalist to comply with the BESIX Watpac Asbestos Management Procedure; the Asbestos Management Plan and the Australian Government Code of Practice for the Safe Removal of Asbestos. • The project hygienist is to provide Clearance Certificates
Performance Indicators	Satisfactory post-removal monitoring results.
Reporting	Project hygienist to provide site safety clearance certificate and documented evidence of proper disposal.
Applicable Permits	Licence under WHS Regulations
Reference	• Work Health and Safety Regulation 2011 Ch 8 • BESIX Watpac NSMS Asbestos Management Procedure • Asbestos Management Plan • Code of Practice for the Safe Removal of Asbestos

Hazardous Substances and Dangerous Goods	
Standard Environmental Protocol 7.23	
Objective	To avoid contamination of the environment or risk to human health To appropriately manage the discovery of Hazardous Materials on site
Management Strategy	• Site environmental induction to make personnel aware of the project handling and storage procedures to manage Hazardous Substances and Dangerous Goods • All hazardous materials introduced onto site must be accompanied by a MSDS and the material entered onto the project register. • All hazardous materials must be stored in compliance with the manufacturer's recommendations and in accordance with Australian Standards • No bulk fuels are to be retained on site. Refuelling of plant is to be undertaken on a just-in-time basis and only within a prepared designated area. • Any discovery of a hazardous material is immediately reported
Action	Project Manager shall ensure that: • Hazardous chemicals are stored in an impervious storage area, which is cool and dry, vented, lockable, and bunded to 110% the volume of the chemical container. • Conflicting chemicals are kept segregated in accordance with AS 3833 and AS 1940. • The quantities of Hazardous Substances and Dangerous Goods on site are minimised. • No bulk diesel is to be stored on site. • Fuelling and maintenance of vehicles and equipment on site is avoided. Where refuelling is unavoidable, the location and procedures will be strictly controlled. Refer to NSMS procedures on refuelling. • Subcontractors are trained in the use and precautions of their hazardous substances in accordance with the MSDS. • Subcontractors advise the Senior Site Supervisor of the type of material, location, volume and any special handling / storing precautions in relation to any dangerous gases or flammable materials that are proposed to be brought on site. • Subcontractors do not use any materials which are classified as Hazardous in or adjacent to occupied areas without the prior approval of the Senior Site Supervisor. • Subcontractors provide a current MSDS for all Hazardous Substances and Dangerous Goods proposed to be brought onto site. A Site MSDS Register is to be developed and maintained. • A Spill Kit and Site Emergency Plan are readily accessible. Clean up materials are disposed of in compliance with regulatory requirements • All oxygen and acetylene cylinders are properly stored in an upright position and adequately restrained away from heat sources. • Persons handling dangerous chemicals and materials will wear appropriate PPE and receive appropriate training in its use • Fuels and hazardous chemicals will not be decanted or handled in the vicinity of the central drainage line and major stormwater inlet points. Decanting of liquids is to be done in temporary bunded area. • Paint storage does not need to incorporate 110% volumetric bund but should be sufficient to envelope an incidental spill. • Material Safety Data Sheets (MSDS) will be located at the site office for all hazardous and dangerous goods used during construction operations. The contractor will ensure that all materials are handled, used and disposed of in accordance with their MSDS
Performance Indicators	No spillages, incidents or complaints
Reporting	Licenced removal contractor to provide site safety clearance certificate and documented evidence of proper disposal.
Reference	• Work Health and Safety Regulation 2011, s 357 • National Code of Practice "Managing Risks of Hazardous Chemicals in the Workplace" • National Code of Practice "Labelling of Workplace Hazardous Chemicals"

Pest Animals, Vermin, and Infestation Control	
Standard Environmental Protocol 7.24	
Objective	Minimise the possibility of infestation from rats, mice, insects, or other scavenging wildlife.
Management Strategy	Keep site clean and tidy Monitor area for infestation Consult Pest Management Contractor if required
Action	Project Manager shall ensure that: • Keep site clean and tidy with daily clean-ups. • Ensure all putrescible waste is disposed of in an appropriately sealed receptacle. • Six weeks prior to the commencement of any demolition, individual blocks, properties and the surrounding area should be inspected in order to identify the presence and extent of any infestations. Where infestations are identified, appropriate treatments must be implemented by licenced Pest Control Contractors to eliminate infestation before demolition. • Pest animals include: – European rabbits and hares – Mice – Feral or wild pigs – Wild dogs and dingoes – Red foxes • It is not incumbent on BESIX Watpac to destroy these animals, particularly it if it is unsafe to do so. • Minimise ponding and exposed water sources to prevent mosquitos and midgeys. • Ideally, licenced Pest Control Contractors should be consulted for management strategies after the substructure is completed. Frequently the dark cold environment can be a pest habitat which presents an unacceptable working environment. • To prevent rat egress from live drains and sewers to new systems, the live systems should be temporarily sealed off with expanding drainage stoppers until connection to new drainage is completed. • Where vermin presents itself as a problem on site, consult a Pest Control company for advice. Do not attempt to address the problem internally.
Performance Indicators	No infestations.
Reporting	None
Reference	• Work Health and Safety Regulation 2011 • Plant Protection Act 1989

Site Demobilisation	
Standard Environmental Protocol 7.25	
Objective	Control and minimise damage to the receiving environment as a result of site demobilisation.
Management Strategy	Ensure ground is stabilised and operational stormwater controls are commissioned prior to demobilisation. Clean up during after demobilisation.
Action	Project Manager shall ensure: • Ensure any landscaping is sufficiently stabilised, either of their own accord or supported by an erosion blanket such as jute mesh. Any permanent stormwater that can't be relied on must be continue to supported by erosion and sediment controls that are maintained during the planting establishment period • Tenting of erosion blankets can prevent vegetation growth, and trap wildlife. Ensure good ground contact is made and pinned • Hydroseeding and hydro-mulching can be used for accelerated grass growth for cover and stabilisation • Basins should be removed or integrated into permanent stormwater system. Temporary sediment controls must be installed downslope of this process, and captured water must be properly disposed of. The footprint of the basin will require revegetation • Plan routes of plant access, such as removal of sheds, so that it can be accessed without disturbing earth or vegetation • Conduct a site clean-up before and after shed removal. Invariably a fair amount of rubbish will have accumulated under the sheds
Performance Indicators	Minimal disturbance because of site demobilisation.
Reporting	None
Reference	None

8 Unexpected Finds Protocols

8.1 Unexpected Finds Protocol - Contamination Procedure

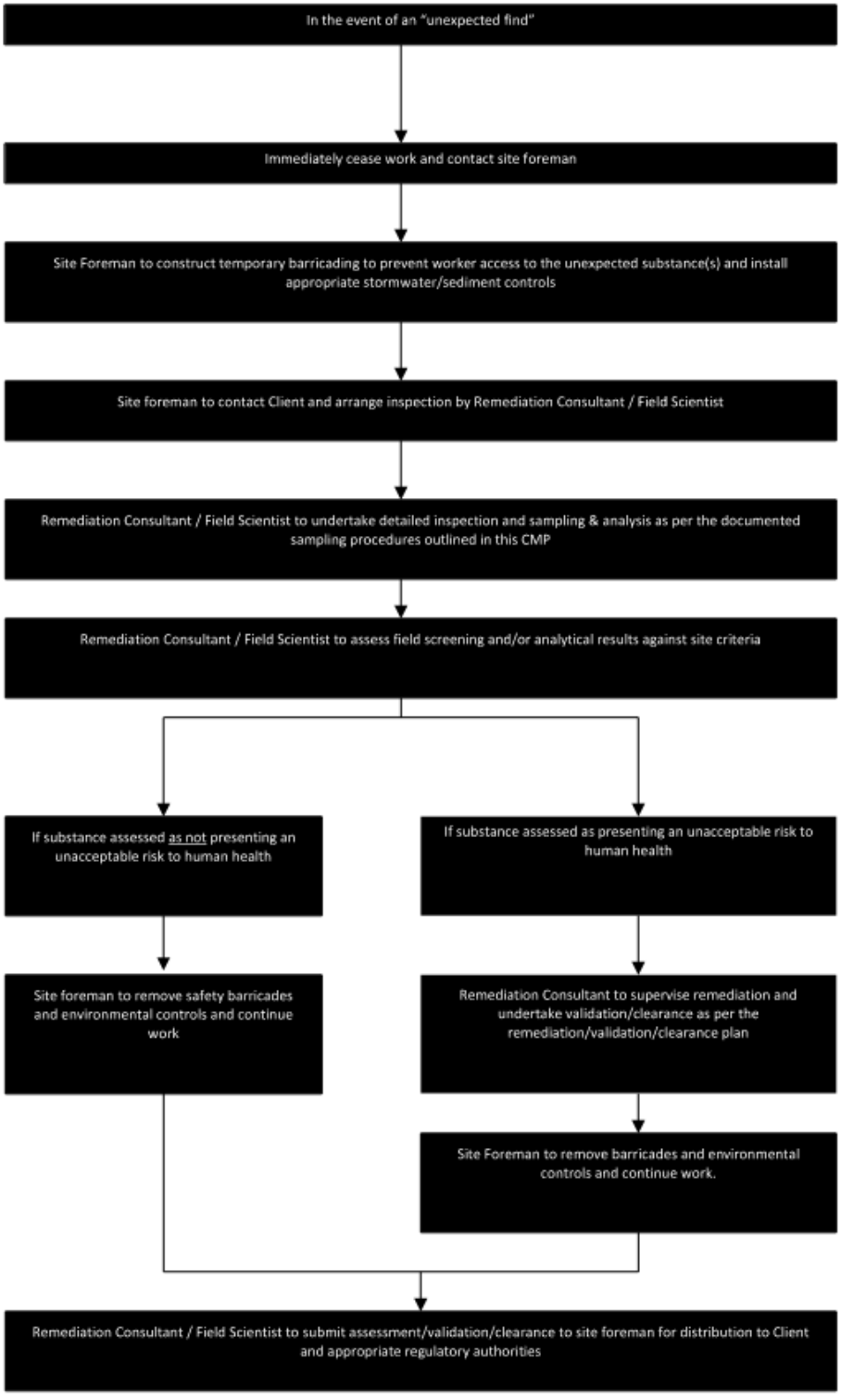


Figure 3 Unexpected Finds Protocol, Revision 1, December 2023, prepared by JBS&G

8.2 Unexpected Finds Protocol - Aboriginal and non-Aboriginal Heritage Procedure

Refer to Appendix H, section 5.8 of Bank Street Park Aboriginal Cultural Heritage Management Plan, Revision 2, dated 22 December 2025 for the unexpected finds protocol.

The works must operate under an unexpected finds procedure that outlines processes which must be followed in the event that unexpected Aboriginal objects are encountered during the works program (CoC B33d). This was also recommended by GML (2024) in the ACHAR prepared for this project.

To assist with the identification of unexpected Aboriginal objects during works, characteristics of Aboriginal stone tools include the following shown in Figure A.1 and Figure A.2:

- Sharp edge
- Retouch along one or more edges
- Stone rich in silica (does it sparkle? If so, it likely has a high silica content)
- Stone type is often different to natural rock in the area

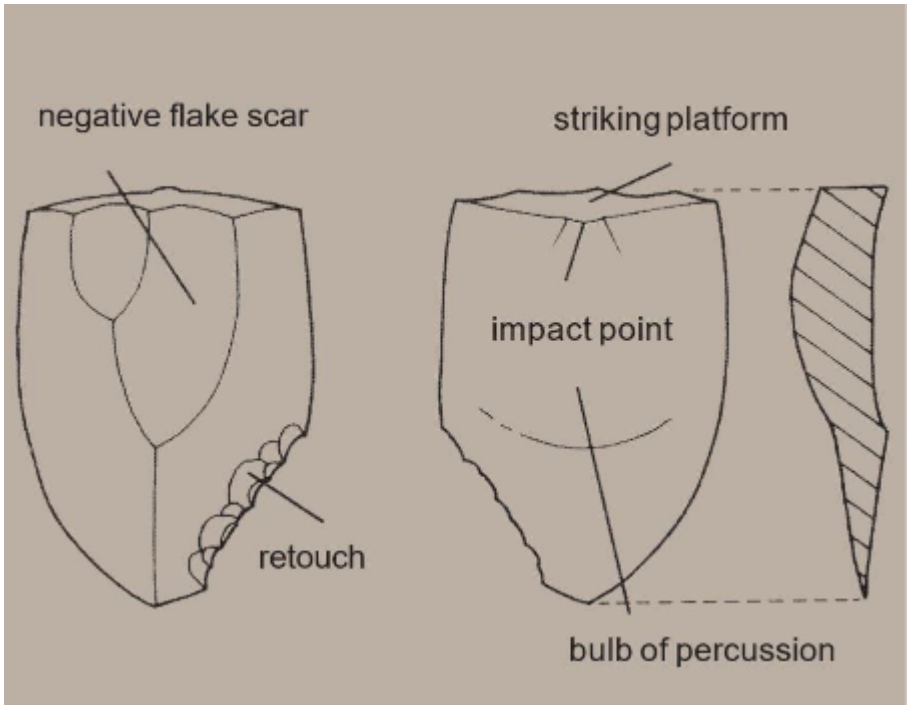


Figure A.1: Characteristics of stone flakes

Figure A.2: Representative examples of stone artefacts which are encountered in NSW (Source: NSW Archaeology)

GML (2024) also determined that there is low potential for midden material to be present across the site. Middens are characterised by concentrations of shells from a wide range of species as well as other materials (e.g. stone artefacts, bone, etc.).

Features of middens include:

- Generally contain large/mature shellfish species
- Shells may be blackened from cooking and charcoal may be visible
- Animal and fish bones may be present, as might stone artefacts
- Have been known to contain human burials also

Figure A.3: Representatice example of a shell midden

Figure A.4: Representative example of a shell midden

If unanticipated suspected Aboriginal objects are uncovered at any time throughout the life of the project the following steps would be undertaken.

- All work in the immediate vicinity of the suspected Aboriginal object must cease immediately
- A 5 m wide buffer area around the suspected item or object must be cordoned off

Once the find has been secured a suitably qualified archaeologist must be contacted to assess the significance of the find and determine management requirements.

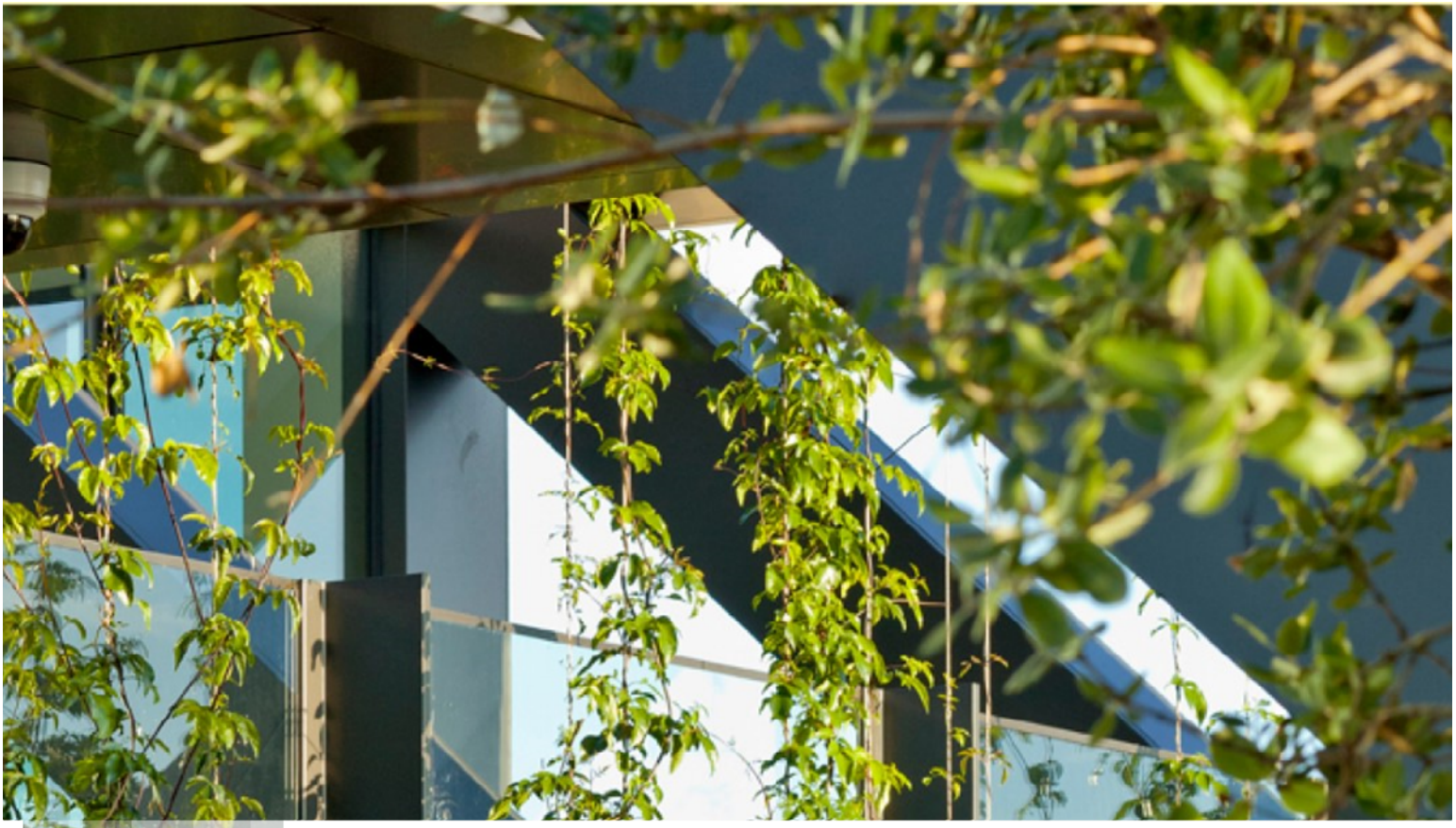
If the find is identified as a genuine Aboriginal object:

- Heritage NSW and must be notified and the RAPs for the project consulted
- The Planning Secretary must be notified within seven days of the Applicant becoming aware of an incident as per the Incident Notification and Reporting Requirements of the CoC. Written notification of the incident must contain the details outlined in the CoC (p.30). Within 30 days of the incident occurring, the Applicant must provide the Planning Secretary and any relevant public authorities with a detailed incident report addressing the requirements outlined in the CoC (p. 30)
- A methodology for salvage and long-term storage of the find in accordance with its identified significance must be developed in consultation with Heritage NSW and the RAPs. Salvage may mean either a collection of Aboriginal objects or archaeological excavation
- Salvage works in accordance with the methodologies outlined in this ACHMP should be undertaken
- The Aboriginal object must be registered on the Heritage NSW AHIMS database and an ASIRF prepared where required.

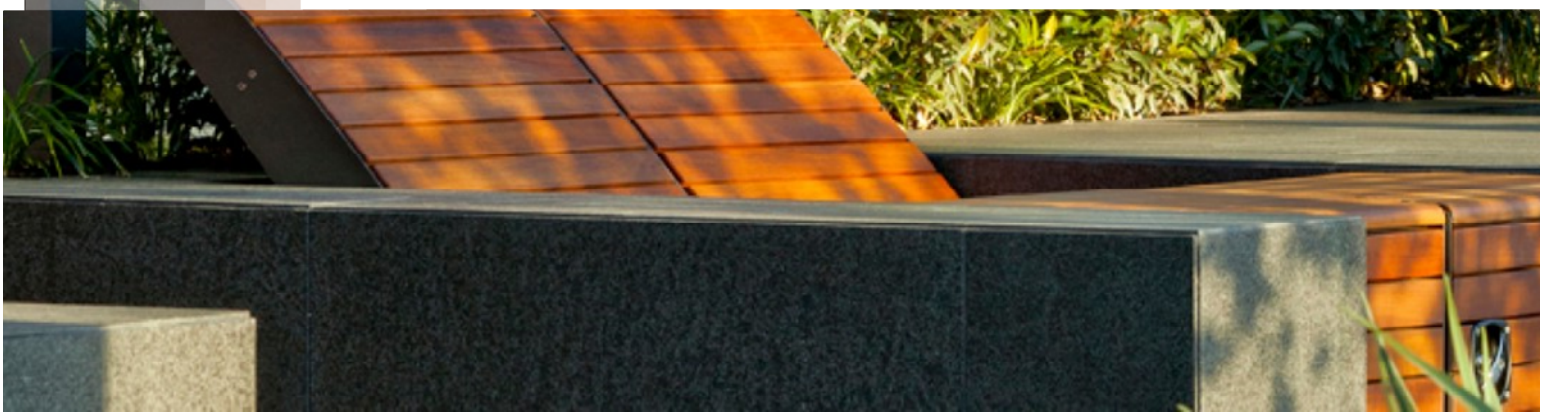
Works would not recommence until written consent is received from the project archaeologist/heritage consultant.

Performance indicator for this action:

- The unexpected finds procedure is communicated to all project staff as part of project inductions and a log of inductions is kept.
- in the event of any unexpected finds, that procedure and any relevant notifications or reporting are prepared within specified timelines



Appendix A
Environmental Risk Assessment



Appendix B
Construction Traffic and Pedestrian Management Plan

BESIX Watpac

Construction Pedestrian and Traffic Management Plan

N231

Bank Street Park

17 February 2026

Technical Advisory Note

Project	Bank Street Park	**Project Number**	SCT_00812
Client	BESIX Watpac		
Document Name	Bank Street Park Construction Pedestrian and Traffic Management Plan		
Version	3.0	**Date**	17 February 2026
Author	Helen Aberra	Consultant	
Reviewer	Shawn Cen	Principal Consultant	
Authoriser	Nick Bernard	Director	

1.0 Introduction

1.1 Project background

SCT Consulting was engaged by BESIX Watpac to prepare a Construction Pedestrian and Traffic Management Plan (CPTMP) for the Bank Street Park project. The proposal is the construction of a recreational area for the primary purpose of a public park. The State Significant Development Application (SSDA) was approved by the Minister for Planning and Public Spaces in July 2024, followed by a modification in July 2025.

The CPTMP for the project covers the following key aspects:

- Proposed truck movements to and from the site
- Estimated frequency of truck movements
- Measures to ensure pedestrian safety near the site
- Traffic control measures
- Indicative locations of works zones and work areas
- Indicative construction worker numbers and parking arrangements, per stage of construction
- Proposed haulage routes for heavy vehicles

1.2 Conditions of Consent Requirements

As part of the approval, Conditions of Consent requirements were issued by Department of Planning and Housing Infrastructure (DPHI), dated 31 July 2024. The conditions relevant to this CPTMP are listed below in **Table 1**.

Table 1 City of Sydney CTMP requirements

No.	Requirement	Reference
C12. Prior to the commencement of works, the Applicant must submit to the satisfaction of the Certifier a Construction Pedestrian and Traffic Management Plan Sub-Plan (CPTMP) endorsed by the Sydney Coordination Office within TfNSW (development.CTMP.CJP@transport.nsw.gov.au). The CPTMP must specify matters including, but not limited to, the following:		
Site information and building construction plans		
1	A description of the development	Section 2.1
2	Construction program and construction methodology.	Section 2.2
3	Proposed construction hours.	Section 2.4
4	A detailed plan of any proposed hoarding and/or scaffolding.	Appendix B
5	Details of crane arrangements, including location of any crane(s)	No crane is proposed
6	Location(s) where it is proposed to park the construction vehicle.	Section 2.5
7	Location of any proposed work zone(s)	Section 2.7
Access and movement:		
8	Pedestrian and traffic management measures, ensuring safe and convenient pedestrian access is provided at all times.	Section 3.4
9	Haulage routes.	Section 2.7
10	Predicted number of construction vehicle movements and detail of vehicle types.	Section 2.6
11	Identify any potential impacts to general traffic, cyclists, pedestrians and bus services within the vicinity of the site from construction vehicles during the construction of the proposed works.	Section 3.5
12	Cumulative construction impacts of projects including the new Sydney Fish Markets and Sydney Metro West. Existing CPTMPs for developments within or around the development site should be referenced in the CPTMP to ensure that coordination of work activities are managed to minimise impacts on the surrounding road network.	Section 3.7
13	Measures to minimise movement delays. i.e. Vehicle movements are to be minimised during peak network demand periods.	Section 3.9
14	Details of specific measures to ensure the arrival of construction vehicles to the site do not cause additional queuing on public roads.	Section 3.9
15	Proposed mitigation measures. 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 included in the CPTMP.	Section 3.4
16	Measures to avoid construction worker vehicle movements, including strategies to minimise impacts on available on-street parking spaces in the locality.	Section 2.4
Ongoing activities:		
17	Details of the monitoring regime for maintaining the simultaneous operation of buses and construction vehicles on roads surrounding the site.	Section 3.5
18	Consultation strategy for liaison with surrounding stakeholders, including other developments under construction	Section 3.7
C16. Prior to the commencement of works, the Applicant must submit to the satisfaction of the Certifier evidence that sufficient off-street parking has been provided for heavy vehicles, to ensure that construction traffic associated with the development does not utilise on-street parking or public parking facilities.		Section 2.7

Source: NSW Government, Department of Planning Housing and Infrastructure

1.3 Site context

The site is located at 1A-19 Bank Street, Pyrmont and is within the City of Sydney local government area (LGA). The site is approximately 1.9 hectares and has a frontage on Bank Street and Anzac Bridge. The Anzac Bridge serves as a key distributor across Johnstons Bay between Pyrmont and Glebe on the western fringe of the Sydney CBD.

Bank Street Park forms part of the Blackwattle Bay Precinct, which is an area of predominantly state-owned land located on the western edge of the Pyrmont Peninsula and adjoining the water of Black Wattle Bay.

An aerial view of the site and its surrounds is shown in **Figure 1**.

Figure 1 Site location

Source: Nearmap with annotations by SCT Consulting, 2025

1.4 TfNSW's Traffic control at work sites Technical Manual

The Traffic Control at Work Sites *(TCAWS)* technical manual outlines TfNSW's expectations for how Traffic Management Plan (TMP's) and Traffic Guidance Schemes (TGS's) are prepared.

The key objective for a TMP is to ensure that work is arranged such that:

– Road workers can work safely

– Road users can travel around, past or through the work site safely

– Road workers and road users are separated wherever possible

– The activity does not impact or cause delay to road users or, if not reasonably practicable, it is minimised.

1.4.1 Personnel must be appropriately qualified

Traffic control training in NSW is prescribed under the WHS Regulation 2025 and is managed by SafeWork NSW. As a requirement of the WHS Regulation 2025, a person undertaking traffic control work must hold the relevant qualification for the work they are performing. The three qualifications outlined in the WHS Regulation 2025 are as follows:

– Traffic Control (TC)

– Implement Traffic Control Plans (ITCP)

– Prepare Work Zone Traffic Management Plans (PWZTMP).

Implication for this project: Any Traffic Guidance Schemes must be pre-prepared by an individual who is qualified to prepare a Work Zone Traffic Management Plan (PWZTMP) and Traffic Control must only be conducted by appropriately qualified individuals.

1.4.2 Hierarchy of controls

TfNSW identifies a hierarchy of controls (**Table 2**) that should inform the way that interventions are developed.

Table 2 Hierarchy of traffic controls

Traffic management method	Description	Examples
Around (elimination)	An around method is where traffic is completely separated from the work area. An around method is the preferred Temporary Traffic Management method where achievable, as a majority of risks associated with Temporary Traffic Management are eliminated and it generally provides the lowest overall net risk option. This method must be considered as the first option, however, if it cannot be achieved, justification must be provided in the TMP.	Examples of around methods include: – A road closure requiring a detour of all traffic. – Construction of a sidetrack. – Contraflow of traffic via a separated median.
Past (isolation or engineering)	A past method is where substitution, isolation and engineering controls are used to guide traffic along an adjacent path to the work area. A past method includes the use of a barrier or shifting of traffic to provide complete separation of workers and traffic.	Examples of past methods include: – Contraflow without a separated median. – A lateral shift taper. – Use of an accepted temporary barrier system.
Through (administration and PPE)	A through method relies on administrative, training and PPE controls only. A through method does not provide separation of traffic to the work area and requires the passage of traffic through the work area. A through method must only be considered when around and past strategies are not achievable or the risk generated by installing those options outweighs the safety benefit.	Examples of through method include: – Directing road users immediately over the work area. – Separation is only achieved by the use of cones or bollards. – Pilot vehicle used to platoon road users.

Source: Transport for NSW, 2022

For the proposed construction activity, traffic from the site can't be eliminated, isolated or engineered away. Waste materials need to be transported from the site and the only access points are the public road network.

1.4.3 Risk evaluation

TfNSW prescribes a risk management approach to identify and control hazards for traffic management. The list of hazards is identified in **Table 3**.

Table 3 Traffic management hazards and risks

Hazards and risks	
Moving traffic	Traffic generating special events
Queued traffic	Non-compliance with temporary speed limits
High volume traffic	Reduced lane and shoulder widths
High vulnerable road user activity	Compromised access points
Other construction activity or roadworks in close proximity to proposed work site	Emergency vehicle access
Rising and setting of the sun	Overhead power lines or other utilities
Traffic speed and compliance behaviour	Horizontal (curves) and vertical (crests/sags) alignment
Traffic composition	Crash history
Number and location of traffic control points	Site vehicle access and egress points
Exposure and proximity of workers to live traffic	Topographical constraints
Length of delays for road users	

Source: Transport for NSW, 2022

The risk matrix which is used to evaluate the need for intervention is provided in **Figure 2**.

Figure 2 Risk matrix

Risk evaluation matrix

Risk ratings:
Very high VH
High H
Medium M
Low L

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

Source: Transport for NSW, 2022

The key risks for the site are associated with truck collisions, particularly with vulnerable user groups. Controls are required to manage the potential conflicts caused by trucks, which are outlined in this plan.

2.0 Construction activities

2.1 Works

The proponent intends to develop the study area as a recreation area for the primary purpose of a public park. The works would involve:

- Site preparation works, including tree removal, earthworks and remediation to facilitate the proposed use
- Partial demolition and adaptation of existing buildings at 1-3 Bank Street
- New and adapted facilities for community use
- Adaptive reuse of existing building 'Building D' for storage
- Boat storage for dragon boat users with a publicly accessible rooftop deck
- New amenities block with toilets, showers, and rangers room
- Public domain works, including:
    - Foreshore promenades
    - Multi-purpose sports court
    - Play space and Fitness equipment
    - Public plaza, grassed open space, trees and landscaped areas
    - Picnic shelters with tables and BBQ's
    - New kayak/ passive craft pontoon
    - Works to Bank Street Road reserve
    - Relocation of the existing Marina office demountable.

It is noted that the works to Bank Street Road reserve include the addition of a new shared path, new on-street line marking and signage, which would take place during or after the construction of the park itself.

2.2 Construction staging

The construction of the project will take place over 50 weeks, with construction set to commence in February 2026 and be completed by January 2027. The major construction stages and duration of each stage are summarised in **Table 4** where the use of the access points by stages is also shown (see access arrangement in **Figure 4**).

Table 4 Construction staging summary

Construction stage	Duration	Access in use
Site possession and clearing	February 2026	Access E
Excavation and demolition	March 2026 to May 2026	Access A, B, D, E
Structure, walls and storm water	May 2026 to July 2026	Access B, C, D, E
Landscaping and footpath	July 2026 to August 2026	Access C, D, E
Make-good, services, fit out, superstructure	August 2026 to November 2026	Access C, E
Final touch-ups, commissioning, and inspections	November 2026 to January 2027	Access C

A detailed on-site hoarding plan is shown in **Appendix A**.

2.3 Work hours

The work hours are limited to those approved under the Conditions of Consent (Condition D4 and D8):

> *"Construction, including the delivery of materials to and from the site, may only be carried out between the following hours:*
>
> *(a) between 7 am and 5:30 pm, Mondays to Fridays inclusive*
>
> *(b) between 7.30 am and 3.30 pm, Saturdays.*
>
> *No work may be carried out on Sundays or public holidays.*
>
> *Rock breaking, rock hammering, sheet piling, pile driving and similar activities may only be carried out between the following hours:*
>
> *(a) 9.00 am to 12.00 pm, Monday to Friday*
>
> *(b) 2.00 pm to 5.00 pm Monday to Friday*
>
> *(c) 9.00 am to 12.00 pm, Saturday.*

2.4 Construction worker commuting

It is expected that there will be a maximum of 100 workers on-site during the peak construction.

No on-site parking will be provided to workers; therefore, the main transport choice for accessing the site will be via public transport. On-street parking on Bank Street and surrounding streets in Pyrmont is limited to 6-hour parking or less, meaning all-day parking on site will not be possible. The limited on-site parking for contractors and employees at the site is consistent with major construction projects within the City of Sydney LGA.

Construction workers arriving by public transport to the site should arrange for any equipment to be delivered and stored on site. The closest bus stop is located on Miller Street, approximately 220m from the site and Harris Street, approximately 500m from the site, which are serviced by Routes 389 and 501. Light rail services are also available with the closest stop located approximately 350m away at the Bank Street light rail stop. Workers should be advised of this information during induction. The light rail and bus stop closest to the site is shown in **Figure 3**.

Figure 3 Public transport access near the site

Source: BESIX Watpac, 2026

2.5 Construction vehicles

The site will have various types of construction vehicles accessing such as the following:

– 12.5m Heavy Rigid Vehicles (HRVs) for spoil removal for the site

– 8.8m Medium Rigid Vehicles (MRVs)

– 6.4m Small Rigid Vehicles (SRVs).

All equipment will be loaded and unloaded on-site.

2.6 Construction traffic volumes

The site is expected to generate the following level of vehicle activity, where the majority of the vehicles are expected to be heavy vehicles:

– 5 vehicles per hour and 15 vehicles per day on a typical workday

– 10 vehicles per hour and 40 vehicles per day on a busy day

Based on the above, the number of construction vehicles generated by the site is expected to be relatively low, with a maximum of 40 vehicles per day during peak construction phases.

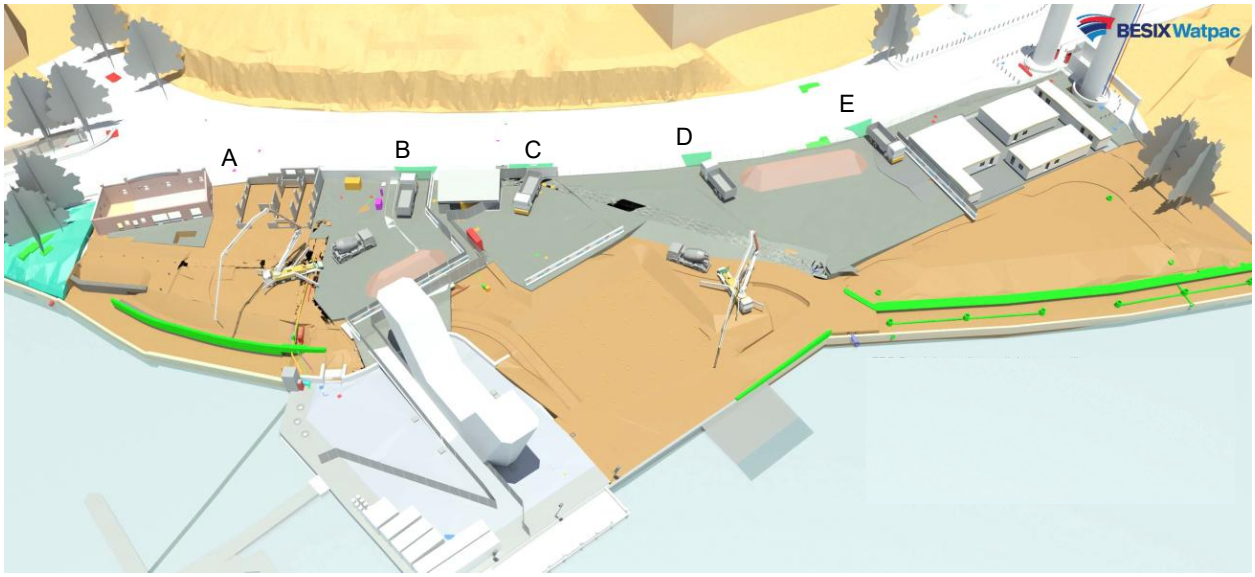
Where practical minimal construction traffic movements to/from the site will be made during peak hours to minimise impact on the wider road network.

2.7 Construction site access and routes

2.7.1 Site access

The site will be accessed via Bank Street, with all work to take place within the site itself (except the work on Bank Street reserve). The site has several driveways, which will be used by construction vehicles to access the on-site work areas (as shown in **Figure 4**). Five site access points (identified A to E) will provide access to and from the site at the different stages of the project, which is summarised in **Table 4**. Noting that the location of access E is indicative and may change during site establishment methodology.

Figure 4 Construction access driveway



Source: BesixWatpac, 2025

On-site work area will accommodate parking for construction vehicles to facilitate loading, unloading and other construction-related activities. Construction vehicles will arrive and depart from the south via Bank Street/ Western Distributor intersection.

No on-street work zones will be utilised, with Bank Street expected to function as usual, except during the period where Bank Street road reserve works take place.

Swept path analysis of these manoeuvres is shown in **Appendix B** and confirms that vehicles can safely and efficiently enter and exit the site. It is noted that the proposed driveways would result in the loss of on-street parking spaces in different stages. Its impact is further discussed in **Section 3.2**.

2.7.2 Routes to/ from the site

The proposed construction vehicle access routes are shown in **Figure 5.** Construction vehicles will access the site via Wattle Street, Western Distributor, Anzac Bridge and Cross City Tunnel. No local roads will be utilised in the Pyrmont area.

Figure 5 Construction vehicle routes

Source: NHVR, 2026 and Nearmap, 2026 (inset) with annotations by SCT Consulting

3.0 Construction traffic management

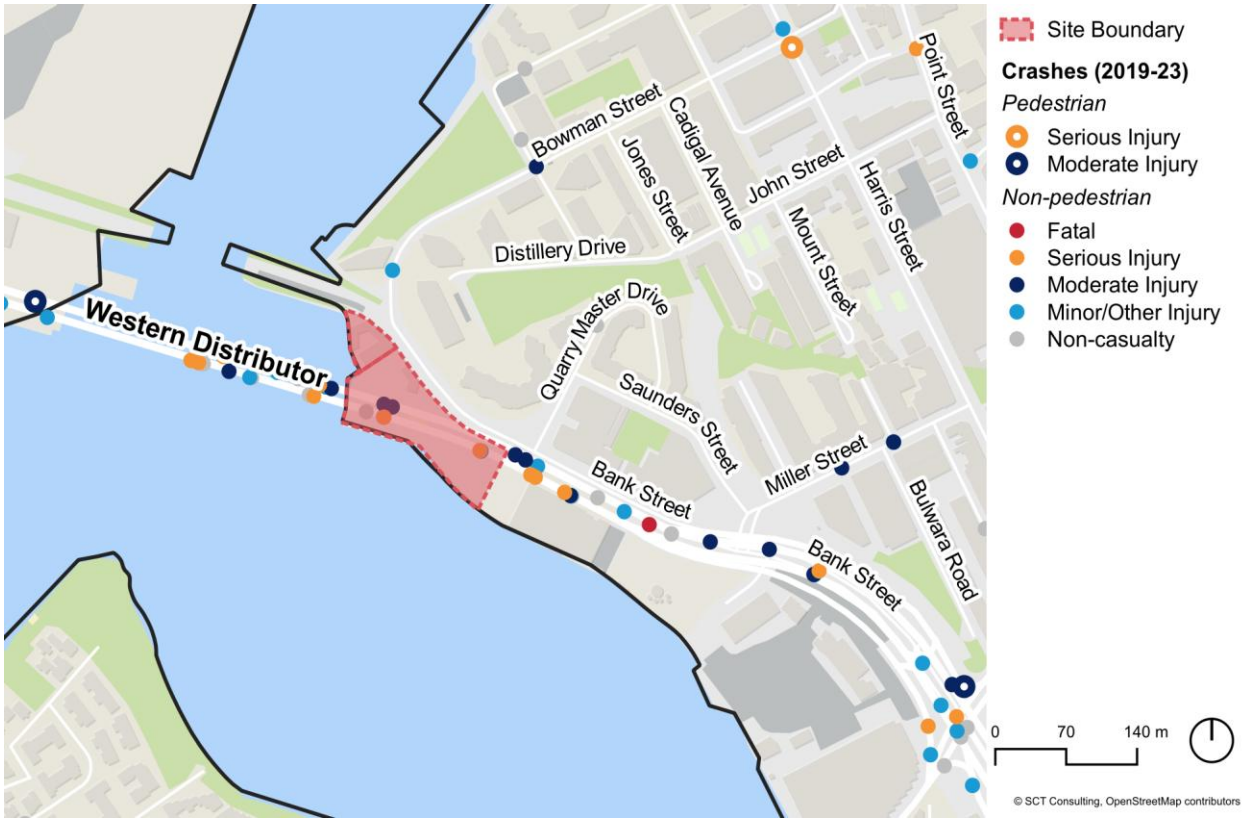
3.1 Crash history

Crash data between 2019 and 2023 were obtained from the Transport Open Data Hub (TfNSW, 2024) to develop an understanding of the nature of road crashes that occurred near the site. The locations of the crashes recorded in the five-year period are shown in **Figure 6**.

57 crashes occurred on the Western Distributor (Bank Street) between Solomons Way and Pyrmont Bridge Road. One fatality occurred on Pyrmont Bridge Road, which involved an on-path accident between a pedestrian and a car (RUM Code 62). There were also 13 serious and moderate accidents, 14 minor accidents and the remaining were non-casualty accidents. While there were a considerable number of accidents that have occurred on the Western Distributor, this is to be expected considering it serves as a major state road within the Sydney CBD.

The crashes on surrounding local roads are minimal.

Figure 6 Location and type of crashes 2019 – 2023



Source: Transport for NSW, 2026

3.2 On-street parking impacts

The project will result in the loss of existing ticketed car parking on the western side of Bank Street due to the proposed access points by staging. This includes one space due to Access A, two spaces due to Access C and two spaces due to Access E. No parking loss will happen at Access B and D.

Currently, there is a total length of 136m on the western side of Bank Street for on-street parking, which is equivalent to around 22 spaces considering the existing crossovers. Therefore, the parking loss of the parking spaces as a result of the construction is summarised in **Table 5**.

Table 5 On street parking loss summary

Construction stage	Access in use	Loss of parking spaces
Site possession and clearing	Access E	Two spaces
Excavation and demolition	Access A, B, D, E	Three spaces
Structure, walls and storm water	Access B, C, D, E	Four spaces
Landscaping and footpath	Access C, D, E	Four spaces
Make-good, services, fit out, superstructure	Access C, E	Four spaces
Final touch-ups, commissioning, and inspections	Access C	Two spaces

It is estimated that there will be a maximum loss of four spaces during the construction of the site. The small number of existing parking spaces to be temporarily removed on Bank Street is considered an insignificant impact on the surrounding transport network, given the following:

– The parking spaces on Bank Street are not allocated to any particular user group (e.g. nearby residents) and are not relied upon for access to certain sites.

– The subject site is currently vacant, and there is very little parking demand currently generated in this section of Bank Street. The dragon boat users have been temporarily relocated during the project.

– Observations undertaken through Nearmaps' historical satellite images indicate there is significant spare on-street capacity on Bank Street

– No on-street parking loss will occur on the eastern side of Bank Street.

– The lost parking spaces will be reverted once the driveway is closed off (not in use), according to the staging, further mitigate the impact throughout the entire construction period.

During the road reserve work on Bank Street, all on-street parking is not expected to be available. This would facilitate the vehicle travel along Bank Street and minimise the congestion and blockage. However, this will only take place during a short period of time.

3.3 Traffic guidance scheme

It is noted that no Traffic Guidance Scheme (TGS) is required during the on-site work, but is only required to support the one lane operation due to the work on the Bank Street Road reserve. The TGS outlines the proposed traffic management to inform road users of the changed traffic conditions in the vicinity of the works and provide appropriate signage and delineation. This reduces the risk of conflicts between pedestrians and vehicles. The key principles of the TGS are:

– Early warning signage for other road users that there is increased truck use of the site.

– Traffic controllers would stop vehicles to manage one-way operation. When pedestrians are crossing the road, traffic would be stopped in all directions.

– A traffic controller can monitor the driveway and assist with pedestrian movements.

The full TGS is shown in **Appendix C**.

3.4 Pedestrian management

Pedestrian connectivity along Bank Street will be maintained throughout construction as shown in **Appendix C**. A-class hoarding will be constructed on Bank Street. Other appropriate fencing/hoarding will be provided to ensure pedestrians are appropriately separated from plants, equipment and construction activities.

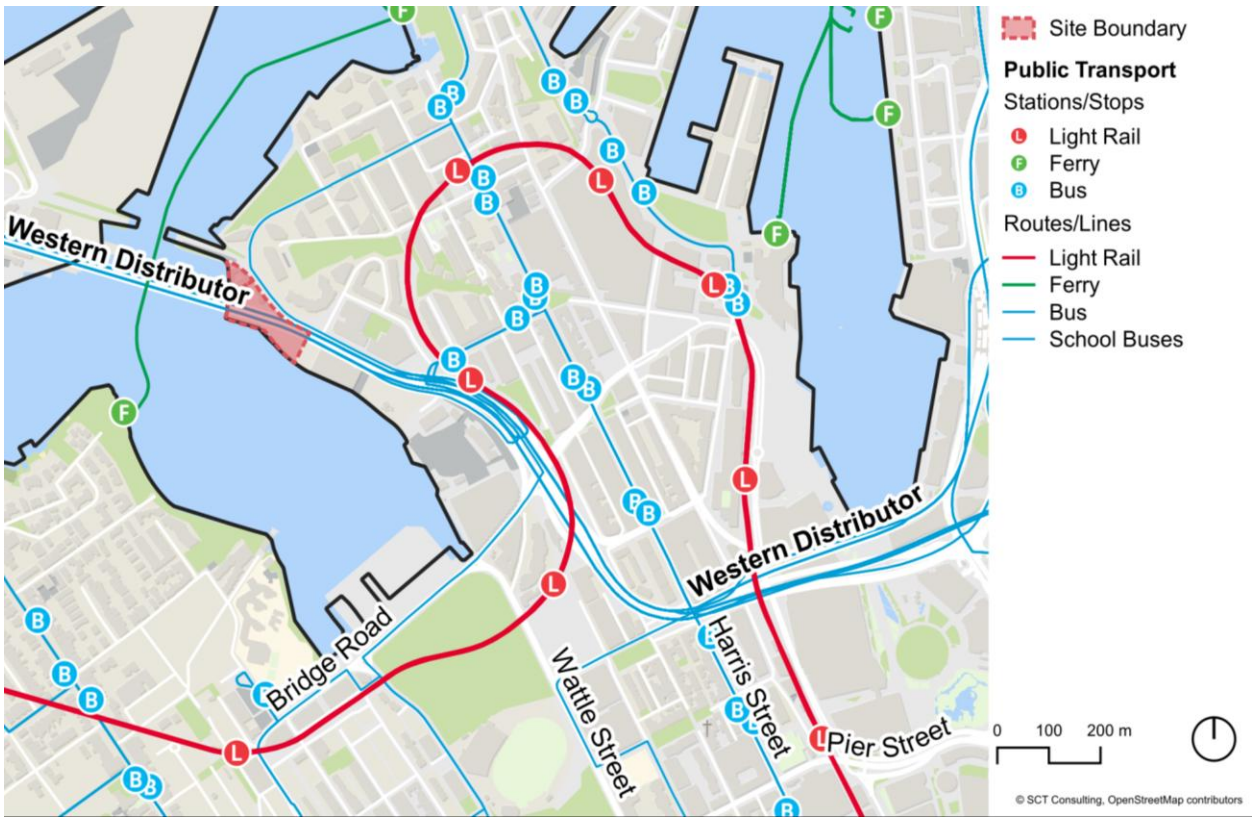
A traffic controller can manage the entry and exit gates to ensure that vehicles give way to pedestrians where safe. If required, controllers may stop pedestrians (e.g. when a truck is entering the site) to prevent queuing on the road.

All temporary pedestrian / pram ramps would be compliant with relevant standards.

3.5 Public transport

There are no expected impacts on public transport. **Figure 7** shows the public transport routes and stops surrounding the site. There is no bus or light rail stops located within the site or construction boundary, thus no conflicts are anticipated to that area.

Figure 7 Public transport



3.6 Emergency vehicle access

Access to the site for emergency vehicles will be maintained at all times.

3.7 Existing and future developments

It is understood that the development is within close proximity to the new Sydney Fish Markets and Sydney Metro West projects. The construction of the new Sydney Fish Markets (SFM) was completed in early 2026 with the opening taking place on 19 January 2026. In this regard, the SFM construction works will have no impact on the development and does not need to be considered as part of this CPTMP.

In terms of the Sydney Metro West project, there is currently no public information on the construction schedule and therefore the impacts of this development on the proposed project will be assessed at a later stage. The Blackwattle Bay project, which includes the existing SFM site will be under development by Mirvac with early works not expected to commence until early 2027.

Hence, it is not expected that the works will negatively impact the area, considering the low number of construction workers and vehicle volumes that will be added to the surrounding road network as a result of this project.

3.8 Traffic movements in adjoining council areas

No adverse impacts are expected from the movement of heavy vehicles through adjacent council areas. Heavy vehicles will remain on the state road network once they have reached the Western Distributor.

3.9 Truck management

To minimise the traffic impact during the construction period, the construction traffic is expected to be managed as follows:

– Truckloads would be covered during transportation off-site

– Truck arrivals and departures, and spoil would be removed, during standard construction hours

– Avoidance of idling trucks alongside sensitive receivers

– Truck arrivals would be planned to ensure a consistent and minimal number of trucks arriving at the site at any one time.

To manage drivers' conduct, the following measures are to be implemented:

– All truck movements will be scheduled. This is to ensure no marshalling or queuing of construction vehicles would occur on public roads. Any unscheduled arriving vehicles that are not able to enter the site must continue to a holding point until space becomes available.

– Vehicles are to enter and exit the site in a forward direction along the travel path shown on delivery maps.

– Drivers are to always give way to pedestrians and cyclists.

Traffic controllers must wait for a suitable gap in traffic before assisting trucks to enter or exit the site, as the Roads Act and City of Sydney CTMP requirements does not grant construction vehicles priority over other road users. All vehicles entering, exiting, or operating near the site must give way to pedestrians at all times.

3.10 Site induction

Site induction will include, among other requirements:

– Advice that there is no worker parking available on site and that delivery of equipment needs to be scheduled with other deliveries.

– Information about how to access the site by public transport, including the provision of directions to the nearest bus stops and connectivity to train stations (see **Figure 3**).

– Allowable work hours.

APPENDIX A

STAGING PLAN

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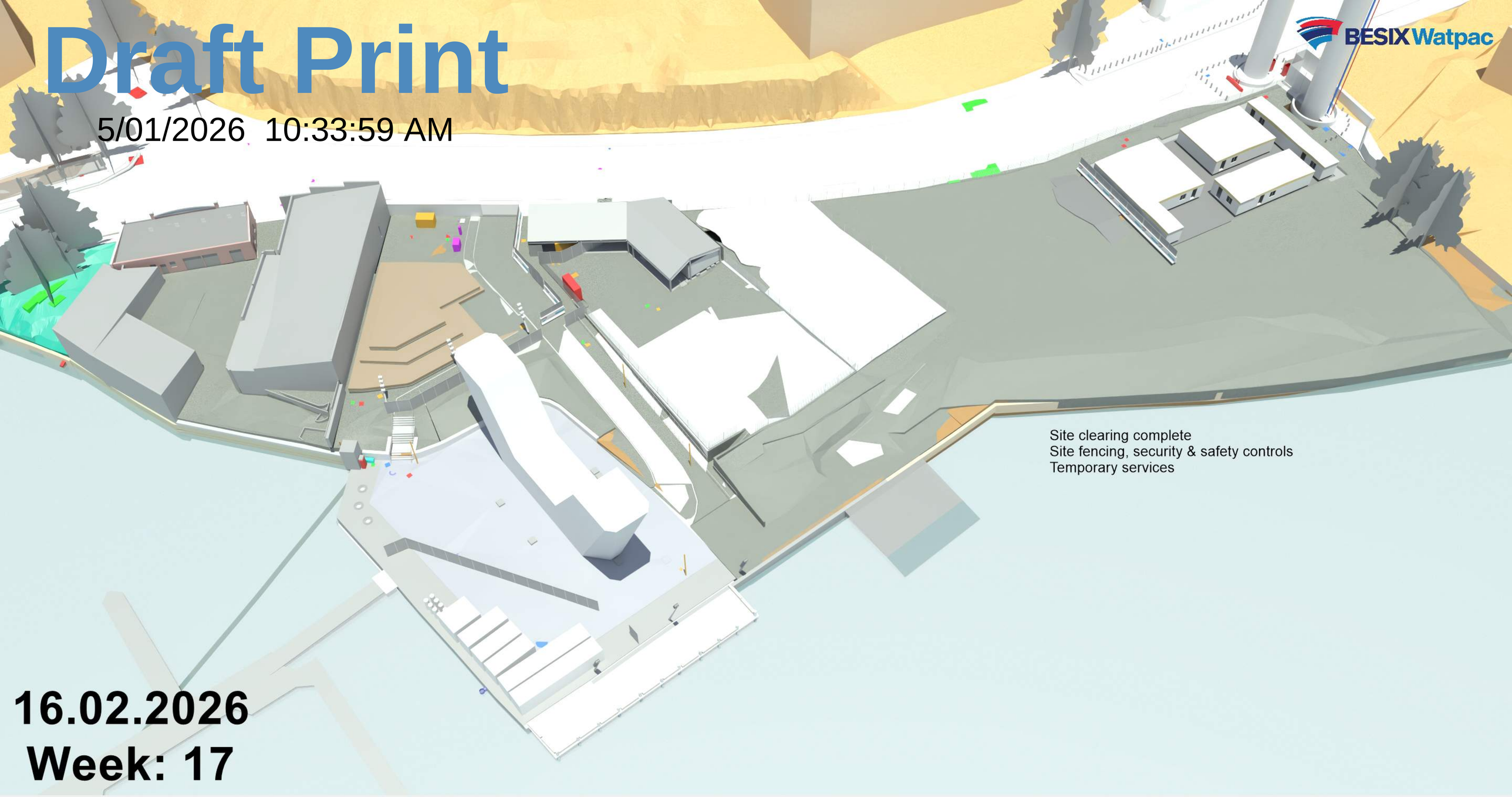

16.02.2026

Week: 17

Feb 2026					Mar 2026				Apr 2026					May 2026				Jun 2026				Jul 2026					Aug 2026				Sep 2026				Oct 2026					Nov 2026				Dec 2026					Jan 20
29th	5th	12th	19th	26th	5th	12th	19th	26th	2nd	9th	16th	23rd	30th	7th	14th	21st	28th	4th	11th	18th	25th	2nd	9th	16th	23rd	30th	6th	13th	20th	27th	3rd	10th	17th	24th	1st	8th	15th	22nd	29th	5th	12th	19th	26th	3rd	10th	17th	24th	31st	7th
wk 15	wk 16	wk 17	wk 18	wk 19	wk 20	wk 21	wk 22	wk 23	wk 24	wk 25	wk 26	wk 27	wk 28	wk 29	wk 30	wk 31	wk 32	wk 33	wk 34	wk 35	wk 36	wk 37	wk 38	wk 39	wk 40	wk 41	wk 42	wk 43	wk 44	wk 45	wk 46	wk 47	wk 48	wk 49	wk 50	wk 51	wk 52	wk 53	wk 54	wk 55	wk 56	wk 57	wk 58	wk 59	wk 60	wk 61	wk 62	wk 63	wk 64

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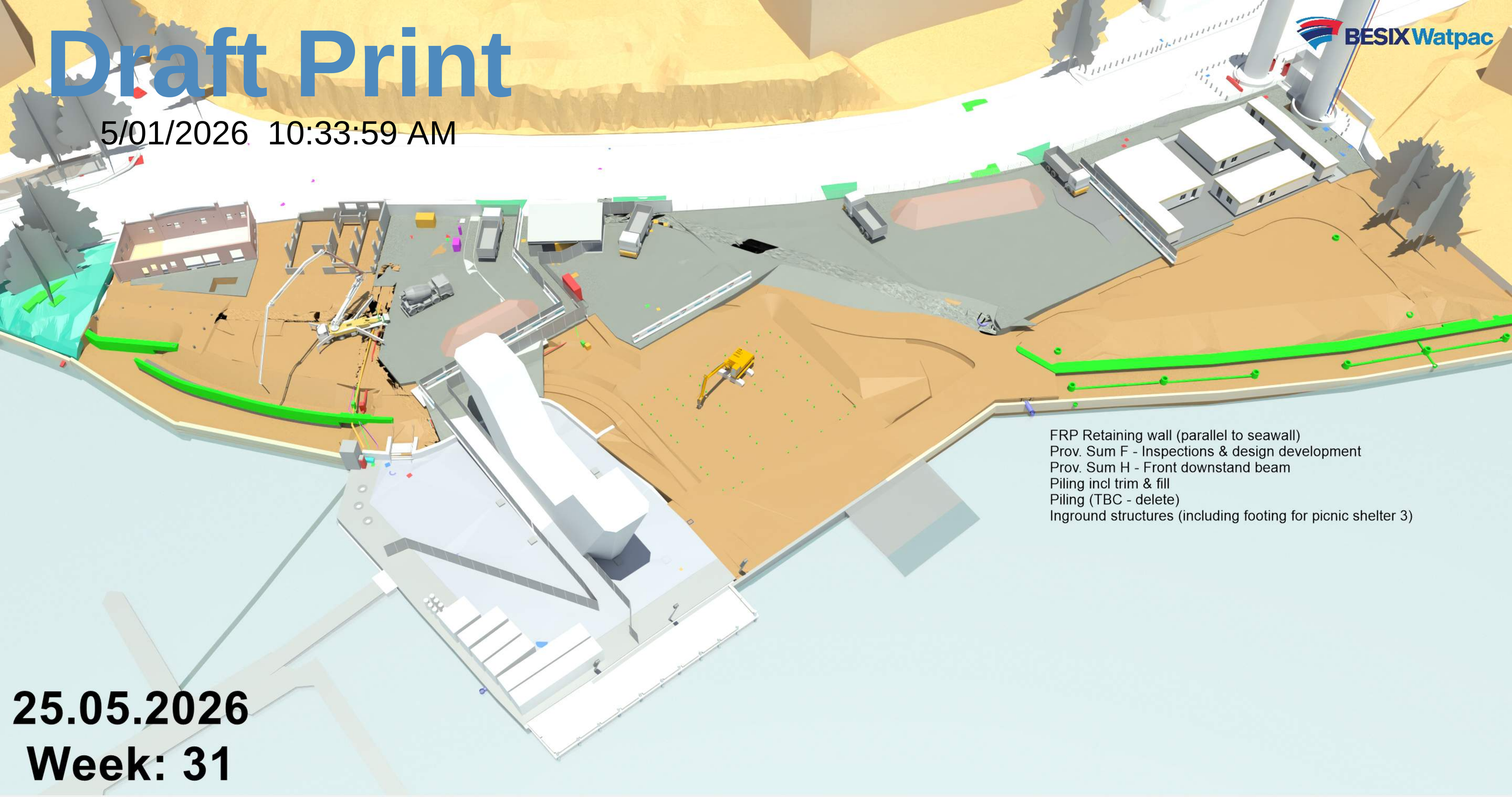
BESIX Watpac



FRP Retaining wall (parallel to seawall)
Prov. Sum F - Inspections & design development
Prov. Sum H - Front downstand beam
Piling incl trim & fill
Piling (TBC - delete)
Inground structures (including footing for picnic shelter 3)

25.05.2026

Week: 31

	Feb 2026					Mar 2026					Apr 2026					May 2026				Jun 2026					Jul 2026					Aug 2026					Sep 2026					Oct 2026					Nov 2026					Dec 2026					Jan 20
	29th	5th	12th	19th	26th	5th	12th	19th	26th	2nd	9th	16th	23rd	30th	7th	14th	21st	28th	4th	11th	18th	25th	2nd	9th	16th	23rd	30th	6th	13th	20th	27th	3rd	10th	17th	24th	1st	8th	15th	22nd	29th	5th	12th	19th	26th	3rd	10th	17th	24th	31st	7th
	wk 15	wk 16	wk 17	wk 18	wk 19	wk 20	wk 21	wk 22	wk 23	wk 24	wk 25	wk 26	wk 27	wk 28	wk 29	wk 30	wk 31	wk 32	wk 33	wk 34	wk 35	wk 36	wk 37	wk 38	wk 39	wk 40	wk 41	wk 42	wk 43	wk 44	wk 45	wk 46	wk 47	wk 48	wk 49	wk 50	wk 51	wk 52	wk 53	wk 54	wk 55	wk 56	wk 57	wk 58	wk 59	wk 60	wk 61	wk 62	wk 63	wk 64

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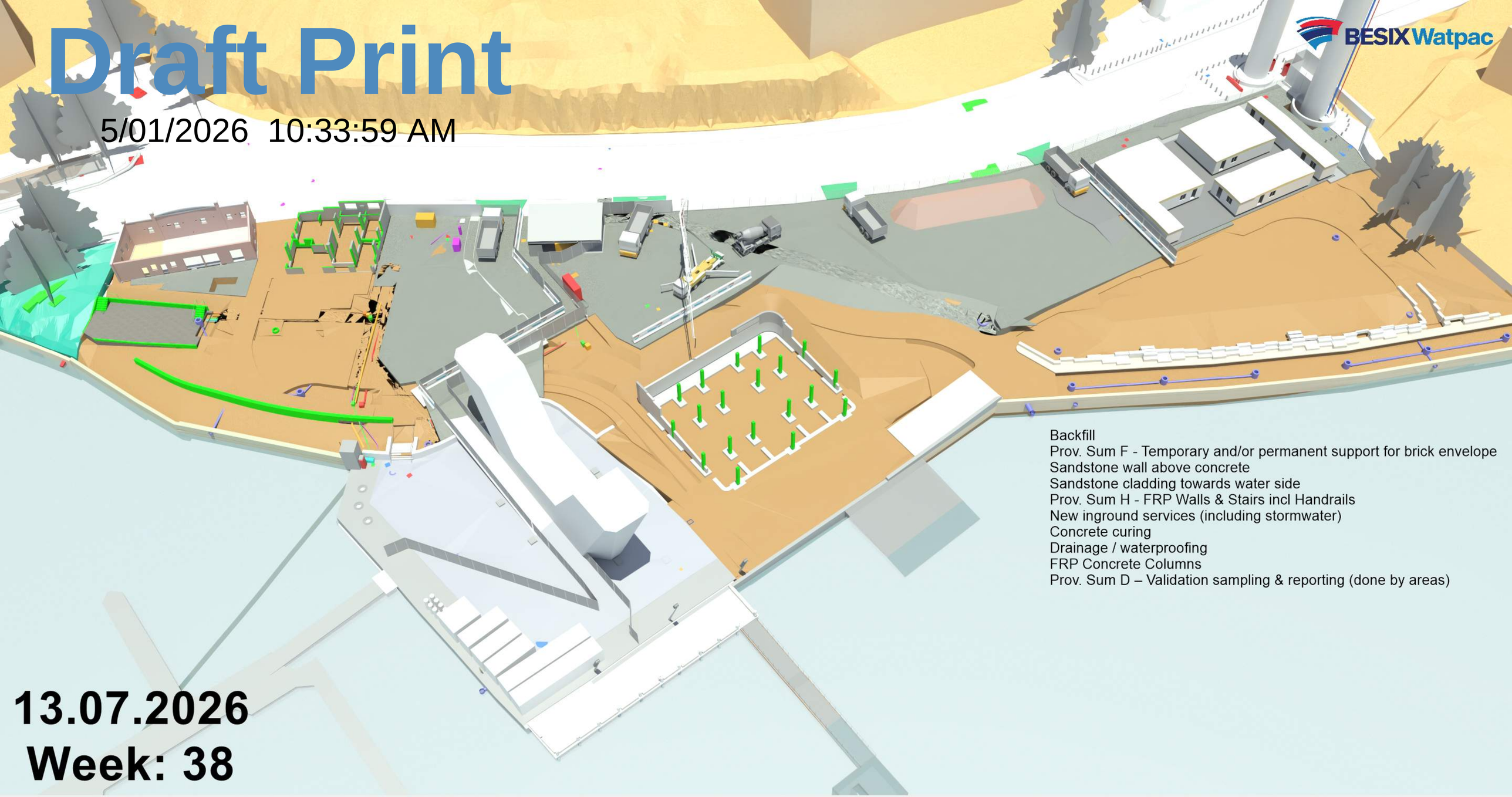

Backfill
Prov. Sum F - Temporary and/or permanent support for brick envelope
Sandstone wall above concrete
Sandstone cladding towards water side
Prov. Sum H - FRP Walls & Stairs incl Handrails
New inground services (including stormwater)
Concrete curing
Drainage / waterproofing
FRP Concrete Columns
Prov. Sum D – Validation sampling & reporting (done by areas)

13.07.2026

Week: 38

	Feb 2026					Mar 2026					Apr 2026					May 2026					Jun 2026					Jul 2026					Aug 2026					Sep 2026					Oct 2026					Nov 2026					Dec 2026					Jan 20
29th	5th	12th	19th	26th	5th	12th	19th	26th	2nd	9th	16th	23rd	30th	7th	14th	21st	28th	4th	11th	18th	25th	2nd	9th	16th	23rd	30th	6th	13th	20th	27th	3rd	10th	17th	24th	1st	8th	15th	22nd	29th	5th	12th	19th	26th	3rd	10th	17th	24th	31st	7th
wk 15	wk 16	wk 17	wk 18	wk 19	wk 20	wk 21	wk 22	wk 23	wk 24	wk 25	wk 26	wk 27	wk 28	wk 29	wk 30	wk 31	wk 32	wk 33	wk 34	wk 35	wk 36	wk 37	wk 38	wk 39	wk 40	wk 41	wk 42	wk 43	wk 44	wk 45	wk 46	wk 47	wk 48	wk 49	wk 50	wk 51	wk 52	wk 53	wk 54	wk 55	wk 56	wk 57	wk 58	wk 59	wk 60	wk 61	wk 62	wk 63	wk 64

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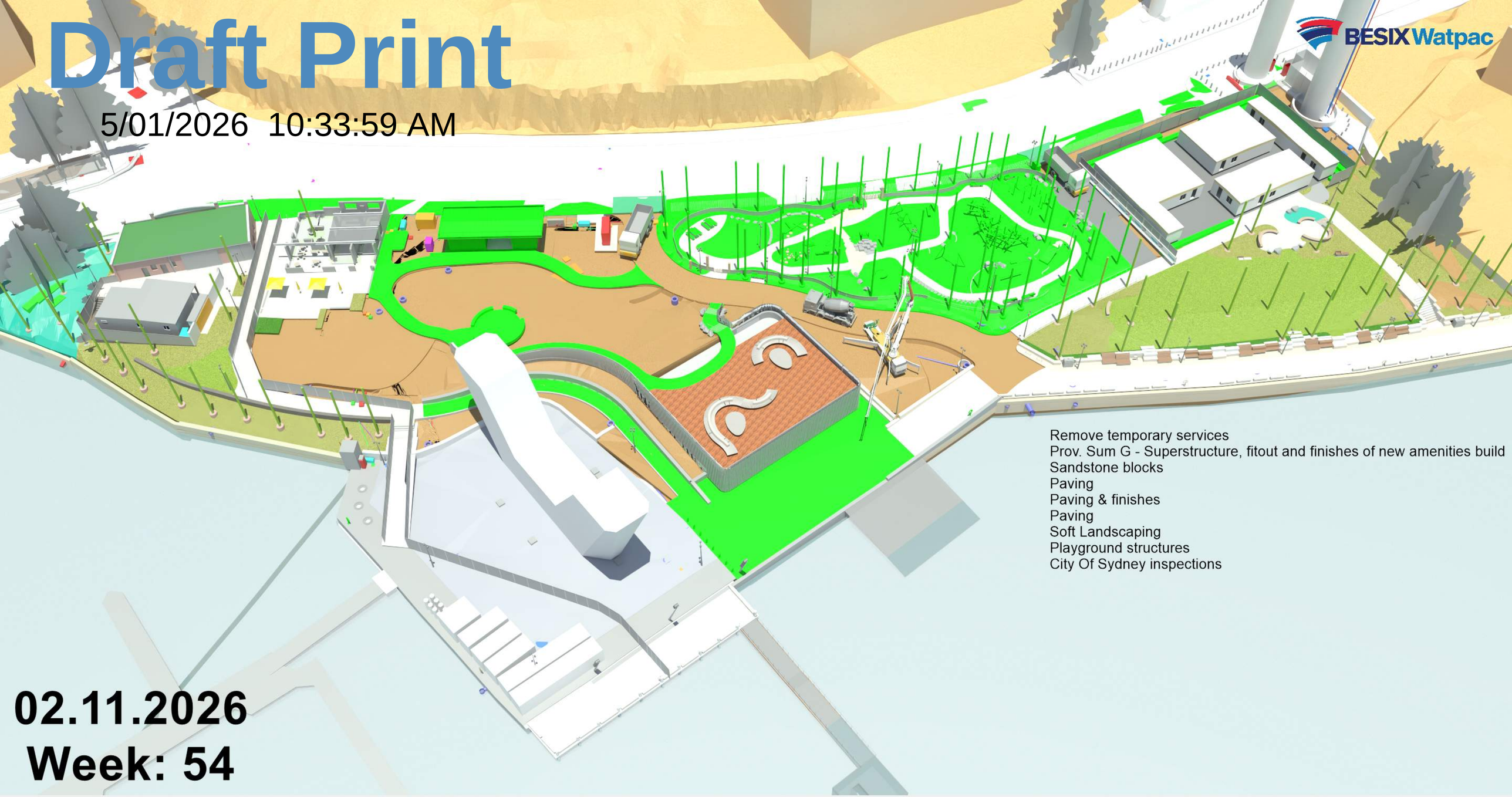

Remove temporary services
Prov. Sum G - Superstructure, fitout and finishes of new amenities build
Sandstone blocks
Paving
Paving & finishes
Paving
Soft Landscaping
Playground structures
City Of Sydney inspections

02.11.2026

Week: 54

Feb 2026					Mar 2026				Apr 2026					May 2026				Jun 2026				Jul 2026					Aug 2026				Sep 2026				Oct 2026					Nov 2026				Dec 2026					Jan 20
29th	5th	12th	19th	26th	5th	12th	19th	26th	2nd	9th	16th	23rd	30th	7th	14th	21st	28th	4th	11th	18th	25th	2nd	9th	16th	23rd	30th	6th	13th	20th	27th	3rd	10th	17th	24th	1st	8th	15th	22nd	29th	5th	12th	19th	26th	3rd	10th	17th	24th	31st	7th
wk 15	wk 16	wk 17	wk 18	wk 19	wk 20	wk 21	wk 22	wk 23	wk 24	wk 25	wk 26	wk 27	wk 28	wk 29	wk 30	wk 31	wk 32	wk 33	wk 34	wk 35	wk 36	wk 37	wk 38	wk 39	wk 40	wk 41	wk 42	wk 43	wk 44	wk 45	wk 46	wk 47	wk 48	wk 49	wk 50	wk 51	wk 52	wk 53	wk 54	wk 55	wk 56	wk 57	wk 58	wk 59	wk 60	wk 61	wk 62	wk 63	wk 64

Draft Print

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Defect identification & closeout
Commissioning & witness testing
Completion surveys and inspections
Completion surveys and inspections
Collation of handover documentation: as-builts, O&M manuals, training,
Final cleaning
Commissioning & witness testing
Demobilise site

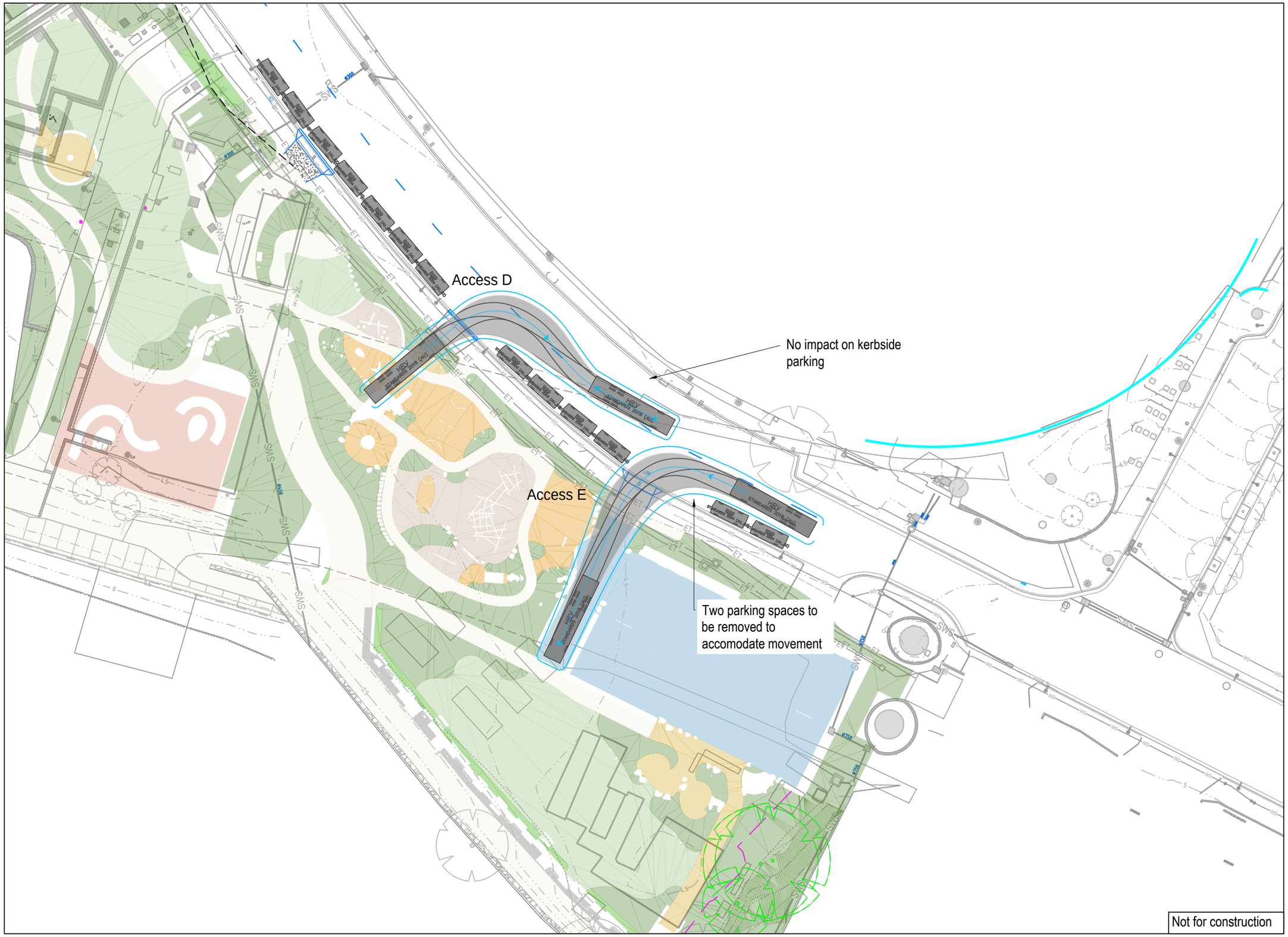
11.01.2027

Week: 64

	Feb 2026				Mar 2026				Apr 2026					May 2026				Jun 2026				Jul 2026					Aug 2026				Sep 2026				Oct 2026					Nov 2026				Dec 2026					Jan
29th	5th	12th	19th	26th	5th	12th	19th	26th	2nd	9th	16th	23rd	30th	7th	14th	21st	28th	4th	11th	18th	25th	2nd	9th	16th	23rd	30th	6th	13th	20th	27th	3rd	10th	17th	24th	1st	8th	15th	22nd	29th	5th	12th	19th	26th	3rd	10th	17th	24th	31st	7th
wk 15	wk 16	wk 17	wk 18	wk 19	wk 20	wk 21	wk 22	wk 23	wk 24	wk 25	wk 26	wk 27	wk 28	wk 29	wk 30	wk 31	wk 32	wk 33	wk 34	wk 35	wk 36	wk 37	wk 38	wk 39	wk 40	wk 41	wk 42	wk 43	wk 44	wk 45	wk 46	wk 47	wk 48	wk 49	wk 50	wk 51	wk 52	wk 53	wk 54	wk 55	wk 56	wk 57	wk 58	wk 59	wk 60	wk 61	wk 62	wk 63	wk 64

APPENDIX B

SWEPT PATH ANALYSIS



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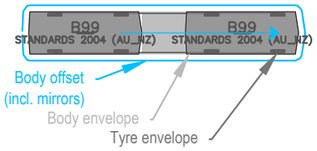
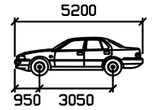


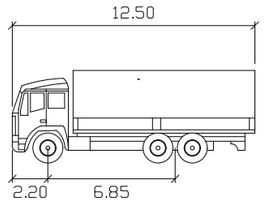
This swept path assessment is based on:

- 600mm body offset
- Vehicle speed of 10km/h
- A Heavy Rigid Vehicle



B99

	mm
Width	: 1940
Track	: 1840
Lock to Lock Time	6.0
Steering Angle	: 33.9



HRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	6.0
Steering Angle	: 36.7

NOTE: Location of Access E is indicative and will be confirmed on site

V	Description	Date
1.0	PRELIMINARY DRAFT	29/01/2026

SCT Consulting

Prepared for: BESIX Watpac

Quality information	
Date	01/29
Prepared	H.A
Reviewed	S.C
Authorised	S.C

Scale @ A3

0 5 10

Scale 1:500

Project: SCT_00812 Bank Street Park

Title: Access E and D swept path analysis
HRV to construction site

Project Number: SCT_00812_CAD_Access E and D

Sheet number: 01

A3

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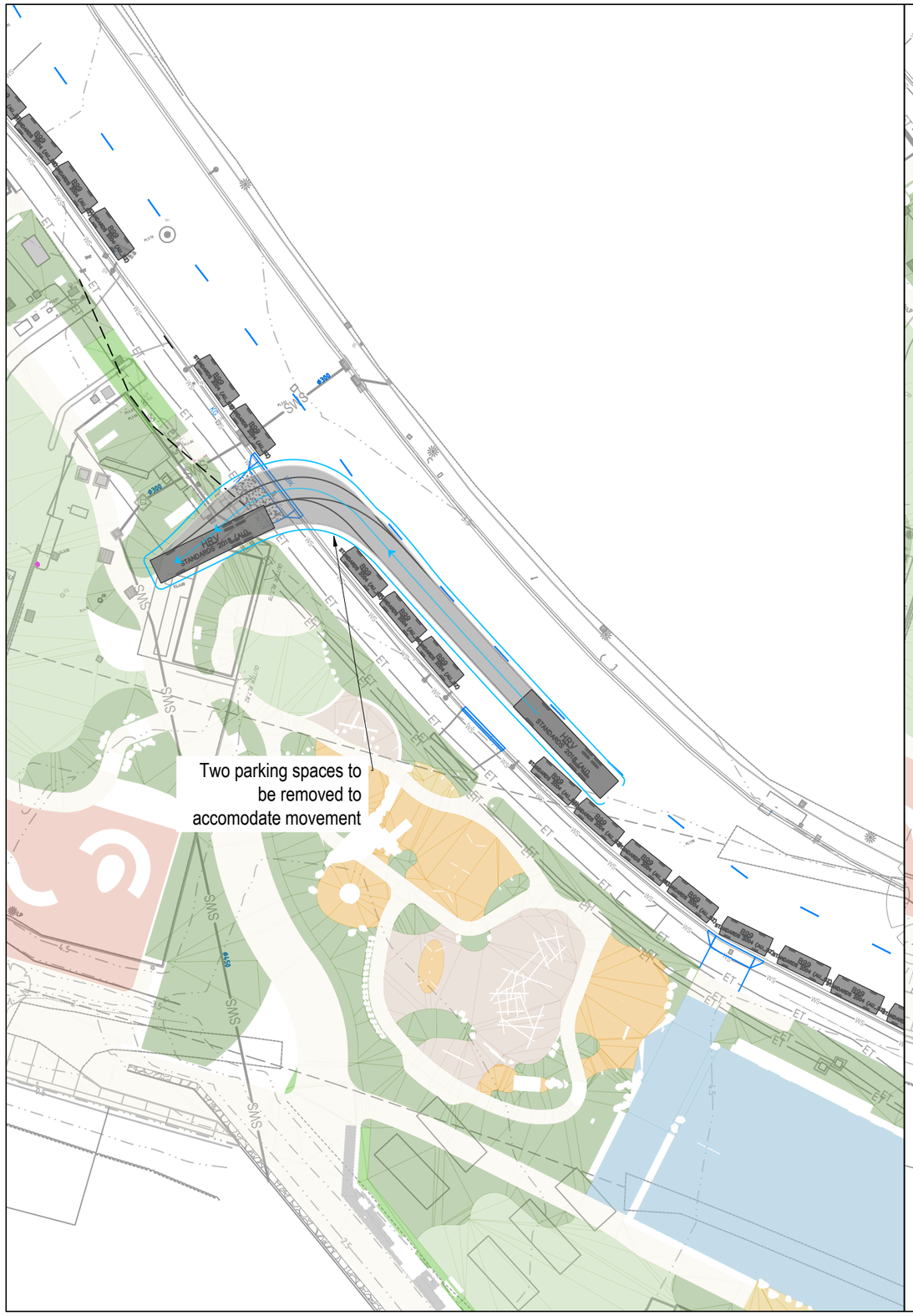
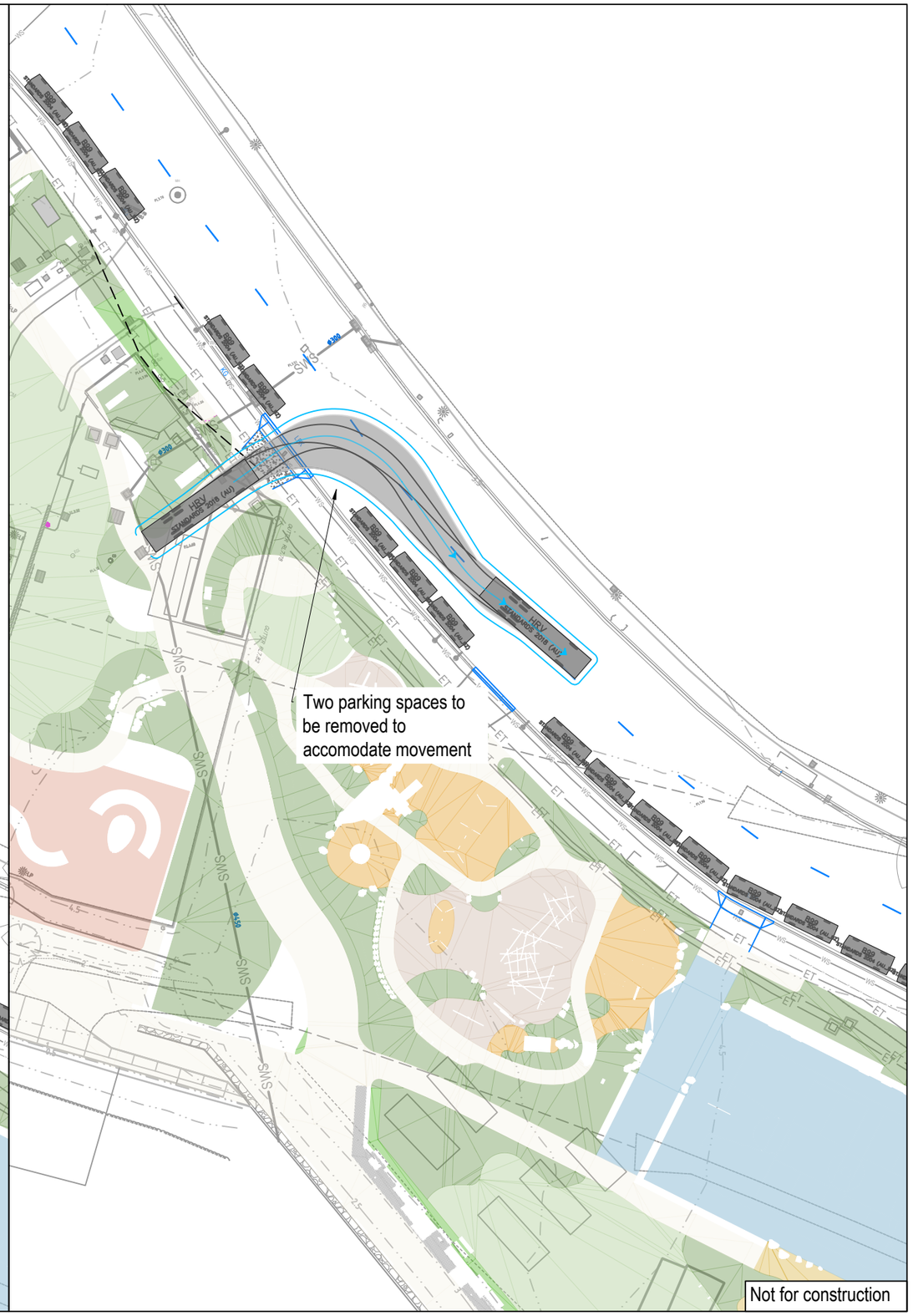
XREF DATE | FILE NAME | PROVIDER





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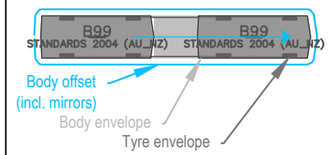
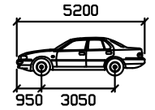


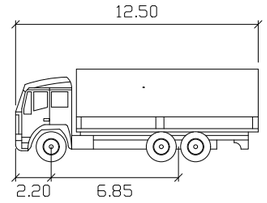
This swept path assessment is based on:

- 600mm body offset
- Vehicle speed of 10km/h
- A Heavy Rigid Vehicle



B99

	mm
Width	: 1940
Track	: 1840
Lock to Lock Time	6.0
Steering Angle	: 33.9



HRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	6.0
Steering Angle	: 36.7

V	Description	Date
1.0	PRELIMINARY DRAFT	29/01/2026

Prepared for: BESIX Watpac

Quality information	
Date	01/29
Prepared	H.A
Reviewed	S.C
Authorised	S.C

Scale @ A3

0 5 10

Scale 1:500

Project: SCT_00812 Bank Street Park

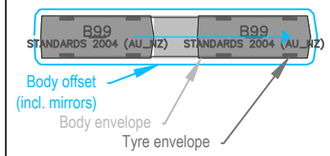
Title: Access C swept path analysis
HRV to construction site

Project Number: SCT_00812_CAD_Access C

Sheet number: 02

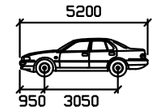
A3

Legend



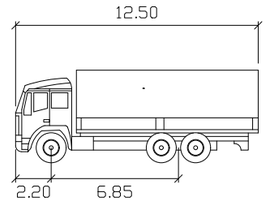
This swept path assessment is based on:

- 600mm body offset
- Vehicle speed of 10km/h
- A Heavy Rigid Vehicle



B99

	mm
Width	: 1940
Track	: 1840
Lock to Lock Time	6.0
Steering Angle	: 33.9



HRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	6.0
Steering Angle	: 36.7

Not for construction

V	Description	Date
1.0	PRELIMINARY DRAFT	29/01/2026

Prepared for: BESIX Watpac

Quality information	
Date	01/29
Prepared	H.A
Reviewed	S.C
Authorised	S.C

Scale @ A3

0 5 10

Scale 1:500

Project: SCT_00812 Bank Street Park

Title: Access B swept path analysis
HRV to construction site

Project Number: SCT_00812_CAD_Access B

Sheet number: 03

A3

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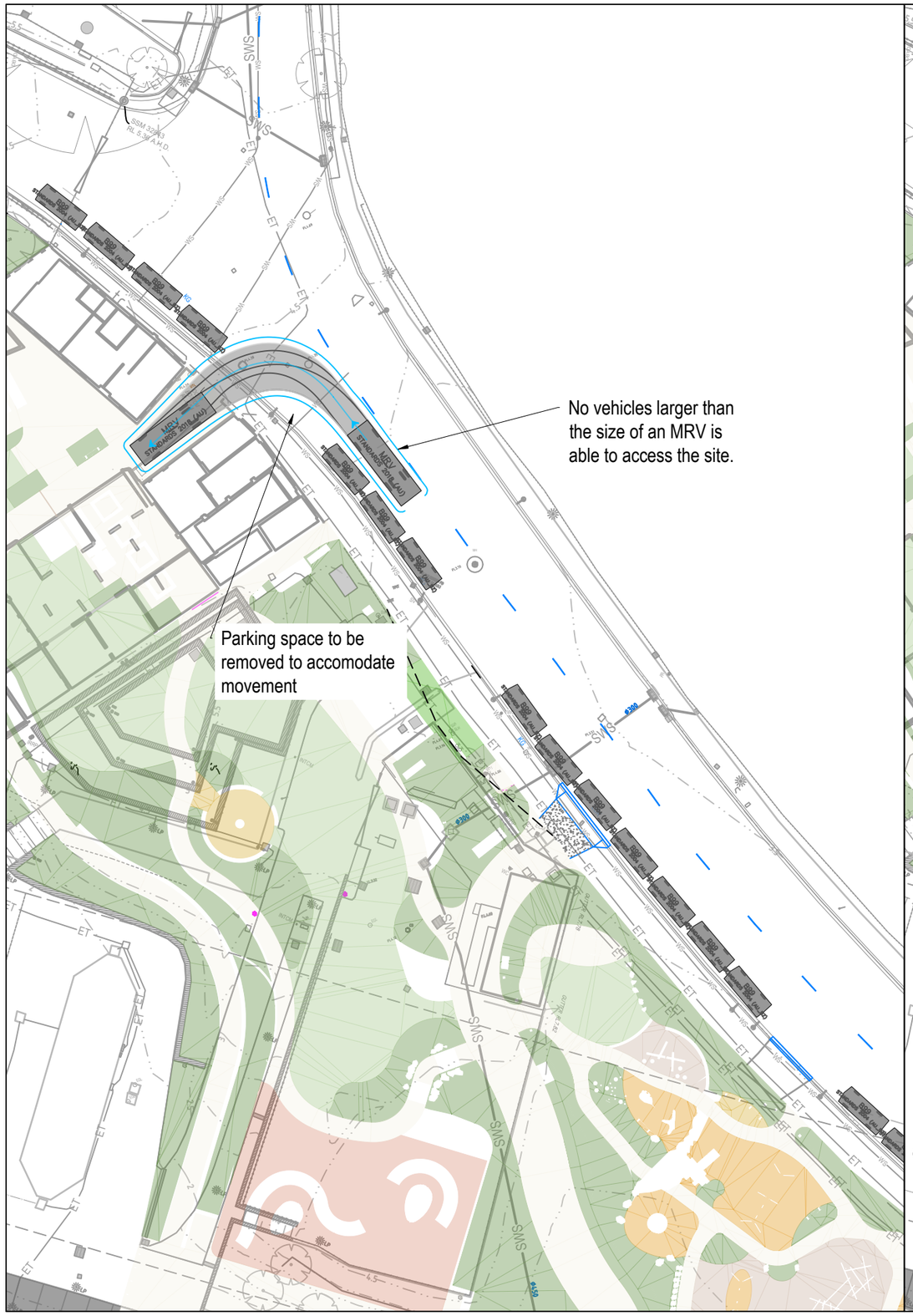

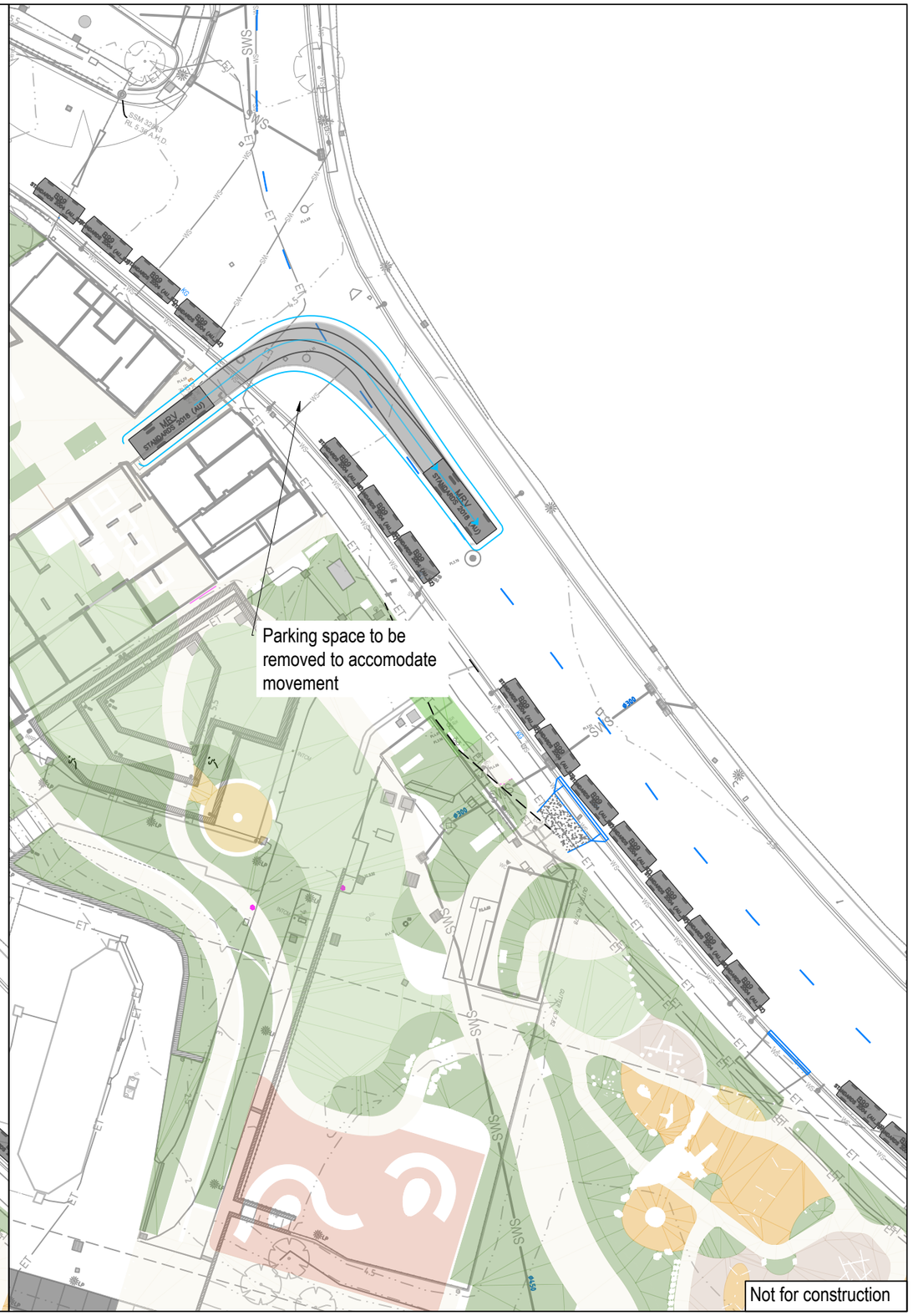

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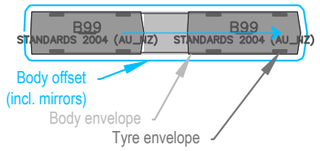
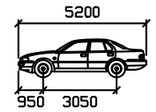


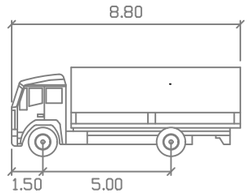
This swept path assessment is based on:

- 600mm body offset
- Vehicle speed of 10km/h
- A Medium Rigid Vehicle



B99

	mm
Width	: 1940
Track	: 1840
Lock to Lock Time	: 6.0
Steering Angle	: 33.9



MRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 34.0

V	Description	Date
1.0	PRELIMINARY DRAFT	29/01/2026

Prepared for: BESIX Watpac

Quality information	
Date	01/29
Prepared	H.A
Reviewed	S.C
Authorised	S.C

Scale @ A3

0 5 10

Scale 1:500

Project: SCT_00812 Bank Street Park

Title: Access A swept path analysis
MRV to construction site

Project Number: SCT_00812_CAD_Access A

Sheet number: 04

A3

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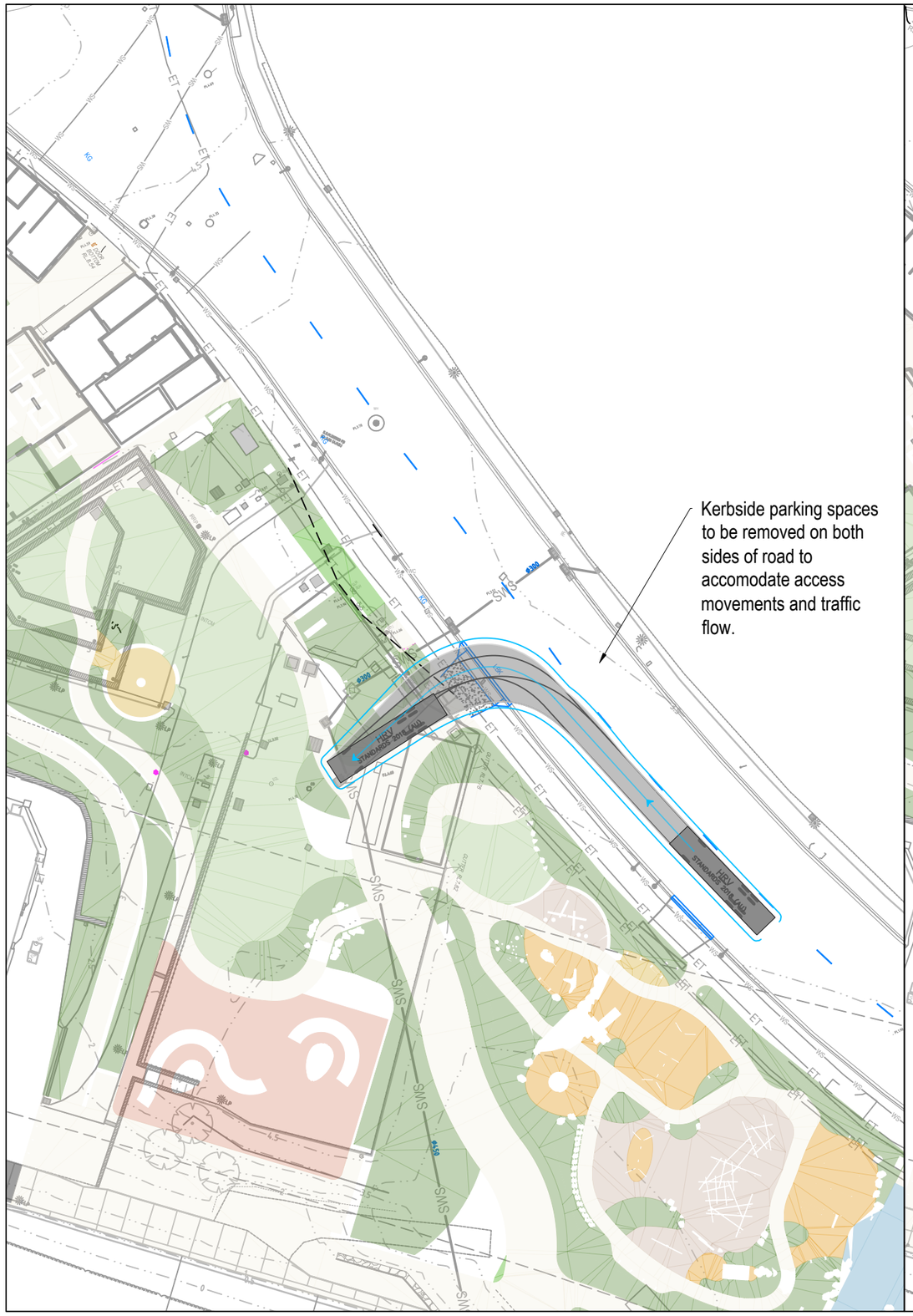
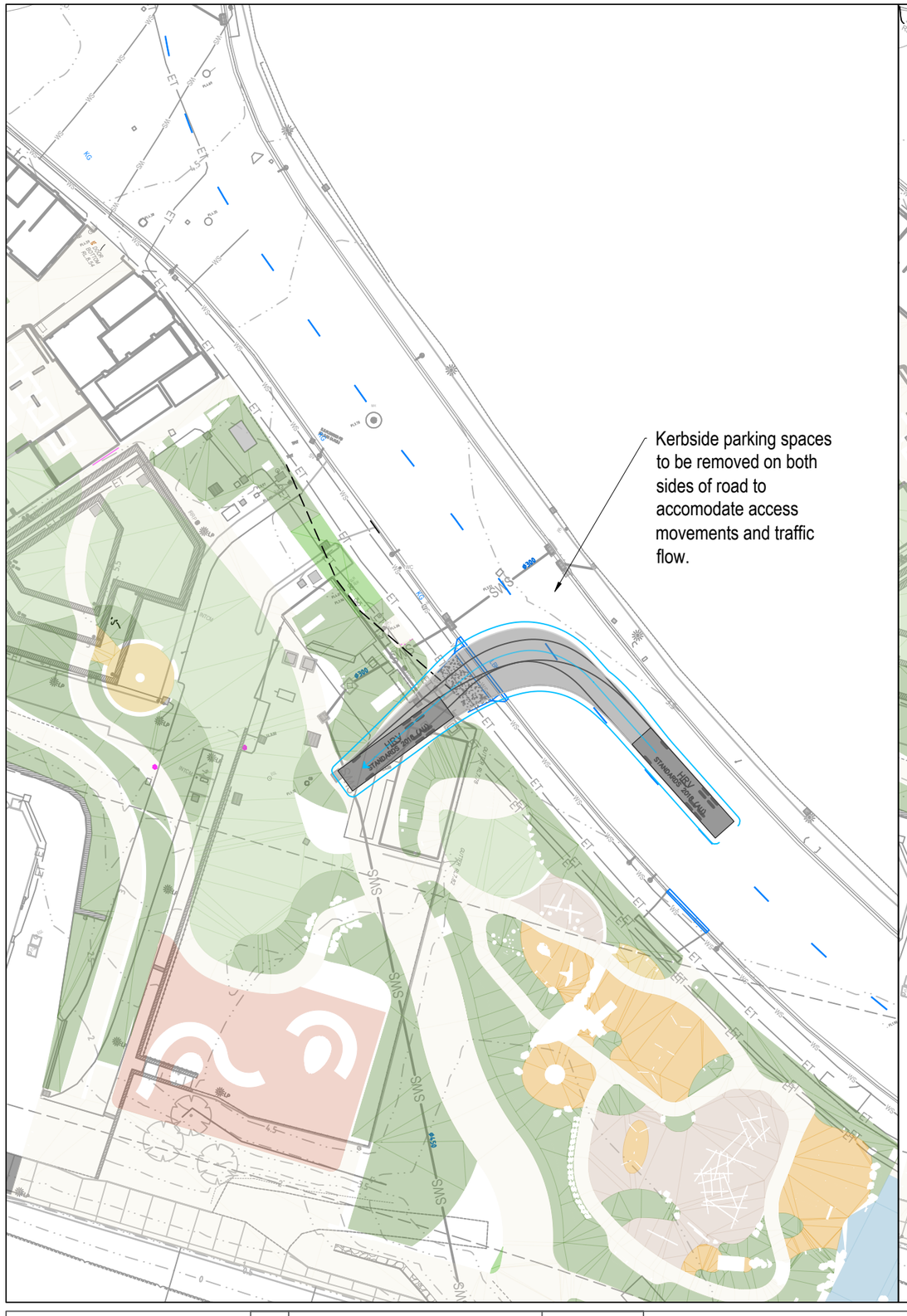
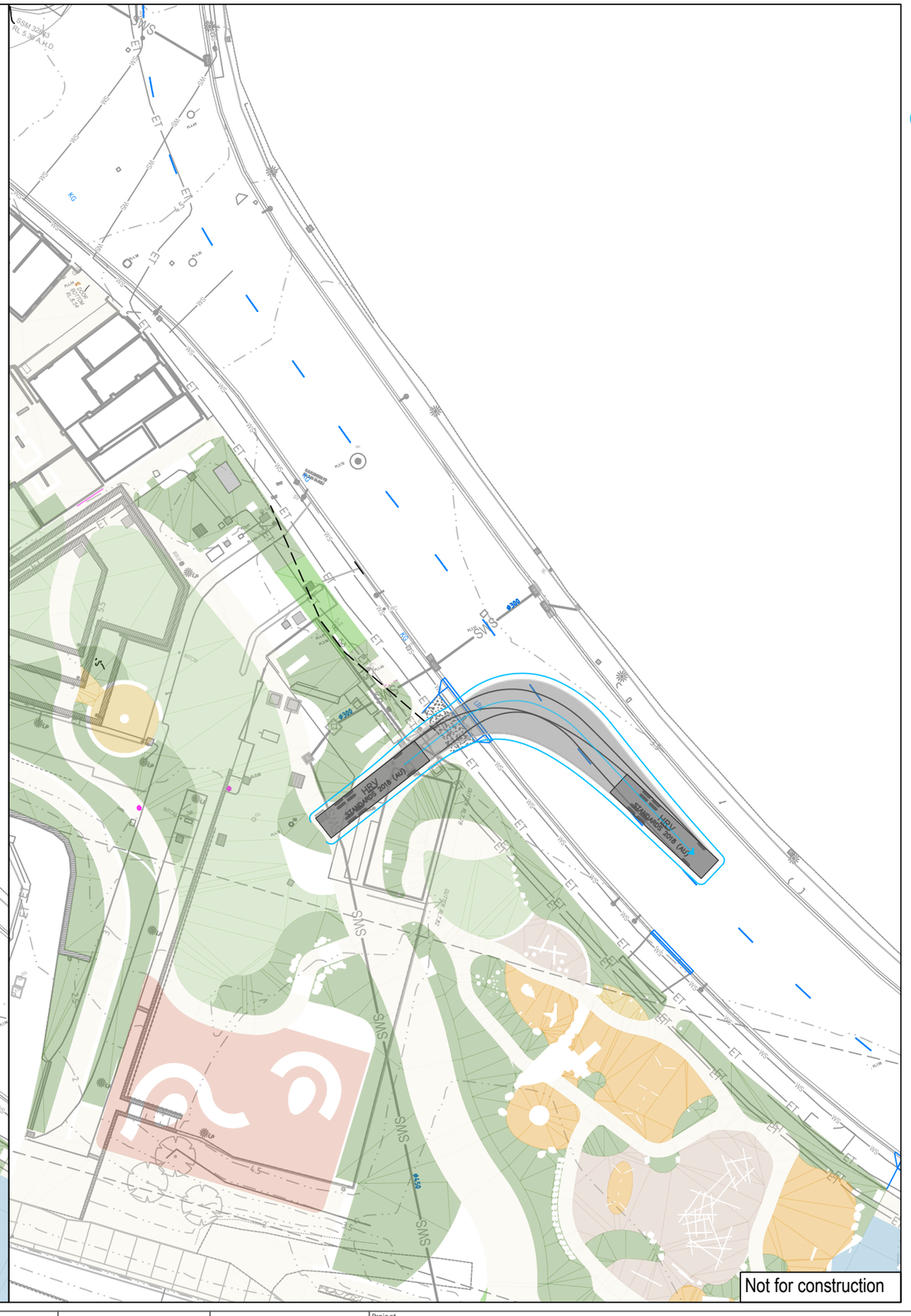

HRV
STANDARDS 2016 (AU)
HRV
STANDARDS 2016 (AU)
SWS
SWS
SWS
SWS
SWS
SWS
4459
4.5
4.5
4.5





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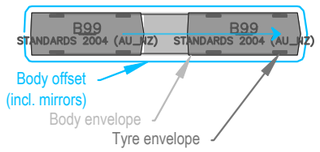
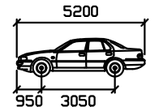


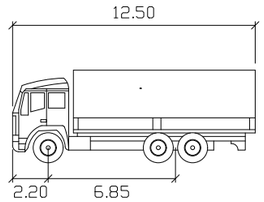
This swept path assessment is based on:

- 600mm body offset
- Vehicle speed of 10km/h
- A Heavy Rigid Vehicle



B99

	mm
Width	: 1940
Track	: 1840
Lock to Lock Time	6.0
Steering Angle	: 33.9



HRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	6.0
Steering Angle	: 36.7

This scenario considers the closure of the westbound lane with only one lane in operation on the eastbound lane.

SCT Consulting

V	Description	Date
1.0	PRELIMINARY DRAFT	29/01/2026

Prepared for: BESIX Watpac

Quality information	
Date	01/29
Prepared	H.A
Reviewed	S.C
Authorised	S.C

Scale @ A3

0 5 10

Scale 1:500

Project: SCT_00812 Bank Street Park

Title: Access C swept path analysis
HRV to construction site during exit lane closure

Project Number: SCT_00812_CAD_Access C_exit lane closure

Sheet number: 06

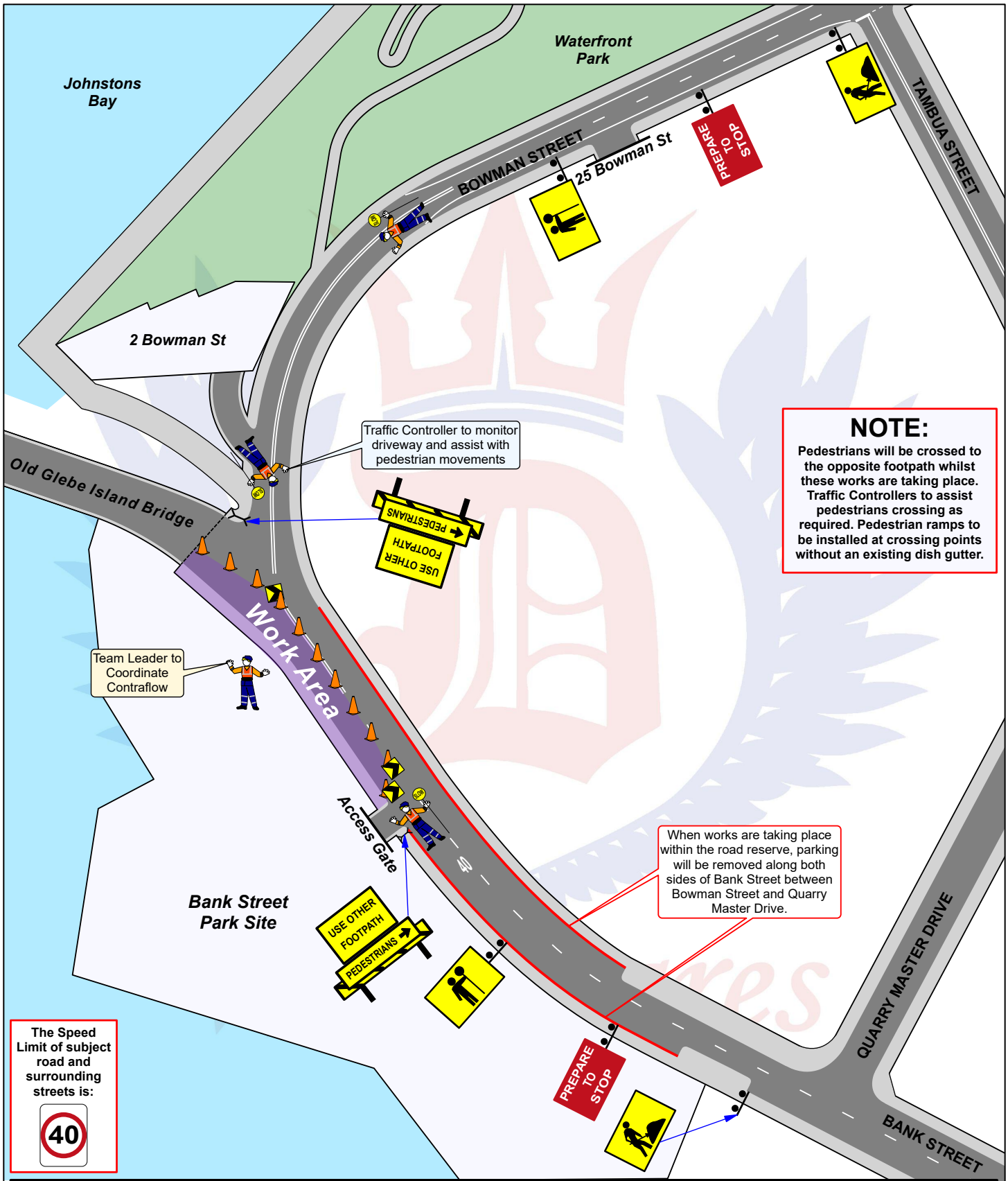
A3

S:\Projects\SCT_00812_Bank Street Park CPTMP\4. Tech Work\5. Engineering\SCT_00812_Bank Street CTMP_CAD_Site Access Swept Paths_v0.3

XREF DATE | FILE NAME | PROVIDER

APPENDIX C

TRAFFIC GUIDANCE SCHEME



BANK STREET PARK		Bank St & Bowmen St PYRMONT			TGS	01
AGENCY	PRIMARY TASK	SECONDARY TASK	STAFF ON-SITE	TIME	DATE	DATES TBC
TfNSW						
POLICE						
TRAFFIC	Manage Traffic & Pedestrians	Deliver & Install Signage	4	TIMES TBC		
MARSHAL						

Drawn by: Tim Emslie
SafeWork PWZ Card No. TCT0073149
for Who Dares Pty Ltd

Signature:

Revised 29 Jan 26

Who Dares Pty Ltd accepts no liability for the implementation or execution of this TGS unless undertaken by authorised Who Dares personnel.
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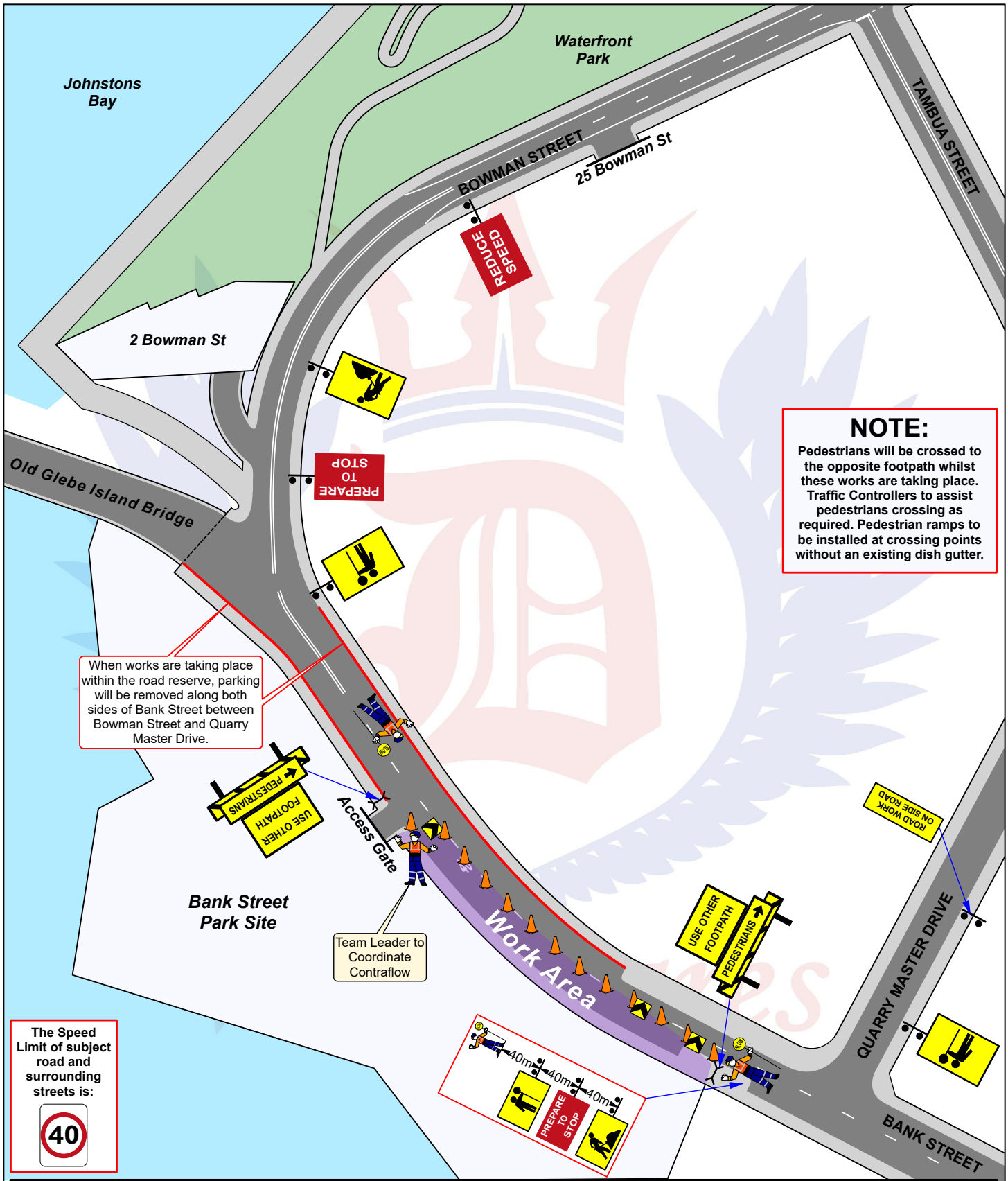

BANK STREET PARK		Bank St & Bowmen St PYRMONT			TGS	02
AGENCY	PRIMARY TASK	SECONDARY TASK	STAFF ON-SITE	TIME	DATE	DATES TBC
TfNSW						
POLICE						
TRAFFIC	Manage Traffic & Pedestrians	Deliver & Install Signage	3	TIMES TBC		
MARSHAL						

Drawn by: Tim Emslie
SafeWork PWZ Card No. TCT0073149
for Who Dares Pty Ltd

Signature:

Revised 29 Jan 26

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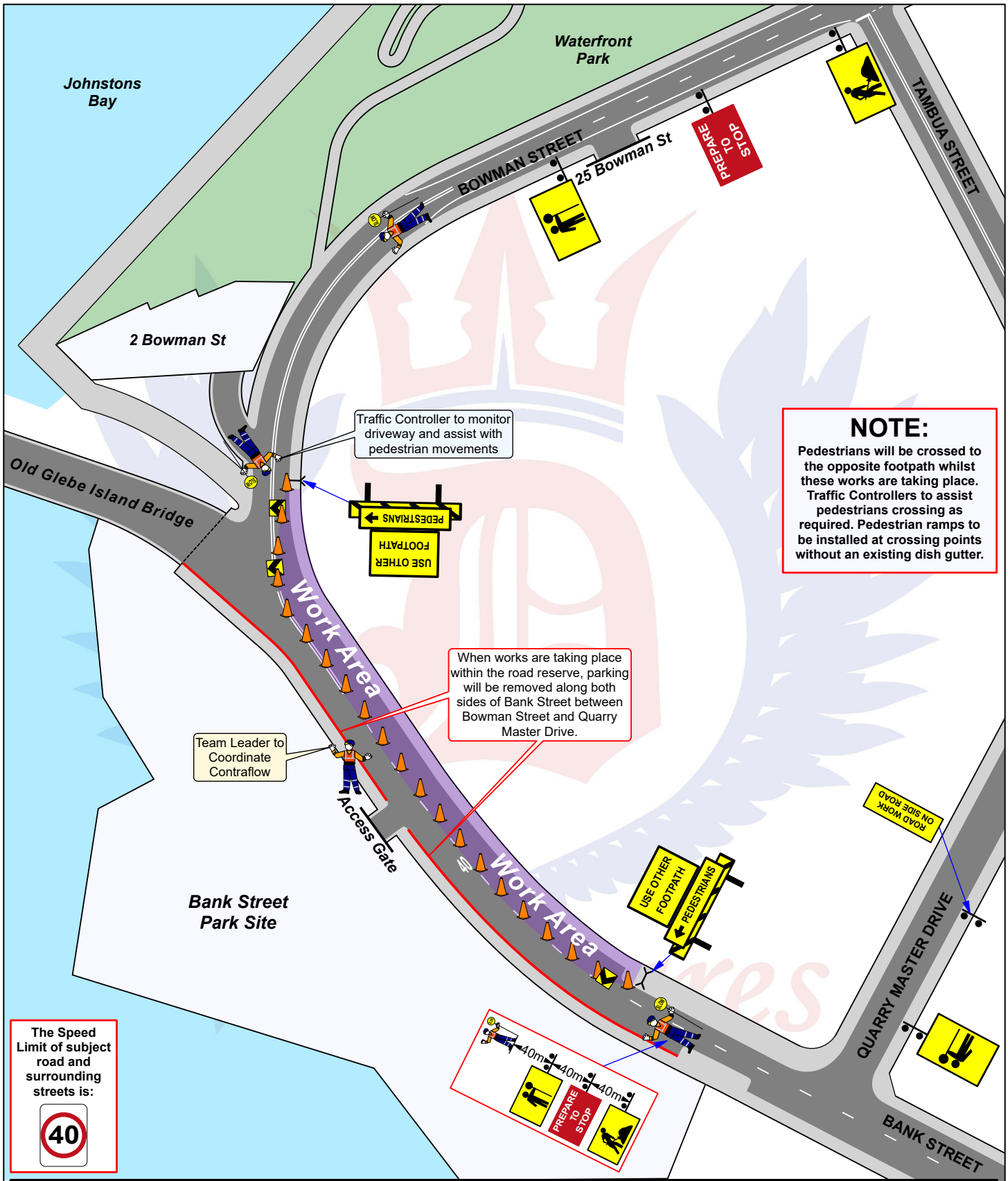

BANK STREET PARK		Bank St & Bowmen St PYRMONT			TGS	03
AGENCY	PRIMARY TASK	SECONDARY TASK	STAFF ON-SITE	TIME	DATE	DATES TBC
TfNSW						
POLICE						
TRAFFIC	Manage Traffic & Pedestrians	Deliver & Install Signage	4	TIMES TBC		
MARSHAL						

Drawn by: Tim Emslie
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Appendix C
Construction Noise and Vibration Management Plan

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Bank Street Park, Pyrmont

Construction Noise and Vibration Management Plan

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Project ID	20260051.1
Document Title	Construction Noise and Vibration Management
Attention To	Watpac Construction Pty Limited (ABN 71 010 462

Revision	Date	Document Reference	Prepared By	Checked By	Approved By
0	3/02/2026	20260051.1/2701A/R0/GC	GC		WY
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1 INTRODUCTION

Acoustic Logic has been engaged to prepare a Noise and Vibration Management Plan for the demolition and construction works associated with the Bank Street Park development located at 1A-19 Bank Street, Pyrmont to satisfy Condition of Consent C13 (detailed in section 3.1) of SSD-53386706, the approved MOD1 and pending MOD2.

The issues which will be addressed in this report are:

- Identification of the noise and vibration standards which will be applicable to this project.
- Identification of potentially impacted nearby development.
- Identify likely sources of noise and vibration generation and predicted noise levels at nearby development.
- Formulation of a strategy to comply with the standards identified and mitigation treatments in the event that compliance is not achievable.

Table 1 – Consent Condition C13 Satisfaction Table

Consent Condition Requirement C13	Comment/Report Reference
Prior to the commencement of works, the Applicant must submit to the satisfaction of the Certifier a Construction Noise and Vibration Management Sub-Plan (CNVMP) for the development. The Sub-Plan must include: a) Identification of the specific activities that will be carried out and associated noise sources at the site.	Refer Section 5.1
b) Identification of all potentially affected sensitive residential receiver locations;	Refer Section 2.3
c) Quantification of the rating background noise level (RBL) for sensitive receivers, as part of the Sub-Plan, or as undertaken in the EIS and RtS;	Refer Section 4.1
d) 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;	Refer Section 4.1
e) 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;	Refer Section 4.2 & 5.4
f) 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;	Refer Section 6, 7 & 8

Consent Condition Requirement C13		Comment/Report Reference
g)	Description of management methods and procedures, and specific noise mitigation treatments/measures that can be implemented to control noise and vibration during construction;	Refer Section 6, 7 & 8
h)	Where objectives cannot be met, additional measures including, but not necessarily limited to, the following must be considered and implemented where practicable; 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;	
i)	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;	N/A
j)	Measures to identify non-conformances with the requirements of the Sub-Plan, and procedures to implement corrective and preventative action;	Refer Section 6, 7 & 8
k)	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;	
l)	Procedures for notifying residents of construction activities that are likely to affect their noise and vibration amenity;	
m)	Measures to monitor noise performance and respond to complaints;	
n)	Measures to reduce noise related impacts associated with offsite vehicle movements on nearby access and egress routes from the site;	
o)	Procedures to allow for regular professional acoustic input to construction activities and planning; and	
p)	Effective site induction, and ongoing training and awareness measures for personnel (e.g. toolbox talks, meetings etc).	

2 SITE DESCRIPTION

2.1 SITE DESCRIPTION

Bank Street Park is located at 1A – 19 Bank Street, Pyrmont NSW within the City of Sydney local government area (LGA), and the site area is approximately 1 hectare. It adjoins the foreshores of Glebe to the west and Pyrmont Bridge Road and Wentworth Park to the south. A large amount of the site is directly under the ANZAC Bridge. There is a significant residential community of apartment buildings to the north-east.

2.2 PROPOSED WORKS

The Bank Street Park development forms part of the Blackwattle Bay Precinct, adjoining the waters of Blackwattle Bay. A critical part of the Blackwattle Bay Precinct is the high-quality public domain which includes a series of parks and open spaces connected by a foreshore promenade. Bank Street Park will bring new active and passive recreation uses into a unique park environment, catering for both existing and future communities in the vicinity.

BESIX Watpac is the designated Head Contractor for the development of Bank Street Park, a 1.1-hectare waterfront park that surrounds the southern pylon of the ANZAC Bridge.

The project features include outdoor multipurpose court, playground, outdoor fitness station, public amenities, marina office, water access for paddle craft and storage for dragon boats, harbour foreshore walkways and cycle paths, public art, wayfinding and signage, adaptive reuse of buildings, open lawns and first nations inspired structures, as seen in Figure 1.

The project will involve site preparation (clearing, earthworks, remediation), demolition and adaptation of existing buildings, new and adapted community facilities, relocation of marina office, adaptive reuse of 'Building D' for storage, Dragon Boat storage with rooftop deck, public domain works, including 'Interpretation garden' in existing 'Building A ruins', foreshore promenade, muti-purpose sports court with artwork surface, nature-based inclusive play space , fitness equipment, picnic shelters, public art, wayfinding and interpretive signage, lighting, bike parking and FFE, harbour works including kayak/ passive craft pontoon, repair to existing seawalls, works to Bank Street road including reinstatement of existing on-street parking, accessible parking space, loading zone adjacent to 1-3 Bank Street, kerb upgrades.

The overall construction program of Bank Street Park is estimated to be approximately 12 months long.

Figure 1 – Site Plan of the Proposed Bank Street Park

Ref: Drawing BSP_OO_OCU_LA_DG_00_00 006, Rev A, dated 22/12/25

2.2.1 Proposed Hours of Works

The proposed hours of construction work are within the recommended standard hours of work of the ICNG. The hours of work are as follows:

The SSDA Consent Conditions place a number of constraints on the hours of construction work. These are summarised below. Construction, including the delivery of materials to and from the site, may only be carried out between the following hours:

- Monday to Friday – 7:00am to 5:30pm (Consent Condition D4)
- Saturdays – 7:30am to 3:30pm (Consent Condition D4)
- Sundays and Public Holidays – No works permitted (Consent Condition D5).

Note that rock breaking, rock hammering, sheet piling, pile driving and similar activities may only be carried out between the following hours (Consent Condition D8):

- Monday to Friday – 9:00am to 12:00pm
- Monday to Friday – 2:00am to 5:00pm
- Saturdays – 9:00am to 12:00pm (Consent Condition D4)

Activities proposed outside of these hours must be in line with Consent Conditions D6 and D9. For the purposes of this assessment, it is assumed activities will not be undertaken outside of the hours specified above.

2.3 RECEIVER LOCATIONS

Table 2 lists the nearest sensitive receivers surrounding the site. An aerial site map, also showing monitoring locations and surrounding receivers, is shown in Figure 2.

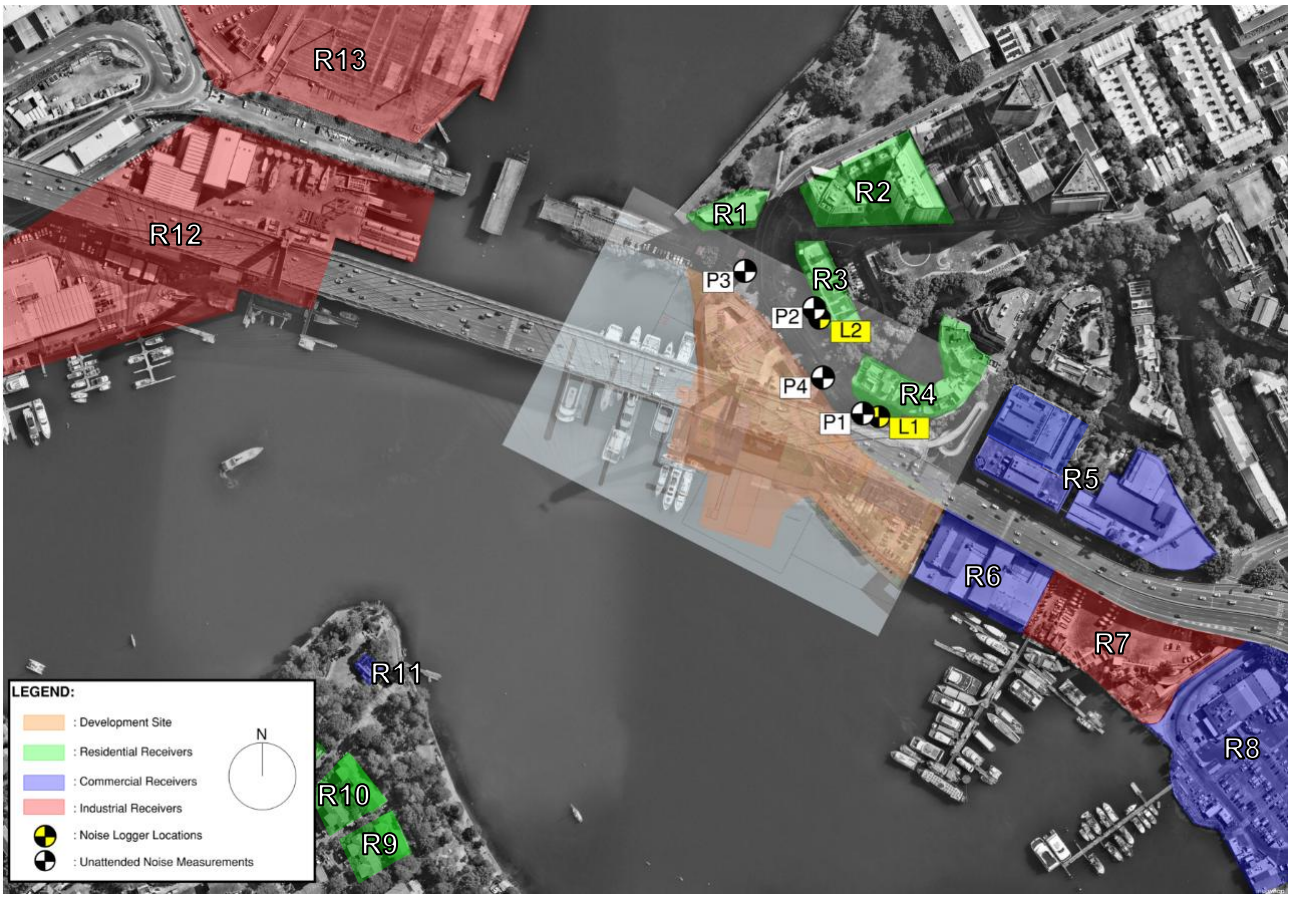


Figure 2 – Overview of the Site and Measurement Locations

Ref: Adapted from Stantec Noise and Vibration Impact Assessment, dated 07/03/2025

Table 2 – Sensitive Receivers

Receiver	Land Use	Address
R1	Residential	2 Bowman Street, Pyrmont
R2	Residential	15 & 25 Bowman Street, Pyrmont 2 & 4 Distillery Drive, Pyrmont
R3	Residential	1 Distillery Drive, Pyrmont
R4	Residential	120 & 122 Saunders Street, Pyrmont
R5	Commercial	1-33 Saunders Street, Pyrmont 140-148 Bank Street, Pyrmont
R6	Commercial	21-29 Bank Street, Pyrmont 31-35 Bank Street, Pyrmont
R7	Industrial	37-39 Bank Street, Pyrmont 1B Bank Street, Pyrmont 41-45 Bank Street, Pyrmont
R8	Commercial	56-60 Pyrmont Bridge Road, Pyrmont
R9	Residential	14 Leichhardt Street, Glebe
R10	Residential	16 Leichhardt Street, Glebe
R11	Commercial	53 Leichhardt Street, Glebe
R12	Industrial	Industrial receivers along Rozelle Bay, west and north-west of the site
R13	Industrial	

3 CONDITIONS OF CONSENT

3.1 CONSTRUCTION NOISE AND VIBRATION MANAGEMENT PLAN (CNVMP)

The relevant Condition of Consent from City of Sydney Council (SSD-53386706) for the preparation of a CNVMP is reproduced below.

Condition of Consent C13	
Prior to the commencement of works, the Applicant must submit to the satisfaction of the Certifier a Construction Noise and Vibration Management Sub-Plan (CNVMP) for the development. The Sub-Plan must include:	
a)	Identification of the specific activities that will be carried out and associated noise sources at the site.
b)	Identification of all potentially affected sensitive residential receiver locations;
c)	Quantification of the rating background noise level (RBL) for sensitive receivers, as part of the Sub-Plan, or as undertaken in the EIS and RtS;
d)	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;
e)	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;
f)	Where objectives are predicted to be exceeded, an analysis of feasible and reasonable noise mitigation measures that can be implanted to control noise and vibration during construction
g)	Description of management methods and procedures, and specific noise mitigation treatments/measures that can be implanted to control noise and vibration during construction;
h)	Where objectives cannot be met, additional measures including, but not necessarily limited to, the following must be considered and implemented where practicable; 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;
i)	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;
j)	Measures to identify non-conformances with the requirements of the Sub-Plant, and procedures to implement corrective and preventative action;
k)	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;
l)	Procedure for notifying residents of construction activities that are likely to affect their noise and vibration amenity;
m)	Measures to monitor noise performance and respond to complaints;
n)	Measures to reduce noise related impacts associated with offsite vehicle movements on nearby access and egress routes from the site;
o)	Procedures to allow for regular professional acoustic input to construction activities and planning.
p)	Effective site induction, and ongoing training and awareness measures for personnel (e.g. toolbox talks, meetings etc).

3.2 CONSTRUCTION SCHEDULING AND NOISE LIMITS

Conditions of Consent for SSD-53386706 relating to the scheduling of construction works and noise limits for equipment are presented below.

Table 3 – Conditions of Consent for Construction Scheduling and Noise

Consent Condition Number	Description
D4	Construction, including the delivery of materials to and from the site, may only be carried out between the following hours: (a) between 7 am and 5:30 pm, Mondays to Fridays inclusive; and (b) between 7.30 am and 3.30 pm, Saturdays.
D5	No work may be carried out on Sundays or public holidays.
D6	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; (b) in an emergency to avoid the loss of life, damage to property or to prevent environmental harm; or (c) in accordance with the terms of a road opening permit or road occupancy license.
D7	Notification of such activities must be given to affected residents before undertaking the activities or, in the event of an emergency, as soon as is practical afterwards
D8	Rock breaking, rock hammering, sheet piling, pile driving and similar activities may only be carried out between the following hours: (a) 9.00 am to 12.00 pm, Monday to Friday; (b) 2.00 pm to 5.00 pm Monday to Friday; and (c) 9.00 am to 12.00 pm, Saturday.
D9	Despite Condition D4, the use of a crane for special operations, including the delivery of materials, hoisting of plant and equipment and erection and dismantling of on-site tower cranes which warrant the on-street use of mobile cranes outside of above hours can occur, subject to a separate application being submitted to and approved by the relevant roads authority under Section 68 of the Local Government Act 1993 and Sections 138/139 of the Roads Act 1993.
D10	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.
D11	The Applicant must ensure that any work generating high noise impact (i.e. work exceeding a noise management level 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.
D12	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.

Consent Condition Number	Description
D13	Vibration caused by construction at any residence or structure outside the site must be limited to: (a) for structural damage, the latest version of DIN 4150-3 (1992-02) Structural vibration - Effects of vibration on structures (German Institute for Standardisation, 1999); (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).
D14	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 project specific CNVMP required by this consent.

4 NOISE AND VIBRATION MANAGEMENT LEVEL

4.1 EPA INTERIM CONSTRUCTION NOISE GUIDELINE

The EPA Interim Construction Noise Guideline (ICNG) assessment requires:

- Determination of noise management levels (based on ambient noise monitoring).
- Review of operational noise levels at nearby development.
- If necessary, recommendation of noise controls strategies in the event that compliance with noise emission management levels is not possible.

EPA guidelines adopt differing strategies for noise control depending on the predicted noise level at the nearest residences:

- *"Noise affected" level*. Where construction noise is predicted to exceed the "noise effected" level at a nearby residence, the proponent should take reasonable/feasible work practices to ensure compliance with the "noise effected level". For residential properties, the "noise effected" level occurs when construction noise exceeds ambient levels by more than 10dB(A)$L_{eq(15min)}$.
- "*Highly noise affected level*". Where noise emissions are such that nearby properties are "highly noise effected", noise controls such as respite periods should be considered. For residential properties, the "highly noise effected" level occurs when construction noise exceeds 75dB(A)$L_{eq(15min)}$ at nearby residences.

Long term unattended background noise measurements were undertaken between the 1st and 14th of June 2023 by Stantec as part of DA documentation. The '*Bank Street park Noise & Vibration Impact Assessment for Modification to State Significant Development Application*' report (document reference 301351267, dated 07/03/2025) contains detailed noise monitoring. The measured background noise levels are presented in the table below.

Table 4 – Measured Background Noise Levels, dB(A) L_{90}

Location	Background Noise Level RBL – dB(A)		
	Day	Evening	Night
L1	61	59	54
L2	57	54	45

A summary of the recommended noise levels from the ICNG is presented below in Table 5.

Table 5 – Noise Management Levels

Location	"Noise Affected" Level - dB(A)$L_{eq(15min)}$	"Highly Noise Affected" Level - dB(A)$L_{eq(15min)}$
Residential receivers (R1, R2, R4)	71	75
Residential receivers (R3, R9, R10)	67	75
Commercial Receivers (R5, R6, R8, R11)	70	-
Industrial Receivers (R7, R12, R13)	75	-

If noise levels exceed the management levels identified in the tables above, reasonable and feasible noise management techniques will be reviewed.

4.2 VIBRATION

Vibration caused by construction at any residence or structure outside the subject site must be limited to:

- For structural damage vibration, German Standard DIN 4150-3 Structural Vibration: Effects of Vibration on Structures; and
- For human exposure to vibration, the evaluation criteria presented in the British Standard BS 6472:1992 *Guide to Evaluate Human Exposure to Vibration in Buildings (1Hz to 80Hz)* for low probability of adverse comment.

4.2.1 Assessing Amenity

The NSW EPA document "*Assessing Vibration: A Technical Guideline*" provides procedures for assessing tactile vibration and regenerated noise within potentially affected buildings and is used in the assessment of vibration impact on amenity.

Relevant criteria are presented below.

Table 6 – Preferred and Maximum Weighted RMS Values for Continuous and Impulsive Vibration Acceleration (m/s^2) 1-80Hz (Table 2.2 Assessing Vibration: A Technical Guideline)

Location	Assessment Period [1]	Preferred values		Maximum Values	
		z-axis	x & y-axes	z-axis	x & y-axes
Continuous Vibration					
Residences	Daytime	0.010	0.0071	0.02	0.014
	Night-time	0.007	0.005	0.014	0.010
Offices, schools, educational institutions and places of worship	Day or night-time	0.020	0.014	0.040	0.028
Workshops	Day or night-time	0.04	0.029	0.080	0.058
Impulsive Vibration					
Residences	Daytime	0.30	0.21	0.60	0.42
	Night-time	0.10	0.071	0.20	0.14
Offices, schools, educational institutions and places of worship	Day or night-time	0.64	0.46	1.28	0.92
Workshops	Day or night-time	0.64	0.46	1.28	0.92

NOTE:

1. *Daytime is 7:00am to 10:00pm and night-time is 10:00pm to 7:00am.*
2. *Examples include hospital operating theatres and precision laboratories where sensitive operations are occurring. There may be cases where sensitive equipment or delicate task require more stringent criteria than the human comfort criteria specified above. Stipulation of such criteria is outside the scope of this policy, and other guidance documents (e.g. relevant standards) should be referred to. Source: BS6472-1992.*

Table 7 – Acceptable Vibration Dose Values for Intermittent Vibration (m/s$^{1.75}$) (Table 2.2 Assessing Vibration: A Technical Guideline)

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

NOTE:

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: BS6472-1992.*

4.2.2 Structure Borne Vibrations (Building Damage Criteria)

German Standard DIN 4150-3 (2016) provides a guideline for acceptable levels of vibration velocity in building foundations, to assess the effects of vibration on structures. The table give guidance on the maximum accepted values of velocity at the foundation and in the plane of the highest floor of various types of buildings, to prevent any structural damage.

The table following lists the peak particle velocity, which is the maximum absolute value of the velocity signals for the three orthogonal components. This is measured as a maximum value of any of the three orthogonal component particle velocities when measured at the foundation, and the maximum levels measured in the x- and y-horizontal directions in the plane of the floor of the uppermost storey.

It is noted that if measured vibration levels do not exceed the guidelines listed in the following table, damage that will reduce the serviceability of the building will not occur, and if damage to the building does occur, it is assumed that the damage is related to other causes. Furthermore, the DIN4150-3 guideline states the following regarding the limits presented in Table 1 of the standard:

"Exceeding the guideline values does not necessarily lead to damage. Should they be exceeded, however, further investigations may be necessary, such as determining and evaluating the stresses as detailed in 4.3 and 4.4.".

Table 8 – DIN 4150-3 (2016-12) Safe Limits for Building Vibration

	Type of Structure	Guideline values for $v_{i,max}$ in mm/s				
		Foundation, all directions, i = x, y, z, at a frequency of			Topmost floor, horizontal direction, i = x, y	Floor slabs, vertical direction, i = z
		1Hz to 10Hz	10Hz to 50Hz	50Hz to 100Hz [a]	All Frequencies	All Frequencies
L/C	1	2	3	4	5	6
1	Buildings used for commercial purposes, industrial buildings, and buildings of similar design	20	20 to 40	40 to 50	40	20
2	Residential buildings and buildings of similar design and/or occupancy	5	5 to 15	15 to 20	15	20
3	Structures that, because of their particular sensitivity to vibration, cannot be classified under lines 1 and 2 **and** are of great intrinsic value (e.g. listed buildings) buildings that are under a preservation order)	3	3 to 8	8 to 10	8	$20^{(b)}$

NOTE:

Even if guideline values as in line 1, columns 2 to 5, are complied with, minor damage cannot be excluded.

a. At frequencies above 100 Hz, the guideline values for 100 Hz can be applied as minimum values.

b. b It may be necessary to lower the guideline value markedly to prevent minor damage

5 NOISE AND VIBRATION ASSESSMENT AND RECOMMENDATIONS

5.1 NOISE AND VIBRATION SOURCES

The construction scenarios which are anticipated to generate the most amount of noise have been modelled. These are demolition, excavation and piling, surfacing works and construction. The impact on nearby development from construction noise will be dependent on the activity and where on the site the activity is undertaken. A summary of sound power levels of major construction processes/equipment is detailed in Table 9.

Table 9 – Sound Power Levels of the Proposed Equipment

Equipment / Process	Sound Power Level – dB(A) [2]
Scenario 1 – Demolition	
30t Excavator with Hydraulic Hammer	122
Scenario 2 – Excavation & Piling	
20t Excavator	105
Dump Truck	110
Bored Piling Rig	112
Scenario 3 – Surfacing Works	
Large Pad Foot Roller	109
MRV Truck	103
Water Cart	107
Compactor	106
Scenario 4 – Construction	
Mobile Crane	113[1]
Concrete Pump	109
Concrete Truck	109
MRV Truck	103
Powered Hand Tools	95

NOTE:

1. Equipment operating 25% of the time
2. Noise levels take into account correction factors (for tonality, intermittency where necessary).

The noise levels presented in the above table are derived from the following sources, namely:

- Table A1 of Australian Standard 2436-2010.
- Data held by this office from other similar studies.

Noise levels take into account correction factors (for tonality, intermittency where necessary).

5.2 NOISE IMPACT ASSESSMENT

A quantitative evaluation of the proposed works has been undertaken to identify those activities that have the potential to adversely impact nearby properties. The outcomes of the assessment have been used to develop a management plan to minimise adverse noise and vibration impacts.

The assessment uses site specific noise and vibration management levels established in Section 3.2.The predicted, receiver noise and vibration levels will be compared to the management levels to identify those activities that are likely to require additional management, above what is considered to be normal good practice.

Construction noise emissions to nearby development depend on the activities being undertaken at the time, and where on the site the activities occur.

- Noise levels have been predicted at the receiver locations using SoundPLAN™ 9.1 modelling software implementing the ISO 9613-2:2024 "Acoustics – Attenuation of Sound During Propagation Outdoors – Part 2: General Method of Calculation" noise propagation standard.
- The plant sound power levels indicated in Section 5.1. These have been corrected for estimated typical operation duty indicated in the table using 10 x log(% duty/100).
- Elevation data for the site and surrounds was obtained from the project architectural drawings, and obtained from Geoscape database.
- Source heights – 1m above the ground/building level of the noise source location, unless noted otherwise.
- Noise contour maps have been calculated at:
    - 1.5m above ground level, representing recreation and other outdoor spaces, and the ground floor level of dwellings.
    - Where relevant, facade noise maps have been produced to indicate facade incident noise levels at multi-storey buildings.
- Ground absorption was conservatively calculated.

The predicted noise levels during construction will depend on:

- The activity undertaken.
- The distance between the work site and the receiver. For many of the work areas, the distance between the noise source and the receiver will vary depending on which end of the site the work is undertaken.
- The screening effect provided by any building structure or building shell, if applicable. In particular, noise from works proposed during the fit-out stages when the building shell will screen these activities from the surrounding sensitive receivers.

SoundPLAN modelling outputs are provided in Appendix A. SoundPLAN "grid noise map" contours include a 2.5dB façade reflection increase close to a façade. When assessing noise levels close to a façade, 2.5 dB has been subtracted from the grid map noise levels. SoundPLAN "façade noise maps" do not include a façade reflection allowance, and therefore do not require correction.

The maximum predicted noise levels for each construction scenario for each receiver are presented in Table 10–* A *1-2dB(A) exceedance is imperceptible to the human ear and is considered negligible.*

Table 12.

Table 10 – Predicted Noise Levels for Construction Scenario 1

Scenario 1 – Demolition				
Receiver	**NML dB(A)$L_{Aeq(15min)}$**	**Predicted Noise Level**	**Exceeds NML?**	**Exceeds HANML (>75 dBA)?**
R1	71	80	**Yes**	**Yes**
R2	71	74	**Yes**	No
R3	67	81	**Yes**	**Yes**
R4	71	83	**Yes**	**Yes**
R5	70	72	No*	N/A (Commercial)
R6	70	71	No*	N/A (Commercial)
R7	75	57	No	N/A (Industrial)
R8	70	58	No	N/A (Commercial)
R9	67	58	No	No
R10	67	58	No	No
R11	70	60	No	N/A (Commercial)
R12	75	60	No	N/A (Industrial)
R13	75	55	No	N/A (Industrial)

* *A 1-2dB(A) exceedance is imperceptible to the human ear and is considered negligible.*

Table 11 – Predicted Noise Levels for Construction Scenario 2

Scenario 2 – Excavation & Piling				
Receiver	**NML dB(A)$L_{Aeq(15min)}$**	**Predicted Noise Level**	**Exceeds NML?**	**Exceeds HANML (>75 dBA)?**
R1	71	73	No*	No
R2	71	68	No	No
R3	67	73	**Yes**	No
R4	71	75	**Yes**	No
R5	70	73	**Yes**	N/A (Commercial)
R6	70	78	**Yes**	N/A (Commercial)
R7	75	55	No	N/A (Industrial)
R8	70	55	No	N/A (Commercial)
R9	67	51	No	No
R10	67	52	No	No
R11	70	52	No	N/A (Commercial)
R12	75	52	No	N/A (Industrial)
R13	75	48	No	N/A (Industrial)

* *A 1-2dB(A) exceedance is imperceptible to the human ear and is considered negligible.*

Table 12 – Predicted Noise Levels for Construction Scenario 3

Scenario 3 – Surfacing Works				
Receiver	**NML dB(A)$L_{Aeq(15min)}$**	**Predicted Noise Level**	**Exceeds NML?**	**Exceeds HANML (>75 dBA)?**
R1	71	72	No*	No
R2	71	66	No	No
R3	67	71	**Yes**	No
R4	71	74	**Yes**	No
R5	70	71	No*	N/A (Commercial)
R6	70	78	**Yes**	N/A (Commercial)
R7	75	51	No	N/A (Industrial)
R8	70	53	No	N/A (Commercial)
R9	67	50	No	No
R10	67	50	No	No
R11	70	50	No	N/A (Commercial)
R12	75	50	No	N/A (Industrial)
R13	75	46	No	N/A (Industrial)

* *A 1-2dB(A) exceedance is imperceptible to the human ear and is considered negligible.*

Table 13 – Predicted Noise Levels for Construction Scenario 4

Scenario 4 – Construction				
Receiver	**NML dB(A)$L_{Aeq(15min)}$**	**Predicted Noise Level**	**Exceeds NML?**	**Exceeds HANML (>75 dBA)?**
R1	71	73	No*	No
R2	71	67	No	No
R3	67	74	**Yes**	No
R4	71	75	**Yes**	No
R5	70	73	**Yes**	N/A (Commercial)
R6	70	79	**Yes**	N/A (Commercial)
R7	75	54	No	N/A (Industrial)
R8	70	53	No	N/A (Commercial)
R9	67	51	No	No
R10	67	51	No	No
R11	70	52	No	N/A (Commercial)
R12	75	53	No	N/A (Industrial)
R13	75	47	No	N/A (Industrial)

* *A 1-2dB(A) exceedance is imperceptible to the human ear and is considered negligible.*

5.3 DISCUSSION OF PREDICTED RESULTS

The analyses indicates that noise emissions are expected to exceed the established noise management levels during all construction stages, however noise impacts on nearby development will be dependent on the activity and where on the site the activity is undertaken. Work close to the site boundaries will have the greatest impact on nearby receivers

Demolition works are the loudest activity in this assessment (scenario 1), therefore exceedances of the noise management level were predicted at residential receivers R1-4. Predictions also showed exceedances over the highly noise affected management level at R1, R3 & R4. This is due to machine mounted hydraulic hammers being high impact demolition works, noting that any works near the site boundary that is closest to any given residential receiver will expose them to said noise levels. It is noted, however, that no exceedances of the noise management level are predicted for R5-13 during the same demolition scenario.

Exceedances of the noise management level were also predicted at commercial receiver R6 in construction scenarios 2-4, if the construction equipment was located close to the receiver.

No residential receivers were predicted to be highly noise affected during construction scenarios 2-4, however R3 & R4 are likely to be noise affected during these works if the construction equipment was located close to the receiver.

Feasible and reasonable work practices should be implemented to minimise noise impacts on surrounding residents. Noise impacts can be minimised using the following:

- Selection of equipment and process.
- Location of static plant.
- Use of screens or enclosures and erection of hoarding (typically only feasible for static plant).
- Scheduling of noisy activities and provision of respite periods.

Specific recommendations are detailed in the following report sections.

5.4 CONSTRUCTION VIBRATION

5.4.1 Vibration Sources

The following sources have been identified as potentially producing significant ground vibration:

- Bore Piling (in rock)
- Impacts from falling rocks/rubble
- Ripping (excavator with claw)
- Hydraulic hammer (rock)

The remaining activities are not expected to produce significant ground vibration and/or are sufficiently separated from sensitive receivers. Vibration from these activities is expected to be significantly below amenity or damage risk management levels at all receivers except for commercial receiver R6 which directly bounds the site to the east.

5.4.2 Assessment of Vibration

A precise assessment of vibration emissions from the proposed works is not possible due to the large number of unknowns including the actual equipment employed, how it is operated, site conditions, etc.

In the absence of any specific equipment the generic minimum safe working distances presented in Table 14 should be used with caution for guidance. It is noted that the vibrating roller distances are based on asphalting road works and are not applicable to earthworks as the vibration frequencies are considerably lower leading to a greater safe-work distance requirement. Empirical formulae by Hiller and Crabb will be used in lieu.

Should the types and models of the plant and equipment be available then vibration levels may be predicted at the nearest and most affected receivers by using the published generic formulae, source levels or historical data as found in:

- BS 5228-2:2009+A1:2014
- ISO 4866:2010
- FTA *Transit Noise and Vibration Impact Assessment Manual* (2018)
- Caltrans *Transportation and Construction Vibration Guidance Manual* (2020)
- *Construction Vibrations* 2nd Edition (Dowding, 2000)

Regardless of the method used site vibration levels from machinery and processes should be verified on site as soil conditions may be different from the basis sources.

The assessment of building and soil settlement or the liquefaction of soils under induced vibration is outside the scope of typical vibration standards such as DIN 4150-3 and expert advice is to be sought from a Geotechnical Engineer.

6 NOISE AND VIBRATION MANAGEMENT PLAN

The project specific noise and vibration management plan should be implemented to manage noise and vibration impacts. The Plan should be revised as the works proceed in response to changing or latent conditions and to incorporate the results of additional analysis, monitoring or modified work practices implemented to minimise impacts.

The management plan has been prepared in accordance with ICNG guideline and includes:

- Identification of sensitive receivers and applicable noise and vibration management levels
- A description of the main noise or vibration producing activities, processes and equipment that will be employed and an indicative construction programme.
- Proposed construction hours.
- A prediction of likely noise/vibration levels at the most impacted receivers.
- The assessment and recommendation of mitigation methods to be applied where the predicted levels exceed the management levels, as indicated below.
- A monitoring plan including the type and extent of monitoring, reporting procedures.
- Recommended management procedures including complaints handling, response to monitoring exceedances, reporting, site training, etc.
- Community liaison.

7 NOISE AND VIBRATION MONITORING, REPORTING AND RESPONSE PROCEDURES

Noise and vibration monitoring may either consist of manned and/or unmanned measurements. Active monitoring may be undertaken during the construction work phase of the project if required in the event complaints are received from neighbours.

In the event that complaints are received from neighbours the following process should be considered:

- Assessing impacts and determining the offending plant/equipment/process and.
- Locating the plant/equipment/process further away from the affected receiver(s) if possible.
- Implementing additional acoustic treatment in the form of localised barriers, silencers etc.
- Selecting alternative equipment/processes

Where monitoring is required and indicates exceedances of the predicted noise impacts immediate action should be taken to identify any further controls as required to reduce noise emissions so that the noise limits are complied with. Monitoring of the activities following the implementation of these additional controls will be undertaken to confirm compliance.

7.1 REPORTING REQUIREMENTS

The following is an example of reporting which may be kept on site:

- A register of complaints received/communication with the local community shall be maintained and kept on site with information as detailed below.
- Where noise/vibration complaints require noise/vibration monitoring, results from monitoring shall be retained on site at all times.
- Any noise exceedances occurring including, the actions taken and results of follow up monitoring.
- A report detailing complaints received and actions taken shall be presented.
- All monitoring and reporting shall be conducted in conjunction with the conditions of consent.

7.2 RESPONSE PROCEDURES

Complaints associated with noise and vibration generated by site activities shall be recorded on a Noise Complaint Form. A draft Noise Complaint Form can be found in Appendix B. The person(s) responsible for complaint handling and contact details for receiving of complaints shall be established on site prior to construction works commencing. A sign shall be displayed at the site indicating the Site Manager and the general public and their contact telephone number

If a noise complaint is received the complaint should be recorded on a Noise Complaint Form. The complaint form may list:

- The name and address of the complainant (if provided).
- The time and date the complaint was received.
- The nature of the complaint and the time and date the noise was heard.
- The name of the employee who received the complaint.
- Actions taken to investigate the complaint, and a summary of the results of the investigation.
- Indicate what operations were occurring on site at the time of the complaint.
- Required remedial action, if required
- Validation of the remedial action.
- Summary of feedback to the complainant.

8 NOISE AND VIBRATION MANAGEMENT AND CONTROL

The flow chart that follows illustrate the process followed to assess construction activities prior to the start of work on site, and for the ongoing investigation of noise and vibration impacts during the construction period.

The ICNG recommends "feasible and reasonable" mitigation measures to be implemented where works generate noise levels above the out of normal hours NML but does not specify what mitigation measures or to what extent these measures should be applied.

8.1 GENERAL NOISE CONTROL METHODS

The determination of appropriate additional noise control measures will be dependent on the particular activities and the construction equipment and plant identified as requiring future acoustic treatments to those already identified in this report. This section provides an outline of available methods which have previously been used on similar construction sites and may be possible on this site.

8.1.1 Selection of Alternate Appliance or Process

Where a particular activity or plant and equipment is found to generate noise levels that exceed the management levels, it may be possible to select an alternative approach or plant and equipment. For example, the use of excavator mounted hydraulic hammers of the site may potentially generate high levels of noise. By carrying this activity by using concrete saws or smaller plant here practical, construction noise levels and/or length of exposure to construction noise levels may be reduced.

8.1.2 Acoustic Barriers

The placement of barriers at the source is generally only effective for static plant. Placing barriers at the source cannot effectively attenuate equipment which is on the move or working in rough or undulating terrain.

The degree of noise reduction provided by barriers is dependent on the amount by which the line of sight can be blocked by the barrier. If the receiver is totally shielded from the noise source reductions of up to 15 dB(A) can be effected. Where only partial obstruction of line of sight occurs, noise reductions of 5 to 8 dB(A) may be achieved. Where the barrier does not obstruct line of sight, generally no noise reduction will occur.

Barriers are used to provide shielding and do not act as an enclosure. The material they are constructed from should have a noise reduction performance which is approximately 10dB(A) greater than the maximum reduction provided by the barrier screening. In this case, the use of a material such as 15mm plywood (or equivalent material) would be acceptable for the barriers.

8.1.3 Silencing Devices

Where construction methodologies or plant and equipment permit, investigate the use of silencing devices. These may take the form of engine shrouding, or special industrial silencers fitted to exhausts, for example.

8.1.4 Treatment of Specific Equipment

In certain cases, it may be possible to specially treat a piece of equipment to dramatically reduce the sound levels emitted.

8.1.5 Establishment of Site Practices

This involves the formulation of work practices to reduce noise generation. This includes, for example, investigating the possibility of locating fixed plant items as far as possible from residents, rotating plant and activities to provide respite to receivers, scheduling activities after the construction of buildings that will screen receivers, avoiding noise sensitive periods for receivers, identify "safe" working distances, etc.

8.1.6 Notification

Notification of affected receivers of the progress of works, particularly when short-term activities likely to create higher noise levels occur, can in many cases minimise community reaction. The *Communications and Stakeholder Engagement Plan* prepared by BESIX Watpac shall be adopted to aid in providing an open line of communication.

8.1.7 Vibration Management

The following principles should be considered to manage adverse vibration impacts identified:

- Obtaining separate structural or specialist advice for critical or fragile structures as to the level of damage risk.
- Selection of processes that minimise structure and ground vibration – generally avoiding percussive methods.
- Use smallest plant that is able to efficiently undertake the work activity.
- Lay vibration absorbing mats to cushion impacts from falling debris.
- Application of vibration dampening pads to metal surfaces subject to impacts.
- When demolishing, cut control joints in structures to form vibration "breaks", or work away from sensitive receiver locations to form natural vibration breaks in propagation path.
- Monitoring of structures using attended and/or unattended monitors with alarms.
- Time scheduling works to minimise amenity impacts.
- Communicating with affected receivers.
- Identify "safe" working distances to sensitive receivers/structures for various activities by conducting site simulation tests and limiting activities within those distances to those that are not likely to exceed vibration goals. Vary locations/equipment/techniques used as determined by the simulation testing. The following table provides an initial guide to working distances that should be confirmed by site measurement.

Table 14 – Recommended Base Minimum Working Distances for Vibration Intensive Plant from Sensitive Receivers

Plant item	Rating / Description	Minimum Working Distance			
		Cosmetic Damage			Human Response
		Light-Framed Structure (BS 7385)	Residential Structures (DIN 4150)	Heritage and Other Sensitive Structures (DIN 4150)	NSW EPA's Vibration Guideline
Vibratory Roller	< 50 kN (Typically 1-2 tonnes)	5 m	18.5	14 m	15m
	< 100 kN (Typically 2-4 tonnes)	6 m	17.8	16 m	20 m
	< 200 kN (Typically 4-6 tonnes)	12 m	43	33 m	40 m
	< 300 kN (Typically 7-13 tonnes)	15 m	51.5	41 m	100 m
	> 300 kN (Typically 13-18 tonnes)	20 m	-	54 m	100 m
	> 300 kN (> 18 tonnes)	25 m	-	68 m	100 m
Small Hydraulic Hammer	(300 kg - 5 to 12t excavator)	2 m	-	5 m	7 m
Medium Hydraulic Hammer	(900 kg – 12 to 18t excavator)	7 m	-	19 m	23 m
Large Hydraulic Hammer	(1600 kg – 18 to 34t excavator)	22 m	-	60 m	73 m
Vibratory Pile Driver	Sheet piles	20 m	-	50 m	100 m
Pile Boring	≤ 800 mm	2 m (nominal)	-	5 m	7 m
Jackhammer	Hand held	1 m (nominal)	-	2 m	3 m
Profiler	Wirtgen W210	4 m	-	-	-
Asphalt Paver	Vogele Super 1800-3	1 m	-	-	-
Steel Drum Roller	Hamm HD70 (Oscillating Mode)	2 m	-	-	-
Steel Drum Roller	Hamm HD70 (Static Mode)	1 m	-	-	-

8.2 SUMMARY OF MITIGATION

The project specific mitigation and management to be adopted is summarised in the following sections.

8.2.1 Management Controls

1. **Community Consultation/Notification:** Notification (leaflet or similar) of all marked receivers in Figure 2 is recommended prior to commencement of works. Notification should advise of anticipate date and duration of demolition/ excavation. The *Communications and Stakeholder Engagement Plan* prepared by BESIX Watpac shall be adopted to aid in providing an open line of communication.

2. **Respite Periods:** Respite periods are recommended for any activity that exceeds the highly noise affected management level. The following management controls are recommended.

    a. The scheduling of construction activities should be undertaken to reasonably minimise noise impacts to all surrounding residents.

    b. Any work generating high noise impact (i.e. work exceeding a noise management level of L_{Aeq} 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. Note: '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.

        i. The recommended hours for use of the 30t excavator with hydraulic hammer:

            - Monday – Friday: 8am – 12pm
            - Monday – Friday: 2pm – 5pm

    c. In accordance with Condition of Consent D8, rock breaking, rock hammering, sheet piling, pile driving and similar activities may only be carried out between the following hours:

        i. 9.00 am to 12.00 pm Monday to Friday;

        ii. 2.00 pm to 5.00 pm Monday to Friday; and

        iii. 9:00 am to 12:00 pm Saturday.

    d. It is noted that the loudest construction plant which is predicted to exceed the NML and HANML would only be in use during the demolition and excavation stage.

    e. It is noted that respite periods will extend the length of demolition, excavation and construction works and may provide heavier loss of amenity compared to non-imposed respite.

3. **Quiet Work Methods/Technologies:**

    a. The primary noise generating activity at the site will be the demolition and bulk excavation period. As much as practicable, use of commercially available and practical for the intended use quieter demolition and excavation methods is to be adopted.

    b. Demolition and excavation shall be conducted initially using excavator with bucket (quietest excavation method), then use of rock saws or rippers. Use of the loudest excavation equipment is used only when other options are not appropriate, i.e., when ripping and breaking.

    c. It is recommended to use rock saws near all boundaries to reduce vibration and noise levels.

d. Materials handling/vehicles:

i. Trucks and bobcats to use a non-tonal reversing beacon (subject to OH&S requirements) to minimise potential disturbance of neighbours.

ii. Avoid careless dropping of construction materials into empty trucks.

iii. Trucks, trailers and concrete trucks (if feasible) should turn off their engines during idling to reduce noise impacts (unless truck ignition needs to remain on during concrete pumping).

e. Concrete pump trucks should generally be located within the bounds of the site, away from the western and northern boundaries if possible. Preferred location in red below.

4. **Complaints Handling:** In the event of complaint, the procedures outlined in Section 7.2 should be adopted. A draft noise complaint form is provided in Appendix B.

5. **Site Induction:**

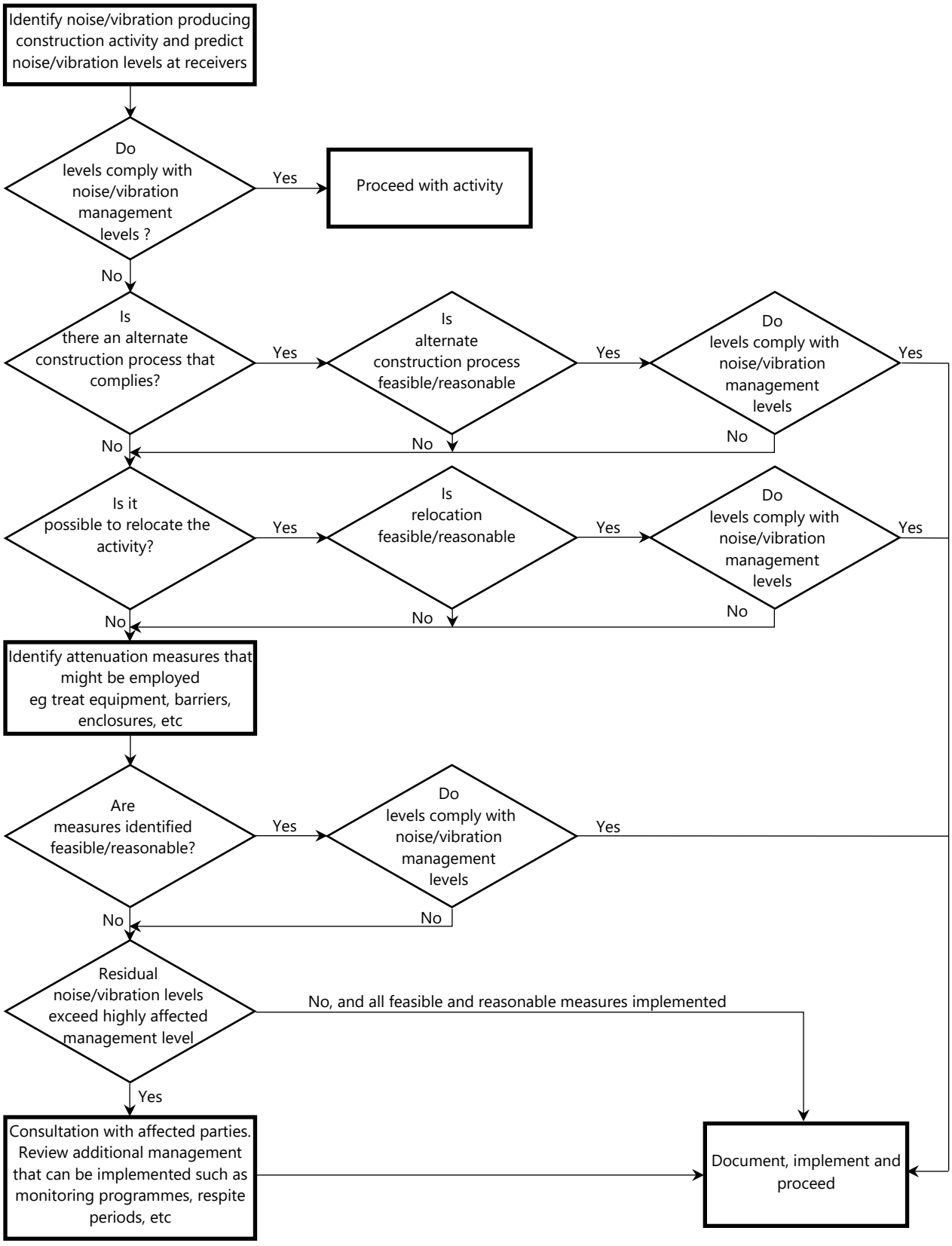
a. A copy of the Noise Management Plan is to be available to contractors. The location of the Noise Management Plan should be advised in any site induction.

b. Site induction should also detail the site contact in the event of noise complaint.

8.2.2 Recommended Monitoring

1. **Vibration monitoring:** No vibration monitoring is required for construction works. In the event of continuous complaint from other nearby receivers, vibration monitoring is to be implemented along the property boundary closest to the vibration receiver who issued the complaint. This localised vibration monitoring is to be conducted for a minimum period of 2 weeks to ensure the appropriate criteria is achieved. The Head Contractor may wish to conduct vibration monitoring proactively.

2. **Noise monitoring:** No noise monitoring is required for standard construction works. In the event of continuous complaint, noise monitoring is to be implemented along the property boundary closest to the noise receiver who issued the complaint. This localised noise monitoring is to be conducted for a minimum period of 2 weeks for documentation. The Head Contractor may wish to conduct noise monitoring proactively.



Noise and Vibration Management Flow Chart

9 CONCLUSION

An assessment of noise from construction works associated with the Bank Street Park development, located at 1A-19 Bank Street, Pyrmont, has been presented within this report to satisfy Condition of Consent C13 for SSD-53386706.

The acoustic assessment of the proposed works has been made with reference to the existing consent conditions for the site and relevant policies & guidelines for construction noise – namely the *Interim Construction Noise Guideline*.

Based on the assessment, noise emission from construction activities are expected to exceed the relevant noise emission levels. Recommendations have been provided to minimise the noise impacts on surrounding receivers.

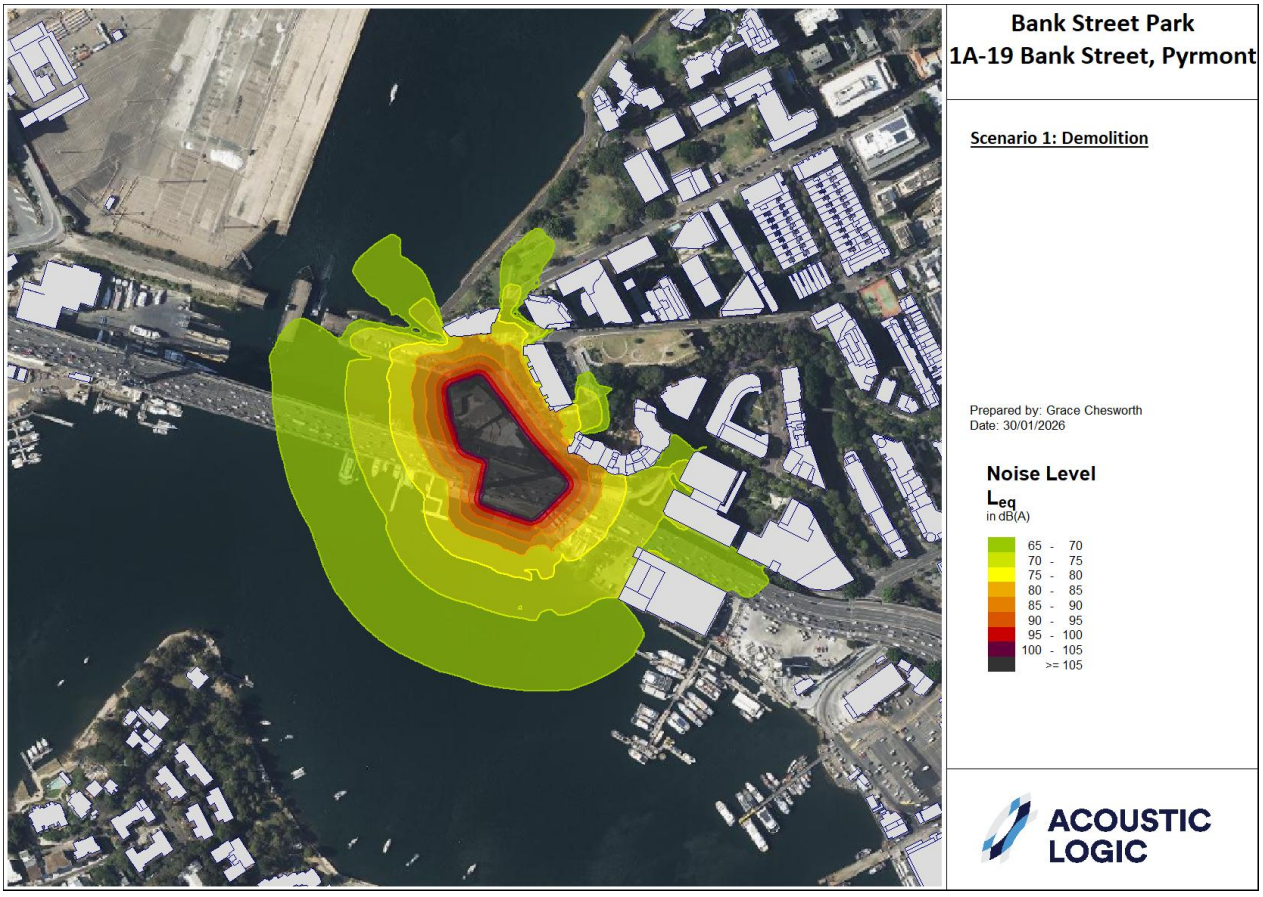
A Construction Noise and Vibration Plan has been developed that will be used to minimise impacts on the surrounding properties. Provided that the mitigation techniques as recommended in sections 5, 6, 7 & 8 of this report are adopted, noise and vibration impacts on the adjacent buildings are expected to be acceptable.

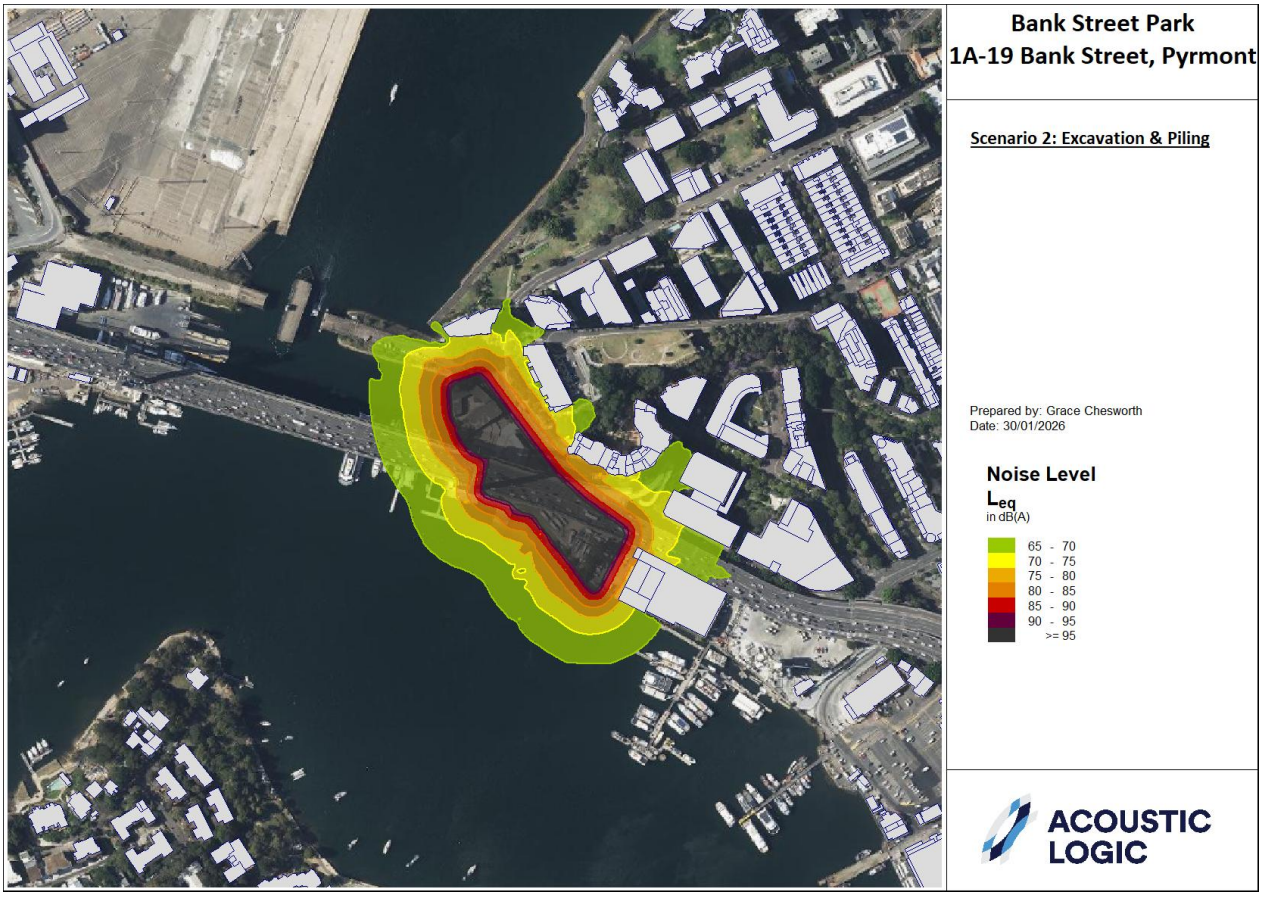
We trust this information is satisfactory. Please contact us should you have any further queries.

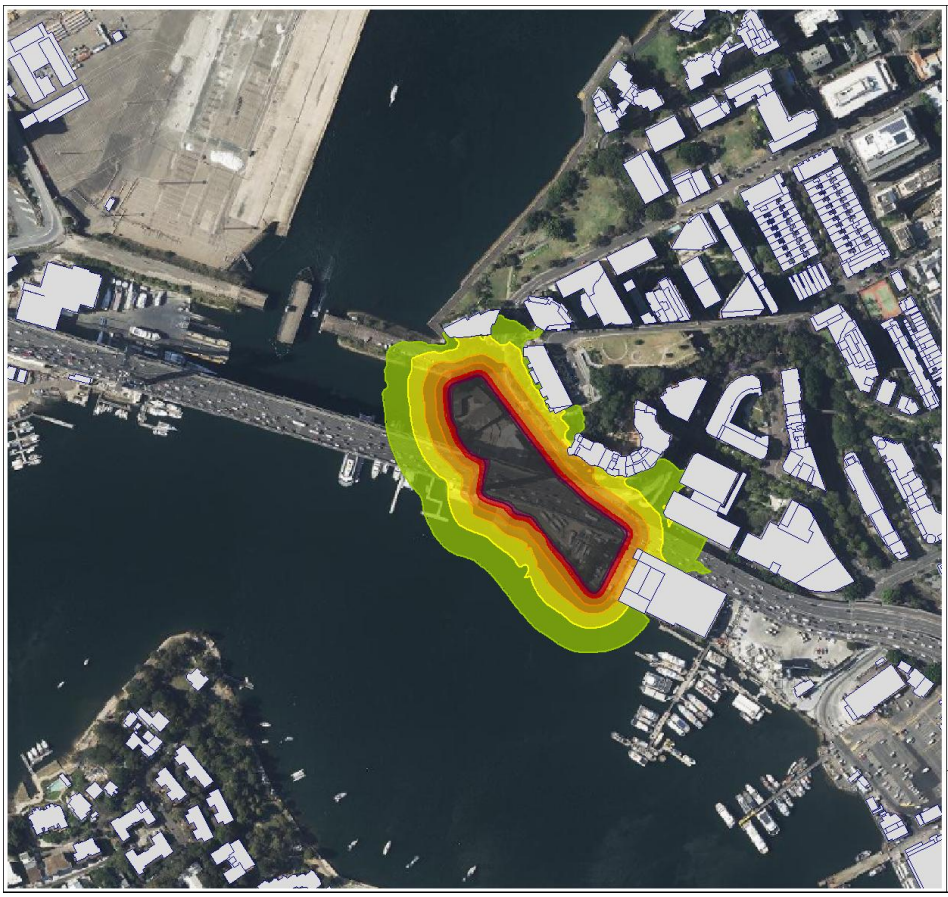
Yours faithfully,

Acoustic Logic Pty Ltd
Grace Wright

APPENDIX A – CONSTRUCTION NOISE CONTOURS







Bank Street Park
1A-19 Bank Street, Pyrmont

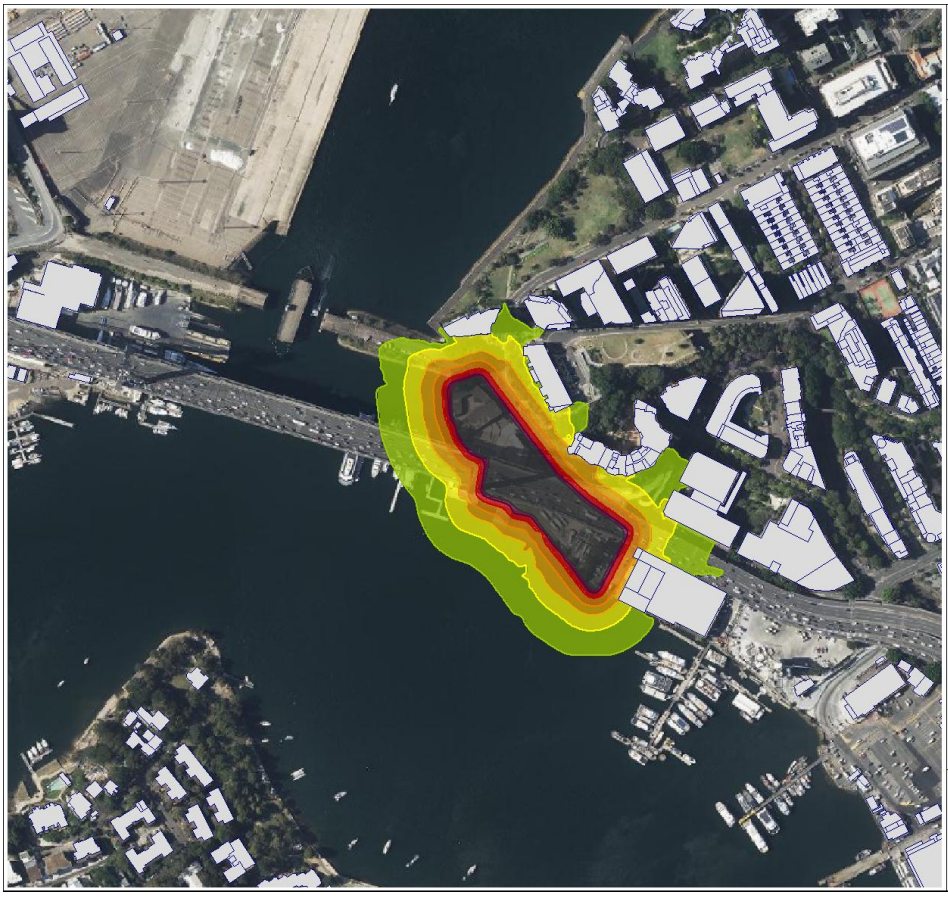
Scenario 3: Surfacing Works

Prepared by: Grace Chesworth
Date: 30/01/2026

Noise Level
L_{eq}
in dB(A)

65 - 70
70 - 75
75 - 80
80 - 85
85 - 90
90 - 95
>= 95

ACOUSTIC LOGIC



Bank Street Park
1A-19 Bank Street, Pyrmont

Scenario 4: Construction

Prepared by: Grace Chesworth
Date: 30/01/2026

Noise Level
L_{eq}
in dB(A)

65 - 70
70 - 75
75 - 80
80 - 85
85 - 90
90 - 95
>= 95

ACOUSTIC LOGIC

APPENDIX B – DRAFT NOISE COMPLAINT FORM

BANK STREET PARK - NOISE COMPLAINT FORM

1.	Name of the complainant (if provided)	
2.	Address of the complainant (if provided)	
3.	Date the complaint was received	
4.	Time the complaint was received	
5.	Nature of the complaint	
6.	Time and date the noise was heard	
7.	Name of the BESIX Watpac employee who received the complaint	
8.	Actions taken to investigate the complaint	
9.	Summary of the results of the investigation	
10.	What operations were occurring on site at the time of the complaint?	
11.	Required remedial action, if required	
12.	Validation of the remedial action	
13.	Summary of feedback to the complainant	

Appendix D
Construction Vessel Traffic Management Plan

BESIX Watpac

Construction Vessel Traffic Management Plan

N231

Bank Street Park

9 February 2026

Caption: Sydney Harbour – Friendship (First Fleet Class)

Project overview

Project Site Address:
1A – 19 Bank Street
Pyrmont
NSW 2009

BESIX Watpac State Division Address:
Level 15, 210 George Street
Sydney
NSW 2000

Project Commencement Date:
23 October 2025

ABN:
71 010 462 816

Document Control

Client:	Infrastructure NSW
Title:	Bank Street Park
Subtitle:	Construction Vessel Traffic Management Plan [CVTMP]
Owner / Approver:	Fay Crawford
Document Number:	BSP-OO-BWP-PM-PL-00-0016
Revision:	03

Revision History

Version	Date	Revision Description	Project/Site Manager Sign off
01	18/12/25	Initial Version	FC
02	04/02/2026	Internal updates	FC
03	09/02/2026	Internal updates	FC

BESIX Watpac Approvals

Name	Role & Title		Date
Fay Crawford	Project Manager	FC	06/02/2026
Matthew Lloyd (MTL Marine)	Managing Director	ML	06/02/2026

Construction Vessel Traffic Management Plan

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1. Introduction

1.1 Objective

The Construction Vessel Traffic Management Plan (CVTMP) addresses the following items as required for BESIX Watpac to comply with the project's technical requirements and the Port Opening Protocol:

- Interface with Construction Vessel Traffic in Pyrmont/Blackwattle Bay and Sydney Harbour; and
- Communication with key agencies and the Harbour Master's requirements
- Environmental, safety and security measures

A copy of the Construction Vessel Traffic Management Plan shall be kept in the site office and reviewed monthly or as required by the change in project conditions or location. The management plan is to be reviewed and commented by Infrastructure New South Wales (INSW) prior to issuance to external stakeholders.

The Construction Vessel Traffic Management Plan addresses the following requirements as nominated in SSD-53386706 Condition C11:

> *Prior to the commencement of any works, a Construction Vessel Traffic Management Plan (CVTMP) including Construction Maritime Risk Management Plan to address maritime construction risks must be prepared by a suitably qualified person and submitted to and approved by TfNSW (Maritime) and the Port Authority of NSW. A copy of the CVTMP must be provided to the Planning Secretary for information prior to works commencing.*

The CVTMP was developed by Alan Millar (internal BESIX Watpac resource) and Matthew Lloyd of MTL Marine as the suitably qualified person.

1.2 Site Description

1.2.1 Bank Street Park

Bank Street Park forms part of the Blackwattle Bay Precinct, adjoining the waters of Blackwattle Bay. A critical part of the Blackwattle Bay Precinct is the high-quality public domain which includes a series of parks and open spaces connected by a foreshore promenade. Bank Street Park will bring new active and passive recreation uses into a unique park environment, catering for both existing and future communities in the vicinity.

Aerial photos and site maps are included below for information.

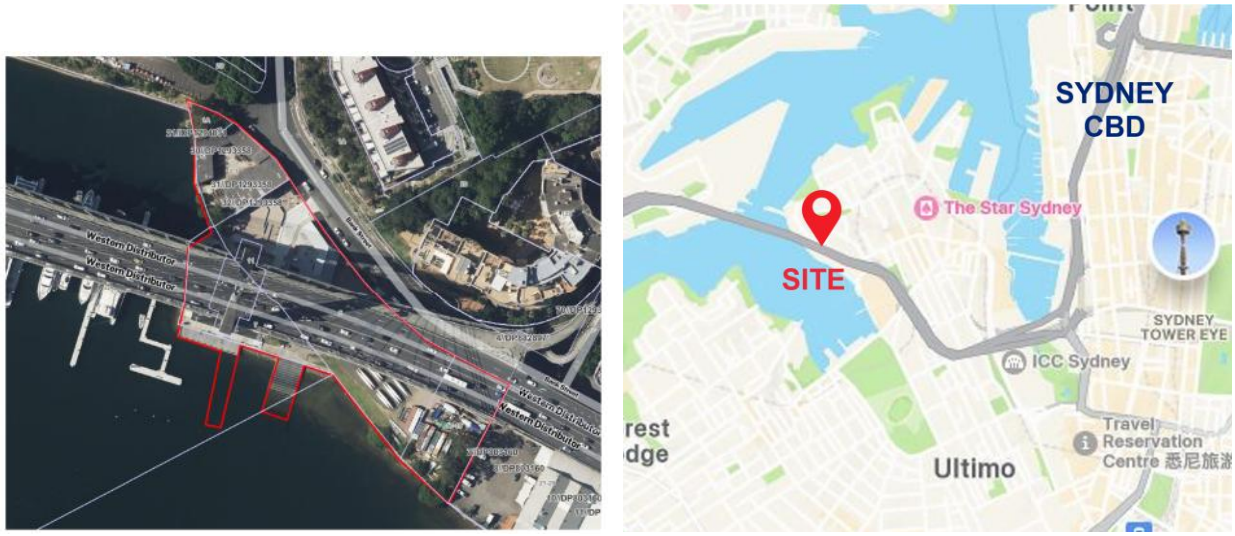


Figure 1 Bank Street Park: 1A-19 Bank Street, Pyrmont NSW

1.2.2 Marine Scope of Work

- Demolition adjacent to Building B (seawall)
- Seawall repairs
- New recreational gangway and floating pontoon for kayaks
- General environment controls establishment and maintenance during construction
- Make good of Dragon Boat ramp

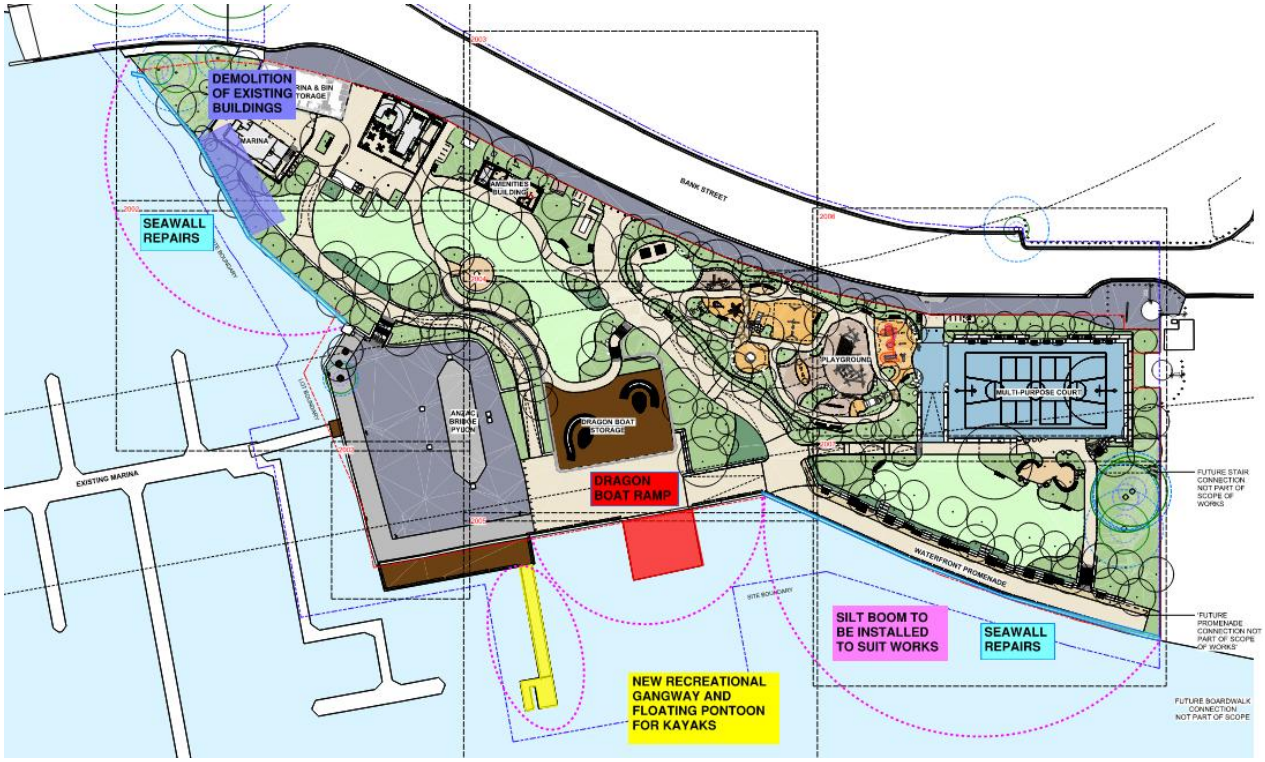


Figure 2 Bank Street Park: Overview of Marine Scope

1.3 Legislation & Referenced Documents

NSW Government legislation:

- Marine Safety Act 1998
- Marine Safety (General) Regulation 2016
- Ports and Maritime Administration Act 1995.
- Port and Maritime Administration Regulation 2021
- Management of Waters & Waterside Lands Regulation
- Work Health and Safety Act 2011
- Work Health and Safety Regulation 2017

Commonwealth Government legislation:

- Navigation Act 2012
- Shipping Registration Act 1981
- Maritime Safety (Domestic Commercial Vessel) National Law Act 2012
- Marine Safety (Domestic Commercial Vessel) National Law Regulation 2013
- Maritime Transport & Offshore Facilities Security Act 2003
- Maritime Transport & Offshore Facilities Security Regulations

1.4 CVTMP Review

The CVTMP, its operation and implementation, and any elements of the overarching BESIX Watpac EMS must be periodically reviewed during project delivery. Formal review of the CVTMP will be undertaken for currency and applicability at least once every 6 months. Other triggers for review may include:

- Corrective or Preventative Actions raised through the reporting process.
- Changes to relevant legislative, regulatory or compliance obligations
- Changes to project scope or methodology
- Request by the Client or any regulatory authority
- Response to internal or Client audit findings, or
- Identification of new environmental risks.

The ESR (or Project Manager nominee) will be responsible for review and amendment of the CVTMP. If updated at any stage of the project, a revised copy will be submitted to all relevant stakeholders.

2. Construction Maritime Risk Management Plan

2.1 Risk Management Approach

BESIX Watpac's approach to risk management is guided by the International Standard on Risk Management, ISO 31000.

The following risk assessments are to occur throughout the project:

1. Quality Risk Assessment, evaluates quality-related threats/outcomes arising from maritime construction.
2. Environmental Risk Assessment, ensures compliance with maritime environmental legislation by aligning marine construction with environmental constraints and approvals.
3. Safety "Project Risk Register, highlights the types of major activities, including maritime-specific activities and hazards that may occur.
4. Design Risk, Opportunity, Value Engineering Register (DROVER), coordinate design risks and value engineering issues
5. Safety in Design (SiD), profiles safety risks on the design during both construction and operational maintenance, supporting lifecycle risk management in relation to marine assets.

2.2 Construction Maritime Risk Matrix

Refer to Appendix C – Construction Maritime Risk Matrix.

3. Requirements of Port Operating Protocol

3.1 Key Agencies & Harbour Master

3.1.1 Harbour Master

The Harbour Master is **Myron Fernandes**; Phone: +612 9296 4999

The Deputy Harbour Master is **Nick Yatsenko**; Phone: +612 9296 4999

The Harbour Master is to be given a minimum of 14 days to review and approve/reject the Construction Vessel Traffic Management Plan. BESIX Watpac understands that communication with the Harbour Master is essential to ongoing safety for the duration of the project and the efficient movements of vessels around the harbour and the project Marine Works Area (MWA).

Table 1 Extract from Harbour Master Directions July 2025, Sydney Harbour & Port Botany, page 9

Sydney Harbour VTS	
Call Sign	Sydney VTS

VHF	Ch 12 Port Botany Ch 13 Sydney Harbour
Email	sydneyvts@portauthoritynsw.com.au
Telephone	+ 61 (02) 9296 4999
Website	portauthoritynsw.com.au

An incident resulting in a threat to life or property shall be reported immediately to Emergency Services by calling Triple Zero (000).

3.1.2 BESIX Watpac Emergency Contacts

The emergency contact for the project is:

- bankstreetpark@besixwatpac.com and 24h hotline: 1800 875 689
- **Project Manager – Fay Crawford** fcrawford@besixwatpac.com

The secondary emergency contacts for the project are:

- **Senior Site Supervisor – Patrick Ferris** pferris@besixwatpac.com
- **Senior Project Engineer – Marie Trarieux** mtrarieux@besixwatpac.com

3.2 Requirements of Harbour Master's Directions

The master of any vessel within the Ports of Sydney Harbour shall:

- Comply with any direction which may be given by the Harbour Master, and
- Navigate in accordance with the Marine Safety Regulation 2016; notably Schedule 4 being the modifications to the *International Regulations for Preventing Collisions at Sea 1972*.
- Must monitor VTS Channel 13 at all times while the vessel is in Sydney Harbour.
- Must contact VTS for approval for all barge movements.

References from 'Harbour Master Directions, Sydney – July 2025:

Section 2.2 Vessel Traffic Services (VTS)

- All vessels >30m in length must participate in Sydney VTS. Also applicable are those vessels towing or pushing a tow, where the combined lengths of both tug and tow exceed 30m – this would include construction barges used on this project. All participating barges and tugs for the project must seek clearance from the Sydney VTS prior to entering a ports limits, as well as departing from or moving from anchor within the VTS area.

Section 2.8 Towage

- BESIX Watpac vessels must comply/use the number of tugs set out in the Towage Tables published on the Port Authority website unless otherwise determined by the Harbour Master. Refer to section 3.11 for Towage Plan.

Section 3.7 Diving Operations

- Permission will be sought by the Harbour Master on duty for any dive works required as part of the Project. Dive works will be accompanied by a vessel showing the appropriate flag signal.

Sydney VTS will be notified on arrival at site and the commencement of the diving operations as well as the completion of diving works and the exiting of the area.

- 24 hours prior to any diving works, an Application for Dive Operations – must completed on the Port Authority of NSW website.

https://www.portauthoritynsw.com.au/port-operations/sydney-harbour/notices-forms-and-permits/sydney-harbour-application-dive-operations

Section 3.8 Disturbance of Seabed

- BESIX Watpac will seek permission from the Harbour Master via an application from the Port Authority website prior to seabed disturbance, i.e., piling.

Harbour Master notification | Port Authority of NSW (https://www.portauthoritynsw.com.au/doing-business/planning-and-approvals/harbour-master-notification)

- Other references:

Construction Vessel Lighting Requirements

- All construction barges and marine vessels must always comply with the NSW Government – Waterways Safety and Rules Guide. Specially Navigation marks, lights, and sounds. https://www.nsw.gov.au/topics/waterways-safety-and-rules/navigation-marks-lights-and-sounds.

Task Lighting

- The need for task lighting for activities during night-time activities will be assessed on a case-by-case basis. Prior to the commencement of any night works, a risk assessment will be undertaken by BESIX Watpac and the marine contractor to determine the extent of task lighting required. Ensure that task lighting is appropriate for the task at hand and does not distract passing vessels, neighbours, and the public.

3.3 Marine Works Area (MWA) – Blackwattle Bay/Bank Street Park

The Marine Works Area (MWA), located at the Bank Street Park site, is situated below the eastern pylon of the ANZAC bridge, south-west of Bank Street and within Blackwattle Bay.

The landside component is located along the end of Bank Street, as marked out by the green lines below.

The marine component is located around the existing marina.

During the works, AOC will continue to have access to the marina and operate as normal, pending site coordination between the marina operator and BESIX Watpac.

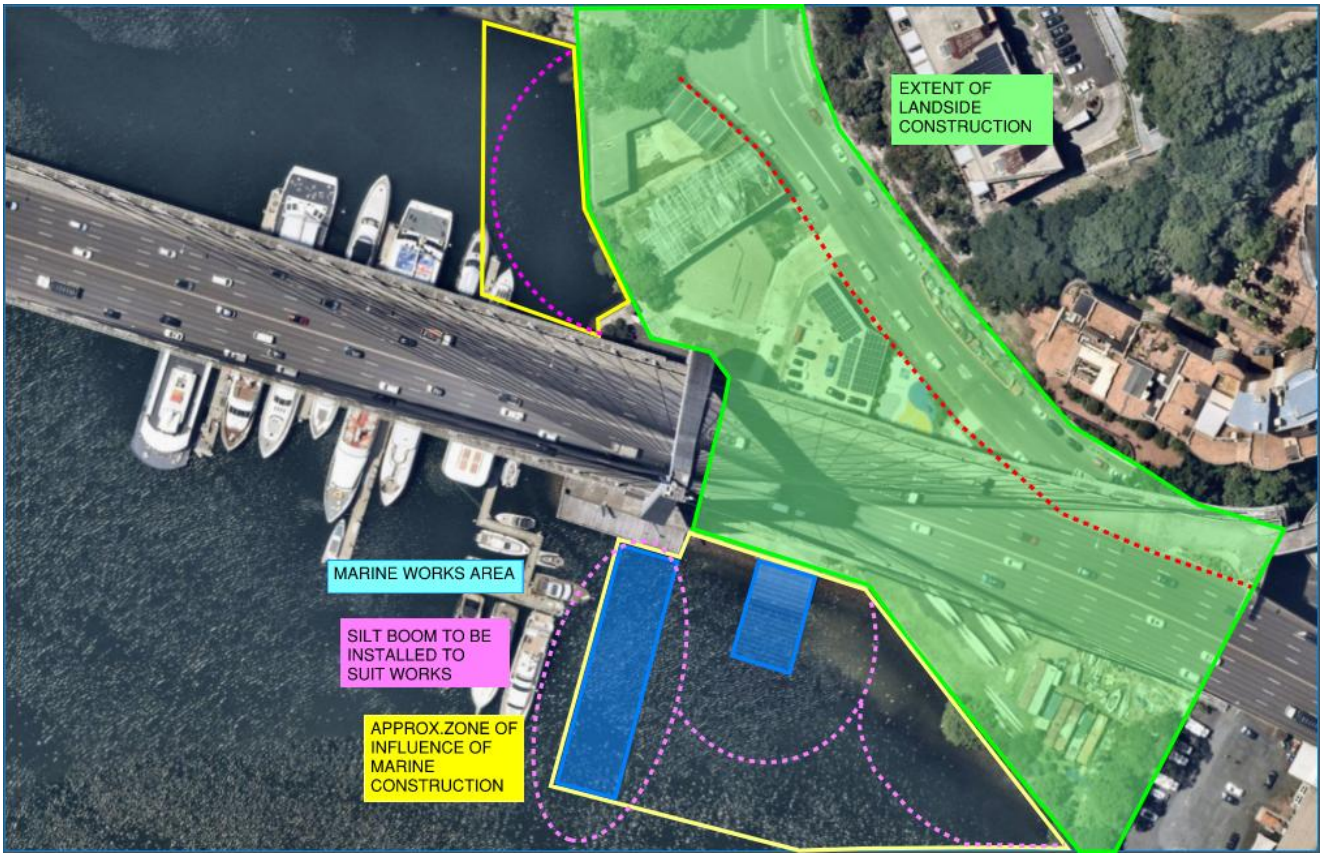


Figure 3 Marine Works Area (Blackwattle Bay Marina), reference Nearmaps

Table 2 Legend

Item	Marking
Landside construction zone	Green highlighted area
Marine Works Area	Blue highlighted area
Zone of Influence outside of designated MWA, to position cranes, construction barges, anchor lines etc.	Yellow outlined area
Site Fencing	Red dashes
Silt Boom	Pink dashes

BESIX Watpac is aware that no work outside of the **MWA** may be undertaken without prior approval from the Harbour Master.

3.4 Collision & Near Miss Protocol

Vessels must maintain VHF radio watch on VHF channel 13 for communication with the VTS when using a berth or anchorage mentioned in the Berths and Channels document on the Port Authority website unless otherwise agreed with the Harbour Master. Where any Construction Vessel has

grounded or been involved in a collision or near-miss with another vessel, navigation mark, wharf or structure, the master of the Construction Vessel shall immediately report such incident to VTS.

In complying with this direction, the master of every construction vessel involved in such reported collision or incident shall:

Comply with any direction from Sydney Ports VTS.

- If required prepare a verbal report to the Harbour Master.
- Within 24hrs notify the Harbour Master in writing of the circumstances of the collision or incident; and
- Cooperate fully in any subsequent investigation into the collision or incident.

Safe Work NSW must also be immediately notified if this constitutes a notifiable incident.

3.5 Navigational Aids, Markers & Exclusion Zones

During construction, various barges and vessels will arrange anchor ropes and wires to prevent excessive movement of said vessels during activities. Anchors, piles, mooring lines and silt curtains and other temporary items required throughout construction will be made visible using yellow marker buoys with lights. All corners of construction barges will be lit in accordance with the Marine Safety Regulation 2016 and the NSW Government - Waterways Safety and Rules Guide.

The Marine Works Area shown in Fig 3 will be the nominated exclusion zone for all other public and private vessels during the construction of the new floating pontoon.

BESIX Watpac to contact Port Authority of NSW a minimum of 20 working days prior to MWA establishment (if required) so that a Local Marine Notice can be developed and distributed to the wider community by the Port Authority of NSW. For the latest Local Marine Notice's visit:

https://www.portauthoritynsw.com.au/sydney-harbour/port-services-facilities/notices/local-marine-notices/

BESIX Watpac must notify Transport for NSW a minimum of 20 working days prior to MWA establishment so that a marine notice may be issued to vessel operators. These notices give safety advise about potential hazards and special events including wharf closures and exclusion zones. For the latest Marine Notices visit:

https://roads-waterways.transport.nsw.gov.au/maritime/using-waterways/restrictions-closures/marine- notices/index.html

The Marine Subcontractor shall mark the construction footprint with yellow flashing buoys to incorporate mooring blocks and lines.

3.6 Marine Animals

Should BESIX Watpac or the marine subcontractor sight any stranded or injured marine mammals (including whales, dolphins, or seals), the sighting will be reported to the VTS as required.

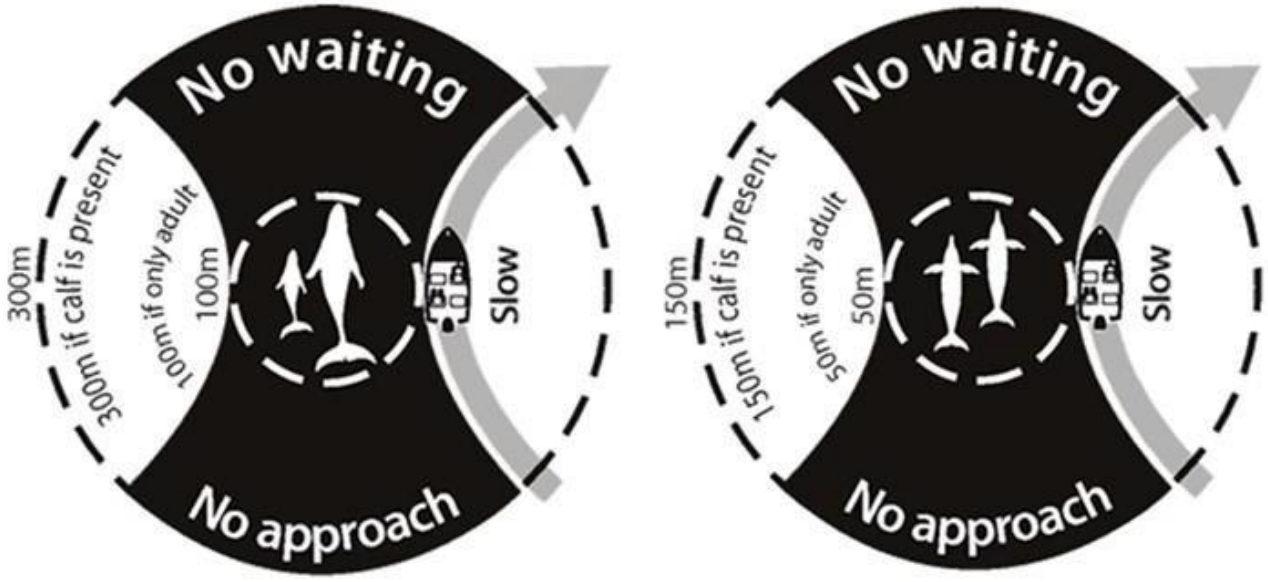


Figure 4 NSW regulations for vessel approach and distance from whales (left) and dolphins (right)

Vessels must keep a distance of at least 100 m from whales (300m if a whale calf is present), while vessels that can make fast and erratic movements such as jet skis or parasail boats, must stay at least 300 m away. Vessels must travel at a constant slow speed, leave a negligible wake and no more than two vessels are allowed to approach a whale at the same time.

Sightings of any injured or stranded marine mammals, including whales, dolphins, and seals, can be reported from anywhere along the NSW coast to wildlife rescue charity ORRCA through its 24/7 Rescue Hotline on 02 9415 3333.

3.7 Threatened Fauna Species at Bank Street Park

The vegetation and habitat at Bank Street Park MWA form a potential habitat for a number of threatened fauna species (refer to Biodiversity Development Assessment Report (Eco Logical), revision 4, dated 27 November 2023 from the SSDA reports):

- White's Seahorse (Hippocampus whitei) listed as endangered under the Fisheries Management Act 1994 (FM) Act and the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

Initial field surveys identified that the buildings and seawall that are to be removed and refurbished may provide habitat for threatened michiropteran species.

Three possible species credit species were recorded during targeted surveys including:

- Miniopterus australis (Little Bent-winged Bat) - listed as vulnerable under the BC Act
- Miniopterus orianae oceanensis (Large Bent-winged Bat) - listed as vulnerable under the BC Act
- Myotis macropus (Southern Myotis) - listed as vulnerable under the BC Act

The results from the targeted surveys indicate that microbats only utilise the subject land on rare occasions and are not roosting/breeding or regularly foraging within the subject land. A Microbat Management Plan (MMP) will be prepared prior to demolition works to minimise impacts to microbats from the proposed construction.

Three Matters of National Environmental Significance (MNES) listed under the EPBC Act were identified:

- Limosa lapponica baueri (Bar-tailed Godwit)
- Calidris ferruginea (Curlew Sandpiper)
- Pteropus poliocephalus (Grey-headed Flying-fox)

Assessments of significance were undertaken for these MNES concluding that the proposed works are unlikely to have a significant impact on these species.

3.8 Fuelling

The re-fuelling of generators/piling power packs and mobile equipment on board the construction vessels will be carried out with the diesel fuel cell onboard. The flexible pipe connected to the bowser is fitted with a manually operated pump and this is equipped with a lock that will be locked shut when not in use. The fuel cell has a fire extinguisher and spill kit that is stored nearby and will be appropriately bunded.

All personnel involved in fuelling equipment wear appropriate PPE during the operation as outlined in the relevant SWMS.

The marine subcontractor must provide a Safe Works Method Statement (SMWS) & Environmental Works Method Statement (EWMS) for this activity.

3.9 Environmental Emergency Response Procedure

Minor spillages into the harbour are to be contained with an oil absorbent boom and pads in the spill kit. If the incident is beyond the control of the crew of the vessel the crew **must** contact the Port Authority of NSW on +61 (02) 9296 4999 immediately and report the incident to the Harbour Master on VHF Channel 13. Specify the following:

- Specify pollutant type and range of discharge, time and location of the spill, size of the area impacted, names and contact numbers of those involved in the incident and nature of response actions underway.
- Contact the BESIX Watpac Emergency Contacts listed in Section 3.1.2.
- If the incident is significant, the Contractors Authorised Person to notify the Environmental Protection Agency (EPA).

Port Authority provides a 24-hour emergency response that can deal with incidents in Sydney Harbour.

In the case of any emergency involving life or property, call Triple Zero (000) immediately.

3.10 Chemical & Dangerous Goods Storage

BESIX Watpac will ensure that all risks associated with the handling, storage and use of hazardous materials are managed as per the product SDS and in accordance with Safe Work Australia ‘Managing Hazardous Chemicals in the Workplace – December 2022.

The marine subcontractor must provide a Safe Works Method Statement (SWMS) & Environmental Works Method Statement (EWMS) for this activity.

3.11 Vessel Specifications

The marine contractor (once appointed) will provide all details for floating plant to the Bank Street Park Marine Works Area. This will include:

- Barges including a piling barge
- Small Harbour tug boats
- Vessels such as 6m work boats

3.12 Towage Plan

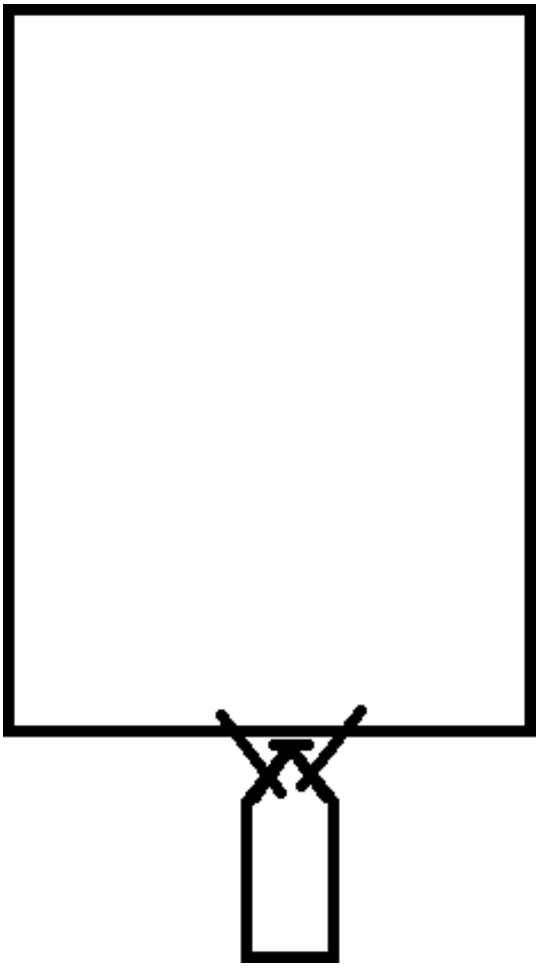


Figure 5 General towing arrangement

All tug movements to and from the site will be completed in the arrangement shown in Fig, 5. In general terms the stern tug will be attached to the barge in order to form a composite unit engine tug. A spotter will be employed at the front of the barge during tow to scan for any oncoming traffic and obstacles.

Generally, the tug will remain as a composite unit for berthing and mooring operations on either the bow or stern side of the barge depending on conditions i.e. wind or current or in the event of having to go alongside a berth.

In the event of inclement weather, it may be necessary for the assisting shoulder tug to tow the barge on a tow line behind the tug.

If required, a workboat will be made fast on either port or starboard shoulder depending on operational circumstances in such a manner that it can square off and push/pull at low speed and can provide propulsion and braking assistance as required.

The crane and piling barges are fitted with winches and a 4-point mooring system fit for purpose. The barge anchors will be fitted with buoys and retrieving pennants. The mooring system will enable the barges to anchor and accurately position over the worksite. When not in operation the mooring system will allow the barges to occupy a relatively small mooring envelope given, they will not swing at anchor.

Wherever possible, barges will be moored against new or existing mooring piles.

The barges and tug will display the appropriate day shapes and lights at all times under the International Rules for Prevention of Collision at Sea, Australian Identification System (AIS), as well as any additional requirements that the Ports Authority of NSW may deem necessary at the time.

3.13 Traffic Management Plan

The path of travel for construction barges, vessels, and the like from the marine contractor's shipyard in Rozelle Bay to the MWA is shown in Fig.6. Larger barges will be towed in the arrangement outlined in section 3.11.

Rozelle and Blackwattle Bays are known rowing and dragon boat courses. Tug and Workboat masters will be from local subcontractors with local knowledge of what paths to take. Barge and vessel movements will be coordinated to suit construction and to avoid other vessel traffic. Refer to Appendix D for the Blackwattle Bay Rowing Map.

The local knowledge rule is to be followed:

- Vessels departing Rozelle Bay and Blackwattle Bay will take priority when navigating under the Old Glebe Island Bridge.
- Inbound vessels must standby to allow for a clear navigational path of outbound vessels prior to navigating safely under the bridge and into the bays.

In the event of inclement weather or other unsafe working conditions, the BESIX Watpac Site Supervisor may direct that works shall cease and construction vessels be secured on dedicated moorings.

Any vessel connected with the project shall follow the directions of the Harbour Master at all

times. Approved site working hours under the approved SSDA are as follows:

- 7:00 am to 5:30 pm Monday to Friday,
- 7:30 am to 3:30 pm Saturdays
- Night works or 'Out of hours' works as required with consultation with the community and INSW.

Marine subcontractor to submit SWMS for movement of barge, gangway & pontoon from subcontractor yard to site.

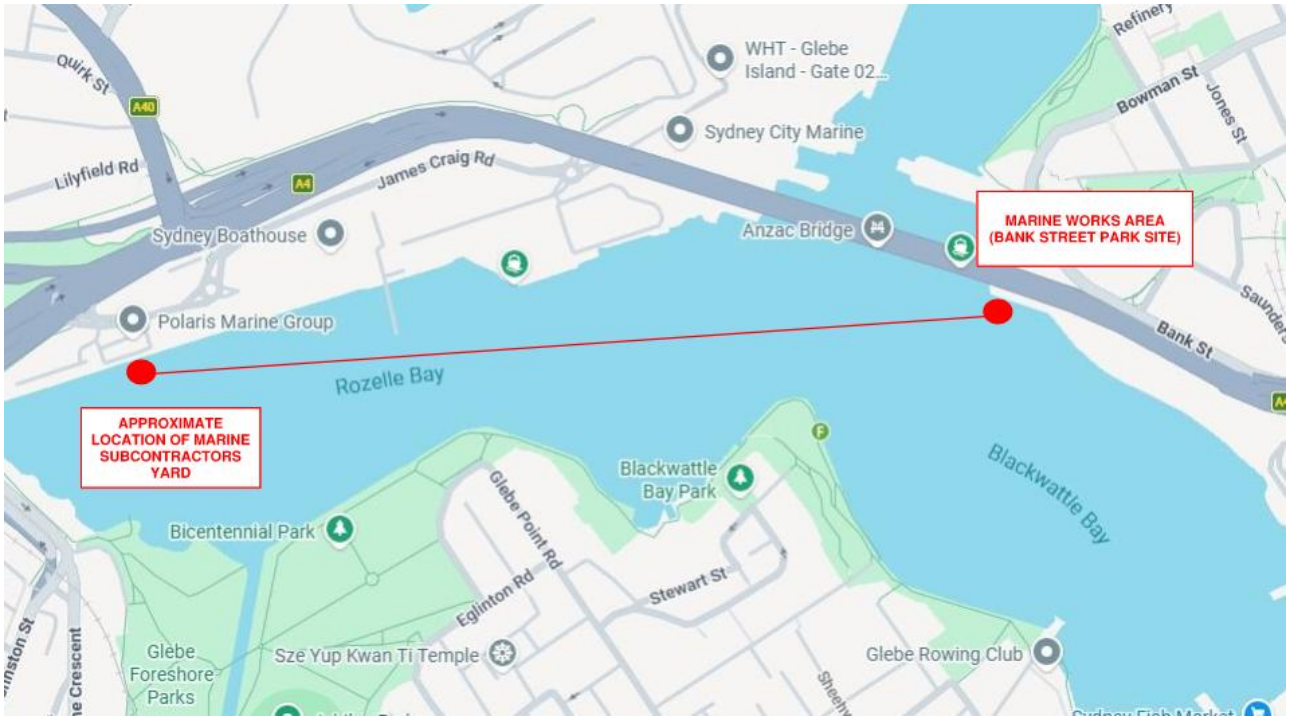


Figure 6 Path of Travel from Marine Subcontractor shipyard. Reference; Google Maps.

Appendix A
TBA – Barge Specification

By Subcontractor TBA

Caption: One Central Park, Sydney

Appendix B
TBA – Indicative Mooring Plans

By Subcontractor TBA

Caption: One Central Park, Sydney

Appendix C
Maritime Construction Risk Matrix

Caption: One Central Park, Sydney

BESIX Watpac

PROJECT RISK REGISTER

Last Reviewed - 21 January 2026

Project Name: Bank Street Park

Construction Maritime Risk Matrix

STOP. THINK. ACT.
Work safe. Home safe.

RISK MATRIX

a. Identify potential hazards associated with the activity through the use of the Risk Identification Checklist (Following Pages)
b. Perform a risk assessment for the hazards identified by:
(i) Determining the consequences (refer Table 1);
(ii) Determining the probability of the event occurring (refer Table 2);
(iii) Apply the values obtained from Tables 1 & 2 to the Qualitative Risk Matrix (Table 3) to obtain the resultant Risk Score and Level.

TABLE 1 - CONSEQUENCE TABLE

Given that the event occurs, what is the likely outcome?

LEVEL	*DESCRIPTOR*	*CONSEQUENCE*
1	Insignificant	No injury
2	Minor	First aid treatment
3	Moderate	Medical treatment required
4	Major	Extensive injuries
5	Catastrophic	Death

TABLE 2 - LIKELIHOOD TABLE

How likely is it that the event will occur?

LEVEL	*DESCRIPTOR*	*DESCRIPTION*
A	Almost Certain	Event expected to occur in most circumstances
B	Likely	Event will probably occur in most circumstances
C	Possible	Event might occur in some circumstances
D	Unlikely	Event could occur at some time
E	Rare	Event may occur only in exceptional circumstances

TABLE 3 - QUALITATIVE RISK ASSESSMENT MATRIX

LIKELIHOOD	*1 Insignificant*	*2 Minor*	*3 Moderate*	*4 Major*	*5 Catastrophic*
A. Almost Certain	H 11	H 16	E 20	E 23	E 25
B. Likely	M 7	H 12	H 17	E 21	E 24
C. Possible	L 4	M 8	H 13	E 18	E 22
D. Unlikely	L 2	L 5	M 9	H 14	E 19
E. Rare	L 1	L 3	M 6	H 10	H 15

RISK PRIORITISATION LEVEL			
Low Risk (1-5)	Moderate (6-9)	High (10-17)	Extreme (18-25)

LEGEND	
E	extreme risk; immediate reaction required - SOP/SWMS to be prepared (18-25)
H	high risk; senior management to be aware of high risks (10-17) Also manage by routine procedures and relevant JSAs
M	moderate risk; management responsibility must be specified manage by routine procedures (6-9)
L	low risk; manage by routine procedures (1-5)
NOTE: The implementation of control measures MUST be prioritised based on level/rating of risks	

TABLE 4 - ORDER OF HIERARCHY	LEVEL
Eliminate	1
Substitute	2
Isolate	3
Engineer/Redesign	4
Administration	5
PPE	6

Diving

Relevant Legislation:

- Work Health and Safety Regulation 2017, Part 4.8 Diving Work
- AS/NZS 2299.1 Occupational diving operations
- AS/NZS 2815 Training and certification of occupational divers

Project Activity Hazard and Risk Assessment	Pre-Control			Post Control			
	Likelihood	Consequence	Score	Likelihood	Consequence	Score	Applicable control/s
Drowning	Possible	Catastrophic	E22	Rare	Catastrophic	H15	1-16,18-21,25
Decompression Illness	Unlikely	Moderate	M9	Unlikely	Moderate	M9	1-16,18-23,25
Weather	Possible	Moderate	H13	Unlikely	Moderate	M9	1-4,16-18,25
Entrapment or Entanglement	Possible	Moderate	H13	Unlikely	Moderate	M9	1-17,24-25
Water/Environmental conditions	Possible	Moderate	H13	Unlikely	Moderate	M9	1-4,16,25
Water Inlets	Possible	Minor	M8	Rare	Minor	L3	1-2,4,16-17,25
Shipping Movements/Nearby Works	Possible	Moderate	H13	Unlikely	Moderate	M9	1-2,4,16-17

HOC Level	Levels of Hierarchy of Control 1. Elimination 2. Substitution 3. Isolation 4. Engineering 5. Administration 6. PPE	Responsibility	Control number
1, 5	A diving operation is only to be conducted if there is no other method available to carry out the work, such as works being performed on or from the surface, use of remotely operated vehicles (ROVs), works carried out from the deck of vessels etc.	**Project Manager / Site Manager / Project Safety Advisor/ Coordinator / Subcontractor**	**1**
5	Contractors undertaking diving works will develop and provide to Watpac safe systems of work which includes adequate detail on how the risks associated with diving will be managed. This will include the development of a safe work method statement (SWMS) for the high risk construction activity of - work that is carried out on, in or adjacent to a road, railway, shipping lane or other traffic corridor in use by traffic other than pedestrians (where applicable); - carrying out work involving diving. The safe systems of work shall include a diving operations manual and dive plan, with documentation relating to the: * qualification and fitness of divers as aligned to the scope of works; * diving equipment and breathing gas used; * depth and duration of the dive; * decompression schedule; * tools to be used; and * the tasks and duties of each person involved in the dive.	**Subcontractor / Site Manager / Project Safety Advisor / Coordinator**	**2**
5	Safe systems of work will be developed and provided by the subcontractor performing diving works detailing specific controls for the continual monitoring of associated hazards (e.g. water conditions, tides and weather).		**3**
5	The subcontractor carrying out diving work is to develop an emergency procedure specific to their scope of work. The subcontractor must train their workers in the emergency procedure and provide evidence of this training to Watpac. A copy of the emergency procedure is to form part of the diving operations manual and dive plan, and be available at the dive site.		**4**
5	A Dive Supervisor is to be present at all times while a diver is in the water. A Dive Supervisor is to be certified as competent by an RTO for the class of diving supervision being performed: * Onshore Diving Supervision - SCUBA to 30m * Onshore Diving Supervision - SSBA (Surface Supplied Breathing Apparatus) to 30m * Onshore Diving Supervision - SSBA to 50m * Offshore Diving Supervision - SSBA to 50m * Offshore Diving Supervsion - Closed Bell		**5**
5	Workers performing diving works are to be certified as competent by an RTO for the class of diving works being performed: * Occupational SCUBA to 30m (Restricted) * Occupational SCUBA to 30m * Occupational SSBA to 30m (Restricted) * Occupational SSBA to 30m * Occupational SSBA to 50m (Restricted) * Occupational SSBA to 50m * Closed Bell		**6**
5	Whenever a diver goes underwater, or is subjected to pressure, the diver is to be attended by a diver's attendant, fit to undertake the required tasks and has a working knowledge of the following: * The requirements of underwater work; * Signals in use; * Decompression procedures; * Diving plant and equipment in use, including ancillary fittings such as pressure gauges, compressors and filters. The diver's attendant shall not be engaged on any other task other than that of diver's attendant while the diver is in the water or under pressure.		**7**
5, 6	A standby diver shall be present whenever a diver is underwater and shall be - a) a diver who is currently fit to dive; b) wherever possible, located on the surface; and c) if located on the surface, dressed and equipped to enable immediate entry into the water for the purpose of providing aid or assistance to a diver.		**8**

Diving

Relevant Legislation:

- Work Health and Safety Regulation 2017, Part 4.8 Diving Work
- AS/NZS 2299.1 Occupational diving operations
- AS/NZS 2815 Training and certification of occupational divers

Project Activity Hazard and Risk Assessment	Pre-Control			Post Control			
	Likelihood	Consequence	Score	Likelihood	Consequence	Score	Applicable control/s
Drowning	Possible	Catastrophic	E22	Rare	Catastrophic	H15	1-16,18-21,25
Decompression Illness	Unlikely	Moderate	M9	Unlikely	Moderate	M9	1-16,18-23,25
Weather	Possible	Moderate	H13	Unlikely	Moderate	M9	1-4,16-18,25
Entrapment or Entanglement	Possible	Moderate	H13	Unlikely	Moderate	M9	1-17,24-25
Water/Environmental conditions	Possible	Moderate	H13	Unlikely	Moderate	M9	1-4,16,25
Water Inlets	Possible	Minor	M8	Rare	Minor	L3	1-2,4,16-17,25
Shipping Movements/Nearby Works	Possible	Moderate	H13	Unlikely	Moderate	M9	1-2,4,16-17

HOC Level	Levels of Hierarchy of Control 1. Elimination 2. Substitution 3. Isolation 4. Engineering 5. Administration 6. PPE	Responsibility	Control number
5	All divers and attendants shall be trained in first aid so that, as a minimum, they are able to - a) control bleeding; b) administer 100% oxygen; c) care for an unconscious patient; and d) carry out cardiopulmonary resuscitation (CPR). In addition, a dive supervisor shall be further trained in the recognition and first aid management of diving-related medical problems as a supervisor, and in communicating findings to medical support. Evidence of this training is to be provided to Watpac.		9
5	For Surface-supplied breathing apparatus (SSBA), dive teams will consist of: * Dive depths to 1.5m - one supervisor, one diver, and one diver's attendant. The supervisor may act as the diver's attendant or carry out minimal surface duties provided that the following are met: a) A documented comprehensive risk assessment is provided to Watpac. b) This does not compromise the dive team's ability to respond to an emergency. c) The diving operation does not involve - i) poor visibility; ii) danger to the diver from natural currents or currents associated with weirs, dams, sluices, locks, outlets or inlets in the vicinity of the workplace; iii) risk of entrapment of the diver or entanglement, and provides unimpeded access to the surface; or iv) a situation in which third party assistance is not readily available in an emergency. If a dive team of two is used, the supervisor shall maintain constant visual contact with the diver and be capable of removing the diver from the water in an emergency or if the diver requests assistance.	**Subcontractor**	**10**
	* Dive depths to 20m - one supervisor, one diver's attendant, and one standby diver. The minimum dive team shall consist of three persons. * Dive depths over 20m but not deeper than 30m - one supervisor, one diver, one diver's attendant, one standby diver, and one standby diver's attendant. Supervisor may act as the diver's attendant where a documented comprehensive risk assessment is provided and the dive team's ability to respond to an emergency is not compromised. The minimum dive team shall consist of four persons. * Dive depths greater than 30m - one supervisor, one diver, one diver's attendant, one standby diver, and one standby driver's attendant. The minimum dive team shall consist of five persons. * When it is planned for two or more divers to be in the water at the same time, a diver's attendant shall be present for each diver, and standby divers shall be present.		
5	Contractors undertaking diving works are to ensure that a dive safety log is kept, containing the following information about each dive carried out by a worker - a) the name of the worker who carries out the dive, b) the name of any other person with whom the dive is carried out, c) the name of the competent person appointed to supervise the diving work, d) the date and location of the dive, e) the time each diver enters and leaves the water, f) the maximum depth of the dive, g) any incident, difficulty, discomfort or injury that occurs or is experienced during the dive, h) if the dive was carried out usinga dive computer - the dive time, i) if the dive was carried out using dive tables - the repetetive dive group, if available, and either the bottom time or the dive time, j) if the repetetive group and surface interval result in a repetetive factor - the surface interval and the repetetive factor, k) if the dive is carried out using EANx - (i) the oxygen content of the EANx, and (ii) the maximum operating depth of the EANx, l) if the dive is carried out using mixed gas - (i) the oxygen content and the nitrogen content (if any) of the gas, and (ii) the maximum operating depth of the mixed gas, and (iii) the minimum operating depth of the bottom mix.		**11**
5	Diving operations using SCUBA shall only be carried out where the duration of the dive can be calculated and controlled so as to ensure that the diver has sufficient breathing gas available to permit the divers's projected bottom time plus a minimum one-third of the total supply safety margin.		**12**

Diving

Relevant Legislation:
- Work Health and Safety Regulation 2017, Part 4.8 Diving Work
- AS/NZS 2299.1 Occupational diving operations
- AS/NZS 2815 Training and certification of occupational divers

Project Activity Hazard and Risk Assessment	Pre-Control			Post Control			
	Likelihood	Consequence	Score	Likelihood	Consequence	Score	Applicable control/s
Drowning	Possible	Catastrophic	E22	Rare	Catastrophic	H15	1-16,18-21,25
Decompression Illness	Unlikely	Moderate	M9	Unlikely	Moderate	M9	1-16,18-23,25
Weather	Possible	Moderate	H13	Unlikely	Moderate	M9	1-4,16-18,25
Entrapment or Entanglement	Possible	Moderate	H13	Unlikely	Moderate	M9	1-17,24-25
Water/Environmental conditions	Possible	Moderate	H13	Unlikely	Moderate	M9	1-4,16,25
Water Inlets	Possible	Minor	M8	Rare	Minor	L3	1-2,4,16-17,25
Shipping Movements/Nearby Works	Possible	Moderate	H13	Unlikely	Moderate	M9	1-2,4,16-17

HOC Level	Levels of Hierarchy of Control 1. Elimination 2. Substitution 3. Isolation 4. Engineering 5. Administration 6. PPE	Responsibility	Control number
5	No dive shall be undertaken using SCUBA where - a) prolonged physical exertion may be required by the diver; b) the diving operation requires the use of cranes, surface-powered equipment or surface-controlled equipment; c) direct access to the surface cannot be maintained, or there is the risk of entanglement; d) decompression stoppages may be required; e) the maximum depth of the dive exceeds 30m; or f) the partial pressure of the oxygen being breathed by the diver exceeds 140 kPa.	**Site Manager / Subcontractor**	**13**
5	The use of SCUBA shall be restricted to activities where the nature of the task to be performed does not significantly increase the level of risk associated with the dive. Such activities may include the following - a) Single dives for inspection purposes. b) Light work of short duration where any tools or equipment used by the diver do not present hazards or increase risk to the diver, and are such that they can be manually handled and safely controlled by the diver.		**14**
5	For SCUBA, dive teams will consist of: * Dive depths to 1.5m - one supervisor, one diver, and one diver's attendant. The supervisor may act as the diver's attendant or carry out minimal surface duties provided that the following are met: a) A documented comprehensive risk assessment is provided to Watpac. b) This does not compromise the dive team's ability to respond to an emergency. c) The diving operation does not involve - i) poor visibility; ii) danger to the diver from natural currents or currents associated with weirs, dams, sluices, locks, outlets or inlets in the vicinity of the workplace; iii) risk of entrapment of the diver or entanglement, and provides unimpeded access to the surface; or iv) a situation in which third party assistance is not readily available in an emergency. If a dive team of two is used, the supervisor shall maintain constant visual contact with the diver and be capable of removing the diver from the water in an emergency or if the diver requests assistance.	**Subcontractor**	**15**
	* Dive depths up to 30m - one supervisor, one diver, one diver's attendant, and one standby diver. The dive shall be controlled by a dive supervisor on the surface. Supervisor may act as the diver's attendant or carry out minimal surface duties where a documented comprehensive risk assessment is provided and the dive team's ability to respond to an emergency is not compromised.The supervisor shall not be nominated as the diver or standby diver. Where the safety of the divers is reliant on the buddy system, the divers shall maintain visual contact and be able to render immediate assistance to each other as required.		
5	The relevant Permit to work systems will be implemented as required, including: **- S08-04-94.01 Dive Permit;** **- S08-04-07 Confined Space Permit**	**Site Manager / Project Safety Advisor / Coordinator / Subcontractor**	**16**
5	A Watpac project management representative shall facilitate a daily coordination meeting with all contractors working in or near water detailing the days operations, associated hazards (including expected weather and tide conditions), risks, and the controls to be exercised. The coordination meeting shall be recorded using S03-01-01 Record of Toolbox Meeting and signed off by all parties. The record of the daily coordination meeting shall be included in the subcontractor daily pre-start meetings.	**Site Manager**	**17**
5	Gas cylinders used in association with diving operations shall be identified as being in compliance with AS 2030.1 'Gas cylinders - General requirements'. Industrial or medical gases used or stored at the site or used in diving operations shall be colour-coded in accordance with AS 4844 'Gas cylinders for industrial, scientific, medical and refrigerant use - Labelling and colour coding'. Diver's breathing air cylinders shall be durable marked with the word 'AIR' in letters not less than 50mm high and in a contrasting colour to the body of the cylinder.	**Subcontractor**	**18**
5	Divers are to be a minimum of 18 years of age and hold a certificate of medical fitness to dive (valid for up to 12 months), issued by a medical practictioner specifically trained in underwater medicine.	**Site Manager / Project Safety Advisor / Coordinator / Subcontractor**	**19**
5	Pressure gauges are to be calibrated at a maximum of 12 months. In environments where the gauge is subjected to heavy or rough use, a calibration period of six months shall be applied.	**Subcontractor**	**20**

Diving

Relevant Legislation:

- Work Health and Safety Regulation 2017, Part 4.8 Diving Work
- AS/NZS 2299.1 Occupational diving operations
- AS/NZS 2815 Training and certification of occupational divers

Project Activity Hazard and Risk Assessment	Pre-Control			Post Control			
	Likelihood	Consequence	Score	Likelihood	Consequence	Score	Applicable control/s
Drowning	Possible	Catastrophic	E22	Rare	Catastrophic	H15	1-16,18-21,25
Decompression Illness	Unlikely	Moderate	M9	Unlikely	Moderate	M9	1-16,18-23,25
Weather	Possible	Moderate	H13	Unlikely	Moderate	M9	1-4,16-18,25
Entrapment or Entanglement	Possible	Moderate	H13	Unlikely	Moderate	M9	1-17,24-25
Water/Environmental conditions	Possible	Moderate	H13	Unlikely	Moderate	M9	1-4,16,25
Water Inlets	Possible	Minor	M8	Rare	Minor	L3	1-2,4,16-17,25
Shipping Movements/Nearby Works	Possible	Moderate	H13	Unlikely	Moderate	M9	1-2,4,16-17

HOC Level	Levels of Hierarchy of Control 1. Elimination 2. Substitution 3. Isolation 4. Engineering 5. Administration 6. PPE	Responsibility	Control number
5	Oxygen resuscitation equipment shall be available at the dive site for immediate use if required. The oxygen equipment used shall be capable of providing a spontaneously breathing patient with an inspired oxygen concentration of 100%. The equipment shall also facilitate oxygen enriched artificial ventilation of a non-breathing patient.	**Site Manager / Project Safety Advisor / Coordinator / Subcontractor**	**21**
5	A first aid kit is to be available at the dive site. A specific compression chamber first aid kit shall be available if a recompression chamber is available. Emergency recompression support shall be organised for all diving operations. This may involve a chamber on-site or at a distance and the chamber may or may not be dedicated to support of the diving operation. If a chamber proposed for hyperbaric support is not dedicated to the diving operation, arrangements shall be made to ensure that the chamber will be available if needed. An operational recompression chamber shall be located on-site when - (a) decompression diving is undertaken; (b) free or buoyant ascent training is being conducted; (c) diving is planned to greater than 30 m water depth; (d) diving exceeds the depth/time limits given in Table 5.1 (below); (e) the nature of the environment or work to be conducted creates risk of extended bottom time, entraptment or uncontrolled ascent; or (f) where the nature of the plant or equipment used during the dive or on the dive site can be reasonably foreseen to result in a substantial increase in risk	**Subcontractor / Site Manager**	**22**
5	Diving operations shall be conducted only from a safe and suitable site or vessel, which at all times provides - (a) suitable access and exit for the divers; (b) means to recover an injured diver from the water; and (c) a means of communication to emergency and support services.	**Subcontractor**	**23**
5, 6	All diver's equipment shall be in accordance with the requirements of AS/NZS 2299.1 'Occupational diving operations', and maintained in accordance with the manufacturer's requirements. Records of inspection/maintenance is to be readily available and/or provided to Watpac.		**24**
3, 5	When diving near pumps or inlets, all services shall be de-energised and isolated. Evidence of de-energisation/isolation is to be provided to Watpac and recorded as part of **S08-04-94.01 Dive Permit.**	**Site Manager / Project Safety Advisor / Coordinator / Subcontractor**	**25**
Additional controls are to be listed below for critical risk controls and/or unacceptable residual risks (i.e. greater than H17)			

Last Reviewed - 21 January 2026

Domestic Commercial Vessels

Relevant Legislation:
- Marine Safety (Domestic Commercial Vessel) National Law Act 2012
- Marine Safety (Domestic Commercial Vessel) National Law Regulation 2013

Project Activity Hazard and Risk Assessment	Pre-Control			Post Control			
	Likelihood	Consequence	Score	Likelihood	Consequence	Score	Applicable control/s
Waterway Hazards	Possible	Moderate	H13	Unlikely	Moderate	M9	1,3,4,6-9
Vessel Capsizing	Possible	Major	E18	Rare	Major	H10	1-5,7,9-14
Wind and Tide Conditions	Possible	Moderate	H13	Possible	Minor	M8	1,3-9, 10, 11, 14
Falling Overboard	Possible	Moderate	H13	Unlikely	Minor	L5	1,5,7-9, 11, 13, 14
Vessel Collision	Possible	Major	E18	Unlikely	Major	H14	1,5,7-9, 14

HOC Level	Levels of Hierarchy of Control 1. Elimination 2. Substitution 3. Isolation 4. Engineering 5. Administration 6. PPE	Responsibility	Control number
5	Contractors working with Domestic Commercial Vessels (boats, barges, pontoons etc.) will develop and provide to BESIX Watpac safe systems of work which incudes adequate detail on how the risks associated with working in, over or adjacent to water/liquids where there is the risk of drowning will be managed. This will include the development of a safe work method statement (SWMS) for the high risk construction work activity of: - work that is carried out on, in or adjacent to a road, railway, shipping lane or other traffic corridor in use by traffic other than pedestrians; - carrying out work in or near water or other liquid that involves a risk of drowning. The safe systems of work will include documentation relating to the: * nature of the work; * use and inspection of buoyancy vests/personal floatation devices or other emergency equipment; * communication and supervisory measures; * fall prevention measures; * transfer of personnel between vessels; and * training of workers.	**Site Manager / Subcontractor / Project Safety Advisor/ Coordinator**	**1**
5	Owners of Domestic Commercial Vessels (boats, barges, pontoons etc.) will provide the following documentation to BESIX Watpac as required under the Marine Safety (Domestic Commercial Vessel) National Law: * Safety Management System; * Unique Identifier; * Certificate of Survey, non-survey vessel permit, Class C restricted operations permit, or another vessel permit or exemption; and * Certificate of operation, or Certificate of operation exemption.		**2**
4, 5	Where cargo is carried on deck of Domestic Commercial Vessels: * maximum deck loading limits are to be clearly identified on the deck; * cargo is to be secured to prevent movement; * cargo is to be distributed in a manner as to not adversely affect the heel and trim of the Domestic Commercial Vessel, considering: - locations of plant (cranes, excavators, winches); deck cargo and dunnage; personnel; fuel, ballast, and fresh water tanks; - the lifting of masses external to the vessel including shore-side items; mooring weights; salvage weights, navigation aids, existing piles etc.; - adding, removing or moving deck cargo using the vessel plant such as davit, crane, excavator or pile frame; - adding or removing deck cargo using tracked or wheeled vehicles such as excavators, forklifts, ATV's, trucks, trailers, wheelbarrows, utes and cars; - adding deck cargo that has a high centre of gravity or large windage profile. Approved documentation covering the stability of the vessel, and the specific loading requirements for plant being used on the Domestic Commercial Vessels, is to be readily available at all times.		**3**
5	Where plant is in use on Domestic Commercial Vessels, including vessel plant or mobile plant, information specific to the use of the plant in its capacity on the vessel is to be provided to BESIX Watpac, including any additional engineering requirements, load or lifting restrictions etc. to ensure the stability of the vessel.		**4**
5	Operators of Domestic Commercial Vessels are to hold the appropriate qualification for the type of vessel being operated: * Master less than 24 metres near coastal - command a commercial vessel less than 24 metres long; * Mater (inland waters) - command a vessel up to 24 metres long in inland waters; * Master less than 35 metres near coastal - command a vessel less than 35 metres near coastal; * Mate less than 80 metres near coastal - second in command of a commercial vessel up to 80 metres long; * Master less than 80 metres near coastal - command a commercial vessel less than 80 metres long.		**5**
5	A BESIX Watpac project management representative shall facilitate a daily coordination meeting with all Domestic Commercial Vessel operators where applicable, detailing the days operations, associated hazards (including expected weather and tide conditions), risks, and the controls to be exercised. The coordination meeting shall be recorded using S03-01-01 Record of Toolbox Meeting and signed off by all parties. The record of the daily coordination meeting shall be included in the subcontractor daily pre-start meetings.	**Site Manager**	**6**
5	The Domestic Commercial Vessel contractor shall develop an emergency procedure specific to their scope of work. Personnel working on Domestic Commercial Vessels shall be trained in the emergency procedure and evidence of this training provided to BESIX Watpac.	**Subcontractor / Site Manager / Project Safety Advisor / Coordinator**	**7**
1, 4, 5	Where practicable, fall prevention measures must be provided on Domestic Commercial Vessels, such as: * Permanent guardrails; * Removable guardrails (where permanent guardrails may impede the vessel's operations; Where railings cannot be fitted, the vessel owner shall provide a risk assessment identifying how the risk of falls will be managed.		**8**
5, 6	Where there is the risk of falling into water, a lifejacket meeting the requirements of AS 4758.1:2015 'Lifejackets - General requirements' must be worn. This includes: - When within 3 metres of a berth face/edge where there is no barrier or fall prevention system in place; - When working on a small vessel or pontoon; - When getting on or off a ship where there is the risk of falling into water; - When working suspended over water in a workbox or platform. There may be some instances where an auto inflatable lifejacket may be a risk. In these instances, the use of a non-inflatable lifejacket should be considered.		**9**

Domestic Commercial Vessels

Relevant Legislation:
• Marine Safety (Domestic Commercial Vessel) National Law Act 2012
• Marine Safety (Domestic Commercial Vessel) National Law Regulation 2013

Project Activity Hazard and Risk Assessment	Pre-Control			Post Control			
	Likelihood	Consequence	Score	Likelihood	Consequence	Score	Applicable control/s
Waterway Hazards	Possible	Moderate	H13	Unlikely	Moderate	M9	1,3,4,6-9
Vessel Capsizing	Possible	Major	E18	Rare	Major	H10	1-5,7,9-14
Wind and Tide Conditions	Possible	Moderate	H13	Possible	Minor	M8	1,3-9, 10, 11, 14
Falling Overboard	Possible	Moderate	H13	Unlikely	Minor	L5	1,5,7-9, 11, 13, 14
Vessel Collision	Possible	Major	E18	Unlikely	Major	H14	1,5,7-9, 14

HOC Level	Levels of Hierarchy of Control 1. Elimination 2. Substitution 3. Isolation 4. Engineering 5. Administration 6. PPE	Responsibility	Control number
5	A competent person, being a, Australian Marine Safety Authority (AMSA) accredited Naval Architect must provide: For existing/permanently mounted cranes: * Stability Book, stamped by AMSA * Load chart that is limited to the crane's capacity and stability For mobile/crawler cranes installed on vessel: * Roll on Plan * Lashing Plan * Structural and deck strength * Barge stability boook amendment * Load chart that is limited to the crane's capacity and stability	**Subcontractor / Site Manager / Project Safety Advisor / Coordinator**	**10**
5	After erection, and prior to use, the crane and vessel combination is to be inspected to ensure: * all ties anchorages and ballast are in place and correctly secured * the crane is configured in accordance with the crane manufacturer's or engineer's specifications * the crane configuration is free from defects that would prevent the vessel-mounted crane from handling the test load safely. Vessel mounted cranes are to be tested in accordance with AS 2550.1 Cranes, hoists and winches, with commissioning documentation provided to BESIX Watpac in accordance with 'Contracted Crane Activities'. After these tests have been completed, a full assessment of the vessel and crane combination is to be undertaken by a competent person, being the Barge Master or Barge Operator, and Crane Operator to ensure that the vessel and crane combination has withstood the test loadings without structural damage, and the mechanisms function free of any defect that will affect the safety of the crane.	**Subcontractor / Site Manager / Project Safety Advisor / Coordinator**	**11**
5	Crane operators must hold a high risk work licence for the following types of mobile cranes in use on a vessel: * a vehicle loading crane with a capacity of 10 metre tonnes or more * a slewing mobile crane * a non-slewing mobile crane with a capacity exceeding 3 tonnes	**Subcontractor / Site Manager / Project Safety Advisor / Coordinator**	**12**
5	Where the capacity of a crane has been de-rated for use on a vessel, this is to be clearly identified on the load charts kept with the crane. Rated capacity limiters or indicators are to be adjsuted to reflect any de-rating. The subcontractor is to implement controls to ensure that the crane is operating within the specified limits.	**Subcontractor / Site Manager / Project Safety Advisor / Coordinator**	**13**
5	Where Vessel-mounted cranes are in use in either loaded or unloaded conditions, the following shall be considered: * effect on freeboard (i.e. distance between the vessel's deck and the water) * the ability of the vessel to support the crane structure * any load capacity de-rating required for the crane to safely operate on the vessel * installation of stops or restraints to prevent the crane driving off the vessel's side * method of securing the crane to prevent unintended movement, particularly when working outside smooth water limits. * the vessel should be anchored during mobile crane operation, or tethered to a craft alongside if the vessel cannot be anchored * Where the crane can move along the deck of the vessel, lifting should only take place when the crane is secured to the deck, for example, by chains of adequate strength	**Subcontractor / Site Manager / Project Safety Advisor / Coordinator**	**14**
Additional controls are to be listed below for critical risk controls and/or unacceptable residual risks (i.e. greater than H17)			

Last Reviewed - 21 January 2026

Working Above-Near Body Water

Relevant Legislation:
- WHS Reg 2025, Chapter 6
- AS 4758.1 Lifejackets- General requirements

Project Activity Hazard and Risk Assessment	Pre-Control			Post Control			
	Likelihood	Consequence	Score	Likelihood	Consequence	Score	Applicable control/s
Persons falling into body of water	Possible	Major	E18	Rare	Major	H10	1-4, 11
Drowning	Unlikely	Catastrophic	E19	Rare	Catastrophic	H15	1,-11
Hypothermia	Unlikely	Major	H14	Unlikely	Minor	L5	1-4, 8-9
Heat Stress	Possible	Moderate	H13	Unlikely	Moderate	M9	1
Exposure to Adverse Weather	Possible	Moderate	H13	Possible	Minor	M8	1, 2, 4
Trip Hazards	Possible	Moderate	H13	Possible	Minor	M8	1, 4, 11
Slippery Surfaces	Possible	Moderate	H13	Unlikely	Moderate	M9	1, 2, 4, 11

HOC Level	Levels of Hierarchy of Control 1. Elimination 2. Substitution 3. Isolation 4. Engineering 5. Administration 6. PPE	Responsibility	Control number
5	Contractors working in, over or adjacent to water/liquids where there is the risk of drowning will develop and provide to Watpac safe systems of work which includes adequate detail on how the risks associated with working in, over or adjacent to water/liquids where there is the risk of drowning will be managed. This will include the development of a safe work method statement (SWMS) for the high risk construction work activity of - work that is carried out on, in or adjacent to a road, ~~railway,~~ shipping lane or other traffic corridor in use by traffic other than pedestrians (where applicable); - carrying out work in or near water or other liquid that involves a risk of drowning. The safe systems of work will include documentation relating to the: * nature of the work; * use and inspection of buoyancy vests/personal floatation devices or other emergency equipment; * communication and supervisory measures; * fall prevention measures; and * training of workers.	**Senior Site Supervisor / SWHSEA / Subcontractor**	**1**
5	Safe systems of work will be developed and provided by the subcontractor performing work in, over or adjacent to water/liquids where there is the risk of drowning detailing specific controls for the continual monitoring of associated hazards (e.g. water conditions, tides and weather).		**2**
5	The subcontractor carrying out work in, over or adjacent to water/liquids where there is the risk of drowning is to develop an emergency procedure specific to their scope of work. The subcontractor must train their workers in the emergency procedure and provide evidence of this training to Watpac		**3**
1, 2, 3, 5, 6	Where works are conducted above or near water, the following shall apply: - Where possible, works are to be conducted on land, with only essential works carried out above or near water to eliminate or minimise the risk of falling into water; - Where works must proceed on or near the water's edge, fall prevention devices must be utilised where practicable in accordance with S08-01-12 Work at Heights, such as scaffold, ~~workboxes,~~ and temporary guardrails. Consideration shall be given to water depth and conditions, tides and objects which could cause injury below the water's surface, potentially slippery or sharp surfaces and any specific PPE requirements to minimise the risks associated with slipping/falling into water (hard hats with chin straps etc.).		**4**
5, 6	Where there is the risk of falling into water, a lifejacket meeting the requirements of AS 4758.1:2015 'Lifejackets - General requirements' must be worn. This includes: - When within 3 metres of a berth face/edge where there is no barrier or fall prevention system in place; - When working on a small vessel or pontoon; When getting on or off a commercial vessel where there is the risk of falling into water; When working suspended over water in a ~~workbox~~ or platform. There may be some instances where an auto inflatable lifejacket may be a risk. In these instances, the use of a non-inflatable lifejacket should be considered.		**5**
6	Lifejackets are classified by application and buoyancy levels as follows: a. Level 275. This level is primarily for offshore use and by people who are carrying significant weights and thus require additional buoyancy. It is also of value to those who are wearing clothing which traps air and which may adversely affect the self-righting capacity of the lifejacket. It is designed to ensure that the user is floating in a safe position with the mouth and nose clear of the surface. b. Level 150. This level is intended for general offshore and rough weather use where a high standard of performance is required. It will turn an unconscious person into a safe position and requires no subsequent action by the user to maintain this position. c. Level 100. This level is intended for those who may have to wait for rescue, but are likely to do so in a safe position in sheltered water. The device should not be used in rough conditions.		**6**
5	Lifejackets are to be maintained in accordance with the manufacturer's requirements (12 monthly). Evidence of ongoing maintenance is to be provided to Watpac.	**Subcontractor**	**7**
6	Rescue equipment is to be positioned such that it is easily accessible in the case of an emergency..	**Senior Site Supervisor /SWHSEA/ Subcontractor**	**8**
5	No worker is to work alone where there is a risk that they could fall into a body of water.		**9**
6	Tool belts worn by personnel undertaking work activities on a body of water are to be of the quick-release type and safety boots to have zip for quick removal.		**10**
4	Where work on a body of water is undertaken at night and / or where visibility is poor, adequate lighting of the work site is to be provided.		**11**
Additional controls are to be listed below for critical risk controls and/or unacceptable residual risks (i.e. greater than H17)			

Last Reviewed - 21 January 2026

Additional Maritime Construction Risks

No.	Risk Event	Hazard	Initial Risk Rating	Mitigations Measures	Residual Risk Rating	Responsibility
1	Safe work site (over water)	Changes to barge or site conditions due to weather, water conditions or unauthorized access	13	Inspect site daily before work commences to identify hazards that appear over-night (needles, rubbish, damage to equipment, changed access, etc.). Complete Daily Site Hazard Inspection Checklist or equivalent. Rectify identified hazards immediately or barricade-off (quarantine) until rectified. Keep gates locked after hours.	5	Marine Subcontractor
2	Access to barges and workboats	Falls	13	Access ladder to be provided to and from barge and workboat. Maintain 3 points of contact with ladder at all times.	5	Marine Subcontractor
3	Delivery of materials by barges; impact from/with other vessels	Damage to vessels and structures	17	Barges to be towed to site by competent personnel. Tug master to be in control during move.	8	Marine Subcontractor
4	Barge Piling. Use opf drill rig.	Noise, bodily injuries, environmental spills, Falls from height, slips trips	13	Adhere to approved work hours as per SSDA. No Wash zone to be in place. Type 5 ear muff hearing protection to be worn. No debris in water. Carry out pre-start on all plant and equipment prior to work. Comply with relevant SWMSs. Place a floating boom around the work area. Competent operators ans Supervisor to be controlling task. Risk Assessment for Drill Rig to be completed. Drill rig operation to be checked by competent person prior to use. In the event of any abnormal noises shut down and notify Maintenance department.	8	Marine Subcontractor
5	Use of excavator on barge	Operator error, impact injuries, environmental spills	13	Operator to complete verification of competency prior to using excavator on barge. Plant Pre-Project Checklist Form to be completed prior to plant being used. Excavator to be secured/chained to deck. Plant risk assessment to be completed. Prestart to be completed. Work area to be barricaded. SWMS to be completed for excavation work. Spill kits to be available.	8	Marine Subcontractor
6	Concrete pumping for pile plug	Impact injury from blow-out or boom.	13	Pump lines to be inspected and maintained to Code of Practice. Protection to be put in place to avoid concrete entering water at end of pour. Plant Project Checklist Form to be completed prior to plant being used. Exclusion zone in place.	9	Marine Subcontractor
7	Prepare pile heads	Hot works	13	Qualified boilermaker to complete work. Fire extinguisher to be on standy. Permit system in place. PPE		Marine Subcontractor
8	Lifting of gangway over water	Lifting equipment failure, impact injuries	13	Lifting Plan and Risk Assessment to be completed for lifting over water Load not to be lifted over persons. Qualified Dogman and Crane Operator to perform task.	9	Marine Subcontractor
9	Man Overboard Emergency	Drowning	13	Person Overboard Procedure to be displayed. All employees to wear Type 1 Personal Flotation Device. Work boat on standby during marine works. Floating stretcher to be available. Trial of man overboard to be held in first week of project and then every three months after that. Trial evaluation to be by Supervisor and work team held to address improvements in rescue procedure.	5	Marine Subcontractor
10	Operating plant & equipment over water	Noise- vibration, Annoyance to local community, etc, Spills, Air pollution, disturbance to marine life.	13	Carry out regular maintenance on all plant Provide effective exhaust silencers Prevent hazardous goods entering waterway by not refuelling/decanting over water. Floating boom to be in place around work areas at all times. Bund the liquids Have spill kits readily available Minimise use of hazardous products Train personnel in emergency spill procedures If spill occurs activate Environmental Procedures Monitor proximity of marine mammals.	5	Marine Subcontractor
11	Towing of barges to site	Collision, spills, emissions	9	Transfer of barge contolled by competent personnel. Follow Harbour Master Directions (July 2025)	5	Marine Subcontractor

Appendix D
Blackwattle Bay Rowing Map

Caption: One Central Park, Sydney

ROZELLE AND BLACKWATTLE BAY ROWING/DRAGON BOAT GUIDE

When approximately 60 metres from centre of Anzac Bridge, turn to port and row towards the north western end of Rozelle Bay

STOP: Do not pass Waterways Construction building.

Turn to port and row towards Rozelle Bay Public Wharf.

Caution: Inbound/Outbound Vessels

Stop approximately 45 metres from Fishmarkets trawler wharf. Turn to port and row towards the centre of Anzac Bridge.

James Craig Road

NSW Maritime Office

"Liquidity"

Superyacht Marina

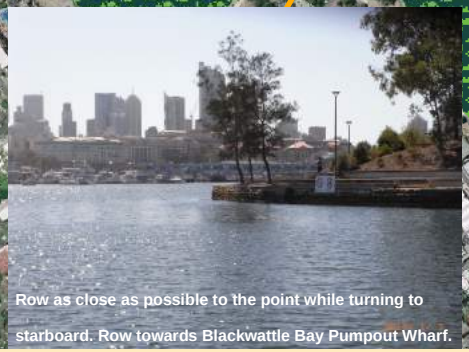
Caution: Stay Well Clear of Vessels Manoeuvring

Keep approximately 25-40 metres from marinas and vessels.

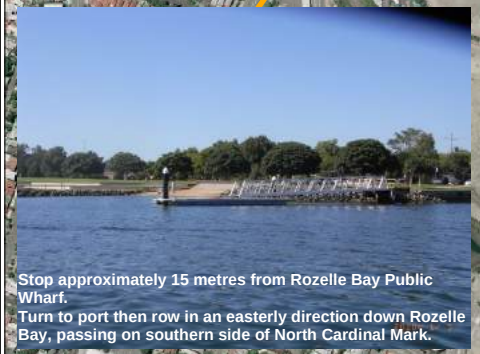
Rozelle Bay

Glebe Point

Blackwattle Bay



Row as close as possible to the point while turning to starboard. Row towards Blackwattle Bay Pumpout Wharf.



Stop approximately 15 metres from Rozelle Bay Public Wharf.
Turn to port then row in an easterly direction down Rozelle Bay, passing on southern side of North Cardinal Mark.

Stop approximately 45 metres from Blackwattle Bay Pumpout Wharf. Turn to port and row towards Fishmarkets trawler wharf.

Aerial Photography Supplied by SKM (Flown January 2009)

- Rowing and Dragon Boat Guide
- Anchoring Allowed
- Caution: Inbound/Outbound Vessels
- Proposed Development Area

General Rules to Remember:

Rule 5 - Look-out
Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.

Rule 6 - Safe Speed
Every vessel shall at all times proceed at a safe speed so that they can take proper and effective action to avoid collision and be stopped within a distance appropriate to the prevailing circumstances and conditions.

Rule 13 - Overtaking
Any vessel overtaking any other shall keep out of the way of the vessel being overtaken.

We advise all rowing craft/Dragon Boats to enter and exit the above course in the designated direction of travel.

File Location: U:\dmarkey\projects\Rozelle_Blackwattle\development_overview_A4.mxd

Appendix E
Construction Waste Management Plan

BESIX Watpac

Waste Management Plan

N231

Bank Street Park

9 January 2026

Revision History

Table 1 Revision History

Version	Date	Revision Description	Project/Site Manager Sign off
A	18/12/25	First Draft	FC
0	09/01/26	Issue pre Site Mobilization	FC

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1 Purpose

To minimise the amount of construction waste generated on this project by avoiding waste generation and implementing practicable and efficient re-use and recycling procedures for all residual materials.

1.1 Project Goal

The project's target is to re-use or recycle a minimum of 80% of construction waste by weight.

1.2 Responsibilities

BESIX Watpac will:

- Allocate clear responsibilities to subcontractors, suppliers and the project Waste Contractor
- Provide optimum product specification, sizing and packaging information to the Client
- Select materials with a high recycled content where appropriate
- Direct materials that can be reused back into off-site manufacturing processes
- Direct materials that can be recycled to an appropriate facility
- Provide clear signage of acceptable materials for each bin and monitor contents to prevent contamination
- Provide regular waste reports to the Client and site personnel

Subcontractors will:

- Provide advice to BESIX Watpac on optimum product specification, sizing and packaging
- Offer alternative products containing recycled materials which conform to specified requirements
- Order the correct quantity of materials and prefabricate off-site where possible
- Implement measures to prevent surplus materials and packaging from entering the site
- Manage wastes resulting from their work to maximise material re-use and recycling
- Clean their respective work areas daily and place wastes in the nominated waste bins

The Project Waste Contractor will:

- Provide advice on optimum resource recovery options
- Provide waste bins and off-site segregation facilities
- Coordinate the timely emptying / removal of bins from site
- Deliver materials to reuse and recycling facilities
- Provide receipts, records and Waste Reports for all waste

1.3 Planning and operation

The BESIX Watpac Project Team will strategically plan waste minimisation measures for each phase of the project based on the timing and sequence of construction activities.

The project will appoint a Waste Management Contractor during the early stage of the project. The Waste Management Contractor will collaborate with BESIX Watpac to ensure effective waste recycling, measurement, recovery and disposal is implemented through each phase of the project.

BESIX Watpac personnel in conjunction with subcontractors and the Project Waste Contractor will:

- Identify the type, volume and location of construction waste anticipated at each stage of the project

- Investigate the potential use of materials with a high recycled content
- Assess options for material sizing, packaging and off-site fabrication
- Review procedures for on-site segregation, off-site segregation and the return of products and packaging to suppliers

1.4 Training

BESIX Watpac personnel will reinforce waste minimisation responsibilities and awareness during site inductions, tool-box talks, onboarding meetings, audits and ongoing meetings.

1.5 Monitoring, Measuring and Reporting

The Site Supervisor will monitor site waste handling practices and regularly inspect the contents of bins.

The Waste Management Contractor will provide monthly Waste Reports that detail the tonnage and volume of waste generated and the total recycled by waste category.

The Project Manager will provide regular status reports to the Client and Senior Management.

1.6 Corrective Actions

BESIX Watpac personnel will monitor the waste management practices of subcontractors on site. Where a subcontractor fails to comply with the project's waste management procedures, the Site Manager/ Supervisor will be advised and a non-conformance raised. Corrective actions taken by the subcontractor shall be reviewed and approved prior to the non-conformance being closed out.

1.7 Waste segregation

Waste reuse and recycling will be achieved through on-site and off-site segregation of materials. Materials segregated for recycling will include:

- Glass
- Concrete
- Bricks and tiles
- Asphalt
- Timber
- Aluminium
- Plastic
- Paper and cardboard
- Plasterboard
- Polystyrene
- Insulation
- Steel and other metals
- Clean Fill
- Green Waste

Table 2 Resource Recovery

Waste Materials		Resource Recovered		Product
Mixed general waste (heavy)	➔	Excavated material Brick/Concrete Light waste	⇨	Landscape Supplies Recycled aggregates Paper, plastic, insulation products
Mixed general waste (light)	➔	Cardboard, Paper, Plastic Metal, steel,Timber Gyprock board	⇨	Paper, cardboard products Plastics, insulation materials Ferrous and nonferrous products Shredded chipboard products Plasterboard, gypsum products
Metals	➔	Metal offcuts	⇨	Ferrous and nonferrous products
Bricks	➔	Brick offcuts	⇨	Recycled aggregates
Concrete	➔	Pump washout	⇨	Recycled aggregates
Excess concrete returned for re-use / recycling	➔	Timber offcuts	⇨	Shredded chipboard products
Timber	➔	Soil, rock, clays	⇨	Fill material
Excavated material	➔	Green waste	⇨	Mulch
Green waste	➔	Metal offcuts	⇨	Ferrous and nonferrous products

1.8 Waste Disposal

Waste disposal will be in strict compliance with regulatory requirements. Hazardous wastes will be transported to facilities licensed by the EPA. Records of disposal shall be kept and tracker kept up-to-date.

Disposal of non-hazardous wastes to landfill will be as a last resort only.

1.9 Material Separation

1.9.1 Concrete, Tiles Glass

Separated on site for dedicated bins to be sent to local resource recovery centre for crushing. Likely to be reused for road base or crusher dust.

1.9.2 Metals

Separated on site for steel and nonferrous varieties in mixed construction bins and redirected via transfer station to be shredded or crushed at a transfer facility and sold into the manufacturing industry for reuse.

1.9.3 Timber

Separated on site and placed in mixed construction bins to be redirected at transfer facilities for further sorting and processing, Timber is then processed into mulch and sold to landscaping yards and local councils.

1.9.4 Plasterboard

Separated on site and directed to special plasterboard bins to be ordered at particular stage of project. Redirected to a dedicated plasterboard facility and materials recovered for use in landscaping products.

1.9.5 Paper/Cardboard

Separated on site for direction to a dedicated wheelie bin. Redirected to a local recycler and mulched for the production of paper and cardboard.

1.9.6 Plastics

Separated on site to be sent to local resource recovery for further reprocessing and separation to PET. HPDE, PVC, and LDPE. All non-PVC plastics baled for overseas processing and recycling, PVC sort for recycling.

Appendix F
Construction Soil and Water Management Plan

Bank Street Park
1A-19 Bank Street, Pyrmont, NSW

BESIX Watpac

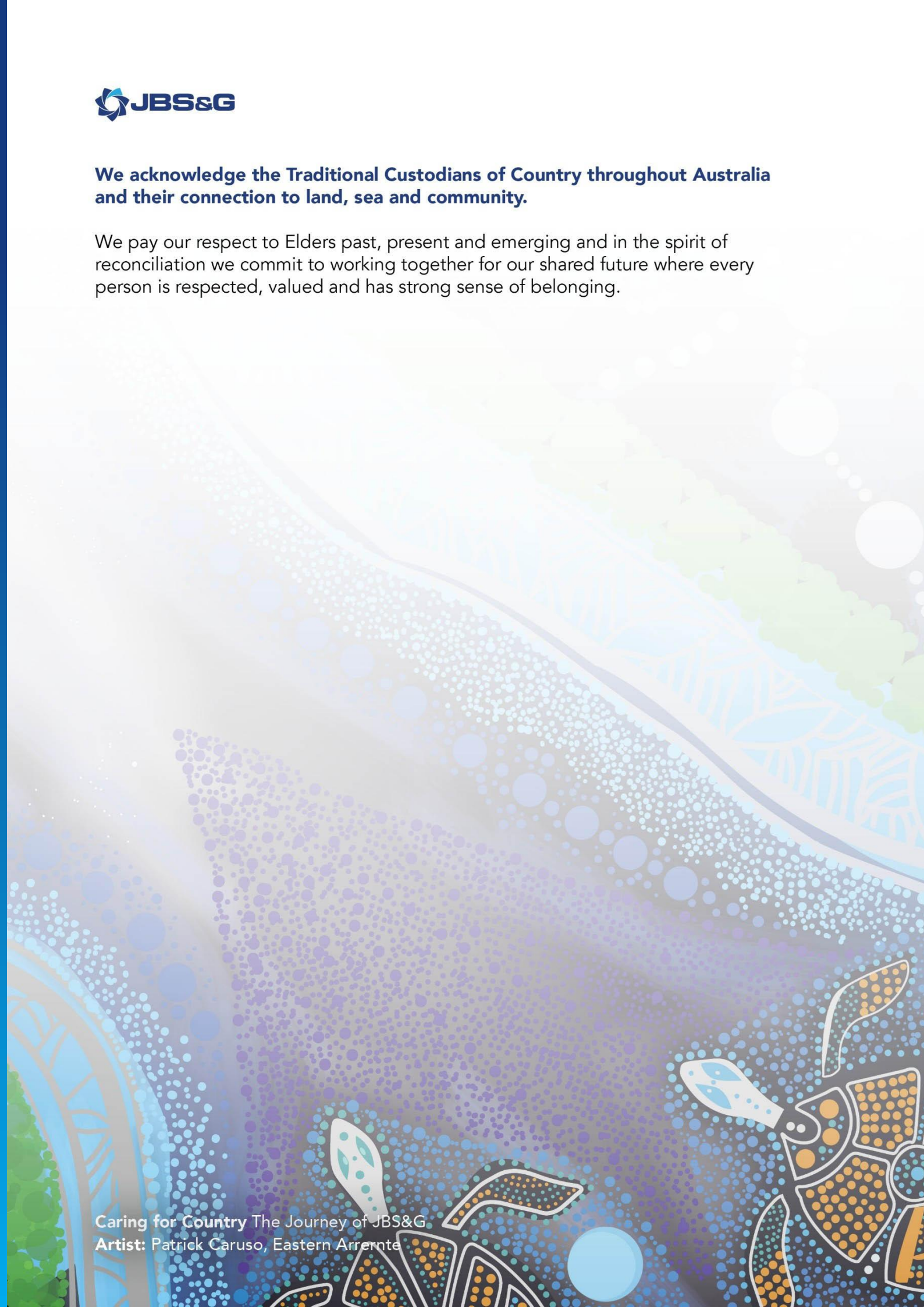
Construction Soil and Water Management Sub Plan (CSWMP)

70056 | 174041 (Rev1)

25 February 2026

We acknowledge the Traditional Custodians of Country throughout Australia and their connection to land, sea and community.

We pay our respect to Elders past, present and emerging and in the spirit of reconciliation we commit to working together for our shared future where every person is respected, valued and has strong sense of belonging.



Caring for Country The Journey of JBS&G
Artist: Patrick Caruso, Eastern Arrernte

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Appendix A **Limitations**
Appendix B **Erosion and Sediment Control Strategy**

Abbreviations

Term	Definition
AEP	Annual Exceedance Probability
AHD	Australian Height Datum
ARI	Average Recurrence Interval
ASS	Acid Sulfate Soils
ASSMP	Acid Sulfate Soils Management Plan
Blue Book	Managing Urban Stormwater: Soils and Construction (Landcom)
CEMP	Construction Environmental Management Plan
CSWMSP	Construction Soil and Water Management Sub Plan
DA	Development Application
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
ER	Environmental Representative
ESCP	Erosion and Sediment Control Plan
PASS	Potential Acid Sulfate Soils
LGA	Local Government Area
PCMP	Preliminary Construction Management Plan
RAP	Remedial Action Plan
SSD	State Significant Development
SWMP	Stormwater Management Plan / Stormwater Management Report
t	Tonne
TDS	Total Dissolved Solids
yr	Year

1. Introduction

JBS&G Australia Pty Ltd (JBS&G) was engaged by BESIX Watpac (the Client) to provide environmental (contaminated land) services for the new waterfront public park within Blackwattle Bay, to be known as Bank Street Park (the site). As part of this engagement, the Client has requested JBS&G prepare a Construction Soil and Water Management Sub Plan (CSWMSP).

This CSWMSP has been prepared for the approved State Significant Development (SSD-53386706) and is required under Condition C15 of the Minister's Conditions of Consent. The CSWMSP forms part of the Construction Environmental Management Plan (CEMP) and has been developed to guide the practical, on-site management of soil erosion, sediment control, stormwater, wet weather works, and flood-related risks during construction.

This CSWMSP is an implementation document. It operationalises the mitigation measures and commitments approved under the Environmental Impact Statement (EIS) and supporting technical reports. It does not reassess impacts or replicate detailed investigations already approved.

Figure 1.1 illustrates the location of the site at 1A-19 Bank St, Pyrmont, NSW, in relation to surrounding road networks, Blackwattle Bay and adjacent land uses. The approximate site boundary is shown in red.

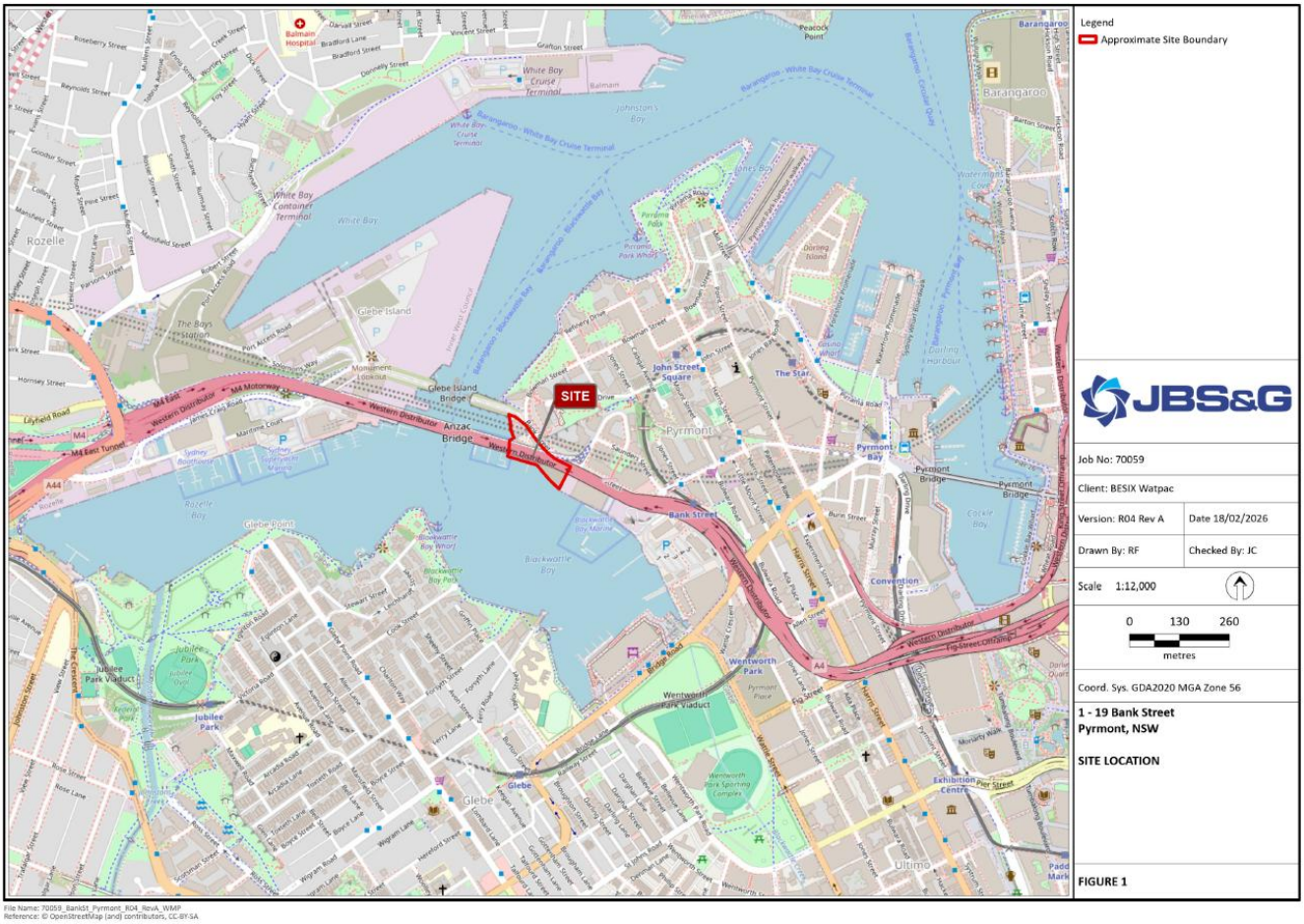

Figure 1.1: Site Location

2. Purpose and objectives

2.1 Purpose

The purpose of this CSWMSP is to describe the procedures, responsibilities, and control measures that will be implemented during construction to manage soil disturbance and water quality risks in accordance with Condition C15 and relevant best practice guidelines. A copy of these conditions is reproduced in **Table 2.1**

Table 2.1: Construction Soil and Water Management Plan Sub Plan Consent Conditions

Condition	Condition Description
C15	Prior to the commencement of works, the Applicant must submit to the satisfaction of the Certifier a Construction Soil and Water Management Sub-Plan (CSWMSP) 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.

2.2 Objectives

The objectives of this CSWMSP are to:

- Prevent or minimise soil erosion and sediment generation during construction
- Manage construction stormwater and wet weather works to prevent pollution
- Appropriately manage off-site flows entering or leaving the site
- Manage construction activities during flood events in a safe and environmentally responsible manner
- Protect downstream receiving environments, including Blackwattle Bay
- Ensure compliance with approval conditions and applicable guidelines

3. Environmental Requirements

3.1 Conditions of Consent

This CSWMSP has been prepared to satisfy Condition C15 of the Minister's Conditions of Consent. Condition C15 requires that the CSWMSP:

a) describes erosion and sediment control measures

b) describes wet weather management measures

c) identifies and manages off-site flows

d) addresses stormwater and flood management for construction activities, including the 1-year, 5-year, and 100-year ARI events

Other conditions relevant to soil and water management are addressed through the overarching CEMP and supporting sub-plans.

3.2 Condition C15 Compliance Mapping

Table 3.1 provides a summary of how the requirements of Condition C15 are addressed within this CSWMSP

Table 3.1: Condition C15 Compliance

Condition Requirement	CSWMSP Section	Relevant Measures
C15(a) Erosion and sediment controls	**Section 6.1**; **Section 7**	SW-01, SW-02, SW-09, SW-13, SW-14, SW-15, SW-16
C15(b) Wet weather management	**Section 6.2**; **Section 7**	SW-04, SW-05, SW-06
C15(c) Off-site flows	**Section 6.3**; **Section 7**	SW-09, SW-18
C15(d) Tide, stormwater and flood management	**Section 6.4**; **Section 7**	SW-03, SW-06, SW-11, SW-12

3.3 Approved Documents and Commitments

This CSWMSP has been prepared with reference to the following approved documents and plans:

EIS Documentation

- Architectus, 2024. Bank St Park. Appendix C – **Amended Mitigation Measures**. Prepared for Infrastructure NSW. 28 March 2024.
- Ecological, 2023. Bank Street Park – **Marine Ecological Assessment**. Prepared for Infrastructure NSW. 28 November 2023.
- Enspire. 2023. Bank St Park Development Application (SSDA). **Civil Engineering – Stormwater Management Report**. Prepared for Infrastructure NSW. 28 November 2023.
- JBS&G, 2023a. Bank St Park. **Acid Sulfate Soil Management Plan** Prepared for Infrastructure NSW. 26 October 2023.
- JBS&G, 2023b. Bank St Park. **Detailed Site Investigation**. Prepared for Infrastructure NSW. 26 October 2023.
- JBS&G, 2023. Bank St Park. **Remedial Action Plan**. Prepared for Infrastructure NSW. 26 October 2026.
- JK Geotechnics, 2023. Bank St Park. **Geotechnical Assessment**. Prepared for Infrastructure NSW. 28 November 2023.
- Mott MacDonald, 2023. Bank St Park. **Flood Risk and Impact Assessment**. Prepared for Infrastructure NSW. November 2023.

Erosion and Sediment Control

- ENSPIRE, 2026. **Erosion and Sedimentation Control Pla**n (Sheet 01). Stage 1 100% Detailed Design. Drawing No: BSP-BA-ENS-CI-DG-0301 Issue B. Status: For Construction. 28/01/2026
- ENSPIRE, 2026. **Erosion and Sedimentation Control Plan** (Sheet 02). Stage 1 100% Detailed Design. Drawing No: BSP-PK-ENS-CI-DG-0302 Issue B. Status: For Construction. 28/01/2026
- ENSPIRE, 2026.**Erosion and Sediment Control Details**. Stage 1 100% Detailed Design. Drawing No: BSP-OO-ENS-CI-DG-0321 Issue B. Status: For Construction. 28/01/2026
- ENSPIRE, 2026. **Sediment Basin Plan**. Stage 1 100% Detailed Design. Drawing No: BSP-PK-ENS-CI-DG-0331 Issue B. Status: For Construction. 28/01/2026

The requirements of these documents are implemented through the controls and management measures described in this CSWMSP.

3.4 Legislation and Guidelines

This CSWMSP has been developed in accordance with the following legislation and guidelines:

3.4.1 Commonwealth Legislations

- Environment Protection and Biodiversity Conservation Act 1999

3.4.2 NSW Legislation

- Contaminated Land Management Act 1997
- Environmental Planning and Assessment Act 1979
- Environmentally Hazardous Chemicals Act 1985
- Protection of the Environment Operations Act 1997 (POEO Act)
- Soil Conservation Act 1938
- Waste Avoidance and Resource Recovery Act 2001
- Work Health and Safety Act 2011

3.4.3 Guidelines and Standards

- Acid Sulfate Soil Management Advisory Committee (ASSMAC) (1998). Acid Sulfate Soil Manual.
- National Environment Protection Council (1999, amended 2013). National Environment Protection (Assessment of Site Contamination) Measure (ASC NEPM).
- National Health and Medical Research Council (NHMRC) (2011, updated 2018). Australian Drinking Water Guidelines.
- NSW Department of Primary Industries (2012). Aquifer Interference Policy (AIP).
- NSW Environment Protection Authority (EPA) (2014). Waste Classification Guidelines.
- NSW EPA (2022). Sampling Design Part 1 – Application, Contaminated Land Guidelines.
- NSW EPA – Transport and Tracking Waste Guidance (POEO Waste Regulation 2014 and NSW Environment Protection Act 2017 legislative requirements).
- NSW Government (2004). Managing Urban Stormwater: Soils and Construction, Volume 1 (Blue Book), 4th Edition.
- Safe Work Australia (2018). Code of Practice: How to Safely Remove Asbestos.

4. Existing Environment

4.1 Site History and Land Use

A review of previous investigations and approved EIS documentation indicates the site has a long history of reclamation and industrial use associated with Blackwattle Bay. Key aspects of the site history relevant to soil and water management include:

- The site and adjoining areas of Blackwattle Bay were progressively reclaimed
- From the early 1900s, the site was used for a range of commercial and industrial purposes, including timber handling, abattoirs, waste and materials handling
- Portions of the site were historically used for coal unloading, with coal fragments previously reported in seabed sediments and boreholes
- Former underground storage tanks containing fuels and petroleum products were removed in the mid-1990s, with associated excavation and validation works undertaken
- Demolition of former structures resulted in the removal of asbestos-containing materials
- Nearby activities include concrete batching and commercial marine operations

This history indicates the potential for disturbed fill materials, residual contamination and legacy industrial materials to be present within near-surface soils and sediments

4.2 Topography and Site Levels

The site is generally low-lying and relatively flat, with ground slopes typically less than 1 percent. Review of survey and topographic information indicates:

- Reclaimed land areas generally occur at elevations of approximately 2 metres Australian Height Datum (AHD)
- Surface water runoff from the site is anticipated to discharge directly downgradient to Blackwattle Bay to the south and western portion of the site, or to the local stormwater system depending on location

The low relief and proximity to tidal waters increase sensitivity to sediment mobilisation during construction if not appropriately managed.

4.3 Meteorological Conditions

Climatic data from the nearest Bureau of Meteorology station indicates the site experiences:

- Warm summers and mild winters typical of coastal Sydney
- An average annual rainfall of approximately 1,200 mm
- Rainfall occurring throughout the year, with higher monthly averages typically between January and June

These conditions increase the likelihood of rainfall occurring during construction and reinforce the need for effective wet weather and erosion and sediment controls.

4.4 Geology and Soils

Previous geotechnical and environmental investigations indicate subsurface conditions generally comprise:

- Variable depths of fill material near the shoreline and reclaimed areas, typically consisting of clayey sand, silty clay and industrial inclusions
- Natural estuarine and marine sediments comprising interbedded silty clays, sandy clays and clayey sands
- Underlying sandstone bedrock at depth

Fill and natural soils exhibit variable strength and plasticity, with fine-grained materials prone to erosion and mobilisation if exposed during construction.

4.5 Acid Sulfate Soils and PASS

Review of Acid Sulfate Soil risk mapping and site investigations indicates the site is located within an area of high probability of acid sulfate soils within underlying sediments. Sampling has also identified that the fill material below the water table contains PASS. Disturbance of these materials through excavation or dewatering has the potential to generate acidic runoff if exposed to air.

Management of actual and potential acid sulfate soils will be undertaken in accordance with the approved Acid Sulfate Soils Management Plan.

4.6 Groundwater

Available bore and investigation data indicate shallow groundwater conditions influenced by tidal fluctuations within Blackwattle Bay. Key characteristics include:

- Shallow standing water levels within fill materials and at the soil rock interface
- Groundwater salinity consistent with marine or estuarine conditions
- Hydraulic connectivity between site groundwater and surface waters of Blackwattle Bay

Construction activities involving excavation, dewatering or disturbance of subsurface materials have the potential to mobilise saline or contaminated water if not managed in accordance with approved procedures.

4.7 Flooding

Flood behaviour at and surrounding the site has been assessed in the approved Flood Risk and Impact Assessment. Key findings relevant to construction include:

- Flooding is influenced by overland flow paths and tidal conditions associated with Blackwattle Bay
- Parts of the surrounding road network are subject to inundation during larger flood events
- The site is generally subject to low flood hazard for smaller events, with increased hazard in defined flow paths during larger events

Flood extents and indicative flood levels for the 1-year, 5-year and 100-year ARI events are defined in the approved flood assessment and are referenced in this CSWMSP for construction planning and response purposes.

4.8 Offsite Stormwater Flows and Receiving Environment

Surface water runoff from the site discharges directly or indirectly to Blackwattle Bay. Off-site stormwater flows may also pass through or adjacent to the site depending on rainfall intensity and tide levels.

The proximity of Blackwattle Bay as a sensitive receiving environment requires careful management of erosion, sediment, slurry and stormwater discharges during construction to prevent water quality impacts.

4.9 Receiving Environments

Downstream receiving environments include Blackwattle Bay and associated marine habitats. These environments are sensitive to increased turbidity, sedimentation, and contaminant inputs, requiring robust construction-phase controls.

5. Environmental Aspects and Impacts

This section identifies construction activities that have the potential to affect soil stability, surface water quality and downstream receiving environments. The focus is on aspects requiring active management during construction, rather than reassessment of impacts previously addressed in the Environmental Impact Statement (EIS) or the Remedial Action Plan (RAP).

Potential contamination risks have been previously assessed in the Remedial Action Plan (R03 – Bank Street RAP, Rev 1) prepared by JBS&G. Detailed contamination characterisation, remediation requirements and validation criteria are provided in the RAP and are not repeated in this CSWMSP. This CSWMSP focuses on the prevention of off-site migration of sediment and contaminants via erosion, stormwater and surface water pathways.

Chemicals of potential concern (COPC) identified in the RAP include:

- Heavy metals (including arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc)
- Total petroleum hydrocarbons (TPH) and BTEX compounds
- Polycyclic aromatic hydrocarbons (PAHs)
- Asbestos containing material (ACM) within fill
- Potential Acid Sulfate Soils (PASS); and
- Saline groundwater influenced by tidal interaction with Blackwattle Bay.

Table 5.1 identifies key construction activities, associated environmental hazards and potential risks relevant to soil and water management. The environmental control measures described in **Section 6** and the management measures outlined in **Section 7** are designed to address these risks.

Table 5.1: Project Activities, Environmental Hazards, and Risks

Project Activity	Environmental Hazard (Including COPC)	Environmental Risk
Sediment and Soil Disturbance	Disturbance of fill containing heavy metals, PAHs, TPH and potential ACM. Increased sediment mobilisation.	Transport of contaminated sediment to stormwater network or Blackwattle Bay. Elevated turbidity and impacts to marine ecosystems.
Excavation and Bulk Earthworks	Exposure of contaminated soils, PASS and potentially saline groundwater. Alteration of site drainage patterns.	Acid generation and mobilisation of dissolved metals. Degradation of surface water quality.
Foreshore and Drainage-Adjacent Works	Interaction with marine-influenced groundwater and tidal sediments. Potential mobilisation of hydrocarbons or metals.	Sediment plumes, increased turbidity and contaminant transport to Blackwattle Bay.
Stockpiling and Material Handling	Rainfall contact with contaminated soils and fill materials. Dust generation from contaminated soils.	Sediment-laden runoff containing contaminants. Off-site migration via stormwater or windblown dust.
Management of Excavation Water	Accumulation of water in contact with contaminated soils or saline groundwater.	Discharge of saline or contaminated water if not appropriately treated and monitored.
PASS Disturbance	Oxidation of Potential Acid Sulfate Soils during excavation.	Generation of acidic runoff and mobilisation of metals to receiving waters.

Project Activity	Environmental Hazard (Including COPC)	Environmental Risk
Storage and Use of Chemicals and Fuel	Spills or leaks of fuels, oils, hydraulic fluids and construction chemicals.	Localised soil contamination and migration to groundwater or stormwater system.
Wet Weather and Flood Interaction	Increased runoff volumes interacting with disturbed or contaminated areas.	Failure of erosion controls, elevated turbidity and contaminant transport to Blackwattle Bay.
Temporary Works in Flood-Prone Areas	Floodwater interaction with plant, materials or stockpiles.	Mobilisation of sediment or contaminants during flood events.

6. Environmental Control Measures and Monitoring

This section describes the overarching control framework to manage soil and water risks during construction. Detailed, auditable management measures are provided in **Section 7**.

Figure 6.1 presents the indicative Erosion and Sediment Control Plan (ESCP) for the construction works. The plan identifies:

- Site boundary
- Existing and proposed stormwater infrastructure
- Diversion drains and direction of surface flow
- Sediment basins and sediment fencing
- Tree protection zones
- Clean and dirty water separation measures
- 1% AEP flood extent

The ESCP has been prepared in accordance with Managing Urban Stormwater: Soils and Construction (Blue Book) and supports the control measures described in **Section 6** of this CSWMSP. A detailed erosion and sediment control plan to be used for construction is provided in **Appendix B**. This also includes indicative sediment control mitigation measures and planned layout, along with sediment basin calculations according to the Blue Book.

6.1 Erosion and Sediment Control

Erosion and sediment controls will be implemented in accordance with the principles of the Blue Book and the approved Erosion and Sediment Control Plans (ESCPs). Controls will be installed prior to the commencement of relevant works and progressively updated to reflect construction staging and site conditions. The sediment basins will progressively be constructed to the indicated size as the development progresses.

Key principles include:

- Minimising the extent and duration of exposed soils
- Progressive stabilisation of disturbed areas
- Separation of clean and dirty water
- Treatment of sediment-laden runoff prior to discharge

Erosion and sediment controls may include diversion drains, sediment fences, inlet protection, sediment basins or treatment devices, and stabilisation measures such as mulching or revegetation. Controls will be inspected, maintained, and repaired as required to ensure ongoing effectiveness.

6.2 Wet Weather Management

Construction activities will be planned and managed to reduce risks associated with rainfall and wet weather. Wet weather management measures include:

- Monitoring weather forecasts and rainfall warnings
- Undertaking pre-rain inspections of erosion and sediment controls
- Securing stockpiles, materials, and exposed soils prior to rainfall

- Suspending or modifying soil disturbance and excavation activities during heavy rainfall
- Implementing temporary stabilisation where required

Emergency response procedures will be implemented in the event of control failure or unexpected rainfall.

6.3 Management of Off-Site Flows

Off-site flows entering the site will be identified and managed to prevent clean water from becoming contaminated. Measures include:

- Diverting clean off-site runoff around disturbed areas where practicable
- Conveying off-site flows through stable channels or pipes
- Avoiding the concentration or redirection of flows that could impact downstream environments

6.4 Tide, Stormwater, Flood Event Management

Stormwater and flood management during construction will be based on event scale:

- Major tidal and storm surge events will be monitored. Sediment basins will be setback from the harbour edge as well as predicted king tide and storm surge related events
- Minor events: erosion and sediment controls remain operational and site drainage functions as intended
- Moderate events: increased monitoring, securing of plant and materials, and suspension of vulnerable activities
- Major flood, tide, and storm surge events: cessation of works, relocation of plant and hazardous materials, and implementation of site safety procedures

Flood behaviour and design considerations are addressed in the approved Flood Risk and Impact Assessment.

6.5 Construction Water Management

6.5.1 Applicability

Groundwater interception is not anticipated as part of the approved construction works based on the approved design and geotechnical investigations.

Construction activities are not expected to extend below the groundwater table. As such, routine groundwater dewatering is not proposed.

The site is located adjacent to Blackwattle Bay, and shallow groundwater is expected to be tidally influenced and saline in nature. Excavation water may therefore comprise a mixture of rainfall runoff and saline groundwater. Reuse of such water on site (e.g. for dust suppression or compaction) is not considered appropriate due to elevated salinity, potential mobilisation of dissolved constituents and the risk of secondary impacts to soils or infrastructure.

The accumulation of rainwater or incidental surface water within excavations may require removal during construction.

6.5.2 Management of Surface Water in Excavations and Surface Water Runoff

6.5.2.1 Discharge Approvals

Discharge of construction water to stormwater or sewer will be undertaken only where:

- Relevant approvals, licenses or trade waste agreements are in place, including council consent for the discharge of surface water to their assets
- The discharged water will not cause pollution as defined under the Protection of the Environment Operations Act 1997 (POEO Act)

Water quality will be assessed through sampling and comparison against criteria protective of the receiving environment.

6.5.2.2 Management of Surface Water in Excavations

Where rainwater or incidental surface water accumulates in excavations:

- Water will be removed in a controlled manner and directed to the site sediment basin(s)
- Sediment controls will be implemented prior to pumping
- Water will be assessed for visible contamination (e.g. sheen, odour, turbidity)
- Water discharged from sediment basins will comply with applicable Water Quality Objectives (WQOs) and discharge criteria prior to release
- Discharge will not cause erosion, sediment mobilisation or pollution of Blackwattle Bay

6.5.2.3 Management of Surface Water Runoff

During construction, it is expected that all surface water generated within the site will be directed to the sediment basin system for treatment prior to discharge to Blackwattle Bay in accordance with approved erosion and sediment control measures.

The discharged water quality must be such that it does not cause pollution as defined under the POEO Act 1997. This shall be evaluated by sampling

Discharged water to stormwater must:

- Meet water quality objectives protective of marine ecosystems in Blackwattle Bay. These are categorised under the Sydney Harbour and Parramatta River Water Quality Flow Objectives (WQOs) for the lower estuary. This includes the protection of aquatic ecosystems, visual amenity, secondary contact recreation, primary contact recreation, and aquatic foods (cooked).
- Be consistent with the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018) 95 percent species protection level for marine waters (or 99 percent protection level for bioaccumulative contaminants, where applicable)
- Comply with any NSW EPA approved guidance or site-specific criteria where established
- Not cause visible turbidity, sediment plumes, sheen, odour or discoloration in the receiving environment

For analytes not covered by ANZG (2018), reference may be made to:

- NHMRC (2011) where relevant
- Other NSW EPA approved guidance

Where discharge criteria specified in any consent condition, licence or approval differ from the above, the stricter criteria shall apply.

If monitoring indicates that water within the sediment basin does not meet discharge criteria:

- Discharge will cease immediately

- Additional treatment measures will be implemented (e.g. extended settling time, flocculation, filtration or pH adjustment where appropriate)
- Water will be retained on site until compliant; or
- Water will be disposed of off-site at a suitably licensed facility if compliance cannot be achieved. Wastewater disposed off-site will be classified in accordance with the NSW EPA (2014) Waste Classification Guidelines and NSW waste regulations. A licensed transporter will be used to transport material to an appropriately licensed NSW EPA waste facility and disposed water will be tracked using the project's waste tracking system.

6.5.3 Unexpected Groundwater Interception

If groundwater is encountered during excavation:

- Works in the affected area will cease
- The Environmental Representative will be notified
- An assessment will be undertaken to determine groundwater quality, volume and flow conditions
- A separate Dewatering Management Plan (DMP) will be prepared prior to recommencement of dewatering activities
- No groundwater discharge will occur unless authorised in accordance with the DMP and relevant regulatory approvals

Any groundwater intercepted will be temporarily stored in a controlled manner pending assessment and management in accordance with the DMP

As groundwater interception is not expected, detailed dewatering assessment and discharge criteria are not included within this CSWMSP. If required, the DMP will identify appropriate management options, which may include:

- Discharge to stormwater, subject to Council approval and compliance with applicable WQOs
- Discharge to sewer in accordance with a Sydney Water trade waste agreement or permit; or
- Off-site transport and disposal at a suitably licensed facility where water quality is unsuitable for discharge

6.5.4 Environmental Risk Controls

The key risks associated with dewatering include:

- Mobilisation of saline or contaminated groundwater
- Pollution of stormwater infrastructure or Blackwattle Bay
- Non-compliance with statutory requirements

Mitigation measures include:

- Avoidance of groundwater interception where practicable
- Implementation of erosion and sediment controls to minimise water ingress
- Suspension of works and preparation of a Dewatering Management Plan if groundwater is encountered

6.6 Stormwater Network Transition Management

During construction, sections of the existing stormwater drainage network will be removed and replaced with new infrastructure. There may be a temporary period during changeover where permanent drainage infrastructure is not fully operational.

The detailed methodology for stormwater network changeover will be determined by the Contractor. The Contractor will undertake a site-specific risk assessment prior to commencing changeover works to ensure continuous control of surface water and prevention of pollution during the transition period.

To prevent uncontrolled discharge or pollution during this transition period:

- Existing stormwater controls will remain operational until replacement infrastructure is installed and commissioned
- Temporary diversion measures (e.g. temporary pipework, pumping, bunding or overland flow diversion) will be implemented where required to maintain a controlled drainage pathway.
- Runoff from disturbed areas will continue to be directed to sediment basin systems or temporary treatment controls prior to discharge
- Direct discharge of untreated water to Blackwattle Bay will not occur during changeover works
- All connections to the new stormwater system will be inspected and verified prior to commissioning
- Any disconnection works will be staged to ensure continuous management of runoff
- Monitoring of discharge points will be undertaken during and immediately following changeover activities

If unforeseen conditions result in uncontrolled runoff, works will cease and temporary containment measures will be implemented until compliant drainage controls are re-established.

6.7 Monitoring and Inspection

Monitoring and inspection will be undertaken in accordance with the CEMP and the requirements of this CSWMSP.

As routine groundwater dewatering is not proposed, monitoring requirements relate primarily to:

- Water accumulating in excavations
- Any discharge from sediment basins or temporary treatment systems

If groundwater is intercepted and a Dewatering Management Plan (DMP) is required, monitoring requirements will be expanded in accordance with that plan.

The objective of monitoring is to:

- Verify that discharge water meets applicable water quality objectives
- Confirm that erosion and sediment controls are functioning effectively
- Prevent pollution of stormwater infrastructure or Blackwattle Bay

6.7.1 Monitoring Locations

Water quality monitoring will focus on the following locations:

- Excavations or low points where water accumulates and may have contacted contaminated soils or fill
- Sediment basin(s) prior to discharge

- Discharge point(s) where treated water leaves the site and enters the stormwater system draining to Blackwattle Bay

Routine compliance monitoring will be undertaken at the sediment basin and discharge point prior to release.

6.7.2 Inspection and Monitoring Schedule

Water captured during construction will be assessed prior to discharge. Discharge will only occur where water quality criteria are met. **Table 6.1** contains details of the indicative inspection and monitoring schedule.

Monitoring frequency may be increased where:

- Screening parameters indicate potential contamination
- Water interacts with contaminated soil or groundwater
- Discharge is sustained over multiple days; or
- Directed by the Environmental Representative.

Table 6.1: Inspection and Monitoring Schedule

Monitoring Location	Attribute	Monitoring Type	Method	Frequency
Excavation	Visual quality	Inspection	Check for sheen, odour, turbidity, discolouration	Prior to pumping
Sediment basin (pre-discharge)	pH, turbidity, EC	Field measurement	Calibrated field probe	Prior to discharge and daily during pumping
Discharge point (compliance point)	pH, turbidity, EC	Field measurement	Calibrated field probe	Prior to discharge and daily during pumping
Sediment basin or discharge point (where water has contacted contaminated soil or groundwater)	Metals, TPH, BTEX, PAHs (as relevant to RAP COPC)	Laboratory analysis	Grab sample analysed by NATA-accredited laboratory	Initial discharge and periodically thereafter as directed by Environmental Representative
PASS disturbance areas	pH and acidity	Field testing and laboratory confirmation	In accordance with ASSMP	As required

6.7.3 Sample collection, handling, and analysis

Sampling will be undertaken by suitably trained personnel using methods endorsed by the NSW EPA, including Approved Methods for the Sampling and Analysis of Water Pollutants in NSW.

Field meters will be calibrated in accordance with manufacturer requirements, and calibration records will be retained.

All laboratory analyses will be undertaken by a NATA-accredited laboratory.

6.7.4 Triggers and Response

Monitoring results will be reviewed prior to discharge to confirm compliance with the adopted water quality objectives and criteria. If monitoring identifies a field trigger or laboratory exceedance of the applicable assessment criteria, the following actions will be implemented:

- Discharge will cease immediately

- The Environmental Representative (ER) will be notified
- The source of exceedance will be investigated
- Additional treatment measures (e.g. further settlement, filtration, neutralisation, hydrocarbon control) will be implemented as required
- Sampling frequency and analytical scope will be increased where necessary to confirm water quality
- An Environmental Consultant will review laboratory results for Chemicals of Potential Concern (COPCs)
- Discharge will not recommence until compliance with the relevant criteria has been demonstrated and approved by the ER

Where repeated exceedances occur, the sediment basin performance, erosion and sediment controls, and interaction with contaminated materials will be reviewed and modified as necessary.

Water quality criteria for monitoring and response are provided in **Table 6.2**.

Table 6.2: Discharge Water Quality Monitoring and Response Criteria

Parameter	Sampling Location(s)	Field Screening Trigger (Prior to Discharge)	Laboratory Assessment (Where Required)	Action if Triggered / Exceeded	Reference
pH	Sediment basin and discharge point	Outside 7.0–9.0	Compare to ANZG (2018) marine guidance and background	Hold discharge. Adjust (neutralise or allow further settlement) and re-test prior to discharge.	ANZG 2018
Turbidity	Sediment basin and discharge point	>10 NTU above background or visible plume risk	Assess against ANZG marine turbidity framework	Continue settlement or treatment. Review erosion and sediment controls. Re-test prior to discharge.	ANZG 2018
Total Suspended Solids (TSS)	Sediment basin and discharge point	Visible suspended solids	Assess against ANZG / NSW EPA guidance	Continue treatment until visually clear and compliant.	ANZG / NSW EPA
Electrical Conductivity (EC)	Sediment basin and discharge point	Elevated relative to rainfall baseline or previous site readings	Compare to background marine salinity where relevant; assess risk of contaminant mobilisation	Investigate potential interaction with saline groundwater or contaminated fill. Seek ER advice prior to discharge if elevated.	ANZG 2018
Dissolved Metals (RAP COPCs)	Discharge point (filtered sample)	N/A (field)	Compare dissolved results to ANZG (2018) marine 95% species protection trigger values (current at time of discharge)	Suspend discharge. Environmental Consultant review required. Implement additional controls or alternative disposal if required.	ANZG 2018
TPH / BTEX	Sediment basin and discharge point	Any visible hydrocarbon sheen	Compare to ANZG where available or NSW EPA guidance	Cease discharge. Deploy hydrocarbon controls. Investigate source.	ANZG / NSW EPA
PAHs	Discharge point	N/A (field)	Compare to ANZG (2018) marine trigger values	Suspend discharge and review soil interaction or contamination source.	ANZG 2018
PFOS, PFHxS, PFOA (RAP COPCs)	Discharge point	N/A (field)	Compare to PFAS NEMP 3.0 (2024) marine ecosystem protection criteria	Suspend discharge. Escalate to Environmental Representative. Manage in accordance with DMP if required.	NEMP 3.0 (2024)

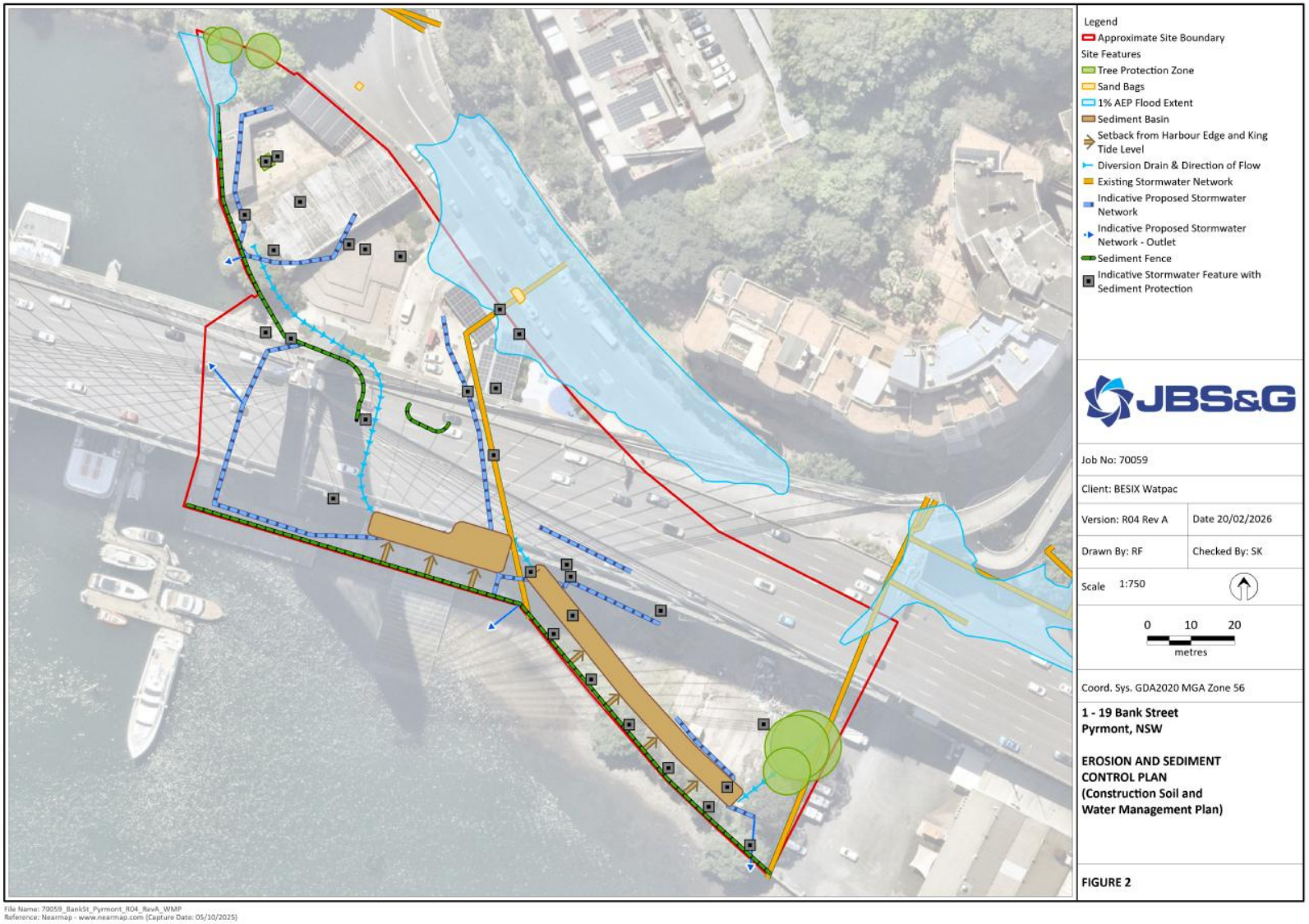

Figure 6.1: Indicative Erosion and Sediment Control Plan

7. Environmental Management Measures

This section provides a register of construction-phase soil and water management measures for the Project. The measures in this section are derived from the approved Environmental Impact Statement (EIS), Amended Mitigation Measures, and supporting technical reports. This table is intended to be read in conjunction with the CEMP and will be referenced directly within the CEMP mitigation register.

The measures below define the specific actions to be implemented during construction, the responsible parties, and how compliance will be verified. All measures in this section will be implemented unless otherwise approved through a formal CEMP variation process.

Table 7.1 contains a register of Construction Soil and Water Management Measures

Table 7.1: Construction Soil and Water Management Measures

Ref	Source Document	Environmental Aspect	Management / Mitigation Measure	Implementation Phase	Responsibility	Verification / Records
SW-01	EIS / Amended Mitigation Measures	Erosion and sediment	Erosion and sediment controls will be installed in accordance with the Blue Book and approved ESCPs prior to commencement of earthworks and maintained for the duration of construction	Pre-construction and construction	Contractor / Environmental Representative	ESCP approval, inspection records
SW-02	EIS / Amended Mitigation Measures	Disturbed areas	The extent and duration of exposed soils will be minimised, and disturbed areas stabilised progressively as works advance	Construction	Contractor	Site inspections, photographic records
SW-03	Stormwater Management Report	Stormwater quality	Construction stormwater will be managed to prevent sediment-laden runoff from entering the stormwater system or Blackwattle Bay	Construction	Contractor	Inspection records, site diary
SW-04	Preliminary Construction Management Plan	Wet weather works	Weather forecasts will be monitored and pre-rain inspections undertaken to secure exposed materials and controls prior to rainfall	Construction	Site Supervisor	Weather logs, inspection records
SW-05	Preliminary Construction Management Plan	Wet weather works	Soil disturbance and excavation activities will be suspended during heavy rainfall or where controls cannot be maintained effectively	Construction	Site Supervisor	Site diary
SW-06	Flood Risk and Impact Assessment	Tide, storm surge, and flood risk	Construction activities will be managed in accordance with forecast tide, storm surge, and flood conditions including setting back sediment basins from the foreshore and predicted tide and storm surge levels, securing plant, relocating hazardous materials, and ceasing works during major flood events	Construction	Site Supervisor	Weather warnings, site diary
SW-07	ASS Management Plan	Acid sulfate soils	Actual and potential acid sulfate soils will be managed in accordance with the approved ASSMP, including testing, treatment, handling, and disposal	Construction	Contractor / Environmental Representative	ASS logs, validation records
SW-08	Remedial Action Plan	Contaminated soils and water	Contaminated soils and water will be managed in accordance with the approved RAP	Construction	Contractor / Environmental Representative	Incident reports, validation documentation

Ref	Source Document	Environmental Aspect	Management / Mitigation Measure	Implementation Phase	Responsibility	Verification / Records
SW-09	Amended Mitigation Measures	Off-site flows	Clean off-site flows will be diverted or conveyed around disturbed areas to prevent contamination and uncontrolled discharge	Construction	Contractor	Inspection records
SW-10	Marine Ecology Assessment	Receiving environment	Measures will be implemented to prevent uncontrolled discharge of sediment or contaminants to Blackwattle Bay, including containment, treatment, and controlled discharge where required	Construction	Contractor / Environmental Representative	Monitoring results, inspection records
SW-11	Stormwater Management Report	Dewatering	Water generated from dewatering of excavations will be treated as necessary prior to discharge to prevent sediment or contaminant release. If groundwater is intercepted, cease works and prepare Dewatering Management Plan. Groundwater discharge will not occur unless a Dewatering Management Plan has been prepared and relevant approvals obtained	Construction	Contractor	Treatment records, discharge logs
SW-12	Stormwater Management Report	Dewatering	Discharge locations into Blackwattle Bay and methods for treated water will be managed to avoid erosion, scour, or impacts to downstream systems	Construction	Contractor	Inspection records
SW-13	Amended Mitigation Measures	Stockpiles	Soil and material stockpiles will be located away from drainage lines, stabilised where required, and provided with sediment controls	Construction	Contractor	Site inspections
SW-14	Amended Mitigation Measures	Stockpiles	Stockpiles will be progressively reduced or removed where practicable to minimise erosion risk	Construction	Contractor	Site inspections
SW-15	Blue Book	Site access	Stabilised site access points will be provided to minimise tracking of sediment onto public roads	Construction	Contractor	Inspection records
SW-16	Blue Book	Vehicle movements	Sediment tracked onto public roads will be promptly removed to prevent sediment from entering the stormwater system	Construction	Contractor	Site diary

Ref	Source Document	Environmental Aspect	Management / Mitigation Measure	Implementation Phase	Responsibility	Verification / Records
SW-17	Remedial Action Plan	Unexpected finds	Unexpected, contaminated land, asbestos, or impacted water encountered during construction will be managed in accordance with the Unexpected Finds Protocol outlined in the RAP	Construction	Contractor / Environmental Representative	Incident reports, clearance documentation
SW-18	Stormwater Management Report	Temporary drainage	Temporary drainage systems will be installed and maintained to safely convey runoff during construction	Construction	Contractor	Inspection records
SW-19	Preliminary Construction Management Plan	Training	Site personnel will receive induction and toolbox training covering soil and water management requirements	Pre-construction and construction	Contractor	Training record

8. Compliance Management

This section outlines the responsibilities, inspection, and compliance processes to ensure effective implementation of this CSWMSP during construction.

8.1 Roles and Responsibilities

Roles and responsibilities for the implementation of soil and water management measures during construction are summarised in **Table 8.1**.

Table 8.1: Roles and Responsibilities

Role	Key Responsibilities
Proponent / Principal	Ensure the CSWMSP is approved and implemented as part of the CEMP; provide adequate resources for environmental management
Project Manager	Overall accountability for compliance with the CSWMSP; ensure contractors are aware of requirements; oversee corrective actions
Site Supervisor	Day-to-day implementation of soil and water controls; suspend works where controls cannot be maintained; coordinate wet weather and flood responses
Client Environmental Representative	The client's environmental representative will monitor compliance with the CSWMSP; undertake inspections and audits; provide advice on corrective actions; maintain environmental records
Contractor and Subcontractors	Implement erosion, sediment, stormwater, and wet weather controls in accordance with this CSWMSP; report incidents and control failure

8.2 Inspections and Monitoring

Routine inspections will be undertaken during active works, prior to significant forecast rainfall, and following significant rainfall events to verify the effectiveness of soil and water controls. Inspection findings will be recorded and corrective actions implemented where required.

8.3 Non-Compliance and Incident Response

Any failures of erosion and sediment controls, uncontrolled discharges, or pollution incidents will be addressed promptly. Incidents will be managed and reported in accordance with the CEMP and applicable statutory requirements.

9. Review and Improvement

This CSWMSP will be reviewed and updated as required following:

- Significant rainfall or flood events
- Environmental incidents or non-compliances
- Changes to construction staging or methodology
- Updates to ESCPs or related management plans

Appendix A Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only and has been based in part on information obtained from the client and other parties. The report has been prepared specifically for the client for the purposes of the commission, and no warranties, express or implied, are offered to any third parties and no liability will be accepted for use or interpretation of this report by any third party.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose. This report should not be amended in any way without prior approval by JBS&G, or reproduced other than in full including all attachments as originally provided to the client by JBS&G.

Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements or agreed scope of work.

Changes to the conditions may occur after the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Appendix B Erosion and Sediment Control Strategy

LEGEND

- SITE BOUNDARY
- 100.00 EXISTING CONTOUR
- TEMPORARY CONSTRUCTION EXIT REFER TO DRG. C03.21 FOR DETAIL
- STOCKPILES (SD 4-1) REFER TO DRG. C03.21 FOR DETAIL
- SEDIMENT FENCE (SD 6-8) REFER TO DRG. C03.21 FOR DETAIL
- TEMPORARY CATCH DRAIN / SWALE
- SEDIMENT TRAP FOR KERB INLET (ON GRADE - SANDBAG) REFER TO DRG. C03.21 FOR DETAIL
- SEDIMENT TRAP FOR KERB INLET (AT LOW POINT - SANDBAG) REFER TO DRG. C03.21 FOR DETAIL
- GEOTEXTILE INLET FILTER (SD 6-12) REFER TO DRG. C03.21 FOR DETAIL
- EXISTING TREE TO BE RETAINED. REFER DRG: C03.21 FOR DETAIL.

GENERAL NOTES:

1. ALL SEDIMENT AND SOIL EROSION CONTROL MEASURES TO BE INSTALLED IN ACCORDANCE WITH THE 'BLUE BOOK'. CONTRACTOR TO ENSURE APPROPRIATE MEASURES ARE IN PLACE AND MAINTAINED AT ALL TIMES DURING CONSTRUCTION WORKS.
2. PROVIDE GEOTEXTILE INLET FILTER OR MESH GRAVEL INLET FILTER TO ALL STORMWATER PITS AND INLETS AS CONSTRUCTED.

	A	B	C
1	INDICATIVE MAINTENANCE SCHEDULE		
2	CONTROL ELEMENT	MAINTENANCE FREQUENCY	INSPECTION REQUIREMENTS
3	DIVERSION DRAINS	> MONTHLY AND/OR FOLLOWING A RAINFALL EVENT.	> CHECK STATE OF CHANNEL IS FREE DRAINING AND FREE OF DEBRIS OR BLOCKAGE. TRIM OVERGROWTH AND REMOVE BLOCKAGES WHERE REQUIRED. > CHECK CHANNEL ALIGNMENT OR FORMATION HAS NOT BEEN ADVERSELY ALTERED. RECTIFY DEFECTS WITHIN 48 HOURS.
4	STRAW BALE FILTERS	> MONTHLY AND/OR FOLLOWING A RAINFALL EVENT.	> CHECK STRAW BALE FILTERS ARE TIGHTLY BOUND AND ANCHORED. RECTIFY DEFECTS WITHIN 48 HOURS. > CHECK FOR EXCESS SEDIMENT BUILD UP AND REMOVE WHERE REQUIRED.
5	SEDIMENT FENCES	> MONTHLY AND/OR FOLLOWING A RAINFALL EVENT.	> CHECK SEDIMENT FENCES ARE APPROPRIATELY POSITIONED AND ANCHORED. RECTIFY DEFECTS WITHIN 48 HOURS. > CHECK FOR EXCESS SEDIMENT BUILD UP AND REMOVE WHERE REQUIRED. > CHECK FOR STANDING WATER AND DEWATER IN ACCORDANCE WITH SEDIMENT BASIN DEWATERING METHODOLOGY. ALTERNATIVELY TRANSFER SEDIMENT LADEN WATER TO SEDIMENT BASINS TO CONSOLIDATE TREATMENT ONLY WHERE SEDIMENT BASINS HAVE CAPACITY TO STORE TRANSFERRED WATER.
6	PIT INLET FILTERS	> MONTHLY AND/OR FOLLOWING A RAINFALL EVENT.	> CHECK PIT INLET FILTERS ARE CORRECTLY POSITIONED AND ANCHORED. RECTIFY DEFECTS WITHIN 48 HOURS. > CHECK FOR EXCESS SEDIMENT BUILD UP AND REMOVE WHERE REQUIRED.
7	CONSTRUCTION EXITS	> WEEKLY AND/OR FOLLOWING A RAINFALL EVENT.	> CHECK CONSTRUCTION EXITS HAVE ADEQUATE SEDIMENT AND SOIL STORAGE. REMOVE EXCESS SEDIMENT AND SOILS. > CHECK DIVERSION DRAIN TO NEAREST SEDIMENT CONTROL FENCE OR SEDIMENT CONTROL BASIN IS AVAILABLE AND UNIMPEDED. > CONVERT TO WASH DOWN CONSTRUCTION EXIT WHERE EXCESSIVE SEDIMENT IS OBSERVED ON DEPARTURE AREAS.
8	SEDIMENT BASINS	> WEEKLY AND/OR FOLLOWING A RAINFALL EVENT.	> CHECK GENERAL STATE OF SEDIMENT BASINS ARE OPERATING AS PER DESIGN DRAWING (E.G. DEPTHS, OVERFLOW WEIRS, OVERFLOW DIRECTION). RECTIFY DEFECTS WITHIN 48 HOURS. > ENSURE COMPLETE SETTLEMENT OF SEDIMENT WITHIN 5 DAYS OF RAINFALL. FLOCCULATE SEDIMENT LADEN WATER WHERE NECESSARY TO ENSURE SETTLEMENT WITHIN 5 DAYS OF RAINFALL. > CHECK SEDIMENT STORAGE ZONE CAPACITY AND REMOVE ALL STORED SEDIMENT ONCE STORAGE IS EXCEEDED. > DISPOSE OF SETTLEMENT ZONE WATER PRIOR TO NEXT FORECAST RAINFALL. TEST WATER PRIOR TO DISPOSAL AND DISPOSE ONLY WHERE TOTAL SUSPENDED SOLIDS IS EQUAL TO OR LESS THAN 50MG/L AND PH LEVELS BETWEEN 6.5-8.5.

PROVIDE SANDBAGS UPSTREAM OF EXISTING AND PROPOSED ON-GRADE PITS.

INDICATIVE LOCATION OF SITE ACCESS WITH LOCKABLE GATE. PROVIDE PROTECTION TO COUNCIL ASSETS AND SERVICES AS REQUIRED.

FOR CONTINUATION REFER DRG: C03.02

NOTES

THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL LANDSCAPE SCHEDULES AND TECHNICAL SPECIFICATION AND OTHER CONSULTANTS DRAWINGS. CHECK AND VERIFY ALL DIMENSIONS AND SITE CONDITIONS PRIOR TO THE COMMENCEMENT OF ANY WORK. DO NOT SCALE DRAWINGS - REFER TO FIGURED DIMENSIONS ONLY. INFORM OCULUS OF ANY DISCREPANCIES FOR CLARIFICATION BEFORE PROCEEDING. UNLESS NOTED OTHERWISE THIS DRAWING IS NOT FOR CONSTRUCTION.

SERVICES SHOWN ON THIS DRAWING ARE APPROXIMATELY ONLY. THE EXACT LOCATION IS TO BE CONFIRMED ON SITE BY CONTRACTOR PRIOR TO COMMENCEMENT WORK.

KEY PLAN

ISSUE	DATE	AMENDMENT	DRN	APRVD
1	16/12/2024	70% DESIGN DEVELOPMENT	BLA	RHU
2	24/01/2025	DRAFT TENDER ISSUE	BLA	RHU
3	19/02/2025	DRAFT TENDER ISSUE	BLA	RHU
4	27/02/2025	ISSUED FOR TENDER	SS	RHU
5	17/12/2025	90% DESIGN DEVELOPMENT	SS	RHU
A	21/01/2026	80% DESIGN DEVELOPMENT	SS	RHU
B	28/01/2026	STAGE 1 100% DETAILED DESIGN	RN	RHU

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PROJECT
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CIVIL ENGINEERING WORKS

CLIENT
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STATUS
FOR CONSTRUCTION

DRAWING SCALE
0 5 10m
SCALE 1:250 @A1

NORTH POINT

DRAWING TITLE
EROSION AND SEDIMENTATION CONTROL PLAN
SHEET 01

PROJECT N° BSP
SHEET SIZE A1
DRAWING N° BSP-BA-ENS-CI-DG-0301
ISSUE B

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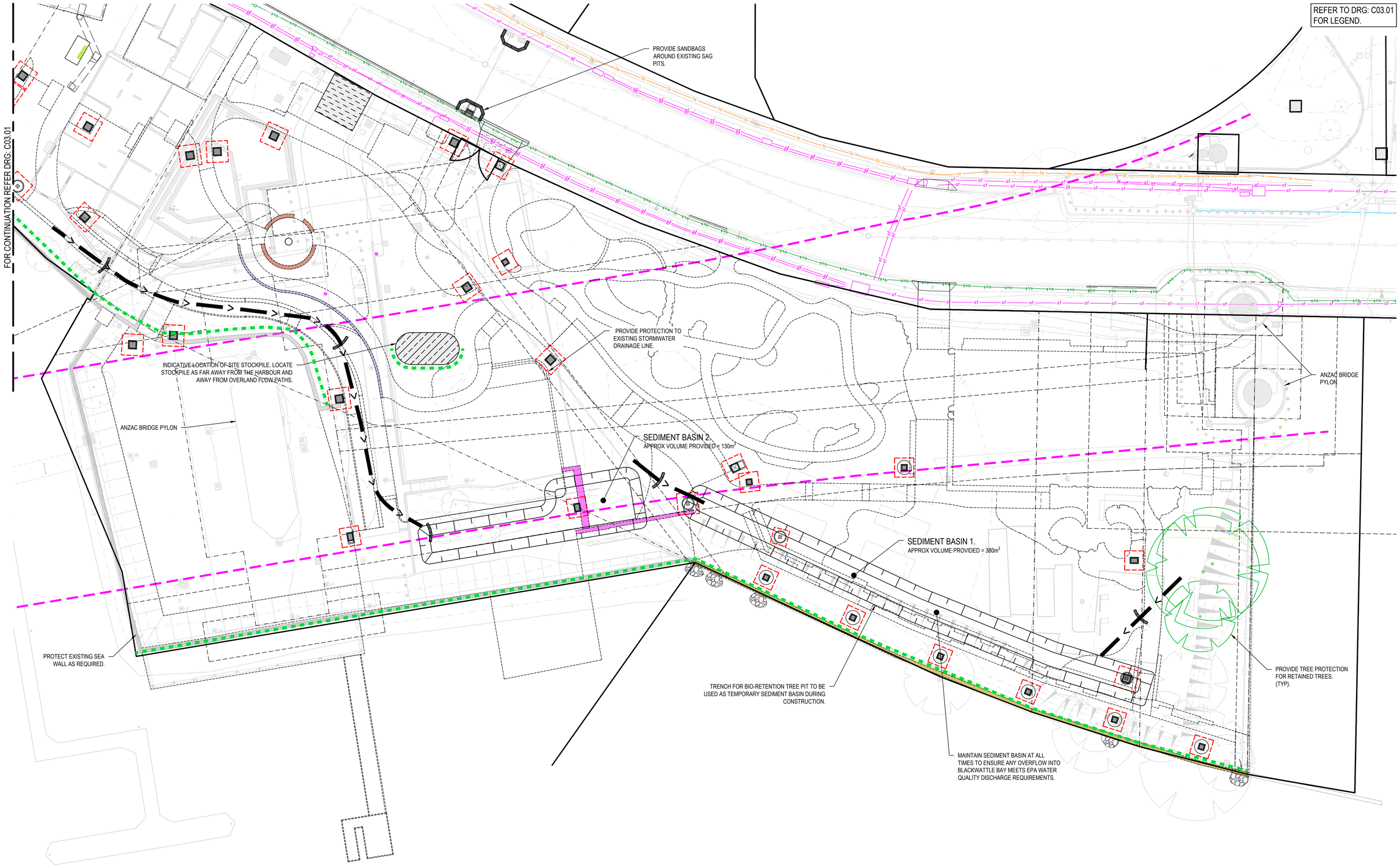

NOTES

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4	27/02/2025	ISSUED FOR TENDER	SS	RHU
5	17/12/2025	90% DESIGN DEVELOPMENT	SS	RHU
A	21/01/2026	80% DESIGN DEVELOPMENT	SS	RHU
B	28/01/2026	STAGE 1 100% DETAILED DESIGN	RN	RHU

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Phone: 02 9922 6135 enspiresolutions.com.au

PROJECT
BANK STREET PARK, PYRMONT, NSW, 2009
CIVIL ENGINEERING WORKS

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STATUS
FOR CONSTRUCTION

DRAWING SCALE
0 5 10m
SCALE 1:250 @A1

NORTH POINT

DRAWING TITLE
EROSION AND SEDIMENTATION CONTROL PLAN
SHEET 02

PROJECT N°
BSP

SHEET SIZE
A1

DRAWING N°
BSP-PK-ENS-CI-DG-0302

ISSUE
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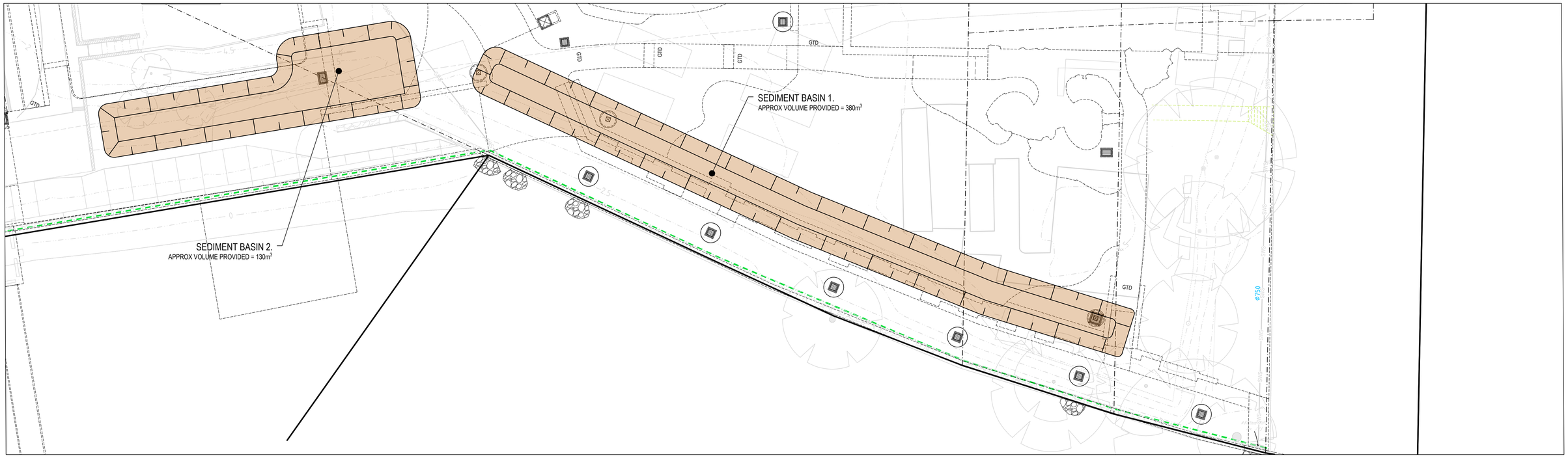
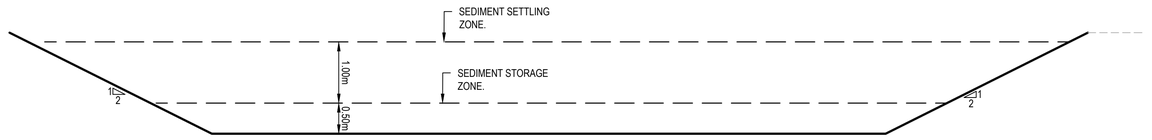


SEDIMENT BASIN PLAN

SCALE 1:200



SEDIMENT BASIN - TYPICAL SECTION

SCALE 1:50

GENERAL NOTES:

1. ALL SEDIMENT AND SOIL EROSION CONTROL MEASURES TO BE INSTALLED IN ACCORDANCE WITH THE 'BLUE BOOK'. CONTRACTOR TO ENSURE APPROPRIATE MEASURES ARE IN PLACE AND MAINTAINED AT ALL TIMES DURING CONSTRUCTION WORKS.
2. REFER SPECIFICATION NOTES FOR SEDIMENT AND SOIL EROSION CONTROL REQUIREMENTS.
3. CONTRACTOR TO CONSTRUCT AND MAINTAIN SEDIMENT BASIN IN ACCORDANCE WITH RELEVANT AUTHORITY SPECIFICATIONS AND DETAILS.
4. TEST ANY EXISTING STORED WATER AND FLOCCULATE AS REQUIRED TO ENSURE WATER QUALITY MEETS THE REQUIREDMENTS OF COUNCIL PRIOR TO PUMPING FOR DUST CONTROL.
5. THE SITE IS SUBJECT TO CONTAMINATED SOILS. THE CONTRACTOR SHALL ENSURE THE RECOMENDATIONS OF THE RAP ARE IMPLEMENTED.

1. Erosion Hazard and Sediment Basins

Site Name: BANK STREET
Site Location: CITY OF SYDNEY
Precinct/Stage:
Other Details:

Site area	Sub-catchment or Name of Structure						Notes
	1	2					
Total catchment area (ha)	0.396	0.321					
Disturbed catchment area (ha)	0.396	0.321					
Soil analysis (enter sediment type if known, or laboratory particle size data)							
Sediment Type (C, F or D) if known:	D	D					From Appendix C (if known)
% sand (fraction 0.02 to 2.00 mm)	30	30					Enter the percentage of each soil fraction. E.g. enter 10 for 10%
% silt (fraction 0.002 to 0.02 mm)	30	30					
% clay (fraction finer than 0.002 mm)	30	30					
Dispersion percentage	10.0	10.0					E.g. enter 10 for dispersion of 10%
% of whole soil dispersible	4.5	4.5					See Section 6.3.3(e). Auto-calculated
Soil Texture Group	D	D					Automatic calculation from above
Rainfall data							
Design rainfall depth (no of days)	5	5					See Section 6.3.4 and, particularly, Table 6.3 on pages 6-24 and 6-25.
Design rainfall depth (percentile)	90	90					
x-day, y-percentile rainfall event (mm)	53.6	53.6					Only need to enter one or the other here
Rainfall R-factor (if known)							
IFD: 2-year, 6-hour storm (if known)	10.4	10.4					
RUSLE Factors							
Rainfall erosivity (*R*-factor)	2370	2370					Auto-filled from above
Soil erodibility (*K*-factor)	0.03	0.03					RUSLE LS factor calculated for a high rill/interrill ratio.
Slope length (m)	60	60					
Slope gradient (%)	1	2.5					
Length/gradient (*LS*-factor)	0.18	0.46					
Erosion control practice (*P*-factor)	1.3	1.3	1.3	1.3	1.3	1.3	
Ground cover (*C*-factor)	1	1	1	1	1	1	
Sediment Basin Design Criteria (for Type D/F basins only. Leave blank for Type C basins)							
Storage (soil) zone design (no of months)	2	2	2	2	2	2	Minimum is generally 2 months
Cv (Volumetric runoff coefficient)	0.5	0.5					See Table F2, page F-4 in Appendix F
Calculations and Type D/F Sediment Basin Volumes							
Soil loss (t/ha/yr)	17	43					
Soil Loss Class	1	1					See Table 4.2, page 4-13
Soil loss (m^3/ha/yr)	13	33					Conversion to cubic metres
Sediment basin storage (soil) volume (m^3)	1	2					See Sections 6.3.4(i) for calculations
Sediment basin settling (water) volume (m^3)	106	86					See Sections 6.3.4(i) for calculations
Sediment basin total volume (m^3)	107	88					

NB for sizing of Type C (coarse) sediment basins, see Worksheet 3 (if required).

NOTES
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4	27/02/2025	ISSUED FOR TENDER	SS	RHJ
5	17/12/2025	80% DESIGN DEVELOPMENT	SS	RHJ
6	17/12/2025	80% DESIGN DEVELOPMENT	SS	RHJ
A	21/01/2026	80% DESIGN DEVELOPMENT	SS	RHJ
B	28/01/2026	STAGE 1 100% DETAILED DESIGN	RN	RHJ

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CIVIL ENGINEERING WORKS

CLIENT
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PRINCIPLE CONTRACTOR
BESIX Watpac

STATUS
FOR CONSTRUCTION

DRAWING SCALE
0 1 2m
SCALE 1:50 @A1
0 5 8m
SCALE 1:200 @A1

NORTH POINT

DRAWING TITLE
SEDIMENT BASIN PLAN
BANK STREET PARK

PROJECT N°: BSP
SHEET SIZE: A1
DRAWING N°: BSP-PK-ENS-CI-DG-0331
ISSUE: B

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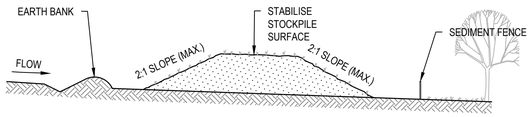
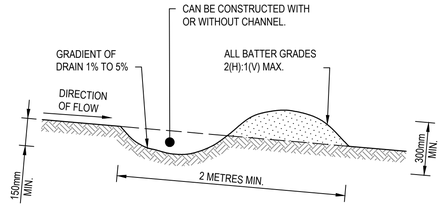


CONSTRUCTION NOTES

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

STOCKPILES (SD 4-1)

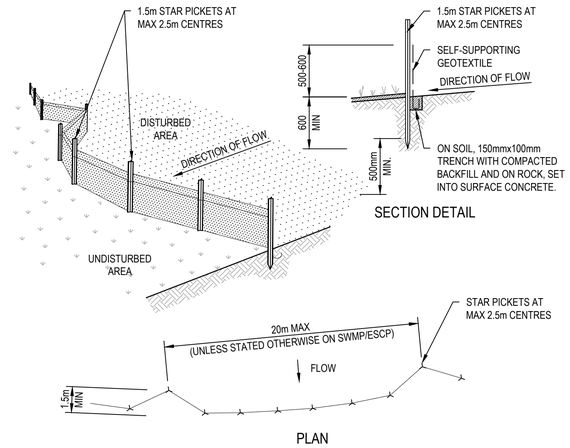


CONSTRUCTION NOTES

1. BUILD WITH GRADIENTS BETWEEN 1 AND 5 PERCENT.
2. AVOID REMOVING TREES AND SHRUBS IF POSSIBLE - WORK AROUND THEM.
3. ENSURE THE STRUCTURES ARE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT COULD IMPEDE WATER FLOW.
4. BUILD THE DRAINS WITH CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTIONS, NOT V SHAPED.
5. ENSURE THE BANKS ARE PROPERLY COMPACTED TO PREVENT FAILURE.
6. COMPLETE PERMANENT OR TEMPORARY STABILISATION WITHIN 10 DAYS OF CONSTRUCTION.

NOTE: ONLY TO BE USED AS TEMPORARY BANK
WHERE MAXIMUM UPSLOPE LENGTH IS 80 METRES.

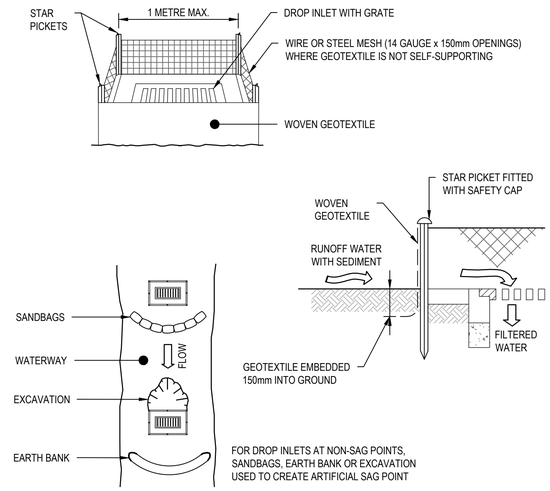
EARTH BANK - LOW FLOW (SD 5-5)



CONSTRUCTION NOTES

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

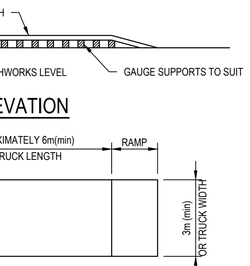
SEDIMENT FENCE (SD 6-8)



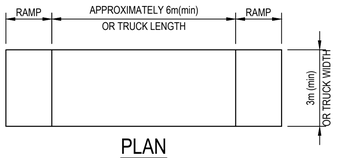
CONSTRUCTION NOTES

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

GEOTEXTILE INLET FILTER (SD 6-12)



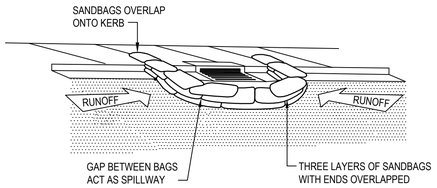
ELEVATION



PLAN

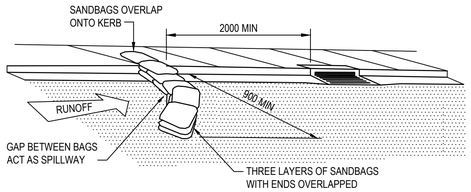
TEMPORARY CONSTRUCTION EXIT (SHAKER PAD DETAIL)

THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH PREVENTS TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. THIS MAY REQUIRE REPAIR AND OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.



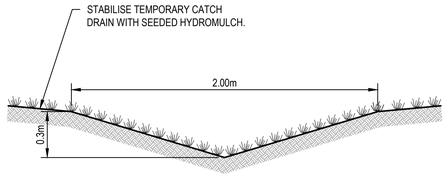
SEDIMENT TRAP FOR KERB INLET (AT LOW POINT - SANDBAG)

NOT TO SCALE



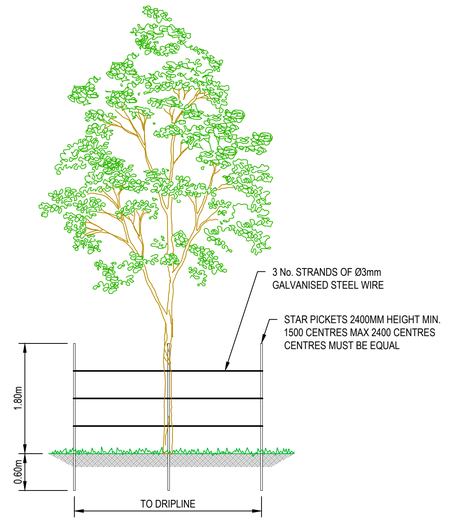
SEDIMENT TRAP FOR KERB INLET (ON GRADE - SANDBAG)

NOT TO SCALE



CATCH DRAIN

N.T.S



TREE PROTECTION DETAIL

SCALE 1:50

ALL TREE PROTECTION AND EROSION CONTROL MEASURES ARE TO BE INSPECTED AND APPROVED IN WRITING (BY COUNCIL OR PCA) PRIOR TO COMMENCEMENT OF CONSTRUCTION.

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		Name	Name	Signature	Date
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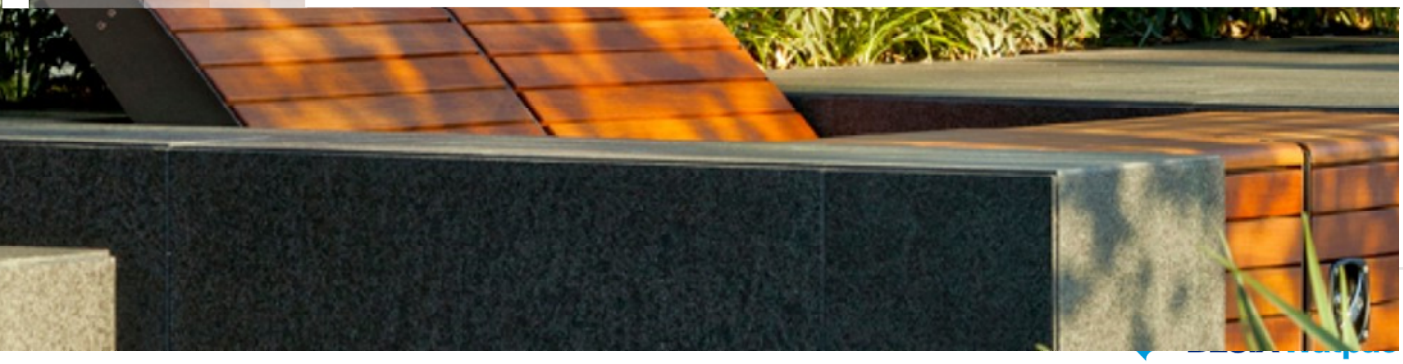
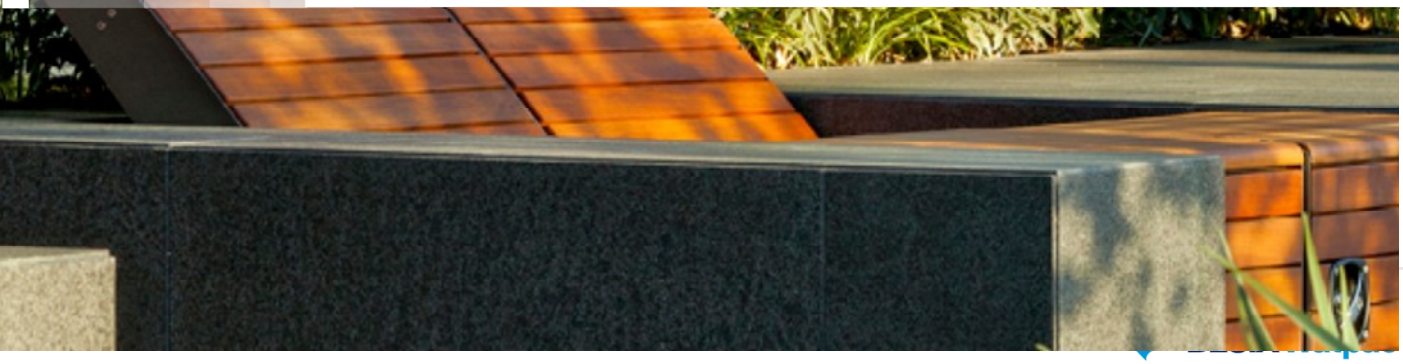
Appendix G
Environmental Risk Assessment



Appendix H
Aboriginal Cultural Heritage Management Plan



Bank Street Park

Aboriginal Cultural Heritage Management Plan

Prepared for BESIX Watpac

February 2026

artefact

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2	22 December 2025	BESIX Watpac	BESIX Watpac	7 January 2026	External	Draft
3	7 January 2026	RAPs			External	Draft
4	20 February 2026					Final
5						
6						

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Name of project:	Bank Street Park
Name of document:	Bank Street Park Aboriginal Cultural Heritage Management Plan
Document version:	Final

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1.0 INTRODUCTION

Artefact Heritage and Environment (Artefact) has been engaged by BESIX Watpac on behalf of Infrastructure NSW (the proponent) to prepare an Aboriginal Cultural Heritage Management Plan (ACHMP) to satisfy the conditions of the State Significant Development consent (SSD-53386706) for the planned redevelopment of Bank Street Park. The Bank Street Park development forms part of the Blackwattle Bay Precinct, adjoining the waters of Blackwattle Bay. A critical part of the Blackwattle Bay Precinct is the high-quality public domain which includes a series of parks and open spaces connected by a foreshore promenade. Bank Street Park will bring new active and passive recreation uses into a unique park environment, catering for both existing and future communities in the vicinity.

GML (2024) prepared an Aboriginal Cultural Heritage Assessment Report (ACHAR) for the proposed works to satisfy the Secretary's Environmental Assessment Requirements (SEARs) for the project. Through the ACHAR, GML identified that an Aboriginal archaeological deposit was present within the site, that there was potential for additional areas of Potential Archaeological Deposit (PAD), and that there were Aboriginal cultural values associated with the site. GML recommended that staged Aboriginal heritage management strategies be implemented for the works, involving impact avoidance where possible, archaeological monitoring, and further Aboriginal archaeological excavation if required.

The project was approved as an SSD on 31 July 2024, and Conditions of Consent (CoCs) were issued on the same day. The CoCs required that an ACHMP be prepared to manage Aboriginal cultural heritage during the works program. Modifications to the SSD consent have been sought (SSD-53386706-Mod-1, approved 9 July 2025; SSD-53386706-Mod-2, pending approval), but these modifications are unlikely to result in any changes to the requirements for Aboriginal cultural heritage outlined in the existing CoCs. The present document has been prepared to meet the specific requirements for the ACHMP outlined in the CoCs.

1.1 Purpose

The purpose of this ACHMP is to describe how Aboriginal heritage will be protected and managed during the project in accordance with the management and mitigation measures outlined in the ACHAR and the CoC. This plan provides:

- A summary of the Aboriginal heritage values which are present within the project site
- Protocols for the management of Aboriginal objects/sites located within the project site
- Description of measures to be implemented if any Aboriginal objects are encountered during the project
- Description of measures to be implemented if any Aboriginal skeletal remains are encountered during the project
- Protocol for the ongoing consultation and involvement of the Aboriginal community in the management of the Aboriginal heritage of the project site
- Requirements and triggers for the revision of this report.

1.2 Condition compliance

The Minister's CoC relating to Aboriginal Heritage for SSD-53386706, issued on 31 July 2024 under Section 4.38 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) as well as subsequent SSD modifications (SSD-53386706-Mod-1, approved 9 July 2025; SSD-53386706-Mod-

2, pending approval). Condition B33 of the CoCs, which deals specifically with Aboriginal heritage, is outlined below:

Prior to the carrying out of works, the Applicant must prepare an Aboriginal Cultural Heritage Management Plan (ACHMP) to the satisfaction of the Certifier. This plan must:

(a) be prepared by suitably qualified and experienced person/s

(b) be prepared in consultation with Registered Aboriginal Parties (RAPs) and reviewed by Heritage NSW, incorporating any requested changes where appropriate;

(c) include a description of the measures (and associated methodologies) that would be implemented for:
(i) conducting Aboriginal archaeology monitoring with RAP participation;
(ii) avoiding and conserving areas of Potential Archaeological Deposit (PAD) identified during monitoring, where feasible to do so;
(iii) conducting additional Aboriginal archaeological excavation with RAP participation where areas of PAD are identified as an unexpected find during construction and/or during monitoring and cannot be conserved;
(iv) assessing the significance of Aboriginal objects identified during the monitoring and/or Aboriginal archaeology excavations;
(v) the long-term management of any Aboriginal heritage items or material collected during the previous test excavations and any additional Aboriginal archaeological excavations that may be conducted under the ACHMP;
(vi) ensure workers on site receive suitable heritage inductions prior to carrying out any development on site, and that records are kept for these inductions;
(vii) ongoing consultation with RAPs during the implementation of the ACHMP;
(viii) preparing Aboriginal Site Impact Recording Form/s (ASIRFs) for all Aboriginal heritage sites following construction activities with ASIRFs to be submitted to the Aboriginal Heritage Information Management System (AHIMS) registrar.

(d) include an Unexpected Heritage Finds and Human Remains Procedure prepared in relation to Aboriginal cultural heritage, with these measures to be prepared in accordance with the guidelines and standards specified by Heritage NSW, be implemented for the duration of the project and to include the requirement to register any newly identified Aboriginal objects or sites in the AHIMS database.

(e) include provision for the preparation of an Aboriginal Cultural Heritage Excavation Report(s) where additional Aboriginal archaeological excavations have been completed. The Aboriginal Cultural Heritage Excavation Report(s), must:
(i) be prepared by a suitable qualified expert;
(ii) be prepared generally in accordance with the Guide to Investigation, assessing and reporting on Aboriginal cultural heritage in NSW, 2011 and the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales, 2010;
(iii) document the results of the Aboriginal archaeological excavations and any subsequent salvage (with artefact analysis and identification of a final repository for finds); and
(iv) be provided to the RAPs who must be given a minimum of 28 days to consider

the report and provide comments before the report is finalised. The final report must be provided to the Planning Secretary, Heritage NSW, the relevant Councils, and the relevant Local Aboriginal Land Council, and the RAPs within 24 months of the completion of the Aboriginal archaeological collections and excavations.

(f) include a program to monitor and report on the effectiveness of these measures and any heritage impacts of the project.

1.3 Authorship

This ACHMP has been prepared by Sammuel Sammut (Senior Heritage Consultant, Artefact). This plan has been reviewed by Dr Samantha Higgs (Archaeology Team Leader, Artefact) and Josh Symons (Technical Executive, Artefact).

2.0 PROJECT CONTEXT

2.1 Scope of works

The proponent intends on developing the study area as a recreation area for the primary purpose of a public park. The works would involve:

- Site preparation works, including tree removal, earthworks and remediation to facilitate the proposed use
- Partial demolition and adaptation of existing buildings at 1-3 Bank Street
- New and adapted facilities for community use, including:
- Adaptive reuse of existing building 'Building D' for storage
- Boat storage for dragon boat users with publicly accessible rooftop deck
- New amenities block with toilets, showers, and rangers room
- Public domain works, including:
    - Foreshore promenades
    - Muti-purpose sports court
    - Play space and Fitness equipment
    - Public plaza, grassed open space, trees and landscaped areas
    - Picnic shelters with tables and BBQ's
    - New kayak/ passive craft pontoon
    - Works to Bank Street Road reserve
    - Relocation of existing Marina office demountable.

2.2 Study area

The study area (Figure 1), that is Bank Street Park, is located at 1A-19 Bank Street, Pyrmont within the City of Sydney Local Government Area (LGA) and the boundaries of the Metropolitan Local Aboriginal Land Council (LALC). The study area is also located on the lands of the Gadigal people of the Eora Nation. The lots comprising the study area are listed below:

- Lot 1 DP85206
- Lot 1 DP188671
- Lots 1-2 DP1089643
- Lot 1 DP439245
- Lot 20 DP803159
- Lot 19 DP803159
- Lot 21 DP803159
- Lot 22 DP803159
- Lots 5-6 DP803160
- Lot 5 DP1209992

Figure 1: Study area (GML 2024)

2.3 Statutory context

This ACHMP was developed in consideration of the following legislative instruments.

Table 1: Legislative background

	Legislative purpose	Relevance to the current ACHMP
EP&A Act	The act establishes the framework for cultural heritage values to be formally assessed in the land use planning, development assessment and environmental impact assessment processes. The current project was assessed as a State Significant Development under Part 4, Division 4.1 of the EP&A Act.	The project has been approved under Section 4.38 of the EP&A Act, and the CoC and REMMs for the project are incorporated into this ACHMP
Environment Protection and Biodiversity Conservation Act 1999 (Cwth)	The main purpose of this Act is to provide for the protection of the environment especially those aspects that are of national environmental importance and to promote ecological sustainable development. Heritage places are listed on the National Heritage List (NHL) for their 'outstanding heritage value to the nation' and are owned by a variety of constituents, including government agencies, organisations or individuals. Only items owned or controlled by the Commonwealth that meet the threshold for national heritage listing under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) are listed on the Commonwealth Heritage List (CHL) and/or the World Heritage List (WHL) and afforded protection under the EPBC Act.	No NHL, CHL or WHL items are located within the study area, therefore the EPBC Act is not considered in this ACHMP
National Parks and Wildlife Act 1974	This Act provides protection for all Aboriginal objects and Aboriginal places. Section 86 of the NPW Act identifies that it is an offence to harm or desecrate an Aboriginal object and/or an Aboriginal place. A section 90 Aboriginal Heritage Impact Permit (AHIP) is generally required to harm an Aboriginal object or place. An AHIP is not required for impact associated with an approved State Significant Development.	The project has been approved under Section 4.38 of the EP&A Act, therefore, an AHIP is not required to harm Aboriginal objects that are present in the study area
Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cwth)	This Act provides for the preservation and protection from injury or desecration to areas and objects of particular significance to Aboriginals. Areas and objects can be protected by Ministerial Declaration, and it is then an offence to contravene such a declaration.	No areas or objects within the study area have been identified as being subject to a ministerial declaration, therefore this Act is not relevant to the ACHMP
Coroners Act	This Act enables coroners to investigate certain kinds of deaths or suspected deaths in order to determine the identities of the deceased persons, the times and dates of their deaths and the manner and cause of their deaths.	This Act is relevant if Human Skeletal Remains are located within the study area and is addressed in Section 5.5 of this ACHMP

2.4 Guidelines

Additional guidelines and standards relating to the management of Aboriginal cultural heritage that have been considered as part of the development of this ACHMP to meet the CoCs (B33) for the project include:

- *Aboriginal cultural heritage consultation requirements for proponents 2010* (Department of Environment, Climate Change & Water 2010a); hereafter the Consultation Requirements
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (Department of Environment, Climate Change & Water 2010b); hereafter the Code of Practice
- *Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011); hereafter The Guide.

3.0 CONSULTATION

This section describes consultation with Registered Aboriginal Parties (RAPs) that has been undertaken in preparation of this ACHMP.

3.1 Consultation undertaken during preparation of the EIS

Aboriginal community consultation was initiated during preparation of the EIS in accordance with the Consultation requirements (OEH 2010).

Consultation and collaboration with the RAPs was integral to the assessment and will continue to be undertaken during the ongoing management of Aboriginal cultural heritage for the project.

A list of RAPs for the project is provided in Table 2.

Table 2: Registered Aboriginal Parties

Organisation	RAP contact person
Butucarbin Aboriginal Corporation	Jennifer Beale
Darug Custodian Aboriginal Corporation	Justine Coplin
Dharug Ngurra Aboriginal Corporation	Dirk Schmitt
Didge Ngunawal Clan	Lillie Carroll and Paul Boyd
Guntawang Aboriginal Resources Incorporated	Wendy Morgan
Kamilaroi Yankuntjatjara Working Group	Phil Khan
Metropolitan Local Aboriginal Land Council	Nathan Moran
Ngambaa Cultural Connections	Kaarina Slater
Yarrawalk	Scott Franks
Sonione Wakabut Rogers	Sonione Wakabut Rogers
[redacted]	
[redacted]	
[redacted]	

Consultation with the RAPs throughout the EIS assessment process is outlined in Section of the ACHAR prepared for this project (GML 2024).

3.2 Consultation undertaken during preparation of the current ACHMP

A draft of the ACHMP was issued to Heritage NSW and the RAPs for review on 8 January 2026. Comments were requested by 5 February 2026. Comments received and actions completed are presented in Table 3.

Table 3: Responses to draft ACHMP

Person	Group	Comments	Action
Wendy Morgan	Guntawang Aboriginal Resources Incorporated	Good Morning, thank you for the updated report. Guntawang agrees with the report. We look forward to working with you on future projects.	Responded.
Phil Khan	Kamilaroi Yankuntjatjara Working Group	Thank you for your ACHMP for Bank Street, we agree and support your ACHMP.	Responded.

3.3 Triggers for consultation during construction

Further consultation with RAPs and Heritage NSW will be undertaken under the following circumstances:

- Input from the RAPs will be sought by the proponent into development of a heritage induction (see Section 5.1)
- Following the identification of unexpected finds which are confirmed to be Aboriginal objects (see Sections 5.4 and 5.8)
- Following the identification of Aboriginal human remains (see Section 5.9)

Ongoing consultation with RAPs and Heritage NSW will be the responsibility of the proponent. The proponent may direct others to undertake consultation on their behalf.

Ongoing consultation will be undertaken in accordance with the protocols outlined below:

- All RAPs will be contacted and given the opportunity to provide comment and input
- RAPs will be provided the information in writing and given the adequate time to respond (28 days minimum)
- All consultation will be recorded in the consultation log located in Appendix 1: Consultation records

4.0 EXISTING ENVIRONMENT

4.1 Aboriginal histories

4.1.1 Note on language and cultural warning

Aboriginal and Torres Strait Islander people should be aware this report may contain words and terms in quotations from works written by non-Indigenous people in the past that may be confronting and considered inappropriate today. Artefact does not endorse these views or the use of these terms. These historical sources have been included because they provide information on the lives of Aboriginal people in the region.

This report also contains the names and images of deceased people and descriptions of historical events including massacres that may be distressing to some readers.

4.1.2 Aboriginal Histories of the Locality

Many Aboriginal people, like other Indigenous or First Nations people around the world, have been living on Country for 'time immemorial' – that they have always been here, and their origins lie in the creation of the land and animals. As Sydney Elder and Wiradjuri activist Aunty Jenny Munro expresses:

> *'...from time immemorial, we believe as Aboriginal people, Australia has been here from the first sunrise, our people have been here along with the continent, with the first sunrise. We know our land was given to us by Baiami, we have a sacred duty to protect that land'* (Munro in Currie 2008:4)

Over the last few decades, archaeologists' knowledge of deep human time in Australia has expanded from just a few thousand years in the 1950s, to 25,000 years in the 1960s, then 40,000 years, to now around 60,000 years or more. (Belshaw, Nickel and Horton, 2020; Griffith, 2018: 112; Karskens 2009: 25).

Archaeological evidence of Aboriginal people living in the Sydney region from Shaw's Creek west of the Dyarubbin (Nepean) River is dated at around 14,000 years ago and numerous other sites in the area have been dated at around 15,000 ago. While Cranebrook Terrace, near Penrith in Western Sydney, has been dated to 41,700 years and a site near Parramatta at 30,000 years old, there is growing consensus among archaeologists and historians that people have lived across the Sydney region from around 50,000 years ago. (Attenbrow 2010:18-20; Nanson, Young & Stockton 1987: 77; Williams, et al., 2017: 100-109; McDonald 2005: 4, 87-94; Attenbrow, 2012; Williams et al., 2012; Karskens, Burnett & Ross 2017: 4).

More ancient sites lie off the coast and in river valleys, now deep under water. Before the major sea level rise event at the end of the last ice age around 17,000 years ago, Aboriginal people living along the Parramatta River could have walked downstream along the riverbanks to the sea about 30 kilometres beyond the current day coastline. Over generations they would have watched and told stories about the gradual change as the sea rose to fill the 'drowned river valley' of what is now Sydney Harbour until it reached present levels around 6,000 years ago. (Nunn and Reid 2016: 11; Attenbrow 2010: 154-155; Birch 2007: 217-219).

Given the devastating impact of violent dispossession and disease upon Aboriginal people in the Sydney region during colonisation, the precise identification of language groups and historical

traditional lands or Country for a given area is often difficult today. Early colonial observer Watkin Tench believed there was at the least coastal and inland dialects of the same language and, while this is challenged by some, there seems to have been an alignment with inland economies of the rivers, creeks and open forests of the Cumberland Plain, and coastal 'saltwater' focused groups. (Tench 1793: 122; Aboriginal Heritage Office 2015; Stanner 1965: 1-26). However, study area is generally accepted as being located within the traditional lands of the Gadigal people.

4.1.2.1 Gadigal land

The Gadigal lived on the south side of what is now called Sydney Harbour for hundreds of generations and tens of thousands of years. According to historian Keith Vincent Smith, 'Cadi' means 'below or under' and the name of the clan group stems from Camp Cove, a place described as below South Head. The Cadi (or more correctly Gadi) heartland stretched from South Head through the present-day Eastern Suburbs to Woolloomooloo Bay, Farm Cove and Warrane or Warrang (Sydney Cove), up to the entrance to Darling Harbour or Gomora (Smith 2020).

They were one of around 30 clan groups across the Sydney region. On the west side of Gomora were the Wangal, on the north side of the harbour the Cammeraygal, Borogegal and Wallumedegal. To the south and east were the Bidjigal and Gweagal. In 1790, the Wangal man Bennelong related to Governor Phillip the clans around Sydney Cove:

> *'From the Entrance of the Harbour, along the South Shore, to the Cove adjoining this Settlement, the District is called Cadi, & the Tribe Cadigal — the Women, Cadigalleon. The South Side of the Harbour from the above-mentioned Cove to Rose-Hill, which the Natives call Parramatta, the District is called Wann, & the Tribe, Wanngal. The opposite Shore is called Wallumetta, & the Tribe, Wallumedegal. The other Tribes which live near us, are those of Gweagal, Noronggerragal, Borogegal, Gomerrigal, & Boromedegal.' (Smith 2020)*

The Gadigal had different relations with these groups – some Gadigal ceremonial gatherings such as initiations were conducted by other clan groups with certain authority to do so. For example, according to early colonist David Collins, the Cammeraygal were able to 'oblige' other clans to 'attend wherever and whenever they directed' and Collins believed they had a 'decided superiority over all the tribes' the colonists had encountered. Contests were delayed until the Cammeraygal arrived and they also had the 'extraordinary privilege of exacting a tooth from the natives of other tribes inhabiting the sea coast' (Collins 1789, 456).

Gadigal women (Gadigalleon), like the rest of the coastal or saltwater groups in the Sydney region, were important food providers for their families. One of the staple food sources was fish. While men speared fish from the shoreline with multi-pronged spears or mooting, the women fished from their nawi or tied-bark canoes with lines and hooks. They made their fishing lines or carr-e-jun by twisting together strands of fibre from kurrajong trees, cabbage trees or flax plants. Animal fur and grass 'nearly as fine as raw silk' were also used to make lines. One colonist described them as 'nicely shredded and twisted very close and neatly'. The distinctively crescent-shaped fish-hooks or burra were crafted from the turban shell (Bradley 1802, 284).

Gadigalleon had extraordinary skills in fishing, swimming, diving and using watercraft. They sang as they fished and were seen fishing for long periods during the day, in all weathers, and often at night with small fires on board. These women, as historian Grace Karskens has noted, 'dominated the waters of the harbours, coves and bays, and the coastlines in between. The men mostly only used canoes when they wanted to get from one cove to another (Karskens 2014).

As one of the early colonists Lieutenant William Bradley observed in 1788:

> *'The Natives strike fish with their barbed Spears from the rocks & sometimes from the Canoe in with they stand up: in general we observe the Canoe occupied by the Women who fish with hook & line, which I never noticed any of the Men to use or that the women use the Spear. The line appears to be made from the inside / bark of the Cabbage tree, it is laid of two strands well twisted & strong. Their hooks seem to be made both from the claws of Birds & the inside of a shell resembling the pearl Oyster Shell, from the latter I have seen a hook made, they rub it down on the rocks until fit for their purpose & then shape the hook in a curve with a sharp shell or stone; we found vast quantities of Oysters & other shell fish in the Harbour & Oysters of an amazing size in the uppermost Coves.' (Bradley 1802, 133)*

Although the resource rich foreshores of the harbour were the focus for Gadigal, the areas inland around what is todays Eastern Suburbs and City of Sydney were used as well. Inland, there were fruits, seeds, nuts and grains. Nectars, rhizomes and tubers were also harvested. Some parts of plants would have required special preparation to remove any poisons, but the seeds of all native grasses are edible. David Collins noted the difference between the inland areas and the foreshores, although did not observe the use of plants as closely as he might have:

> *'The woods, exclusive of the animals which they occasionally find in their neighbourhood, afford them but little sustenance; a few berries, the yam and fern-root, the flowers of different banksia, and at times some honey, make up the whole vegetable catalogue' (Collins 1789)*

Men used wooden spears and women wooden digging sticks - two of the most important possessions of Aboriginal people in the pre-colonial past. The Melaleuca tree's paper-like bark was used as shelter, wrapping, containers and for fire lighting. In 1791 John Hunter described how Aboriginal burning the ground on the north side of the harbour, opposite the settlement', was a practice 'constantly' done when the weather was dry. 'Firestick farming' was practice of burning land to create new green shoots and thereby attract kangaroos for hunting, but fire was also used to control undergrowth and prevent larger bushfires (Hunter 1793, 361; Tench 1793).

Due to the predominance of relatively soft sandstone around Sydney Harbour, hard stone used for axes and scrapers in particular, was traded from areas such as the basalt gravel beds along the Nepean River. Trading was extensive and far-reaching. Silcrete from an outcrop near present day Plumpton Ridge on the Cumberland Plain in Sydney's west and mudstone from the Hunter Valley or near Warragamba dam have been found around Sydney Harbour (Currie 2008, 10–15).

4.2 Historical impacts

The study area has been subject to significant levels of disturbance from its historic and more recent land use. However, in the early nineteenth century the study area was dominated by sandstone ridges and cliffs that occupied much of the northern part of the Pyrmont peninsula (Broadbent 2010). The delayed development of Pyrmont compared to other parts of colonial Sydney has been attributed to the strong presence of the Gadigal people in this area until the late 1830s (GML 2024).

Due to the abundance of sandstone in the Pyrmont area, the western portion of the peninsula became a focal point for quarrying (Fitzgerald 2008). The 'Paradise' quarry was located in proximity to the study area, with the escarpment face of the quarry extending between Bowman and Mount Streets, immediately northeast of the study area (GML 2024). In their assessment, GML (2024) determined that quarrying at this site has likely truncated soil profiles, potentially down to bedrock in

some instances, which likely removed or destroyed present Aboriginal objects in portions of the study area.

Multiple phases of land reclamation within and around the study area have also occurred since the mid- to late nineteenth century (Birch et al. 2009). Some of these reclamation activities were associated with the construction of the eastern approach to the Glebe Island Bridge, the construction of wharves to support the site's industrial usage, and the construction of a support pylon for the ANZAC Bridge. GML (2024) stated that these reclamation activities were likely to have introduced capping fill over truncated natural soil profiles, which may have protected Aboriginal archaeological deposits located within any remnant profiles from additional impacts.

The construction of this support pylon for the ANZAC Bridge also resulted in the almost complete flattening of the study area, which is likely to have resulted in significant truncation to natural soil profiles as well as the introduction of fill materials. The subsurface disturbance of the study area has been further increased through the installation of subsurface utilities across the site, which are likely to have further impacted buried natural soil profiles.

A more detailed description of the study area's historical usage and development is contained within the ACHAR prepared for the project by GML (2024).

4.3 Aboriginal archaeological and cultural heritage assessment

Infrastructure NSW engaged GML to prepare an ACHAR and associated Archaeological Technical Report (ATR) for the project to fulfill the Secretary's Environmental Assessment Requirements (SEARs) for the project. Desktop assessment identified on Aboriginal Heritage Information Management System (AHIMS) site within the study area, which is described in Table 4.

Archaeological test excavations were conducted to investigate The Bays Precinct PAD02 (AHIMS ID 45-6-3338) as well as three other PADs that had been identified within the study area during previous archaeological assessments of the site (Artefact Heritage 2021; City Plan Heritage 2023): PAD 2A, PAD 3 and PAD 4. PADs were identified based on the presence of potentially intact, natural soil deposits that may have the potential to possess Aboriginal objects and were identified through geotechnical assessment of the study area. Natural soil profiles were encountered in PAD 2A and within a test pit placed between PAD 3 and PAD 4; however, only one Aboriginal object, a worked flint flake, was identified within PAD 2A.

GML consolidated this archaeological assessment into the ACHAR as required by the project SEARs. The ACHAR identified Aboriginal cultural values associated with the study area, as well as assessed the Aboriginal cultural and archaeological significance of the study area.

Table 4: AHIMS sites within the study area

AHIMS No.	Site name	Site type	Site features	Description
45-6-3338	The Bays Precinct PAD02	Open	Potential Archaeological Deposit (PAD)	The PAD consists of apparently undeveloped land in 1A Bank Street, Pyrmont, and land that appears to have not been subject to modern development in 1-3 Bank Street, Pyrmont. Historical mapping indicates that this is not reclaimed land. Geotechnical bores in these properties indicates the presence of preserved natural soils. These natural soils have the potential to possess *in situ* Aboriginal objects.

4.3.1 Aboriginal cultural heritage values

Table 5 provides a summary of the Aboriginal cultural heritage values which were identified in the project ACHAR (GML 2024).

Table 5: Summary of identified cultural values

Cultural heritage value	Description	Source
Connection to Country	The presence of a worked flint flake within the study area represents tangible evidence of Aboriginal peoples' connection to the study area, and the ACHAR prepared by GML describes the connection felt by First Nations people to the study area and its surrounds.	GML 2024; consultation conducted by GML
Blackwattle Bay/*Tjerruing*	Blackwattle Bay, or *Tjerruing* as it was referred to by the Gadigal, represents a significant site for Aboriginal people as a meeting point between saltwater and freshwater (*tucoerah*/*tuggorah*). As such, the study area and the region around it would have provided numerous important resources for that sustained First Nations groups' occupation and use of this landscape for thousands of years. In particular, the women of the Gadigal people, the *Gadigalleon*, were noted to have extensively utilised Blackwattle Bay for fishing. The study area, as it overlooks the bay, was also assessed as possessing high aesthetic values for its visual connection the *Tjerruing*.	GML 2024; consultation conducted by GML

4.3.2 Significance assessment

A significance assessment of the scientific, social, historic and aesthetic values of the study area was completed as part of the ACHAR and summarised below:

4.3.2.1 Historic value

GML assessed that the study area was of low historical significance, as there were no known post-contact historical associations with the study area. However, they did identify that due to the study area's proximity to the ANZAC Bridge and the placement of one of its support pylons, the study area has associations with Blak Diggers (GML 2024, 88).

4.3.2.2 Aesthetic value

Due to levels of historical disturbance and development of the study area, GML assessed that the study area possessed little to no aesthetic significance. Yet, the study area holds sightlines towards Blackwattle Bay, and it was determined that these views possess moderate to high aesthetic value associated with connections to the bay, and particularly Gadigal women's use of the bay for fishing (GML 2024, 89).

4.3.2.3 Socio/cultural value

The ACHAR prepared by GML stated the following regarding the socio/cultural value of the study area:

> *The site holds social value for the First Nations community in terms of its actual and potential archaeological record, which connects First Nations people to their*

past and is representative of their cultural continuity in association with the site and wider area. A single Aboriginal object in the form of a flint flake was identified during testing, while the remainder of the site is considered to hold low potential for additional Aboriginal objects in the form of stone artefacts and/or midden material.

Consultation conducted as part of this ACHAR, as a component of the park design,11 and as part of the precinct-wide ACHAR12 have identified social values in association with the meeting of fresh and saltwater within the area, and with Gadigal women's mastery of fishing, undertaken across the harbour, including on Blackwattle Bay. RAP [One Aboriginal stakeholder], registered for both the precinct-wide and the present ACHAR, identified in response to the precinct-wide ACHAR that the wider area is highly significant to First Nations people, who have lived on Country for thousands of years. He also noted that the precinct formed part of the region of early contact between European colonists and First Nations people. The site has a high level of social value. (GML 2024, 88)

4.3.2.4 Scientific value

Based on the findings of the excavation program, GML determined that the solitary flint artefact retrieved by excavations possesses limited research potential. As a result, the study area possesses an overall low level of scientific significance (GML 2024, 89). However, it was noted that remnant soil profiles containing Aboriginal objects, depending on the nature and extent of the archaeological deposit, may hold scientific significance if they are identified within the study area.

5.0 ARCHAEOLOGICAL MANAGEMENT

5.1 Heritage induction

All project personnel must complete a heritage induction required in accordance with CoC B33c (vi). This heritage induction will:

- Describe potential Aboriginal objects within the study area
- Summarise applicable heritage legislation
- Outline the conditions of approval related to Aboriginal cultural heritage applicable to the works
- Detail Aboriginal heritage management measures that have been established for the works, including the unexpected finds procedure
- Provide contact details for individuals and groups responsible for the management of unexpected finds and heritage within the study area.

The initial heritage induction must be delivered by a representative of the RAPs or a qualified archaeologist to all contractors on site prior to works commencement. Subsequent heritage inductions may be conducted by representative of the proponent that was inducted by a RAP representative or archaeologist during the initial heritage induction. A log must be kept of all people inducted.

Performance indicator for this action:

- Heritage induction is given to all relevant employees and a log of all people inducted is kept.

5.2 Archaeological monitoring

The CoC for the project also state that archaeological monitoring by suitably qualified archaeologists and RAPs must be carried out during works (CoC B33c). Monitoring must be conducted according to the following methodology prepared by GML (2024):

- All excavation works in the areas identified by GML (Figure 2) must be monitored by at least one suitably qualified archaeologist and at least one RAP due to the potential for subsurface deposits of Aboriginal objects to be present in soil profiles across portions of the works area.
- Monitoring of excavation works in locations where PAD may be present must continue until:
    - The necessary depth of excavation required by the works has been reached; or,
    - Bedrock is encountered.
- If soil profiles that are consistent with that found to contain the Aboriginal object by GML, or if Aboriginal objects are identified during excavations, works must cease and opportunities to avoid harm to Aboriginal objects and/or remnant natural soil profiles should be considered or Aboriginal archaeological excavations must commence.
- Decisions about next steps following the identification of PAD and/or Aboriginal objects during the monitoring program or as an unexpected find must be made in conjunction with the

proponent, project archaeologists and RAPs. All parties must be notified following the identification of PAD.

Figure 2: Aboriginal archaeological management strategy – updated mitigation mapping (GML Heritage 2025)

Performance indicator for this action:

- Memos describing the monitoring undertaken and outcomes to be prepared following the completion of monitoring works and provided to the proponent and RAPs.

5.3 Avoiding and conserving areas of PAD

Opportunities to conserve and avoid areas of PAD identified during the monitoring program must be considered, where is it is feasible to do so (CoC B33c (ii)). This may involve redesign, alterations to excavation locations for the works, or the installation of protective materials (e.g. geofabric) to protect PAD. Measures to avoid or conserve PAD will be negotiated where needed during construction between the proponent, construction personnel, archaeologists and RAPs. If it is not feasible to avoid or conserve PAD where encountered during works, then archaeological excavations must be conducted.

Performance indicator for this action:

- Decision making process to be escribed in the monitoring memo outlining avoidance measures for RAP input or reasons why avoidance is not possible.
- Avoidance of area or appropriate excavation and reporting undertaken as per the methodologies included in this ACHMP.

5.4 Aboriginal archaeological excavation

Where remnant soil profiles with Aboriginal archaeological potential will be impacted by the works during the monitoring program or unexpectedly within the works area, additional archaeological excavation must be conducted, as per the CoCs for this project (B33c (iii)). This excavation should be conducted in accordance with the archaeological research design previously prepared by GML (2024) for the works, which is as follows:

“Where a remnant soil with PAD is identified in any scenario, the following methodology should be employed:

- A TU [Test Unit] should be established, excavated and recorded by a suitably qualified archaeologist and representatives of the project RAPs.
- The TU should be approximately sized in the relation to the deposit. A 0.5m^2 or 1m^2 TU is recommended.
- Where the TU intersects an Aboriginal archaeological deposit, then the Aboriginal Excavation Director, in consultation with the RAPs will assess the nature, extent, condition and integrity of the deposit to determine what additional excavation is necessary in order to understand the full extent and nature of the resource. Triggers which may necessitate the expansion of the TU include identification of an archaeological feature or density of artefacts >5 per 1m^2.
- Expansion would be undertaken in increments equivalent to the current TU size (1m x 1m or 0.5m x 0.5m) until the extent of the resource has been fully explored.
- The TU should be excavated in 50mm spits and excavated to a sterile layer or bedrock. Any archaeological features encountered should be excavated according to their stratigraphy.

- All excavated material should be wet sieved through a 3mm mesh, and any actual or suspected cultural material (i.e. stone, bone, shell) along with any historical material (i.e. flint, glass, ceramic; all of which may be reworked by First Nations people) should be kept for analysis. Material should be bagged by TU and spit. Sieving can occur on or off site and can be undertaken using a water cart into skips bins, which can be emptied as required.
- The following details should be recorded for each TU:
    - TU number;
    - TU location;
    - TU landform;
    - TU aspect;
    - Depth of each spit excavated;
    - Number of stone objects (or other feature/s) per spit;
    - Total number of objects;
    - Any features or inclusions (such as carbon);
    - Taphonomic factors (disturbance, bioturbation, etc); and
    - Soil characteristics (so that a detailed pattern of changing soil landscapes across the site is developed);
    - Section and plan diagrams should be drawn for each TU.
- Soil and carbon samples should be taken where possible which may be used for future palynology, sedimentology and optically stimulated luminescence dating.
- Any Aboriginal objects identified should be subject to specialist analysis."

In the event that archaeological excavations are required, consultation with RAPs must occur to inform them of the intended excavation methodology. RAPs must also be provided with the opportunity to participate in the excavation program. The number of RAPs participating in excavation would be proportionate to the level of excavation being undertaken.

Following the completion of archaeological excavation, an Aboriginal Cultural Heritage Excavation Report(s) must be prepared.

Performance indicator for this action:

- Completion of archaeological excavation in accordance with the methodology provided in Appendix 2: GML ACHAR.
- Preparation of an Aboriginal Cultural Heritage Excavation Report(s) following the completion of excavation.

5.5 Aboriginal Cultural Heritage Excavation Report

The project CoCs outline that where additional Aboriginal archaeological excavation is conducted, an Aboriginal Cultural Heritage Excavation Report(s) must be prepared (B33e). Any excavation report must be prepared by a suitably qualified archaeologist and in accordance with The Guide (OEH 2011) and the Code of Practice (Department of Environment, Climate Change & Water 2010b) (CoC B33e (ii). An assessment of the Aboriginal heritage significance of the site following the excavation program would be contained within the excavation report. This assessment would be prepared in line

with the guidelines and criteria established in The Guide (OEH 2011) the *Burra Charter* (Australia ICOMOS Inc 2013) and the NSW Heritage Office's *Assessing Heritage Significance* (NSW Heritage Office 2001). These criteria are:

- Social values – does the area have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.
- Historic values – is the area important to the cultural or natural history of the local area and/or region and/or state.
- Aesthetic values – is the area important in demonstrating aesthetic characteristics in the local area and/or region and/or state.
- Scientific values – does the area have the potential to yield information that will contribute to an understanding of the cultural and natural history of the local area and/or region and/or state. Scientific values should be considered in light of the following criteria:
    - Research potential – does the evidence suggest any potential to contribute to an understanding of the area and/or region and/or state's natural and cultural history?
    - Representativeness - how much variability (outside and/or inside the subject area) exists, what is already conserved, how much connectivity is there?
    - Rarity - is the subject area important in demonstrating a distinctive way of life, custom, process, land-use, function or design no longer practised? Is it in danger of being lost or of exceptional interest?
    - Education potential – does the subject area contain teaching sites or sites that might have teaching potential?

Any excavation report prepared following additional archaeological excavations must document the results of said excavations and any subsequent salvage, including artefact analysis and the identification of a final repository for finds (CoC B33e (iii)). Additionally, RAPs must be provided with a minimum 28-day period to review and comment upon the report before it is finalised (CoC B33e (iv)). Following finalisation of the report, copies must be provided to the Planning Secretary, Heritage NSW, the City of Sydney Council, the Metropolitan Local Aboriginal Land Council and RAPs within 24 months of the completion of the Aboriginal archaeological collections and excavations.

Performance indicator for this action:

- Excavation report prepared following the completion of excavations, submitted to RAPs for a minimum 28-day review period, finalised following this review and integration of comments, and then submitted to the parties specified above within 24 months of the completion of excavations. All consultation undertaken for the test excavation must also be documented in this report.

5.6 Ongoing Aboriginal object management

A management and repatriation strategy should be developed in consultation with Aboriginal stakeholders, the proponent and project archaeologists to address the long-term management of any

Aboriginal objects salvaged during works and for the flint flake identified by GML during their excavations of the site (CoC B33c (v)).

This strategy would specify the temporary storage details for any Aboriginal objects salvaged during additional excavations. Moreover, it would specify potential long-term management strategies for the Aboriginal objects; these may include reburial on-site in an area that will not be impacted or following the completion of works, display and interpretation within the site, or custodianship by an appropriate body with that body's permission and consensus from all involved parties.

Performance indicators for this action:

- Preparation of a long-term management strategy for Aboriginal objects identified during test excavation by GML and any additional excavation, e.g. long-term care agreement, reburial on-site, heritage interpretation.
- Long term management actions completed in accordance with the strategy.

5.7 Aboriginal Site Impact Recording Form

An Aboriginal Site Impact Recording Form (ASIRF) must be prepared and submitted by a suitably qualified archaeologist, outlining impacts to AHIMS ID 45-6-3338 (The Bays Precinct PAD02) following the completion of development activities within the project area. Once completed, The Bays Precinct PAD02 will be listed as destroyed.

Performance indicator for this action:

- ASIRF submitted to AHIMS following the completion of development activities.

5.8 Unexpected finds procedure

The works must operate under an unexpected finds procedure that outlines processes which must be followed in the event that unexpected Aboriginal objects are encountered during the works program (CoC B33d). This was also recommended by GML (2024) in the ACHAR prepared for this project.

To assist with the identification of unexpected Aboriginal objects during works, characteristics of Aboriginal stone tools include the following shown in Figure 3 and Figure 4:

- Sharp edge
- Retouch along one or more edges
- Stone rich in silica (does it sparkle? If so, it likely has a high silica content)
- Stone type is often different to natural rock in the area

Figure 3: Characteristics of stone flakes

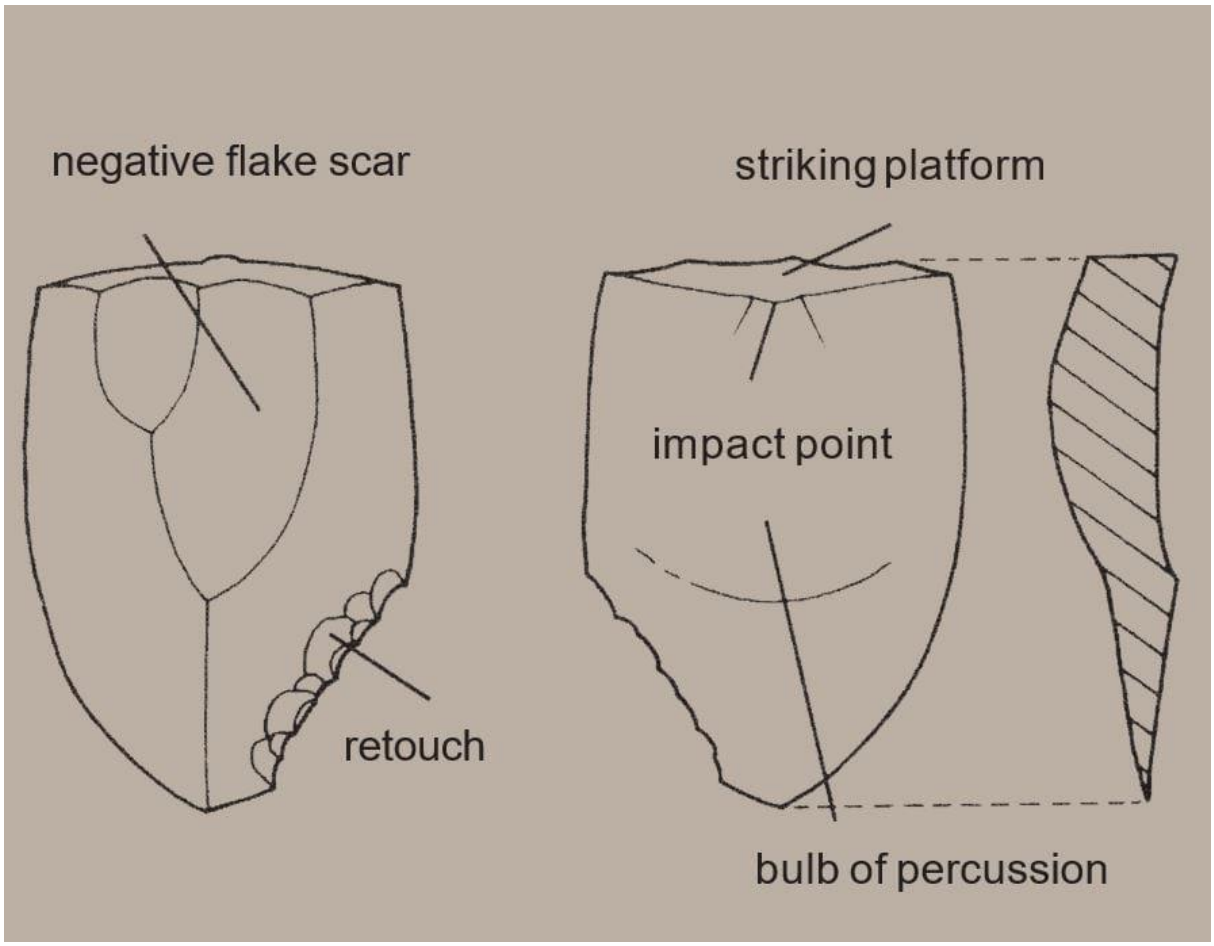

Figure 4: Representative examples of stone artefacts which are encountered in NSW (Source: NSW Archaeology)

GML (2024) also determined that there is low potential for midden material to be present across the site. Middens are characterised by concentrations of shells from a wide range of species as well as other materials (e.g. stone artefacts, bone, etc.). Features of middens include:

- Generally, contain large/mature shellfish species
- Shells may be blackened from cooking and charcoal may be visible
- Animal and fish bones may be present, as might stone artefacts
- Have been known to contain human burials also

Figure 5: Representative example of a shell midden

Figure 6: Representative example of a shell midden

If unanticipated suspected Aboriginal objects are uncovered at any time throughout the life of the project the following steps would be undertaken.

- All work in the immediate vicinity of the suspected Aboriginal object must cease immediately
- A 5 m wide buffer area around the suspected item or object must be cordoned off

Once the find has been secured a suitably qualified archaeologist must be contacted to assess the significance of the find and determine management requirements.

If the find is identified as a genuine Aboriginal object:

- Heritage NSW and must be notified and the RAPs for the project consulted
- The Planning Secretary must be notified within seven days of the Applicant becoming aware of an incident as per the Incident Notification and Reporting Requirements of the CoC. Written notification of the incident must contain the details outlined in the CoC (p.30). Within 30 days of the incident occurring, the Applicant must provide the Planning Secretary and any relevant public authorities with a detailed incident report addressing the requirements outlined in the CoC (p. 30)
- A methodology for salvage and long-term storage of the find in accordance with its identified significance must be developed in consultation with Heritage NSW and the RAPs. Salvage may mean either a collection of Aboriginal objects or archaeological excavation
- Salvage works in accordance with the methodologies outlined in this ACHMP should be undertaken
- The Aboriginal object must be registered on the Heritage NSW AHIMS database and an ASIRF prepared where required.

Works would not recommence until written consent is received from the project archaeologist/heritage consultant.

Performance indicator for this action:

- The unexpected finds procedure is communicated to all project staff as part of project inductions and a log of inductions is kept.
- in the event of any unexpected finds, that procedure and any relevant notifications or reporting are prepared within specified timelines.

5.9 Skeletal remains

Where suspected human remains are identified during salvage excavation or construction works, all work in that area would cease and the area be cordoned off to protect any further harm to the remains.

Where it is unclear whether the remains are human, a specialist, such as a Physical Anthropologist, would be called to site to confirm.

If you suspect the remains are human, the NSW Police must be notified immediately on the Police Assistance Line (131 444).

The Planning Secretary must be notified within seven days of the Applicant becoming aware of an incident as per the Incident Notification and Reporting Requirements of the CoC. Written notification of the incident must contain the details outlined in the CoC (p.30). Within 30 days of the incident occurring, the Applicant must provide the Planning Secretary and any relevant public authorities with a detailed incident report addressing the requirements outlined in the CoC (p. 30).

If the human remains are found to be Aboriginal ancestral remains, the RAPs must be notified.

Work must not recommence in the area where skeletal remains have been identified until such time as the relevant written approval has been granted by the relevant regulatory authority(s).

Performance indicator for this action:

- The unexpected finds procedure is communicated to all project staff as part of project inductions and,
- In the event of any unexpected finds, that procedure and any relevant notifications or reporting are prepared within specified timelines.

5.10 ACHMP revision

Where unexpected finds are identified, this report must be updated with details and management measures for those finds. Additional consultation with RAPs and Heritage NSW must be completed and documented in Section 3.0. The document history and status table on Page ii must be updated to reflect the modifications to this document. The actions and results of investigation into unexpected finds must be documented in a new section of this report.

Performance indicator for this action:

- ACHMP is revised in line with any unexpected finds and additional consultation is undertaken and documented.

5.11 Aboriginal heritage measure monitoring

To meet CoC B33f, the proponent must incorporate a program to monitor and report on the effectiveness of the above measures throughout the construction program and on any heritage impacts of the project.

Performance indicator for this action:

- Proponent to maintain a record of heritage measures implementation, effectiveness and heritage impacts throughout the lifecycle of the project.

6.0 REFERENCES

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APPENDIX 1: CONSULTATION RECORDS

Aboriginal Heritage Team

From: Aboriginal Heritage Team
Sent: Thursday, 8 January 2026 1:39 PM
Subject: RE: Bank Street Park Aboriginal Cultural Heritage Management Plan (ACHMP) DRAFT - Artefact Heritage
Attachments: 250563_Bank St Park_ACHMP_DRAFT_260106_V1.pdf

Dear Sir/Madam,

I realised that the last Appendix on the report did not attach properly so here is the complete draft version.

Thank you,

Aboriginal Heritage Team

ARTEFACT HERITAGE AND ENVIRONMENT
Address: Suite 56, Jones Bay Wharf, 26 32 Pirrama Rd, Pyrmont NSW 2009.
Web: https://www.artefact.net.au/

Artefact acknowledges Aboriginal and Torres Strait Islander peoples as the traditional owners and custodians of the lands and waters of Australia. We acknowledge the Gadigal and Wangal people of Pirrama (Pyrmont) where our Sydney office is located, the Awabakal, Worimi and Wonnaruaof the Hunter Region where our Mulubinba (Newcastle) office is located and the Wiradyuri of the Central West where our Bathurst office is located. We pay our respects to them, their culture and their Elders past and present. We thank them for sustaining and caring for Country for millennia.

Read Artefact's email disclaimer

From: Aboriginal Heritage Team
Sent: Thursday, 8 January 2026 11:34 AM
Subject: Bank Street Park Aboriginal Cultural Heritage Management Plan (ACHMP) DRAFT - Artefact Heritage

Dear Sir/Madam,

Artefact Heritage and Environment (Artefact) has been engaged by BESIX Watpac on behalf of Infrastructure NSW (the proponent) to prepare an Aboriginal Cultural Heritage Management Plan (ACHMP) to satisfy the conditions of the State Significant Development consent (SSD-53386706) for the planned redevelopment of Bank Street Park.

The Bank Street Park development forms part of the Blackwattle Bay Precinct, adjoining the waters of Blackwattle Bay.
A critical part of the Blackwattle Bay Precinct is the high-quality public domain which includes a series of parks and open spaces connected by a foreshore promenade.
Bank Street Park will bring new active and passive recreation uses into a unique park environment, catering for both existing and future communities in the vicinity.

GML (2024) prepared an Aboriginal Cultural Heritage Assessment Report (ACHAR) for the proposed works to satisfy the Secretary's Environmental Assessment Requirements (SEARs) for the project. Through the ACHAR, GML identified that an Aboriginal archaeological deposit was present within the site, that there was potential for additional areas of Potential Archaeological Deposit (PAD), and that there were Aboriginal cultural values associated with the site. GML recommended that staged Aboriginal heritage management strategies be implemented for the works, involving impact avoidance where possible, archaeological monitoring, and further Aboriginal archaeological excavation if required.
The project was approved as an SSD on 31 July 2024 and Conditions of Consent (CoCs) were issued on the same day. The CoCs required that an ACHMP be prepared to manage Aboriginal cultural heritage during the works program. Modifications to the SSD consent have been sought (SSD-53386706-Mod-1, approved 9 July 2025; SSD-53386706-Mod-2, pending approval), but these modifications are unlikely to result in any changes to the requirements for Aboriginal cultural heritage outlined in the existing CoCs.

The DRAFT version of this ACHMP is attached for your records.

If you wish to provide a comment on the ACHMP or any cultural knowledge with the study area and its surrounds, please do so by **COB 5 February 2026** by replying to this email or by contacting consultation@artefact.net.au with the subject line: **"Bank Street Park Aboriginal Heritage Cultural Management Plan (ACHMP)"**

Any questions do not hesitate to ask,

Aboriginal Heritage Team

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From: Aboriginal Heritage Team
Sent: Thursday, 8 January 2026 1:36 PM
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Subject: RE: Bank Street Park Aboriginal Cultural Heritage Management Plan (ACHMP) DRAFT - Artefact Heritage
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Subject: Bank Street Park Aboriginal Cultural Heritage Management Plan (ACHMP) DRAFT - Artefact Heritage
Attachments: 250563_Bank St Park_ACHMP_DRAFT_260106_V1.pdf

Dear Sir/Madam,

Artefact Heritage and Environment (Artefact) has been engaged by BESIX Watpac on behalf of Infrastructure NSW (the proponent) to prepare an Aboriginal Cultural Heritage Management Plan (ACHMP) to satisfy the conditions of the State Significant Development consent (SSD-53386706) for the planned redevelopment of Bank Street Park.

The Bank Street Park development forms part of the Blackwattle Bay Precinct, adjoining the waters of Blackwattle Bay.
A critical part of the Blackwattle Bay Precinct is the high-quality public domain which includes a series of parks and open spaces connected by a foreshore promenade.
Bank Street Park will bring new active and passive recreation uses into a unique park environment, catering for both existing and future communities in the vicinity.

GML (2024) prepared an Aboriginal Cultural Heritage Assessment Report (ACHAR) for the proposed works to satisfy the Secretary's Environmental Assessment Requirements (SEARs) for the project. Through the ACHAR, GML identified that an Aboriginal archaeological deposit was present within the site, that there was potential for additional areas of Potential Archaeological Deposit (PAD), and that there were Aboriginal cultural values associated with the site. GML recommended that staged Aboriginal heritage management strategies be implemented for the works, involving impact avoidance where possible, archaeological monitoring, and further Aboriginal archaeological excavation if required.
The project was approved as an SSD on 31 July 2024 and Conditions of Consent (CoCs) were issued on the same day. The CoCs required that an ACHMP be prepared to manage Aboriginal cultural heritage during the works program. Modifications to the SSD consent have been sought (SSD-53386706-Mod-1, approved 9 July 2025; SSD-53386706-Mod-2, pending approval), but these modifications are unlikely to result in any changes to the requirements for Aboriginal cultural heritage outlined in the existing CoCs.

The DRAFT version of this ACHMP is attached for your records.

If you wish to provide a comment on the ACHMP or any cultural knowledge with the study area and its surrounds, please do so by **COB 5 February 2026** by replying to this email or by contacting consultation@artefact.net.au with the subject line: **"Bank Street Park Aboriginal Heritage Cultural Management Plan (ACHMP)"**

Any questions do not hesitate to ask,

Aboriginal Heritage Team

ARTEFACT HERITAGE AND ENVIRONMENT
Address: Suite 56, Jones Bay Wharf, 26 32 Pirrama Rd, Pyrmont NSW 2009.
Web: https://www.artefact.net.au/

Artefact acknowledges Aboriginal and Torres Strait Islander peoples as the traditional owners and custodians of the lands and waters of Australia. We acknowledge the Gadigal and Wangal people of Pirrama (Pyrmont) where our Sydney office is located, the Awabakal, Worimi and Wonnaruaof the Hunter Region where our Mulubinba (Newcastle) office is located and

the Wiradyuri of the Central West where our Bathurst office is located. We pay our respects to them, their culture and their Elders past and present. We thank them for sustaining and caring for Country for millennia.

Read Artefact's email disclaimer

From: Wendy Morgan <wenlissa01@hotmail.com>
Sent: Monday, 12 January 2026 11:47 AM
To: Aboriginal Heritage Team
Subject: Re: Bank Street Park Aboriginal Cultural Heritage Management Plan (ACHMP) DRAFT - Artefact Heritage

Good Morning, thank you for the updated report. Guntawang agrees with the report.

We look forward to working with you on future projects.

Kind regards,

Wendy Morgan

CEO GARI

0414 964 657

Guntawang Aboriginal Resources Incorporated

113 Reservoir Road Mt Pritchard NSW 2170

Incorporation No: INC1500129

From: Aboriginal Heritage Team <consultation@artefact.net.au>
Sent: Thursday, January 8, 2026 1:39 PM
Subject: RE: Bank Street Park Aboriginal Cultural Heritage Management Plan (ACHMP) DRAFT - Artefact Heritage

Dear Sir/Madam,

I realised that the last Appendix on the report did not attach properly so here is the complete draft version.

Thank you,

Aboriginal Heritage Team

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Read Artefact's email disclaimer

From: Aboriginal Heritage Team
Sent: Thursday, 8 January 2026 11:34 AM
Subject: Bank Street Park Aboriginal Cultural Heritage Management Plan (ACHMP) DRAFT - Artefact Heritage

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Read Artefact's email disclaimer

From: Microsoft Outlook <MicrosoftExchange329e71ec88ae4615bbc36ab6ce41109e@artefact.net.au>
To: scott@tocomwall.com.au
Sent: Friday, 9 January 2026 1:39 PM
Subject: Undeliverable: RE: Bank Street Park Aboriginal Cultural Heritage Management Plan (ACHMP) DRAFT - Artefact Heritage

Delivery has failed to these recipients or groups:

scott@tocomwall.com.au
Your message couldn't be delivered. Despite repeated attempts to contact the recipient's email system it didn't respond.

Contact the recipient by some other means (by phone, for example) and ask them to tell their email admin that it appears that their email system isn't accepting connection requests from your email system. Give them the error details shown below. It's likely that the recipient's email admin is the only one who can fix this problem.

For more information and tips to fix this issue see this article: https://go.microsoft.com/fwlink/?LinkId=389361.

Diagnostic information for administrators:

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Total retry attempts: 12

scott@tocomwall.com.au
Remote server returned '550 5.4.300 Message expired -> 451 4.4.4 Mail received as unauthenticated, incoming to a recipient domain configured in a hosted tenant which has no mail-enabled subscriptions. ATTR5 [ML1PEPF0001130A.ausprd01.prod.outlook.com 2026-01-09T02:31:12.005Z 08DE4E4353E54353]'

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From: Aboriginal Heritage Team <consultation@artefact.net.au>
Subject: RE: Bank Street Park Aboriginal Cultural Heritage Management Plan
 (ACHMP) DRAFT - Artefact Heritage
Thread-Topic: Bank Street Park Aboriginal Cultural Heritage Management Plan
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To: Undisclosed recipients:;
Return-Path: consultation@artefact.net.au
X-OriginatorOrg: artefact.net.au
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From: Microsoft Outlook <MicrosoftExchange329e71ec88ae4615bbc36ab6ce41109e@artefact.net.au>
To: scott@tocomwall.com.au
Sent: Friday, 9 January 2026 11:34 AM
Subject: Undeliverable: Bank Street Park Aboriginal Cultural Heritage Management Plan (ACHMP) DRAFT - Artefact Heritage

Delivery has failed to these recipients or groups:

scott@tocomwall.com.au
Your message couldn't be delivered. Despite repeated attempts to contact the recipient's email system it didn't respond.

Contact the recipient by some other means (by phone, for example) and ask them to tell their email admin that it appears that their email system isn't accepting connection requests from your email system. Give them the error details shown below. It's likely that the recipient's email admin is the only one who can fix this problem.

For more information and tips to fix this issue see this article: https://go.microsoft.com/fwlink/?LinkId=389361.

Diagnostic information for administrators:

Generating server: SY0PR01MB10111.ausprd01.prod.outlook.com
Total retry attempts: 10

scott@tocomwall.com.au
Remote server returned '550 5.4.300 Message expired -> 451 4.4.4 Mail received as unauthenticated, incoming to a recipient domain configured in a hosted tenant which has no mail-enabled subscriptions. ATTR5 [SY3PEPF0000A727.ausprd01.prod.outlook.com 2026-01-08T23:38:08.788Z 08DE4E514DAA6C23]'

Original message headers:


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From: Aboriginal Heritage Team <consultation@artefact.net.au>
Subject: Bank Street Park Aboriginal Cultural Heritage Management Plan (ACHMP)
 DRAFT - Artefact Heritage
Thread-Topic: Bank Street Park Aboriginal Cultural Heritage Management Plan
 (ACHMP) DRAFT - Artefact Heritage
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From: Cultural Officer <culturalofficer@metrolalc.org.au>
Sent: Thursday, 8 January 2026 11:35 AM
To: Aboriginal Heritage Team
Subject: Automatic reply: Bank Street Park Aboriginal Cultural Heritage Management Plan (ACHMP) DRAFT - Artefact Heritage

Hello im currently unavailable & away on holidays. I will be back in the office on the 12th of Jan

Any urgent issues, please call Kelly on 0413 913 376.

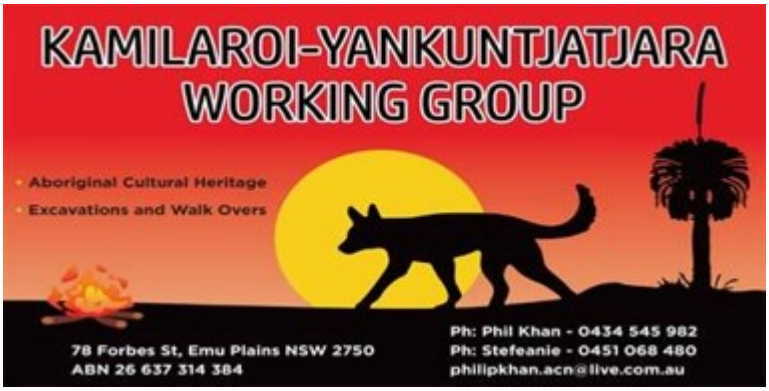
Thanks for understanding.

From: Phil Khan <philipkhan.acn@live.com.au>
Sent: Monday, 2 February 2026 10:52 AM
To: Aboriginal Heritage Team
Subject: Re: "Bank Street Park Aboriginal Heritage Cultural Management Plan (ACHMP)"

Hi,

Thank you for your ACHMP for Bank Street, we agree and support your ACHMP.

Kinds Regards
Phil Khan – Director
P 0451068480
Email: philipkhan.acn@live.com.au
ABN 26 637 314 384



From: Aboriginal Heritage Team <consultation@artefact.net.au>
Sent: Thursday, January 8, 2026 11:33 AM
Subject: Bank Street Park Aboriginal Cultural Heritage Management Plan (ACHMP) DRAFT - Artefact Heritage

Dear Sir/Madam,

Artefact Heritage and Environment (Artefact) has been engaged by BESIX Watpac on behalf of Infrastructure NSW (the proponent) to prepare an Aboriginal Cultural Heritage Management Plan (ACHMP) to satisfy the conditions of the State Significant Development consent (SSD-53386706) for the planned redevelopment of Bank Street Park.

The Bank Street Park development forms part of the Blackwattle Bay Precinct, adjoining the waters of Blackwattle Bay.
A critical part of the Blackwattle Bay Precinct is the high-quality public domain which includes a series of parks and open spaces connected by a foreshore promenade.
Bank Street Park will bring new active and passive recreation uses into a unique park environment, catering for both existing and future communities in the vicinity.

GML (2024) prepared an Aboriginal Cultural Heritage Assessment Report (ACHAR) for the proposed works to satisfy the Secretary's Environmental Assessment Requirements (SEARs) for the project. Through the ACHAR, GML identified that an Aboriginal archaeological deposit was present within the site, that there was potential for additional areas of Potential Archaeological Deposit (PAD), and that there were Aboriginal cultural values associated with the site. GML recommended that staged Aboriginal heritage management strategies be implemented for the works, involving impact avoidance where possible, archaeological monitoring, and further Aboriginal archaeological excavation if required.
The project was approved as an SSD on 31 July 2024 and Conditions of Consent (CoCs) were issued on the same day. The CoCs required that an ACHMP be prepared to manage Aboriginal cultural heritage during the works program. Modifications to the SSD consent have been sought (SSD-53386706-Mod-1, approved 9 July 2025; SSD-53386706-Mod-2, pending approval), but these modifications are unlikely to result in any changes to the requirements for Aboriginal cultural heritage outlined in the existing CoCs.

The DRAFT version of this ACHMP is attached for your records.

If you wish to provide a comment on the ACHMP or any cultural knowledge with the study area and its surrounds, please do so by **COB 5 February 2026** by replying to this email or by contacting consultation@artefact.net.au with the subject line: **"Bank Street Park Aboriginal Heritage Cultural Management Plan (ACHMP)"**

Any questions do not hesitate to ask,

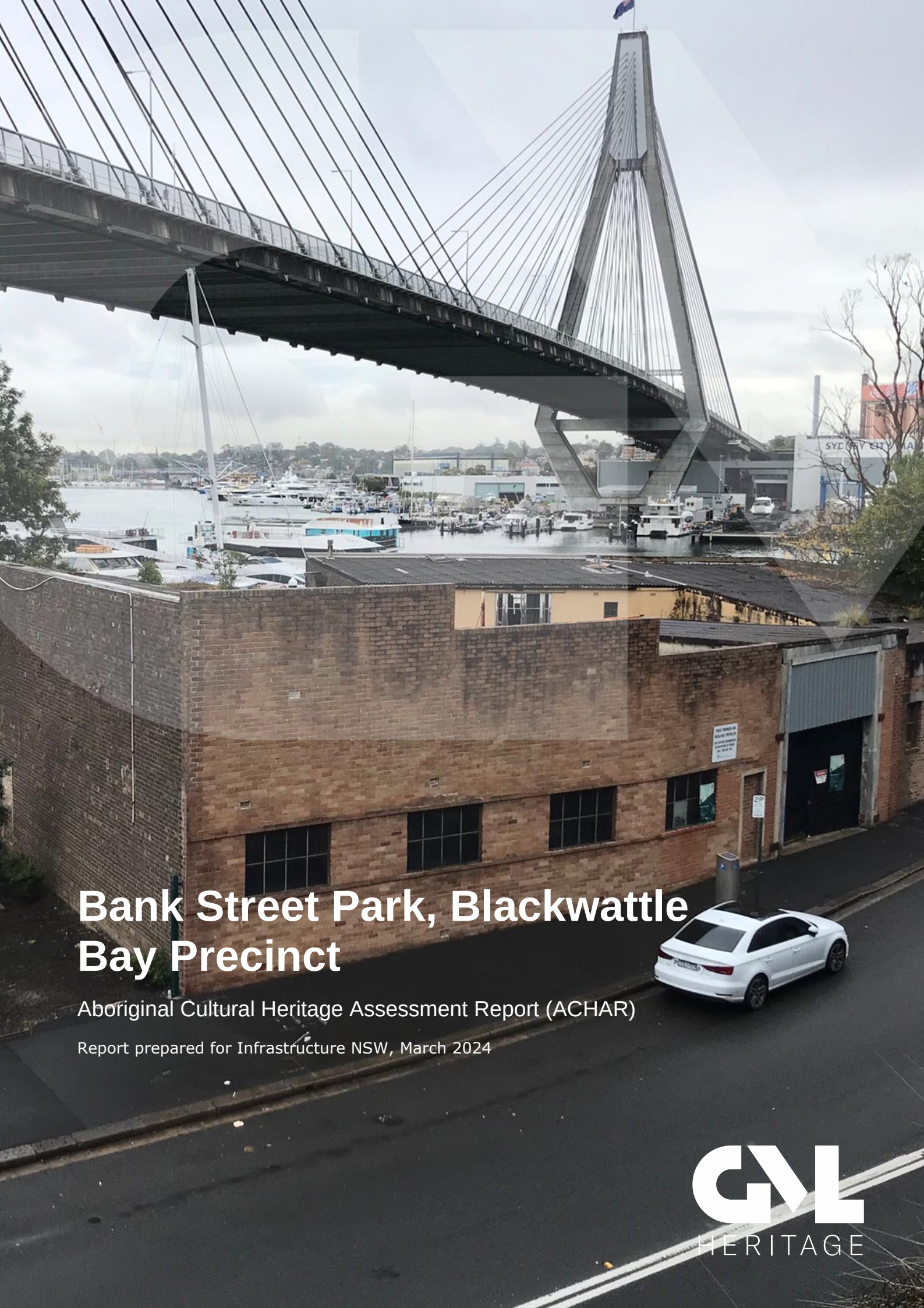
Aboriginal Heritage Team

ARTEFACT HERITAGE AND ENVIRONMENT
Address: Suite 56, Jones Bay Wharf, 26 32 Pirrama Rd, Pyrmont NSW 2009.
Web: https://www.artefact.net.au/

Artefact acknowledges Aboriginal and Torres Strait Islander peoples as the traditional owners and custodians of the lands and waters of Australia. We acknowledge the Gadigal and Wangal people of Pirrama (Pyrmont) where our Sydney office is located, the Awabakal, Worimi and Wonnaruaof the Hunter Region where our Mulubinba (Newcastle) office is located and the Wiradyuri of the Central West where our Bathurst office is located. We pay our respects to them, their culture and their Elders past and present. We thank them for sustaining and caring for Country for millennia.

Read Artefact's email disclaimer

APPENDIX 2: GML ACHAR



Bank Street Park, Blackwattle Bay Precinct

Aboriginal Cultural Heritage Assessment Report (ACHAR)

Report prepared for Infrastructure NSW, March 2024

GML HERITAGE

Acknowledgement of Country

We respect and acknowledge the First Nations of the lands and waterways on which we live and work, their rich cultural heritage and their deep connection to Country, and we acknowledge their Elders past and present. We are committed to truth-telling and to engaging with First Nations to support the protection of their culture and heritage. We strongly advocate social, cultural and political justice and support the Uluru Statement from the Heart.

Cultural warning

Aboriginal and Torres Strait Islander readers are advised that this report may contain images or names of First Nations people who have passed away.

GML HERITAGE

Report register

The following report register documents the development of this report, in accordance with GML's Quality Management System.

Job No.	Issue No.	Notes/Description	Issue Date
23-0126F	1	Draft Report to INSW	20 October 2023
23-0126F	2	Draft Report to project RAPs	25 October 2023
23-0126F	3	Final Draft to INSW	23 November 2023
23-0126F	4	Final Report	28 November 2023
23-0126F	5	Revised Final	26 March 2024

Quality assurance

The report has been reviewed and approved for issue in accordance with the GML quality assurance policy and procedures.

Indigenous cultural and intellectual property

We acknowledge and respect the inherent rights and interests of the First Nations in Indigenous Cultural and Intellectual Property. We recognise that Aboriginal and Torres Strait Islander people have the right to be acknowledged and attributed for their contribution to knowledge but also respect their rights to confidentiality. We recognise our ongoing obligations to respect, protect and uphold the continuation of First Nations rights in the materials contributed as part of this project.

Copyright

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Cover image: View to 1–3 Bank Street. (Source: © GML Heritage, 2023)

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Executive summary

Infrastructure NSW engaged GML Heritage Pty Ltd (GML) to prepare an Aboriginal cultural heritage assessment report (ACHAR) for the Bank Street Park development within the Blackwattle Bay precinct, Pyrmont. This report forms part of the Environmental Impact Statement (EIS) for the site prepared under the project Secretary's Environmental Assessment Requirements (SEARs) issued for State Significant Development (SSD) application number SSD-53386706.

This report aims to:

- identify, assess and report on Aboriginal heritage values within the site;
- involve the Aboriginal community in decisions with respect to its heritage;
- determine how the Bank Street Park development project may harm these values; and
- establish the mechanism for conservation and mitigation of harm to these values.

This ACHAR should be read in conjunction with the Aboriginal Archaeological Technical Report (ATR), which details the results of a program of archaeological test excavation that was completed to address the project SEARs. The ATR forms an appendix to this report.

The cultural heritage assessment has confirmed the identification of an Aboriginal archaeological deposit within the site, the potential for additional areas of potential archaeological deposits (PAD), and Aboriginal cultural values associated with the site.

We recommend that staged Aboriginal heritage management strategies be followed for the Bank Street site, involving impact avoidance where possible, archaeological monitoring in areas of potential impact to PAD, and further Aboriginal archaeological investigation in the instance of identification unexpected finds or areas of PAD within the impact area.

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Community Consultation Log

1 Introduction

1 Introduction to the Project

1.1 Introduction

The purpose of this report is to identify whether the site possesses or has the potential to possess Aboriginal heritage archaeological sites, places, objects, landscapes and/or values, in accordance with the Heritage NSW guidelines for Aboriginal heritage assessment, to support a State Significant Development Application (SSDA) for a new waterfront public park within Blackwattle Bay, to be known as Bank Street Park (SSD-53386706). Bank Street Park is located at 1A-19 Bank Street, Pyrmont on the shoreline of Tjerruing Blackwattle Bay and adjacent areas of Blackwattle Bay.

1.2 Blackwattle Bay Precinct

Bank Street Park forms part of the Blackwattle Bay Precinct, which is an area of predominantly government owned land located on the western edge of the Pyrmont Peninsula and adjoining the waters of Blackwattle Bay (Figure 1.1).

Figure 1.1 Blackwattle Bay Precinct. (Source: INSW)

The precinct was rezoned in December 2022 to facilitate a new mixed-use community, providing for around 2,000 new residents and 5,600 new jobs and creating a vibrant 24/7 economy. Updated planning and land use controls were incorporated into the Sydney Local Environmental Plan 2012, along with site specific design guidance in the *Blackwattle Bay Design Guidelines.*

A critical part of the Blackwattle Bay Precinct is the high quality public domain which includes a series of parks and open spaces connected by a foreshore promenade. Bank Street Park will bring new active and passive recreation uses into a unique park environment, catering for both existing and future communities in the vicinity.

1.3 Site description

Bank Street Park is located at 1A-19 Bank Street, Pyrmont NSW within the City of Sydney local government area (LGA) and includes harbour development in Blackwattle Bay. The site area is 1.1 hectares. The relevant lot and deposited plans and the respective ownership for the site are detailed in Table 1.1 and shown in Figure 1.2 and Figure 1.3.

Table 1.1 Summary of land title details of the site.

Street address	Lot and Deposited Plan details	Ownership
1A Bank Street, Pyrmont NSW 2009	Lot 1 DP 85206 Lot 1 DP 188671	Transport for NSW
1–3 Bank Street, Pyrmont NSW 2009	Lots 1–2 DP 1089643 Lot 1 DP 439245	Infrastructure NSW
5 Bank Street, Pyrmont NSW 2009	Lot 20 DP 803159	Transport for NSW
7 Bank Street, Pyrmont NSW 2009	Lot 19 DP 803159	Transport for NSW
9 Bank Street, Pyrmont NSW 2009	Lot 21 DP 803159	Transport for NSW
11 Bank Street, Pyrmont NSW 2009	Lot 22 DP 803159	Transport for NSW
17–19 Bank Street, Pyrmont NSW 2009	Lots 5–6 DP 803160	Transport for NSW
Sydney Harbour	Lot 5 DP 1209992	Roads and Maritime Services (Transport for NSW)

Street address	Lot and Deposited Plan details	Ownership
Sydney Harbour	Lot 107 in DP 1076596	Transport for NSW
Part Bank Street road reserve	N/A	City of Sydney Council

Bank Street Park is located on Gadigal Land, one of the twenty-nine clans of the great Eora Nation. It adjoins the foreshores of Glebe to the west and Pyrmont Bridge Road and Wentworth Park to the south.

Figure 1.2 Site context map. The indicative site location is outlined in red. (Source: SIX Maps with Architectus edits [2023])

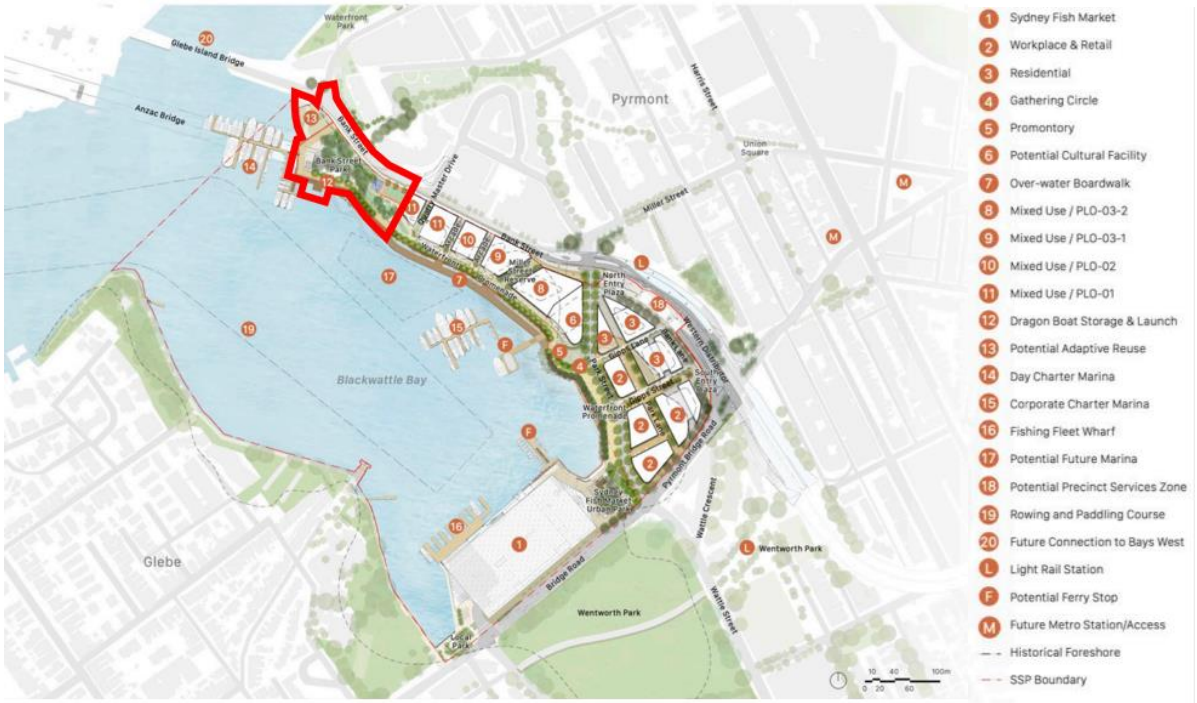

Figure 1.3 Bank Street Park site location within Blackwattle Bay State Significant Precinct. The indicative site location is outlined in red. (Source: Blackwattle Bay Design Guidelines with Architectus edits [2023])

1.4 Proposed development

1.4.1 Overview

Development consent is being sought for a *recreation area* for the primary purpose of a *public park*, comprising:

- Site preparation works, including tree removal, earthworks and remediation to facilitate the proposed use;
- Demolition of three existing buildings at 1–3 Bank Street;
- New and adapted facilities for community use, including:
  - New single storey building to accommodate flexible community space, café, and marina office/store facilities, with green roof and photovoltaics;
  - Adaptive reuse of Building D for public amenities, bin and other storage;
  - Boat launching ramp and pontoon for passive watercraft, including dragon boats and kayaks;
  - Boat storage building with change facilities for dragon boat users with publicly accessible rooftop deck;

- Public domain works, including:
  - 'Interpretation Garden' in existing building 'ruins' at 1–3 Bank Street;
  - Split level foreshore promenade;
  - Multi-purpose court with edge seating and partial fence;
  - Nature-based inclusive playspace for ages 2–12;
  - Fitness equipment;
  - Public plaza and grassed open space areas;
  - New tree plantings and planter beds;
  - Public art, wayfinding and interpretative signage, lighting, bike parking and seating;
- Harbour works including:
  - Overwater boardwalk;
  - Land/water interface works, including sandstone terracing into water and support structure, to improve marine habitat;
  - Demolition and construction of a new timber launching ramp for dragon boats;
  - Kayak/passive craft pontoon; and
  - Restoration, repair and alterations to the existing seawall for new stormwater outlets.
- Works to Bank Street road reserve, including:
  - Road space reallocation to provide separated cycleway;
  - Cycleway transition to Bank Street to continue south as part of future works;
  - Reinstatement of existing on-street parallel parking;
  - Tree planting;
  - Accessible parking space; and
  - Loading zone adjacent 1–3 Bank Street.

1.5 Planning Secretary's Environmental Assessments Requirements

This report has been prepared in response to the relevant requirements outlined within the Planning Secretary's Environmental Assessments Requirements (SEARs) issued on 11 May 2023 for application SSD-53386706. Table 1.2 addresses the relevant SEARs requirements and provides a project response.

Table 1.2 Secretary's Environmental Assessments Requirements.

Item	SEARs	Relevant report section(s)
Item 6	**6. Aboriginal Cultural Heritage** • Provide an Aboriginal Cultural Heritage Assessment Report prepared in accordance with relevant guidelines, identifying, describing and assessing any impacts on any Aboriginal cultural heritage values on the land prepared in accordance with the relevant Heritage NSW Guidelines: – Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010) – Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales (OEH 2011) – Code of Practice for Archaeological Investigation in NSW (DECCW 2010).	This report forms the project Aboriginal Cultural Heritage Assessment Report (ACHAR). This report has been developed in accordance with the Heritage NSW guidelines specified in the project SEARs. An assessment of the project's impacts on Aboriginal cultural heritage values associated with the Bank Street Site is provided in Section 6 (of this report).
	• Address how the development responds to the commitment and principles for action in the Connecting with Country Framework for Tjerruing Blackwattle Bay	See Section 4.6 (of this report).
	• Archaeological test excavation of any potential archaeological deposits (PAD) in the proposed impact area	See Section 4.3 (of this report) and the project Archaeological Technical Report (ATR) (Appendix B of this report).

1.6 Objectives of this Aboriginal cultural heritage assessment

The objectives for the assessment were to:

- identify and consult with local Aboriginal community members who can speak for Country;
- understand and record Aboriginal heritage places and values, and determine whether these are part of a larger Aboriginal cultural landscape and/or Aboriginal traditions;
- involve the local Aboriginal community in the cultural heritage values assessment process, and determine best practice options for the future management of the identified Aboriginal cultural heritage;

- determine how the proposed project may impact the identified Aboriginal cultural heritage values, and aim to minimise impacts through sensible and pragmatic site and land management; and
- provide clear recommendations for the conservation of Aboriginal heritage values and relevant impact mitigation strategies that benefit both Aboriginal cultural heritage and the proponent.

1.7 Statutory context

In NSW, Aboriginal heritage is principally protected under two Acts:

- the *National Parks and Wildlife Act* 1974 (NSW) (NPW Act); and
- the *Environmental Planning and Assessment Act* 1979 (NSW) (EPA Act).

1.7.1 National Parks and Wildlife Act 1974

The NPW Act provides statutory protection for all Aboriginal 'objects' (consisting of any material evidence of the Indigenous occupation of New South Wales) under Section 90 of the NPW Act, and for 'Aboriginal Places' (areas of cultural significance to the Aboriginal community) under Section 84 of the NPW Act. Aboriginal objects and places are afforded automatic statutory protection in New South Wales whereby it is an offence (without the Minister's consent) to harm an Aboriginal object or declared Aboriginal Place.

The NPW Act defines an Aboriginal object as:

> 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.

The protection provided to Aboriginal objects and places applies irrespective of the level of their significance or issues of land tenure. Sites of traditional significance that do not necessarily contain material remains may be gazetted as 'Aboriginal Places' and thereby be protected under the NPW Act. However, areas are only gazetted if the Minister is satisfied that sufficient evidence exists to demonstrate that the location was and/or is of special significance to Aboriginal culture.

A strict liability offence applies for harm to or desecration of an Aboriginal object or declared Aboriginal Place.[1] The definition of 'harm' includes destroying, defacing, damaging or moving an Aboriginal object or declared Aboriginal Place. Under the Act, applicants must seek approval prior to disturbance of sites with the potential to contain Aboriginal objects or cultural material.

The potential for Aboriginal objects, sites, places and/or values within the site, and for the proposed development to impact such objects, has been assessed and the results presented in this report.

1.7.2 Environmental Planning and Assessment Act 1979

Projects declared State Significant Development (SSD) under Part 4 of the EPA Act require heritage and archaeology to be managed in accordance with the project approval documents, including conditions of the Development Consent. Section 4.41(d) of the EPA Act provides an Aboriginal heritage impact permit (AHIP) under Section 90 of the NPW Act is not required for a SSD project that is authorised by a SSD development consent. As the Bank Street Park project has been declared SSD, the requirement to obtain an AHIP does not apply. Furthermore, Section 4.41(3) of the EPA Act provides that any reference to SSD under Section 4.41 that is authorised by a development consent extends to "any investigative or other activities that are required to be carried out for the purpose of complying with any environmental assessment requirements". The implication being, test excavation required under the SEARs, such as for the Bank Street Park project, can be carried out prior to SSD consent being issued without the need for an AHIP.

The EPA Act provides for the identification, protection and management of heritage items through inclusion in schedules to planning instruments such as State Environmental Planning Policies (SEPPs) and Local Environmental Plans (LEPs). Heritage items in planning instruments are usually historic sites but can include Aboriginal objects and places. The EPA Act requires that appropriate measures be taken for the management of the potential archaeological resource by means consistent with practices and standards adopted in meeting the requirements of the NPW Act.

The site is in the City of Sydney local government area and is therefore subject to the *Sydney Local Environmental Plan 2012*. There are no currently listed heritage items under the LEP that fall within the site that have identified Aboriginal heritage values.

1.7.3 Approach to Aboriginal heritage management

In NSW Aboriginal heritage assessment and management is underpinned by several guidelines and policies. Our approach is based on the following guidelines:

- *Operational Policy: Protecting Aboriginal Cultural Heritage* (2009);[2]
- *Aboriginal cultural heritage consultation requirements for proponents* (consultation guidelines) (2010);[3]

- *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (2010) (the Due Diligence Code);[4]
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (2010) (the Code of Practice);[5]
- *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (2011);[6] and
- the Australia ICOMOS Burra Charter (2013) (the Burra Charter).[7]

1.7.4 The Burra Charter process

The Burra Charter process (Article 6) outlines a three-stage process for the assessment and management of heritage. The three stages are:

1. develop an understanding of heritage significance;
2. develop policy that is appropriate to the significance; and
3. undertake management in accordance with the policy.

The Burra Charter's explanations for heritage provide the basis for definitions used in this report. The Burra Charter's Indigenous Practice Note provides further guidance for application of the Burra Charter to Aboriginal heritage. We have used the following definitions:

Article 1.1—Place

> Place means a geographically defined area. It may include elements, objects, spaces and views. Place may have tangible and intangible dimensions.[8]
>
> 'Place' includes locations that embody spiritual value (such as Dreaming places, sacred landscapes, and stone arrangements), social and historical value (such as massacre sites), as well as scientific value (such as archaeological sites). In fact, one place may be all of these things or may embody all of these values at the same time.[9]

Article 1.2—Cultural Significance

> Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations. Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects. Places may have a range of values for different individuals or groups.[10]

Article 1.10—Use

> Use means the functions of a place, including the activities and traditional and customary practices that may occur at the place or are dependent on the place.[11]

Article 1.11—Compatible Use

Compatible use means a use which respects the cultural significance of a place. Such a use involves no, or minimal, impact on cultural significance.[12]

Article 8—Setting

Conservation requires the retention of an appropriate setting. This includes retention of the visual and sensory setting, as well as the retention of spiritual and other cultural relationships that contribute to the cultural significance of the place.[13]

Places of significance to Indigenous people require a holistic approach to 'setting'. 'Setting' may encompass the broadest of experiential factors including a sense of 'intrusion' occasioned when people of the 'wrong' gender, age or level of initiation trespass on defined areas, as well as auditory and visual intrusion.

For some Indigenous peoples, nature and culture are indivisible. The social significance and spiritual significance of a place for Indigenous people may be wholly or partly dependent on the natural environment that the place forms a part of, including aspects such as biodiversity, and totemic and resource species.[14]

Application to the current assessment

To implement the Burra Charter process, we have undertaken the following steps:

Step 1—Understand the place

This involved investigation into the environment, archaeology, history and literature. Field survey was undertaken in collaboration with the Aboriginal community. The outcome of the Step 1 investigations was the development of archaeological and landscape maps and plans that show the known sites, places and values connected to the site. The approach followed the notion that the site is part of an Aboriginal cultural landscape, and the site represents a small zone within this landscape.

Step 2—Assess cultural significance

A preliminary indication of cultural significance considered aesthetic, historic, scientific and social aspects to the site. This preliminary assessment of value should be used for future assessments, noting both that 'cultural significance may change'[15] and 'tangible heritage should not be emphasised at the expense of intangible heritage'.[16]

Step 3—Identify factors and issues

The results from Steps 1 and 2 were used to identify key future management factors and issues. The issues and factors define future needs, opportunities and constraints connected with possible future compatible use.

Step 4—Develop policy

The outcome from Step 3 was applied to develop appropriate management policy, in consultation with the Aboriginal community and in accordance with relevant NSW statutory processes.

1.8 Authors of the Project

This project has been undertaken by the following people. Each person's role and affiliations are detailed in the below table.

Table 1.3 Investigators and contributors.

Person	Affiliation	Role
Dr Tim Owen	GML	Project Director
Andie Coulson	GML	Project Manager, author and archaeologist
Sophie Jennings	GML	Author
Jacob Kiefel	GML	Archaeologist and author
Erica Brown	GML	Archaeologist
Jamie Currell	Kamilaroi-Yankuntjatjara Working Group	Archaeological Assistant and RAP
Gary Dunn	Ngaamba Cultural Connections	Archaeological Assistant and RAP

1.9 Endnotes

[1] Department of Environment, Climate Change and Water 2010, National Parks and Wildlife Act 1974 (NSW), 'Fact sheet 1', September 2010.

[2] Department of Environment and Climate Change, *Operational Policy: Protecting Aboriginal Cultural Heritage 2009*, Department of Environment and Climate Change (NSW),

[3] Department of Environment Climate Change and Water NSW 2010, *Aboriginal Cultural Heritage Consultation Requirements for Proponents*, Department of Environment, Climate Change and Water (NSW).

[4] Department of Environment Climate Change and Water NSW 2010, Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales, Department of Environment, Climate Change and Water NSW, Sydney.

[5] Department of Environment Climate Change and Water NSW, Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales, 2010.

[6] Office of Environment and Heritage NSW, Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW 2011, Office of Environment and Heritage, Department of Premier and Cabinet, Sydney South,

[7] Australia ICOMOS Inc, The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013, Australia ICOMOS Inc, Burwood, VIC.

[8] Australia ICOMOS Inc, The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013, Australia ICOMOS Inc, Burwood, VIC, Article 1.1.

[9] Australia ICOMOS Inc, The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013, Australia ICOMOS Inc, Burwood, VIC, p 2.

[10] Australia ICOMOS Inc, The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013, Australia ICOMOS Inc, Burwood, VIC, Article 1.2.

[11] Australia ICOMOS Inc, The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013, Australia ICOMOS Inc, Burwood, VIC, Article 1.10.

[12] Australia ICOMOS Inc, The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013, Australia ICOMOS Inc, Burwood, VIC, Article 1.11.

[13] Australia ICOMOS Inc, The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013, Australia ICOMOS Inc, Burwood, VIC, Article 8.

[14] Australia ICOMOS Inc, The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013, Australia ICOMOS Inc, Burwood, VIC, p 5.

[15] Australia ICOMOS Inc, The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013, Australia ICOMOS Inc, Burwood, VIC, p 4.

[16] Australia ICOMOS Inc, The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013, Australia ICOMOS Inc, Burwood, VIC, pp 2 and 4.

2 Understanding the site

2 Understanding the site

The purpose of this chapter is to provide contextual information to inform our understanding of Aboriginal occupation, use and connections within the site. This section is separated into the following parts:

- Section 2.1 identifies the traditional Aboriginal connections with the site;
- Section 2.2 provides an overview of the existing environmental setting;
- Section 2.3 presents the outcomes of relevant prior Aboriginal heritage work;
- Section 2.4 provides a summary of geotechnical testing undertaken within the site;
- Section 2.5 details the recent history of land use;
- Section 2.6 provides a summary of Sections 2.1 to 2.5; and
- Section 2.7 outlines a predictive model of the archaeological potential for the site that synthesises the information from Sections 2.1 to 2.6.

2.1 Ethnohistory

The site is considered a part of the lands of the Gadi people of the Eora Nation. Gadi land extended from the South Head of Sydney Harbour to Alexandra Canal/Cooks River, and inland to Petersham in Sydney's Inner West.[1] The people of Gadi (grass tree) Country are often referred to as the Gadigal, with -gal being the suffix for 'man'.[2] The site intersects with the boundary with Wann (or Wanne) Country, which is described as extending from Darling Harbour to Parramatta.[3] However, as per the Bangawarra (2021) *Connecting with Country Framework for Tjerruing Blackwattle Bay*, a wide array of Aboriginal peoples hold ancestral connections to Sydney, including the Eora, Dharawal, Dharug, Gundangara, Gai-maragal (often referred to as Gammeragal or Cammeragal) and Guringai peoples.[4] The site falls within the boundaries of the Metropolitan Local Aboriginal Land Council (MLALC).

Early dates for Aboriginal occupation in Sydney stretch back to at least 50,000 years before present (BP).[5] Aboriginal culture was dynamic, as demonstrated by changes to the archaeological record throughout this period. Rapid sea level rise in the post-glacial period (18,000 to 11,000 BP) caused a major reorganisation of social and spatial boundaries as coastal people were forced inland by rising waters.[6] This period also saw the beginning of a more continuous archaeological record of occupation within the Sydney Basin.

The Cumberland Plain had significant sources of raw stone materials: silcrete, indurated mudstone/silicified tuff (IMST) and quartz. Aboriginal people used these materials to

manufacture stone artefacts. The presence of these materials is linked to their origins (ie source), and changing frequency and preference for use over the Pleistocene and Holocene periods. The sequence of stone use is referred to as the Eastern Regional Sequence (ERS), with demonstrated changes over the last 10,000-plus years.[7] Subtle differences in stone artefact morphologies across the wider Sydney basin likely reflect both long-term territorial areas, while the long-term patterns of the ERS reflect changing preferences for materials, technology, clan and/or language boundaries and, notably, changes to trade networks.[8]

Changes in local technology are apparent through other economies. For instance, approximately 1,000 years ago, hook and line fishing were adopted in southern coastal New South Wales.[9] Fishing appears to have been a gendered task; women used hooks and lines, while men fished with pronged spears.[10] Women were also responsible for making the shell hooks. Fishing in Port Jackson appears to have been concentrated in the lower parts of the estuary (ie east of the Sydney Harbour Bridge).[11]

Colonisation in 1788 significantly disrupted Aboriginal society. Impacts for Aboriginal people included the loss of access to land, food and resources, exacerbated by the introduction of new diseases and violent reprisals. As many as 1,500 Aboriginal people are estimated to have been living in coastal Sydney when the First Fleet arrived in Sydney Cove (Warrane).[12] Despite its proximity to early settlement in Sydney, the development of Pyrmont (Pirrama) was initially slow. The Gadigal people had a strong presence on the Pyrmont peninsula until the late 1830s, at which point much of the peninsula was subdivided, and industry, including sandstone quarrying, became prevalent.

Despite dramatic changes to Aboriginal lifeways, Aboriginal people have always maintained their connections with Country and culture, and continue to practise and hand down cultural knowledge today within their communities and more broadly.

Further details on the Aboriginal history and cultural heritage of the site and surrounds are provided in the *Connecting with Country Framework for Tjerruing Blackwattle Bay*.[13]

2.2 Environmental setting of the site

The site's 'environment' forms a component of the traditional lands and Country of the Gadigal people of the Eora Nation. Understanding the environment through the geology, soils, landforms, water and ecology is important to understand the context of long-term Aboriginal connections to the land. Combining basic environmental information with the history and contemporary connections starts to provide an understanding of the local and regional cultural landscape. Describing and mapping the landscape contextualises the

physical data, and underpins intangible connections inherent in most Aboriginal cultural landscapes. An overview of the baseline datasets for geology, soil, landforms, water, the climate and ecology, is provided in this section.

2.2.1 Landforms

The site is situated on the foreshore of the Pyrmont (Pirrama)[14] peninsula, forming part of the eastern shoreline of Blackwattle Bay. The Pyrmont peninsula consists of a northwest to southeast oriented ridgeline, flanked by slopes dropping down towards the harbour. Less-modified peninsula shorelines (ie Balls Head, Mann Point and Berry Island) on the northern shoreline of Sydney Harbour, where the sloping headlands and rocky harbour foreshores have been less intensely modified, may provide evidence of the likely pre-modification landforms of the Pyrmont peninsula. These less-modified peninsulas have very low to low relief and moderately inclined (10% to 32%) up to steep (32% to 56%) slopes forming rolling- to steep-rise erosional landform patterns. Therefore, prior to land use modifications following invasion, the slopes of Pyrmont peninsula were likely steep, potentially benched, leading down to a rocky shoreline. Illustrations of Pyrmont during the early years of European colonisation indicate that the northern extent of Pyrmont peninsula, including the site, was dominated by sandstone ridges and bluffs, with a rocky or cliff-dominated shoreline.[15]

At present, the landforms of the peninsula have been flattened and much of the shoreline reclaimed to form a levelled, regular shoreline (Figure 2.1). Present landforms across the site have an extremely low relief (0–6 metres above sea level) and a level (<1%) to very gently inclined (1–3%) modal terrain slope. This has resulted in an erosional landform pattern comprising level to gently undulating plains.[16] Immediately east of the site, the landform rises steeply into a modified cliff face formed by sandstone quarrying.

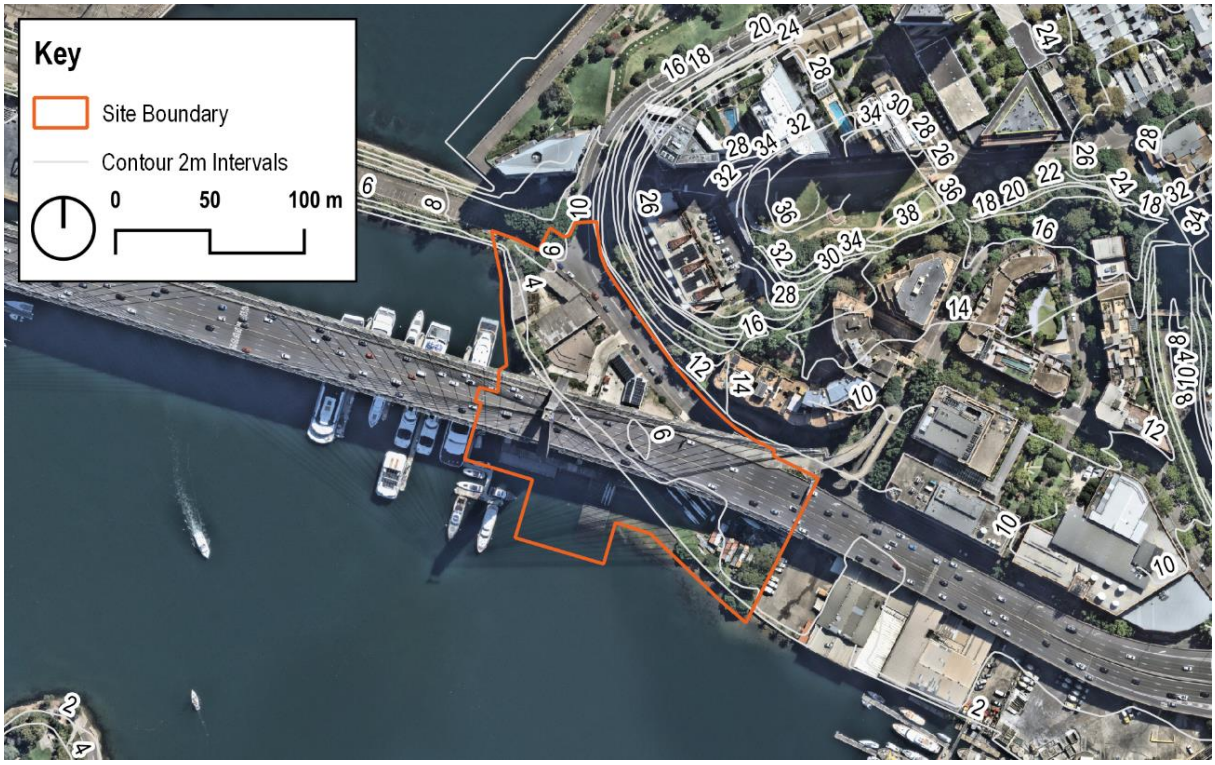

Figure 2.1 Topography of the site. (Source: Nearmap with GML overlay, 2023)

2.2.2 Geology and soil landscapes

Geological mapping (Figure 2.2)[17] indicates that the site overlies Hawkesbury Sandstone, a medium to coarse-grained quartz sandstone with shale and laminite lenses deposited in the Triassic period, which makes up the majority of the Pyrmont peninsula.

Areas of harbour development overlie regolith and recent mud, silt and sand sediments deposited by estuarine processes within the harbour. The regolith and recent sediments of anthropogenic origin along the foreshore reflect the extent of nineteenth and twentieth century reclamation activities. Analysis of geotechnical data[18] has also identified the presence of Gymea and alluvial or colluvial soils along the shoreline below the reclamation deposits (see section 2.4 below).

The Gymea soil landscape is characterised by soils that are shallow to moderately deep (<20–<100 centimetres) and generally consists of loose, coarse sandy loam with common small sandstone, and platy ironstone fragments and charcoal inclusions (A_1 horizon) overlying an earthy, yellowish-brown clayey sand forming a B horizon, or, where exposed, a hard-setting topsoil. This may overlie an earthy to weakly pedal yellowish-brown sandy clay loam (B horizon).

The alluvial or colluvial soils tend to comprise brown sands with traces of gravels. If alluvial in nature, these soils would have been formed by flooding of local waterways, introducing alluvial sediment to the site. If colluvial, the deposits would have been formed by movements of soils downslope due to gravity, potentially aided by water as sheet wash.

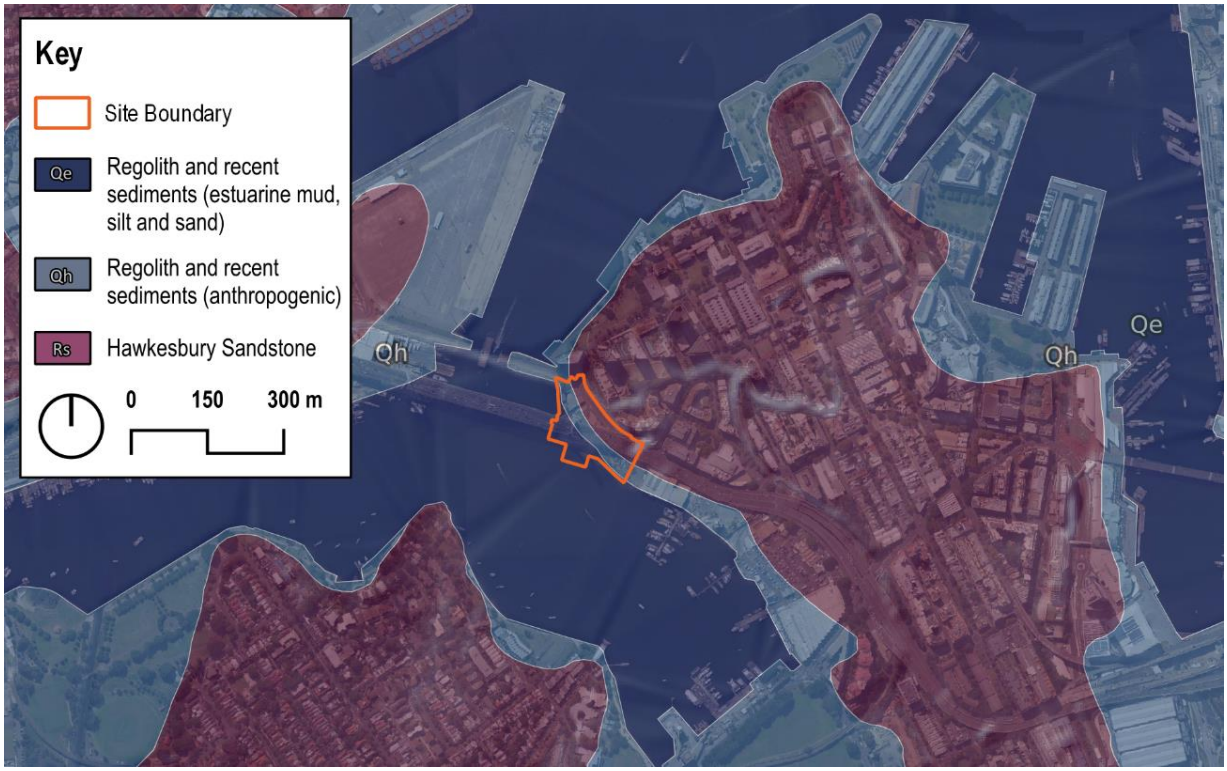

Figure 2.2 Geology of the site and surrounds. (Source: NSW Department of Regional Australia, MinView, with GML overlay, 2023)

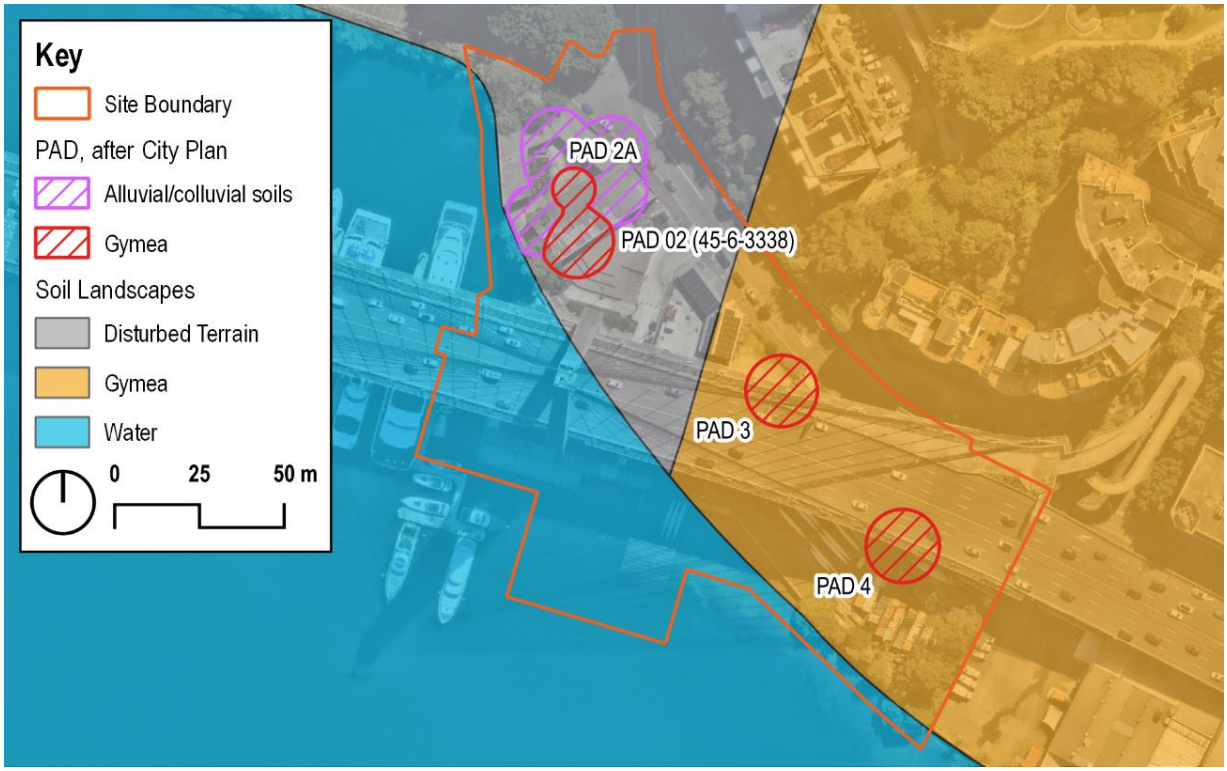

Figure 2.3 Areas of PAD (ie areas of Gymea or alluvial or colluvial soils) after CityPlan 2023.[19] The soil landscape mapping indicating the extent of the Gymea soil landscape is taken from the Soil Landscapes of the Sydney 1:100,000 map sheet. (Source: SIXMaps and NSW SEED[20] with GML overlay, 2023)

2.2.3 Hydrology

The availability of water has significant implications for the range of resources available and the suitability of an area for human occupation. The site abuts Blackwattle Bay, part of the wider Sydney Harbour (Warrane).

Prior to landform alterations following European invasion, low-order waterways would have flowed into Blackwattle Bay, while the bay itself would have extended further inland (Figure 2.4). Small streams likely flowed from the headland to the harbour during times of rainfall. Blackwattle Creek, since obscured by development, named for the Blackwattle tree (*Tjerruing*, *Callicoma serratifolia*) that would have been abundant along the watercourse, would have flowed into Blackwattle Bay from swampy headwaters at the present-day location of Lake Northam in Victoria Park.[21] Furthermore, a freshwater spring was recorded at the northern extent of the peninsula—'Tinker's Well'.[22] The well was located in a large sandstone shelter and was formed from natural freshwater seepage from cracks in the outcropping sandstone. Water accumulated into a dish in the

sandstone floor of the shelter, likely carved out or enlarged by Aboriginal people. This well appears to have been located approximately 50–100 metres east of the site, albeit higher up the peninsula slope, approximately 30 metres above sea level.[23] The well was used by Aboriginal people, as demonstrated by midden material found within the shelter. The well was destroyed by quarrying during the 1920s.[24]

As a result, ample freshwater and estuarine water resources would have been available in the immediate vicinity of the site.

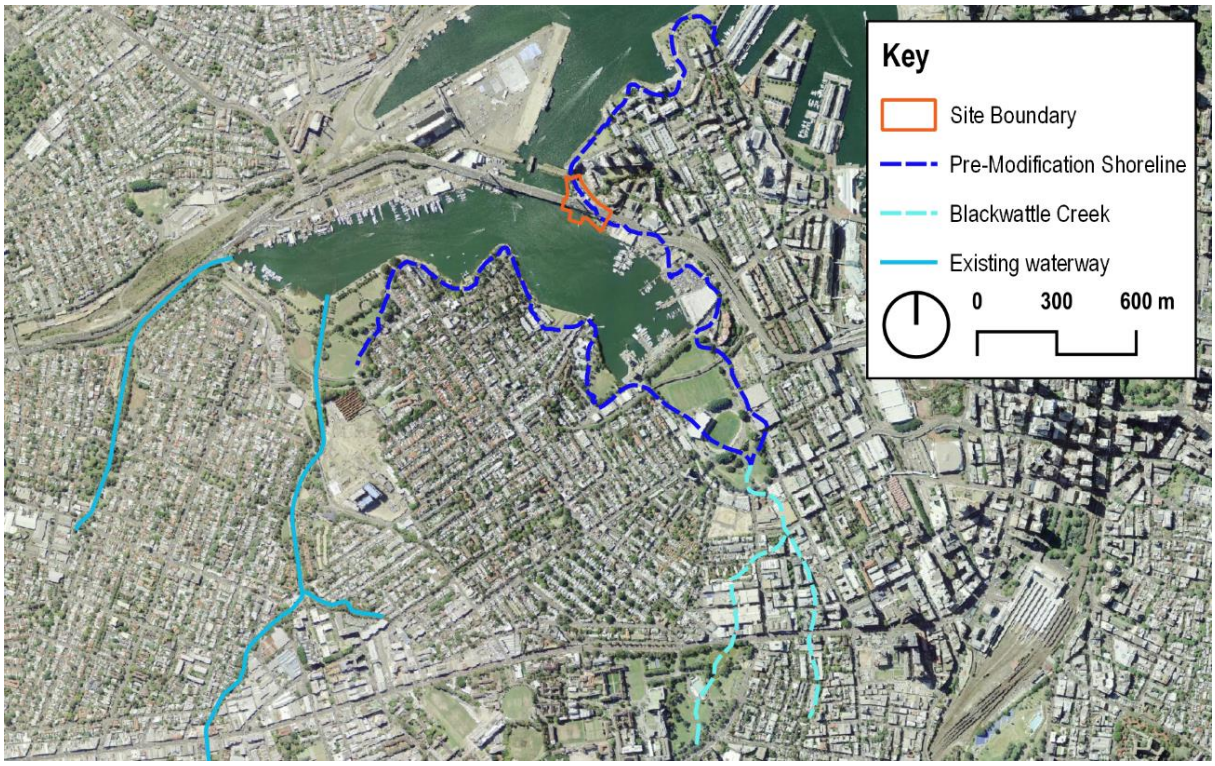

Figure 2.4 Approximation of the pre-modification shoreline of Blackwattle Bay and Blackwattle Creek after Birch et al (2009) (Source: SIXMap with GML overlay, 2023).[25]

2.2.4 Ecology

The ecology of the site has been significantly impacted by post-invasion development. Prior to invasion, the foreshore of Blackwattle Bay would have provided a rich estuarine environment of mudflats, saltmarshes, mangroves and seagrass. This environment would have provided marine resources such as fish, shellfish and crustaceans. The Gymea soil landscape of the Pyrmont peninsula would have provided access to wet and dry sclerophyll woodlands and open forests with terrestrial faunal and floral resources. Dominant species would have included red bloodwood (*Eucalyptus gummifera*), yellow bloodwood (*Eucalyptus eximia*), brown stringybark (*Eucalyptus capitellata*), old man

banksia (*Banksia serrata*), black ash (*Eucalyptus sieberi*), Sydney peppermint (*Eucalyptus piperita*), smooth-barked apple (*Angophora costata*) and scribbly gum (*Eucalyptus haemastoma*). An estimated 675 flora species would likely have been present on the Pyrmont peninsula at the time of invasion, forming a possible 17 plant communities, from estuarine and coastal wetlands through to ridgetop woodlands and gully forests.[26] The site was likely dominated by Sandstone Ridgetop Woodland, with heath elements.[27] Key species would have included red bloodwood, scribbly gum, heath-leaved banksia *(Banksia ericifolia*) and scrub she-oak (*Allocasuarina paludosa*). Fauna species present on the peninsula likely included potentially 22 frog species; 45 reptile species encompassing snakes, lizards and turtles; a variety of bird species; and 60 or more mammal species, encompassing marsupials, bats, rodents and sea mammals.[28]

The estuarine and woodland environments would have provided a rich array of flora and fauna resources that the Eora would have used for food, medicine and raw materials.

2.2.5 The climate

Climatic conditions across the Sydney Basin have fluctuated considerably throughout Aboriginal occupation. During the Last Glacial Maximum (LGM), which spanned 115,000–11,700 BP, temperatures were 6 to 10 degrees Celsius cooler than today.[29] The end of the LGM brought about an increase in rainfall and an alleviation of cooler and drier temperatures, before a return to cooler conditions from 5,000 BP.[30] The cool and dry conditions intensified around 3,000 BP, with temperatures dropping to their lowest level in the preceding 10,000 years.[31] This period also saw the onset of the El Nino Southern Oscillation (ENSO), resulting in periods of fluctuation between drier El Nino and wetter La Nina conditions, which have continued to the present day. Where El Nino reduced available water sources and forest canopy, La Nina increased rainfall, and, with it, increased vegetation and flood risk along rivers.[32] Such fluctuations would have likely impacted land use within the site. Climatic conditions began again to ameliorate from roughly 1,500 BP.[33]

The recent past of 1,000 BP to present has seen climatic conditions similar to that of the present day. January would have been the hottest month of the year, with average maximum temperatures of 26–29 degrees Celsius and highs of 47 Celsius, and average minimum temperatures of 15–18 degrees Celsius.[34] July would have been the coldest month of the year, with average maximum temperatures of 15–17 degrees Celsius, and minimum averages of 2–8 degrees Celsius.[35]

Changes in climatic conditions resulted in sea level fluctuations. Glacial periods saw sea levels fall, with sea levels 60,000 BP approximately 30–35 metres below present levels, dropping to approximately 110–130 metres below present levels between 30,000 and

18,000 BP. During this period, Port Jackson, of which the site forms a part, would have been situated approximately 15 kilometres east of its present location, on what is now Australia's continental shelf. At this time, Sydney Harbour would have been a river valley. Following the end of the LGM in approximately 12,300 BP, sea levels rose, with Sydney Harbour inundated and reaching its present form by 7,000 BP. Oscillations have occurred within the last 7,000 years. Sea levels were at their highest at 1–2 metres above present levels approximately 7,000 years ago, remaining higher than present until 1,400 years ago, albeit with periods of lowered sea levels between 5,100 and 4,600 years ago, and 3,300 and 2,700 years ago.[36]

Sea level fluctuations, both throughout the last 60,000 years and within the Holocene, have affected the potential usage and subsequent archaeological record within the site. The site is situated below 10m above sea level (ASL), while much of the western area of the site is reclaimed low-lying marshy foreshore. As such, while the site was considerably inland during the LGM, much of the site may have been inundated until approximately 2,000 to 1,400 years ago. This has implications for the inundation and loss of older Pleistocene sites that may have been present, and may mean that any Aboriginal objects present today likely date to the comparatively recent past.

2.2.6 Summary of the local environment

The site is situated partially on Triassic Hawkesbury sandstone and the associated Gymea soil landscape, and partially on Disturbed Terrain, composed of concrete blocks, demolition rubble, quarried material and reworked sands or clays, of anthropogenic origins. The site has been extensively modified through alterations to the shoreline via land reclamation and quarrying of the sandstone bedrock, resulting in a truncation of the landform. Prior to European invasion, the northern extent of the Pyrmont peninsula, including the site, was dominated by steep slopes leading to a rocky shoreline. The peninsula would have supported a variety of flora and fauna, with the site likely comprising dry sclerophyll woodland. A variety of terrestrial and estuarine plant and animal resources would have been available year-round. The closest freshwater sources to the site would have been Tinker's Well, a natural spring just east and upslope of the site, and Blackwattle Creek, which would have flown into Blackwattle Bay approximately 1km southeast of the site.

2.3 Previously identified Aboriginal heritage

The purpose of this section is to synthesise available information from previous archaeological investigations, and to provide context and a baseline for what is known about Aboriginal cultural heritage in the site.

2.3.1 Aboriginal Heritage Information Management System (AHIMS) register

A search of the Heritage NSW Aboriginal Heritage Information Management System (AHIMS) database of an area 6km (north to south) by 6km (east to west) between eastings, northings 329395, 6247821 to 335395, 6253821 was undertaken on 31 May 2023 (reference number 787291). The search identified 97 recorded Aboriginal sites and no Aboriginal places. One previously recorded Aboriginal site is within the site—AHIMS ID 45-6-3338, an area of PAD.

A second search of the AHIMS database was undertaken on 23 November 2023 for the same coordinates. The search identified one additional Aboriginal site, bringing the total for the search area to 98 recorded Aboriginal sites and no Aboriginal places. As in the initial search, one previously recorded Aboriginal site is located within the site—AHIMS ID 45-6-3338. The results of the search are shown in Figure 2.5.

An overview of the AHIMS results is shown in Table 2.1 and Figure 2.5.

Table 2.1 Results of the AHIMS search.

Site feature	Frequency	Percentage
Aboriginal Ceremony and Dreaming, Artefact and Burial	1	1.0
Aboriginal Ceremony and Dreaming, Artefact and Shell	2	2.0
Aboriginal Resource and Gathering	2	2.0
Art	8	8.2
Art and Artefact	2	2.0
Art, Artefact and Shell	5	5.1
Art, Artefact, Burial and Shell	1	1.0
Artefact	10	10.2
Artefact and PAD	2	2.0
Artefact and Shell	23	23.6

Site feature	Frequency	Percentage
Artefact, PAD and Shell	1	1.0
Grinding Groove	1	1.0
Grinding Groove and Water Hole	1	1.0
Habitation Structure	1	1.0
Modified Tree	1	1.0
Non-Human Bone and Organic Material, Shell	1	1.0
Potential Archaeological Deposit (PAD)	24	24.6
PAD and Shell	1	1.0
Shell	3	3.1
Water Hole	1	1.0
Not a Site	7	7.2
Total	**98**	**100**

Seven invalid sites (ie not a site) were within the search area and these have been excluded from the following analysis.

This search indicates that stone-artefact-based sites (ie sites comprising or including artefacts and PAD) constitute the predominant site type recorded in this area, followed by sites comprising or including shell (ie middens). The general pattern of Aboriginal sites in the local area shows a strong association with the foreshore, with a high number of sites situated along the shoreline of Sydney Harbour and Parramatta River.

Of the sites, 29 (32%) are closed sites (ie situated in enclosed landforms such as rock shelters), while 62 (68%) are open sites (ie situated within open contexts). Closed sites are predominantly situated along the shoreline, likely as a function of exposed sandstone outcrops where the foreshore slopes down to the harbour. Open sites are situated both along the foreshore and further inland.

Sites comprising or with a shell component are closely associated with the harbour foreshore, and less frequently with the banks of now-obscured waterways that flowed to

the harbour. This patterning is a result of the marine nature of the fish, shellfish and gastropods consumed.

Despite rapid post-invasion development, several sites are recorded within the Sydney CBD, indicating the potential for Aboriginal sites and objects to survive even within disturbed contexts.

One registered site, an area of PAD (The Bays Precinct PAD02, AHIMS ID 45-6-3338), is situated in the Bank Street site within the footprint of 1A and 1–3 Bank Street. The PAD site is described as extending 55 metres in length and 35 metres in width. The description provided on the AHIMS site card states:

> The PAD consists of apparently undeveloped land in 1A Bank St Pyrmont, and land that appears not to have been subject to modern development in 1–3 Bank St Pyrmont. Historical mapping indicates this is not reclaimed land. Geotech[nical] bores in these properties indicates presence of preserved natural soils.

The area of PAD encompasses areas overlain by buildings within 1A to 3 Bank Street. The PAD was assigned based on the presence of remnant natural soils, which were considered to have potential to retain an in situ Aboriginal archaeological deposit (see Section 2.4 below).[37]

Four additional sites are located within 1 kilometre of the Bank Street site and these are all areas of PAD (AHIMS IDs 45-6-2960, 45-6-3339, 45-6-3826 and 45-6-4057). The closest is AHIMS ID 45-6-2960[redacted], a closed (shelter) site [redacted]

<FIGURED REDACTED>

Figure 2.5 Heritage NSW AHIMS search results for the landscape surrounding the site. (Source: Heritage NSW AHIMS, 2023)

<FIGURED REDACTED>

Figure 2.6 AHIMS sites in the immediate vicinity of the site. (Source: Heritage NSW AHIMS, 2023)

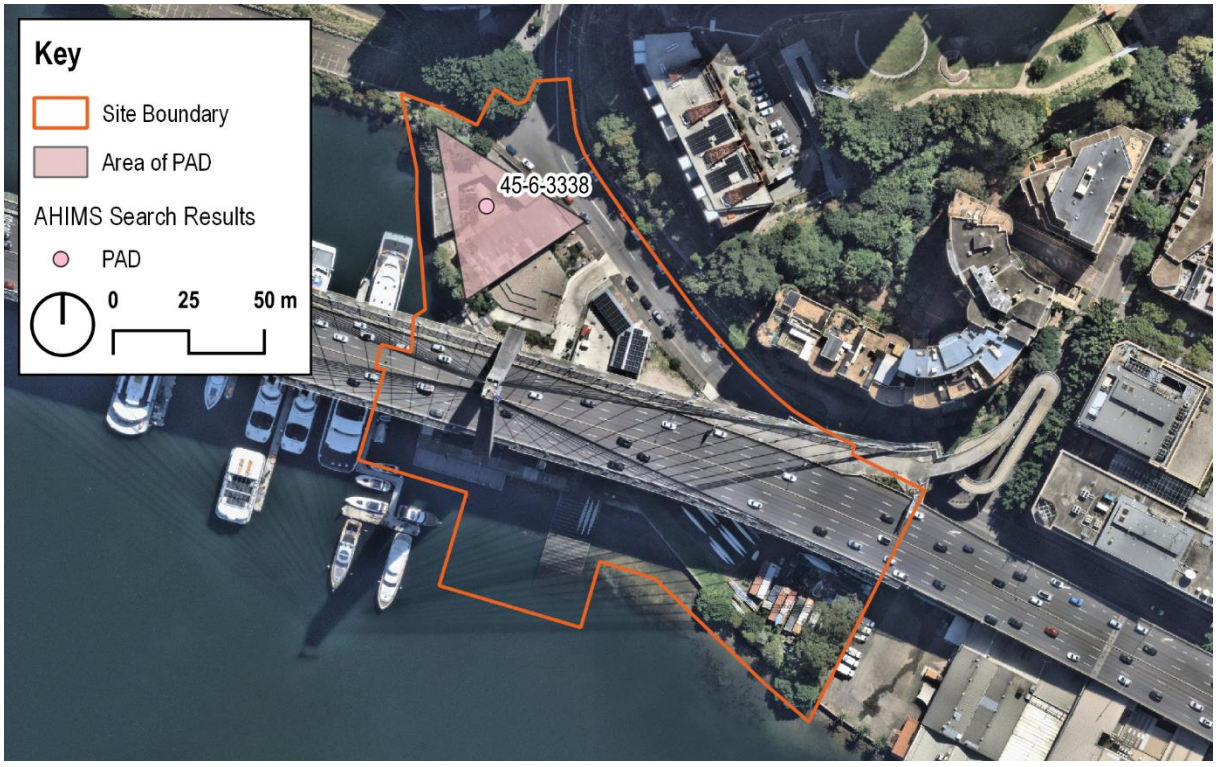

Figure 2.7 The Bays Precinct PAD02 (45-6-3338) area of PAD, after Artefact 2021. Note the vicinity of Jacksons Landing Shelter PAD (45-6-2960) to the site. (Source: Artefact 2021, Heritage NSW AHIMS and Nearmap with GML overlay, 2023)

2.3.2 Previous heritage investigations

The site is located in a region that has been subject to extensive prior Aboriginal heritage assessment. A review of key local Aboriginal archaeological and heritage reports has been undertaken and a summary is provided in Table 2.2 below.

Blackwattle Bay State Significant Precinct Study—Aboriginal Cultural Heritage Assessment Report—Artefact, 2022

Artefact prepared an ACHAR for the wider Blackwattle Bay State Significant Precinct (referred to as the 'precinct-wide ACHAR' in this report), of which the present site forms

the northeastern portion. The ACHAR included a desktop study, archaeological field survey and community consultation.

Most of the precinct was assigned low to nil Aboriginal archaeological potential due to the extent of land reclamation and historical disturbance, particularly along the southern extent of the site, where Blackwattle Bay/Swamp was infilled to form Wentworth Park. However, two areas of PAD were identified—AHIMS ID 56-6-3339 [redacted] and AHIMS ID 45-6-3338 (The Bays Precinct PAD02 within 1A and 1–3 Bank Street, contained within the subject site). The PADs correspond to areas of mapped remnant natural landforms.

Surveys were conducted as part of the assessment in 2014 and 2017. The 2014 survey identified moderate archaeological potential within 1A and 1–3 Bank Street, with the remainder of the site ascribed nil archaeological potential. The 2017 survey was conducted with representatives from RAP groups registered for the precinct-wide ACHAR. From the results of survey, Artefact concluded that intact preserved natural soils may be present beneath the concrete yard within 1–3 Bank Street, and that impacts from construction of the 1–3 Bank Street buildings were likely to have been localised. 1A Bank Street, which could not be accessed at the time of survey, was not considered to exhibit evidence of significant ground disturbance.

The study included geotechnical testing within 1A and 1–3 Bank Street (within the north of the present site). The results of geotechnical testing indicated localised areas of natural soils are present within the precinct, despite most of The Bays comprising historical fills. Two boreholes within 1A and 1–3 Bank Street contained natural soils above the water table, while an additional three boreholes contained natural silts below the water table. Intact soils were considered to have potential to contain subsurface Aboriginal archaeological deposits, hence assigning an area of PAD within 1A and 1–3 Bank Street.

Across the Blackwattle Bay Precinct, shelters and middens were expected to be the most prevalent site types, if present, although low-density artefact scatters, isolated finds and rock engravings were also considered as possible. Some potential for burials where intact midden and sandy deposits are present was noted, as was the potential for contact archaeology (flaked glass and metal objects) within the investigation area.

Community consultation indicated that the Blackwattle Bay area holds cultural value for local Aboriginal people due to the precinct's long history of use by Aboriginal people.

No further investigation was recommended for most of the precinct, with the exception of the two areas of PAD, for which further study was identified as required, including

archaeological management (ie excavation) should natural soil profiles be confirmed to be present.

The KENS site (Kent, Erskine, Napoleon and Sussex streets)—Aboriginal Archaeological Post-Excavation Report—Dominic Steele Consulting Archaeology, 2006

The Kent, Erskine, Napoleon and Sussex streets (KENS) site was subject to Aboriginal and historical archaeological excavation in 2003, prior to the redevelopment of the city block. The site is situated approximately 1.5 kilometres east of the site, on the midslope to footslope of a north–south trending ridgeline, underlain by Hawkesbury Sandstone. Its lowest point was on the rocky foreshore facing Darling Harbour/Cockle Bay. The high tide mark was located under the eastern side of Sussex Street, meaning the western portion of the KENS site was within the tidal zone of mudflats fringed with mangroves, ti-tree and swamp mahogany.[38] The ridge and slope would have supported woodland containing blackbutt, red bloodwood, Sydney peppermint and angophora trees.

Several buried pre-1788 soil profiles of the erosional Gymea soil landscape were identified over the course of the archaeological excavation program. Although original in situ Gymea soils remained in pockets, all areas excavated had been impacted by disturbance and post-depositional processes resulting from both natural and post-colonisation development activities. Various European constructions (including, for example, a well and later building foundations) mixed or removed some of the natural soil profiles, evident through the truncation of soil horizons. Wave action on the foreshore side had also eroded sediment. Further impacts to the natural soils came from massive sheet erosion, likely dating to the late eighteenth century, presumably resulting from land clearance. However, deposition prevailed wherever sediment barriers occurred, including both natural (breaks in slope, side slopes) and man-made (eg historical features such as walls) features. Within the truncated in situ soils, most artefacts were fragmented and had chipped edges and heat damage resulting from substantial traffic trampling and burning during the early historical period.

However, some development processes had also buried natural profiles, contributing to their preservation. For example, some profiles had been encircled by foundations, sealed beneath floor deposits, or capped by fill through erosional deposition, land reclamation or stabilisation.

Archaeological testing and salvage across these profiles revealed considerable concentrations of Aboriginal stone artefacts. Test excavation at the KENS site identified 80 flaked artefacts of silcrete, quartz and tuff—the remains of past Aboriginal knapping. Salvage excavation brought the total to 952 artefacts across the site. Silcrete was the dominant raw material in the assemblage (77%), with quartz making up 11% and tuff

9%. Four glass artefacts were identified. Unfortunately, the site had no evidence of middens, despite the previously large distribution of middens along the foreshore. Artefacts were found in the preserved Gymea soils and in overlying colluvium. No historical artefacts were found in the remnant soils, suggesting rapid burial of these soils beneath historical deposits. Analysis suggested that the artefact assemblage dated primarily from the Late Bondaian period, albeit with some Middle Bondaian elements, while the presence of flaked glass indicated the site's continued use following contact in 1788.

The KENS site demonstrated that Aboriginal archaeological sites may survive in places that have experienced multiple historical phases of development and disturbance. It also clearly illustrated processes of site taphonomy, where early historical activities such as land clearing and increased traffic (humans and horses) had a significant impact on the survival of the Aboriginal archaeological record.

Pyrmont Peninsula Place Strategy—Kelleher Nightingale Consulting, 2020

Kelleher Nightingale prepared an ACHAR for the Pyrmont peninsula as part of a review of planning for the Western Harbour Precinct. The report aimed to identify and consolidate information regarding both the Aboriginal archaeological resource and the cultural landscape of the Pyrmont peninsula. The investigation area extended from the northern extent of the peninsula south to Broadway, and was constrained to the east and west by Cockle and Blackwattle bays. The present site is included within this area.

The study comprised desktop assessment and field inspections. Six Aboriginal archaeological sites were identified within the investigation area—five areas of PAD and a shell midden and artefact site. One site, AHIMS ID 45-6-3338 (The Bays Precinct PAD02), and an area of PAD (discussed above) are situated within the present site. One Aboriginal heritage feature, Tinker's Well (since destroyed), was also identified within the investigation area, and was identified as requiring further investigation to determine its cultural and/or social value.

The overall investigation area was found to be highly disturbed by the industrial development and urbanisation of Pyrmont. However, areas of the original landform that have been subject to minimal ground surface modification were considered to have potential for remnant natural soils, which may contain subsurface archaeological deposits. Therefore, the approximate extent of the entire pre-modification peninsula landform was assigned archaeological sensitivity.

Darling Quarter (formerly Darling Walk)—Aboriginal Archaeological Excavation Report—Comber, 2012

As part of the redevelopment of Darling Walk in Darling Harbour, an extensive series of Aboriginal and historical archaeological excavations were undertaken in 2008 and 2009 at Darling Quarter, approximately 1.2 kilometres east of the site. The site is partially situated on reclaimed land infilling Cockle Bay and partially across the original shoreline of the bay.

Excavations identified the remains of a shell midden, which included ten chert, silcrete and quartz artefacts. Eleven identified shell species were noted in the midden assemblage, with the predominant species being Sydney cockle (*Andara trapezia*) at 92% of the total weight of shell excavated. The midden deposit was on an exposed area of sandstone bedrock outcrop overlooking the harbour. It appears that the midden had originally been on higher ground farther east, but had been redeposited by wave action closer to the water's edge and disturbed by later historical land reclamation.

445–473 Wattle Street, Ultimo—Aboriginal Cultural Heritage Assessment Report—Biosis, 2012

Biosis assessed the 445–473 Wattle Street site, situated 1.5 kilometres southeast of the site, on the wider undulating terrain landform sloping down to Blackwattle Bay. The site is adjacent to the since-obscured Blackwattle Creek, marked by the present alignment of Blackwattle Lane, which forms the western edge of the site.

The site had been heavily developed, but geotechnical investigations indicated that alluvial soils were present at depth beneath historical fill layers. These soils may comprise remnants of the original natural subsoil and, therefore, may retain Aboriginal archaeological material. Remnant soils were present 2.5 metres or greater in depth below the ground surface, and extended to 7 metres in depth below the ground surface level. Moderate to high archaeological potential was assigned to the remnant soils and the site was listed on AHIMS as a PAD (AHIMS ID 45-6-3064).

The ACHAR recommended avoiding impacts to the alluvial soils. Archaeological test excavation was recommended for any areas where impact to alluvial soils was unavoidable.

Westmead to The Bays and Sydney CBD Environmental Impact Statement—Technical Paper 4 Aboriginal Cultural Heritage Assessment Report—Artefact Heritage Services, 2020

The Bays was assessed as part of an Environmental Impact Statement (EIS) prepared for Sydney Metro for the Sydney Metro West project. The Bays station site is located adjacent to White Bay Power Station, Robert Street, Rozelle, approximately 800 metres

west of the site. An environmental and archaeological background was prepared for the site, and an archaeological survey was undertaken. Similar to the site, The Bays site was found to be largely situated on a modified flat landform formed by land reclamation. Prior to invasion and subsequent land modification, the White Bay area was considered to have provided a range of valuable subsistence and raw material resources for Aboriginal people. However, the extent of land modification, construction and demolition was found to have significantly impacted the potential for Aboriginal objects to be present.

Artefact Heritage concluded that infilling phases along the eastern foreshore of White Bay in the early twentieth century could have preserved any intact archaeological deposits or Aboriginal objects present, and assigned low to moderate potential to this area of the site. This area with PAD was registered as 45-6-3826. The PAD was considered to have potential for subsurface deposits as infilling along the eastern foreshore in the early twentieth century may have preserved any intact artefact deposits.[39] The PAD was subsequently reassessed by EcoLogical,[40] which concluded that the majority of the area of PAD was situated over reclaimed land and, as such, held low archaeological potential. Visual inspection of the PAD indicated it was largely covered in grey sandy infill soils, with soil exposure indicating stratigraphic phases of infill material.

Powerhouse Ultimo Renewal Project—Aboriginal Cultural Heritage Assessment Report—Curio Projects, 2021

Curio prepared an ACHAR for the Powerhouse Ultimo Renewal Project, situated at 500 Harris Street, Ultimo, approximately 1.3 kilometres southeast of the site. The site is positioned on the southeastern edge of the Pyrmont peninsula, along what would have been the original Cockle Bay/Darling Harbour shoreline, and to the east of Blackwattle Creek. The site is situated on Gymea soils over Hawkesbury Sandstone. The landform of the site, which would have initially comprised a slope extending east towards Cockle Bay, has since been flattened due to modifications from development.

A moderate to high disturbance had occurred to the site, resulting from post-invasion land clearance and building construction. However, the potential for intact archaeological deposits below the levels of disturbance was noted and confirmed by geotechnical testing. Two boreholes out of eleven across the site encountered natural soils of silty sand and sandy clay alluvial soil below layers of disturbance. Both boreholes were towards the east of the site, downslope towards Darling Harbour. Remnant natural soil profiles were encountered between 1.5 to 4.5 metres below surface level depending on location, and were between 0.5 to 5 metres thick.

Intact natural soils were assigned moderate to high archaeological potential, with expected site types comprising PADs, stone artefacts and middens. Any Aboriginal objects present are expected to date from 7,000 to 1,000 BP, after sea levels had

stabilised to current levels. The site was also assigned potential for contact archaeology (ie flaked glass). Archaeological test excavations are required to determine the nature, extent and significance of any Aboriginal archaeological deposits present within the site.

University of Sydney—Aboriginal Heritage Impact Assessment Report—AHMS, 2016

AHMS prepared an Aboriginal Heritage Impact Assessment (AHIA) for portions of the University of Sydney (USYD) Camperdown and Darlington campuses. USYD is located approximately 1.8 kilometres south of the site and is situated on the Blacktown soil landscape.

USYD had been subject to prior archaeological investigations, including test excavations conducted at the Geology Lawn, Maze Green and USYD Central. All three sites were found to have significant disturbance, and each site resulted in recovery of a single artefact, namely a flaked silcrete artefact, a flaked artefact and a silicified tuff artefact.

Two registered AHIMS sites are located within USYD—both had isolated stone artefacts found in disturbed contexts, which have since been destroyed.

AHMS (2016) concluded that, in line with prior assessments, most of the USYD Camperdown and Darlington campuses hold low archaeological potential due to transient use of the site by Aboriginal people pre-invasion and extensive historical disturbance. Two exceptions were identified—the Life Sciences Precinct and parts of the Health Precinct were proximal to original creek lines and have evidence of buried natural soil profiles. As such, these areas have moderate potential for low-density artefact scatters, isolated finds and PADs.

AHMS (2016) also identified places of cultural value within USYD through consultation with the Aboriginal community. Most of these places had historical or recent cultural connections. For instance, the Macleay and Shellshear Museums hold Aboriginal remains, the Mackie Building and the Koori Centre relate to Aboriginal education, and the university entrances are culturally valuable as markers or gateways for entering Aboriginal land. Two places (the Quadrangle and the sports ovals) were identified as having pre-invasion cultural connections. The land encompassing the two sports ovals (adjacent to the former Orphan School Creek) would have been a former hunting ground for the Gadigal people and may have subsurface deposits beneath introduced overburden. Anecdotal evidence from the Aboriginal student body indicated that the Quadrangle area may have been where ceremonies were held.

The Quadrant, Broadway—Aboriginal Archaeological Post Excavation Report—Dominic Steele Consulting Archaeology, 2003

The Quadrant Site, approximately 1.6 kilometres southeast of the site on the corner of Broadway Street and Mountain Street, was subject to archaeological testing by Dominic Steele Consulting Archaeology in 2001 and 2002. Blackwattle Creek originally passed through the Quadrant Site, which was a natural swamp. Excavation revealed that, in a portion of the site, natural soil profiles had been preserved beneath a capping of introduced fill, although these were truncated and disturbed. The soil profiles present at this site were comprised of a deep alluvial deposit, with the upper layers consisting of a Blacktown soil landscape. Excavations uncovered a small remnant patch of sandy loam covering an area of approximately 5 metres by 10 metres, which contained 14 Aboriginal flaked stone artefacts from three of the 16 trenches excavated. This site was registered in AHIMS as site #45-6-2629. Consent to destroy the site was granted with the requirement for monitoring works; however, no further artefacts were located. The artefact scatter was interpreted as a background distribution of stone artefacts in a landscape only sporadically visited by Aboriginal people. The limited Aboriginal archaeological evidence encountered at the Quadrant Site was determined to be the product of two factors. The first was the significant disturbance across the site in the historical period. The second was the way past Aboriginal people were likely to have used the natural environment—due to the poorly drained swampy nature of the site, it was unlikely to have been used for long-term occupation.

The report identifies that, beyond the creek line and swamp, more elevated portions of the site located on Hawkesbury Sandstone would have been more favourable for Aboriginal occupation, with a less ephemeral archaeological signature. The report noted that these locations have generally experienced such a degree of historical development that the natural A horizon soils capable of bearing artefacts and archaeological deposits have been removed or heavily disturbed.

Concept Design ITPS-1 The Bays—Aboriginal Heritage Due Diligence Report—GML Heritage, 2023

GML conducted a due diligence assessment for a traction substation site and an adjoining cable route to connect to The Bays Sydney Metro West site. The site extended along Robert Street and Port Authority of NSW lands in Balmain, abutting White Bay, approximately 800 metres northwest of the site. The site was situated within a disturbed landscape formed by extensive industrial use and land reclamation in White Bay. Originally, the White Bay foreshore was likely characterised by stepped ridges of Hawkesbury Sandstone ascending the Balmain Peninsula away from the bay. The present landform of the site was created via land reclamation and modification of the existing

coastline, forming a flat landform with extremely low relief and level to a very gently inclined slope.

Due to the nature and extent of prior ground disturbance, Aboriginal archaeological potential throughout the site was assessed as low to nil.

Chapter 5, Identifying Where People Camped and Land Use Patterns—Sydney's Aboriginal Past—Val Attenbrow, 2010

Chapter 5 of Val Attenbrow's *Sydney's Aboriginal Past*[41] examines land use patterns for the Sydney region prior to European invasion. Campsite locations were chosen for shelter from weather and ease of access to resources—namely water, food and raw materials. Campsites might be occupied for a single night or longer term (ie days to weeks). European invaders noted that in coastal Sydney, campsites were often established near waterways, which they assumed was for access to marine resources such as fish and shellfish.

Attenbrow detailed the results of the Port Jackson project, which examined archaeological patterning of the Port Jackson catchment. The site included Sydney Harbour, extending to South Head to the east, Middle Harbour in the north, and the Lane Cove and Parramatta rivers to the west. The study was split into eight sub-catchments for analysis. Blackwattle Bay/Pyrmont falls within the Concord to Sydney Harbour Bridge sub-catchment, which has both freshwater and estuarine influences.

The archaeological record for the sub-catchment was dominated by middens, due to the estuarine nature of the harbour/Parramatta River at this point. Archaeological deposits (ie stone artefact-based sites) were uncommon in the sub-catchment, but were more common in freshwater sub-catchments. Middens tend to be more visible than artefact deposits, which are generally contained within the soil profile. Regardless, middens appear to have been the dominant site type for the area.

Both a greater number (98%) and a greater density of midden and archaeological deposit sites were found on areas with Hawkesbury Sandstone as the underlying geology compared with Wianamatta Shale. However, middens and deposits tend to survive better and be more visible on the sandstone geology. The sub-catchments to the west and along the southern side of the estuary/Parramatta River, including the Concord to Sydney Harbour Bridge sub-catchment, had the lowest numbers of middens and deposits. These low numbers were likely due to dense residential and industrial development in the area, and the prevalence of Wianamatta Shale as the underlying geology.

For the Port Jackson catchment, 60% of middens and 80% of archaeological deposits were found in closed contexts (ie rock shelters). Whether this is partially a function of

extensive development on the flatter Wianamatta Shale landscapes, which tend to be open context and do not form closed context landforms, is unclear. More than 50% of middens across the Port Jackson catchment were within 10 metres of the high-water level.

Table 2.2 Summary of relevant prior Aboriginal heritage reports in chronological order.

Report	Location and connection with the site	Findings/key heritage outcomes
Steele (2003) The Quadrant, Broadway Aboriginal Archaeological Post-Excavation Report	1.6km southeast of the site, along Blackwattle Creek.	Disturbed natural Blacktown and alluvial soil profiles encountered beneath historical layers of disturbance. An artefact scatter consistent with background artefact distribution was encountered during test excavation.
Steele (2006), The KENS Site Aboriginal Archaeological Post Excavation Report	1.5km east of the site on a similar landform of Gymea soils over sandstone and reclaimed/reworked land on the shoreline of Cockle Bay.	Areas of intact soil were found to be present beneath historical layers of disturbance. In total, 952 silcrete, quartz, tuff and worked glass artefacts were found in Gymea soils and overlying colluvium.
Attenbrow, V (2010), *Sydney's Aboriginal Past*	Assessed the Aboriginal archaeological record for the Port Jackson region.	The dominant archaeology of the Concord to Sydney Harbour Bridge sub-catchment consists of middens, with sites more common and denser on Hawkesbury Sandstone geology compared to Wianamatta Shales.
Biosis (2012), Wattle St Ultimo ACHAR	1.5km southeast of the site adjacent to Blackwattle Creek.	Buried alluvial soils were detected between 2.5 to 7m below the ground surface. Moderate archaeological potential was assigned, and the site listed on AHIMS as a PAD.
Comber (2012), Darling Quarter Comber Archaeological Excavation Report	1.2km east of the site, situated partially on the original Cockle Bay shoreline and partially on historical land reclamation.	A shell midden and ten artefacts were recovered during test excavation. The shell midden had been redeposited and disturbed by wave action and historical land reclamation.
AHMS (2016), University of Sydney Aboriginal Heritage Impact Assessment Report	1.8km south of the site. Part of the campus formed a component of the catchment for Blackwattle Creek.	Low archaeological potential for much of the site, with the exception of two locations with moderate potential associated with buried alluvial soils.
Artefact (2020), Westmead to The	800m west of the site. Situated on a similar landform of sandstone and	Area of low to moderate PAD assigned where intact natural soils may have been preserved beneath historical layers of

Report	Location and connection with the site	Findings/key heritage outcomes
Bays and Sydney CBD ACHAR	reclaimed/reworked land on the shoreline of White Bay.	disturbance. Areas of reclaimed land were assigned low potential.
Kelleher Nightingale (2021), Pyrmont Peninsula Place Strategy	Assessment of the Pyrmont peninsula, of which the site is a part.	The entire original landform of the Pyrmont peninsula, excluding exclaimed areas, was assigned archaeological sensitivity due to the potential for buried intact soils that may retain subsurface Aboriginal archaeological deposits.
Artefact (2021), Blackwattle Bay State Significant Precinct ACHAR	Blackwattle Bay Precinct, of which the site forms part.	The majority of the precinct has low to nil archaeological potential due to the extent of disturbance; however, two areas of PAD corresponding to areas of mapped remnant landforms were identified. One area of PAD is within the present site, and initial geotechnical testing indicated natural soils may be present beneath historical fill layers.
Curio (2022), Powerhouse Ultimo Renewal Project ACHAR	1.3km southeast of the site. Situated on a similar landform of Gymea soils over sandstone on the shoreline of Cockle Bay.	Moderate to high potential for PADs, stone artefacts, middens and contact archaeology within remnant intact Gymea soils preserved beneath historical layers of disturbance.
GML (2023), Concept Design ITPS-1 The Bays Due Diligence Report	800m northwest of the site. Situated on a similar landform of sandstone and reclaimed/reworked land on the shoreline of White Bay.	Site situated almost entirely on reclaimed land. Subsequently, low potential for intact soils and Aboriginal objects to be present due to the extent of disturbance within the site.

2.4 Summary of geotechnical testing

Initial geotechnical investigation of the site was undertaken by JBS&G in 2012, as outlined within Artefact 2021.[42] These investigations formed part of wider geotechnical testing conducted across the Blackwattle Bay Precinct, which indicated a high level of fill across most of the precinct. However, geotechnical testing within the northern part of the site (1A and 1–3 Bank Street) indicated that localised areas of natural soils were preserved. In 2023, percussion coring was conducted as part of a site contamination assessment by JBS&G and was archaeologically monitored by City Plan. The results of the 2012 and 2023 investigations were archaeologically assessed by City Plan Heritage.[43]

Intact soil profiles were identified in several boreholes within the site, and were found to correspond to units of the Gymea soil landscape and to alluvial or colluvial soils. Intact

Gymea soils were found to correspond to gy2, an earthy yellowish-brown clayey sand that usually comprises the B horizon, and gy3, an earthy to weakly pedal yellowish-brown sandy clay loam that usually forms a B or C horizon. Areas of intact natural C horizon (weathering sandstone bedrock) were also encountered below the B horizon soils, but were not considered to have PAD, presumably because the bedrock layers are culturally sterile. Alluvial deposits within the site were likely formed by the flooding of gullies or creeks within or adjacent to the site. Colluvial sediments would have formed from the deposition of unconsolidated sediments from higher up the peninsula within the site, resulting from the downslope creep or aided by water movement such as sheet wash.

Boreholes with PAD are outlined in Table 2.3 below. Note that the 2023 boreholes BH04, BH05 and BH08 also encountered intact soils between 4.1 to 4.2 metres, 3.5 to 4 metres and 6 to 7.2 metres in depth, respectively. However, these soils were identified as C horizon and, as such, were not assigned PAD as they were considered culturally sterile. BH04 from the 2012 geotechnical program also encountered natural soils interpreted as colluvial sediment or reworked C horizon soils between 1.4 and 2 metres in depth, but was not assigned PAD.

Table 2.3 Results of the geotechnical testing within the site, after City Plan (2023).

Borehole	Year	Depth of fill	Depth of intact soils	Soils with PAD	Soils with PAD description	Interpretation
BH01/ MW01	2012	2.4m	2.4–5m Alluvial /colluvial	2.4–3.8m	Brown sand with trace of gravels.	Alluvial or colluvial sediments.
				3.8–5m	Dark brown silts and sands with trace of gravels.	Alluvial or colluvial sediments.
BH02/ MW02	2012	2.4m	2.4–4.5m	2.4–2.7m	Silty sandy clay, brown and grey, occasional sandstone fragments.	B or B/C soil profile, potentially of the Gymea soil landscape.
BH05/ MW05	2012	1.1m	1.1–4.6m	1.1–3.4m	Sand, white and brown, trace of dark brown clays and gravel, bands of compressed sand.	Alluvial or colluvial sediments.
				3.4–3.8m	Coarse grained sands, dark grey and trace of light brown.	Alluvial or colluvial sediments.

Borehole	Year	Depth of fill	Depth of intact soils	Soils with PAD	Soils with PAD description	Interpretation
				3.8–4.2m	Coarse grained sands, white and trace of light brown.	Alluvial or colluvial sediments.
BH06	2012	0.5m	0.5–3m	0.5–1.5m	Fine grained sands, brown, traces of clays, sand mottles, and compressed sand plates throughout.	Alluvial or colluvial sediments.
BH03A	2023	2.15m	2.15 to 3.2m (with core loss between 2.2 and 3m) B to C horizon	2.15–2.2m	Sandy silty clay (with fine sand component), dark greyish brown mottled (25%) dark yellowish brown, with very occasional charcoal inclusions.	B horizon, potentially gy2 of the Gymea soil landscape.
				3–3.05m	Sandy silty clay (fine sand component), dark brown.	B/C horizon, potentially gy3 of the Gymea soil landscape.
BH11	2023	2m	2–3.2m (with core loss between 2.2 and 2.6m) B to C horizon	2–2.2m	Clayey sand, dark greyish brown with sandstone gravels.	B horizon, potentially gy2 of the Gymea soil landscape.
				2.6–2.95m	Clayey sand, dark greyish brown with sandstone gravels.	Continuation of above, B horizon (gy2).
BH14	2023	1.8m	1.8–3.5m. B to C horizon	1.8–2.5m	Sandy silty clay, light brown/grey.	B horizon, potentially gy2 of the Gymea soil landscape.

Artefact (2021) noted that of the 2012 boreholes with natural soils and PAD, BH02 and BH06 contained natural soils above the water table, while boreholes BH03, BH04 and BH05 contained natural silts that were below the water table. The results of 2012 geotechnical testing were understood by Artefact to suggest that natural soils did persist beneath the developed area of 1A and 1–3 Bank Street. Furthermore, Artefact considered intact soils to have the potential to contain subsurface Aboriginal archaeological deposits, hence the designation of PAD (45-6-3338) within 1A and 1–3 Bank Street.

The analysis of the borehole logs by City Plan confirmed the presence of PAD below 1A and 1–3 Bank Street, and also identified two other areas of PAD within the wider site buried beneath 0.26 to 3.8m of contaminated fills (Table 2.4 and Figure 2.8).[44] Based on their analysis of the borehole data, City Plan suggested adjusting the present boundaries of AHIMS ID 45-6-3338. City Plan identified both Gymea soils and alluvial or colluvial soils within the footprint of AHIMS ID 45-6-3338, and recommended that the two soils be recorded as separate PADs because the erosional Gymea soils and the alluvial or colluvial soils are formed via different depositional processes. Furthermore, City Plan suggested altering the boundaries of the PAD following the results of the 2023 geotechnical testing to reflect the increased understanding of the locations of intact soils within 1–3 Bank Street.

The two additional areas of PAD within the site were also Gymea soils. As these two areas of PAD are spatially separated from the PAD within 1–3 Bank Street, these were considered to be separate PADs and not an extension of the existing PAD(s). These two PADs were indicatively mapped as a 10-metre buffer around the boreholes with intact Gymea soils.

The areas of PAD identified by City Plan within the site are outlined in Table 2.4 and shown in Figure 2.8 below.

Table 2.4 Reassessment of areas of PAD within the site, after City Plan (2023).

PAD	Corresponding boreholes	Soils	Interpretation and location
The Bays Precinct PAD02 (45-6-3338)	BH03A, BH02/MW02	Gymea soil profile, B horizon	Truncated Gymea soil profile. Boundaries of the PAD as recorded by Artefact should be adjusted.
Additional PAD (City Plan PAD02A)	BH01/MW01, BH05/MW5, BH06	Alluvial/colluvial soils	Alluvial or colluvial soils within the footprint of PAD 45-6-3338. Forms a crescent shape around the Gymea soils within the area of PAD.
Additional PAD (City Plan PAD03)	BH11	Gymea soil profile, B horizon	Truncated Gymea soil profile. Located 80m southeast of PAD 45-6-3338.
Additional PAD (City Plan PAD04)	BH14	Gymea soil profile, B horizon	Truncated Gymea soil profile. Located at least 120m southeast of PAD 45-6-3338.

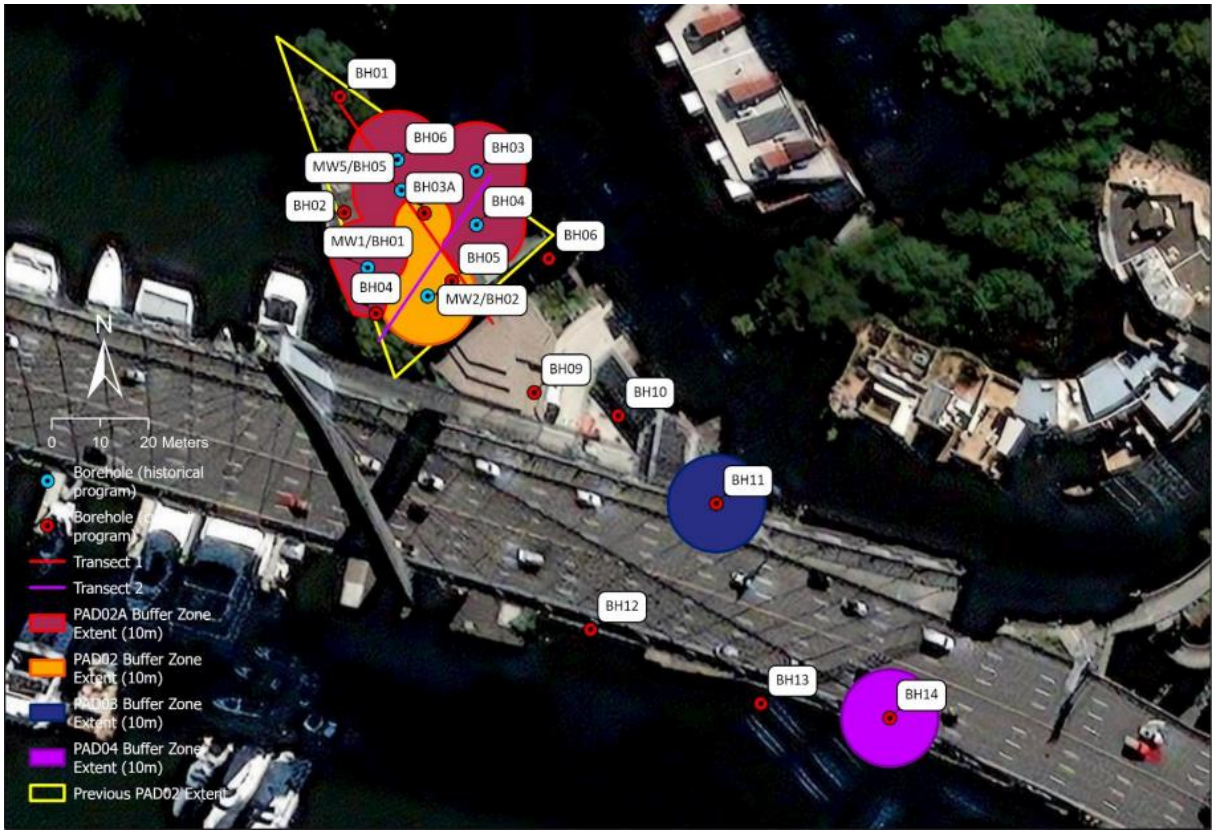

Figure 2.8 Map of 2012 and 2023 geotechnical testing within the site. (Source: City Plan, 2023)

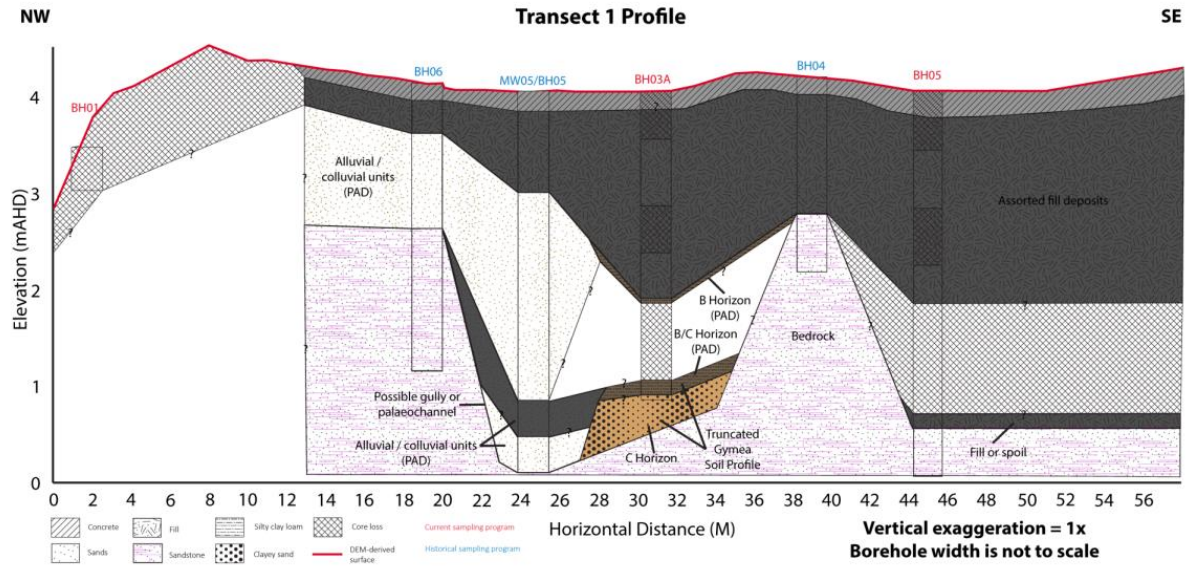

Figure 2.9 Transect 1, illustrating the cross-section of deposits associated with PAD 45-6-3338 (truncated Gymea soil profile) and the alluvial colluvial deposits within the original PAD footprint. (Source: City Plan, 2023)

Archaeological Monitoring Report
1-19 Bank Street, Pyrmont, NSW, 2009
Project # 22-104
May 2023

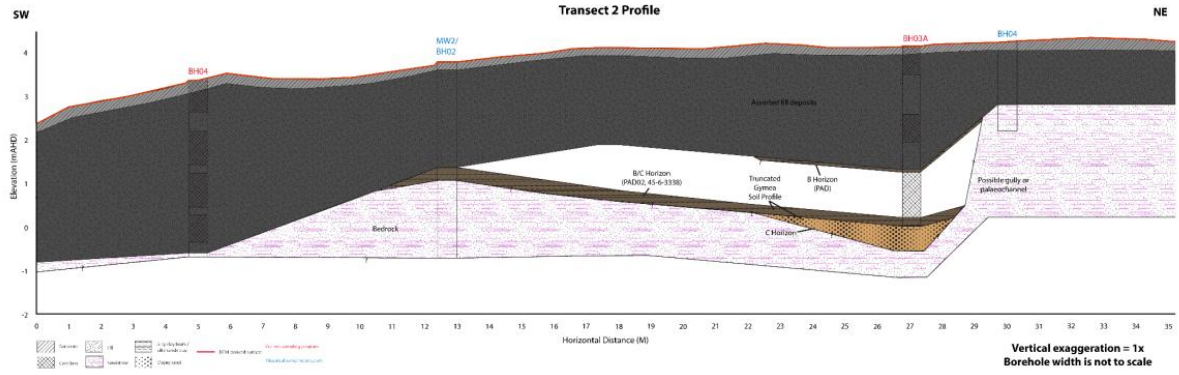

Figure 2.10 Transect 2, illustrating the cross-section of the truncated Gymea soil profile within PAD 45-6-3338. (Source: City Plan, 2023)

2.5 History of the recent land use

The site has been subject to a history of extensive recent land use, including substantial reworking of the Blackwattle Bay shoreline. Prior land uses may affect the ability of the landscape to inform and relate its history of Aboriginal connections. Vegetation clearance, movement of creeks and waterways, cut and fill, and construction have all changed how the landscape appears. These activities can also affect and alter original soil profiles, which may influence the intactness of Aboriginal archaeological sites. Understanding the range and extent of prior recent land use helps develop a model of Aboriginal heritage sensitivity. To assess changes to the site, we have investigated historical maps and historical aerial imagery.

Pyrmont was visited in 1806 by Captain John Macarthur, who named the area Pyrmont after a spa town in northern Germany on account of a natural spring, Tinker's Well, where he and his companions stopped for a picnic.[45] Illustrations of Pyrmont during the early years of European colonisation indicate that the northern extent of Pyrmont peninsula, including the site, was dominated by sandstone ridges and bluffs, with a rocky or cliff dominated shoreline.[46] Despite its proximity to early settlement in Sydney, the development of Pyrmont was initially slow. The Gadigal people had a strong presence on the Pyrmont peninsula until the late 1830s, at which point much of the peninsula was subdivided, and industry, including sandstone quarrying, became prevalent.[47]

The site was initially part of Ultimo Estate, a 34-acre land grant made to Dr John Harris in 1803 and subsequently expanded to 233 acres by 1818 via additional grants and land purchases.[48] The estate was partly used for small-scale farming, but this was largely for show.[49]

The western portion of the peninsula was targeted for quarrying from the 1840s to the end of the century, with quarries locally known as 'Paradise', 'Purgatory' and 'Hellhole'.[50] These quarries were run by the Saunders family, who purchased land on the northwest of the Pyrmont peninsula in 1853. The closest quarry to the site was Paradise, with the escarpment face of the former quarry extending between Bowman Street and Mount Street to the immediate northeast of the site. The quarried escarpment face is listed as a landscape heritage item on the Sydney LEP (item number I1199). Quarrying resulted in drastic changes to the topography of the site, truncating the natural landform and resulting in the destruction of Aboriginal objects, including the Tinker's Well shelter and midden. Land reclamation likely occurred during this period, with mapping by Birch et al (2009) suggesting that reclamation within the site dates to after 1854, with major reclamations occurring by the late 1870s.[51] Quarrying in Pyrmont continued through to the early 1930s.

The State Heritage listed Glebe Island Bridge opened in 1903, with the site intersecting a portion of the heritage curtilage along the eastern approach to the bridge where it adjoins Bank Street. The bridge comprises a swing-span road bridge linking Pyrmont and Glebe Island.[52] Construction included land reclamation for the eastern approach to the bridge.

The land of the subject site continued to be leased by timber yards and other minor shipping and industrial ventures throughout the early twentieth century. In 1900, Augeson & Co. secured the lease of the northern edge of the subject site at 1–3 Bank Street, where it developed a timber yard and wharf.[53] In 1910, this was replaced by Cowlishaws timber yard and wharf. Uses for the 5 Bank Street site around the time included the Taylor Allen and Co. timber store, Wallis Brothers sawmills, McEnnally Bros and Co. lightermen and tugboats, and Puech's skin store.[54] Twentieth-century historical aerial photographs indicate the gradual development and changing shoreline within the site. Wharves and jetties were built, expanded and dismantled progressively between the 1930s and 1980s, demonstrating the intensive industrial nature of the site and Pyrmont peninsula as a whole. A period of intensive land reclamation occurred from the early to mid-1990s (Figure 2.19 and Figure 2.20), associated with the construction of the east support pylon of the ANZAC Bridge, which opened in 1995. During this period, the site was almost completely flattened and most structures removed to allow for construction of the pylon, with the exception of the buildings in the northern portion of the site, namely 1–3 Bank Street. This would have resulted in significant truncation of natural soils and/or of introduced fill layers.

In summary, impacts to the landforms of the site have been significant. Quarrying to the north of the site associated with the Paradise quarry has likely truncated the soil horizons in the north of the site, potentially down to bedrock. Land reclamation associated with the construction and destruction of wharves, construction of the adjacent Glebe Island Bridge and construction of the ANZAC Bridge pylon will have further resulted in changes to the landform, including introducing areas of capping fill over natural soils, which, in places, may have protected underlying truncated yet remnant natural soils from further impacts. Construction of the ANZAC Bridge pylon will have resulted in impacts to natural soil deposits within the pylon footprint. Trenching for installation of utilities across the site, including installation of stormwater pits in 1A Bank Street, may have resulted in impacts to natural soils where these extend below the depths of imported fills. Although large portions of the site have been disturbed, the geotechnical testing suggests that pockets of truncated remnant natural soils are present within the site.

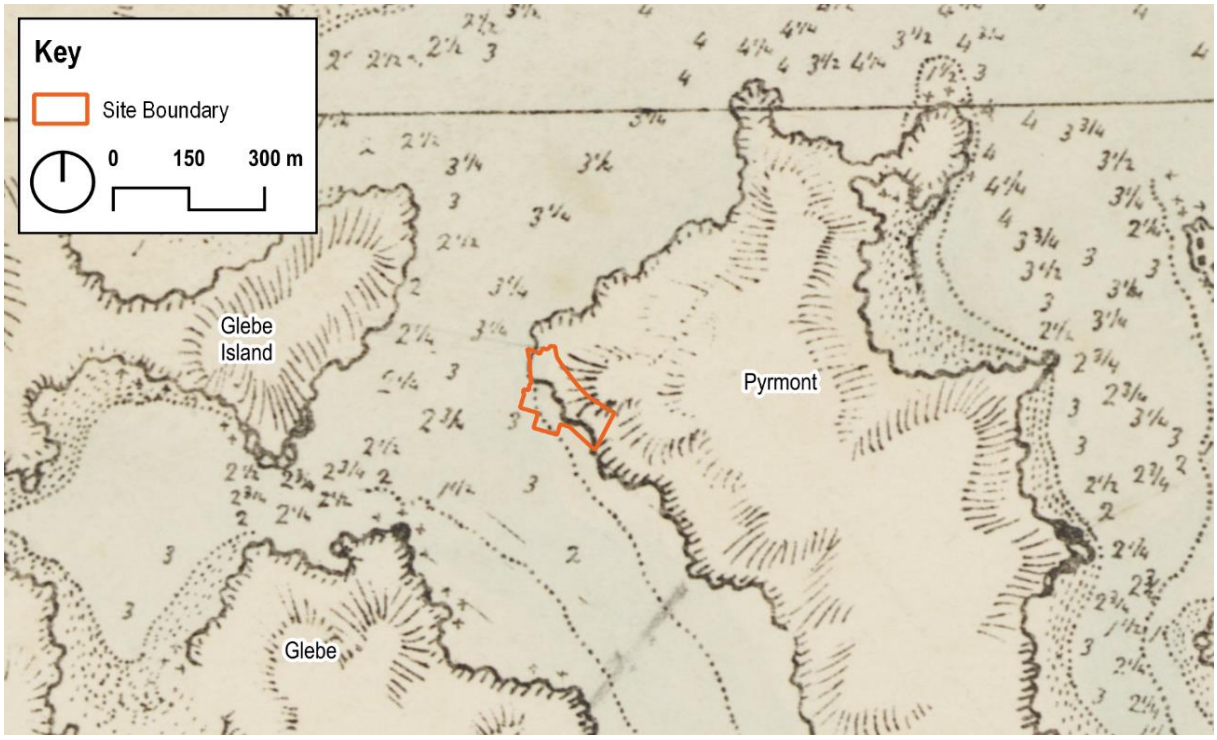

Figure 2.11 1822 historical map of the site, indicating the pre-industrial development shoreline of Blackwattle Bay. (Source: State Library of NSW, Port Jackson, NSW by John Septimus Roe, record ID 74VMyavVRmMl)

Figure 2.12 Dr Harris' residence within Ultimo estate, looking north towards the Pyrmont peninsula, c1821–1823. Note that the peninsula remains vegetated and predominantly unaltered at this time. (Source: State Library of NSW, Views of Sydney and Surrounding District, Edward Mason)

Figure 2.13 1839 plan of Pyrmont, with the position of the site within Dr John Harris' landholdings (Ultimo Estate) indicated. (Source: State Library of NSW, Plan of Pyrmont as divided into building allotments for sale by auction by Mr Smart, record ID 74VvM6VbD4Pd)

Figure 2.14 1930 historical aerial photograph showing the site. (Source: NSW Spatial Collaboration Portal with GML overlay, 2023)

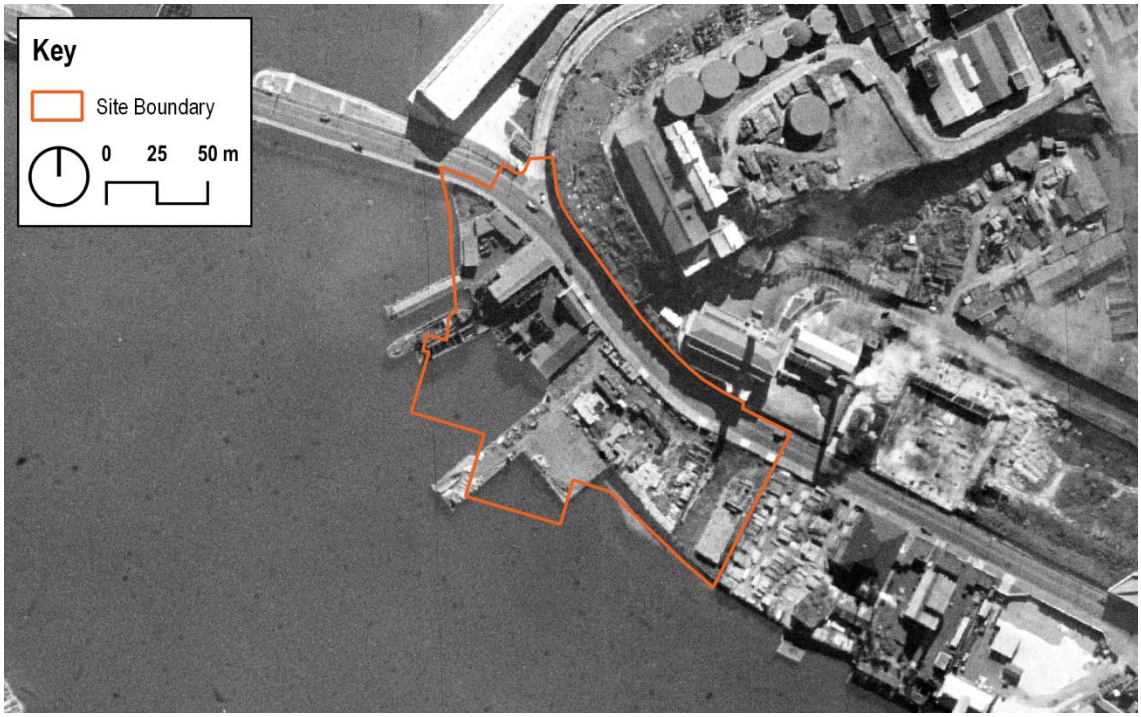

Figure 2.15 1943 historical aerial photograph showing the site. (Source: NSW Spatial Collaboration Portal with GML overlay, 2023)

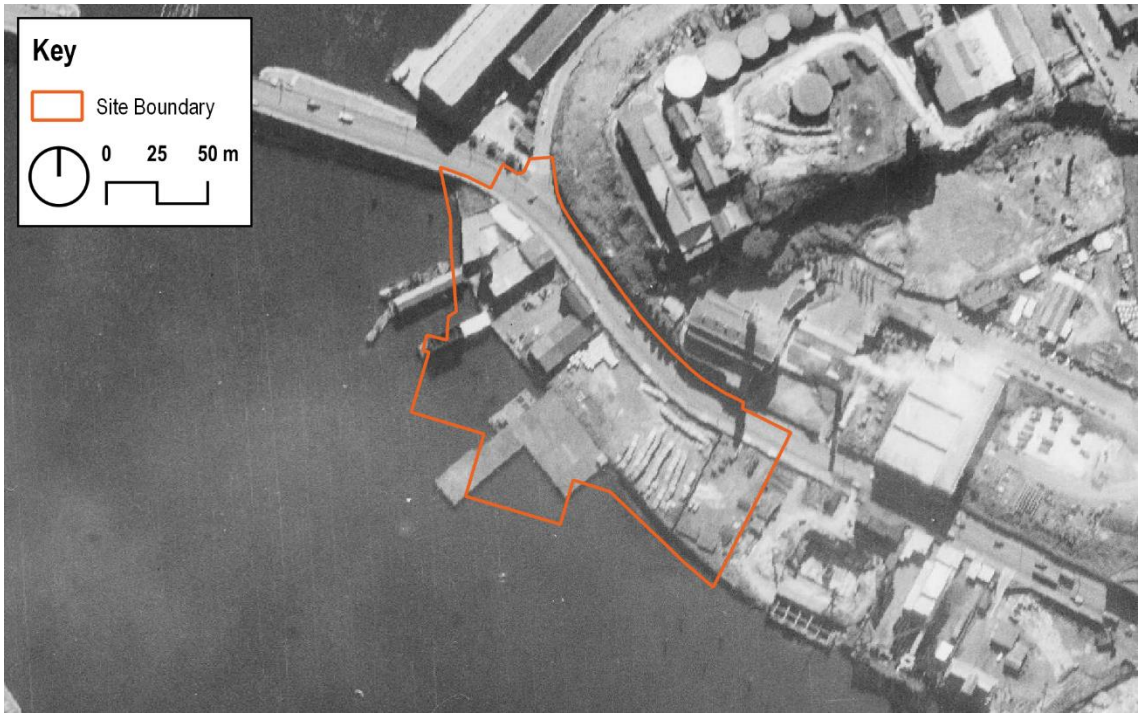

Figure 2.16 1951 historical aerial photograph showing the site. (Source: NSW Spatial Collaboration Portal with GML overlay, 2023)

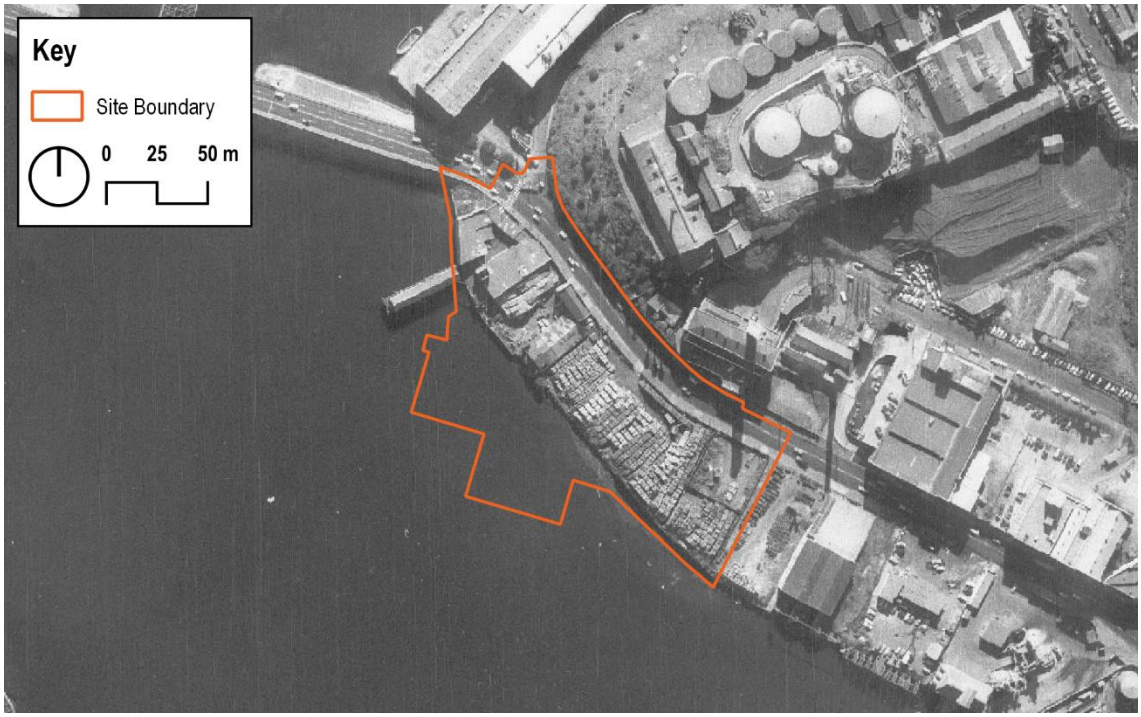

Figure 2.17 1961 historical aerial photograph showing the site. (Source: NSW Spatial Collaboration Portal with GML overlay, 2023)

Figure 2.18 1978 historical aerial photograph showing the site. (Source: NSW Spatial Collaboration Portal with GML overlay, 2023)

Figure 2.19 1991 historical aerial photograph showing the site. (Source: NSW Spatial Collaboration Portal with GML overlay, 2023)

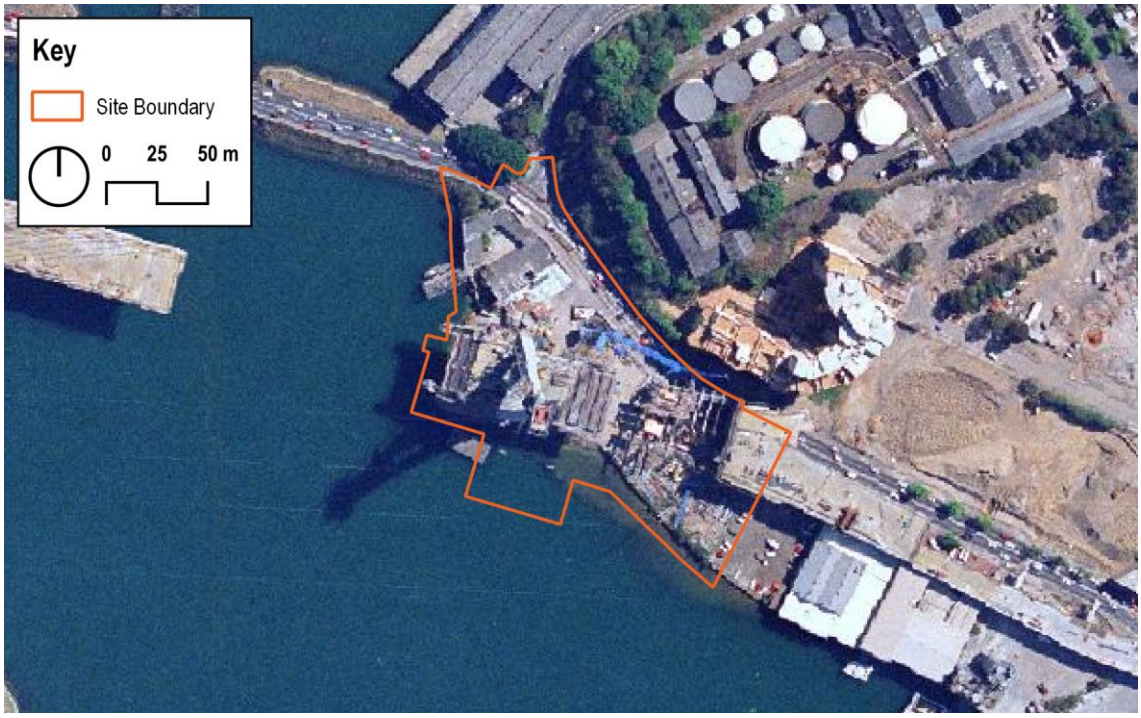

Figure 2.20 1994 historical aerial photograph showing the site. (Source: NSW Spatial Collaboration Portal with GML overlay, 2023)

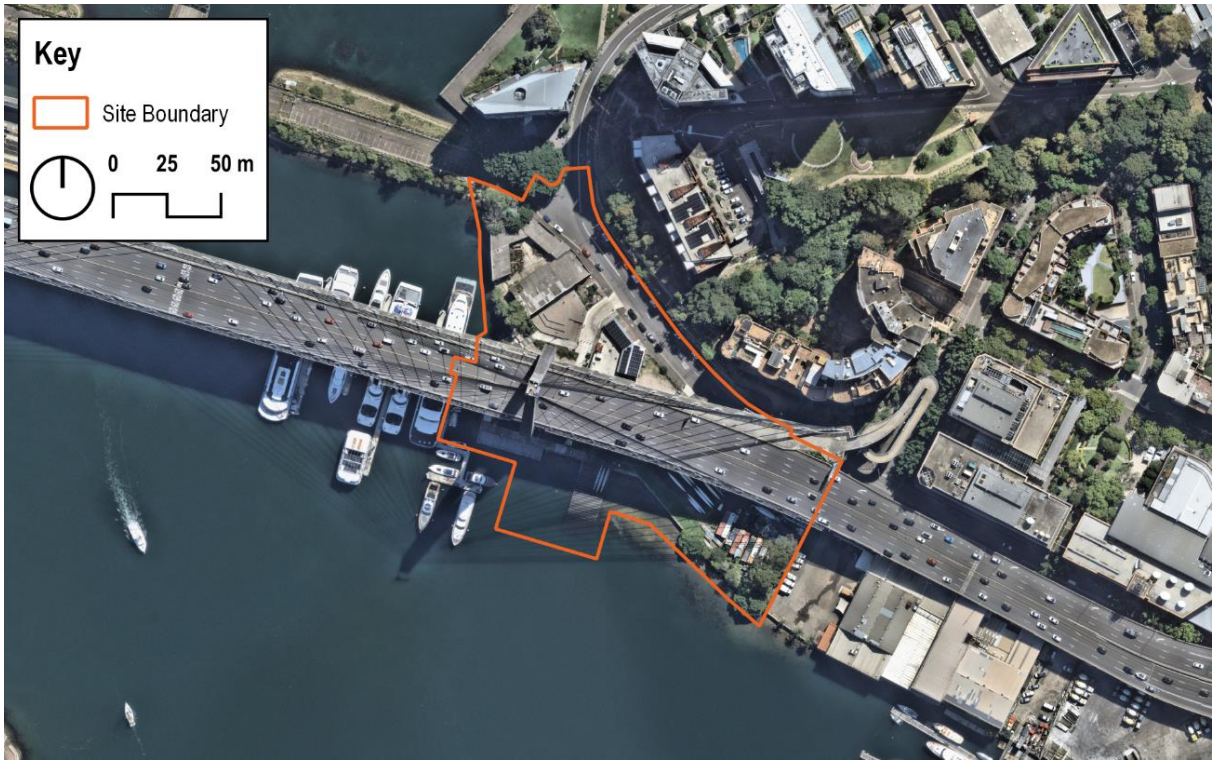

Figure 2.21 2023 aerial imagery of the site. (Source: Nearmap with GML overlay, 2023)

2.6 Summary of archaeological and environmental context

Prior to European invasion, the northern extent of the Pyrmont peninsula, including the site, was dominated by steep slopes leading to a rocky shoreline. The peninsula would have supported a variety of flora and fauna, with the site likely comprising dry sclerophyll woodland. A variety of terrestrial and estuarine plant and animal resources would have been available year-round. The closest freshwater sources to the site would have been Tinker's Well, a natural spring just east and upslope of the site, and Blackwattle Creek, which would have flown into Blackwattle Bay approximately 1 kilometre southeast of the site. As a result of fluctuating sea levels during the Holocene, the site was likely partially to fully inundated between 7,000 and 1,400 BP.

Historical land use within the site has resulted in significant impacts and modifications to the original landforms via alterations to the natural sloping rocky foreshore from sandstone quarrying between the 1850s and 1930s, creation and destruction of industrial and commercial wharves, land reclamation between the 1850s and 1870s and in association with the construction of the ANZAC Bridge in the early 1990s, and

construction of the ANZAC Bridge itself. The soils of the site are predominantly disturbed, composed of reworked sands, silts and clays, with ash, charcoal, road metal, slag, concrete fragments, and bluestone and sandstone gravel inclusions.[55] Disturbed soils either continue to bedrock or, in places, overlie truncated natural soil profiles. These natural soil profiles correspond to Gymea soils, and alluvial or colluvial soils. Areas of intact soil have potential to retain Aboriginal archaeological subsurface artefact deposits and, therefore, have been assigned as PADs. Four areas of PAD have been assigned to the site based off the results of geotechnical investigation.

2.7 Archaeological predictive models

Aboriginal heritage predictive modelling provides an understanding of Aboriginal sites, places and object distribution with a wider landscape.[56] Through a process of landscape characterisation, Aboriginal people and archaeologists are able to infer those locations most frequently visited and used in the past. Such assessment may be used to interpret long-term subsistence and habitation patterns. Based upon the landscape context, land use history, regional and local archaeological patterns it is possible to provide a predictive statement for the likely occurrence of Aboriginal archaeological sites/places connected with the site (Table 2.5).

Based on examination of the AHIMS results and relevant local literature, the most likely Aboriginal site types to be present within the site are stone artefacts (scatters and/or isolated finds), contact archaeology (ie worked glass, metal or flint) and middens. Four areas of PAD have been identified in the site based on geotechnical testing. These areas of PAD comprise buried intact natural soil profiles of both truncated Gymea soils and alluvial or colluvial soils, and Aboriginal objects could potentially be present within these buried soil profiles. As a result of land reclamation and other historical disturbance activities, these areas of PAD are buried beneath 0.5m and 2.4m of historical fills. This may have protected and thus preserved archaeological deposits, as demonstrated by the KENS archaeological site within the Sydney CBD. Like the site, KENS was situated on a modified shoreline at the footslope of a ridgeline. Aboriginal artefacts, including lithics and contact archaeology, were found both within truncated Gymea soils and in overlying colluvial soils. Therefore, Aboriginal objects could potentially be present within the site in areas of intact preserved soils (Figure 2.22).

Table 2.5 Types of Aboriginal archaeological sites that may be located within the site.

Archaeological site type	Description and potential location
Stone artefacts	Stone artefact concentrations are collections of stone, frequently brought from other areas, which demonstrate evidence for Aboriginal working, use and/or discard of the stone at a single location. Stone artefact concentrations may be associated with any of the below site types. Where such sites are buried by sediment they may not be noticeable unless exposed by erosion or disturbed by modern activities. These sites may be present within the site in areas of buried natural soil profiles.
Isolated finds	Sites consisting of a single stone artefact, isolated from any other artefacts or archaeological evidence. They are generally indicative of sporadic past Aboriginal use of a location. A distinction should be drawn between isolated finds which are a component of the background distribution of objects and specialised objects such as axes, hammer stones, grinding dishes etc which would have been used repeatedly and may have been carried from place to place. These sites may be present within the site in areas of buried natural soil profiles.
Contact archaeology	Contact period artefacts consist of non-Aboriginal materials (including but not limited to flint, glass and ceramic) which demonstrate evidence for Aboriginal manufacture, use and/or discard. These objects can be difficult to distinguish from historical artefacts. These artefacts can provide insights into Aboriginal use of new materials brought by British colonisers. These sites may be present within the site in areas of buried natural soil profiles and in reworked soils.
Shelter sites	Sandstone shelters and overhangs were used by Aboriginal people to provide habitation areas sheltered from the rain and sun. The deposits in such sites are commonly very important because they often contain clearly stratified material in a good state of preservation. These sites may be found in areas of outcropping sandstone. Shelters are not likely to be present in the site as the natural sandstone slope has been quarried out within the site. Tinker's Well, a shelter with a natural spring and midden deposit, was located approximately 50–100m east of the site, while the [redacted] (AHIMS ID 45-6-2960) is situated [redacted].
Shell middens	Middens predominantly consist of accumulations of shell that represent the exploitation and consumption of shellfish by Aboriginal people. Shell species may be marine, estuarine or freshwater

Archaeological site type	Description and potential location
	depending on the environmental context. Middens frequently also include faunal remains, stone artefacts, hearths and charcoal. These sites are prevalent on the estuarine foreshores of Sydney Harbour, of which the site forms a part. Middens may be present within the site in areas of buried natural soil profiles.
Grinding grooves	Grooves resulting from the grinding of stone axes or other implements are found on flat areas of suitable sandstone. They are often located near waterholes or creek beds because water is necessary in the sharpening process. In areas where suitable outcrops of rock were not available, transportable pieces of sandstone were used. These sites are not likely to be present in the site as the natural sandstone slope has been quarried out within the site.
Quarries	These are areas where stone was obtained for flaked artefacts or ground-edge artefacts, or where ochre was obtained for rock paintings, body decoration or decorating wooden artefacts. No raw stone material sources are known on the Pyrmont peninsula. It is unlikely that this site type is present within the site.
Art sites	Aboriginal paintings, drawings and stencils are commonly to be found where suitable surfaces occur in sandstone shelters and overhangs. These sites are often referred to as rock shelters with painted art. Rock engravings, carvings or peckings are also to be found on sandstone surfaces both in the open and in shelters. These are referred to as rock engraving sites. These sites are not likely to be present in the site because the natural sandstone slope has been quarried out within the site, removing any exposed sandstone outcrops and shelters that may have contained art sites.
Scarred trees	Scarred trees bear the marks of bark and wood removal for utilisation as canoes, shields, boomerangs or containers. It is commonly very difficult to confidently distinguish between Aboriginal scars and natural scars or those made by Europeans. Scars may also originate as 'foot-marks', small pockets cut into the bark of a tree enabling the tree to be climbed. These sites are unlikely to be present in the site because all mature native vegetation has been cleared.
Burial sites	Burials may be of isolated individuals, or they may form complex burial grounds. They are often associated with other site types such as middens or mounds. These sites are generally associated with deep sandy deposits. There is a low likelihood of burials being present in the site due to the predicted rocky nature of the pre-modification shoreline.

Archaeological site type	Description and potential location
Mound sites	Commonly found on lower-lying alluvial floodplains, mound sites are formed by the long term build-up of soil, organic material, or shell to form a small mound. Mounds may contain stratified deposits and can contain burials. These sites are unlikely to be present within the site due to the rocky estuarine foreshore nature of the landform.
Stone arrangements, carved trees and ceremonial grounds	These site types are often interrelated. Stone arrangements vary from simple cairns or piles of rocks to more elaborate arrangements—patterns of stone laid out to form circles and other designs, or standing slabs of rock held upright by stones around the base. Carved trees may have intricate geometric or linear patterns or representations of animals carved into their trunks. Ceremonial grounds and graves were often marked by such trees. Bora grounds are a common type of ceremonial site and they are generally associated with initiation ceremonies. They comprise two circles, generally edged with low banks of earth but sometimes of stone, a short distance apart and connected by a path. These sites are unlikely to be present in the site due to the nature of the landform and because all mature native vegetation has been cleared.
Resource area	Resource gathering areas represent landforms that contain a high number of fauna and flora species, which were known Aboriginal resources. Resource areas are frequently associated with permanent water resources, often swamps or marshes, and frequently have recorded sites such as middens nearby. Landforms associated with these sites are often flats with a favourable outlook. The larger Pyrmont peninsula likely provided a rich array of resources, from estuarine and swampy landforms to woodlands. The site may have formed part of this large web of resources.

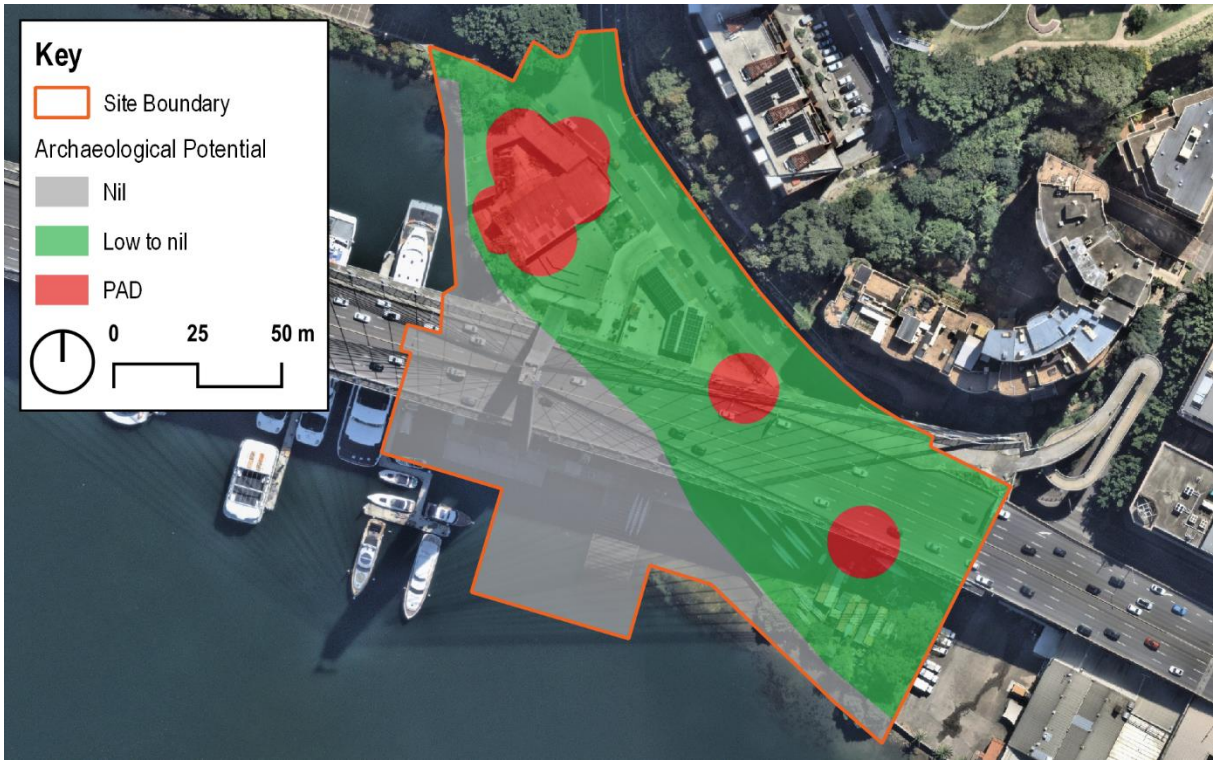

Figure 2.22 Aboriginal archaeological potential within the site. (Source: Nearmap with GML overlay, 2023)

2.8 Endnotes

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3 Aboriginal community consultation

3 Aboriginal community consultation

3.1 Introduction

Aboriginal community consultation is required for any assessment of Aboriginal heritage in order to make a valid assessment of Aboriginal (heritage) 'values'; especially those Aboriginal memories, stories and associations between the Aboriginal people and their traditional lands or Country. Aboriginal people frequently express an enduring connection to their Country, a connection that transcends generations, both past and present. The connection is frequently expressed as a sense of belonging, which may manifest through physical objects or place; alternatively, it may be presented as an intangible idea, where an appreciation of an unseen quality or non-materialistic value connects a place in the landscape, tradition, observance, custom, lore, belief and/or history to the person or group describing the item, event or value. The notion of intangible, social, or community values is essential to Aboriginal people as 'the effective protection and conservation of this heritage is important in maintaining the identity, health and wellbeing of Aboriginal people'.[1]

In order to gather social and community views and opinions with respect to Aboriginal heritage and identify and address Aboriginal heritage values, Heritage NSW requires proponents to adhere to the guideline document Aboriginal cultural heritage consultation requirements for proponents 2010.[2]

GML recognises and acknowledges the continuing Indigenous ownership of the traditional knowledge, traditional cultural expressions, practices, innovations and intellectual property rights in the materials provided by Aboriginal and Indigenous people, on which research and assessments in our reports may be based, and endeavours to protect the privacy, integrity and wellbeing of participants in this research.

3.2 The process of consultation

These consultation guidelines set out a process involving identification, registration, engagement and consultation with Aboriginal peoples who may hold cultural knowledge relevant to determining the significance of an Aboriginal object and/or place.

Adherence with guidelines involves following a number of stages, which includes:

1. Informing Aboriginal people about the nature and scope of the proposal.
2. Understanding what might be present in the landscape and its cultural significance.

3. Determining the potential impacts and the proposed strategies to deal with them.
4. Reviewing the report.[3]

Aboriginal groups are invited to register interest as a party to consultation. This includes placing local press advertisement(s), seeking responses from the Registered Aboriginal Parties (RAPs) on the proposed assessment methodology, and providing them with an opportunity to comment on the assessment reports and recommendations. The guidelines specify timeframes for each stage of the consultation process. Further details pertaining to these stages are described below.

The Aboriginal community consultation for this project has been carried out in accordance with Heritage NSW guidelines. This chapter contains specific details of Aboriginal community consultation with regard to the heritage assessment of the site.

The complete log of all communications between GML and RAPs and all letters, responses and details pertaining to this consultation are provided in Appendix C.

3.2.1 Stage 1: Notification of project

The aim of Stage 1 is to 'identify, notify and register Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places in the area of the proposed project'.[4] The identification process involves:

- sending letters to select government agencies to determine relevant Aboriginal stakeholder groups to contact; and
- placing notices in local press, inviting Aboriginal people who hold relevant cultural knowledge to register in the process of community consultation.

A letter notifying all Aboriginal people and MLALC about the proposed project must be sent to each individual and group identified through the above stages. Aboriginal people have a minimum of 14 days after the letter is sent or the notice published in the newspaper to register an interest in the project.

The outcome of Stage 1 is a list of Aboriginal people who have registered to be involved in consultation. These are the project's RAPs. The RAPs are to be involved for the remainder of the project; Aboriginal consultation with groups or persons outside of the RAPs is not required.

Letters requesting contact details for Aboriginal people or organisations who may hold cultural knowledge and may identify heritage issues relevant to the site were sent via email on 30 May 2023 to:

- Heritage NSW;
- Metropolitan Local Aboriginal Land Council;

- Office of The Registrar, Aboriginal Lands Right Act 1983;
- National Native Title Tribunal;
- Native Titles Service Corporation;
- City of Sydney Council; and
- the Greater Sydney Local Land Service (former Greater Sydney Catchment Management Authority).

Responses were received from the following groups:

- Greater Sydney Local Land Service;
- City of Sydney Council;
- National Native Title Tribunal;
- The Office of The Registrar, Aboriginal Lands Right Act 1983; and
- Heritage NSW.

Subsequently, those Aboriginal people who were identified during the Step 1 notifications were contacted via letter on 13 June 2023, providing information regarding the project and inviting them to register an interest (Step 2 notifications). A notification was also placed in *Koori Mail* on 14 June and the *Sydney Morning Herald* on 15 June, inviting registrations of interest by Aboriginal people with cultural knowledge relevant to the site.

The Project's Registered Aboriginal Parties

In line with the outcomes of Stage 1 following the consultation guidelines[5] the project's RAPs are:

- Butucarbin Aboriginal Corporation;
- Darug Custodian Aboriginal Corporation;
- Dharug Ngurra Aboriginal Corporation;
- Didge Ngunawal Clan;
- Guntawang Aboriginal Resources Incorporated;
- Kamilaroi-Yankuntjatjara Working Group;
- MLALC;
- Ngambaa Cultural Connections;
- Yarrawalk;
- Sonione Wakabut Rogers;
- Confidential #1;
- Confidential #2; and
- Confidential #3.

A copy of the notification and the details of RAPs were provided to Heritage NSW and the MLALC on 7 July 2023.

3.2.2 Stage 2: Presentation of Information

A letter has been sent to all RAPs informing them of the project outline, project impacts, timeline and milestones of the project. Included was a methodology for undertaking the project's assessment and a request for any information on culturally sensitive areas of local traditional knowledge relating to the site. Stage 2 allowed 28 days for the RAPs to respond.

Each RAP group was provided with written details of the proposed project and a test excavation sampling strategy, in the form of an Aboriginal Archaeological and Cultural Assessment Methodology (AACAM). This was presented by post or email, on 1 August 2023. Comments were received from Kamilaroi-Yankuntjatjara Working Group and a confidential RAP group. Both groups supported the proposed methodology.

Further details of the Aboriginal consultation undertaken for the site are provided in Appendix C.

Test excavation

Test excavation to satisfy the project SEARs was undertaken between 11 and 15 September 2023. This stage of works included representatives from Kamilaroi-Yankuntjatara Working Group (KYWG) and Ngaamba Cultural Connections (NCC). A total of two local Aboriginal community representatives participated in the excavation: Jamie Currell (KYWG) and Gary Dunn (NCC). An invitation to participate was also extended to MLALC; however, no response was received prior to the commencement of the testing program. GML would like to acknowledge Rowena Welsh-Jarrett (MLALC) for her time over the phone and in person during the test excavation program to discuss the project and methodology.

3.2.3 Stage 3: Gathering information

During the excavation process we discussed local Aboriginal heritage values, places and sites with the community representatives. This provided an understanding of the local perspective for Aboriginal habitation and subsistence patterns; as well as understanding some local intangible values and connection with the cultural landscape.

Further, extensive consultation has been conducted with the local Aboriginal community as a component of the park design. Outcomes are summarised in the Bank Street Park Phase 1 Community Engagement Outcomes Report (Cred Consulting) and Bank Street Park (Tjerruing Park) Designing for/of/with Country First Nations Consultation Summary (Greenshoot Consulting and Greenaway Architects).[6] Discussion of the cultural context of Blackwattle Bay is also detailed in the Connecting with Country Framework for Tjerruing

Blackwattle Bay (Bangawarra).[7] These reports have identified key themes and values relating to the site both pre- and post-colonisation. Some key values and themes connected with the Bank Street site include:

- Gadigal women's mastery of fishing.
- Pre-colonisation environment: meeting of salt (harbour) and freshwater (Parramatta River, Blackwattle Creek) waters; native flora and fauna.
- Connection to the Blak Diggers in association with the ANZAC Bridge, which is situated above the site.

Discussion with representatives of the RAPs indicated that the site holds significance, particularly in the context of the comparative rarity of retained potential Aboriginal sites in foreshore contexts within the Sydney CBD, due to extensive disturbance and land reclamation.

GML invites RAPs to provide further comment on heritage values, places and sites.

3.2.4 Stage 4: Review of draft report

Following preparation of the draft ACHAR, the RAPs were provided a review period of 28 days to read and comment on the draft ACHAR (this report). RAP review of the draft ACHAR commenced on 25 October 2023, and concluded on 22 November 2023. All community comments received have been summarised in Table 3.1, and written responses are included in Appendix C. If required, action and response to each comment has been undertaken and is detailed in Table 3.2.

The draft ACHAR was supplied on 25 October as an email attachment. Some RAPs noted issues with accessing the file, as a result, the ACHAR was resent via link over email on 30 October.

Table 3.1 RAP comments on the draft ACHAR.

#	RAP	Comment
1	Darug Custodian Aboriginal Corporation (DCAC)	Flagged that ACHAR was not attached to email.
2	Guntawang Aboriginal Resources Incorporated (GARI)	Identified that previous construction within the Blackwattle Bay area may have destroyed or obscured Aboriginal sites, prior to/during the early years of the implementation of Local Aboriginal Land Councils. Enquired how project ACHAR related to previous Blackwattle Bay precinct-wide ACHAR (prepared by Artefact Heritage, 2021). Agreed with the ACHAR and ATR drafts.
3	Sonione Wakabut Roders	Confirmed receipt of draft ACHAR.

#	RAP	Comment
4	KYWG	Agreed with and supported recommendations. Suggested archaeological monitoring proposed as a harm mitigation strategy for the site should be conducted by a RAP.

Table 3.2 GML responses to RAP comments to the draft ACHAR.

#	GML's response
1	A link to the project ACHAR and ATR was resent to all RAPs via email on 30/10/23 in response to DCAC's email.
2	Phone and email response to GARI representative. Outlined how project ACHAR specifically examines the Bank Street site, where the precinct-wide 2021 ACHAR covered Blackwattle Bay as a whole. Summarised results of excavation, and provided brief summary of proposed management and mitigation strategies proposed as presented in the project ACHAR.
3	Noted.
4	Email response to KYWG. Acknowledged KWYG review of and comment on the ACHAR; recommendation has been added to Strategy 2 (see Section 7.1.2).

3.3 Summary of Aboriginal cultural values identified

The process of Aboriginal consultation has identified heritage values and social connections between the local Aboriginal community and project area. These aspects are identified in Table 3.5 and Figure 3.1. The outcomes of Aboriginal consultation have informed the process of heritage identification, values assessment and associated heritage policy development.

No specific values associated with the Bank Street site were identified in RAP review of the project ACHAR. However, discussion with the RAPs on site during fieldwork, and consultation conducted as a component of the park design[8] for the site have identified cultural values in association with the site. These values include:

- The actual and potential archaeological record of the site, manifest in the flint flake identified during testing and the potential for other areas of deposits with archaeological potential to be present. The archaeological record within the site connects First Nations people to their past and is representative of their cultural continuity in association with the site and wider area.
- Traditional connections to the site and surrounds. First Nations people have lived with and cared for Country for thousands of years. Connections were drawn to Gadigal women's mastery of fishing, which would have occurred throughout the harbour, including Blackwattle Bay.

- The environmental context of the site. The site is adjacent to the meeting of fresh water and saltwater.
- Contact archaeology. The site is part of the wider region of early contact between European colonists and First Nations people. A flint flake was identified during archaeological test excavation at the Bank Street site. Further contact archaeology artefacts may be present in deposits with PAD within the site.

3.4 Requirements for future Aboriginal consultation

Heritage NSW has defined a number of stages during the Aboriginal consultation process. The following table provides a synopsis of the progress to date.

Table 3.3 Cultural heritage assessment program synopsis—progress to date.

Stage	Status
Write to statutory bodies to obtain contact details for Aboriginal people who may have an interest in the project.	Completed
Write to identified Aboriginal people, inviting them to register an interest in the project.	Completed
Place an advertisement in local print media, inviting Aboriginal people with cultural knowledge of the area to register an interest in the project.	Completed
Record names of Aboriginal people who have registered an interest in the project.	Completed
Advise MLALC and Heritage NSW of RAPs' details (subject to privacy requests).	Completed
Present information regarding proposed project to RAPs.	Completed
Provide methodology for the cultural heritage and archaeological assessment to RAPs.	Completed
Invite RAPs to provide input for the assessment methodology.	Completed
RAPs are invited to identify: • whether any Aboriginal objects of cultural value are present within the site; and • whether any places of cultural value are present within the site.	Completed
RAPs are invited to comment on potential management outcomes.	Completed
Prepare draft ACHAR and provide it to RAPs for comment.	Completed

Stage	Status
Incorporate RAPs' comments into the final ACHAR.	Completed
Provide final ACHAR to RAPs, MLALC and Heritage NSW.	This report

Future consultation with the RAPs should include the following steps.

- Copies of the final report (this report) will be sent to all registered Aboriginal groups.
- Any future work relating to the Aboriginal archaeological mitigation, or any significant changes to the development, should include consultation with the relevant Aboriginal stakeholders.

3.5 Endnotes

[1] Department of Environment, Climate Change and Water 2010, Aboriginal cultural heritage consultation requirements for proponents 2010, Sydney.

[2] Department of Environment, Climate Change and Water 2010, Aboriginal cultural heritage consultation requirements for proponents 2010, Sydney.

[3] List taken from Department of Environment, Climate Change and Water 2010, Aboriginal cultural heritage consultation requirements for proponents 2010, Sydney, p 10.

[4] Department of Environment, Climate Change and Water 2010, Aboriginal cultural heritage consultation requirements for proponents 2010, Sydney, p 10.

[5] Department of Environment, Climate Change and Water 2010, Aboriginal cultural heritage consultation requirements for proponents 2010, Sydney.

[6] Cred Consulting, Bank Street Park Phase 1 Community Engagement Outcomes Report, report prepared for Infrastructure NSW, October 2022;

Greenshoot Consulting and Greenaway Architects, Bank Street Park (Tjerruing Park) Designing for/of/with Country First Nations Consultation Summary, report prepared for Infrastructure NSW, July 2023.

[7] Bangawarra, Connecting with Country Framework for Tjerruing Blackwattle Bay, report prepared for Infrastructure NSW, June 2021.

[8] Cred Consulting, Bank Street Park Phase 1 Community Engagement Outcomes Report, report prepared for Infrastructure NSW, October 2022;

Greenshoot Consulting and Greenaway Architects, Bank Street Park (Tjerruing Park) Designing for/of/with Country First Nations Consultation Summary, report prepared for Infrastructure NSW, July 2023.

4 Investigations into Aboriginal heritage

4 Investigations into Aboriginal heritage

The background investigations have established the nature of the local environment, the extent of prior heritage works, and known Aboriginal connections into the site. This section presents the results of our investigations into the Aboriginal heritage of the site. The outcomes combine to describe the overarching cultural landscape, and provide the basis for the Aboriginal heritage values assessment.

4.1 Consultation with Heritage NSW

In addition to consultation with Heritage NSW required as part of the *Aboriginal cultural heritage consultation requirements for proponents* (DECCW, 2010) (Consultation Requirements), additional consultation was undertaken with Heritage NSW by GML on behalf of INSW via phone and email to clarify the approach and approvals mechanism for Aboriginal archaeological testing to satisfy the project SEARs. The project SEARs (Item 6) prescribed preparation of an ACHAR in accordance with the Code of Practice which identifies certain circumstances where test excavation cannot occur without an AHIP, including within 50m of a rockshelter or shell midden. Given that the Bank Street site is [redacted], and preliminary reporting indicated the site had potential to contain midden material, GML sought clarification to confirm that the requirement for an AHIP was turned off as the project had been declared SSD. Heritage NSW confirmed that test excavation could proceed without the requirement for an AHIP in accordance with Part 4 Division 4.7 Section 4.41 (3) of the EPA Act. Endorsement for the proposed test excavation methodology was also provided by Corey O'Driscoll (Senior Assessments Officer [Archaeologist]), Heritage NSW, via email on 8 August 2023.

4.2 Archaeological survey

Archaeological survey for the Blackwattle Bay Precinct was conducted as a part of the Artefact ACHAR in 2014 and 2017.[1] This program of survey included inspecting the Bank Street site.

The site is a developed site without ground surface visibility and/or soil exposures. Due to the extensively developed nature of the site and the prior archaeological survey

conducted by Artefact as part of the initial ACHAR process (see Section 2.3.2), additional archaeological survey was not deemed to be necessary.

A preliminary site inspection was undertaken by GML archaeologists Dr Kat McRae and Andie Coulson on 6 June 2023 to inspect areas which had previously not been inspected as part of the Artefact survey.[2] Further details are provided in Section 2.2.1 of the ATR.

4.3 Archaeological test excavations

This section provides an overview of the outcomes of Aboriginal archaeological test excavation conducted at the Bank Street site. For a detailed discussion of the excavation methodology, results and analysis, please refer to the ATR (Appendix B).

4.3.1 Summary of test excavation results

Prior archaeological assessments of the site (CityPlan 2023;[3] see also Artefact 2021[4]) had identified four areas of PAD within the site based on the results of geoarchaeological investigations. These are identified as PAD 02 (AHIMS ID 45-6-3338), PAD 2A, PAD 3 and PAD 4 (Figure 4.1). The program of Aboriginal archaeological test excavation aimed to confirm the presence of intact soil landscapes and their archaeological content, and to archaeologically sample these PADs. The test excavation methodology, outlined in the AACAM, was developed in accordance with the Code of Practice to comply with the project SEARs.

A total of five test units were proposed in the AACAM. Four test units (TU1, TU2, TU3 and TU4) were proposed in areas of PAD adjacent to the geotechnical boreholes with identified intact remnant soils to test for the presence of Aboriginal objects. An additional TU, TU5, was proposed between PAD 3 and PAD 4, in an area which had not been sampled via geotechnical investigations. Testing in this location aimed to identify whether PAD was continuous between PAD 3 and PAD 4.

Five test trenches were machine-excavated under the supervision of the project archaeologists in the proposed locations of TUs 1–5, with the intent of exposing deposits with PAD. In the instances where potential natural soils were not observed, excavation instead ceased when bedrock was encountered, or when excavation reached 2.2m to 2.5m below ground level. This depth was chosen as it provided a minimum of a 1m buffer beneath the proposed project impact depths, and as excavation beyond this depth posed a hazard due to risk of trench wall collapse.

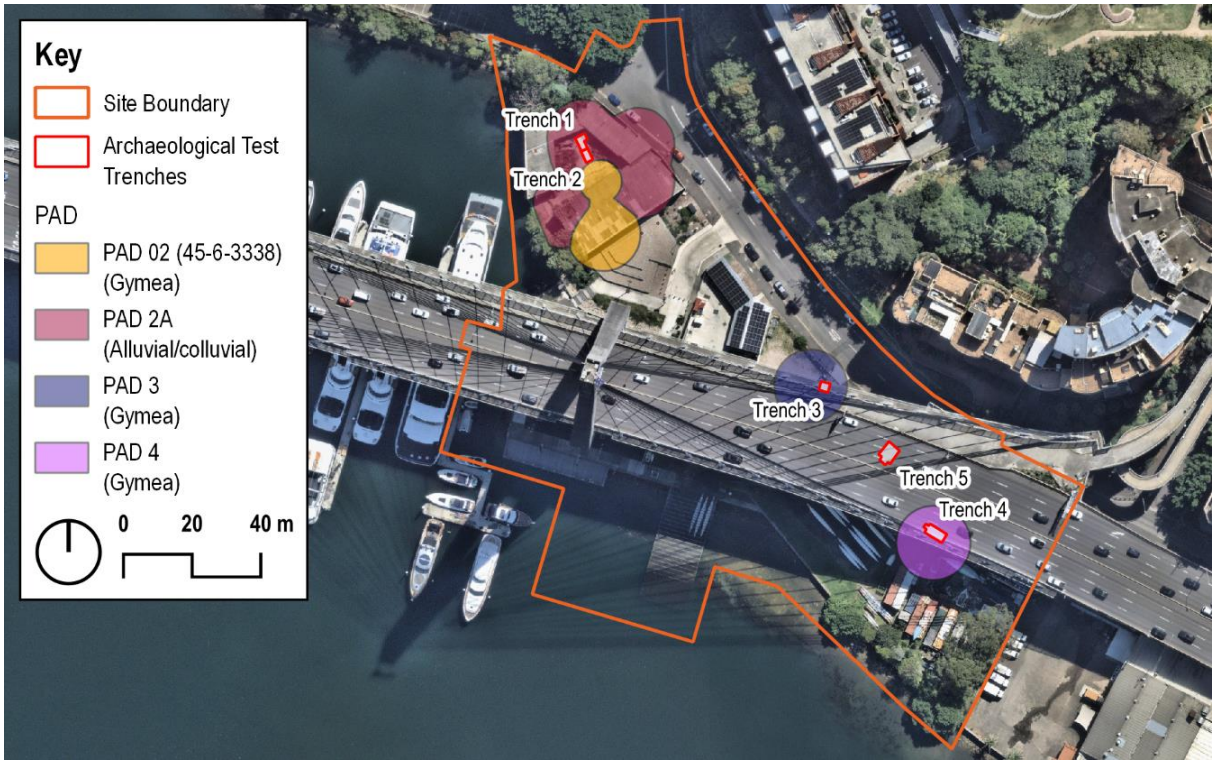

Figure 4.1 Locations of archaeological test trenches within the Bank Street site. (Source: Nearmap with GML overlay, 2023)

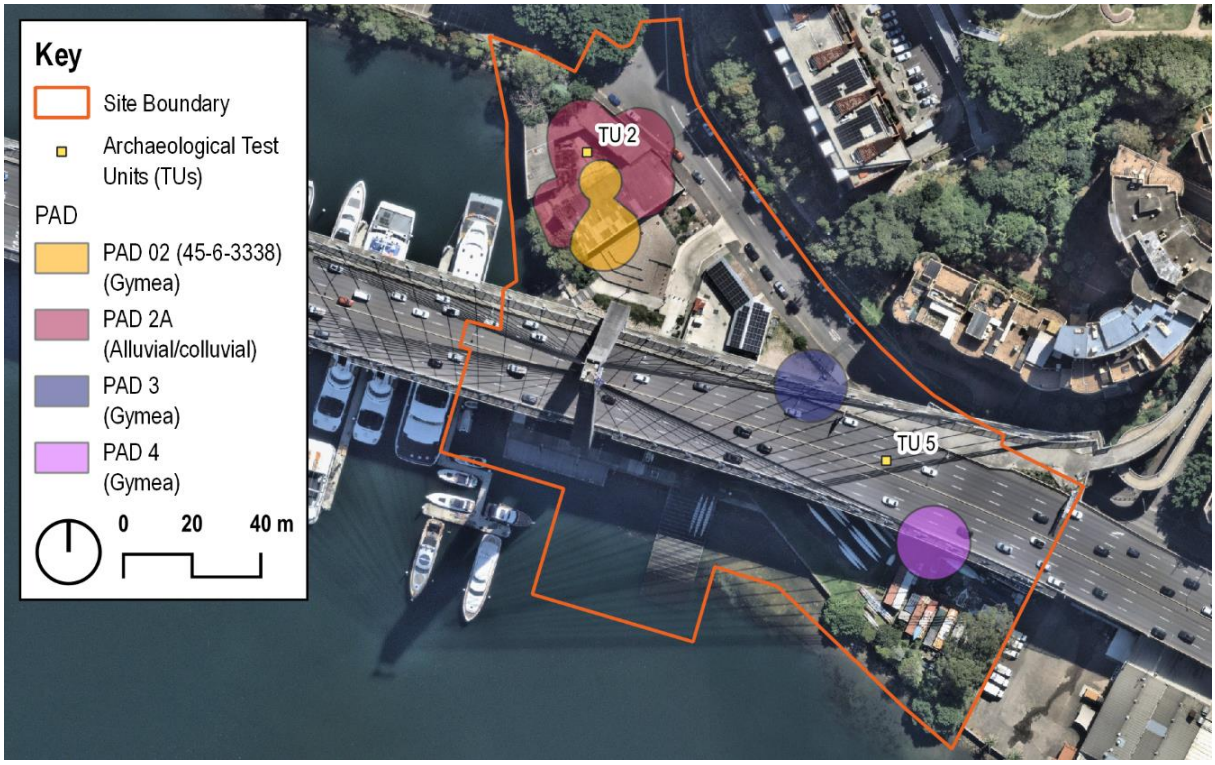

Figure 4.2 Locations of archaeologically excavated test units within the Bank Street site. (Source: Nearmap with GML overlay, 2023)

Two trenches, Trench 2 and Trench 5, were found to contain small, isolated pockets of deposits with PAD, comprising colluvial sediments and B horizon Gymea soils respectively. No natural soil profiles with the potential to contain Aboriginal objects were encountered at the locations proposed for TUs 1, 3 and 4.

These deposits were then subject to hand excavation in the form of test units, each measuring 500mm by 500mm, for a total excavation of 0.5m^2. Two TUs were excavated: TU 2 in the location of Trench 2, and TU 5 in the location of Trench 5. Both TUs were excavated to a sterile layer. All excavated material was wet sieved through a 3mm sieve, and any potential cultural material retained.

Only TU 2 returned an Aboriginal archaeological signature in the form of a single worked flint flake, and as such, only the colluvial deposit in the location of this TU may be confirmed to be an archaeological deposit. The artefact is fully analysed in Section 2.2.5 of the ATR. The artefact is currently stored in a secure location in the GML offices. It has been registered on AHIMS as a component of the existing AHIMS site 45-6-3338 (The Bays Precinct PAD02). This has updated the site type of 45-6-3338 from PAD to Artefact and PAD (Appendix C).

After consultation with the RAPs on site, no expansion of the TU was undertaken due to the low density of artefacts on site, and the spatially constrained nature of the test trenches and deposits with PAD.

The testing program has demonstrated that deposits with PAD (ie truncated and/or reworked remnant Gymea soils, and/or colluvium) may be spatially isolated to small pockets capped by historical fills, which may be present across the site. This has been demonstrated by TU 5.

Though deposits with PAD were not encountered within the locations of Trenches 1, 3 and 4, this does not suggest that the deposits with PAD intercepted by geotechnical testing do not remain within the Bank Street site. Rather, these deposits are likely highly spatially constrained and as such may not have been intercepted by the testing program. The PAD boundaries as described by CityPlan[5] comprise arbitrary 10m buffers centred on borehole locations that intercepted deposits with PAD. The testing program indicates that on the basis that these soils could not be accurately relocated, these deposits are likely to be significantly smaller in size, and not extend to the entire proposed footprint of each PAD. A summary of the results of test excavation is provided in Table 4.1 and Table 4.2

Table 4.1 Summary of test trenches excavated.

Test trench	PAD	Trench size (m)	Depth natural soils encountered (m)	Final depth (m)	Corresponding borehole	Corresponding TU	Trench description
1	PAD 2A	3.1m x 6.4m	No natural soils encountered	2.2m	BH06 (2012)	N/A	Trench contained introduced reclamation and levelling fills. For full description, see Historical Archaeological Research Design and Excavation Methodology (HARDEM) (GML, 2023). Excavation ceased when the maximum safe excavation depth in this location was reached. Bedrock was not reached at this location.
2	PAD 2 (AHIMS ID 45-6-3338)	1.5m x 2m	1.05m	2.1m	BH03A (2023)	TU 2	Trench contained introduced fills overlying colluvial deposit/s. TU 2 was then hand excavated to a sterile crushed sandstone layer.
3	PAD 3	2.5m x 2.2m	No natural soils encountered	2.2m	BH11 (2023)	N/A	Trench contained introduced levelling fills overlying sandstone bedrock. For full description, see HARDEM report (GML, 2023). Excavation ceased at bedrock.
4	PAD 4	5.8m x 2.9m	No natural soils encountered	2.5m	BH14 (2023)	N/A	Trench contained introduced reclamation and levelling fills. For full description, see HARDEM report (GML, 2023). Excavation ceased when the maximum safe excavation depth in this location was reached. Bedrock was not reached in this trench.

Test trench	PAD	Trench size (m)	Depth natural soils encountered (m)	Final depth (m)	Corresponding borehole	Corresponding TU	Trench description
5	N/A	4.7m x 4.1m	0.85m	1.4m	Untested area	TU 5	Trench contained introduced levelling fills overlying a reworked/truncated Gymea B horizon soil. TU 5 was then hand excavated into the suspected B horizon soils to bedrock.

Table 4.2 Summary of TUs excavated.

Test unit (TU)	Location	Coordinates (Easting, northing, GDA 94 MGA 56)	Area excavated (m^2)	Final depth (mm)	Number of spits	TU description	Aboriginal object count
TU 2	PAD 2 (AHIMS ID 45-6-3338)	332354; 6250888	0.25m^2	500mm	7	Colluvial deposits, likely post-1788, situated over a degraded bedrock, possibly a reclamation fill (post-1788).	1
TU 5	No corresponding PAD	332441; 6250799	0.25m^2	600mm	11	Layers of redeposited and/or reworked Gymea soils interrupted by an introduced sandstone crush layer, overlying sandstone bedrock.	0
						Total Aboriginal Stone Object Count	**1**

Figure 4.3 Trench 02, showing the location of TU 2 within the northeast corner. Facing northwest.

Figure 4.4 Location of soils identified for testing within the southern portion of Trench 5, showing TU 5 pre-excavation. 0.5m scale.

Figure 4.5 TU 2 at the end of excavation, facing northwest. 0.5m scale.

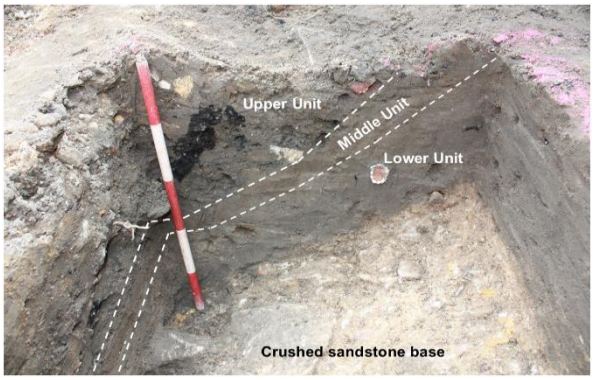

Figure 4.6 Annotated northwestern section of TU 2, showing all three sloping soil units overlying the crushed sandstone base.

Figure 4.7 TU 5 at the end of excavation, facing southeast. 0.5m scale.

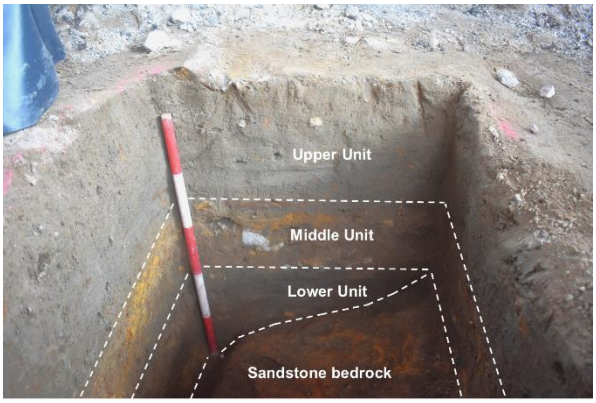

Figure 4.8 Annotated southwestern section of TU 5, showing soil units overlying degraded sandstone bedrock.

Figure 4.9 Flint flake from TU2 spit 7. Left image shows ventral surface, right image shows dorsal surface. The scale is 5mm long in 1 mm increments. (Source: GML, 2023)

4.3.2 Summary of discussion and analysis

On the basis of the identified Aboriginal object (flint flake), the presence of an archaeological deposit has been confirmed, comprising a colluvial, likely post-1788 deposit within 1–3 Bank Street. The Bank Street site retains potential for localised PAD to survive beneath introduced historical fill layers across the site. The Bank Street site should be considered to hold low potential for low-density artefact deposits or isolated stone artefact finds. There is also a low potential for midden material due to the foreshore context, although no shell material was identified during test excavations. Flint is not a naturally occurring material within Sydney,[5] and should be understood to be a contact-period (ie post-1788) artefact. It is likely the flint was transported to Sydney from Britain, potentially as ship's ballast, before being discarded upon arrival in the colony.[6] First Nations people recognised that flint was a workable material, and opportunistically adopted its use for the manufacture of stone artefacts using traditional manufacture techniques.

Based on the results of the test excavation program, the archaeological potential of the site has been refined and is presented in Figure 4.10. Areas south/southwest of the original shoreline (ie fully reclaimed land) have been assessed to hold nil archaeological potential. An archaeological deposit has been identified in the location of TU 2 on the basis of the recovery of an Aboriginal-worked flint flake within the colluvial deposit sampled by TU 2. This deposit may extend further southwest, with boreholes BH05/MW05 and BH01/MW01 also identifying suspected colluvial deposits with PAD. The remainder of the site holds potential for localised expressions of discontinuous and spatially isolated pockets of colluvial deposits or remnant Gymea soils, which have a low

potential to contain Aboriginal objects. In some instances, these have been intersected by geotechnical boreholes. Overall, the site has been assigned low archaeological potential.

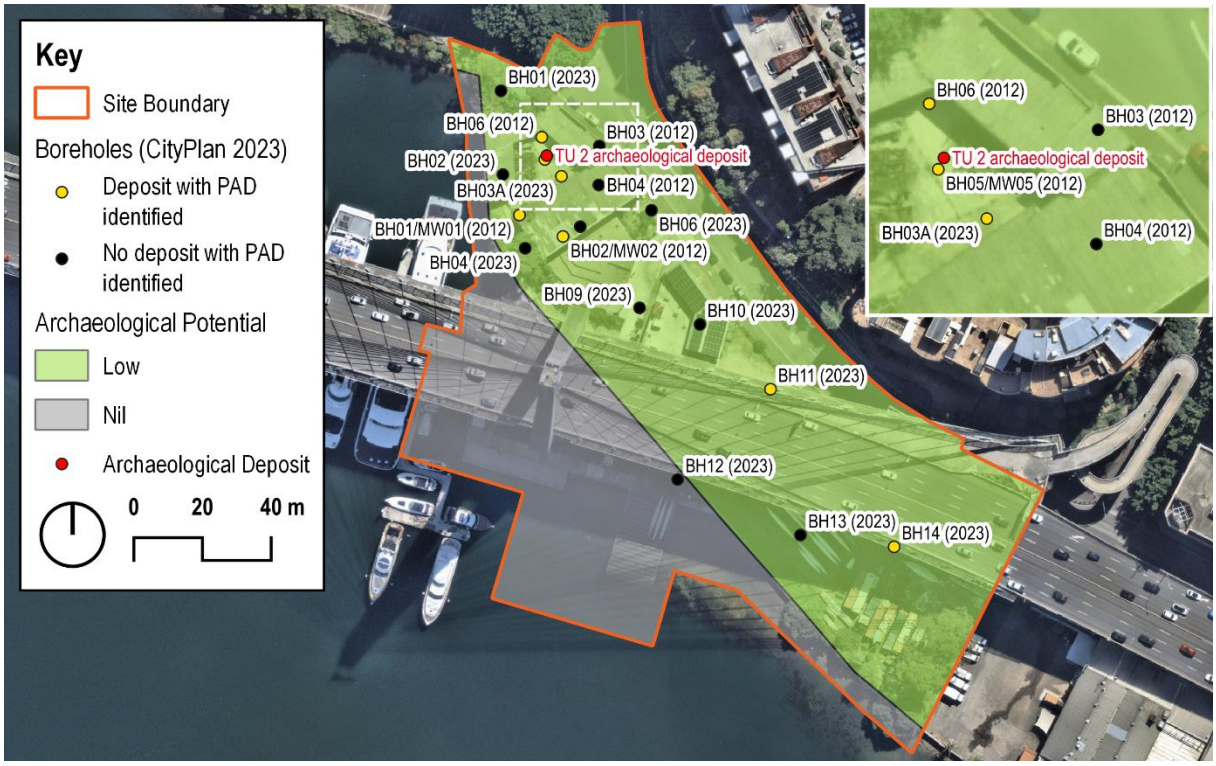

Figure 4.10 Archaeological zoning plan for the site. The plan has been informed by archaeological test excavation (the ACHAR) and geotechnical investigation (see CityPlan 2023). (Source: Nearmap with GML overlay, 2023)

4.4 Aesthetic aspects

The landform of the Bank Street site has been highly modified. The present-day landform of the site does not retain aesthetic values.

The site does, however, retain views to Blackwattle Bay. These views hold aesthetic value, and are significant in association with the relationship to water and connections with traditional use of the bay, for example, in relation to fishing and travel.

4.5 Traditional connections

The site forms part of the wider cultural landscape of the Pyrmont (Pirrama) peninsula, part of the traditional lands of the Gadi. Pyrmont was not intensively developed by

Europeans until the 1830s to 1840s, and the peninsula retained a strong First Nations presence into the 1830s.[7]

Consultation with the First Nations community on the park design[8] has identified traditional connections within the site, connected with associations with the pre-colonisation environment, associated with the native flora and fauna and meeting of fresh and saltwater, and with Gadigal women's mastery of fishing, undertaken across the harbour, including on Blackwattle Bay.

The presence of a definitive post-1788 artefact, namely the worked flint flake, may attest to the ongoing presence of First Nations people on the Pyrmont peninsula following British colonisation, and the continued use of traditional artefact manufacture processes, albeit on an imported material.

4.6 Connecting with Country Framework for Tjerruing Blackwattle Bay

Assessment Requirement 6 of the project SEARs requires that the ACHAR:

> Address how the development responds to the commitment and principles for action in the Connecting with Country Framework for Tjerruing Blackwattle Bay.

This section outlines how the development meets these criteria.

4.6.1 Summary of the commitment and principles for action

The Connecting with Country Framework for Tjerruing Blackwattle Bay (hereafter CwCF) outlines a Connecting to Country Strategy for Tjerruing Blackwattle Bay, of which the Bank Street site forms a part. Key Caring for Country directions include:

- ongoing and meaningful consultation with local First Nations people;
- inclusive acknowledgement of Country;
- minimising damage to Country and augmenting Country;
- sustainable and careful stewardship of Country;
- engagement with both tangible (ie physical 'artefacts') and intangible values (ie aspects like stories of place, view lines, aesthetic values, amongst others), particularly in reference to archaeological and heritage reporting;
- utilising dual naming;
- revealing and acknowledging the pre-colonial shoreline;
- acknowledging traditional and sacred use of the saltwater Country coastline of Blackwattle Bay;

- investigation (ie via site visit) to assist in identifying Aboriginal archaeological sites;
- Truth-telling and acknowledging the past, as a component of reconciliation;
- incorporating measures for anticipated future climate change and sea level rise within the design of the site; and
- incorporating local stories of Country and visual expressions of culture (ie via art, graphic design, materiality) into the design.

The CwCF report sets out a connecting to community strategy, which advises:

- Engagement with 'on-Country' people (ie First Nations peoples with Ancestral connections to story and knowledges of the Sydney Metropolitan area) should be prioritised above First Nations people from other places.
- Consultation must commence at the beginning of development and extend throughout the planning process.
- Engagement must be renumerated.
- Consultation should be broad, ie engaging local on-Country people and groups as well as the Local Aboriginal Land Council (LALC).

The CwCF also provided a detailed response to the precinct-wide ACHAR,[9] including the following recommendations/notes:

- There must be acknowledgement and understanding that Aboriginal archaeology and cultural heritage that may not belong to one group may belong to another.
- Aboriginal people and cultures, including names of sites, should not be referred to in the past tense.
- Places should not be assumed to be of one single Aboriginal group, as many groups may have a connection to place and should be acknowledged.
- While it is vital to care for physical remains of Aboriginal heritage, there must also be an acknowledgement of intangible heritage such as stories, memories and songlines.
- Many archaeological, anthropological and historical texts are incorrect in making claims that are not true, eg Val Attenbrow has no evidence of First Nations' lives prior to sea level inundation.

4.6.2 Response to the commitment and principles for action

To respond to the commitment and principles for action outlined in the CwCF, the above recommendations and Caring for Country directions have been compiled into themes. The response of the Bank Street Park development to these principles is outlined in Table 4.2 below.

Table 4.2 Summary of the response of the Bank Street Park development to the CwCF.

Theme	Components	Response
Consultation and engagement with First Nations people	Ongoing and meaningful consultation with First Nations people. Consultation should be renumerated and engage with a range of individuals and groups, prioritising on-Country peoples.	Consultation has been conducted both as part of this ACHAR following the consultation guidelines (see Section 3); and as a component of the park design, undertaken by Cred Consulting and Greenshoot Consulting with Greenaway Architects.[10] As part of the ACHAR, representatives of the RAPs were engaged for the archaeological test excavation in a renumerated capacity. INSW is also undertaking further consultation with MLALC about the CwCF, separate to the ACHAR process.
Acknowledging Country	Components include: • recognising that many groups may hold connections to the Bank Street site; • acknowledging and reflecting components of the physical and cultural landscape; and • truth-telling and acknowledging the past.	Care has been taken within this ACHAR to acknowledge that many groups hold connection to the Bank Street site, and that the site maintains connections to the wider Pirrama landscape (see Section 2.1). Overviews of First Nations culture and heritage connected with the Bank Street site and surrounds is provided both within this ACHAR and the Bank Street Design Report.[11] The park design, as outlined within the Design Report reflects and acknowledges Country. See the designing with Country theme below for further detail.
Designing with Country	Components include: • Reflecting Country and local stories of Country via design and materiality.	The Designing for/of/with Country strategy outlines how the design of the park engages with the principles of Healing Country, Revealing Country, and Caring for Country.[12] See also the Designing with Country Integration[13] report.
Caring for Country	Minimising damage to Country, augmenting Country, and ensuring ongoing sustainable and careful stewardship of Country.	The Bank Street Design Report[14] outlines planning strategies for sustainability, adaptive re-use and native planting within the Bank Street site, which aim to enhance and sustain Country.

Theme	Components	Response
Archaeological investigation	Components include: • site inspection and archaeological investigation; and • acknowledging both tangible and intangible elements.	Archaeological investigation was undertaken in the form of a site visit/survey and Aboriginal archaeological test excavation, with the aims of understanding the potential Aboriginal cultural and archaeological resource of the Bank Street site (see Sections 4.2 and 4.3). The values assessment of this ACHAR includes an assessment of tangible and intangible heritage values including social, scientific, historical and aesthetic values associated with the site (see Section 5).

4.7 Information gaps

The test excavation program encountered several limitations due to the constrained nature of the site. Constraints are detailed in the project ATR (Section 2.2.6), and included inaccessible areas of PAD due to existing buildings, the depth of the PAD, the shared and spatially constrained nature of the site (including establishment of a temporary pop-up sports court), among others. As a result, not all areas of PAD identified within the Bank Street site were able to be fully investigated.

These limitations have been addressed via the management strategies proposed for the Bank Street site outlined in Section 7 below. The proposed management strategies provide mechanisms for avoidance of PAD by the project where possible and further archaeological investigation of areas of PAD that may be identified during the construction program.

4.8 Synopsis of Aboriginal heritage investigations

The assessment of prior archaeological and heritage studies (Section 2), consultation with the Aboriginal community (Section 3) and new investigations into the site (this section) has identified several key aspects of Aboriginal cultural heritage which are outlined in Table 4.3.

Table 4.3 Aboriginal heritage connected with the site.

#	Aspect of Aboriginal heritage	Tangible/ intangible	Description
1	Archaeological deposit within 1–3 Bank Street (colluvium, PAD 02A)	Tangible	Deposit of colluvium (likely post-1788) located within 1–3 Bank Street, corresponding to PAD 02A as identified by City Plan 2023.[15] Archaeological testing identified one Aboriginal object within the deposit (worked flint flake). Remaining deposit retains archaeological potential (PAD).
2	Localised remnant soils with potential for Aboriginal objects including PAD 02 (45-6-3338), PAD 03 and PAD 04	Tangible	Deposits of remnant truncated and/or reworked Gymea soils and colluvial deposits located across the Bank Street site. These deposits have potential to retain isolated artefacts, low-density artefact scatters, and/or midden material.
3	Views to Blackwattle Bay	Intangible	Views from the site to Blackwattle Bay. Consultation has identified aesthetic aspects and traditional connections associated with the bay, including connections to women's fishing and the intersection of fresh and salt waters.
4	Commemoration of Blak Diggers	Intangible	Connection to the Blak Diggers in association with the ANZAC Bridge, which is situated above the site.

4.9 Endnotes

1 Artefact Heritage, Blackwattle Bay State Significant Precinct Study Aboriginal Cultural Heritage Assessment Report, report prepared for Infrastructure NSW, January 2021.

2 Artefact Heritage, Blackwattle Bay State Significant Precinct Study Aboriginal Cultural Heritage Assessment Report, report prepared for Infrastructure NSW, January 2021.

3 City Plan Heritage, Draft Archaeological Monitoring of Site Contamination Assessment of 1–19 Bank Street, Pyrmont, NSW, report prepared for Infrastructure NSW, May 2023.

4 Artefact Heritage, Blackwattle Bay State Significant Precinct Study Aboriginal Cultural Heritage Assessment Report, report prepared for Infrastructure NSW, January 2021.

5 City Plan Heritage, Draft Archaeological Monitoring of Site Contamination Assessment of 1–19 Bank Street, Pyrmont, NSW, report prepared for Infrastructure NSW, May 2023.

5 Herbert, C 1983, *Sydney 1:100 000 Geological Sheet 9130*, 1st edition, Geological Survey of New South Wales, Sydney.

6 GML Heritage, Investigations of Aboriginal Site RSY1 Randwick Post Excavation Report, report prepared for Acciona & Transport for NSW, April 2020, pp 166–167;

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Williamson, C, Pieces of Flint Excavated from the Hyde Park Barracks: Catalogue and Preliminary Report, report prepared for Historic Houses Trust, 1995.

[7] Fitzgerald, S 2008, *Pyrmont*, Dictionary of Sydney, viewed 6 October 2023, available from <https://dictionaryofsydney.org/entry/pyrmont>.

[8] Cred Consulting, Bank Street Park Phase 1 Community Engagement Outcomes Report, report prepared for Infrastructure NSW, October 2022;

[9] Artefact Heritage, Blackwattle Bay State Significant Precinct Study Aboriginal Cultural Heritage Assessment Report, report prepared for Infrastructure NSW, January 2021.

[10] Cred Consulting, Bank Street Park Phase 1 Community Engagement Outcomes Report, report prepared for Infrastructure NSW, October 2022;

Greenshoot Consulting and Greenaway Architects, Bank Street Park (Tjerruing Park) Designing for/of/with Country First Nations Consultation Summary, report prepared for Infrastructure NSW, July 2023.

[11] Oculus, Bank Street Design Report, report prepared for Infrastructure NSW, October 2023.

[12] Oculus, Bank Street Design Report, report prepared for Infrastructure NSW, October 2023.

[13] Greenaway Architects and Greenshoot Consulting, Bank Street Park Designing with Country Integration, report prepared for Infrastructure NSW, September 2023.

[14] Oculus, Bank Street Design Report, report prepared for Infrastructure NSW, October 2023.

[15] City Plan Heritage, Draft Archaeological Monitoring of Site Contamination Assessment of 1–19 Bank Street, Pyrmont, NSW, report prepared for Infrastructure NSW, May 2023.

5 Aboriginal heritage significance assessment

5 Aboriginal heritage significance assessment

The best practice guide to managing heritage places is the Burra Charter. It defines cultural significance as:

> Cultural significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations. Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects. Places may have a range of values for different individuals or groups.[1]

An assessment of aesthetic and social/spiritual values of Aboriginal cultural significance can only be made by the relevant Aboriginal community because Aboriginal people are the primary source of information about their cultural heritage values. Consulting with Aboriginal people at an early stage of the assessment process ensures they have opportunities to fulfil their heritage obligations. Aboriginal people must have control of their cultural knowledge and how it is used and shared. Restriction of cultural knowledge may be an important part of the value of the cultural knowledge. Management of impacts to Aboriginal cultural heritage values must involve the relevant Aboriginal people to ensure appropriate management is undertaken in accordance with the cultural heritage values.[2]

In line with the Burra Charter's four principal values (social, historical, scientific and aesthetic) and the NSW Heritage Office's publication *Assessing Heritage Significance*,[3] four assessment criteria can be used to assess the Aboriginal heritage values of a site.[4] The four criteria are:

- Social value: 'an item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons';[5]
- Historic value: 'an item is important in the course, or patterning, of NSW's cultural or natural history (or cultural or natural history of the local area)';[6]
- Aesthetic value: 'an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area)';[7] and
- Scientific value: 'an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area)'. The assessment of scientific value also considers representativeness, rarity and educational potential.[8]

Consultation with the RAPs both as part of the ACHAR process and a component of the park design (conducted by Cred Consulting and Greenaway Architects with Greenshoot Consulting),[9] investigation into the background history of the site and local region, the field inspection and archaeological excavations have helped develop an understanding of the key social, historic and scientific values associated with the sites and objects within the site. Following the Office of Environment and Heritage 2011 guideline,[10] values are graded in accordance with a basic ranking of high, moderate or low. The ranking is based upon the research potential, representativeness, rarity and educational potential of each value. The grading is stated at the end of each value assessment below.

5.1 Significance assessment

5.1.1 Social value

The site holds social value for the First Nations community in terms of its actual and potential archaeological record, which connects First Nations people to their past and is representative of their cultural continuity in association with the site and wider area. A single Aboriginal object in the form of a flint flake was identified during testing, while the remainder of the site is considered to hold low potential for additional Aboriginal objects in the form of stone artefacts and/or midden material.

Consultation conducted as part of this ACHAR, as a component of the park design,[11] and as part of the precinct-wide ACHAR[12] have identified social values in association with the meeting of fresh and saltwater within the area, and with Gadigal women's mastery of fishing, undertaken across the harbour, including on Blackwattle Bay. RAP Phil Khan (KYWG), registered for both the precinct-wide and the present ACHAR, identified in response to the precinct-wide ACHAR that the wider area is highly significant to First Nations people, who have lived on Country for thousands of years. He also noted that the precinct formed part of the region of early contact between European colonists and First Nations people.[13] The site has a high level of social value.

5.1.2 Historical value

The site is considered to be of low historical significance. There are no known post-contact historical associations with the site that have been identified through historical research or through consultation with First Nations communities to date. However, connections have been drawn between the ANZAC Bridge, which extends above the site, and the Blak Diggers, with plans to recognise the service of the Blak Diggers as a component of the proposed works.[14]

5.1.3 Scientific value

The site holds scientific significance to a low level through the extant Aboriginal archaeological deposit identified during archaeological test excavation, within the location of 1–3 Bank Street. This is demonstrated by the identification of an Aboriginal-worked flint flake within the colluvial deposit in this location. Scientifically, as an isolated find, the flint artefact recovered has limited research potential, as site-wide patterns cannot be studied from a sole data point. However, further research could be undertaken into the origin of the flint material within Britain.

Remnant soils with PAD could hold scientific significance, depending on the nature and extent of the archaeological deposit. The value of the deposit would be assessed based on its principal characteristics, integrity and comparability to other archaeological sites within the Pyrmont/Darling Harbour and Sydney CBD areas.

5.1.4 Aesthetic value

The site itself retains low to no aesthetic significance as a result of the significant disturbance and landform modification, which has significantly changed the pre-colonisation character of the site. However, the site retains view lines to Blackwattle Bay, and these views hold moderate to high aesthetic value associated with traditional connections to the waterbody, including women's use of the bay for fishing.

5.2 Statement of Significance

The site is assessed as holding high social value to the First Nations community. This value is manifest through the connections held by the local First Nations communities to the site as a place that possesses tangible evidence of past First Nations occupation of Pirrama and the wider Sydney region. The presence of the worked flint artefact identified within a colluvial deposit within 1–3 Bank Street confirms the presence of an archaeological deposit within the site. The artefact itself holds low scientific significance as an isolated find; however, further research is possible into the origin of the flint material, which is not a naturally occurring stone type within Sydney.[15] Views of Blackwattle Bay from the site retain aesthetic value. The site is assessed as having low to no historic value. Future connections between the ANZAC Bridge and Blak Diggers as part of the park development may enhance this value.

An overview of how these cultural values manifest within the site is presented in Table 5.1.

Table 5.1 Summary of Aboriginal cultural heritage values.

Value	Manifest through	Grade of significance
Social	Archaeological deposit in the form of a flint artefact, and other areas of PAD. Meeting of freshwater and saltwater in Blackwattle Bay. Past occupation of Pirrama by First Nations peoples.	Assessed as high
Historic	No historic associations identified. Future connections between ANZAC Bridge and Blak Diggers.	None. Potential for future values associated with commemoration of Blak Diggers within the park design.
Scientific	Isolated artefact find (flint artefact).	Low
	Localised remnant soils with potential for Aboriginal objects including PAD 02 (45-6-3338), PAD 03 and PAD 04.	To be determined
Aesthetic	Views to Blackwattle Bay.	Assessed as moderate to high

5.3 Endnotes

1 Australia ICOMOS Inc, The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013, Australia ICOMOS Inc, Burwood, VIC.

2 Department of Environment, Climate Change and Water 2010, Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010, Department of Environment, Climate Change and Water, p 2.

3 NSW Heritage Office 2001, Assessing Heritage Significance, NSW Heritage Office, Sydney.

4 Office of Environment and Heritage 2011, Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW, Office of Environment and Heritage, Sydney; this guide provides a background for undertaking an Aboriginal cultural heritage values assessment in accordance with the Burra Charter and NSW Heritage Office's Assessing Heritage Significance 2001. The approach recommended by the OEH has been adhered to for this report.

5 NSW Heritage Office 2001, 'Criteria D' in Assessing Heritage Significance, NSW Heritage Office, Sydney.

6 NSW Heritage Office 2001, 'Criteria A' in Assessing Heritage Significance, NSW Heritage Office, Sydney.

7 NSW Heritage Office 2001, 'Criteria C' in Assessing Heritage Significance, NSW Heritage Office, Sydney.

8 NSW Heritage Office 2001, 'Criteria E' in Assessing Heritage Significance, NSW Heritage Office, Sydney.

[9] Cred Consulting, Bank Street Park Phase 1 Community Engagement Outcomes Report, report prepared for Infrastructure NSW, October 2022;

Greenshoot Consulting and Greenaway Architects, Bank Street Park (Tjerruing Park) Designing for/of/with Country First Nations Consultation Summary, report prepared for Infrastructure NSW, July 2023.

[10] Office of Environment and Heritage 2011, Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW, Office of Environment and Heritage, Sydney.

[11] Cred Consulting, Bank Street Park Phase 1 Community Engagement Outcomes Report, report prepared for Infrastructure NSW, October 2022;

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[12] Artefact Heritage, Blackwattle Bay State Significant Precinct Study Aboriginal Cultural Heritage Assessment Report, report prepared for Infrastructure NSW, January 2021.

[13] Artefact Heritage, Blackwattle Bay State Significant Precinct Study Aboriginal Cultural Heritage Assessment Report, report prepared for Infrastructure NSW, January 2021, p 31.

[14] Oculus, Bank Street Design Report, report prepared for Infrastructure NSW, October 2023;

Greenaway Architects and Greenshoot Consulting, Bank Street Park Designing with Country Integration, report prepared for Infrastructure NSW, September 2023.

[15] Herbert, C 1983, *Sydney 1:100 000 Geological Sheet 9130*, 1st edition, Geological Survey of New South Wales, Sydney.

6 The proposed activity

6 The proposed development

This section provides a description of the proposed project development, its timing and objectives, and the Aboriginal values that it may harm (directly or indirectly). Aboriginal heritage management policy has been developed to guide and minimise impacts to Aboriginal heritage values.

6.1 Proposed development

INSW proposes to undertake construction of a public park within the Bank Street site. The site will be developed into a public park environment, featuring development of new community facilities, green space, play, recreation and exercise equipment, an overwater boardwalk, and public art.

The proposed development will require partial demolition of existing buildings, cut and fill landscaping, soil remediation, construction of new community buildings, play and exercise equipment, and outdoor furniture, and planting activities, all of which will involve impacts to the ground surface and subsurface deposits.

Works with the potential to involve ground disturbance include:

- Partial demolition of existing buildings at 1–3 Bank Street: part of Building A and all of buildings B and C presently extant in 1–3 Bank Street (Figure 6.3) will be subject to demolition as part of the proposed works (Figure 6.4). The full depth of impact will be subject to detailed design.
- Site preparation works including tree removal, earthworks and remediation: cut and fill excavation will be undertaken to landscape the site to create the new park. Depth of impacts vary across the site and are shown in Figure 6.2, Figure 6.5, Figure 6.6 and Figure 6.7. The majority of the site will be excavated to between 0.0m to 0.5m and 0.5m to 1m depth below existing ground levels.
- Construction of new community buildings and outdoor furniture/play equipment:
  - A new building with amenities, community space, café and marina office is proposed for 1–3 Bank Street Some of the existing buildings in 1–3 Bank Street are to be adaptively re-used for additional amenities and storage. Foundations of one of the buildings proposed for demolition will be retained as an "interpretation garden" (Figure 6.4). Construction of the new building will require excavation for footings and in-ground services.

- A dragon boat storage building in the centre of the site, adjacent to the Anzac Bridge pylon. The dragon boat storage building will be a new build. As identified in Figure 6.6, construction of the dragon boat storage building will require excavation within the building footprint.

- Construction of public domain works: these works will involve construction of walkways, a sports court, seating, fitness equipment, play equipment, signage, lighting, public art and bike parking. The installation of these components may involve subsurface impacts.
- Harbour works: include construction of an over-harbour boardwalk, demolition and creation of a new dragon boat launching ramp, kayak gangway and pontoon, repairs to the existing seawall, and land/water interface works. Ground impacts will be minimal as a result of harbour works, with ground disturbance limited to the interface between the harbour and shoreline within the site.
- New tree plantings: plantings will utilise plant species that would have once occurred naturally on the Pyrmont peninsula. The planting strategy has been developed with regard to the following principles:
  - retaining mature trees in good condition,
  - acknowledging pre-colonial indigenous plant communities, and
  - utilising predominantly endemic native species. Six mature trees are being retained on site.
- Installation of subsurface utilities: utilities will be required to service adapted and proposed buildings within the site. This will likely involve ground disturbance for installation of new services and maintenance of existing utilities within the site.
- Establishment of a cycleway within the Bank Street road reserve: the cycleway will run along the length of the site. This will likely involve shallow ground disturbance associated with resurfacing of Bank Street and street upgrade works to accommodate the cycleway.

Figure 6.1 Final plan for the site. (Source: Oculus, 2023)

Figure 6.2 Cut and fill plan for the site. (Source: Enspire Solutions, 2023)

Figure 6.3 Plan of existing buildings within 1–3 Bank Street. (Source: Collins and Turner, 2023)

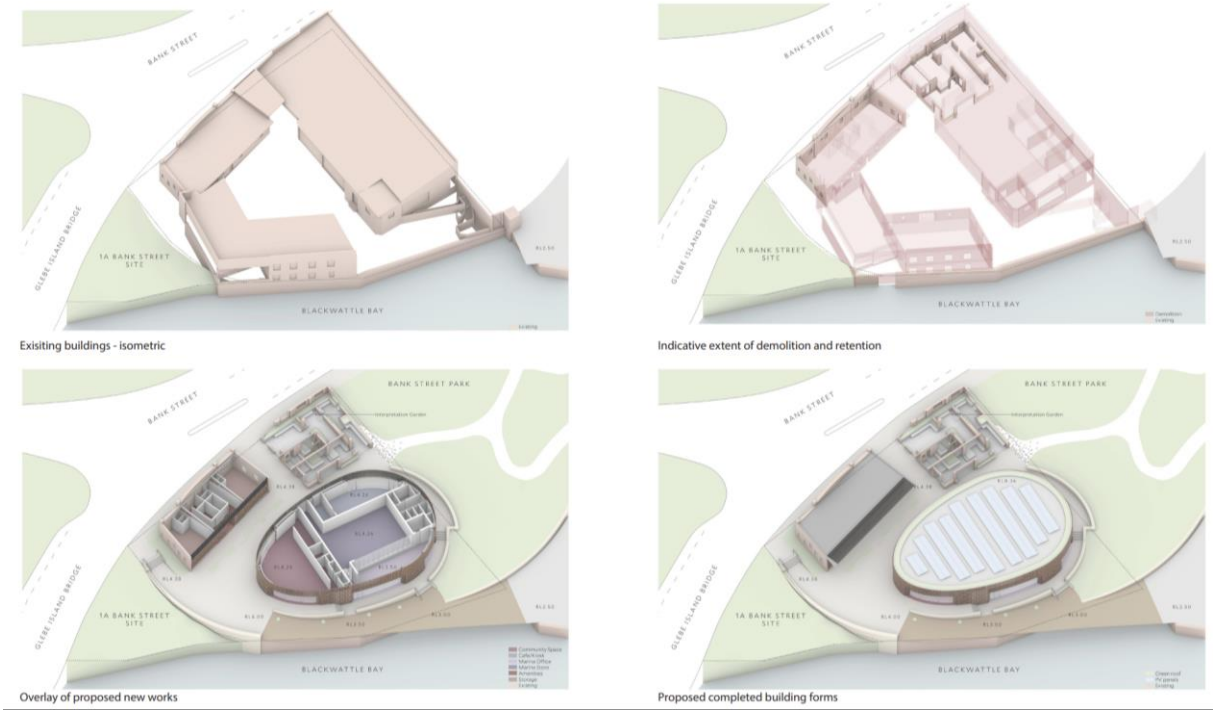

Figure 6.4 Isometric diagrams illustrating extent of demolition, re-use, and construction of new works within 1–3 Bank Street. (Source: Oculus, 2023)

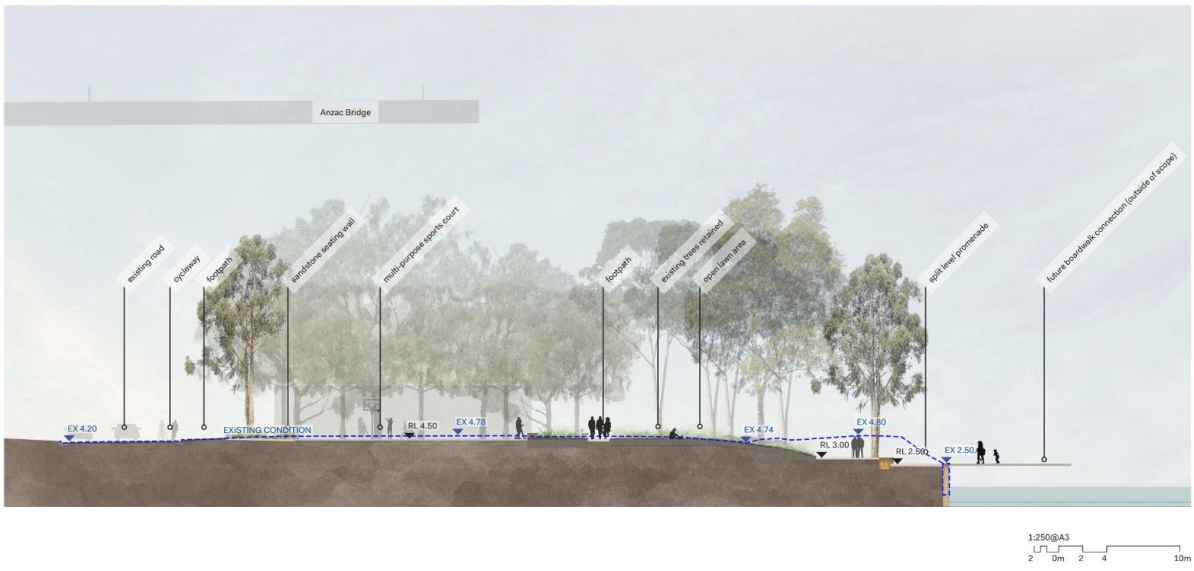

Figure 6.5 Section A through the eastern part of the site showing the final levels of the proposed park in relation to the present condition of the site (blue dashed line). (Source: Oculus, 2023)

Figure 6.6 Section C through the centre of the site below the ANZAC Bridge showing the final levels of the proposed park in relation to the present condition of the site (blue dashed line). (Source: Oculus, 2023)

Figure 6.7 Section E through 1-3 Bank Street showing the final levels of the proposed park in relation to the present condition of the site (blue dashed line). (Source: Oculus, 2023)

6.2 Harm to Aboriginal objects and values

The assessment of Aboriginal heritage has identified archaeological deposits and areas of PAD in connection with the site. An assessment of the proposed activity is able to determine whether these aspects will be 'harmed' either directly or indirectly. This assessment is presented in Table 6.1. The various aspects of Aboriginal heritage hold a variety of heritage values (Table 5.1). These values may be impacted by the proposed

activity. An assessment of how the values may be directly or indirectly affected by the proposal is provided in Table 6.2.

Demolition of the existing buildings and construction of new buildings at 1–3 Bank Street will likely result in harm to any areas of PAD that may be present within this part of the site. Excavation for earthworks (cut and fill), construction of the dragon boat storage facility, planting of new trees and installation of in-ground services may have an impact where these works intersect with areas of PAD. Based on the results of the geotechnical investigations and archaeological test excavation, areas of PAD within the site are highly localised and spatially constrained within the site and these soils appear to be shallower in the northern and eastern parts of the site, becoming deeper (below greater depths of fill) towards the south and west.

Table 6.1 Aspects of Aboriginal heritage and the identified potential harm to Aboriginal heritage.

Aspect of Aboriginal heritage	Type of harm	Degree of harm	Consequence of harm
Archaeological deposit within 1–3 Bank Street (colluvium, PAD 02A)	Direct. Excavation for the proposed development extends up to 1m depth and deeper excavation would be required for new footings and services below this depth. The new marina building is directly adjacent to the archaeological deposit PAD 02A, and excavation and construction for the new buildings have the potential to impact this archaeological deposit.	Partial to total. Depending on the extent and location of PAD 02A, the proposed development may result in the partial or total removal of PAD.	Partial to total loss of value.
Localised remnant soils with potential for Aboriginal objects including PAD 02 (45-6-3338), PAD 03 and PAD 04	Potentially direct. Excavation for earthworks, new buildings, services and landscaping may result in impacts to PAD where these deposits survive in localised areas across the site.	Partial to total, pending depth of impact in relation to areas of PAD.	Partial to total loss of value.

Aspect of Aboriginal heritage	Type of harm	Degree of harm	Consequence of harm
Views to Blackwattle Bay	Indirect. Construction of new buildings at 1–3 Bank Street are within the same location as existing buildings, are of similar height and would not result in a greater obstruction of views. Planting of trees and park furniture in the southern part of the site may partially screen views within parts of the park, however views to the Bay would be maintained overall from the site.	Partial. Connection to water has formed a key design principle in development of the park design. Views to the bay are highlighted in areas of the park design, and therefore impacts are minimal.	Minor partial impact. Views would be maintained across most of the park.
Commemoration of Blak Diggers	Intangible	None.	None.

Table 6.2 Overview of impacts to values and identified potential harm.

Value	Manifest through	Degree of harm	Consequence of harm
Social	Archaeological deposit, flint artefact.	Partial	Partial to total loss of value
Historic	No historic associations identified. Future connections between ANZAC Bridge and Blak Diggers to be developed.	None	None
Scientific	Isolated artefact find (flint artefact).	Partial	Partial loss of value
	Localised remnant soils with potential for Aboriginal objects including PAD 02 (45-6-3338), PAD 03 and PAD 04.	Partial	Partial loss of value
Aesthetic	Views to Blackwattle Bay.	Partial	Minor partial loss of value

7 Avoiding and minimising harm

7 Avoiding and minimising harm

7.1 Overview

The following management and mitigation statements are made in light of the findings of the archaeological test excavation, background research, predictive modelling, heritage significance assessment, relevant NSW legislation protecting Aboriginal heritage, the project SEARs, the Heritage NSW Aboriginal Cultural Heritage Assessment Guidelines and consultation with local Aboriginal stakeholders.

If unmanaged and unmitigated, the impacts resulting from the proposal on Aboriginal heritage are likely to result in a loss of values, and thus impact to the local Aboriginal community. The following management and mitigation statements are based on consideration of:

- the requirements for considering Ecologically Sustainable Development (ESD); principles, and consideration of intergenerational equity and its application to the site;
- applying a cautious approach under the Burra Charter;
- consideration of cumulative impacts to Aboriginal heritage and the consequences of continued loss of Aboriginal heritage values;
- the assessment of the Aboriginal cultural heritage values;
- the interests of the local Aboriginal community members who participated in this project; and
- the size of the site, the extent of Aboriginal heritage values and likely impacts posed by the project proposal.

7.1.1 Strategy 1—impact avoidance

Avoidance of heritage sites represents the best heritage outcome as it means no impact to the identified heritage features. An avoidance strategy would be employed for the majority of the site, where the depth of construction impacts is expected to be shallower than areas of PAD. If PAD is identified during construction, opportunities to avoid impacts to PAD would be considered. Where impacts to PAD cannot be avoided, a program of archaeological investigation (Strategy 3) would be implemented to understand the nature of the deposit.

In the northern part of the site, the construction of the new building at 1–3 Bank Street may have an impact on areas of PAD, and avoidance of impacts would not be possible at

this location. Strategies for archaeological monitoring (Strategy 2) and archaeological investigation (Strategy 3) are recommended for this part of the site.

7.1.2 Strategy 2—archaeological monitoring

Works within 1–3 Bank Street would be subject to archaeological monitoring due to the potential for the proposed works to impact PAD within this part of the site. An archaeological deposit has been demonstrated to exist with the location of TU 2 at 1.05m below the existing ground surface, and may continue to the southwest. Archaeological monitoring is also recommended in the southern part of the site along the foreshore where a program of historical archaeological test excavation and archaeological monitoring will be completed (HARDEM 2023). The areas requiring archaeological monitoring are shown in Figure 7.1. This work should be conducted by a suitably qualified archaeologist with experience in First Nations archaeology and in tandem with the historical archaeological program. During works with the potential to expose deposits with PAD at 1–3 Bank Street, it is recommended that a representative of the project RAPs should be present.

Should any deposits with PAD be identified in these area that would be impacted by the proposed development, the archaeological excavation methodology outlined in Strategy 3 below should be implemented.

7.1.3 Strategy 3—Aboriginal archaeological excavation

The program of Aboriginal archaeological test excavation has identified a low-density artefact site and confirmed the spatially localised expressions of PAD within the site. In areas where remnant soils with PAD are identified that would be impacted by the proposed development, a program of Aboriginal archaeological investigation should be undertaken. An Archaeological Research Design is presented in Section 9 of this report to facilitate Aboriginal archaeological excavation.

This methodology has been designed to investigate and record any Aboriginal archaeological material that may be impacted by the proposed development. The ARD in Section 9 outlines a methodology for the:

- treatment of Aboriginal objects within disturbed/historical contexts;
- identification of areas of Aboriginal archaeological potential;
- test excavation within areas of Aboriginal archaeological potential;
- triggers and parameters for additional test excavation;
- commencement of development impacts following completion of the archaeological program; and

- reporting and post-excavation analysis.

7.1.4 Strategy 4—heritage induction

A heritage induction should be presented to all contractors, consultants and NSW State Government staff involved in works on the site prior to the commencement of works and should form part of the general site induction for all workers. This heritage induction would be prepared by a suitably qualified archaeologist. In detailing the management of First Nations cultural heritage and archaeology within the site, this induction would:

- detail the potential Aboriginal heritage resource within the site;
- summarise the heritage legislation applicable to the project;
- outline any conditions of approval related to Aboriginal cultural heritage applicable to the development works;
- detail the approach to Aboriginal heritage management in place for the project, including unexpected finds procedure in place for the site and procedure in case of a heritage breach; and
- provide contact details for key project staff responsible for management of unexpected finds and heritage within the site.

7.1.5 Strategy 5—unexpected finds procedure

An unexpected finds procedure should be developed for the Bank Street project which should stipulate the process for managing actual or suspected Aboriginal objects (ie shell, stone artefacts, etc) or deposits with archaeological potential that may be identified during works. The procedure should be provided to all staff and contracts who are working on the project. The unexpected finds procedure should include the following measures:

- In the instance of an unexpected find(s), works must cease immediately in the area, and no further disturbance can occur until the area has been assessed by a suitably qualified archaeologist.
- The project archaeologist must be contacted to inspect the item(s).
- Should the item(s) be Aboriginal in origin, the project archaeologist will advise on how to proceed. Works cannot recommence in the area of the unexpected find(s) until sign-off has been given by the archaeologist. This may involve consultation with project RAPs and Heritage NSW to discuss the management of the Aboriginal object(s).
- In the unlikely event that human remains are discovered at any time during the works, works must cease immediately in the surrounding area. The findings would need to be immediately reported to the NSW Police and/or the NSW Coroner's Office.

The MLALC and all project RAPs should also be contacted in the event that human remains of actual or suspected Aboriginal origin are identified.

7.1.6 Strategy 6—ongoing artefact management

An artefact management and artefact repatriation strategy should be developed in consultation with First Nations stakeholders (ie project RAPs but may also include stakeholders involved in consultation for the park design). The management and repatriation policy would address the long-term management strategies for the Aboriginal artefact found during test excavation, and any further Aboriginal objects that are recovered as part of further archaeological investigations or unexpected finds during the development works.

This policy should specify the storage details for the artefact(s) until such time as the assemblage may be returned to First Nations stakeholders. Consultation should be undertaken between INSW, the project archaeologists and the First Nations stakeholders to determine how the artefact may be repatriated. Potential long-term management strategies include reburial within a protected location of the site, display and interpretation within the site, or off-site storage with an appropriate body, ie within a designated keeping place, as appropriate.

7.1.7 Strategy 7—Aboriginal Cultural Heritage Management Plan (ACHMP)

Prior to any development works commencing, an ACHMP should be developed for the Bank Street site to the satisfaction of the Secretary (Department of Environment and Planning). The plan must:

- Be developed by a suitably qualified and experienced person;
- Be prepared in consultation with the RAPs and reviewed by Heritage NSW;
- Include a description of the measures (and associated methodologies) that would be implemented for:
  - Conducting Aboriginal archaeological monitoring with RAP participation;
  - Avoiding and conserving areas of Potential Archaeological Deposit (PAD) identified during monitoring, where feasible to do so;
  - Conducting additional Aboriginal archaeological excavation with RAP participation where areas of PAD are identified as an unexpected find during construction and/or during monitoring and cannot be observed;
    assessing the significance of Aboriginal objects identified during the monitoring and/or Aboriginal archaeological excavations;

- The long term management of any Aboriginal heritage items or material collected during the previous test excavations and any additional Aboriginal archaeological excavations that may be conducted under the ACHMP; and
- Ensuring workers on site receive suitable heritage induction prior to carrying out any development on site; and that records are kept of these inductions.

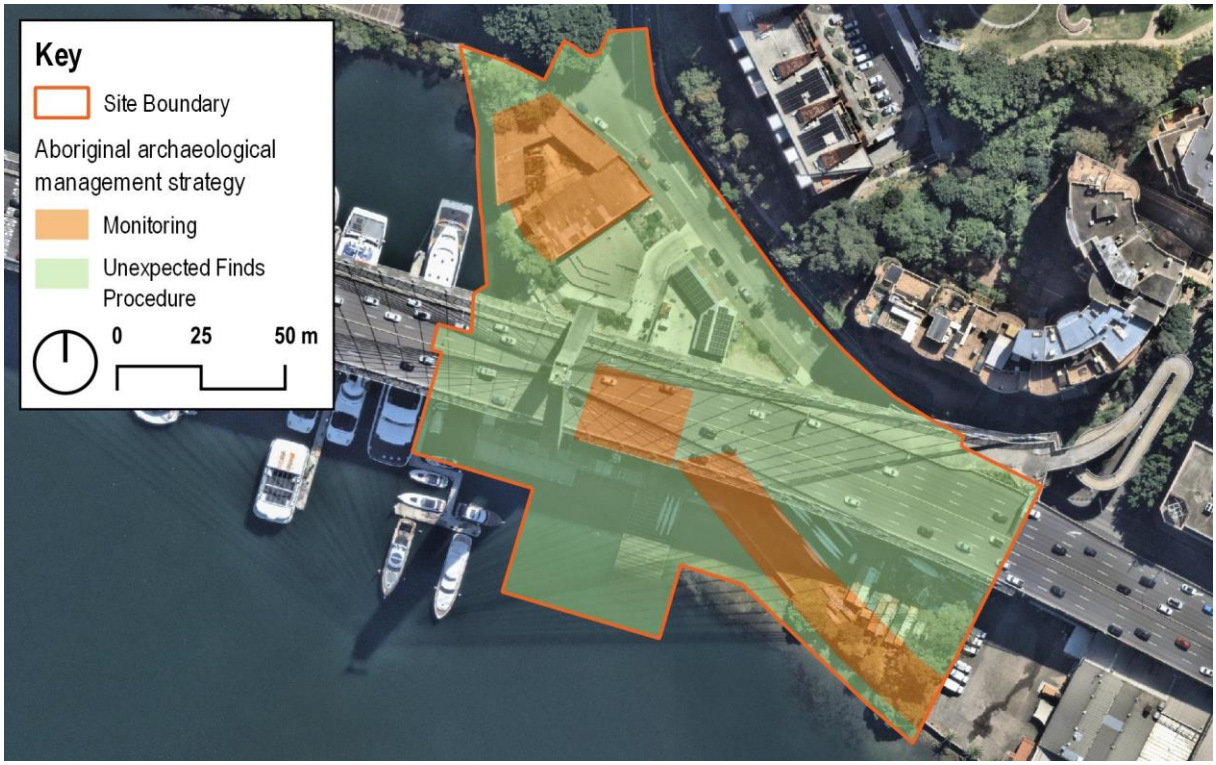

Figure 7.1 Aboriginal archaeological management strategy for the site. (Source: Nearmap with GML overlay, 2023)

8 Conclusions and recommendations

8 Conclusions and recommendations

8.1 Conclusions

The preparation of this ACHAR, including the program of Aboriginal archaeological test excavation, desktop reporting and community consultation, has provided an understanding of the Aboriginal archaeological and heritage resource of the Bank Street site. This site has potential for localised areas of remnant soils that have a low potential to contain Aboriginal objects. The site has identified social and aesthetic values associated with the past occupation of the site by First Nations peoples, and the views from the site into Blackwattle Bay. The proposed development is for construction of a new public park and includes new buildings for community facilities and a marina. The proposed development may result in a partial impact on remnant soils with PAD where the proposed works will extend to the depth of these deposits.

8.2 Recommendations

Based upon the findings of this report, and the ATR, the following heritage management recommendations are made:

- Impact avoidance: the design has sought to minimise impacts to areas of PAD by limiting the proposed depth of excavation. Across most of the site construction the depth of excavation has been restricted to avoid impacts to areas of PAD. In a few areas of the site avoidance of PAD cannot be implemented, and further archaeological management would be required in accordance with the below recommendations.
- Archaeological monitoring: a program of Aboriginal archaeological monitoring would be undertaken at 1–3 Bank Street during works that have the potential to expose or impact areas of PAD.
- Aboriginal archaeological investigation: should deposits with PAD be identified during civil works as an unexpected find, during archaeological monitoring or during historical archaeological testing/localised salvage, further Aboriginal archaeological investigation would be undertaken.
- Heritage induction: a heritage induction should be developed to inform all workers involved in the proposed development of the actual and potential heritage resource, the procedure to follow in case of an unexpected find, and key contact details for heritage management for the project.
- Unexpected Finds Procedure: an Unexpected Finds Procedure should be prepared for the project and provided to all staff and contractors working on the project.

- Ongoing artefact management: an artefact management strategy of the present and potential future artefact assemblage identified at the Bank Street site. This strategy should be developed in consultation with the project RAPs and other key First Nations stakeholders, and should detail the long-term management and storage of Aboriginal objects recovered from the site.
- An ACHMP should be development to guide ongoing Aboriginal Cultural Heritage investigation for the Bank Street site to the satisfaction of the Secretary.

9 Archaeological research design

9 Archaeological research design

The following research design includes the research objectives and methodology for undertaking a program of Aboriginal archaeological excavation where remnant soils with PAD are identified during the construction program. Based on the results of previous geotechnical and archaeological investigations within the site, areas of PAD would be localised and spatially constrained. This methodology has been designed to facilitate appropriate test investigation and recording of any Aboriginal archaeological material that may be affected by the proposed development.

9.1 Research framework

The first objective of the archaeological excavation within the site is to undertake excavation that allows for the clarification, characterisation, description and archaeological potential of soil horizons across the site.

The second objective is to determine whether these soil profiles contain archaeological materials and assess them within a regional context.

To achieve these two objectives, research questions have been established to guide the archaeological process and provide the basis for questioning the data collected. Relevant research questions include:

1 What are the characteristics of soil horizons across the site?

   a. How has the land use history impacted the site and survival of soils and thus archaeological material?

   b. How do areas of remnant Gymea soils interface with alluvial/colluvial soils identified during geotechnical investigations? What do these differing deposits tell of different depositional or formation events?

2 Is an archaeological deposit present?

   a. What is the nature of the archaeological deposit?

   b. Is there archaeological evidence that can be dated (by carbon dating, optically stimulated luminescence and/or relative dating)?

      i. If so, how old is the deposit? Does this correspond to assumptions regarding land use/inundation in relation to sea level fluctuations?

c. Other than stone artefacts, what evidence—if any—is present for Aboriginal occupation and use of the site? Is midden material present and, if so, what may be understood of food resources used and subsistence practices?

3 What is the general nature of stone artefacts recovered from the site? How can the stone artefact assemblage be characterised?

   a. What raw materials are represented in the stone artefact assemblage?

   b. Can any information be ascertained from the stone artefact assemblage regarding the intensity of stone artefact reduction and discard?

   c. Can a difference between stone artefact deposits be identified by different strata in the assemblage over time? If so, what is the nature of that difference?

4 How can the deposit be interpreted?

   a. Does the archaeological deposit vary spatially or in nature between Gymea and alluvial/colluvial soils? How?

   b. What does the archaeological deposit tell us about Aboriginal use of this specific landscape?

5 Can the archaeology be interpreted in a regional context?

   a. Can the deposit be related to a wider cultural landscape?

      i. How does the archaeological deposit relate to comparable sites in the surrounding region, eg the KENS[1] site?

   b. What is the source of the artefactual stone? How does this correlate with current regional research and knowledge of stone resources?

6 Can the presence of Aboriginal archaeological evidence dating to the 'contact' period (ie post-1788) be distinguished or confirmed by examining the archaeological resource present within the site? Is there evidence of post-contact Aboriginal use of the site?

7 Is the archaeological deposit culturally significant?

   a. What is the heritage value of the deposit, both scientifically and culturally?

   b. How does the Aboriginal community view and value the deposit identified?

9.2 Aboriginal archaeological excavation

9.2.1 Identification of areas of Aboriginal archaeological potential

When areas of remnant soil profiles are identified on site, work would cease in the immediate vicinity and the Aboriginal archaeological team would be notified as soon as possible.

Consultation with the Aboriginal archaeological Excavation Director, the project RAPs and possibly Heritage NSW would occur as soon as a remnant soil horizon is identified. An assessment of the area in question would be undertaken and a determination of the site's condition and integrity made. The decision of how, when and where to commence the Aboriginal archaeological test excavation would be made in consultation between all relevant parties.

9.2.2 Aboriginal test excavation methodology

Where a remnant soil with PAD is identified in any scenario, the following methodology should be employed:

- A TU should be established, excavated and recorded by a suitably qualified archaeologist and representatives of the project RAPs.
- The TU should be appropriately sized in the relation to the deposit. A 0.5m^2 or 1m^2 TU is recommended.
- Where the TU intersects an Aboriginal archaeological deposit, then the Aboriginal Excavation Director, in consultation with the RAPs, will assess the nature, extent, condition and integrity of the deposit to determine what additional excavation is necessary in order to understand the full extent and nature of the resource. Triggers which may necessitate the expansion of the TU include identification of an archaeological feature or density of artefacts >5 per 1m^2.
- Expansion would be undertaken in increments equivalent to the current TU size (1m x 1m or 0.5m x 0.5m) until the extent of the resource has been fully explored.
- The TU should be excavated in 50mm spits, and excavated to a sterile layer or bedrock. Any archaeological features encountered should be excavated according to their stratigraphy.
- All excavated material should be wet sieved through a 3mm mesh, and any actual or suspected cultural material (ie stone, bone, shell) along with any historical material (ie flint, glass, ceramic; all of which may be reworked by First Nations people) should be kept for analysis. Material should be bagged by TU and spit. Sieving can occur on

or off site and can be undertaken using a water cart into skip bins, which can be emptied as required.

- The following details should be recorded for each TU:
  - TU number;
  - TU location;
  - TU landform;
  - TU aspect;
  - depth of each spit excavated;
  - number of stone objects (or other feature/s) per spit;
  - total number of objects;
  - any features or inclusions (such as carbon);
  - taphonomic factors (disturbance, bioturbation, etc); and
  - soil characteristics (so that a detailed pattern of changing soil landscapes across the site is developed);
  - section and plan diagrams should be drawn for each TU.
- Soil and carbon samples should be taken where possible which may be used for future palynology, sedimentology and optically stimulated luminescence dating.
- Any Aboriginal objects identified should be subject to specialist analysis.

9.2.3 RAP involvement in the work

Representatives of the RAPs with suitable relevant experience would be engaged by the proponent to collaborate in the archaeological works during the Aboriginal archaeological test excavation. The numbers of representatives should be appropriate to the workload on site.

9.2.4 Management of Aboriginal objects

All Aboriginal archaeological materials and soil samples would be temporarily stored in an appropriate place, which would initially be the archaeologist's office, or a relevant analyst's laboratory or office. Once the analysis is complete, the collection would be transferred to a suitable INSW site, or other location approved by INSW. Infrastructure NSW has the responsibility to develop an appropriate future management strategy for any Aboriginal artefacts recovered from the site in collaboration with the project's RAPs.

9.2.5 Aboriginal objects within disturbed/historical contexts

As part of the historical archaeological excavation program, if Aboriginal objects or archaeological material are identified within early historical unstratified or reclamation fill layers, they would be recorded to their fullest extent and removed from the immediate context to be cleaned, inventoried and re-bagged elsewhere on site as part of the historical archaeological excavation methodology and in accordance with this methodology. Work would continue in the immediate area as per the historical archaeological excavation methodology because the objects have been found in disturbed contexts.

The RAPs for the project and Heritage NSW would be notified of the discovery as soon as possible.

9.2.6 Post-excavation reporting

The results of further Aboriginal archaeological investigation should be detailed within an ATR. The report should provide a description and analysis of the evidence recovered from the site (ie the results of additional excavation), including images of the evidence and plans developed from measured drawings created on site; a review of the program with a response to the research framework; and a discussion of new areas of research that may have been highlighted by the excavation, including the relative values of the artefact assemblage.

9.3 Endnotes

[1] Dominic Steele Consulting Archaeology 2006, 'Aboriginal Archaeological Excavation Report—The KENS Site (Kent, Erskine, Napoleon and Sussex Streets), Sydney, NSW', prepared for Leighton Contractors Pty Limited.

Appendices

10 Appendices

Appendix A

AHIMS Search Results

Appendix B

ATR

Appendix C

Community Consultation Log

Appendix A

AHIMS Search Results

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : 23-0126_update

Client Service ID : 842659

GML Heritage Pty Ltd - Surry Hills

Level 17 323 Castlereagh Street
Haymarket New South Wales 2000

Attention: Andie Coulson

Email: andiec@gml.com.au

Date: 23 November 2023

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 56, Eastings : 329395.0 - 335395.0, Northings : 6247821.0 - 6253821.0 with a Buffer of 0 meters, conducted by Andie Coulson on 23 November 2023.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.

A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

98	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

Level 6, 10 Valentine Ave, Parramatta 2150
Locked Bag 5020 Parramatta NSW 2124
Tel: (02) 9585 6345

ABN 34 945 244 274
Email: ahims@environment.nsw.gov.au
Web: www.heritage.nsw.gov.au

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 23-0126_update

Client Service ID : 842659

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-6-2072										
45-6-0026										
45-6-2680										
45-6-0630										
45-6-1267										
45-6-2652										
45-6-2597										
45-6-1971										
45-6-1481										
45-6-3695										
45-6-3826										
45-6-2647										

Report generated by AHIMS Web Service on 23/11/2023 for Andie Coulson for the following area at Datum :GDA, Zone : 56, Eastings : 329395.0 - 335395.0, Northings : 6247821.0 - 6253821.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 98

This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-6-2637										
45-6-3762										
45-6-3899										
45-6-2168										
45-6-2822										
45-6-2966										
45-6-1957										
45-6-3071										
45-6-3064										
45-6-1237										
45-6-1939										
45-6-3848										

Report generated by AHIMS Web Service on 23/11/2023 for Andie Coulson for the following area at Datum :GDA, Zone : 56, Eastings : 329395.0 - 335395.0, Northings : 6247821.0 - 6253821.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 98

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 23-0126_update

Client Service ID : 842659

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-6-3324										
45-6-2687										
45-6-3552										
45-6-3116										
45-6-2663										
45-6-2676										
45-6-2960										
45-6-1232										
45-6-2979										
45-6-2742										
45-6-0030										
45-6-0283										

Report generated by AHIMS Web Service on 23/11/2023 for Andie Coulson for the following area at Datum :GDA, Zone : 56, Eastings : 329395.0 - 335395.0, Northings : 6247821.0 - 6253821.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 98

This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	SiteFeatures	SiteTypes	Reports
45-6-0618									
45-6-4099									
45-6-1615									
45-6-2581									
45-6-2580									
45-6-2287									
45-6-3654									
45-6-3694									
45-6-3696									
45-6-0555									
45-6-1828									
45-6-1972									
45-6-3152									

Report generated by AHIMS Web Service on 23/11/2023 for Andie Coulson for the following area at Datum :GDA, Zone : 56, Eastings : 329395.0 - 335395.0, Northings : 6247821.0 - 6253821.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 98

This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-6-1268	Balls Head Reserve;									
	Contact									
45-6-0891										
45-6-1901										
45-6-2651										
45-6-3446										
45-6-1853										
45-6-3338										
45-6-2180										
45-6-1271										
45-6-1955										
45-6-3705										
45-6-3502										

This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 23-0126_update

Client Service ID : 842659

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-6-2796										
45-6-3339										
45-6-2967										
45-6-2672										
45-6-2629										
45-6-2961										
45-6-1954										
45-6-3693										
45-6-2278										
45-6-1960										
45-6-4050										
45-6-2666										

Report generated by AHIMS Web Service on 23/11/2023 for Andie Coulson for the following area at Datum :GDA, Zone : 56, Eastings : 329395.0 - 335395.0, Northings : 6247821.0 - 6253821.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 98

This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-6-2838										
45-6-3325										
45-6-2745										
45-6-2762										
45-6-2987										
45-6-0519										
45-6-0622										
45-6-1347										
45-6-1900										
45-6-0628										
45-6-3327										
45-6-2299										

Report generated by AHIMS Web Service on 23/11/2023 for Andie Coulson for the following area at Datum :GDA, Zone : 56, Eastings : 329395.0 - 335395.0, Northings : 6247821.0 - 6253821.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 98

This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact									
45-6-1809										
45-6-2767										
45-6-2382										
45-6-0027										
45-6-0811										
45-6-2055										
45-6-2843										
45-6-0621										
45-6-1935										
45-6-3217										
45-6-2783										

This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 23-0126_update

Client Service ID : 842659

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-6-3081										

**** Site Status**

Valid - The site has been recorded and accepted onto the system as valid

Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.

Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground

Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 23/11/2023 for Andie Coulson for the following area at Datum :GDA, Zone : 56, Eastings : 329395.0 - 335395.0, Northings : 6247821.0 - 6253821.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 98

This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Appendix B

ATR

Bank Street Park, Blackwattle Bay Precinct

Archaeological Technical Report

Report prepared for Infrastructure NSW, November 2023

GML HERITAGE

Acknowledgement of Country

We respect and acknowledge the First Nations of the lands and waterways on which we live and work, their rich cultural heritage and their deep connection to Country, and we acknowledge their Elders past and present. We are committed to truth-telling and to engaging with First Nations to support the protection of their culture and heritage. We strongly advocate social, cultural and political justice and support the Uluru Statement from the Heart.

Cultural warning

Aboriginal and Torres Strait Islander readers are advised that this report may contain images or names of First Nations people who have passed away.

GML HERITAGE

Report register

The following report register documents the development of this report, in accordance with GML's Quality Management System.

Job No.	Issue No.	Notes/Description	Issue Date
23-0126G	1	Draft Report to INSW	20 October 2023
23-0126G	2	Draft Report to project RAPs	25 October 2023
23-0126F	3	Final Draft to INSW	23 November 2023
23-0126F	4	Final Report	28 November 2023

Quality management

The report has been reviewed and approved for issue in accordance with the GML quality management policy and procedures.

It aligns with best-practice heritage conservation and management, *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance, 2013* and heritage and environmental legislation and guidelines relevant to the subject place.

Indigenous cultural and intellectual property

We acknowledge and respect the inherent rights and interests of the First Nations in Indigenous Cultural and Intellectual Property. We recognise that Aboriginal and Torres Strait Islander people have the right to be acknowledged and attributed for their contribution to knowledge but also respect their rights to confidentiality. We recognise our ongoing obligations to respect, protect and uphold the continuation of First Nations rights in the materials contributed as part of this project.

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Source of images is GML unless otherwise stated.

Cover image

Courtyard at 1A–3 Bank Street, with view to ANZAC Bridge. (Source: © GML Heritage)

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CANBERRA 2A Mugga Way, Red Hill ACT 2603 Australia T +61 2 6273 7540
MELBOURNE 17 Drummond Street, Carlton VIC 3053 Australia T +61 3 9380 6933
www.gml.com.au | @GMLheritage

Executive summary

GML Heritage (GML) Pty Ltd was engaged by Infrastructure NSW (INSW) to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) for the Bank Street Park site, Pyrmont. This report has been prepared in response to the relevant requirements outlined within the Planning Secretary's Environmental Assessments Requirements (SEARs) issued on 11 May 2023 for application number SSD-53386706.

This Aboriginal Archaeological Technical Report (ATR) is an appendix to the ACHAR for the Bank Street site. This archaeological report is a standalone technical report that provides evidence about the material traces of Aboriginal land use that is integrated with the other findings from the assessment of Aboriginal heritage to support the conclusions and management recommendations in the ACHAR.

The archaeological investigation of the site, as reported herein, has confirmed the identification of a single Aboriginal object (a flint flake) and has further defined the nature of previously identified areas of PAD (areas with archaeological potential to yield further Aboriginal heritage objects) within the site.

This report presents the results of a program of Aboriginal archaeological test excavation. The environmental and archaeological context of the site, an impact assessment relating to the proposed activity and recommendations regarding the ongoing heritage management of the site are presented within the project ACHAR.

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Introduction

1 Introduction to the Project

1.1 Introduction

The purpose of this report is to identify whether the site possesses or has the potential to possess Aboriginal heritage archaeological sites, places, objects, landscapes and/or values, in accordance with the Heritage NSW guidelines for Aboriginal heritage assessment, to support a State Significant Development Application (SSDA) for a new waterfront public park within Blackwattle Bay, to be known as Bank Street Park (SSD-53386706). Bank Street Park is located at 1A–19 Bank Street, Pyrmont on the shoreline of Tjerruing Blackwattle Bay and adjacent areas of Blackwattle Bay.

This Aboriginal Archaeological Technical Report (ATR) is an appendix to the ACHAR for the Bank Street Park project. The Planning Secretary's Environmental Assessments Requirements (SEARs) issued on 11 May 2023 for the project includes the requirement for Aboriginal archaeological test excavation in proposed impacts areas (Item 6). This archaeological report is a standalone technical report which provides the results of a program of Aboriginal archaeological test excavation to satisfy the Item 6 of the SEARs. It provides evidence about the material traces of Aboriginal land use that is integrated with the other findings from the assessment of Aboriginal heritage to support the conclusions and management recommendations in the ACHAR.

1.2 Blackwattle Bay Precinct

Bank Street Park forms part of the Blackwattle Bay Precinct, which is an area of predominantly government owned land located on the western edge of the Pyrmont Peninsula and adjoining the waters of Blackwattle Bay (Figure 1.1).

Figure 1.1 Blackwattle Bay Precinct. (Source: INSW)

The precinct was rezoned in December 2022 to facilitate a new mixed-use community, providing for around 2,000 new residents and 5,600 new jobs and creating a vibrant 24/7 economy. Updated planning and land use controls were incorporated into the Sydney Local Environmental Plan 2012, along with site specific design guidance in the *Blackwattle Bay Design Guidelines.*

A critical part of the Blackwattle Bay Precinct is the high quality public domain which includes a series of parks and open spaces connected by a foreshore promenade. Bank Street Park will bring new active and passive recreation uses into a unique park environment, catering for both existing and future communities in the vicinity.

1.3 Site description

Bank Street Park is located at 1A–19 Bank Street, Pyrmont NSW within the City of Sydney local government area (LGA) and includes harbour development in Blackwattle Bay. The site area is 1.1 hectares. The relevant lot and deposited plans and the respective ownership for the site are detailed in Table 1.1 and shown in Figure 1.2.

Table 1.1 Summary of land title details of the site

Street address	Lot and Deposited Plan details	Ownership
1A Bank Street, Pyrmont NSW 2009	Lot 1 DP 85206 Lot 1 DP 188671	Transport for NSW
1–3 Bank Street, Pyrmont NSW 2009	Lots 1-2 DP 1089643 Lot 1 DP 439245	Infrastructure NSW
5 Bank Street, Pyrmont NSW 2009	Lot 20 DP 803159	Transport for NSW
7 Bank Street, Pyrmont NSW 2009	Lot 19 DP 803159	Transport for NSW
9 Bank Street, Pyrmont NSW 2009	Lot 21 DP 803159	Transport for NSW
11 Bank Street, Pyrmont NSW 2009	Lot 22 DP 803159	Transport for NSW
17–19 Bank Street, Pyrmont NSW 2009	Lots 5–6 DP 803160	Transport for NSW
Sydney Harbour	Lot 5 DP 1209992	Roads and Maritime Services (Transport for NSW)
Sydney Harbour	Lot 107 in DP 1076596	Transport for NSW
Part Bank Street Road reserve	N/A	City of Sydney Council

Bank Street Park is located on Gadigal Land, one of the twenty-nine clans of the great Eora Nation. It adjoins the foreshores of Glebe to the west and Pyrmont Bridge Road and Wentworth Park to the south.

Figure 1.2 Site context map. The indicative site location is outlined in red. (Source: SixMaps with Architectus edits, 2023)

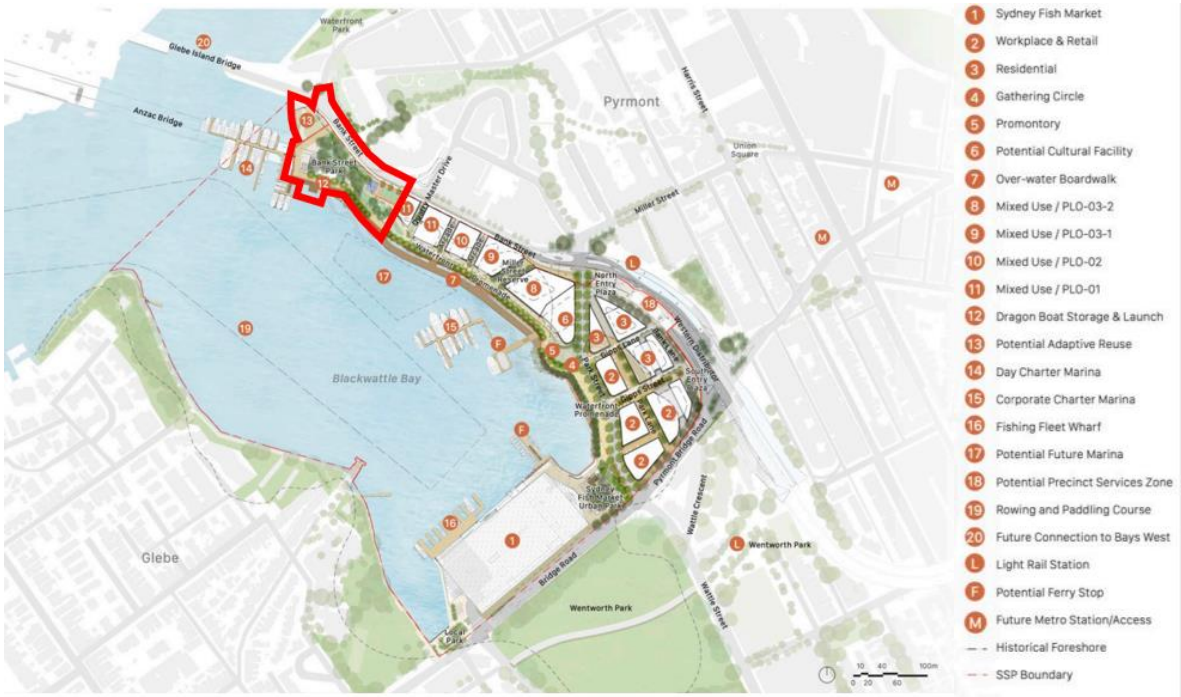

Figure 1.3 Bank Street Park site location within Blackwattle Bay State Significant Precinct. The indicative site location is outlined in red. (Source: Blackwattle Bay Design Guidelines with Architectus edits, 2023)

1.4 Proposed development

1.4.1 Overview

Development consent is being sought for a *recreation area* for the primary purpose of a *public park*, comprising:

- Site preparation works, including tree removal, earthworks and remediation to facilitate the proposed use;
- Demolition of three existing buildings at 1–3 Bank Street;
- New and adapted facilities for community use, including:
  - New single storey building to accommodate flexible community space, café, and marina office/store facilities, with green roof and photovoltaics;
  - Adaptive reuse of Building D for public amenities, bin and other storage;
  - Boat launching ramp and pontoon for passive watercraft, including dragon boats and kayaks; and
  - Boat storage building with change facilities for dragon boat users with publicly accessible rooftop deck.
- Public domain works, including:
  - 'Interpretation Garden' in existing building 'ruins' at 1–3 Bank Street;
  - Split level foreshore promenade;
  - Multi-purpose court with edge seating and partial fence;
  - Nature-based inclusive playspace for ages 2–12;
  - Fitness equipment;
  - Public plaza and grassed open space areas;
  - New tree plantings and planter beds; and
  - Public art, wayfinding and interpretative signage, lighting, bike parking and seating.
- Harbour works including:
  - Overwater boardwalk;
  - Land/water interface works, including sandstone terracing into water and support structure, to improve marine habitat;
  - Demolition and construction of a new timber launching ramp for dragon boats;
  - Kayak/passive craft pontoon; and
  - Restoration, repair and alterations to the existing seawall for new stormwater outlets.
- Works to Bank Street road reserve, including:
  - Road space reallocation to provide separated cycleway;
  - Cycleway transition to Bank Street to continue south as part of future works;

- Reinstatement of existing on-street parallel parking;
- Tree planting;
- Accessible parking space; and
- Loading zone adjacent 1–3 Bank Street.

1.5 Planning Secretary's Environmental Assessments Requirements

This report has been prepared in response to the relevant requirements outlined within the Planning Secretary's Environmental Assessments Requirements (SEARs) issued on 11 May 2023 for application SSD-53386706. Table 1.2 addresses the relevant SEARs requirements and provides a project response.

Table 1.2 Secretary's Environmental Assessments Requirements

Item	SEARs	Relevant report section(s)
Item 6	**6. Aboriginal Cultural Heritage** • Provide an Aboriginal Cultural Heritage Assessment Report prepared in accordance with relevant guidelines, identifying, describing and assessing any impacts on any Aboriginal cultural heritage values on the land prepared in accordance with the relevant Heritage NSW Guidelines: – Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010) – Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales (OEH 2011) – Code of Practice for Archaeological Investigation in NSW (DECCW 2010).	This report forms an appendix to the ACHAR. It has been prepared in accordance with the relevant Heritage NSW guidelines identified in the project SEARs. See ACHAR for further details.
	• Address how the development responds to the commitment and principles for action in the Connecting with Country Framework for Tjerruing Blackwattle Bay.	This information is presented in the project ACHAR (Section 4.6), to which this report forms an appendix.
	• Archaeological test excavation of any potential archaeological deposits (PAD) in the proposed impact area.	This report (Section 2) presents the outcomes of the archaeological test excavations of areas of PAD identified within the site.

1.6 Statutory context

The following statutory controls are relevant to the Bank Street site and therefore this report:

- *National Parks and Wildlife Act* 1974 (NPW Act); and
- *Environmental Planning and Assessment Act* 1979 (EP&A Act).

As the Bank Street Park development program is designated State Significant Development (SSD), application number SSD-53386706, the project is governed by project Secretary's Environmental Assessment Requirements (SEARs) (outlined in Section 1.5 above).

Heritage NSW requires the appropriate management of Aboriginal heritage social values, if connected with a project site. This project aims to determine if harm can be avoided to any Aboriginal sites across the site.

1.6.1 National Parks and Wildlife Act 1974

The NPW Act provides statutory protection for all Aboriginal 'objects' (consisting of any material evidence of the Indigenous occupation of New South Wales) under Section 90 of the NPW Act, and for 'Aboriginal Places' (areas of cultural significance to the Aboriginal community) under Section 84 of the NPW Act. Aboriginal objects and places are afforded automatic statutory protection in New South Wales, whereby it is an offence (without the Minister's consent) to harm an Aboriginal object or declared Aboriginal Place.

The NPW Act defines an Aboriginal object as:

> 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.

The protection provided to Aboriginal objects and places applies irrespective of the level of their significance or issues of land tenure. Sites of traditional significance that do not necessarily contain material remains may be gazetted as 'Aboriginal Places' and thereby be protected under the NPW Act. However, areas are only gazetted if the Minister is satisfied that sufficient evidence exists to demonstrate that the location was and/or is of special significance to Aboriginal culture.

A strict liability offence applies for harm to or desecration of an Aboriginal object or declared Aboriginal Place.[1] The definition of 'harm' includes destroying, defacing, damaging or moving an Aboriginal object or declared Aboriginal Place. Under the Act, applicants must seek approval prior to disturbance of sites with the potential to contain Aboriginal objects or cultural material.

The potential for Aboriginal objects, sites, places and/or values within the site, and for the proposed development to impact such objects, has been assessed and the results presented in this report.

1.6.2 Environmental Planning and Assessment *Act* 1979

Projects declared State Significant Development (SSD) under Part 4 of the EPA Act require heritage and archaeology to be managed in accordance with the project approval documents, including conditions of the Development Consent. Section 4.41(d) of the EPA Act provides an Aboriginal heritage impact permit (AHIP) under Section 90 of the NPW Act is not required for a SSD project that is authorised by a SSD development consent. As the Bank Street Park project has been declared SSD, the requirement to obtain an AHIP does not apply. Furthermore, Section 4.41(3) of the EPA Act provides that any reference to SSD under Section 4.41 that is authorised by a development consent extends to "any investigative or other activities that are required to be carried out for the purpose of complying with any environmental assessment requirements". The implication being, test excavation required under the SEARs, such as for the Bank Street Park project, can be carried out prior to SSD consent being issued without the need for an AHIP.

The EPA Act provides for the identification, protection and management of heritage items through inclusion in schedules to planning instruments such as State Environmental Planning Policies (SEPPs) and Local Environmental Plans (LEPs). Heritage items in planning instruments are usually historic sites but can include Aboriginal objects and places. The EPA Act requires that appropriate measures be taken for the management of the potential archaeological resource by means consistent with practices and standards adopted in meeting the requirements of the NPW Act.

The site is in the City of Sydney local government area and is therefore subject to the *Sydney Local Environmental Plan 2012*. There are no currently listed heritage items under the LEP that fall within the site that have identified Aboriginal heritage values.

1.7 Approach to Aboriginal heritage management

To administer the NPW Act and EPA Act, Heritage NSW has issued a series of best practice guidelines and policies. These guidelines and policies underpin Aboriginal heritage assessment and management in New South Wales. Our approach is based on the following guidelines:

- *Aboriginal cultural heritage consultation requirements for proponents* 2010;[2]

- *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (the Due Diligence Code);[3]
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (the Code of Practice);[4]
- *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW*;[5]
- *Guide to Determining and Issuing Aboriginal Heritage Impact Permits*;[6] and
- The Australia ICOMOS *Burra Charter* 2013 (the Burra Charter).[7]

1.8 Reporting approach

This Aboriginal ATR report is an appendix to the ACHAR. This archaeological report is a standalone technical report that provides evidence about the material traces of Aboriginal land use that is integrated with the other findings from the assessment of Aboriginal heritage to support the conclusions and management recommendations in the ACHAR.

This report has been prepared following the requirements for reporting as established in the Code of Practice.

Note that this report exclusively discusses the outcomes of the test excavation program. Environmental and archaeological background, values and significance assessments, and management recommendations are presented within the ACHAR.

1.9 Authors of the project

This project has been undertaken by the following people. Each person's role and affiliations are detailed in the below table.

Table 1.3 Investigators and contributors

Person	Affiliation	Role
Dr Tim Owen	GML	Project Director
Andie Coulson	GML	Project Manager and author
Sophie Jennings	GML	Technical review
Jacob Kiefel	GML	Archaeologist and author
Erica Brown	GML	Archaeologist and author
Jamie Currell	Kamilaroi-Yankjuntjatjara Working Group	Archaeological Assistant and RAP
Gary Dunn	Ngaamba Cultural Connections	Archaeological Assistant and RAP

Person	Affiliation	Role
Dr Beth White	GML	Lithics analysis
Rowena Welsh-Jarrett	Metropolitan Local Aboriginal Land Council	RAP
Guy Hazell	Guy Hazell Archaeological Surveying & Illustration	Surveyor

1.10 Acknowledgements

GML would like to acknowledge the assistance provided by Belinda Lewis, Louise Haran and Sophie Lovett (INSW), and Joanne Rosner, Milad Noujaim, and Christopher Dagger (JBS&G) during the project.

GML would also like to acknowledge Metropolitan Local Land Council representative Rowena Welsh-Jarrett for her time via phone and in person to discuss the project and methodology during the excavation program.

1.11 Endnotes

[1] Department of Environment, Climate Change and Water 2010, National Parks and Wildlife Act 1974 (NSW), 'Fact sheet 1', September 2010.

[2] Department of Environment, Climate Change and Water 2010, *Aboriginal cultural heritage consultation requirements for proponents 2010*, Sydney.

[3] Department of Environment, Climate Change and Water, *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*, September 2010.

[4] Department of Environment, Climate Change and Water, *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*, September 2010.

[5] Office of Environment and Heritage, Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW, Sydney, April 2011.

[6] Department of Environment and Climate Change, *Guide to Determining and Issuing Aboriginal Heritage Impact Permits*, 2009, <http://www.environment.nsw.gov.au/resources/cultureheritage/09121AHIPGuide.pdf>.

[7] Australia ICOMOS Inc, *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013,* Australia ICOMOS Inc, Burwood, VIC.

2 Archaeological investigation

2 Archaeological investigation

This chapter addresses the program of archaeological test excavation undertaken at the Bank Street Park site. The program was completed between 11 and 15 September 2023. Heritage NSW was notified in writing 14 days before test excavation commenced, meeting the Requirement 15c of the Code. Notification was delivered to the heritage mailbox inbox and to HNSW Senior Assessments Officer Corey O'Driscoll. This section provides an overview of the excavation methodology and presents the results of the test excavation.

2.1 Summary of excavation methodology

The full Aboriginal archaeological excavation methodology is outlined in the project's Aboriginal Archaeological and Cultural Assessment Methodology (AACAM)[1], which forms an appendix to the ACHAR. This section provides a summary of the excavation methodology employed during the archaeological excavation.

Aboriginal archaeological test excavation proposed for the site aimed to confirm the presence of intact soil landscapes and their archaeological content, and to archaeologically sample these soils. Prior archaeological assessments of the site (CityPlan 2023[2], see also Artefact 2021[3]) had identified four areas of potential archaeological deposit (PAD) within the site based on the results of geoarchaeological investigations. These are identified as PAD 02 (AHIMS ID 45-6-3338), PAD 2A, PAD 3 and PAD 4 (Figure 2.1). Test excavations aimed to sample these PADs to:

- identify whether the areas of PAD has an Aboriginal archaeological signature; and
- identify whether areas of the Bank Street Park site has archaeological potential that would be impacted by the proposed development.

The test excavation methodology was developed in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* to comply with the project SEARs.

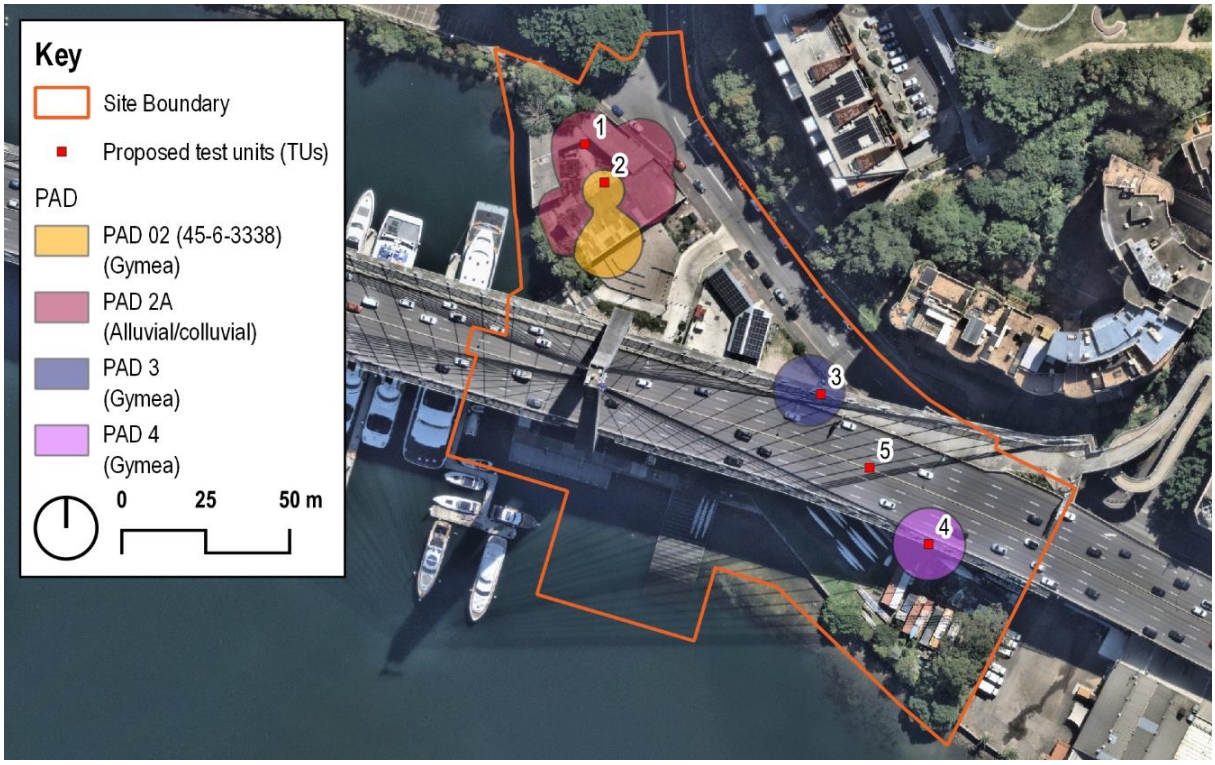

Figure 2.1 Plan showing areas of PAD identified with the Bank Street Park site and the location of the proposed project test units for archaeological test excavations. (Source: Nearmap with GML overlay, 2023)

2.1.1 Archaeological survey

No archaeological field survey was undertaken as the Bank Street site is a developed site without ground surface visibility and/or soil exposures. Due to the extensively developed nature of the site and the prior archaeological survey conducted by Artefact Heritage[4] as part of the initial ACHAR process for the Blackwattle Bay Precinct, which included the Bank Street site, additional archaeological survey was not deemed to be necessary.

A preliminary site inspection was undertaken by GML archaeologists Dr Kat McCrae and Andie Coulson on 6 June 2023 (Figure 2.2 to Figure 2.5) to inspect areas that had previously not been inspected as part of the Artefact Heritage survey. This included inspection of 1A Bank Street, a vegetated area within the north of the site, which had not been accessed via survey. This area was identified to be significantly disturbed, as evidenced by the presence of several services and soil buildup resulting from the construction of Glebe Island Bridge, immediately adjacent. All areas of the site were inspected, with the exception of the interiors of the 1–3 Bank Street existing buildings and the Blackwattle Bay Marina compound. Inspection was also undertaken of AHIMS site 45-6-2960, [redacted], located approximately [redacted] of the Bank Street site.

Figure 2.2 1A Bank Street, showing service access point.

Figure 2.3 1–3 Bank Street, showing concreted courtyard space.

Figure 2.4 4–19 Bank Street, Dragon Boat NSW (DBNSW) compound.

<FIGURE REDACTED>

Figure 2.5 [redacted]

2.1.2 Archaeological sampling strategy

Archaeological test excavations were conducted in accordance with the methodology developed in the AACAM. This methodology had received preliminary approval from Corey O'Driscoll, Senior Assessments Officer (archaeologist) Heritage NSW, via email (dated 8 August 2023). The test excavation program was developed in response to the proposed project impacts and in reference to areas of suspected intact soils with potential to contain Aboriginal objects. Access to areas of PAD beneath standing buildings at 1–3 Bank Street was not possible. As such, testing was restrained to open areas within the balance of the site.

A total of five test units were proposed in the AACAM (Figure 2.1). Four test units (TU 1, TU 2, TU 3 and TU 4) were proposed in areas of PAD adjacent to the geotechnical boreholes with identified intact remnant soils to test for the presence of Aboriginal objects (Figure 2.6). Due to the construction of a temporary sports court in the location of PAD 3 (Figure 2.7), TU 3 was located further east of the borehole location, outside the sports court footprint. An additional TU, TU 5, was proposed between PAD 3 and PAD 4, in an area that had not been sampled via geotechnical investigations. Testing in this location aimed to identify whether PAD was continuous between PAD 3 and PAD 4. Five

test trenches were excavated in the proposed locations of TUs 1–5, with the intent of exposing deposits with PAD that would subsequently be subject to hand excavation in the form of TUs. Test trench refers to the machine-excavated trench, and Test Unit refers to the 500 by 500 millimetre hand-excavated test square. The Historical Archaeological Assessment prepared for the project had identified that the site has potential for locally significant historical archaeological remains. A Work Method Statement (WMS) was prepared to manage historical archaeological remains during the test excavation program.[5]

Archaeological test excavation was completed in accordance with the following measures:

- All overlying modern and historical fills were machine excavated under supervision of an archaeologist. Machine excavation ceased when any actual or suspected natural soil layers were identified, or in the instance of any historical archaeological features until these had been adequately assessed and recorded.
- If natural soils were reached in the test trenches, a Test Unit (TU) was hand excavated.
- Each TU measured 0.5 by 0.5 metres and was excavated to a sterile soil horizon or bedrock.
- Archaeological test excavation was undertaken in 50-millimetre spits.
- A representative sample of TUs was sampled for soil, which may be used for future palynology, sedimentology and OSL dating.
- The nature of soils in each TU was recorded so that a pattern of changing soil landscapes across the site could be developed.
- All archaeologically excavated deposits were wet sieved through a three-millimetre mesh. Sieving occurred on site and was undertaken using a water cart into skip bins, which were emptied as required.

Each test trench and TU was recorded by the excavation team on a Trench or TU recording sheet during excavation and photographed after excavation was completed. Details recorded included Trench an/or TU number, soil texture, compaction, inclusions, evidence for bioturbation and stratigraphic profile. The locations of each test unit have been documented in

Table 2.2 and Figure 2.35.

The stratigraphic profile of each Trench and TU was recorded. This led to the classification of several historical fill layers, including redeposited soils and sediments, with small, isolated pockets of deposits with PAD, comprising colluvial sediments and B horizon Gymea soils observed in Trenches 2 and 5, respectively.

In the instances where potential natural soils were not observed, excavation instead ceased when bedrock was encountered, or when excavation reached 2.2 to 2.5 metres below ground level. This depth was chosen as it provided a minimum of a 1 metre buffer beneath the proposed project impact depths, and as excavation beyond this depth posed a hazard due to risk of trench wall collapse.

As no cultural features were observed during the test excavations, no samples of charcoal were collected. All stone objects were bagged and provenance recorded according to TU and spit, and were catalogued and analysed by Lithic Analyst Dr Beth White. Soil samples were taken from each stratigraphic unit in both TUs to facilitate further analysis as required.

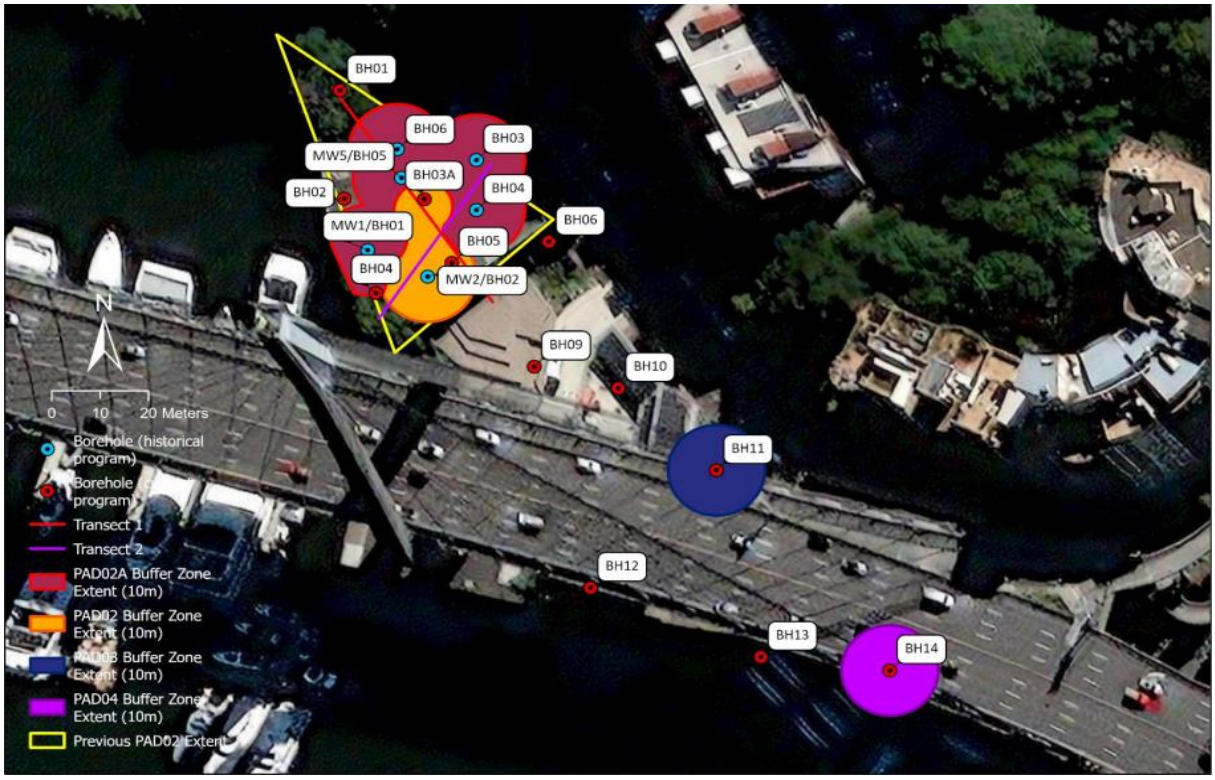

Figure 2.6 Map of 2012 and 2023 geotechnical testing within the site. (Source: CityPlan, 2023)

Figure 2.7 Proposed test units and identified constraints on site, including an electrical easement zone (green) and temporary sports court (red). (Source: Nearmap with GML overlay, 2023)

2.2 Test excavation results

Possible PAD deposits were identified in two locations—in Test Trench 2 and Test Trench 5. In these locations, overlying fill was removed and the locations made safe by JBS&G, allowing for hand excavation of test units as outlined in the project Aboriginal Archaeological and Cultural Assessment Methodology. Test units measured 500 by 500 millimetres in size, and were excavated in 50-millimetre spits. A total of two test units were excavated: TU 2 in the location of Test Trench 2, and TU 5 in the location of Test Trench 5, for a total of 0.5m^2 excavation.

A single Aboriginal artefact was identified during the excavation, within TU 2. The artefact is fully analysed in Section 2.2.5. The artefact is currently stored in a secure location in the GML offices and will be registered with AHIMS. After consulting with the RAPs on site, no expansion was undertaken due to the extremely low density of artefacts on site, and due to the spatially constrained nature of both the test trenches and deposits with PAD, which made expansion unfeasible.

Throughout the week, the team discussed Aboriginal cultural heritage in the region. It was concluded that while the region has significant cultural heritage values, no values were exclusive to the Bank Street location.

Following the conclusion of excavation and recording in each location, each trench was backfilled with the stockpiled fill material.

Table 2.1 Summary of test trenches excavated.

Test trench	PAD	Trench size (m)	Depth natural soils encountered (m)	Final depth (m)	Corresponding borehole	Corresponding Test Unit (TU)	Trench description
1	PAD 2A	3.1 x 6.4m	No natural soils encountered	2.2m	BH06 (2012)	N/A	Trench contained introduced reclamation and levelling fills. For full description, see HARDEM report (GML, 2023). Excavation ceased when maximum safe excavation depth in this location was reached. Bedrock was not reached at this location.
2	PAD 2 (AHIMS ID 45-6-3338)	1.5 x 2m	1.05m	2.1m	BH03A (2023)	TU 2	Trench contained introduced fills overlying colluvial deposit/s. TU 2 was then hand excavated to a sterile crushed sandstone layer.
3	PAD 3	2.5 x 2.2m	No natural soils encountered	2.2m	BH11 (2023)	N/A	Trench contained introduced levelling fills overlying sandstone bedrock. For full description, see HARDEM report (GML, 2023). Excavation ceased at bedrock.

Test trench	PAD	Trench size (m)	Depth natural soils encountered (m)	Final depth (m)	Corresponding borehole	Corresponding Test Unit (TU)	Trench description
4	PAD 4	5.8 x 2.9m	No natural soils encountered	2.5m	BH14 (2023)	N/A	Trench contained introduced reclamation and levelling fills. For full description, see HARDEM report (GML, 2023). Excavation ceased when maximum safe excavation depth in this location was reached. Bedrock was not reached in this trench.
5	N/A	4.7 x 4.1m	0.85m	1.4m	Untested area	TU 5	Trench contained introduced levelling fills overlying a reworked/truncated Gymea B horizon soil. TU 5 was then hand excavated into the suspected B horizon soils to bedrock.

Table 2.2 Summary of Test Units (TUs) excavated.

Test Unit (TU)	Location	Coordinates (Easting, Northing, GDA 94 MGA 56)	Area excavated (m^2)	Final depth (mm)	Number of spits	TU description	Aboriginal object count
TU 2	PAD 2 (AHIMS ID 45-6-3338)	332354; 6250888	0.25m^2	500mm	7	Colluvial deposits, likely post-1788, situated over a degraded bedrock, possibly a reclamation fill (post-1788).	1
TU 5	NHTA	332441; 6250799	0.25m^2	600mm	11	Layers of redeposited and/or reworked Gymea soils interrupted by an introduced sandstone crush layer, overlying sandstone bedrock.	0
						Total Aboriginal stone object count	**1**

2.2.1 Test trench excavation results

This section presents the excavation results for the five test trenches. Trenches were dug with the aim of intercepting deposits with PAD as identified in prior geotechnical testing. For a full discussion of the historical fill layers identified in each of the five test trenches, see the project joint Historical Archaeological Assessment and Historical Archaeological Research Design and Excavation Methodology (HAA/HARDEM) (GML, 2023).

Trench 1

Trench 1 was located within 1–3 Bank Street courtyard, and measured 3.1 by 6.4 metres (Figure 2.8–Figure 2.11). The trench was machine excavated to a 2.2-metre depth below ground level. Trench 1 aimed to intersect PAD 02A, described as alluvial or colluvial sediments, surrounding the northern edge of PAD 2. The trench was situated adjacent the location of BH06, which had identified intact colluvial or alluvial sediments at a depth of between 0.5 and 1.5 metres. Soils with PAD were described as being fine grained brown sands, with traces of clays, sand mottles and compressed sand plates throughout, overlying sandstone bedrock.[6]

No remnant PAD deposits were identified during archaeological excavation. The stratigraphy in Trench 1 comprised a series of historical fill layers overlying crushed or weathered sandstone. Fill layers were as follows:

- Layer 1: Grey-brown silty sand, interpreted as a levelling or demolition fill (c200mm thick). Likely 1932–1980s in date. Capped by concrete slab.
- Layer 2: Below layer 1. Comprises a lens of possible redeposited topsoil (c100mm thick), overlying dense industrial fill comprising black ashy crushed coal matrix (c200mm thick). Likely dated to 1895–c1932.
- Layer 3: Below layer 2. Crushed/weathered sandstone layer, identified as a likely reclamation fill (560mm), with lenses of black/grey sand (c100m) colluvium/alluvium. May potentially instead represent highly degraded natural weathered bedrock (C horizon) at depth of 1.1–2.2 metres. If reclamation, likely dated to 1803–1895.

Figure 2.8 Trench 01 mid-excavation, showing spatially constrained nature of 1–3 Bank Street courtyard.

Figure 2.9 Trench 01 at end of excavation, facing northwest. 1m scale.

Figure 2.10 Trench 01, southwest section mid-excavation showing historical fill layers. 1m scale.

Figure 2.11 Trench 01, southwest section at end of excavation showing historical fill layers.

Trench 2

Trench 2 was located within 1–3 Bank Street courtyard, to the immediate southeast of Trench 1. Trench 2 measured 1.5 by 2 metres. Trench 2 aimed to intersect PAD 02 (AHIMS ID 45-6-3338), described as B horizon Gymea soils, abutting PAD 02A. The trench was situated adjacent to the location of BH03A, which had identified Gymea soils at a depth of between 2.15 and 3.05 metres, although core loss was noted between a depth of 2.2 and 3 metres. Soils with PAD were described as sandy silty clay (with fine sand component), dark greyish brown mottled (25%) dark yellowish brown, with very occasional charcoal inclusions (potentially corresponding to gy2 of the Gymea soil landscape) between 2.15 and 2.2 metres in depth, overlying dark brown sandy silty clay with a fine sand component (potentially corresponding to gy2 of the Gymea soil landscape).[7]

Trench 2 had to be situated slightly further northwest of the location proposed in the AACAM to facilitate access for machine excavation due to the spatially constrained nature of the courtyard space. As such, the trench was situated adjacent the projected interface between PAD 02 (suspected Gymea) and PAD 02A (suspected alluvial or colluvial soils), providing the opportunity to investigate the potential transition between these two areas of PAD.

Trench 2 was machine excavated to a depth of approximately 1.05 metres, at which point remnant PAD deposits were identified. Test Unit 2 (TU 2) was subsequently hand excavated. TU 2 is discussed in further detail below.

The profile of Trench 2 comprised:

- Layer 1: Grey-brown silty sand interpreted as a levelling or demolition fill (c200mm thick). Likely 1932–1980s in date. Capped by concrete slab.
- Layer 2: Below layer 1. Comprises dense industrial fill comprising a black ashy crushed coal matrix (c200mm thick). Likely dated to 1895–c1932.
- Layer 3: Colluvium (PAD). Encountered at a depth of approximately 1.05 metres. Test unit excavation indicated that the colluvium layer extended approximately 300 to 500 millimetres in depth (1.3 to 1.5 metres below surface of trench). Discussed in further detail in Section 2.2.2 below.
- Layer 4: Below layer 2. Crushed/weathered sandstone layer, sloping sharply to southwest. Identified as either reclamation fill comprising crushed/weathered sandstone, or potentially highly degraded natural weathered bedrock (C horizon). If reclamation, likely dated to 1803–1895.

Figure 2.12 Trench 02 mid-excavation, showing spatially constrained nature of 1–3 Bank Street Courtyard. 1m scale.

Figure 2.13 Dark grey-brown colluvial soils (indicated by arrow) identified within Trench 02. 1m scale.

Figure 2.14 Northeast section in Trench 02, showing layers of historical fills. 1m scale.

Figure 2.15 Location of TU 2 within the northeast portion of Trench 02.

Trench 3

Trench 3 was located within the Dragon Boats NSW (DBNSW) compound (4–19 Bank Street), and measured 2.5 by 2.2 metres. The trench was machine excavated to a depth of 0.9 metres. Trench 3 aimed to intersect PAD 03, B horizon Gymea soils. The trench was situated adjacent the location of BH11, which had identified intact Gymea soils at a depth of between 2.0 and 2.95 metres. Note that due to the construction of a temporary sports court in the location of PAD 3, TU 3 was located further east of the borehole location, outside the sports court footprint. Soils with PAD were described as clayey sand, dark greyish brown with sandstone gravels (potentially corresponding to gy2 of the Gymea soil landscape).[8]

No remnant PAD deposits were identified during the archaeological excavation. The excavation identified a series of historical fill layers overlying sandstone bedrock as follows:

- Layer 1: Grey/brown gravels (400–430mm deep) interpreted as levelling fill for construction of Anzac Bridge. Likely dated to between 1980s and present.
- Layer 2: Below Layer 1. Comprises a sequence of historical fills, including a chalky layer (c100mm), a sandy construction/demolition fill with brick inclusions (c200mm) and an industrial ash/slag deposit (130–200mm). Likely dated to 1895–1980s.
- Layer 3: Crushed sandstone reclamation/levelling fill (100–220mm). Likely dated to 1803–1895.
- Sandstone bedrock: Observed at a depth of 750mm below surface of trench.

Figure 2.16 Location of Trench 3, pre-excavation, showing spatially constrained nature of location.

Figure 2.17 Bedrock within Trench 3, facing north, showing steeply sloping bedded sandstone layers.

Figure 2.18 Section, facing north, within Trench 3, showing historical fill layers overlying bedrock.

Figure 2.19 Trench 3, immediately adjacent the pop-up sports court (background of image).

Trench 4

Trench 4 was located within the DBNSW compound (4-19 Bank Street) and measured 5.8 by 2.9 metres. The trench was machine excavated to a depth of 2.5 metres. Trench 4 aimed to intersect PAD 04, comprised of B horizon Gymea soils. The trench was situated adjacent the location of BH14, which had identified intact soils at a depth of between 1.8 and 2.5 metres. Soils with PAD were described as light brown/grey silty sandy clay (potentially corresponding to gy2 of the Gymea soil landscape).[9]

No remnant PAD deposits were identified during the archaeological test excavation. The excavation found a series of historical fill layers. Bedrock was not reached and excavation ceased at a depth of 2.5 metres. Trench 4 contained potential historical features, including a potential robbed out wall and a sandstone surface (see HARDEM for further details). Fill layers were described as follows:

- Layer 1: Pale grey/brown gravel levelling fill (400–430mm deep). Likely dated to between 1980s and present.
- Layer 2: Beneath Layer 1. Sequence of historical fills, including an industrial ash deposit and sandy layers (130–200mm). Several features observed including a possible robbed out wall, a sandstone surface, a metal service pipe, and a large pit or channel cut through reclamation. Likely dated to 1895–1980s.
- Layer 3: Beneath Layer 2. Crushed sandstone reclamation/levelling fill. Likely dated to 1803–1895.

Figure 2.20 Trench 4, facing west, showing stepped nature of the trench due to deep excavation.

Figure 2.21 Crushed sandstone reclamation/levelling fill and service pipe, demonstrating depth of impact in location of Trench 4. 1m scale.

Figure 2.22 Possible surface (historical feature) in Trench 4. 1m scale.

Figure 2.23 Possible robbed out wall (historical feature, indicated by arrow) in Trench 4.

Figure 2.24 Trench 4, end of excavation. 1m scale.

Figure 2.25 Trench 4 section, end of excavation, showing layers of historical reclamation fills. 1m scale.

Trench 5

Trench 5 was located within the DBNSW compound (4–19 Bank Street), and measured 4.7 by 4.1 metres. Most of the trench was machine excavated to a depth of 0.65 metres, but a deeper central sondage measuring 3.5 by 0.75 metres was excavated to a depth of 1.4 metres. Trench 5 was situated in an area that had not been subject to previous geotechnical testing, and aimed to determine whether PAD was continuous between PADs 03 and 04.

Remnant PAD were identified in the southern extent of the sondage trench, at a depth of approximately 0.85 metres. The PAD exposed within Trench 5 measured approximately 1.1 by 1.1 metres, and was cut to the northwest by a potential historical feature comprising a wall trench with remnant timber beam (see HARDEM for further details). The deposit appeared to have been truncated to the northeast by historical fill layers. Test Unit 2 (TU 2) was placed in the centre of the exposed deposit and was subsequently hand excavated. TU 2 is discussed in further detail below. Trench 5 was also found to contain a possible channel cut into the sandstone bedrock in the centre of the sondage trench.

The profile of Trench 5 comprised:

- Layer 1: Pale grey/brown to yellowish grey/brown gravel levelling fill (650mm deep). Likely dated to between 1980s and present.
- Layer 2: Sequence of historical fills, including a sandy historical topsoil and various construction/levelling fills. Possible wall trench with remnant timber beam (depth of c800mm) and possible channel in bedrock. Likely dated to 1895–1980s.
- Layer 3: Crushed sandstone reclamation/levelling fill, likely dated to 1803–1895. In the north of trench, this directly overlay bedrock, and was approximately 100-millimetres thick. In the south of trench (ie overlying location of TU 5), sandstone

layer overlay deposit with PAD (Layer 4), and was approximately 50–75 millimetres thick.

- Layer 4: Deposits with PAD (within south of trench only, in location of TU 5), comprising layers interpreted as reworked and/or redeposited Gymea B soils, interrupted by a layer of crushed sandstone. This is discussed in further detail in Section 2.2.2 below.
- Sandstone bedrock: Identified at a depth of 1.1 metres north of the trench, and tended to comprise large slabs of bedrock. At the location of TU 5, bedrock was encountered at a dept of approximately 1.31 metres below ground level, and comprised sandstone bedrock chunks interspersed with degraded clayey-sand material (degraded bedrock).

Figure 2.26 Trench 5, start of excavation, showing position within DBNSW compound, facing south.

Figure 2.27 Sondage trench dug within Trench 5, exposing sandstone bedrock, facing north. 0.5m scale.

Figure 2.28 Location of soils identified for testing within the southern portion of Trench 5, showing TU 5 pre-excavation. Note adjacent historical wall slot feature. 0.5m scale.

Figure 2.29 Section in south extent of Trench 5, showing layers of historical fill. 0.5m scale.

Figure 2.30 Potential linear channel (historical feature), delineated in white dashed lines, in bedrock within Trench 5, facing north. 0.5m scale.

Figure 2.31 Potential wall slot (historical feature) within south extent of Trench 5.

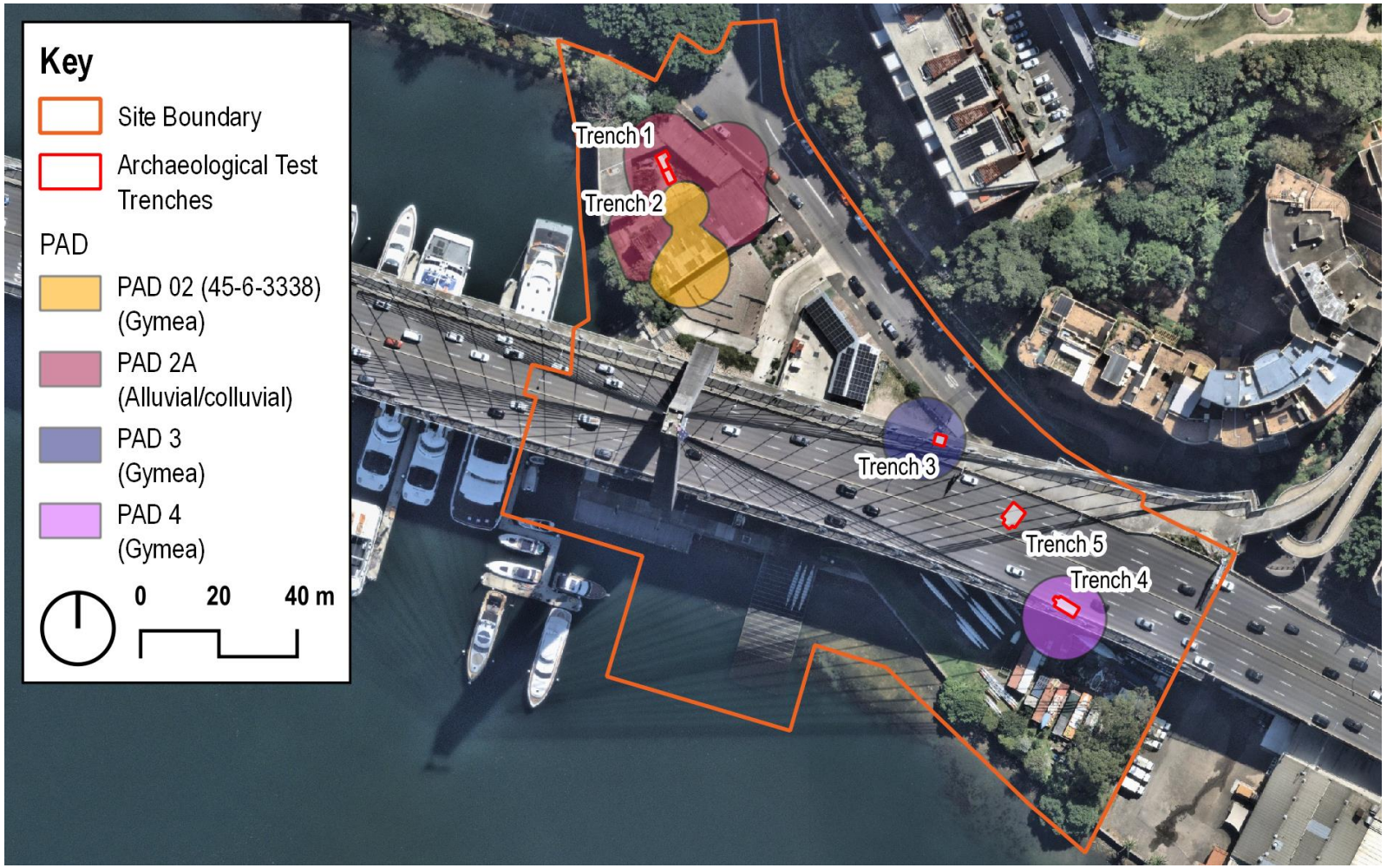

Figure 2.32 Locations of archaeological test trenches within the Bank Street site. (Source: Nearmap with GML overlay, 2023)

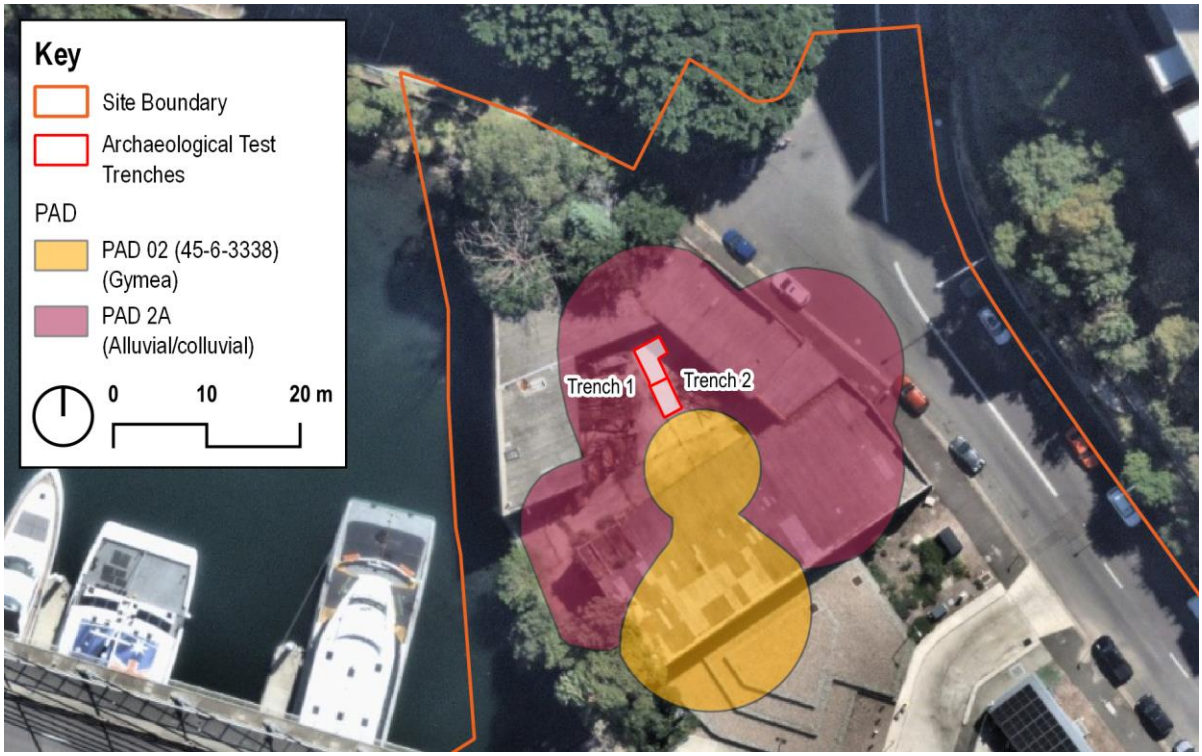

Figure 2.33 Detail of location of Trenches 1 and 2 within 1–3 Bank Street. (Source: Nearmap with GML overlay, 2023)

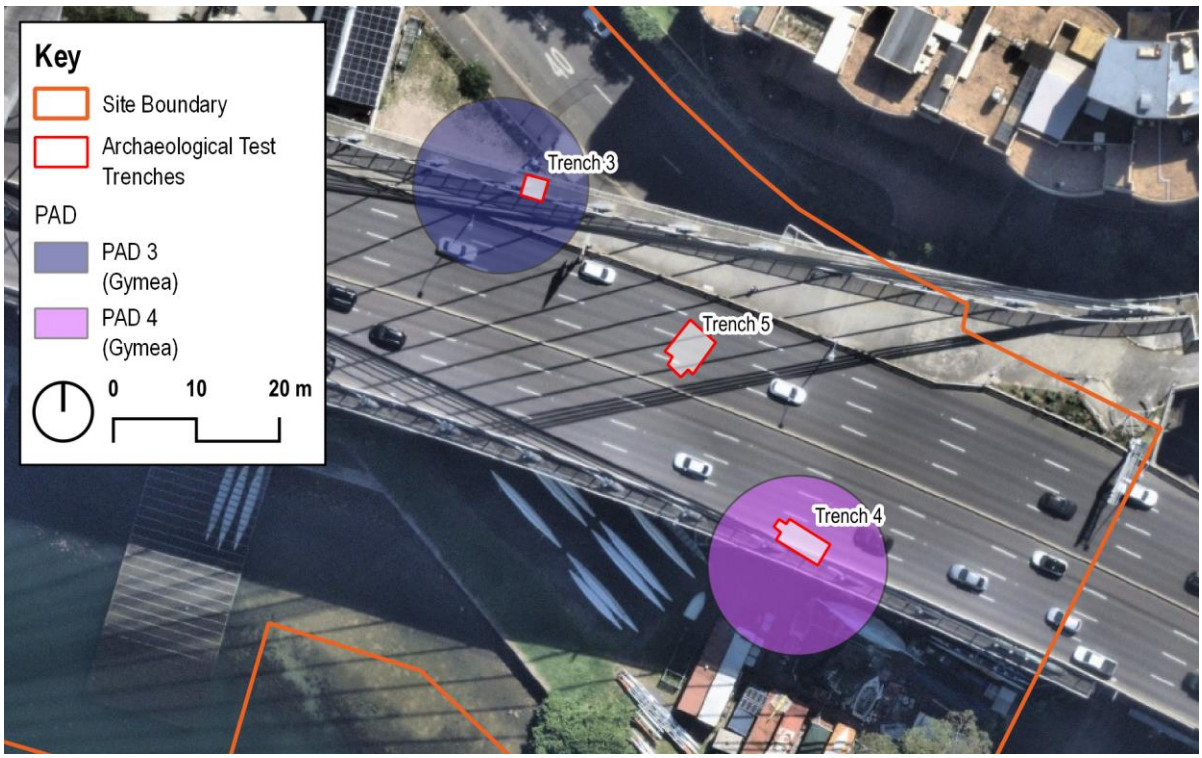

Figure 2.34 Detail of location of Test Trenches 3, 4 and 5 within the southeast of the Bank Street site. (Source: Nearmap with GML overlay, 2023)

2.2.2 Aboriginal archaeological test unit excavation results

A total of two of the five test unit locations (TU 2 and TU 5) proposed in the AACAM (Figure 2.1) were found to contain a natural soil profile with the potential to contain Aboriginal objects (Figure 2.35). At the locations proposed for TUs 1, 3 and 4, no natural soil profiles with the potential to contain Aboriginal objects were encountered.

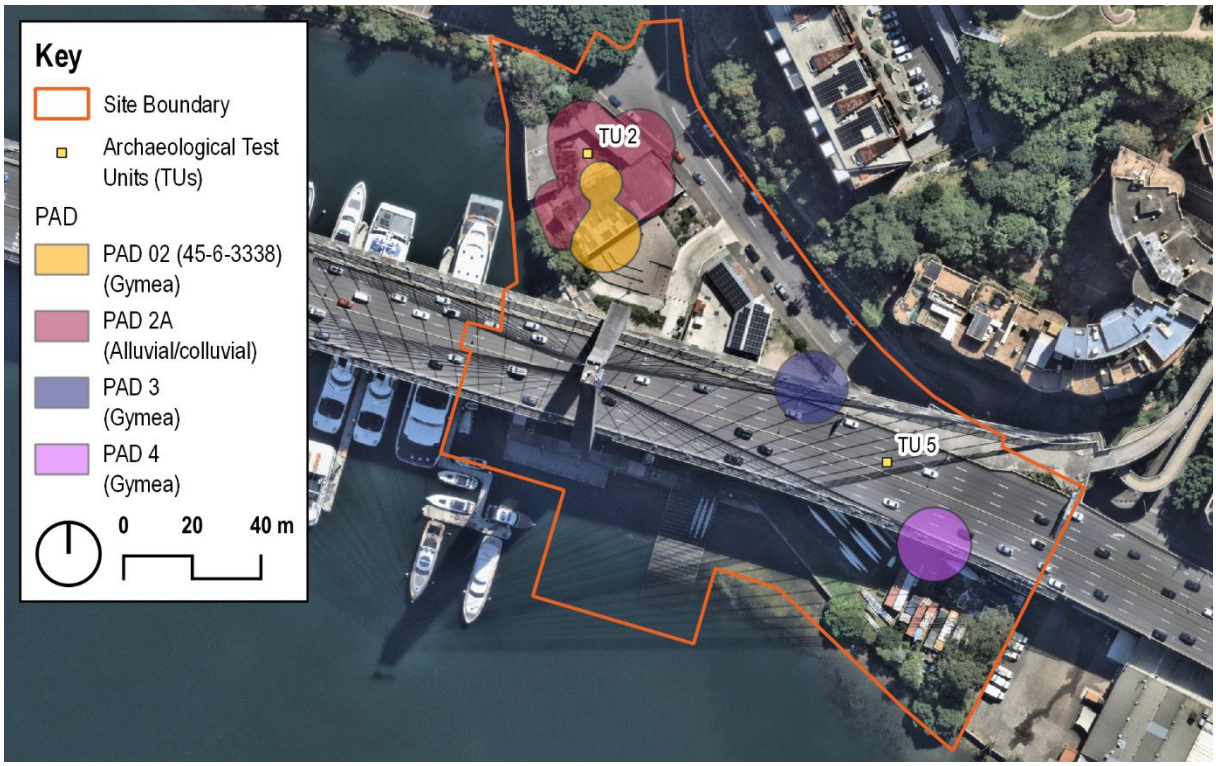

Figure 2.35 Locations of archaeologically excavated test units within the Bank Street site. (Source: Nearmap with GML overlay, 2023)

TU 2

TU 2 was placed in the northeast corner of Trench 02, where a colluvial sediment measuring approximately 0.75 by 1 metre was exposed, at a depth of approximately 1.05 metres. Trench 2 had to be situated slightly further northwest of the location proposed in the AACAM to facilitate access for machine excavation due to the spatially constrained nature of the courtyard space. As such, the trench was situated adjacent the projected interface between PAD 02 (suspected Gymea) and PAD 02A (suspected alluvial or colluvial soils), providing the opportunity to investigate the potential transition between these two areas of PAD. As a result, the closest borehole to the Trench was BHO5/MW05 (2012), which identified brown sandy alluvial or colluvial soils at a depth of 1.1 to 4.2 metres.

The colluvial sediment identified in TU 2 had been truncated by historical fills to the southwest. Seven spits were dug, noting that spit 7 was extended to account for the steeply sloping nature of the base of the pit and was 200 millimetres. Stratigraphically, the test unit consisted of three distinct soil units sloping southwest towards the shoreline. The soil profile in TU 2 comprised (Figure 2.36):

- Upper unit: Dark grey-brown silty sand with frequent slag and sandstone fragment inclusions. Present only in southwest of test unit. Maximum unit thickness of approximately 270 millimetres.
- Middle unit: Grey-brown silty sand colluvial sedimentary layer. Brown mottling evident. Present in southwest portion of test unit. Approximately 50–70 millimetres thick.
- Lower unit: Dark grey sand colluvial sedimentary layer, no brown mottling, with root bioturbation. The presence of ceramic and Aboriginal worked flint within this deposit demonstrates some degree of historical disturbance. Maximum unit thickness of approximately 300 millimetres.
- Base: Pale yellow crushed sandstone layer, comprising unconsolidated sandstone chunks interspersed with a friable brownish yellow sand. Interpreted as a reclamation fill, or, less likely, a degraded natural weathered bedrock (C horizon).

One flint lithic was identified from the lower soil unit within spit 7 (see section 2.2.5 below). Due to the low density of artefacts identified and after consultation with the RAPs on site, no expansion was undertaken. Potential for expansion was also limited by the spatially constrained nature of 1–3 Bank Street, the location where the artefact was identified.

Three ceramic fragments (unworked) were also identified within this spit. The presence of post-1788 material within the lower layers of the test unit (ie flint, ceramic) suggests either historical disturbance (ie churning or mixing of soils) or, more likely, post-1788 deposition of the material. The soils of TU 2 likely represent layers of post-1788 colluvium, potentially introduced to the site because of increased soil movement from upslope on the peninsula, triggered by land clearance following colonisation.

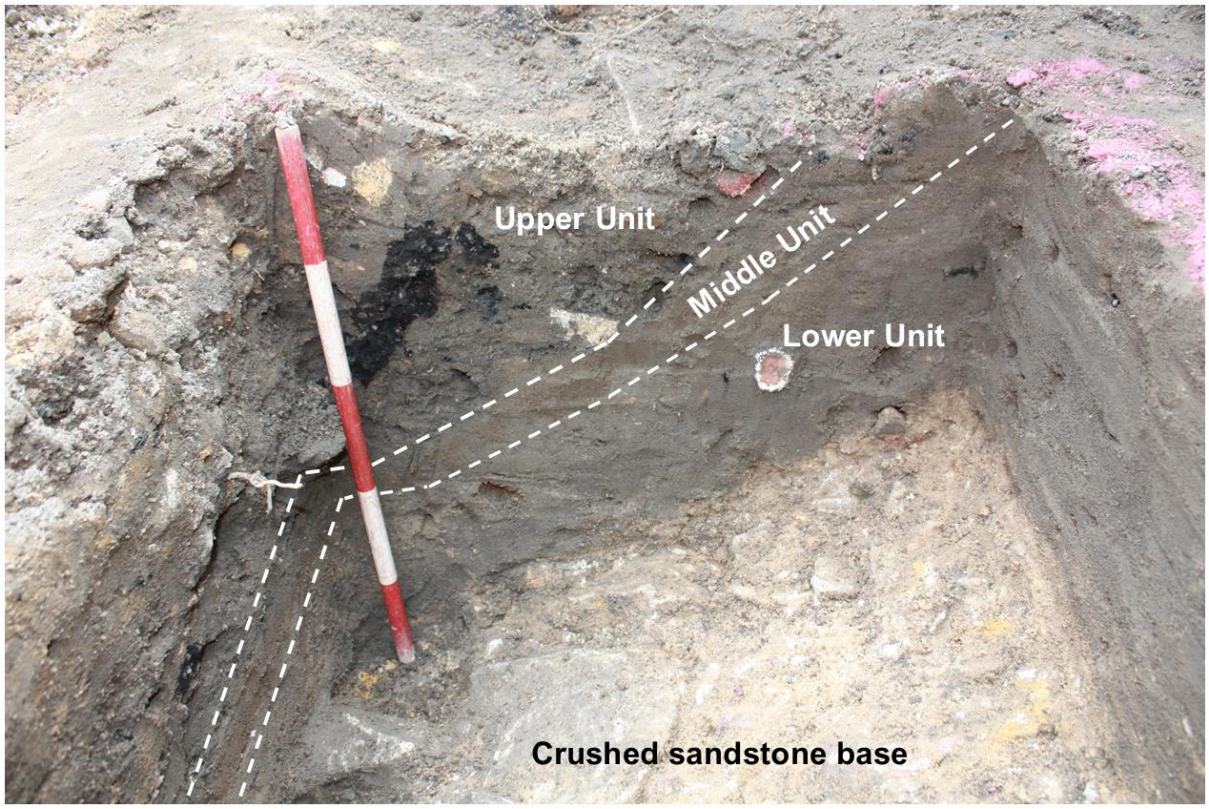

Figure 2.36 Annotated northwest section of TU 2, showing all three sloping soil units overlying the crushed sandstone base.

Figure 2.37 TU 2 pre-excavation, within the north end of Trench 5. Facing west. 0.5m scale.

Figure 2.38 TU 2 at the end of excavation, facing northwest. 0.5m scale.

Figure 2.39 TU 2 at the end of excavation, northeast section. Due to the slope of the deposits, this section exclusively comprises the colluvial sediment units. 0.5m scale.

Figure 2.40 TU 2 at the end of excavation, showing position within Trench 2, facing west. 0.5m scale.

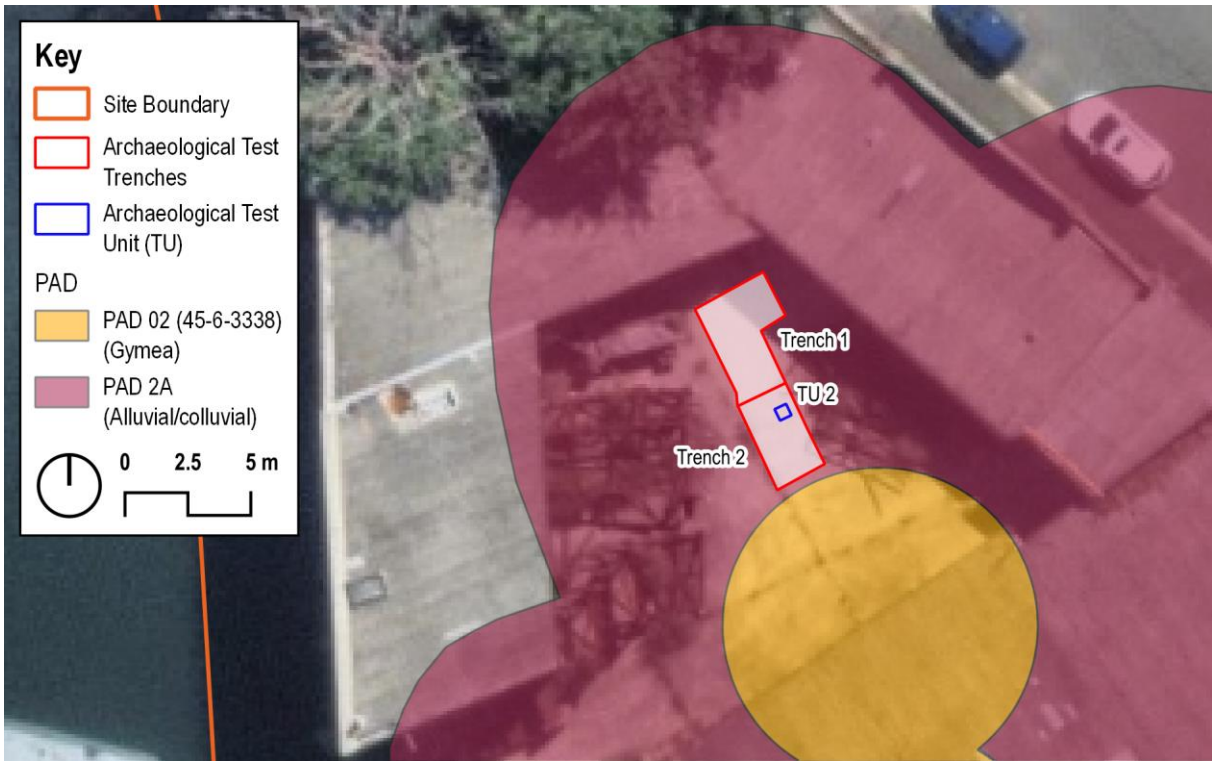

Figure 2.41 Detail of location of TU 2 within 1–3 Bank Street. (Source: Nearmap with GML overlay, 2023)

TU 5

TU 5 was a 500 by 500 millimetres trench excavated in 50-millimetre spits. The TU was placed in the southeastern corner of Trench 05 after 0.83 metres of historical fills were machine excavated, exposing an isolated deposit with suspected PAD, measuring approximately 1.1 by 1.1 metres. The deposit had been truncated by historical fills to the

northeast and northwest. The deposit may extend to the southwest and southeast of Trench 5. Eleven spits were excavated, noting spit 11 was extended to account for the uneven depth of the base of the pit. The test unit was excavated to a maximum depth of 600 millimetres. Stratigraphically, this test unit consisted of three distinct soil units overlying an uneven sandstone base. The soil profile of TU 5 comprised (Figure 2.42):

- Upper unit: Brown sandy silt with occasional red-brown mottles. Rare sandstone rubble inclusions. Due to its similarity in colour and texture to the lower unit, this soil was interpreted as a redeposited soil/sediment, potentially a Gymea soil, in a post-1788 context. Maximum unit thickness of 240 millimetres.
- Middle unit: Layer of reddish-yellow crushed friable sandstone. Interpreted as an introduced layer, in a post-1788 context. Unit approximately 110-millimetres thick.
- Lower unit (predominantly visible in southwest of test unit): Brown sandy silt with noticeable clay content, similar in colour and texture to the upper unit, but with a higher clay content. Interpreted as a Gymea B horizon, subject to disturbance due to the presence of glass and introduced gravels. In the northeast portion of test unit, this layer has a diffuse boundary to the underlying degraded sandstone bedrock, with mixing of the layers evident. The boundary between the layers was cleaner and more delineated to the southwest. Unit was approximately 120-millimetres thick (maximum).
- Base: Degraded sandstone bedrock with an uneven surface. Comprised blocks of reddish-yellow sandstone interspersed with deeper pockets of friable sandy material, interpreted as degraded bedrock (C horizon).

No Aboriginal artefacts were identified within TU 5. However, the presence of post-1788 materials, namely flint gravels (unworked), glass fragments, and a metal bolt incorporated throughout the depth of the test unit (ie within spits 1–10 inclusive, no materials identified in spit 11) indicates that the soils within TU 5 have been subject to disturbance. This is likely in the form of truncation and mixing of soils, resulting in a soil profile with low condition and low integrity.

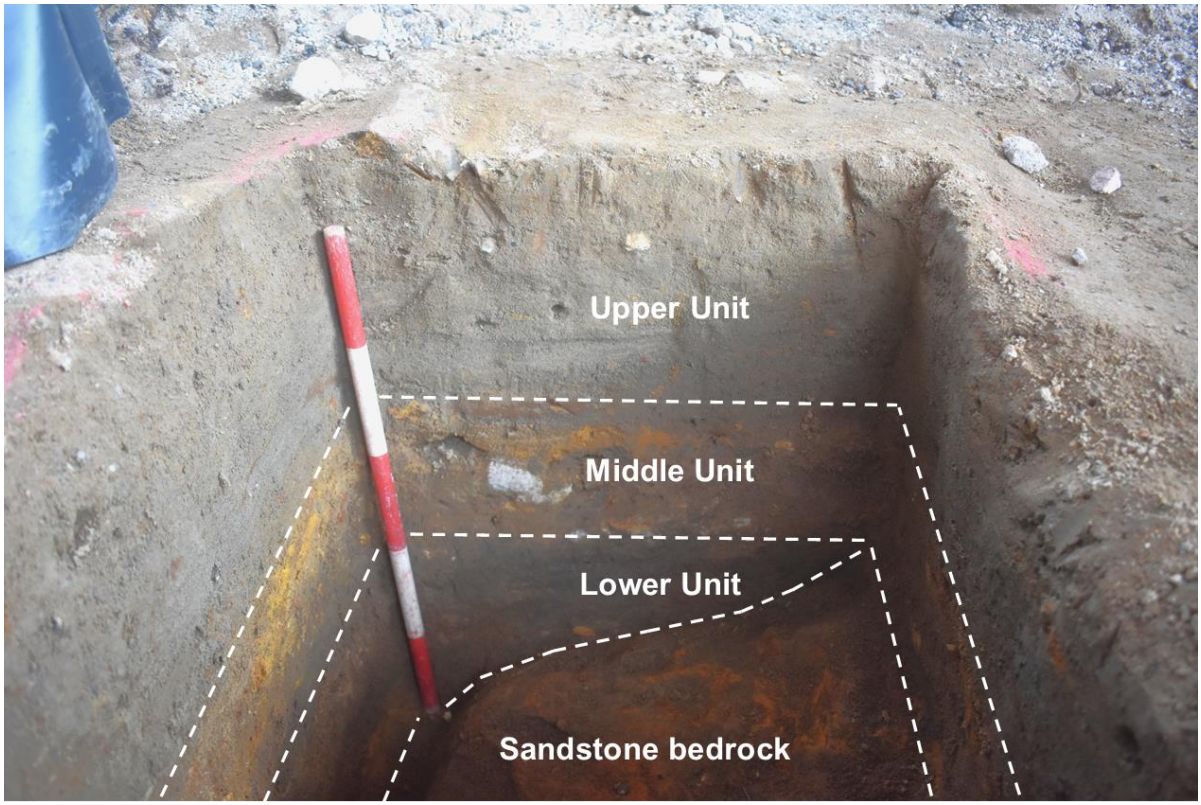

Figure 2.42 Annotated southwest section of TU 5, showing soil units overlying degraded sandstone bedrock.

Figure 2.43 TU 5 pre-excavation, within the southern end of Trench 5. Facing southwest.

Figure 2.44 TU 5 mid-excavation (upper unit), facing northeast. 0.5m scale.

Figure 2.45 TU 5 mid-excavation, facing southeast, showing transition to crushed sandstone layer (middle unit) in section. 0.5m scale.

Figure 2.46 TU 5 at the end of excavation, facing southeast. 0.5m scale.

Figure 2.47 TU 5 at the end of excavation, southeast section. 0.5m scale.

Figure 2.48 TU 5 at the end of excavation, southwest section. Note continued grey-brown silty clay below crushed sandstone layer. 0.5m scale.

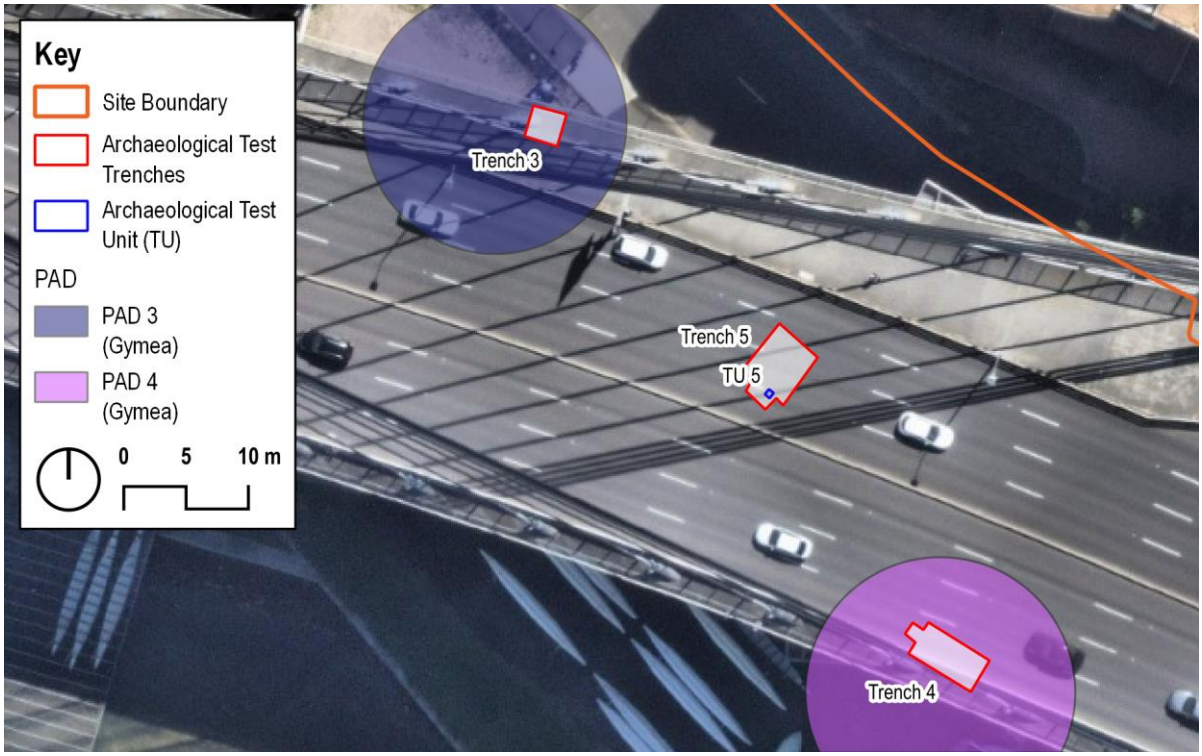

Figure 2.49 Detail of location of TU 2 within 1–3 Bank Street. (Source: Nearmap with GML overlay, 2023)

2.2.3 Soil conditions (integrity and condition)

Test excavations confirmed that the integrity of PAD deposits has been significantly compromised by previous construction and development within the site. Several metres of imported material were observed in all trenches, with small, isolated pockets of PAD deposits only identified in Trenches 02 and 05. Where PAD deposits were identified, they were highly disturbed, as demonstrated by the presence of post-1788 material, such as flint (worked and unworked), glass, ceramic and metal, and had been truncated by historical activities. As such, deposits across the site held low condition and low integrity. The extent of historical disturbance significantly reduces the potential for intact Aboriginal archaeological material across the site.

TU 2 was situated adjacent to the projected interface between PAD 02 (Gymea B horizon soils) and PAD 02A (alluvial or colluvial deposits). Suspected Gymea soils identified in geotechnical testing were described as being dark greyish brown mottled dark yellowish brown sandy silty clay (potentially corresponding to gy2 of the Gymea soil landscape), while deposits described as alluvial or colluvial in nature were described as being fine grained sands, brown, traces of clays, sand mottles and compressed sand plates throughout, overlying sandstone bedrock.[10] Observed soils in TU 2 during the 2023 archaeological excavation comprised layers of dark grey brown to dark grey silty sand to

sand. This description appears to be more aligned to the description of the alluvial or colluvial soils identified in geotechnical testing, as opposed to Gymea soils. This is consistent with the borehole results within this area, particularly with reference to BH05/MW5, noting that due to the sharply southwest sloping nature of the deposit, the deposit extends significantly deeper in the location of BH05/MW5 than in TU 2. The presence of post-1788 material within these deposits suggests that the colluvium is likely post-1788 in date, or less likely, was reworked/churned post-1788, introducing post-1788 material deep into the soil profile.

TU 5 was situated in a previously untested area. Deposits observed in the 2023 archaeological excavation comprised layers of brown sandy silt, which were identified as being reworked Gymea B horizon soils, interspersed by an introduced crushed sandstone layer. This was based on descriptions of deposits interpreted as Gymea B horizon soils identified across the Bank Street site during geotechnical investigations,[11] and due to the presence of the introduced sandstone layer and post-1788 material throughout the soil profile of the test unit, suggesting extensive reworking in the form of churning or redeposition of soils.

2.2.4 Observed Aboriginal sites

A single artefact was identified during test excavations, comprising a flint flake located in spit 7 of TU 2, in the location of PAD 2 (1-3 Bank Street). This artefact has been registered to AHIMS as a component of the existing AHIMS site 45-6-3338 (The Bays Precinct PAD02). This has updated the site features of 45-6-3338 to artefact and PAD.

Further analysis of the artefact and the remainder of the assemblage is outlined in Section 2.2.5 below. The assemblage is currently being stored in a secure location in the GML offices. Long-term management of the artefact will be determined with the project RAPs.

Table 2.3 Stone artefacts recovered during excavation.

TU number	Spit	Raw material	Colour	Description	Post-depositional taphonomic modification	Cortex	Figure(s)
TU 2	7	Flint	Pale greyish-yellow	Flake; 11mm long by 16mm wide, 3.5mm thick.	Damage to lateral margins and platform	None	Figure 2.50
					Total Aboriginal objects:		**1**

2.2.5 Artefact and assemblage analysis

A singular Aboriginal object was recovered during the test excavations, comprising a flint flake artefact. All other stone (gravel) and glass material identified (ie the balance of the assemblage) was analysed and did not show any evidence of working or use by First Nations people. No shell was identified in the assemblage.

Artefact

A flake of pale flint was recovered from TU 2 spit 7 (Figure 2.50). The flake measures 11-millimetres long by 16-millimetres wide at midpoint of length, and 3.5-millimetres thick at the intersection of length and width. It is a maximum of 19 millimetres in size and weighs 0.9 grams. It has a step termination. The platform is damaged, but was probably a smooth plain surface. A fracture on the bulb of the ventral surface is probably an undetached eraillure flake. Damage to the platform extends onto the proximal end of the dorsal surface. Both lateral margins show minor damage. Damage appears to be post-discard.

Figure 2.50 Flint flake from TU 2 spit 7. Left image shows ventral surface, right image shows dorsal surface. The scale is 5mm long in 1 mm increments. (Source: GML Heritage 2023)

Gravels

Gravels were recovered from TU 5. These are mostly of flint, but include some glass and ceramic fragments. Most are fairly small (<30mm in length) (Figure 2.51). While some pieces show signs of conchoidal fracture—curving surfaces, ripple marks—they differ in several respects from the flake in TU 2. They tend to be thick blocky pieces, often with irregular crushing along margins. Where conchoidal partial scars are present, they tend to be small and show haphazard placement. A piece of dark glass (lower right of Figure 2.51) shows similar crushing that is unlikely to be related to tool use.

Figure 2.51 Gravels from TU 5 spit 1 (left image) and gravels and glass TU 5 spit 2 (right image). The scale is 30mm long in 10mm increments. (Source: GML Heritage 2023)

A larger block of flint was recovered from Spit 7, together with smaller gravels, a piece of igneous mechanically-fractured rock and a piece of metal. This block is described briefly here, but analysis has identified that this is not an Aboriginal core (object).

It measures 61 millimetres in maximum size, with block measures of 57 millimetres by 35 millimetres and 31 millimetres. It weighs 83.6 grams. It appears to have multiple unifacial platforms with series of impacts along the edges of surfaces. However, these are high-angle to obtuse, with numerous step terminations, and scars terminating at flaws. Numerous impact points and crushing also occur along other angular margins (some obtuse), indicating repeated battering in a manner not suitable for the detachment of functional flakes. Some surfaces also appear less weathered than others, indicating more than one episode of breakage. Mechanical breakage and/or breakage during construction work is the most likely explanation for fractures on this rock.

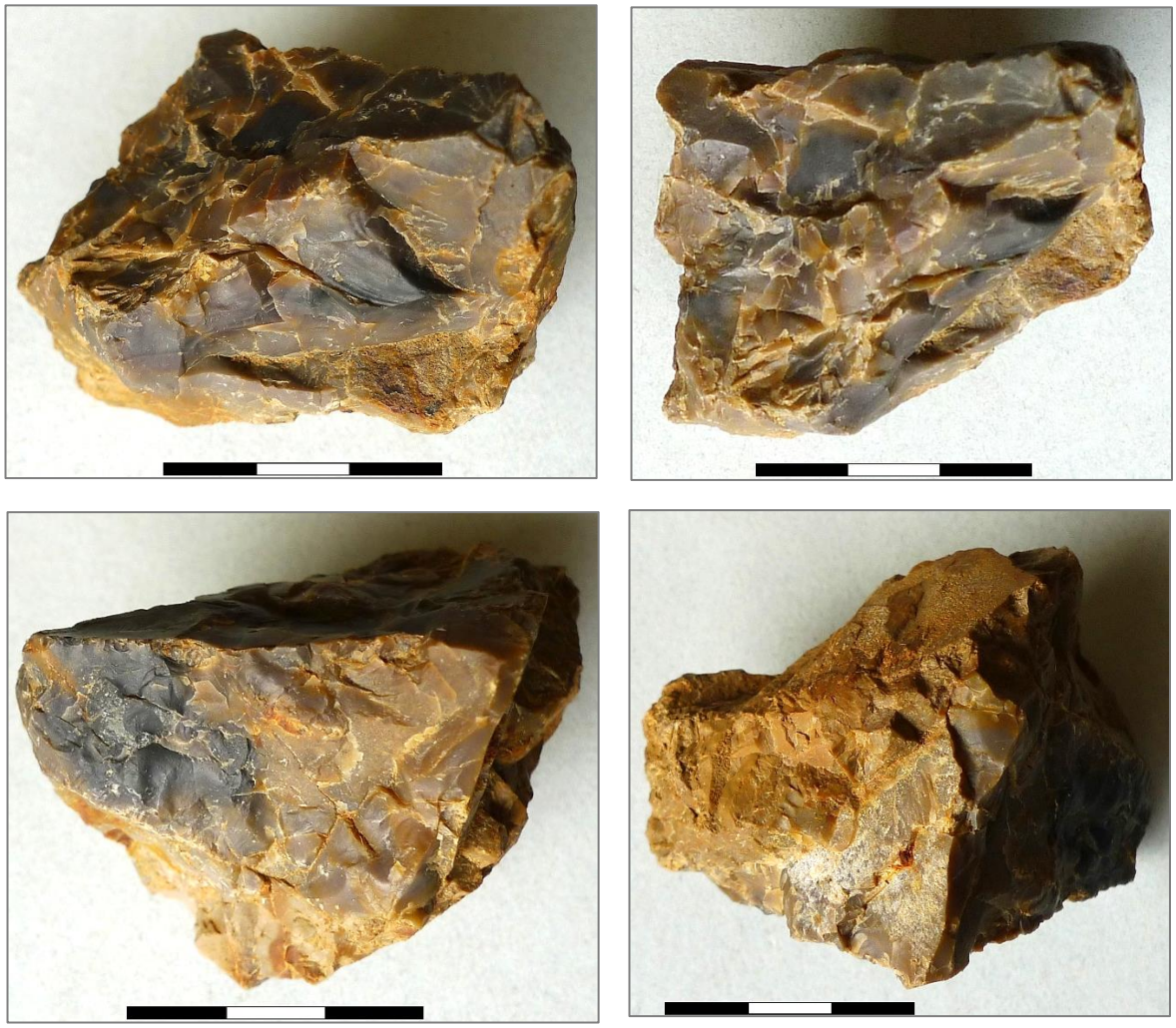

Figure 2.52 Blocky flint piece from TU 5 spit 7 (left image). The scale is 30mm long in 10mm increments. (Source: GML Heritage 2023)

2.2.6 Constraints

Several constraints were identified both prior to and during test excavations. These constraints were navigated in the field. Constraints included:

- Inaccessible areas of PAD—as identified within the AACAM, the standing buildings at 1–3 Bank Street overlie areas classified as PAD. As these buildings remained extant at the time of excavation, excavation of areas of PAD beneath the buildings was not possible.
- Depth of the deposits—geotechnical testing identified potential remnant soils with PAD in several locations, at depths of between 0.5 metres and 3.05 metres. However, PAD within the locations of testing commonly commenced at a depth of 1.8 metres or below, with only one location, Trench 1, expected to intersect PAD at depths of less than 1 metre. Deep excavation posed hazards associated with trench collapse, which

was mitigated by benching the excavation where depths of excavation exceeded 1.5 metres. This did, however, create demands on the available space, due to the required trench width to bench safely.

- Shared and spatially constrained workspace—the site was significantly spatially constrained. Within 1–3 Bank Street, testing was only feasible within the courtyard space. However, this space was limited due to the presence of heritage objects, including former coal loader infrastructure stored within the courtyard space. 4–19 Bank Street was a shared zone, and remained in operational use by DBNSW and the Blackwattle Bay Marina. Furthermore, a pop-up sports court was being established within this area during excavations, meaning the location of Trench 3 was shared with Regal Constructions. As a result of constrained or shared space, the size and positioning of trenches was limited to ensure all parties maintained operational use of the site.
- Pop-up sports court—as identified in the AACAM, a pop-up (temporary) sports court was proposed within the south of the DBNSW compound. This court partially overlays the location of PAD 3. The court was in construction during the archaeological excavations. As such, Trench 3 had to be offset to the east of the location of BH11 to avoid impacts to the court.
- Relocating borehole locations—the archaeological testing locations were based on the locations of geotechnical boreholes dug in 2012 and 2023. However, these locations had been recorded by hand-held GPS, which involves an inherent margin of error. A surveyor was engaged to relocate the location of the boreholes based on coordinates derived from prior reporting, but the margin of error associated with hand-held GPS recording may explain why natural soils were not encountered in Trenches 1, 3 and 4, despite natural soils being identified in the bore logs.
- Potential contaminants—several potential contaminants had been identified during contamination testing.[12] A JBS&G representative was onsite for the duration of excavation to monitor for the presence of potential contaminants, and to make trenches safe for hand excavation in the suspected or actual presence of contaminated material.

2.3 Analysis and discussion

The present-day landform within the site comprises a flat to very gently inclined southwards slope. However, this landform is the result of extensive land modifications to flatten and reclaim the shoreline. The original landform of the site likely comprised a moderately to steeply inclined benched slope dominated by outcropping Hawkesbury Sandstone bedrock descending the peninsula towards the shoreline, forming a rocky foreshore.

As a result of the extensive landform modifications due to sandstone quarrying, industrial usage of the site, and land reclamation, deposits with PAD were observed to exist only in spatially discrete and isolated pockets within the Bank Street site. Depths of these deposits varied, likely reflecting the stepped nature of the original landform as it descended to meet Blackwattle Bay.

Only TU 2 returned an Aboriginal archaeological signature in the form of a single worked flint flake, and as such, only the colluvial deposit in the location of this TU may be confirmed to be an archaeological deposit. However, the testing program has demonstrated that deposits with PAD (ie truncated and/or reworked remnant Gymea soils, and/or colluvium) are spatially isolated to small pockets capped by historical fills, which may be present across the site. This has been demonstrated by TU 5. The presence of reworked Gymea soils in this location may be taken to suggest that small, localised deposits with remnant natural soils may occur across the wider site. Additionally, the difficulties in relocating deposits with PAD in the locations of Trench 1 (BH06), Trench 3 (BH11), and Trench 4 (BH14) further reflect the spatially constrained nature of the deposits with PAD. The soils intercepted by geotechnical testing may remain within the Bank Street site as, due to their highly spatially constrained nature, they may not have been intercepted by the testing program. However, the absence of deposits with PAD in these locations may be used to refine the boundaries of the PADs in these locations. PADs 3 and 4 comprise an arbitrary 10-metre buffer centred on borehole locations that intercepted deposits with PAD. The testing program indicates that, on the basis that these soils could not be accurately relocated, these deposits are likely to be significantly smaller in size, and not extend to the entire proposed footprint of each PAD.

Inferring human behaviour activities on the site is difficult due to the limited archaeological evidence. As outlined above, the landscape was found to be heavily disturbed, which has affected the presence of stone artefacts. The sole artefact find was a flint flake. Flint is not a naturally occurring material within Sydney,[13] and should be understood to be a contact-period (ie post-1788) artefact. Flint was transported to Sydney from Britain as ballast in ships, before being discarded on arrival in the colony.[14] First Nations people recognised that flint was a workable material, and opportunistically adopted its use for manufacturing stone artefacts using traditional manufacture techniques. Due to the extensive amount of flint material (predominantly unworked, ie not artefactual and frequently small in size) within the Bank Street assemblage, the flint material may have been discarded on site by European colonists and was subsequently used by First Nations people.

Due to the level of disturbance found across the site and the presence of the single artefact, the remainder of the Bank Street site has a low potential to contain Aboriginal objects. Artefacts present would likely comprise background scatter resulting from random and unpredictable discard or loss of artefacts. These artefacts would likely be

restricted to discrete pockets of shallow remnant soils preserved in locations across the site beneath capping layers of introduced historical and modern fills. Artefactual material may include stone artefacts; contact period artefacts such as worked flint, glass, or metal; and may include shell material (ie shell middens).

2.3.1 Research questions

The first objective of the archaeological test excavation within the site was to undertake excavation that helps clarify, characterise and describe the archaeological potential of soil horizons across the site. The second objective was to determine whether these soil profiles contain archaeological materials and to assess them within a regional context.

To achieve these two objectives, research questions were established to guide the archaeological process and provide the basis for questioning the data collected. Research questions included:

1 What are the characteristics of soil horizons across the site?

   a. How has the land use history impacted the site and survival of soils, and thus archaeological material?

   b. How do areas of remnant Gymea soils interface with alluvial/colluvial soils identified during geotechnical investigations? What do these differing deposits tell of different depositional or formation events?

2 Is an archaeological deposit present?

   a. What is the nature of the archaeological deposit?

   b. Is there archaeological evidence that can be dated (by carbon dating, optically stimulated luminescence and/or relative dating)?

      i. If so, how old is the deposit? Does this correspond to assumptions regarding land use/inundation in relation to sea level fluctuations?

   c. Other than stone artefacts, what evidence—if any—is present for Aboriginal occupation and/or use of the site? Is midden material present and, if so, what may be understood of food resources used and subsistence practices?

3 What is the general nature of stone artefacts recovered from the site? How can the stone artefact assemblage be characterised?

   a. What raw materials are represented in the stone artefact assemblage?

   b. Can any information be ascertained from the stone artefact assemblage regarding the intensity of stone artefact reduction and discard?

   c. Can a difference between stone artefact deposits be identified by different strata in the assemblage over time? If so, what is the nature of that difference?

4 How can the deposit be interpreted?

   a. Does the archaeological deposit vary spatially or in nature between Gymea and alluvial/colluvial soils? How?

   b. What does the archaeological deposit tell us about Aboriginal use of this specific landscape?

5 Can the archaeology be interpreted in a regional context?

   a. Can the deposit be related to a wider cultural landscape?

      i. How does the archaeological deposit relate to comparable sites in the surrounding region, eg the KENS[15] site?

   b. What is the source of the artefactual stone? How does this correlate with current regional research and knowledge of stone resources?

6 Can the presence of Aboriginal archaeological evidence dating to the 'contact' period (post-1788) be distinguished or confirmed by examining the archaeological resource present within the site? Is there evidence of post-contact Aboriginal use of the site?

7 Is the archaeological deposit culturally significant?

   a. What is the heritage value of the deposit, both scientifically and culturally?

   b. How does the Aboriginal community view and value the deposit identified?

2.3.2 Addressing the research questions

Research question 1: soil horizons across the site

The archaeological test excavation supports previous interpretations of the Bank Street Park site's soils and sediments. In 1788, the site would have been characterised by a series of bedrock ledges and benches leading down to the eastern shoreline of Blackwattle Bay. Between bedrock outcrops, small discontinuous pockets of shallow to moderately deep Gymea soils would have been found with alluvial sediments deposited along the foreshores during flood events or high tide. Colluvial deposits would have been deposited at the base of slopes by gravity. The natural formation processes that form these deposits continued after colonisation. For example, land clearing in the surrounds would have resulted in increased erosion and thus increased depositional rates of colluvium. In any case, these types of deposits (ie post-1788 deposits) have proven Aboriginal archaeological sensitivity.

The physical character of the Bank Street Park site has been modified to the point that deposits associated with the original shoreline, including any Aboriginal archaeological signatures, are confined to small areas and buried beneath metres of historical fills. These developments have significantly compromised the integrity of PAD deposits. PAD

deposits (Gymea soils, or natural colluvial and/or alluvial sediments) have only been identified within seven of the eighteen geotechnical and contamination borehole investigations within the site (Figure 2.6). During our investigations, PAD deposits were only identified in Trenches 2/TU 2 and Trench 5/TU 5. In both cases, these deposits had been truncated by historical fills and had been clearly altered by historical activities prior to truncation, evidenced by the presence of introduced material such as slag or sandstone fragments.

However, the identification of PAD deposits and the recovery of a flint artefact from TU 2 does support previous interpretations of the Bank Street Park site's soils and sediments.[16] These interpretations have concluded that low densities of Aboriginal archaeological material may be retained within small, discontinuous pockets of buried Gymea soils, alluvium or colluvium. It was also noted that, should these pockets be identified, the high levels of historical disturbance significantly reduce the potential for intact Aboriginal archaeological material. Our findings support these interpretations of the soils and sediments across the site.

Research question 2: nature of the archaeological deposit

Four areas of PAD were ascribed to the Bank Street site on the basis of geotechnical testing.[17] Archaeological test trenches were placed to correspond to these locations, with an additional trench placed in a previously untested area to investigate for the potential for remnant natural soils.

An archaeological deposit was confirmed to be present within the location of Trench 2/TU 2 (corresponding to PAD 2) on the basis of the presence of the flint artefact. Additionally, one area of reworked remnant Gymea soil was identified in the location of Trench 5/TU 5 (previously untested area). However, no artefacts were identified in this location. All other areas of archaeological investigation did not encounter intact soils. While the presence of an archaeological deposit could be confirmed only in the location of Trench 2/TU 2, the presence of additional areas of remnant soils across the site with the potential to contain subsurface Aboriginal artefact deposits cannot be ruled out. The nature of the remnant soils within the Bank Street site are highly spatially constrained due to the stepped nature of the sandstone bedrock, resulting in naturally discontinuous pockets of Gymea soils, and due to the varying extents and depths of historical disturbance across the site, resulting in truncation and mixing of soil profiles.

The nature of the archaeological deposit in the location of Trench 2/TU 2 is highly spatially constrained. The deposit is moderately deep (maximum depth of 500 millimetres), and is interpreted to comprise post-1788 colluvium. This is understood via the presence of the flint artefact in Spit 7 (approximately 350 millimetres in depth), suggesting either post-1788 deposition of the deposit, or churning or mixing post-deposition to incorporate the post-1788 artefact relatively deep within the soil profile.

This is not unexpected due to the intensity of historical use and associated disturbance of the site, and parallels may be drawn to the KENS site,[18] which similarly displayed extensive mixing and truncation of remnant Gymea soils due to historical disturbance, and the introduction of post-1788 colluvium to the site from deposition of massive sheet erosion originating upslope. As no carbon material was identified in the location of TU 2, the deposit cannot be scientifically dated. However, the deposit may be relatively dated on the basis of the presence of the flint artefact, which can only be post-1788 in age. As such, the archaeological deposit in the location of TU 2 may be taken to date between 1788 and the 1830s, following which the industrialisation and subdivision of the peninsula increased, likely resulting in the displacement of First Nations people from the area. In addition, the introduction of historical capping reclamation fills from the nineteenth century onwards, which overlie the colluvium, also constrains the age range for this deposit, suggesting it is likely late eighteenth to mid-nineteenth century in age.

No midden material (ie, shell, bone) was identified within the Bank Street site.

Research question 3: nature of the artefact assemblage

The artefact assemblage from the Bank Street site comprises a single worked flint artefact. As a result, any conclusions regarding the nature of First Nations use of the site are minimal. The presence of an isolated artefact find may be indicative of background scatter (ie, artefact discard or loss associated with infrequent or transitory use of the site). However, as the artefact is situated within colluvium, it is also possible that the artefact may have been moved downslope from an original discard point higher on the peninsula, along with the soil material the artefact is deposited within.

Research question 4: interpreting the archaeological deposit

The limited nature of the recovered archaeological deposit makes interpretation difficult. The flint artefact was identified within a colluvial deposit and, as such, may have been introduced to the site via colluvial processes, such as slope wash, and may not represent cultural activities that occurred within the site. However, the artefact is evidence of the continuity of traditional cultural practices by First Nations people on the Pyrmont Peninsula into the early to mid-nineteenth century.

Research question 5: regional context

The archaeological resource of the Bank Street site may be interpreted within the local context of the Sydney Harbour foreshore, particularly in association with the KENS site, and in a regional context across the wider Sydney region using the lens of the distribution of First Nations worked flint artefacts.

In terms of the local context, Bank Street may be compared to the KENS[19] archaeological site in the Sydney CBD, which was subject to Aboriginal and historical archaeological excavation in 2003. Similarly to the Bank Street site, the KENS site was situated on the

mid- to foot-slope of a ridgeline, extending to a rocky bay foreshore, with the western portion of the KENS site situated within the reclaimed tidal mudflat zone. Like at Bank Street, pockets of disturbed remnant Gymea soils were retained in pockets across the KENS site, truncated by historical disturbance. Remnant soils were frequently mixed, partially removed or capped by fill layers, as is also noted in the Bank Street excavation (see discussion of TUs 2 and 5). In addition, late eighteenth-century colluvium was identified at KENS, resulting from deposition of massive sheet erosion originating upslope. A significant volume of artefacts (n=952) was recovered from the KENS site in both remnant soils and overlying colluvium. No flint artefacts were recovered, but contact archaeology in the form of flaked glass artefacts was identified. Artefacts identified in truncated in situ soils showed chipping and heat damage, suspected to be from trampling and burning post-deposition in the early historical period. Similarly, the flint artefact from Bank Street showed signs of likely post-deposition damage, which did not appear recent (ie, not caused during archaeological excavation). This may be indicative of historical disturbance on the site.

Comparison should also be drawn between the Bank Street site and archaeological sites within Sydney, which also contain worked flint artefacts. While flint is not a stone type found in the geology of Sydney, and thus is comparatively uncommon in the archaeological record, flint is recorded in the artefact assemblages of several archaeological sites within the wider Sydney region, either in worked or unworked form. Where worked, the flint is sometimes attributed to being either British or First Nations in origin. British-worked flint is connected with gun flints or strike-a-lights, both of which present distinct forms and modes of manufacture, which are very different to flints attributed to being of First Nations worked origin. Relevant sites with flint in First Nations archaeological contexts include:

- Randwick Stabling Yard (RSY1), Randwick;[20]
- First Government House, Sydney CBD;[21]
- Arthur Phillip High School (AHPS) and Parramatta Public School (PPS), Parramatta;[22] and
- Former Defence Aerodrome at Schofields, Western Sydney.[23]

The Randwick Stabling Yard (RSY1) site in Randwick was archaeologically investigated by GML as part of the Sydney Light Rail development. The site is situated within the Botany Sand Dunes. Excavations resulted in the recovery of 2,400 flaked stone artefacts and five flaked glass artefacts. Most of the stone artefacts were composed of flint, which was identified via portable X-ray fluorescence analysis as originating from the tidal banks of the river Thames in London, England. Nodules and pebbles of flint were understood to have been transported to Sydney as ship's ballast, then were collected by First Nations people, who transported the material to Randwick, beyond the fringes of the early colony at Sydney Cove. The material was then worked using a bi-polar flaking manufacture process. The site was interpreted as a primary stone reduction and working space, and

was used for flint artefact manufacture between 1788 and 1830, prior to formalised use of site as an early racecourse.

Historical archaeological excavations conducted at the site of the first Government House within the Sydney CBD uncovered stone, bone and glass Aboriginal artefacts that were subject to analysis in 1993 and 2016. The assemblage comprised eighteen stone artefacts, seven worked glass artefacts and two potential bone points. Of the stone artefacts, fourteen were of flint. Flint pieces included flaked artefacts, possible flakes and unworked nodules. Some flint featured potential use-wear, indicating usage of the artefacts. The source of the flint material was understood to have been imported from Britian, potentially in the form of military gunflint[24] or as ship's ballast that was subsequently reworked by First Nations people.

The AHPS and PPS sites in the Parramatta CBD were archaeologically excavated by GML between 2017 and 2020. The sites were situated across Blacktown and Birrong soils, and the Parramatta Sand Body. Several contact period artefacts were identified during archaeological investigations, including worked 'black' glass artefacts and two flaked (worked) flint artefacts. The worked flint comprised one flint nodule flaked as a core and a small broken flake of flint. The flint core material was suggested to have originated from Brandon, England, while the flint source of the broken flake was suspected to be the Thames River flints.

The Schofields Aerodrome site in Quakers Hill, within the Blacktown LGA, was archaeologically excavated by GML in 2017. Contact period artefacts were identified in one location within the investigation area and comprised worked 'black glass', and ceramic and flint artefacts. The flint artefacts comprised two worked flint lithics and an additional third unworked flint piece. The two worked flint artefacts were intentionally knapped and displayed evidence of use-wear. Portable X-ray fluorescence analysis established that the flint was introduced to Sydney from England. It was understood that the material arrived at the investigation area via trade and exchange by First Nations people after the flint was imported as ship's ballast.

The presence of First Nations worked flint at these sites indicates that flint material was recognised by First Nations people as having properties suitable for traditional use, while the presence of the artefacts within the assemblages of the above sites provided the ability to recognise and understand post-1788 archaeological contexts. All flint artefacts identified within the above sites were identified as having a British origin (ie, the flint used and worked by First Nations people was imported from Britain). Due to the absence of naturally-occurring flint resources within the Sydney region, the flint identified at the Bank Street site is likely to similarly originate from Britain, and was transported to Sydney as ship's ballast post-1788, before being collected and worked by First Nations people. Further analysis would be required to identify the precise source of the flint material.

In terms of the wider cultural landscape of the Pyrmont (*Pirrama*) peninsula, drawing conclusions regarding the Bank Street site is challenging due to the sparse nature of the archaeological resource recovered during testing. Pyrmont was not intensively developed by Europeans until the 1830s to 1840s, with the peninsula retaining a strong First Nations presence up to 1830s.[25] The presence of a definitive post-1788 artefact, namely the worked flint flake, may attest to the ongoing presence of First Nations people on the Pyrmont peninsula following European invasion and colonisation, and the continued use of traditional artefact manufacture processes, albeit on an imported material.

Research question 6: 'contact' period archaeology

The presence of the flint artefact recovered from the Bank Street site, showing distinct evidence of First Nations manufacture, provides evidence of post-contact Aboriginal use of the Pyrmont Peninsula area. As outlined above, First Nations people maintained their presence in the Pyrmont/*Pirrama* peninsula into the 1830s. The presence of the flint artefact may indicate First Nations use of the Bank Street site during the contact period. The flint artefact is, however, an isolated find in a disturbed or potentially displaced soil context. As such, definitive conclusions regarding the nature of First Nations use of the Bank Street site cannot be made.

Research question 7: significance

Scientifically, as an isolated find, the flint artefact recovered has limited research potential, as site-wide patterns cannot be derived from a sole data point. However, further research could be undertaken into the origin of the flint material within Britain.

Discussion with representatives of the RAPs indicated that the site holds significance, particularly in the context of the comparative rarity of retained potential Aboriginal sites in foreshore contexts within the Sydney CBD, due to extensive disturbance and land reclamation.

Extensive consultation with the First Nations community has also occurred as a component of the park design. Outcomes are summarised in the Bank Street Park Phase 1 Community Engagement Outcomes Report (Cred Consulting) and Bank Street Park (Tjerruing Park) Designing for/of/with Country First Nations Consultation Summary (Greenshoot Consulting and Greenaway Architects).[26] Discussion of the cultural context of Blackwattle Bay is also detailed in the Connecting with Country Framework for Tjerruing Blackwattle Bay (Bangawarra).[27] These reports have identified key themes and values relating to the site both pre- and post-colonisation. Some key values and themes connected with the Bank Street site include:

- Gadigal womens' mastery of fishing;
- pre-colonisation environment—meeting of salt (harbour) and freshwater (Parramatta River, Blackwattle Creek) waters, and native flora and fauna; and

- connection to the Blak Diggers in association with the ANZAC Bridge, which is situated above the site.

The cultural values of the artefact and the views of the community regarding the significance of the site are discussed further within the project ACHAR (see Section 5).

The artefact should be appropriately stored and managed until it can be repatriated. The method for repatriation should be determined in consultation with and in accordance with the wishes of the RAPs.

2.3.3 Summary

Archaeological test excavations at the Bank Street site aimed to investigate four areas of PAD ascribed on the basis of geotechnical testing. Five test trenches, four corresponding to the locations with PAD and an additional untested location, were machine excavated, with the intent of intercepting deposits with PAD. Deposits with PAD were only identified in two locations, Trenches 2 and 5. Test units measuring 500 by 500 millimetres were subsequently hand excavated in these locations, for a total of two test units, or 0.5m^2 hand excavation. Deposits were then wet-sieved and all potential cultural material retained for analysis.

Following test excavation, all recovered stone materials were subject to analysis by one of GML's stone artefact specialists, leading to the identification of a single Aboriginal stone object (artefact), a flint flake. The artefact was recovered from TU 2. Recording of all relevant attributes was undertaken in a comparable manner to other studies from the region in accordance with Requirement 19 of the Code of Practice and widely used Australian stone object analysis techniques.[28] This technical report was prepared to address the research questions presented above.

On the basis of the identified Aboriginal object (flint flake), the presence of an archaeological deposit has been confirmed, comprising a colluvial, likely post-1788, deposit within 1–3 Bank Street. Further (likely spatially constrained) deposits with PAD may be retained beneath introduced historical fill layers across the site. The Bank Street site should be considered to hold low potential for low density artefact deposits or isolated stone artefact finds. There is also a low potential for midden material due to the foreshore context, although no shell material was identified during test excavations.

GML undertook landscape analysis and all other reporting. All results were analysed with the assistance of GIS, and consequential mapping of sites, places, landscapes and heritage values was GIS-based.

Heritage management recommendations and further values assessment are provided in the project ACHAR, to which this report forms an appendix.

In accordance with the project SEARs and Heritage NSW requirements, this report was provided to the RAPs for a period of 28 days between 25 October 2023 and 22 November 2023 for review and comment. Comments received on the ACHAR and ATR are presented in Section 3 of the ACHAR.

2.4 Endnotes

[1] GML Heritage, Aboriginal Archaeological and Cultural Heritage Assessment Methodology, report prepared for Infrastructure NSW, August 2023.

[2] City Plan Heritage, Draft Archaeological Monitoring of Site Contamination Assessment of 1–19 Bank Street, Pyrmont, NSW, report prepared for Infrastructure NSW, May 2023.

[3] Artefact Heritage, Blackwattle Bay State Significant Precinct Study Aboriginal Cultural Heritage Assessment Report, report prepared for Infrastructure NSW, January 2021.

[4] Artefact Heritage, Blackwattle Bay State Significant Precinct Study Aboriginal Cultural Heritage Assessment Report, report prepared for Infrastructure NSW, January 2021.

[5] GML Heritage, Historical Archaeology Work Method Statement, report prepared for Infrastructure NSW, September 2023.

[6] City Plan Heritage, Draft Archaeological Monitoring of Site Contamination Assessment of 1–19 Bank Street, Pyrmont, NSW, report prepared for Infrastructure NSW, May 2023.

[7] City Plan Heritage, Draft Archaeological Monitoring of Site Contamination Assessment of 1–19 Bank Street, Pyrmont, NSW, report prepared for Infrastructure NSW, May 2023.

[8] City Plan Heritage, Draft Archaeological Monitoring of Site Contamination Assessment of 1–19 Bank Street, Pyrmont, NSW, report prepared for Infrastructure NSW, May 2023.

[9] City Plan Heritage, Draft Archaeological Monitoring of Site Contamination Assessment of 1–19 Bank Street, Pyrmont, NSW, report prepared for Infrastructure NSW, May 2023.

[10] City Plan Heritage, Draft Archaeological Monitoring of Site Contamination Assessment of 1–19 Bank Street, Pyrmont, NSW, report prepared for Infrastructure NSW, May 2023.

[11] City Plan Heritage, Draft Archaeological Monitoring of Site Contamination Assessment of 1–19 Bank Street, Pyrmont, NSW, report prepared for Infrastructure NSW, May 2023.

[12] JBS&G, Detailed Site Investigation 1–19 Bank Street Pyrmont, report prepared for Infrastructure NSW, May 2023.

[13] Herbert, C 1983, Sydney 1:100 000 Geological Sheet 9130, 1st edition, Geological Survey of New South Wales, Sydney.

[14] GML Heritage, Investigations of Aboriginal Site RSY1 Randwick Post Excavation Report, report prepared for Acciona & Transport for NSW, April 2020, pp 166–167;

GML Heritage, Site of First Government House-Conservation management Plan, vol. 2, report prepared for Sydney Living Museums, February 2017;

Attenbrow, V and Fullagar, R, Analysis of Stone and Glass Artefacts, report prepared for Australian Museum, October 1993;

Williamson, C, Pieces of Flint Excavated from the Hyde Park Barracks: Catalogue and Preliminary Report, report prepared for Historic Houses Trust, 1995.

[15] Dominic Steele Consulting Archaeology 2006, 'Aboriginal Archaeological Excavation Report—The KENS Site (Kent, Erskine, Napoleon and Sussex Streets), Sydney, NSW', prepared for Leighton Contractors Pty Limited

[16] See Artefact Heritage 2021 and City Plan 2023.

[17] City Plan Heritage, Draft Archaeological Monitoring of Site Contamination Assessment of 1–19 Bank Street, Pyrmont, NSW, report prepared for Infrastructure NSW, May 2023.

[18] City Plan Heritage, Draft Archaeological Monitoring of Site Contamination Assessment of 1–19 Bank Street, Pyrmont, NSW, report prepared for Infrastructure NSW, May 2023.

[19] Dominic Steele Consulting Archaeology 2006, 'Aboriginal Archaeological Excavation Report—The KENS Site (Kent, Erskine, Napoleon and Sussex Streets), Sydney, NSW', prepared for Leighton Contractors Pty Limited.

[20] GML Heritage, Investigations of Aboriginal Site RSY1 Randwick Post Excavation Report, report prepared for Acciona & Transport for NSW, April 2020.

[21] GML Heritage, Site of First Government House Conservation Management Plan, volume 2, report prepared for Sydney Living Museums, February 2017.

[22] GML Heritage, Arthur Phillip High School and Parramatta Public School, Parramatta, Aboriginal Post-Excavation Report, report prepared for Schools Infrastructure NSW, July 2021.

[23] GML Heritage, Former Schofields Aerodrome Aboriginal Heritage Poset excavation Archaeological Report, draft report prepared for Defense Housing Australia, February 2023.

[24] Attenbrow, V and Fullager, R 1993, First Government House Aboriginal Lithics Analysis of Stone and Glass Artefacts, Anthropology Department, Australian Museum, Sydney.

[25] Fitzgerald, S 2008, Pyrmont, Dictionary of Sydney, viewed 6 October 2023, available from <https://dictionaryofsydney.org/entry/pyrmont>.

[26] Cred Consulting, Bank Street Park Phase 1 Community Engagement Outcomes Report, report prepared for Infrastructure NSW, October 2022.

Greenshoot Consulting and Greenaway Architects, Bank Street Park (Tjerruing Park) Designing for/of/with Country First Nations Consultation Summary, report prepared for Infrastructure NSW, July 2023.

[27] Bangawarra, Connecting with Country Framework for Tjerruing Blackwattle Bay, report prepared for Infrastructure NSW, June 2021.

[28] Holdaway, S and N Stern 2004, *A Record in Stone: The Study of Australia's Flaked Stone Artefacts,* Museum of Victoria and Aboriginal Studies Press, Melbourne.

Appendix C

Community Consultation Log

Aboriginal Consultation Log—Bank Street Park Project—23-0126

Stage 1—Notification of Project Proposal and Registration of Interest

Stage 1, Step 1–Contacting relevant authorities

Body/Group	Contact Information	Date Sent/Date Reply	Response/Comment
Heritage NSW	heritagemailbox@environment.nsw.gov.au	**Sent** 30/05/2023 **Reply** 05/06/2023.	Provided list of Aboriginal stakeholders.
Metropolitan Local Aboriginal Land Council (MLALC)	metrolalc@metrolalc.org.au (02) 8394 9666	**Sent** 30/05/2023	
The Registrar, Aboriginal Lands Right Act 1983	adminofficer@oralra.nsw.gov.au	**Sent** 30/05/2023 **Reply** 28/06/2023	No Registered Aboriginal Owners identified for the project area. Suggested GML contact MLALC.
National Native Title Tribunal (NNTT)	GeospatialSearch@NNTT.gov.au	**Sent** 30/05/2023 **Reply** 30/05/2023	Search results indicate no Native Title Features within the study area.
Native Title Services Corporation (NTSCORP Limited)	information@ntscorp.com.au	**Sent** 30/05/2023	
City of Sydney Local Council	council@cityofsydney.nsw.gov.au	**Sent** 30/05/2023 **Reply** 30/05/2023	Recommend GML contact MLALC. Further, *The City of Sydney has a Community participation plan that you also might find helpful.* *It details our community engagement strategy and community participation plan and provides a framework for how we engage communities in the decisions we make. Pages 32 – 43 in the plan will take you directly to how we engage with our diverse communities.*

Body/Group	Contact Information	Date Sent/Date Reply	Response/Comment
Greater Sydney Local Land Services	gs.service@lls.nsw.gov.au	**Sent** 30/05/2023 **Reply** 30/05/2023	*GS LLS feels that it is not a primary source of contact for First Nations (Aboriginal) communities or persons that may inform or provide comment on development or planning issues.* *GS LLS strongly recommends you contact Heritage NSW…*

Stage 1, Step 2–Contacting people identified in Stage1, Step 1 & Newspaper notification

Organisation	Contact Information	Date Sent/Date Reply	Response/ Comment
Badu (Murrin Clan/Peoples)	[redacted]	**Sent** 13/06/2023	
Barking Owl Aboriginal Corporation	[redacted]	**Sent** 13/06/2023	
Biamanga (Murrin Clan/Peoples)	[redacted]	**Sent** 13/06/2023	
Bidjawong Aboriginal Corporation	[redacted]	**Sent** 13/06/2023	
Bilinga (Murrin Clan/Peoples)	[redacted]	**Sent** 13/06/2023	
Butucarbin Aboriginal Corporation	[redacted]	**Sent** 13/06/2023 **Reply** 13/6/23	Registered
Clive Freeman	[redacted]	**Sent** 13/06/2023	
Corroboree Aboriginal Corporation	[redacted]	**Sent** 13/06/2023 –invite resent via email on 13/06/2023 to corrected email address (due to initial error in email address)	
Callendulla (Murrin Clan/Peoples)	[redacted]	**Sent** 13/06/2023	
Darug Aboriginal Cultural Heritage Assessments	[redacted]	**Sent via post** 13/06/2023	

Organisation	Contact Information	Date Sent/Date Reply	Response/ Comment
Darug Boorooberongal Elders Aboriginal Corporation	[redacted]	**Sent** 13/06/2023	
Darug Custodian Aboriginal Corporation	[redacted]	**Sent** 13/06/2023 **Reply** 14/6/23	Registered
Darug Land Observations	[redacted]	**Email sent** 13/06/2023 Bounce back email received, invite then **sent via post** 13/06/23. **Return to sender** – calls placed to numbers listed on HNSW stakeholder list on 30/6/2023, both numbers were disconnected.	
Dharug (Murrin Clan/Peoples)	[redacted]	**Sent** 13/06/2023	
Dharug Ngurra Aboriginal Corporation	[redacted]	**Sent** 13/06/2023 **Reply** 14/6/2023	Registered
Didge Ngunawal Clan	[redacted]	**Sent** 13/06/2023 **Reply** 15/6/2023, 22/6/2023	Registered
DJMD Consultancy	[redacted]	**Sent** 13/06/2023	
Eric Keidge	[redacted]	**Sent via post** 13/06/2023	
Galamaay Cultural Consultants (GCC)	[redacted]	**Sent** 13/06/2023	
Ginninderra Aboriginal Corporation	[redacted]	**Sent** 13/06/2023	
Goobah Development PTY LTD (Murrin Clan/People)	[redacted]	**Sent** 13/06/2023	
Goodragbee Cultural & Heritage Aboriginal Corporation	[redacted]	**Sent** 13/06/2023	
Gulaga	[redacted]	**Sent** 13/06/2023	
Gunjeewong Cultural Heritage	[redacted]	**Sent** 13/06/2023	

Organisation	Contact Information	Date Sent/Date Reply	Response/ Comment
Aboriginal Corporation			
Guntawang Aboriginal Resources Incorporated	[redacted]	**Sent** 13/06/2023 invite resent via email on 13/06/2023 to corrected email address (due to initial error in email address) **Reply** 16/06/2023	Registered
Gunya Aboriginal Cultural Heritage Services PTY LTD	[redacted]	**Sent** 13/06/2023	
Gunyuu (Murrin Clan/Peoples)	[redacted]	**Sent** 13/06/2023	
Jerringong (Murrin Clan/Peoples)	[redacted]	**Sent** 13/06/2023	
Kamilaroi-Yankuntjatjara Working Group	[redacted]	**Sent** 13/06/2023 **Reply** 20/06/2023	Registered
Koori Digs Services	[redacted]	**Sent** 13/06/2023	
La Perouse Local Aboriginal Land Council	[redacted]	**Sent** 13/06/2023	
Metropolitan Local Aboriginal Land Council	[redacted]	**Sent** 13/06/2023 **Reply** 13/06/2023 and 20/06/2023	Registered
Minnamunnung	[redacted]	**Sent via post** 13/06/2023 **Return to sender** – call placed to number listed on HNSW stakeholder list on 30/6/2023, no response.	
Munyunga (Murrin Clan/Peoples)	[redacted]	**Sent** 13/06/2023	
Mura Indigenous Corporation (icn:8991)	[redacted]	**Sent** 13/06/2023	
Murramarang (Murrin Clan/Peoples)	[redacted]	**Sent** 13/06/2023	
Murrumbul (Murrin Clan/Peoples)	[redacted]	**Sent** 13/06/2023	
Ngambaa Cultural Connections	[redacted]	**Sent** 13/06/2023 – invite resent via email on 13/06/2023 to	Registered

Organisation	Contact Information	Date Sent/Date Reply	Response/ Comment
		corrected email address (due to initial error in email address) **Reply** 14/6/23	
Nundagurri (Murrin Clan/Peoples)	[redacted]	**Sent** 13/06/2023	
Pemulwuy (Murrin Clan/Peoples)	[redacted]	**Sent** 13/06/2023	
Thauaira	[redacted]	**Sent** 13/06/2023	
Thawun Aboriginal Consultancy	[redacted]	**Sent** 13/06/2023	
Thomas Dahlstrom Offers ACH value by using 3D Laser and Drone technology	[redacted]	**Sent** 13/06/2023	
Thoorga Nura	[redacted]	**Sent** 13/06/2023	
Tocomwall	[redacted]	**Sent** 13/06/2023 **Reply** 13/06/2023	Registered as Yarrawalk.
Waawaar Awaa Aboriginal Corporation	[redacted]	**Sent** 13/06/2023	
Wailwan Aboriginal Group	[redacted]	**Sent** 13/06/2023	
Walbunja (Murrin Clan/Peoples)	[redacted]	**Sent** 13/06/2023	
Walgalu (Murrin Clan/Peoples)	[redacted]	**Sent** 13/06/2023	
Wingikara (Murrin Clan/Peoples)	[redacted]	**Sent** 13/06/2023	
Woka Aboriginal Corporation	[redacted]	**Sent** 13/06/2023	
Wori Wooilywa	[redacted]	**Sent** 13/06/2023	
Wullung (Murrin Clan/Peoples)	[redacted]	**Sent** 13/06/2023	
Wurrumay Consultancy	[redacted]	**Sent** 13/06/2023	

Organisation	Contact Information	Date Sent/Date Reply	Response/ Comment
Yerramurra (Murrin Clan/Peoples) and Taste of Tradition Native Aboriginal Corporation	[redacted]	**Sent** 13/06/2023	
Yurwang Gundana Consultancy Cultural Heritage Services	[redacted]	**Sent** 13/06/2023	
Wallanbah Aboriginal Site Conveyancing	[redacted]	**Sent** 13/06/2023	
RAW Cultural Healing	[redacted]	**Sent** 13/06/2023	
Sonione Wakabut Rogers	[redacted]	**Sent** 13/06/2023 **Reply** 20/06/2023	Registered
Dharramalin	[redacted]	**Sent** 13/06/2023	
Ninnum	[redacted]	**Sent** 13/06/2023	

Newspaper	Date Published
Koori Mail	14 June 2023
Sydney Morning Herald	15 June 2023

Registration cut-off date: 30 June 2023 (14 days must be allowed for Aboriginal people to register an interest in the project).

Stage 1, Step 3–Registered Aboriginal Parties (RAPs) and LALC/Heritage NSW Notification

List of Registered Aboriginal Parties (RAPs)

Registered Aboriginal Party	Contact Information
Butucarbin Aboriginal Corporation	[redacted]
Darug Custodian Aboriginal Corporation	[redacted]
Dharug Ngurra Aboriginal Corporation	[redacted]

Registered Aboriginal Party	Contact Information
	[redacted]
Didge Ngunawal Clan	[redacted]
Guntawang Aboriginal Resources Incorporated	[redacted]
Kamilaroi-Yankuntjatjara Working Group	[redacted]
Metropolitan Local Aboriginal Land Council	[redacted]
Ngambaa Cultural Connections	[redacted]
Yarrawalk	[redacted]
Sonione Wakabut Rogers	[redacted]
Confidential #1	—
Confidential #2	—
Confidential #3	—

A copy of the registered Aboriginal parties, invitation to register and newspaper notice must be provided to MLALC and Heritage NSW within 28 days of the closing data for registering an interest. These records were provided to MLALC and HNSW on the dates specified below:

Organisation	Date Sent
Metropolitan LALC	7/07/2023
Heritage NSW	7/07/2023

Stage 2–Project Presentation and Gathering Information about Cultural Significance of the Proposed Project

Stage 2, Step 1–RAP Review of ARD/Methodology

Registered Aboriginal Party	Date Sent/Date Reply	Response/Comment
Butucarbin Aboriginal Corporation	**Sent** 01/08/2023	

Registered Aboriginal Party	Date Sent/Date Reply	Response/Comment
Darug Custodian Aboriginal Corporation (DCAC)	**Sent** 01/08/2023	
Dharug Ngurra Aboriginal Corporation	**Sent** 01/08/2023	
Didge Ngunawal Clan	**Sent** 01/08/2023	
Guntawang Aboriginal Resources Incorporated	**Sent** 01/08/2023	
Kamilaroi-Yankuntjatjara Working Group (KYWG)	**Sent** 01/08/2023 **Reply** 29/08/2023	Agreed with and supports methodology.
Metropolitan Local Aboriginal Land Council (MLALC)	**Sent** 01/08/2023	
Ngambaa Cultural Connections (NCC)	**Sent** 01/08/2023	
Yarrawalk	**Sent** 01/08/2023	
Sonione Wakabut Rogers	**Sent** 01/08/2023	
Confidential #1	**Sent** 01/08/2023 **Reply** 17/08/2023	Agreed with methodology.
Confidential #2	**Sent** 01/08/2023	
Confidential #3	**Sent** 01/08/2023	

ARD review period ends: 29 August 2023. (Minimum 28 days must be provided to review the ARD.)

Stage 2, Step 2–Archaeological Test Excavation

Heritage NSW must be notified at least 14 days before start of test excavation.

Organisation	Date Sent
Heritage NSW	18/08/2023

Opportunity for RAPs to visit study area/participate in fieldwork.

Registered Aboriginal Party	Date Sent/Date Reply	Response/Comment/Representative
MLALC	Call 1/9/23	Call from GML to MLALC. Interested in participating in testing
KYWG	Call 1/9/23	Call from GML to KYWG. Interested in participating in testing
DCAC	Call 1/9/23	Call from GML to DCAC. Voice message left.
MLALC	Email 1/9/23	Email from GML to MLALC. Follow up email re expression of interest to participate in testing
KYWG	Email 1/9/23	Email from GML to KYWG. Follow up email re expression of interest to participate in testing

Registered Aboriginal Party	Date Sent/Date Reply	Response/Comment/Representative
DCAC	Email 1/9/23	Email from GML to DCAC. Follow up email re expression of interest to participate in testing
DCAC	Call 1/9/23	Call from DCAC to GML. DCAC unavailable for testing
NCC	Call 5/9/23	Call from GML to NCC. Interested in participating in testing
NCC	Email 5/9/23	Email from GML to NCC. Follow up email re expression of interest to participate in testing
MLALC	Email 5/9/23	Email from GML to MLALC. Update re confirmed testing dates
KYWG	Email 5/9/23	Email from GML to KYWG. Update re confirmed testing dates
MLALC	Call 7/9/23	Email from GML to MLALC. Follow up re availability for excavation
NCC	Call and follow up email 7/9/23	Call from GML to NCC to ask for ABN and insurances for contract and whether comfortable with photo/video recording of the excavation by INSW. Reiterated in follow up email.
KYWG	Call and follow up email 7/9/23	Call from GML to KYWG to advise contract is being prepared and whether comfortable with photo/video recording of the excavation by INSW. Reiterated in follow up email.
KYWG	Email 8/9/23	Email from KYWG to GML. Acknowledged confirmed testing dates, advises that KYWG is fine with video and photography of the excavation.
MLALC	Call and follow up email 8/9/23	Call from GML to MLALC, since no response to email received. Clarified which email address to forward excavation dates to, advised to contact nmoran@mlalc.org.au. Previous emails regarding testing then forwarded to this address.
MLALC	Call and follow up text from MLALC, 13/9/23	Call from MLALC (Rowena Welsh-Jarrett) and follow up text to discuss Aboriginal excavation program.
MLALC	Return calls and text to MLALC 14/9/23	Calls between GML and MLALC to discuss excavation and arrange a time for Rowena Welsh-Jarrett to attend site on afternoon of 14/9/23 (during Aboriginal archaeological testing program).

Stage 3—Review of draft Aboriginal Cultural Heritage Assessment Report

Stage 3, Step 1–RAP Review of draft ACHAR

Registered Aboriginal Party	Date Sent/Date Reply	Response/Comment
Butucarbin Aboriginal Corporation	**Sent:** 25 October 2023	
Darug Custodian Aboriginal Corporation (DCAC)	**Sent:** 25 October 2023 **Reply** 27 October 2023	Flagged that attached reports were not received. Subsequently, the ACHAR and ATR were resent to all RAPs via email Sharepoint link on the 30 October to ensure RAP access to draft reports.

Registered Aboriginal Party	Date Sent/Date Reply	Response/Comment
Dharug Ngurra Aboriginal Corporation	**Sent:** 25 October 2023	
Didge Ngunawal Clan	**Sent:** 25 October 2023	
Guntawang Aboriginal Resources Incorporated (GARI)	**Sent:** 25 October 2023 **Email reply:** 30 October 2023 **Follow up phone call (GARI to GML):** 31 October 2023 **Email (GML to GARI):** 31 October 2023 **Email (GARI to GML):** 3 November 2023	Email 30/10: underfunding of local Land Councils during their early implementation means that construction during this period would have destroyed sites within the area. Agreed with ACHAR and ATR draft. Follow up call 31/10: Call from GARI to GML. Discussed potential destruction of sites during early years of construction in the area. A summary of the findings of the ACHAR and ATR was provided, and management policies (ie unexpected finds protocol and further archaeological investigation, including monitoring) were discussed. GARI representative agreed with the recommendations of the ACHAR/ATR. Email 31/10: Summarising content of phone discussion. Email 3/11: GARI conferred with content of email.
Kamilaroi-Yankuntjatjara Working Group (KYWG)	**Sent:** 25 October 2023 **Reply:** 21 November 2023	Agreed with and supported recommendations. Suggested archaeological monitoring proposed as a harm mitigation strategy for the site should be conducted by a RAP.
Metropolitan Local Aboriginal Land Council (MLALC)	**Sent:** 25 October 2023	
Ngambaa Cultural Connections (NCC)	**Sent:** 25 October 2023	
Yarrawalk	**Sent:** 25 October 2023 **Reply:** 31 October 2023	
Sonione Wakabut Rogers	**Sent:** 25 October 2023 **Reply** 27 October 2023	Confirmed receipt of draft reports.
Confidential #1	**Sent:** 25 October 2023	
Confidential #2	**Sent:** 25 October 2023	
Confidential #3	**Sent:** 25 October 2023	

One RAP group flagged that they had not received the ACHAR as an attachment following the initial provision of the report on 25 October. A link to the report was resent to all

RAPs on 30 October. No further issues with access to the report were flagged by the RAPs. The ACHAR review period ended 22 November 2023.

Stage 3, Step 2– Final submission

The Bank Street Park project is State Significant Development under Part 4 of the EPA Act. heritage and archaeology to be managed in accordance with the project approval documents, including conditions of the Development Consent. Section 4.41(d) of the EPA Act provides an Aboriginal heritage impact permit (AHIP) under Section 90 of the NPW Act is not required for a SSD project that is authorised by a SSD development consent.

The final ACHAR was provided to the client on 28 November 2023.

RAPs and MLALC must be provided with a copy of the final ACHAR.

Stage 3, Step 3–RAP notification of final ACHAR submission

Registered Aboriginal Party	Date Sent
Butucarbin Aboriginal Corporation	29 November 2023
Darug Custodian Aboriginal Corporation (DCAC)	29 November 2023
Dharug Ngurra Aboriginal Corporation	29 November 2023
Didge Ngunawal Clan	29 November 2023
Guntawang Aboriginal Resources Incorporated	29 November 2023
Kamilaroi-Yankuntjatjara Working Group (KYWG)	29 November 2023
Metropolitan Local Aboriginal Land Council (MLALC)	29 November 2023
Ngambaa Cultural Connections (NCC)	29 November 2023
Yarrawalk	29 November 2023
Sonione Wakabut Rogers	29 November 2023
Confidential #1	29 November 2023
Confidential #2	29 November 2023
Confidential #3	29 November 2023

Appendix I
Communications Plan

BESIX Watpac

Communications and Stakeholder Engagement Plan

N231

Bank Street Park

11 February 2026

Bank Street Park – artists impression

Project overview

Project Site Address:
1A-19 Bank Street, Pyrmont NSW

Project Commencement Date:
23 October 2025

Watpac Construction State Division Address:
Level 15, 210 George Street
Sydney NSW 2000

Watpac Construction Pty Ltd ABN:
71 010 462 816

Revision history

Version	Date	Revision Description	Project/Site Manager Sign off
[00]	22/12/25	DRAFT - Initial version, for INSW review	BW PM
[01]	11/02/26	Updated to address INSW comments	BW PM

Acknowledgement of Country

Infrastructure NSW and BESIX Watpac acknowledge the Traditional Custodians of the lands where we walk, work and live, and pays respect to their Elders past and present.

We acknowledge and respect their continuing connection to the land, seas and waterways of NSW, and the continuation of their cultural, spiritual and educational practices.

We acknowledge the importance of Aboriginal and Torres Strait Islander people's unique history of land and water management, and of art, culture and society, that began over 65,000 years ago.

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Appendices

Appendix A Neighbours Catchment Map

1. Introduction

The NSW Government is prioritising delivery of Bank Street Park, a 1.1-hectare waterside park that surrounds the southern pylons of the ANZAC Bridge.

The design concept has been guided by extensive community and stakeholder consultation, identified local infrastructure needs, community priorities, and the desire to provide a space that can be enjoyed by all.

The design is underpinned by:

- Community input
- First Nations design
- Art and culture
- Sustainable design.

The project has followed a State Significant Development Application planning process. The Department of Planning, Housing and Infrastructure (DPHI) determined the application under delegation for the NSW Minister for Planning and Public Spaces in July 2024.

In a first for the NSW Government, Infrastructure NSW is working closely with head contractor BESIX Watpac to achieve a minimum target of 40% and a stretch target of 50% women working on the project.

The Women in Construction pilot project aims to address the underrepresentation of women in the NSW construction industry - an imbalance that limits diversity, reduces the available talent pool, and makes it harder to meet the state's infrastructure needs.

1.1 Purpose

The purpose of this Communications and Stakeholder Engagement Plan is to identify community and stakeholders impacted by the project and outline procedures and mechanisms for communication, feedback and resolution of issues to ensure successful project delivery.

This plan is also closely aligned with the Women in Construction Management Plan, which outlines the communication and industry engagement activities that will take place to achieve the objectives of the Women in Construction pilot project. Key messages for this aspect of the project are included in this plan.

The Women in Construction Management Plan also emphasises the need for proactive and positive communication with stakeholders and media outlets. Clear, consistent messaging will be used to highlight the benefits of diversity and inclusion within the construction industry, showcasing success stories and progress achieved through the pilot project. Media engagement will focus on promoting awareness, celebrating milestones, and reinforcing the project's commitment to creating equitable opportunities for women. By fostering transparent dialogue and leveraging positive publicity, the initiative aims to build trust, encourage industry participation, and inspire broader cultural change. This Plan will be implemented for the duration of the project, which is underway and will be delivered by March 2027.

1.2 Communication and engagement objectives

The engagement objectives for this plan follow those outlined and achieved to identify key issues, priorities and ideas for the Bank Street Park (SSD-53386706) redevelopment.

The engagement activities for the Bank Street Park will also continue to be undertaken in accordance with:

- Department of Planning, Housing and Infrastructure Environment Undertaking Engagement Guidelines for State Significant Projects (2021) and in particular the key principles:
  - Plan early

  - Engage as early as possible
  - Ensure engagement is effective
  - Ensure engagement is proportionate; Innovative
  - Open and transparent, and
  - Implement the community participation objectives.
- Engagement and communication requirements contained within the Consolidated Development Consent for SSD-53386706, further outlined in Section 1.3 of this plan.

Continuing the previous approach for the project, the communications and engagement approach for the Bank Street Park project focuses on early, proactive, transparent and regular communications and engagement throughout all stages of the project.

Additionally, the following specific objectives have been developed to guide communication and stakeholder engagement throughout the project:

- Provide stakeholders with opportunities to provide feedback on any future planning and design modifications.
- Promote informed dialogue with stakeholders and the community, particularly among close neighbours and relevant authorities.
- Promote the pilot project for the NSW Government's Women in Construction Program to assist in the project's aims for 50% female participation.
- Raise awareness of the proposed development and its benefits to the community.
- Proactively identify and manage project construction issues in a transparent way.
- Communicate proactively, timely and transparently with stakeholders and the community to mitigate construction impacts with local stakeholders and minimise avoidable complaints.
- Provide progress construction updates and answer community queries.
- Effectively manage stakeholder and community expectations.
- Continue to meet statutory requirements for communication and engagement.

1.3 Conditions of consent

The following consent conditions in relation to public communication and engagement requirements of the project (SSD-53386706) have been addressed in this plan to manage compliance.

Consent condition	Excerpts that relate to public communication and engagement
B4 Access to information	At least 48 hours before the commencement of construction until the completion of all works under this consent, or such other time as agreed by the Planning Secretary, the Applicant must: (a) make the information and documents (as they are obtained or approved) publicly available on its website, as listed in Condition B4, and specifically related to communications and engagement: (vii) contact details to enquire about the development or to make a complaint (viii) a complaints register, updated monthly. (b) keep such information up to date, to the satisfaction of the Planning Secretary.
C9 Construction Environmental Management Plan	Prior to the commencement of works, a Construction Environmental Management Plan (CEMP) must be submitted to the Certifier. The CEMP must address, but not be limited to, the following matters where relevant: (a) Details of:

Consent condition	Excerpts that relate to public communication and engagement
	(iii) consultation strategy for liaison with surrounding stakeholders, including other developments under construction, and a complaint handling procedure. (i) consideration of constructing staging including the communication with, and relocation of, the existing users of the site.
C12 Construction Pedestrian and Traffic Management Sub-Plan	Prior to the commencement of works, the Applicant must submit to the satisfaction of the Certifier a Construction Pedestrian and Traffic Management Plan Sub-Plan (CPTMP) endorsed by the Sydney Coordination Office within TfNSW. The CPTMP must specify matters including, but not limited to, the following: (c) Ongoing activities: (ii) Consultation strategy for liaison with surrounding stakeholders, including other developments under construction.
C13 Construction Noise and Vibration Management Sub-Plan	Prior to the commencement of works, the Applicant must submit to the satisfaction of the Certifier a Construction Noise and Vibration Management Sub-Plan (CNVMP) for the development. The Sub-Plan must include: (l) procedures for notifying residents of construction activities that are likely to affect their noise and vibration amenity. (m) measures to monitor noise performance and respond to complaints.
D3 Site Notice	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: (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.
D4 Hours of construction	Construction, including the delivery of materials to and from the site, may only be carried out between the following hours: (a) between 7 am and 5:30 pm, Mondays to Fridays inclusive; and (b) between 7.30 am and 3.30 pm, Saturdays.
D5 Hours of construction	No work may be carried out on Sundays or public holidays.
D6 Hours of construction	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. (b) in an emergency to avoid the loss of life, damage to property or to prevent environmental harm, or (c) in accordance with the terms of a road opening permit or road occupancy license.
D7 Hours of construction	Notification of such activities must be given to affected residents before undertaking the activities or, in the event of an emergency, as soon as is practical afterwards.
D8 Hours of construction	Rock breaking, rock hammering, sheet piling, pile driving and similar activities may only be carried out between the following hours: (a) 9.00 am to 12.00 pm, Monday to Friday. (b) 2.00 pm to 5.00 pm, Monday to Friday. (c) 9.00 am to 12.00 pm, Saturday.
D9 Hours of construction	Despite Condition D4, the use of a crane for special operations, including the delivery of materials, hoisting of plant and equipment and erection and dismantling of on-site tower cranes which warrant the on-street use of mobile cranes outside of above hours can occur, subject to a separate application being submitted to and approved by the relevant roads authority under Section 68 of the Local Government Act 1993 and Sections 138/139 of the Roads Act 1993.

Consent condition	Excerpts that relate to public communication and engagement
D26 Asbestos	Five days prior to the commencement of licensed asbestos removal, Safework NSW must be formally notified of the works. All adjoining properties and those opposite the development must be notified in writing of the dates and times when asbestos removal is to be conducted. The notification must identify the licensed asbestos removal contractor and include a contact person for the site together with telephone number and email address.

1.4 Document maintenance and accountability

This plan will be reviewed every six months in collaboration with Infrastructure NSW, in addition to recommendations arising from project Health Checks. The communication issues and mitigations will be updated where they arise or are detected throughout the life of the project.

The plan will be uploaded to Aconex and transmitted to relevant individuals including:

- Principal's Representative
- Project Manager
- Community Relations Manager/Community and Stakeholder Engagement Manager
- Relevant Project Personnel.

2. Project context and construction activities

2.1 Key messages about the project

- Bank Street Park is a new 1.1-hectare waterside park in Pyrmont, reconnecting locals with the waterfront for the first time in over a century.
- It's part of the transformation of Blackwattle Bay into a world-class destination, linking over 10 hectares of former industrial land to the community and completing a continuous 15km Harbour Walk from Woolloomooloo to Rozelle Bay.
- The park's design is the result of extensive community consultation and collaboration with award-winning landscape architects.
- It is underpinned by First Nations principles of healing, revealing, and caring for Country, ensuring the space honours heritage and provides inclusive, sustainable amenities for all.
- Bank Street Park will be the first project in NSW to proactively work towards 50% participation of women throughout the project lifecycle.
- The Women in Construction pilot project aims to address the underrepresentation of women in the NSW construction industry - an imbalance that limits diversity, reduces the available talent pool, and makes it harder to meet the state's infrastructure needs.
- The new park will have:
  - A playground, multipurpose court and fitness station
  - Open lawns and First Nations inspired shelter structures
  - Public amenities, including toilets and showers
  - New pontoon for kayak water access and storage for dragon boats
  - Provisions for outdoor food trucks and coffee carts
  - Wayfinding and interpretive signage
  - Harbour foreshore walkway and new cycle path on Bank Street

  - » Relocated marina office
  - » Adaptive reuse of an existing building and transformation of a heritage building into a space with seating and a garden.
- Sustainable design elements include adaptive reuse of existing structures and native landscaping to encourage biodiversity.

2.2 Key project milestones

Table 1 Indicative construction program

Timing	Milestone
October 2025	Contract execution
November 2025	Site investigations commence
February 2026	Site establishment activities
March 2026	Main construction works commence
July 2026	New kayak pontoon jetty installed
August 2026	End of civil works within park
October 2026	Dragon boat store completion
December 2026	Multi-purpose court artwork installation
March 2027	Main works completion and handover

2.3 Roles and responsibilities

Infrastructure NSW is leading the design and delivery of the project on behalf of the NSW Government. Infrastructure NSW oversees the management of statutory planning, design and project delivery, governance and community and stakeholder engagement.

Infrastructure NSW has appointed BESIX Watpac as the construction contractor. The roles and responsibilities for key project communication and stakeholder engagement are outlined in Table 2 below. The responsibilities reflect those articulated in the contract documents and as otherwise agreed.

Table 2 Key project communications roles and responsibilities

Role	Responsibilities
Infrastructure NSW	• Generally lead Government and external stakeholder, communications and engagement matters relating to the project and planning • Review and approve plans, activities and materials required and prepared by the Project Manager or Community Relations Manager, prior to public distribution/implementation. • Provision of approved Government graphics, logos, branding, artwork or collateral. • Facilitate and chair the Communications Working Group • Provide and authorise key messages about the project.

	• Maintain public-facing project website and Campaign Monitor email distribution list. • Manage complaints and stakeholder concerns relating to the project scope, planning approval or broader Blackwattle Bay or government matters.
BESIX Watpac (Project Manager, Community Relations Manager and Corporate Affairs Manager)	• Generally administer, input and attend to stakeholder, communications and engagement matters relating to the project design and construction. • Lead, prepare, implement, maintain and review the Communications Plan and other plans as required. • Establish and maintain processes to manage enquiries and complaints. • Provide INSW with a monthly Complaints Register that sets out the complaint and response provided. • Record all community and stakeholder interactions in Consultation Manager (sent to project50@insw.in.consultationmanager-preview.com) • Record minutes in the Communications Working Group. • Manage and/or attend stakeholder and partnership meetings as identified or required. • Prepare and manage external communications collateral as identified or required. • Monitor and manage compliance with branding requirements. • Monitor and manage traffic and access signage to meet requirements. • Identify upcoming project milestones and other positive, social media and communication opportunities • Develop draft EDM and news stories • Undertake media and government relations activities as identified or requested, to meet requirements. • Ensure impacted residents are appropriately notified of works. • Contribute to the timely and comprehensive completion of all reporting requirements. • Immediately advise Infrastructure NSW of any major incident, emergency, or crisis

In the event the PM or CRM is on leave, the role will be backfilled by a suitable project team member or Community Relations Manager to ensure coverage.

2.4 Coordination with Infrastructure NSW

Bank Street Park will be among the first of many public benefits that will be delivered as part of the wider renewal of Blackwattle Bay. There will soon be a number of head contractors delivering key elements of the renewal program, which means coordination with Infrastructure NSW is critical to the success of program management.

The Project Manager and Community Relations Manager (or their delegate(s)) will actively participate in Infrastructure NSW's Communications Working Group to coordinate communication and consultation activities with Infrastructure NSW and other stakeholders to ensure a consistent approach to the community and other stakeholders, to provide:

- a summary of current and upcoming construction, likely impacts and proposed communication and strategies to address those impacts
- an update on any current or emerging issues and/or opportunities
- an update on enquiries and complaints received and action taken to resolve them other
- information as requested by Infrastructure NSW.

The Project Manager and Community Relations Manager will also work with Infrastructure NSW to:

- proactively identify emerging communication risks and issues, including those may relate to or impact other areas of the renewal program.
- proactively manage community and stakeholders around the site, including organising formal and informal meetings.
- provide a minimum of 3 business days' notice prior to any meeting with the community or stakeholder (including door knocking) and ensure that suitable persons are available to attend such meetings (including after-hours).
- actively participate in strategic partnerships specific to the project, including attending regular meetings and developing proposals with Infrastructure NSW.
- coordinate and share activities and material distribution planned in areas that are adjacent to other works being undertaken for other public projects, with the aim of coordinating and sharing collateral ahead of public distribution.

3. Stakeholders, issues and mitigation

Project stakeholders have been divided into the following categories:

- State government
- Local government
- Government departments and agencies
- First Nations
- Local community – Directly impacted
- Local community – Indirectly impacted
- Emergency services
- Women in Construction

This categorisation ensures communication and engagement activities are targeted and guided by a strong purpose. This section identifies stakeholders, including interests, proposed engagement pathway, and responsibility owner.

3.1 Stakeholder analysis

Stakeholder name	Interest	Engagement pathway	Responsibility
State government			
Stephen Kamper, MP, Minister for Lands and Property	Project milestones	[Managed by Infrastructure NSW]	Infrastructure NSW

Stakeholder name	Interest	Engagement pathway	Responsibility
Steven Whan, Minister for Skills, TAFE and Tertiary Education	Women in Construction program	[Managed by Infrastructure NSW]	Infrastructure NSW
Jodie Harrison, Minister for Women	Women in Construction program	[Managed by Infrastructure NSW]	Infrastructure NSW
Alex Greenwich, MP Member for Sydney	Local Member	[Managed by Infrastructure NSW]	Infrastructure NSW
Local government			
City of Sydney	Progress updates	Email updates at milestones	Infrastructure NSW
City of Sydney Public Art Panel	Progress updates of public art installation works	Email updates at milestones	Infrastructure NSW
Government departments and agencies			
DPHI	Compliance with communication and engagement consent conditions	[Per reporting requirements]	Infrastructure NSW with input from BESIX Watpac
DCCEEW – Environment and Heritage Group	Microbats, archaeological management, Blackwattle Bay Precinct Flood Study	Per reporting requirements	Infrastructure NSW with input from BESIX Watpac
TfNSW – Property Asset Management	Marina operations, dragon boat operations and storage works, progress of works	Works notifications	Infrastructure NSW with input from BESIX Watpac
TfNSW including Greater Sydney Roads (ANZAC Bridge)	Progress of works	Works notifications	Infrastructure NSW with input from BESIX Watpac
TfNSW – Glebe Island Bridge Project Team	Progress of works	Works notifications	Infrastructure NSW with input from BESIX Watpac
Port Authority of NSW	Marine activity	Works notifications	BESIX Watpac
Place Management NSW	Wayfinding, Safety in Design	Email updates at milestones	Infrastructure NSW with input from BESIX Watpac
First Nations			
Metropolitan Local Aboriginal Land Council	Designing with Country, First Nations storytelling	Email updates at milestones	Infrastructure NSW with input from BESIX Watpac

Stakeholder name	Interest	Engagement pathway	Responsibility
Blak Diggers	Designing with Country, First Nations storytelling	Email updates at milestones	Infrastructure NSW with input from BESIX Watpac
Local community - Directly impacted			
Harbour View Towers 122 Saunders Street (224 units)	Noise, vibration, dust, traffic and parking, access to completed park, management of contaminated materials	Works notifications, project updates, email updates to property manager	BESIX Watpac
Antias 1 Distillery Drive (4 buildings, 43 units)	Noise, vibration, dust, traffic and parking, access to completed park, management of contaminated materials	Works notifications, project updates, email updates to property manager	BESIX Watpac
Cyclists and pedestrians on Bank Street	Impacts to use of roads and footpaths	Site signage, traffic control personnel and signage	BESIX Watpac
Paulos Bros 21-29 Bank Street	Traffic and parking, access to completed park	Works notifications, project updates, community open day/s	BESIX Watpac
31-35 Bank Street	Traffic and parking, access to completed park	Works notifications, project updates, community open day/s	BESIX Watpac
Blackwattle Bay Marina 5 Bank Street	Traffic and parking, access to completed park	Works notifications, project updates, community open day/s, Works notifications	BESIX Watpac
Dragon Boats NSW	Construction completion, access to view new facilities, access to completed park	Works notifications, project updates, community open day/s	BESIX Watpac
Paradragons NSW	Accessibility requirements compliance, construction completion, access to view new facilities, access to completed park	Works notifications, project updates, community open day/s	BESIX Watpac
Dragon Boat Clubs Blackwattle Bay Sydney Spirit Mavericks	Construction completion, access to view new facilities, access to completed park	Works notifications, project updates, community open day/s	BESIX Watpac

Stakeholder name	Interest	Engagement pathway	Responsibility
Purple Storm Outrigger Canoe Club 2/4 Bank Street	Construction completion, access to view new facilities, access to completed park	Works notifications, project updates, community open day/s	BESIX Watpac
Pyrmont Heritage Boat Fleet	Vegetation management and tree removals	Works notifications, project updates, vegetation management plan.	BESIX Watpac
All Occasion Cruises	Marine activities, traffic and parking, interruptions to access	Works notifications, project updates, Works notifications	BESIX Watpac
Vagabond Cruises	Marine activities, traffic and parking	Works notifications	BESIX Watpac
Sydney Harbour Attractions 37 Bank Street	Marine activities, traffic and parking	Works notifications	BESIX Watpac
Sea Sydney Harbour	Marine activities, traffic and parking	Works notifications	BESIX Watpac
Local community – Indirectly impacted			
Pyrmont Action Group	Noise, vibration, dust, traffic and parking, access to completed park, management of contaminated materials	Works notifications, project updates, community open day/s	
Evolve 2 Bowman Street (approx. 50 units)	Traffic and parking, access to completed park	Works notifications, project updates, community open day/s	BESIX Watpac
Silk 15 Bowman Street (13 units)	Traffic and parking, access to completed park	Works notifications, project updates, community open day/s	BESIX Watpac
33-35 Saunders Street (Commercial Offices)	Traffic and parking, access to completed park	Works notifications, project updates, community open day/s	BESIX Watpac
Thrive Early Learning Centre 33-35 Saunders Street	Traffic and parking, access to completed park, management of contaminated materials	Works notifications, project updates, community open day/s	BESIX Watpac
1 Saunders Street (Commercial Offices)	Traffic and parking, access to completed park	Works notifications, project updates, community open day/s	BESIX Watpac

Stakeholder name	Interest	Engagement pathway	Responsibility
Vitra 140 Bank Street	Traffic and parking, access to completed park	Works notifications, project updates, community open day/s	BESIX Watpac
Glebe Rowing Club 120 Ferry Road Glebe	Marine activities	Works notifications	BESIX Watpac
Sydney Uni Boathouse Glebe 123 Ferry Road Glebe	Marine activities	Works notifications	BESIX Watpac
Sydney Fish Market	Marine activities, future ferry services	Works notifications	BESIX Watpac
Celestino (Nearby property developer)	Construction completion, traffic and parking	Works notifications	BESIX Watpac
Hymix 41-45 Bank Street (Heidelberg Materials/Pyrmont Concrete)	Traffic and parking	Works notifications	BESIX Watpac
Emergency services			
Police Sydney City PAC	Access to project team, access to site in cases of emergency	Works notifications, site emergency plan	BESIX Watpac
Fire and Rescue Pyrmont Fire Station	Access to project team, access to site in cases of emergency	Works notifications, site emergency plan	BESIX Watpac
Women in Construction – Key stakeholders			
Local Educational Institutions	Women in Construction commitments and achievements, opportunities for involvement, site tours with project team members	Via Women in Construction Management Plan and Project updates	BESIX Watpac
NAWIC	Women in Construction commitments and achievements, opportunities for involvement	Via Women in Construction Management Plan	BESIX Watpac
NEXGEN	Women in Construction commitments and achievements, opportunities for involvement	Via Women in Construction Management Plan	BESIX Watpac

3.2 Issues and mitigation

The project team will demonstrate a high level of commitment to addressing issues by anticipating potential concerns and preparing mitigation measures. The potential community concerns and proposed mitigation measures are listed in Table 3 below.

Table 3 Potential community concerns and mitigations

Potential concerns	Mitigation
Construction impacts on street parking in the nearby area	Toolbox meetings will include regular reminders about on street parking conditions and encourage use of public transport, car pooling, and travel by bike. Promoting public transport as per onboarding procedure. Communicating to the construction workforce that share bikes are to be parked in a responsible and courteous manner for the safety and comfort of footpath users.
Construction vehicles causing traffic congestion on Bank Street and nearby streets.	Construction vehicles will adhere to approved travel routes. Delivery schedules and other construction traffic movements will be scheduled in consideration of other projects nearby, and community will be notified ahead of these activities.
Safety of active transport users along Bank Street during vehicle access to the site.	Traffic management will be in place at all times.
Construction noise, vibration and dust impacts	Consent conditions specify management practices and limits to control the impact of noise, vibration and dust. Nearby local businesses and residents will be provided advanced notification of potential for noise and vibration. Monitoring during key activities.
Management of contaminated materials	Consent conditions specify the stakeholder and community notification requirements for the management of contaminated materials. Site signage and notification of management and removal activities will be provided to nearby residents and businesses (such as the early learning centre).
Impacts to maritime activities due to marine-related construction activities	Notification of maritime stakeholders will include advanced notification of maritime activities.
Removal of trees and vegetation across the site	Compliance with Construction Environmental Management Plan and tree protection safeguards.
Construction worker behavioural impacts in residential area, such as early morning noise impacts from radios and conversations, parking of e-Bikes on footpaths	Toolbox meetings will address expectations around behaviour and identify specific potential neighbourhood annoyances.

Potential concerns	Mitigation
Timing and access to information about construction	Regular works notifications and project updates will be distributed about construction timing and activities.

4. Communication strategies and tools

A range of communications, tools and collateral will be used to engage stakeholders over the life of the project. It is important that the correct channel for the correct target audience is selected. These channels may be added to, depending on the findings of the feedback and research by Infrastructure NSW.

The project team will demonstrate a high level of commitment to communicating with the community and stakeholders by utilising a wide range of communication tools, as outlined in Table 4 below.

4.1 Communication tools and activity summary

Table 4 Communication tools and activity summary

What	When	Why	Who
Infrastructure NSW project website • blackwattlebay.insw.com Comprehensive source of all project planning and construction information. Regular updates to the website will ensure currency of information.	Ongoing	To inform	Infrastructure NSW in collaboration with BESIX Watpac
NSW Women in Construction website • https://www.nsw.gov.au/employment/women-construction/women-construction-program	Ongoing	To inform	Infrastructure NSW in collaboration with BESIX Watpac
Project 1800-line and email • Email – bankstreetpark@besixwatpac.com • Phone – 1800 875 689 The dedicated project 1800-line and email are key access points for the community for managing enquiries and complaints, as set out in section 5. The hours of operation are Monday to Friday, 7am to 5.30pm.	Ongoing	To inform	BESIX Watpac
EDM – Project updates Quarterly project updates to project subscribers to inform on milestones and achievements. In line with Infrastructure NSW's digital first approach and commitment to sustainability, these will be electronic direct mail notifications. Register for project updates	Quarterly	To inform	Developed by BESIX Watpac and sent by Infrastructure NSW

What	When	Why	Who
Works notifications Community works notifications to local community to inform on current and upcoming activities such as construction commencement, milestones, changes to scopes of work, out of hours work and when local conditions or access is altered.	As required	To inform	BESIX Watpac
Social media • The Hon Steve Kamper (LinkedIn, Instagram, META) • Infrastructure NSW (LinkedIn) • NSW Women in Construction (LinkedIn) • BESIX Watpac (LinkedIn) • NSW Government (LinkedIn, META)	As required	To inform	Infrastructure NSW in collaboration with BESIX Watpac
Printed project collateral • Community contact cards • Works notifications • Site signage (impacts to pedestrian routes, cycleways, traffic, public transport nodes)	Ongoing	To inform and consult	BESIX Watpac
Community stakeholder events • Community open days	Bi-annual	To inform and build positive relationships	BESIX Watpac in collaboration with Infrastructure NSW
Good Neighbour Activities • Includes doorknocks, letterbox drops, site signage and community events to provide specific project information to project neighbours.	As required	To inform and build positive relationships	BESIX Watpac
Media relations • Media enquiries • Media announcements	As required	To inform	Infrastructure NSW in collaboration with BESIX Watpac
Hoarding	Site establishment	To inform and increase awareness	Infrastructure NSW in collaboration with BESIX Watpac and City of Sydney

5. Protocols, procedures and approvals

This section outlines the communication protocols, procedures and approvals that will be implemented and/or required throughout the project.

5.1 Enquiries handling procedure

Enquiries or feedback received via the phone line or email will be answered on the spot using pre-approved key messages or responses to FAQs. If the enquiry cannot be answered using key messages, the nominated person will liaise with the project team to provide an answer. The enquiry or feedback will be logged into the stakeholder consultation database (Consultation Manager).

5.2 Complaint handling procedure

Complaints received via the phone or email will be handled as follows:

- Complaint is received by the project, an acknowledgement email is sent, and the details are entered into the Stakeholder Consultation database (Consultation Manager).
- The BESIX Watpac and INSW project teams are alerted to the complaint within 4 hours and the PM or Community Relations Manager investigates the nature and cause of the complaint to develop a response and close out the issue.
- Where a complaint is made directly to workers on site, they are to immediately advise the PM or Community Relations Manager of the compliant for logging and actioning. The PM or Community Relations Manager will maintain ongoing contact with the caller/emailer until the issue is resolved satisfactorily.
- Consultation Manager is updated and the complaints log is updated.
- Project Manager undertakes continuous improvement discussions, based on complaint monitoring with the contractor to reduce complaint recurrence.
- Project Manager implements changes with the contractor, based on evaluation of data from complaint log.
- In the event a complaint is deemed unresolved by the stakeholder, the complaint will be escalated to Infrastructure NSW's Project Director to review the process to resolve the matter, and the outcome.

Table 5 Responding to complaints and enquiries timeframes

Contact type	Method	Acknowledgement timeframe	Resolve timeframe
Enquiry or complaint	• In person • Phone • Email	Within 4 hours of receipt (Monday – Friday, business hours).	Within 2 working days (Keep complainant updated if this can't be met).

BESIX Watpac will take all reasonable measures to prevent the reoccurrence of stakeholder and community complaints and will manage all complaints in accordance with INSW and the NSW Ombudsman policies and procedures.

Enquiries or complaints from any federal, state or local government elected representatives will be referred to Infrastructure NSW.

5.3 Dispute resolution

A complaint that cannot be resolved by the nominated person will then be considered a dispute. It will be escalated as follows:

1. Construction contractor Project Manager, if not resolved then –
2. Infrastructure NSW Project Director, if not resolved then –
3. Construction contractor and Infrastructure NSW discussion. The construction contractor Project Manager and Infrastructure NSW Project Director to determine if the complaint is to be forwarded to mediation.

If mediation is required, Infrastructure NSW and the contractor will comply with the recommendations of a specialist mediator, who will be independent of Infrastructure NSW.

5.4 Recording contacts

A record will be kept of all contact, including telephone and face-to-face communication. Details will be entered into Consultation Manager.

The record will note the following in Table 6.

Table 5 Recording contacts

Essential information	Pending action

• Type of contact (enquiry/complaint and telephone/email/letter/face-to-face)
• Date and time of contact
• Team member receiving contact
• Name of stakeholder and contact details (if consent to record personal details is not provided the contact will be recorded but will not include personal details)
• Tone of the contact, particularly if angry or upset
• The team member to whom the contact was referred (if needed) and the referral date.
	• **For contact requiring action**, record of the action taken, response provided and the completion date
	• **For contact where no further action will be taken**, record the reason(s) why no action was taken
	• **For contact where further action is required,** record required actions, contact the person to confirm/clarify:
	  • The nature of the issue
	  • Reasons (if any) for its occurrence
	  • The criteria upon which the issue was assessed
	  • How the issue has been addressed
	  • Steps undertaken to prevent re-occurrence of either the issue or the contact if based on a complaint.

• **After contact has been resolved**, record resolution reached and the completion date.	

5.5 Privacy policy

Infrastructure NSW will protect the personal privacy of anyone interacting with the project team through community engagement. All personal information is treated in accordance with the NSW Privacy and Personal Information Protection Act (PPIPA).

For more information, see https://www.infrastructure.nsw.gov.au/privacy-policy/

5.6 Media and government relations

Infrastructure NSW will lead all major announcements on the project. The contractor will actively work with Infrastructure NSW and stakeholders on media requests, enquiries or opportunities that relate to the

project, supplying construction project specific information under the overall media management of Infrastructure NSW.

Specifically, in relation to media and government relations, the contractor will:

- refer any enquiry/contact by the media or elected government representative to Infrastructure NSW
- not make any statement (verbal or written) or provide any photographs or illustrations on social media or to the media, or elected government representatives regarding the Contractor's Activities without the prior written approval of Infrastructure NSW
- not permit any media or elected government representative on a worksite without the prior written approval of Infrastructure NSW
- provide Infrastructure NSW with relevant information in a timely manner, as required to respond to media and government enquiries
- comply with Infrastructure NSW Contractor Media Protocols.

5.7 Photography and videography

Infrastructure NSW will carry out construction progress photography as required, with access aided by the contractor. All photography and videography taken by the contractor will be submitted to Infrastructure NSW for review and approval ahead of any public release.

5.8 Branding

Infrastructure NSW will supply templates for work notifications, hoardings, project signage and other collateral which will enable the Contractor to comply with the NSW Government Branding Guidelines (Masterbrand).

5.9 Stakeholder and partnership meetings

The contractor will proactively manage community and stakeholders around the site, and where necessary:

- provide a minimum of 3 Business Days' notice prior to any meeting with the community or stakeholder (including door knocking) and ensure that suitable persons are available to attend such meetings (including after-hours).
- record all meeting interactions in Consultation Manager
- actively participate in strategic partnerships specific to the project, including attending regular meetings and developing proposals with Infrastructure NSW.

5.10 Community events planning

The contractor will identify potential community events in the six-monthly look-ahead and include a discussion topic on the Communications Working Group agendas. At a minimum, a Meet the Builder community event will be held once the contractor has possession of the site. The contractor will manage planning and logistics for the event, which will include an invitation to local community stakeholders. The event will include information about construction and light refreshments.

Future community events will be raised at Communications Working Group.

5.11 Approval, production and distribution of project collateral, marketing, media and promotional materials

The contractor will obtain approval from Infrastructure NSW to proceed with the development, production, and distribution of communication collateral, marketing materials, media interactions, and promotional

materials in relation to the project. Importantly, the contractor will apply a 'digital first' approach for the distribution of communication material.

To aid clarity, Table 8 below outlines the specific approval requirements and timeframes required of the contractor.

Table 8 Approval requirements

Approval requirements	Timeframe
All project collateral, including works notifications, project updates, signage must be submitted to Infrastructure NSW for approval	At least five business days prior to planned release
All urgent communications such as emergency or remedial works must be submitted to Infrastructure NSW for approval and include the reason the urgency	Provide as much notice as possible
All construction content and images produced by the contractor, subcontractors and suppliers for external facing communication channels must be submitted to Infrastructure NSW for approval	At least five business days prior to planned release
All written notifications to stakeholders and community with the potential to impact any stakeholder or member of the community must be submitted to Infrastructure NSW for approval, including: • construction commencement • significant milestones (i.e. completion of staged or a component of works) • changes to the scope of work • night works • changes to traffic conditions, modifications to pedestrian routes, cycleways and bus stop • out of hours work; disruption of residential or business access.	At least seven days before commencement of activities

5.12 Project staff responsibilities

The contractor will ensure all project staff are made aware of their responsibilities in relation to communication and engagement, particularly regarding SSD consent conditions through:

- Project inductions to include an overview about communication and engagement
- Project refresher sessions to provide status updates about complaints management and reminders about communication and engagement responsibilities
- Toolbox meetings to include reminders about communication and engagement responsibilities:
  - Ahead of planned works that will be disruptive
  - Following unplanned works that were disruptive.

    Following the receipt of complaints.

6. Monitoring and reporting

The contractor will continuously monitor and report monthly to Infrastructure NSW on the effectiveness of this plan by analysing the details of stakeholder interactions, response timeframes, issues raised and

responses provided, including the compliance with consent conditions. The monthly report will include any lessons learnt that will be incorporated into subsequent activities.

The report will be provided within five business days following the end of each month.

Appendix A
Neighbours Catchment Map

A-1 Appendix A: Project neighbours catchment map