UrbanGrowth NSW Development Corporation

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The new Sydney Fish Market Development
Construction Environmental Management Plan
Stage 1: Demolition and Early Works; and
Stage 2: Main Works

Version 5

April 2019

Contents

1. Purpose of this CEMP

Urban Growth NSW Development Corporation (UrbanGrowth NSW) is the developer of the new Sydney Fish Market. UrbanGrowth NSW has broad environmental objectives for the development of this project and these are set out in this document within Section 4.1, Table 2 – UrbanGrowth NSW Environmental Requirements for Sydney Fish Market.

In accordance with Section 78A (8) of the EP&A Act and Schedule 2 of the EP&A Regulation 2000, UrbanGrowth NSW has made application to the NSW Department of Planning and Environment (DPE) for issue of the Secretary's Environmental Assessment Requirements (SEAR's) for the development. This application was made in two parts, Application Number SSD 8924 for Stage 1 - demolition and early works[1], and Application Number SSD 8925 for Stage 2 - the main works[2]. These SEAR's were both issued to UrbanGrowth NSW by DPE on 22 December 2017.

This document, 'The new Sydney Fish Market Development / Construction Environmental Management Plan – Stage 1: Demolition, Early Works and Stage 2: Main Works' (this CEMP), is produced in satisfaction of Key Issues '19 – Construction Impacts' of both sets of SEAR's. In addition, this CEMP incorporates UrbanGrowth NSW's response in satisfaction of 'Key Issues 16 – Sediment, erosion and dust control' of both sets of SEAR's.

All other Key Issues identified in both SEAR's have been responded in the Environmental Impact Statement (EIS) or by documents produced by specialist consultants and appended to the EIS. This CEMP provides a full list of the documents, and sections within these document, in which responses to each SEAR's Key Issue can be found. This information is contained within Section 4.5, Table 3 of this CEMP.

The CEMP also contains some additional information provided in support of documents produced by specialist consultants with the aim of achieving a complete response to all SEAR's Key Issues. Such additional information is provided in this CEMP in relation to:

- Key Issues 13 – Water quality, soils and contamination;
- Key Issues 14 – Noise and vibration;
- Key Issues 15 – Air quality and odour; and
- Key Issues 17 – Waste.

These additional information's are referenced in Section 4.5, Table 3 of this CEMP.

This CEMP should be read in conjunction with the Environmental Impact Statement (EIS). UrbanGrowth NSW have advised that an accredited Site Auditor will be appointed, and that this Auditor will be engaged to assess and potentially sign off that the existing conditions are suitable for the intended use of the new Sydney Fish Market prior to commencement of Stage 1 and Stage 2 works. Following this assessment and clearance, is it expected that the contractors for Stage 1 and Stage 2 works will be able to complete groundworks in accordance with the requirements of this CEMP (as amended) and that a separately documented and certified action plan will not be required.

1. Proposal Name 'Sydney Fish Markets – Concept development application and Stage 1 works comprising demolition and early works' hereafter referred as Stage 1 works.

2. Proposal Name 'Sydney Fish Markets – Stage 2 main works proposal' hereafter referred as Stage 2 works.

2. Implementation of this CEMP

2.1 Endorsement of Construction Environmental Management Plan (CEMP)

This Construction Environments Management Plan (CEMP), along with the Environmental Impact Statement, will be submitted to the Department of Planning and Environment in response to the SEARs. Subject to the endorsement of the CEMP by the DPE, UrbanGrowth NSW will implement the plan to achieve the project's environmental obligations.

2.2 Ownership of the CEMP

The development of the new Sydney Fish Market project will be achieved by UrbanGrowth NSW through contracting the design works to various experienced and qualified design firms and the construction works to one or more experienced and suitable building contractors. The contractors may choose to subcontract various parts of the works to other specialist firms. The designers may be contracted directly to UrbanGrowth NSW, or to the principal contractor or to subcontractors.

This CEMP reflects the plan by which selected environmental issues as noted herein will be managed and implemented across all project phases. Responsibility for the CEMP document, its development, reissue and implementation will belong to the document's owner. Document ownership will be transferred by contract from time to time such that it remains the responsibility of the party directly able to undertake its implementation during the project's development. UrbanGrowth NSW will own the CEMP from the time of its endorsement by the Department of Planning and Environment and until its ownership is transferred, by contract, to the principal contractor for the construction of the project.

In addition to the detailed requirements of SEARs Key Issues 16 and 19, this CEMP contains general information about the project and its environmental characteristics and identifies UrbanGrowth NSW's broader environmental objectives. Other SEAR's Key Issues are responded in other documents produced by relevant environmental specialists and summarised in Section 4.5, Table 3. This CEMP plus all documents referenced in Table 3 form part of the projects documents available to all project parties

2.3 Risk Assessment

Prior to the commencement of works, the project stakeholders will review environmental risks and opportunities, in order to identify, limit, manage and mitigate the environmental impact of works. Construction phase project risks will be managed through the principal contractor's environmental risk management process under the requirements of the construction contract.

2.4 Key Stakeholders Roles and Responsibilities

Various project stakeholder groups having responsibility for achievement of various of the projects environmental obligations. These stakeholder groups and their responsibilities are outlined in Table 1 of this Section 2.4. Each stakeholder group will be responsible for managing their allocated environmental impacts and working in accordance with the systems and procedures implemented across the site. All subcontractors will have their roles and responsibilities explained by the principal contractor and will be required to comply with this document as amended from time to time.

Table 1: Key Stakeholders Roles and Responsibilities

Stakeholder	Responsibilities
Land Owner (UrbanGrowth NSW Development Corporation)	1. Ensure that site personnel or contractors that conduct intrusive works at the areas of the site to which this CEMP applies are provided a copy of the CEMP and are aware of their responsibilities regarding health and safety and protection of the environment; and 2. Ensure the requirements of the CEMP are successfully implemented. 3. Liaise with Government Agencies including NSW Office Environment and Heritage, City of Sydney and other key stakeholders prior to awarding the works
Site Manager (Principal Contractor)	1. Maintain, update and implement the CEMP; 2. Regular assessment of activities using a Risk Based Critical Controls and Activities process 3. Communicate environmental management measures, as part of the site induction e.g. location of storm water drains, marine environment, waste management system; 4. Regular liaison with sub-contractors and specialist contractors to identify successful initiatives and areas for improvement; 5. Ensure specialist environmental approvals are obtained for relevant contractors; 6. Ensure receipts and other records are obtained from contractors undertaking relevant works; 7. Report on project environmental performance; 8. Monitor the environmental impacts of the day-to-day activities of site personnel; 9. Maintain a record of complaints / enquiries and reporting environmental incidents to the Project Manager; and 10. Ensure corrective actions are taken in response to complaints and incidents and that these are recorded.
Project Manager	1. Assessment of activities using the Risk Based Critical Controls and Activities process; 2. Monitoring the environmental compliance of site activities; 3. Monitor, Record and close out corrective actions undertaken in response to incidents; and 4. Maintain a record of all complaints and enquires.
Environment/ Sustainability Manager	1. Assessment of activities using the Risk Based Critical Controls and Activities process; 2. Monitoring the environmental impacts of site activities; 3. Ensuring corrective actions are taken in response to incidents and that these are recorded and closed out; 4. Provide advice to the Project Team and sub-contractors to improve the environmental performance of the works; 5. Review the CEMP and update as required; 6. Review all complaints and enquires; and 7. Liaise with sub-contractors to identify successful initiatives and areas for improvement.
Site Workers	1. Ensure operations and intrusive works conducted at areas of the site to which this CEMP applies, are conducted in accordance with the requirements of this CEMP and other relevant statutory requirements including current Workplace, Health & Safety (WH&S) legislation; 2. Ensure that any persons or sub-contractors, who are engaged on the areas of the site to which this CEMP applies, are provided with a copy of the EMP; and 3. Implement CEMP including records.

3. Project Overview

3.1 Background

Sydney Fish Market is the largest of its kind in the Southern Hemisphere and among the three largest seafood markets in terms of variety in the world. The market sources product both nationally and internationally and trades approximately 14,500 tonnes of seafood annually with up to one hundred sustainable seafood species traded every day and approximately 500 species traded annually. The site attracts over 3 million visits each year.

In November 2016 the NSW Premier announced a new fish market would be built adjacent to the existing fish market at the head of Blackwattle Bay. In June 2017 the Premier of NSW announced the appointment of Danish architects 3XN to lead the architect consortium that includes Sydney firms BVN and Aspect Studios. Since this time the architect consortium have been working with UrbanGrowth NSW and the key stakeholders, including Sydney Fish Market Pty Ltd (SFM), to develop the design for the new fish market. As announced by the NSW Premier, works are planned to commence in 2019.

3.2 Site and context

The site is located at the head of Blackwattle Bay between the Pyrmont Peninsula and the foreshore of Glebe, situated less than 2km west of Sydney's CBD and is partially within the City of Sydney LGA.

The land to which the development application relates comprises Lots 3 - 5 in DP 1064339 part of lot 107 in DP 1076596 and part Lot 1 in DP835794. Works to connect to the existing waterfront promenade to the west of the site are located on Lot 3 in DP1018801. The development footprint is irregular in shape and has an area of approximately 36,800m^2. The site is partly on land above mean high water mark and partly on water below mean high water mark.

The site has a frontage to Bridge Road to the south and Blackwattle Bay to the north. Pyrmont Bridge Road is an arterial road that links to the Anzac Bridge to the north west of the site. Sydney Secondary College Blackwattle Bay Campus is immediately south west of the site and the existing fish market immediately north east. Located directly opposite the site to the south is Wentworth Park, separated by Bridge Road.

Located approximately 400m walking distance from the site are the Fish Market, Wentworth Park, and Glebe Light Rail stops which are serviced by the Dulwich Hill Line which is a 23 stop, 12.8-kilometre route running from Dulwich Hill to Central station via Pyrmont.

The site contains one heritage item being the heritage stormwater culvert. The site is also near a number of heritage items.

The site's current uses include a concrete batching plant at the Western end and concrete hardstand and wharf area at the Eastern end, which is currently vacant. The site includes wharves and land-based structures. Part of the site is the water of Blackwattle Bay. Works will be undertaken on Bridge Road and its intersections with Wattle Street and Wentworth Park Road.

3.3 Summary of the development

The proposal is to build a new fish market with a contemporary urban design, provide unique experiences for visitors and world-class auction and wholesale facilities. The new facility will be set within an improved public domain including the creation of a waterfront promenade with improved access to Blackwattle Bay and linking to surrounding areas and to public transport.

The development will expand and improve the functions of the existing in a new setting designed to achieve design excellence, functional performance and environmental sustainability.

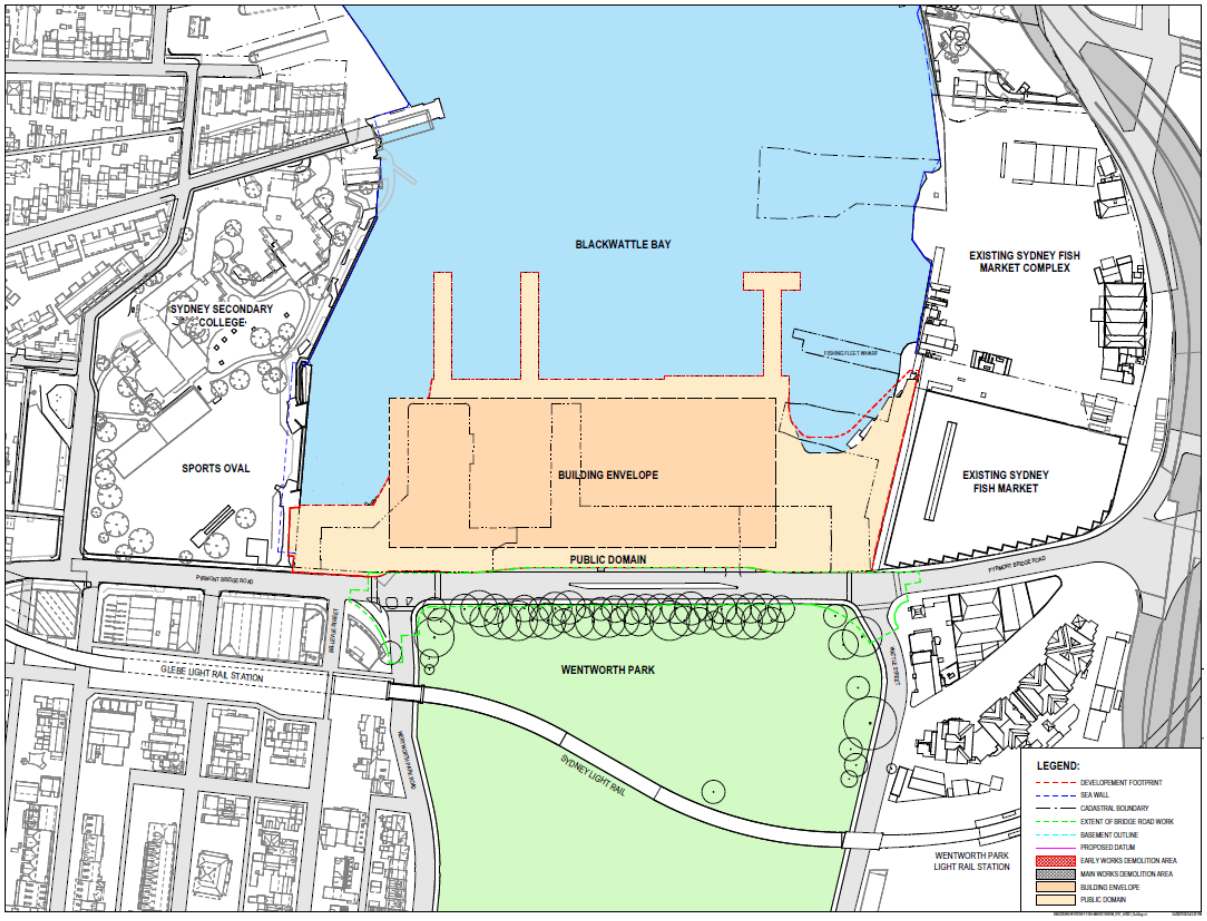
The new fish market will include retail and food and beverage premises, wholesale facilities and auction rooms, offices and commercial space, Sydney Seafood Schools, back-of-house facilities and car, truck and coach parking spaces. The new facility is to include a new foreshore promenade and wharves. The new fish market will be purpose built and will be supported by a state of the art back-of-house plant and recycling/waste management facilities.

3.4 Project Schematic Description and Staging

The new Sydney Fish Market will be created by developing a new fish market facility, on land adjacent to the existing Sydney Fish Market. When the new facility is completed, business tenants of the existing facility will be relocated into the new facility.

A representation of the new fish market facility on the new site is shown in schematic in Figure 1 below.

Figure 1: Existing site plan with new works overlay



3.5 Project Staging

The development of the new fish market facility will be performed in two stages:

Stage 1 – Demolition of existing structures and early works; and

Stage 2 – Main works.

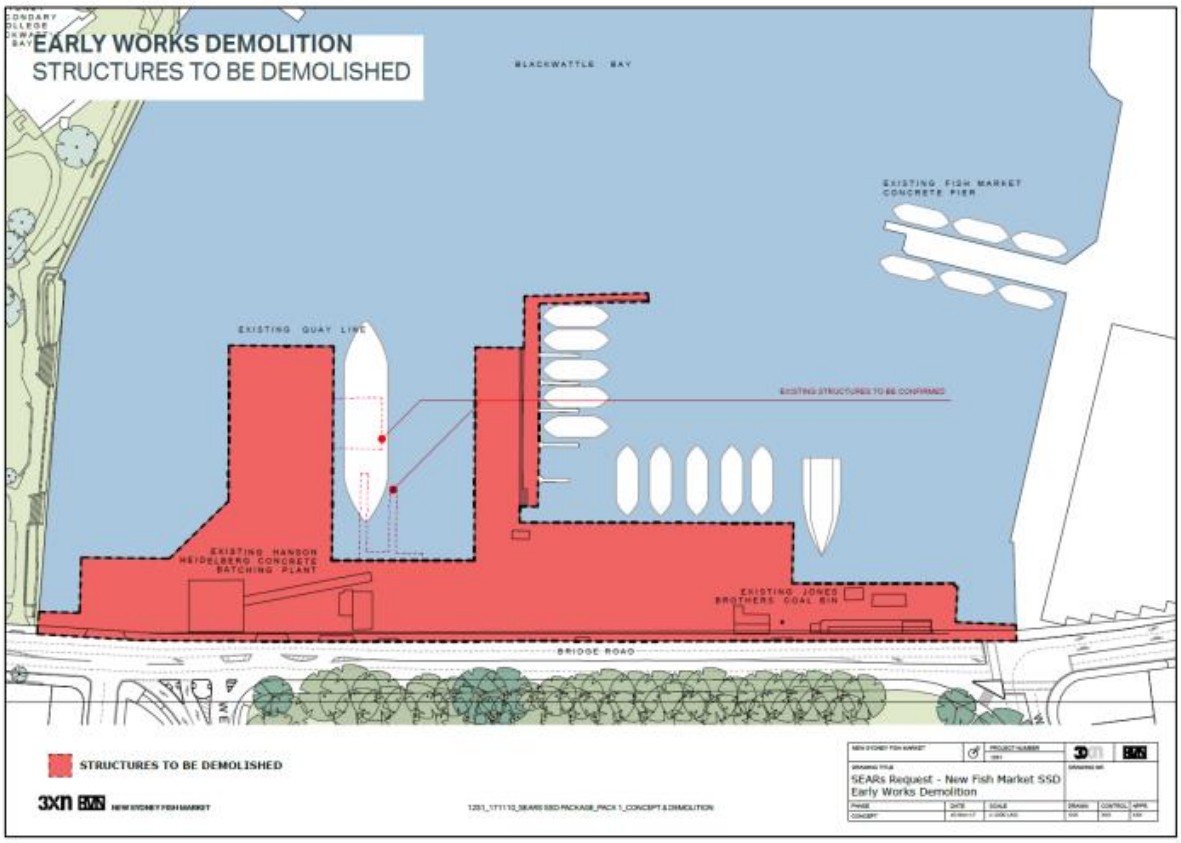
3.5.1 Stage 1 – Demolition and early works

Stage 1 generally includes the following scope of works:

- Site mobilisation and establishment (including installing environmental controls);
- Demolition of existing infrastructure including concrete batch plant, timber wharf and other marine structures;
- Services verification, relocations and installation of selected temporary services;
- Localised remediation works; and
- Selected early civil works (temporary works, drainage and other inground services).

A general representation of the Stage 1 works is shown in schematic in Figure 2 below.

Figure 2: Scope of Stage 1 works



Stage 1 works will be undertaken in a planned and controlled manner and in accordance with the requirements specified within the EIS and this CEMP. It is proposed within Stage 1 to establish a Construction Staging Area onsite (refer to Construction Staging Plans in Appendices B and C) to facilitate the performance of the various parts of the works.

A general representation of the construction staging for Stage 1 works of the new fish market is further shown in Annexure B.

3.5.2 Stage 2 – Main works

Stage 2 generally includes the following scope of works:

- land and water-based structures
- basement truck dock and parking
- waterfront commercial and tourist facilities and ancillary uses and the distribution of uses
- public domain works including promenades access to Blackwattle Bay and landscaping
- pedestrian, cycle and road access and circulation
- infrastructure provision and waste management
- associated works as required including the Bridge Road works
- removal of any temporary works

A general representation of the Stage 2 works is shown in plan in Figure 3 below and in perspective in Figure 4 below.

Figure 3: Scope of Stage 2 works

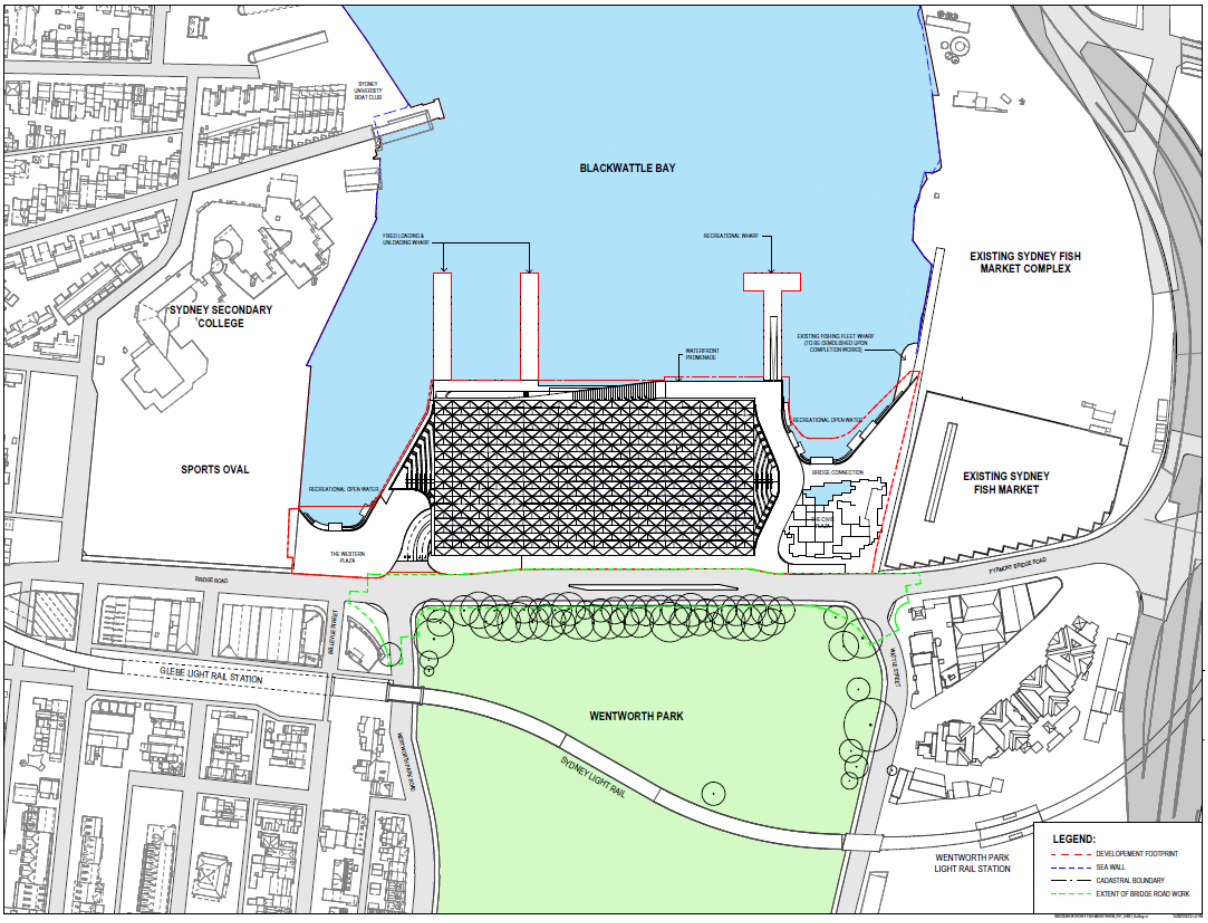
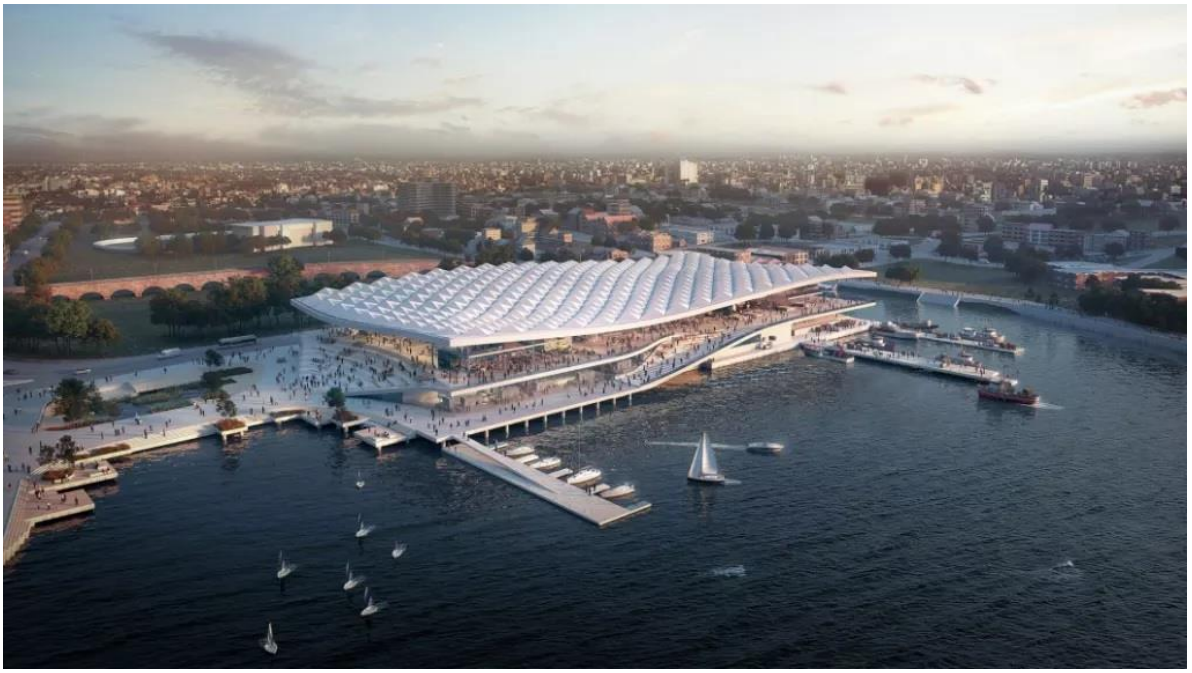


Figure 4: Sydney Fish Market Stage 2 - perspective



Stage 2 works will be undertaken in a planned and controlled manner and in accordance with the requirements specified within the EIS and this CEMP.

A general representation of the construction staging for Stage 2 works of the new fish market is further shown in Annexure C.

4. Project Environmental Requirements

This section identifies the project's environmental requirements with reference to both UrbanGrowth NSW environmental objectives and SEAR's Key Issues. The SEAR's responses are elsewhere in this report and as referenced in Section 4.5, Table 3.

4.1 UrbanGrowth NSW Environmental Requirements for the new Sydney Fish Market

UrbanGrowth NSW has committed to delivering a project that minimises the impact of construction activities on the environment.

The broader UrbanGrowth NSW environmental objectives for this project are set out in **Table 2**.

Table 2: UrbanGrowth NSW environmental objectives

UrbanGrowth NSW Environmental Objectives	Description
Air Quality	Minimisation of dust and odours produced by the development works from disturbing surrounding buildings and public spaces while maintaining air quality for contractors working on-site (specifically for the demolition works).
Noise & Vibration	Management and minimisation of noise pollution to ensure that neighbours are not adversely impacted by the construction works activities.
Minimisation of Materials Use	The project has been designed with modularity to ensure that the amount of waste and materials loss is minimal. This will ensure minimisation of site generated waste.
Water Quality	Water quality includes the management of onsite water points and existing storm water systems. Efforts are to be made to ensure that there is no contamination of waterways throughout the associated works. Spill risks are to be reduced and management techniques employed to ensure no contamination to Blackwattle Bay.
Energy	Management of energy consumption on site to improve energy efficiency and reduce greenhouse gas emissions.
Waste	Minimum site waste generation and maximum recycling. Segregation of site waste to maximise recycling. Segregation of hazardous waste for treatment and disposal.
Land	Minimise the use of materials that have the potential to contaminate soil. Minimise the risk of spills to prevent soil contamination.
Flora and Fauna	Minimise disturbance of local fauna (incl. marine) caused by construction activities. Minimise the disturbance of native or significant flora and vegetation (including marine) in accordance with Ecological Assessment report requirements.
Heritage	Minimise the disturbance of objects of Aboriginal and European significance in accordance with Heritage Assessment report requirements.

4.2 SEAR's Key Issue 19 response

Key Issue 19 of both SEAR's Stage 1 - Demolition and early works and SEAR's Stage 2 – Main works contain a requirement for a Construction Environmental Management Plan (CEMP) to be prepared. Both Key Issues 19 specify that this CEMP address the following environmental management issues:

- Community consultation, notification & complaints handling;
- Impacts of construction works on adjoining development and proposed measures to mitigate these;
- Noise and vibration impacts on and off site;
- Air quality impacts on the neighbourhood;
- Odour Impacts;
- Water quality management for the site; and
- Construction waste classification, transportation and management methods.

This whole document forms the CEMP that is UrbanGrowth NSW's response to Key Issues 19 of both SEAR's.

The reference sections of this document that respond to the SEAR's required areas of environmental management are detailed in Section 4.5, Table 3.

4.3 SEAR's Key Issue 16 response

Key Issue 16 of both SEAR's Stage 1 - Demolition and early works and SEAR's Stage 2 – Main works contain a requirement for identification and detailing of sediment, erosion and dust control measures during construction.

Section 5 of this CEMP represents the UrbanGrowth NSW's response to Key Issues 16 of both SEAR's. Additional supporting information is included in Appendices B and C, Construction Staging.

4.4 SEAR's other Key Issues

All Key Issues identified in both SEAR's, save for Key Issues 16 and 19, have been responded in the Environmental Impact Statement (EIS) or within documents produced by specialist consultants and appended to the EIS. This CEMP provides a full list of the documents, and sections within these document, in which responses to each SEAR's Key Issue can be found. This information is contained within Section 4.5, Table 3.

This CEMP also contains some additional information provided in support of documents produced by specialist consultants with the aim of achieving a complete response to all SEAR's Key Issues. Such additional information is provided in this CEMP in relation to:

- Key Issues 13 – Water quality, soils and contamination;
- Key Issues 14 – Noise and vibration;
- Key Issues 15 – Air quality and odour; and
- Key Issues 17 – Waste.

These additional information's are referenced in Section 4.5, Table 3 of this CEMP.

4.5 Referenced documents responding to SEAR's Key Issues

Table 3 below lists selected Key Issues required by the SEAR's Stage 1 – Demolition & early works and the SEAR's Stage 2 – Main works. The table references every document and/ or specialist consultants, including this CEMP, that together respond to CEMP related matters.

Table 3: Referenced documents responding to SEAR's Key Issues

NB. All reference documents noted relate to the current version as may be amended from time to time.

SEAR's Key Issue	SEAR's Key Issue No. St 1	SEAR's Key Issue No. St 2	Description	Reference Document	Reference Document Section
Transport, traffic, parking and access	8.	8.	Site demolition layout: access to / from site, internal roads network, truck marshalling, turning path diagrams, staging, driver facilities and parking	Arup – The new Sydney Fish Market - Transport Impact Assessment	Section 8.3 Construction traffic routes Appendix A Proposed road layout and configuration
Maritime navigation	9.	9.	Navigation Impact Assessment (NIA) impacts of demolition and early works on the navigation of bulk carriers and cruise ships	Royal Haskoning DHV - Navigation Impact Assessment - Concept and Stage 1 Early Works	Section 4.5 Vessel Interaction Section 4.6 Stage 1 Early Works Construction Impacts
			Outline mitigating measures		Section 4.7 Summary of Mitigation Measures
Biodiversity	10.	10.	Marine Ecology Report to identify impacts to aquatic ecology	Ecological Australia – The new Sydney Fish Market - Marine Ecology Assessment	Executive Summary
			Outline mitigating measures		Section 5.6 Recommended Mitigation measures
			Biodiversity Development Assessment	Ecological Australia – The new Sydney Fish Market - Biodiversity Development Assessment Report	Appendix A Likelihood of Occurrence Assessment
			Outline mitigating measures		Section 2.1.7 Mitigating and managing impacts
Heritage and archaeology	11.	11.	Maritime heritage impacts	Comber Consultants - Maritime Heritage Impact Statement City Plan – The new Sydney Fish Market – Heritage Impact Statement	Executive Summary
			Archaeological Testing		Executive Summary Point 3
			Outline mitigating measures		Section 7
			Procedures and management strategies for unexpected discovery of heritage items		Executive Summary Point 5
			Historical Archaeological Impact	Artefact – The new Sydney Fish Market Aboriginal Heritage Due Diligence Assessment, Aboriginal Cultural Heritage, ACHAR Addendum	Various
			Proposed measures to mitigate impacts on Aboriginal cultural heritage		Various

SEAR's Key Issue	SEAR's Key Issue No. St 1	SEAR's Key Issue No. St 2	Description	Reference Document	Reference Document Section
Flooding	12.	12.	Direct or indirect siltation destruction of riparian vegetation or reduction in river bank stability from flooding	Cardno – SFM – All Stages – Flooding and Water Quality	Various
			Mitigating effects of stormwater management during and after the works on hydrological attributes		
Water quality, soils and contamination	13.	13.	Background conditions. Impacts on water quality. Impacts on hydrology. Stormwater Management Plan. Map water and soil features. Detail on decommissioning structures and decontamination processes. Assess contamination of shore side areas. Compliance with SEPP 55 – Remediation of Land	JBS&G; ESA, HMRP, RAP, ASSMP	Various
				This CEMP.	Section 10
Noise and vibration	14.	14.	Noise and vibration assessment in accordance with EPA guidelines.	SLR - SFM Noise Impact Assessment	Various
			The impact of noise and vibration on noise sensitive receivers such as surrounding residences, Sydney Secondary College, Ultimo Public School (temporary relocation site in Wentworth Park) and nearby public reserves; and Mitigation measures to minimise potential noise and vibration impacts including recommended standard construction hours and intra-day respite periods for highly intrusive noise generating work)	This CEMP.	Section 9
Air quality and odour	15.	15.	Prepare Air quality impact assessment.	SLR – The new Sydney Fish Market Air Quality Impact Assessment	
			Identify the key air emission generating sources and activities. Identify measures to mitigate potential air quality impacts.	This CEMP.	Section 8
Sediment, erosion and dust controls	16.	16.	Provide details on the sediment and erosion control and dust control measures. Provide details on the measures and procedures to minimise and manage the	Thelem Consulting This CEMP.	Section 5 and Appendices B and C

SEAR's Key Issue	SEAR's Key Issue No. St 1	SEAR's Key Issue No. St 2	Description	Reference Document	Reference Document Section
			generation and off-site transmission of sediment, dust and particles		
Waste	17.	17.	Provide an assessment of the demolition and early works waste impacts and their management, including waste classification in accordance with the EPA guidelines and off-site	AECOM – The new Sydney Fish Market Waste Management Plan	Section 4
			Provide a management plan for the identification, handling, transport and disposal of any acid sulfate soils containing waste that may be encountered during demolition and early works.	JBS&G HMRP, RAP, ASSMP	Various
			Provide a management plan for the identification, handling, transport and disposal of any asbestos waste and lead-based paint that may be encountered during demolition and early works.	This CEMP.	Section 11
Utilities & infrastructure	18.	18.	Assess capacity and required upgrades to utilities and infrastructure.	AECOM – The new Sydney Fish Market Utilities and Infrastructure Report	Various
Construction impacts	19.	19.	Community consultation, notification & complaints handling	Thelem Consulting This CEMP.	Section 6
			Impacts on adjoining development and proposed measures to mitigate demolition impacts		Section 7
			Noise and vibration impacts on and off site		Section 9
			Air quality impacts on the neighbourhood		Section 8
			Odour Impacts		Section 8
			Water quality management for the site		Section 10
			Construction waste classification, transportation and management methods with DECCW's Know your responsibilities…Guidelines		Section 11

5. Sediment, erosion and dust controls

SEAR's Key Issue 16
Provide details on the sediment and erosion control and dust control measures during the works. Provide details on the measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and particles.

In addition to the key issues referenced at Section 4.5 Table 3 and set out in the;

- Biodiversity documents related to SEAR's Key Issue 10
- Heritage and archaeology documents related to SEAR's Key Issue 11, and
- Water quality, soils and contamination documents related to SEAR's Key Issue 13.

This section provides a response to SEARs Key Issue 16 with respect to the controls applicable to Stage 1 and Stage 2 construction works.

5.1 Sediment and Erosion Controls Plan

Upon award of the works contracts, the principal contractor will further develop the Sediment Erosion and Control Plan (SECP) for the project. The contractor and all site personnel are required to comply with the SECP at all times. The SECP is a live document and as the site moves through the different phases of demolition and construction, the plan will be updated and constantly monitored to ensure the prevention of site contaminants from entering the public domain and waterways via storm water the drainage system is mitigated.

The SECP must be developed in conjunction with the requirements of related reports including include specifically those listed above. The most stringent requirements of each and any supporting report must be maintained or formally revised and adjustments top procedures developed as required.

The contractor must induct all workers and subcontractors on site to comply with the SECP and must enforce good erosion and sediment control practice.

5.2 Sediment and Erosion Controls Measures

Prior to the commencement of any construction works by the contractor a draft SECP is to be submitted to UrbanGrowth NSW for review and comment. This plan will generally be developed by the contractor's specialist environmental representative in conjunction with the contractor and subcontractor undertaking the works. The SECP can also be developed directly by a contractor but must be approved by the specialist environmental representative prior to implementation to ensure the plan adequately protects the site.

The establishment of effective erosion and sediment control measures for the new Sydney Fish Market Project are based on the following principles:

1. Diverting surface runoff around the works areas (where possible);
2. Placing sediment barriers downslope of works areas and spoil stockpiles;
3. Placing sediment barriers around any stormwater drains/pits and silt curtains underwater (refer to below notes for details);
4. Preventing sediment migration offsite with cattle grates/rumble pads and reduced velocity of vehicles;
5. Undertake daily inspections of all erosion and sediment control structures and during/after rain event;
6. Immediately adjust / re-install any structure found to be ineffective;
7. Preventing erosion by always keeping stockpiles covered; and
8. Vehicle movements to be restricted to designated areas and sealed surfaces where practicable.

When spoil is removed it will be stockpiled at an appropriate location away from drains (covered where practical) and either:

1. Where practical, spoil will be reused onsite in accordance with the best practices;

2. Classified and used for beneficial reuse offsite in accordance with the exemptions to the DECC Waste Classification Guidelines (2009); or

3. Where there are no other practical options, or contamination is present, spoil will be classified in accordance with the DECC Waste Classification Guidelines (2009) and disposed of at a licensed facility.

It is essential to restore all areas where the ground surface was disturbed to its pre-construction condition as soon as possible, or to temporarily stabilise to prevent wind-blown dust, pending construction constraints. Sedimentation control will be achieved through the use of a combination of bunding, sandbags or other controls deemed adequate around high risk areas and sealing of the bases of hoardings and fences to retain sediment laden water within the worksite. All erosion and sediment controls will be maintained until the areas are stabilised.

The location of control measures will be verified once UrbanGrowth NSW have approved the hoarding layout and prior to commencement of work. The installation of control measures will be carried out under the supervision of the contractor. Aspects to be incorporated in the control measures will take account of existing levels, location of existing drainage paths and potential impact on the public or egress to the station areas.

It is anticipated that all saw cutting, core-drilling and general inground works will need specific perimeter sedimentation controls during those works including, but not limited to, concrete bunding, sand bags and wet vacs. The implementation of these measures will be reviewed and finalised in association with the specialist trades undertaking the works. Details of the works being undertaken, volume of water generated and the method causing least impact to the operation of the station precinct will be taken into consideration when planning the environmental controls to be established.

Disturbed sediment is generally to be retained behind the coffer dam and in all cases, within floating booms and barriers. Refer to the **Construction Staging Plans** in **Appendices B & C** for the indicative layout of the floating booms and silt curtains during the various project stages. Note that these silt and sediment controls will generally include a silt curtain for the full water depth (subject to the physical constraints of the seabed profile) and can be moved as and when required, to accommodate site constraints, the Principal Contractor's construction methodology and external stakeholder interface requirements. The capture of sediment will be ensured by maintaining regular checks to ensure the integrity of the silt curtain is intact, and prompt repairs to any defects that are found. The required sediment controls will be further informed by the JBS&G ASSMP.

Specific control measures will need to be implemented for moving bed sediments from one portion of the coffer dam footprint to another to provide for construction of the basement level. It is anticipated that local silt curtains will be installed for these silt adjustment activities.

Temporary diversions, if needed, will be constructed to divert runoff away from the works and exposed areas.

5.3 Monitoring Controls Measures

The temporary sedimentation control measures are to be inspected daily, with additional inspections during/after significant rain events. The effectiveness of each structure is to be assessed and recorded.

If the temporary sedimentation control measures require maintenance, then rectification/repair works will be completed promptly. Sediment removed from these structures will be disposed of at locations where it will not again erode into construction areas, waterway or drainage systems (such as spoil stockpile locations).

The SECP is a dynamic document and is to be revised whenever the temporary erosion and sedimentation control structures require modification to suit the changing work site. Any revisions to the SECP are to be submitted to UrbanGrowth NSW for comment.

5.4 Matters Related to Heritage and Archaeology

Activities will be planned with a view to minimising the disturbance of sediment. Activities with the potential to disturb sediment will generally be undertaken behind the coffer dam and in all cases, within floating booms and barriers. Refer to the **Construction Staging Plans** in **Appendices B & C** for the indicative layout of the floating booms and silt curtains during the various project stages. Note that these silt and sediment controls will generally include a silt curtain for the full water depth (subject to the physical constraints of the seabed profile) and can be moved as and when required, to accommodate site constraints, the Principal Contractor's construction methodology and external stakeholder interface requirements. The capture of sediment will be ensured by maintaining regular checks to ensure the integrity of the silt curtain is intact, and prompt repairs to any defects that are found.

The proposed works will necessitate significant disturbance of the harbour bed within the site area. Disturbance will be associated with both Stage 1 and Stage 2 works during the installation of the cofferdam, dewatering, removal of existing piling and installation of new piling.

Prior to installation of the cofferdam, archaeological testing of the upper 1m layer of the seabed in accordance with the methodology outlined in Comber Consultants - Maritime Heritage Impact Statement - Sydney Fish Market Stage 1 Concept and Demolition Report.

Dewatering will be completed in a manner that does not result in re-suspension of existing sediments.
The removal of the large number of existing piles has the potential to disturb a large proportion of the marine sediment within the site area. Existing piles will be extracted by mechanical means where possible. In the event that piles cannot be extracted by conventional means, or the existing pile does not clash with the new Sydney Fish Market design, they will be cut off at sea bed level. All pile extraction/cut off works will be undertaken in a manner that minimises the potential for sediment suspension and will occur within a sediment curtain surrounds to manage associated impacts.

6. Community consultation, notification & complaints

6.1 Pre-Construction Consultation

Engagement with key stakeholders, affected landowners and neighbours, and the broader community is an important aspect of the CEMP and is required by the SEARs. The Consultation Report (see Appendix 31 of EIS) provides details of the engagement program and its outcomes.

To support this CEMP, a summary of the key consultation activities carried to inform the EIS are outlined below:

- In 2015, UrbanGrowth NSW held the International Summit, Sydneysiders Summit and Leadership Forums, The Call for Great Ideas and public exhibited Transforming City Living: The Bays Precinct Discussion Paper to inform The Bays Transformation Plan;
- UrbanGrowth NSW established the Bays Precinct Community Reference Group in December 2015, which consists of 41 representations from community, industry and peak groups. The Group continues to meet quarterly;
- As part of a broad engagement program, UrbanGrowth NSW runs quarterly open houses that include market stalls, information sessions and sponsorship of community events such as the Balmain Fun Run;
- In order to engage future residents, workers and visitors, UrbanGrowth NSW runs a schools engagement program that includes student site tours, presentations to school groups and is currently developing online school curriculum resources;
- To support planning for The Bays, UrbanGrowth NSW ran a workshop with sporting groups and a public online survey to gauge the current and future active recreational needs of the area; and
- Over four-weeks in August 2017, UrbanGrowth NSW delivered consultation activities including public workshops and an online survey to inform the development of a masterplan for the Bays Market District.

In addition, consultation was undertaken as required by specialist consultants in undertaking assessments for the purpose of the design and development of the EIS and supporting technical reports. Refer to SFM Consultant Stakeholder table in Stage 2 EIS.

6.2 Construction Phase Consultation

Post-award of construction works contract to a principal contractor, the successful contractor will engage resources for the following proposed requirements within their team:

- Environmental manager
- Health and safety manager
- Environmental consultants
- Community relations manager

In addition to other contractual and legislative requitements, these resources will be required to prepare and implement an approved community and stakeholder relations management plan.

The plans required by, and to be defined within, the contract will clarify the process by which the contractor will:

1. Identify key risks associated with environmental and safety management and how they are being managed,
2. Communicate and liaise with all stakeholders including neighbours, Government agencies and subcontractors and suppliers,
3. Provide ongoing communications and notifications regarding progress and impacts upon the community and surrounds
4. The process for complaints management and inquiries from stakeholders
5. The process for closing-out complaints to ensure compliance with the conditions of consent and to the reasonable satisfaction of stakeholders.

7. Impact on Adjoining Developments

7.1 Demolition Specific Impacts

The first stage of the early works will include the demolition of land and water based structures on the site including removal of marine piles. The following structures are proposed to be demolished:

- A wharf structure comprising a reinforced concrete deck supported by 250x250 hardwood girders;
- A finger jetty;
- A concrete jetty;
- Piles supporting the existing wharves and jetty structures;
- Concrete batching facilities including concrete and steel clad silos and hoppers;
- The former Jones Coal Loader; and
- All other associated land and water based structures.

Associated works are proposed to make good the existing sandstone seawall where required. A detailed demolition methodology will be prepared by the demolition contractor once appointed. The contractor's methodology will be complaint with necessary Australian Standards.

Construction and demolition activities will generate a wide range of waste materials including:

1. Excavated material such as rock and soil;
2. Waste asphalt, bricks, concrete, plasterboard, glass, timber and vegetation (products of removal and demolition of existing structures); and
3. Asbestos and contaminated soil and materials.

Identification and management of the waste streams will mitigate the environmental pollutants, public health risks (particularly asbestos and contaminated material) and amenity issues.

UrbanGrowth NSW will ensure the Contractor is also held accountable for the following demolition hazards:

- Unplanned structure collapse;
- Falls from height;
- Falling objects;
- The location of above and underground essential services;
- Exposure to hazardous chemicals;
- Hazardous noise from plant used in demolition work; and
- Proximity of the marine and other structures being demolished to other building structures or structures.

7.2 Demolition Specific Measures

The following mitigation measures will be implemented to ensure the demolition sequence of the existing structures are conducted in a safe and effective manner with minimal impact on the environment and its surroundings.

Entry points to work areas where demolition work is to be undertaken shall be signposted to indicate the danger / hazard of demolition work in the area.

Prior to commencing demolition work, a workplace risk assessment will be completed to determine which demolition activities carried out, could result in harm. Prior to commencement of high risk construction work, the Project Manager and Foreman shall ensure all workers involved in the task have participated in the development of the task specific SWMS. The head contractor will ensure the demolition contractor has a valid demolition license prior to engagement.

Notification of demolition work shall be provided to WorkCover at least five days prior to the commencement of work. A demolition plan will also be prepared by the demolition subcontractor detailing the methodology of the work as well as highlighting the key safety and environmental controls that will be implemented. A dilapidation survey may also be provided by an external consultant, identifying and recording pre-existing conditions.

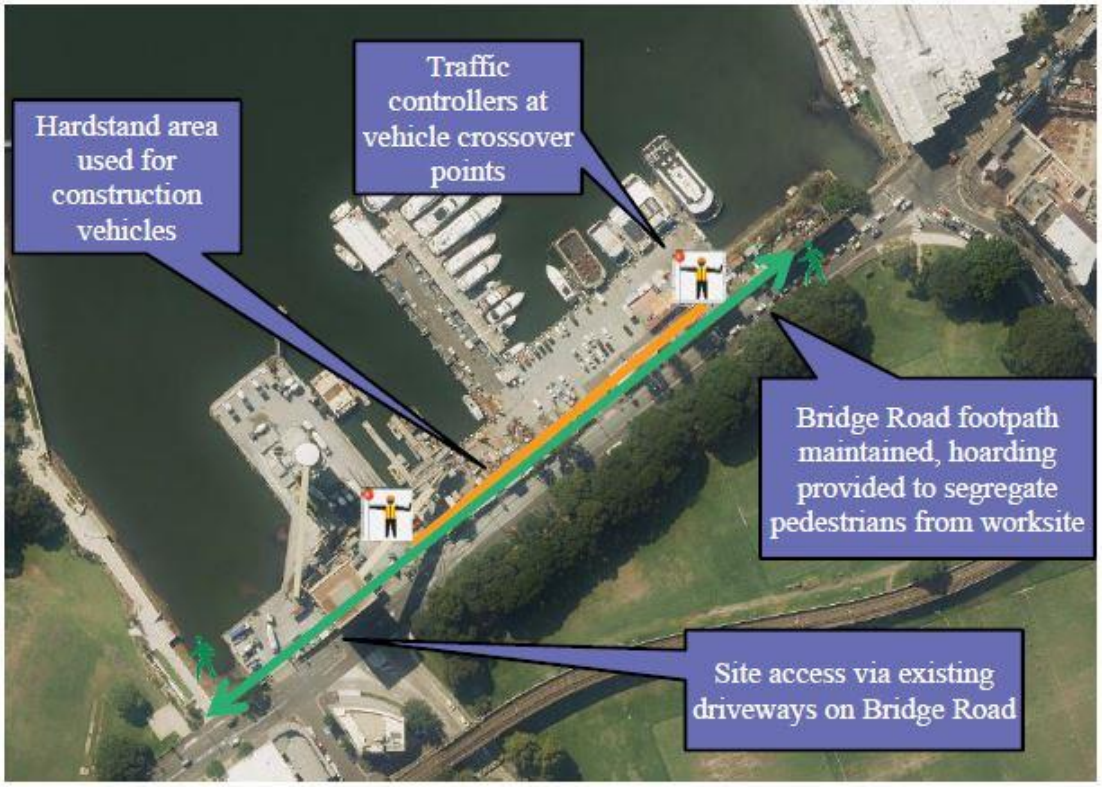
7.3 Construction Site Movements and Deliveries

In addition to the requirements set out in the transport, traffic, parking and access documents related to SEAR's Key Issue 8 and referenced at Section 4.5 Table 3, the following controls are applicable to Stage 1 and Stage 2 construction works.

All site deliveries are to be received within the hours of 7am to 7pm weekdays and 7am - 5pm on weekends or as per the subject State Significant Development Application Conditions. Some out of hours deliveries will be accepted outside of these hours, as approved by Council and/or UrbanGrowth NSW on a case by case basis. All deliveries will be sensitive to the location of the site within mixed use area of residential and commercial uses. All out of hours deliveries and road closures will require the contractor to prepare and issue notices to all neighbours within an agreed protocol.

The proposed vehicular and pedestrian routes and controls will be firmed up by the appointed contractor(s) including obtaining all necessary approvals. The delivery, staging, unloading and waiting areas will be considered to best achieve; safety and compliance as well as efficient materials handling by reduced double handling, program coordination at peaks times. Pedestrian controls will be finalised to provide a safe route at all times including traffic controllers when necessary.

Figure 5 – Pedestrian and Vehicle movements surrounding the site (preliminary option)



8. Air and Dust Control Measures

In addition to the requirements set out in the Air Quality Impact Assessment documents referenced in Section 4.5, Table 3, the following controls are applicable to Stage 1 and Stage 2 Construction works.

Air quality and dust will be visually monitored and minimised during the course of the project, reported daily in the contractor's site diary. An external consultant may be used to monitor the generation of dust during construction.

This section aims to identify the strategy being implemented to ensure air quality is not impacted and the surrounding receivers are not affected by migration of dust from site. UrbanGrowth NSW's goal is to conduct works in a way to prevent any external impacts.

The following general mitigation measures to minimise dust movement from site the following actions will be implemented;

- Where practical, erection of hoardings around high risk activities where practical to prevent migration of dust from site;
- Erection of shade cloth along ATF fencing and perimeter fencing to prevent migration of dust from site;
- Dust suppression through water application
- Visual dust monitoring to be conducted throughout the project and following receipt of any legitimate complaints and works modified if necessary. If contamination is discovered and identified within the dust, works will cease, the areas will be stabilised, and an investigation will be conducted.
- Areas of ground disturbance will be stabilised as soon as possible to prevent windblown dust;
- Equipment and vehicles will be maintained in good operating condition and be subject to regular servicing, with daily inspections conducted to identify plant or equipment that is causing visible emissions;
- Plant or equipment will be switched off when not in use;
- Truck loads will be covered when removing spoil off site;
- Any stockpiles will either be located appropriately for protection from wind or covered; and
- Works that are likely to generate high levels of dust or air borne particles will not be carried out during strong winds.

All personnel on site are responsible for identifying dust generation and migration. Should it be observed, the activity will stop and be reported by the personnel to the site supervisor. The activity will be reassessed, and additional dust controls may be implemented in order to resume works. Should any complaints by the public or any other source be received, the complaint will be registered and acted upon immediately. Training will be provided in the form of toolbox talks to all personnel to identify dust generating activities and suppression measures.

When stable, water will be used for dust suppression under the following guidelines:

- Hoses must always be held down and further than 3m from the powerlines to ensure there is no possibility of arcing;
- Hoses will aim towards the work areas ensuring sediment control measures are used to prevent unsuitable material entering, blocking or otherwise contaminating drains and waterways;
- Any area that is still wet when workers or public are using will be cordoned off and / or sign posted to ensure that there is no possibility of slipping;
- Hoses will not be used near the public or roads; and
- Water that results in slurry being generated will be contained and disposed off-site; no washing of slurry into any drainage systems and natural waterways will be permitted.

Where visible levels of dust are high, site activities will be reviewed with additional control measures or varied site operations in consultation with UrbanGrowth NSW and the CoS.

8.1 Air and Odour Quality Impacts

During the works, air and odour quality impacts will be associated with the generation of dust and emissions from stationary and moving onsite machinery and associated vehicular traffic.

Emissions associated with the combustion of diesel fuel and petrol from construction plant and equipment contribute to poor air and odour quality. The operation of plant, machinery and trucks may also lead to increases in exhaust emissions in the study areas; however, these impacts will be minor and short term.

8.2 Air Quality Measures

These impacts will be minimised by following the below mitigation measures outlined in Table 4.

Table 4: Proposed Mitigation Measures

	Activity	
1	**Communications**	
1.1	Display the name and contact details of person(s) accountable for related issues on the site boundary. This may be the environment manager/engineer or the site manager.	H
1.2	Display the head or regional office contact information.	H
1.3	Implement a dust management plan, which may include measures to control other emissions, approved by the Local Authority.	D
2	**Site Management**	
2.1	Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken.	H
2.2	Make the complaints log available to the local authority when asked.	H
2.3	Record any exceptional incidents that cause dust and/or air emissions, either on- or offsite, and the action taken to resolve the situation in the log book.	H
3	**Monitoring**	
3.1	Perform daily on-site and off-site inspections where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This will include regular dust soiling checks of surfaces such as street furniture, cars and window sills within 100 m of site boundary.	D
3.2	Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection log available to the local authority when asked.	H
3.3	Increase the frequency of site inspections by the person accountable for air quality on site when activities with a high dust potential are being performed and during prolonged dry or windy conditions.	H
4	**Preparing and Maintaining the Site**	
4.1	Plan site layout so that machinery and dust causing activities are located away from receptors.	H
4.2	Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site.	H
4.3	Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period.	D
4.4	Avoid site runoff of water or mud.	H
4.5	Keep site fencing, barriers and scaffolding clean using wet methods.	D
4.6	Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If they are being re-used on-site cover as described below	D
4.7	Cover, seed or fence stockpiles to prevent wind erosion	D
5	**Operating Vehicle/Machinery and Sustainable Travel**	
5.1	Ensure all on-road vehicles comply with relevant vehicle emission standards, where applicable	H
5.2	Ensure all vehicles switch off engines when stationary - no idling vehicles	H
5.3	Avoid the use of diesel or petrol powered generators and use mains electricity or battery powered equipment where practicable	H

	Activity	
5.4	Impose and signpost a maximum-speed-limit of 10 km/hr.	D
6	**Operations**	
6.1	Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems.	H
6.2	Ensure an adequate water supply on the site for effective dust/particulate matter suppression/ mitigation, using non-potable water where possible and appropriate	H
6.3	Use enclosed chutes and conveyors and covered skips	H
6.4	Minimise drop heights from loading or handling equipment and use fine water sprays on such equipment wherever appropriate	H
6.5	Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods.	D
7	**Waste Management**	
7.1	Do not use bonfires and burning of waste materials.	H
8	**Demolition**	
8.1	Soft strip inside buildings before demolition (retaining walls and windows in the rest of the building where possible, to provide a screen against dust).	D
8.2	Ensure effective water suppression is used during demolition operations. Hand held sprays are more effective than hoses attached to equipment as the water can be directed to where it is needed. In addition, high volume water suppression systems, manually controlled, can produce fine water droplets that effectively bring the dust particles to the ground.	H
8.3	Do not use explosive blasting, using appropriate manual or mechanical alternatives.	H
8.4	Bag and remove any biological debris or damp down such material before demolition.	H
9	**Trackout**	
9.1	Use water-assisted dust sweeper(s) on the access and local roads to remove, as necessary, any material tracked out of the site.	D
9.2	Avoid dry sweeping of large areas.	D
9.3	Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport.	D
9.4	Record all inspections of haul routes and any subsequent action in a site log book.	D
9.5	Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).	D

H = Highly recommended; D = Desirable

9. Noise and Vibration

In addition to the requirements set out in the Noise and Vibration documents referenced in Section 4.5 Table 3, the following controls are applicable to Stage 1 and Stage 2 construction works.

The impact of noise and vibration associated with demolition, early works and main works on noise sensitive receivers such as surrounding residences, Sydney Secondary College, Ultimo Public School (temporary relocation site in Wentworth Park) and nearby public reserves is to be managed. Mitigation measures to minimise potential noise and vibration impacts during demolition and early works including recommended standard construction hours and intra-day respite periods for highly intrusive noise generating work.

A noise and vibration assessment will be completed within the relevant EPA guidelines. The following sections outline at a high level the noise and vibration management strategies and to the extent that there are any inconsistencies, the approved Construction Noise and Vibration Management Plan and Noise and Vibration Impact Assessment will be followed.

9.1 Construction and Vibration Criteria

Where feasible and practical measures may be applied, the construction site will endeavour to comply with the criteria outlined in the Council of the City of Sydney's Code of Practice for Construction Hours/Noise.

The noise goals for the construction activities on this project are aimed at minimising adverse impacts within the commercial or residential/hotel buildings. The noise goals adopted by the code of practice are outlined in Table 5.

Table 5: Construction Noise Criteria

Day	Time Zone	Noise Criteria $L_{10(15\ minute)}$
Monday to Friday	7am to 8am	Background Noise + 5
Monday to Friday	8am to 7pm	Background Noise + 10
Monday to Friday	7pm to 10pm	Background Noise + 5
Saturday	7am to 8am	Background Noise + 5
Saturday	8am to 5pm	Background Noise + 10

The Code also mentions that the guidelines for control of construction noise as outlined in AS2436 shall be applied, where appropriate. Based on these criteria the following procedure will be used to assess noise emissions:

- Predict noise levels produced by typical construction activities at the sensitive receivers;
- Adopt management conditions as per AS 2436 where possible in the event of a non-compliance; and
- Develop a detailed Construction Noise and Vibration Management Plan for approval by Council as may be required.

9.2 Proposed Construction Works Noise Emitters

The proposed construction works in Table 6 will include the following:

- Demolition and Early works; and
- General construction works.

Table 6: Typical Demolition, Excavation, and Construction Activities

Construction Activity	Equipment / Process	Sound Power Level dB(A)
Demolition and Excavation	Concrete Sawing	115
	Angle grinders	114
	Bobcat	105
	Excavator/ Bulldozer	114
	Piling	100
	Hydraulic Hammering	120
	Trucks	108
General Construction works	Trucks	108
	Concrete Pumps	110
	Concrete Sawing	115
	Drilling	94
	Angle grinders	114
	Electric Saw	111
	Impact drill	105

9.3 Vibration Criteria

Until more specific construction equipment and methodology details are known, a detailed construction vibration assessment is not possible. However, it is recommended to mitigate any potential impacts using the recommended safe working distances for vibration intensive plant, as referenced in Table 8 below (taken from Transport for NSW's Construction Noise Strategy (2012).

9.4 Noise and Vibration Control Methods

The determination of appropriate noise control measures will be dependent on the particular activities and construction equipment. Strict adherence to the approved Conditions of Consent will be observed. This section provides an outline of available methods.

9.4.1 Material Handing

The installation of rubber matting over material handling areas can, if practical, reduce the sound of impacts due to material being dropped by up to 20dB(A).

9.4.2 Establishment of Site Practices

This involves the formulation of work practices to reduce noise generation. It is recommended that all available and reasonable treatments and mitigation strategies be investigated to minimise noise emissions from the demolition and construction activities on site.

Table 7: Recommended safe working distance for vibration intensive plant

Plant Item	Rating/Description	Safe Working Distance	
		Cosmetic Damage (BS 7385)	Human Response (OH&E Vibration Guideline)
Vibratory Roller	< 50 kN (Typically 1-2 tonnes)	5 m	15 m to 20 m
	< 100 kN (Typically 2-4 tonnes)	6 m	20 m
	< 200 kN (Typically 4-6 tonnes)	12 m	40 m
	< 300 kN (Typically 7-13 tonnes)	15 m	100 m
	> 300 kN (Typically 13-18 tonnes)	20 m	100 m
	> 300 kN (> 18 tonnes)	25 m	100 m
Small Hydraulic Hammer	(300 kg - 5 to 12t excavator)	2 m	7 m
Medium Hydraulic Hammer	(900 kg – 12 to 18t excavator)	7 m	23 m
Large Hydraulic Hammer	(1600 kg – 18 to 34t excavator)	22 m	73 m
Vibratory Pile Driver	Sheet piles	2 m to 20 m	20 m
Pile Boring	≤ 800 mm	2 m (nominal)	N/A
Jackhammer	Hand held	1 m (nominal)	Avoid contact with structure

Note: More stringent conditions may apply to heritage or other sensitive structures

9.5 Vibration Mitigation Measures

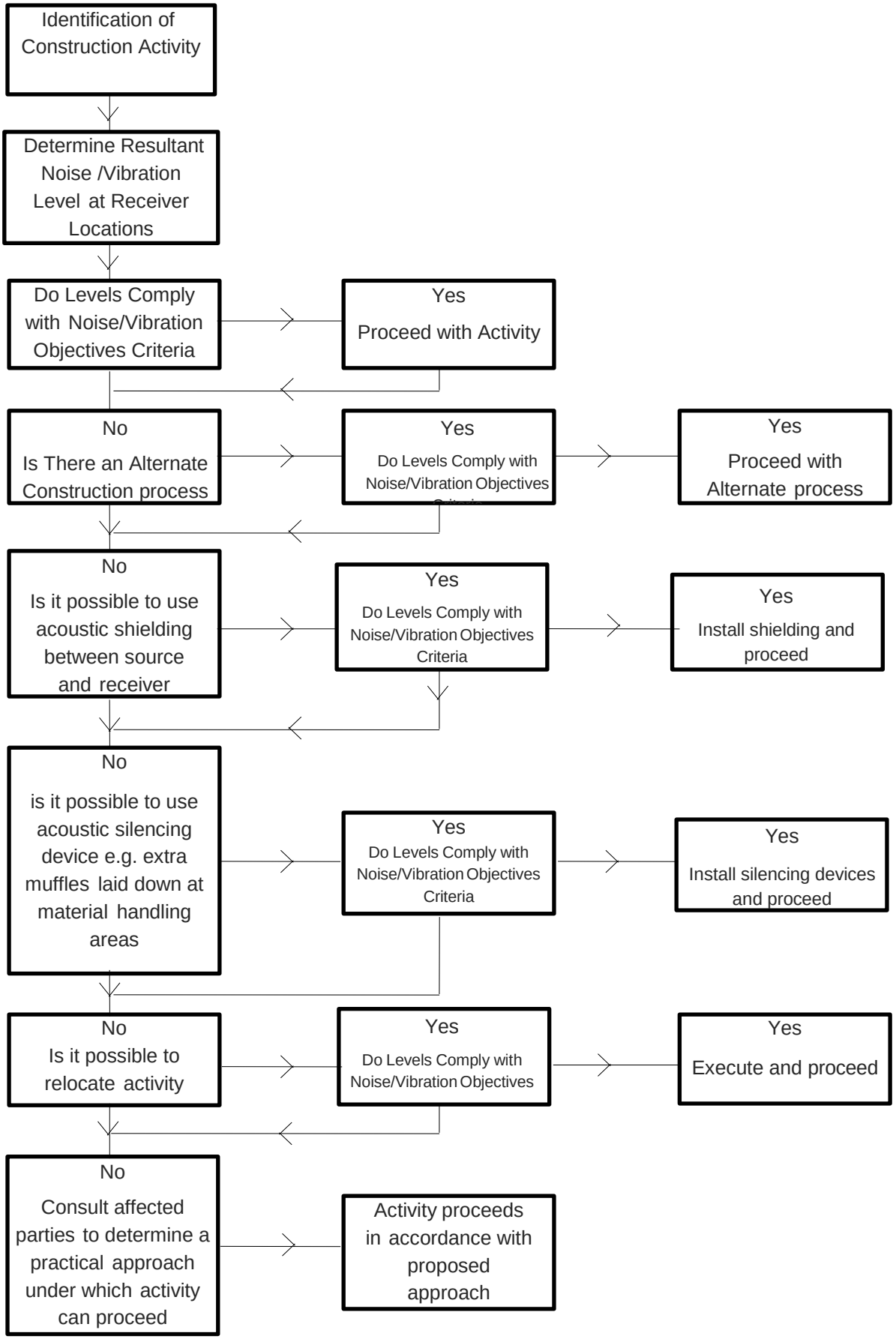
The recommendations of the approved Conditions of Consent must be followed by all contractors and site staff at all times. Typical sources of vibration include:

- Excavator and piling rig noise;
- Structural demolition;
- Vehicle movements; and
- Tipping and truck loading.

The execution of this work will facilitate the formulation of noise control strategies for this project.

The flow chart presented below in Figure 7 illustrates the process that will be followed in assessing construction activities.

Figure 6: Assessment of Construction activities flow chart



10. Water quality, soils and contamination

In addition to the requirements set out in the JBS&G RAP and ASSMP (referenced in Section 4.5 Table 3), the following controls are applicable to Stage 1 and Stage 2 construction works.

10.1 Treatment of water (Land Based)

Should groundwater or surface water impacted by ASS be encountered, an appropriately qualified environmental consultant will be engaged as soon as practicable to assess the impacted water and recommend treatment procedures.

A typical treatment procedure is outlined below which may be applicable, subject to assessment by the environmental consultant:

- A suitable water holding tank and a water pump will be used for the storage, treatment and monitoring of ASS impacted water;
- The water will be monitored at least daily for pH and electrical conductivity. Where the pH or electrical conductivity exceeds the relevant water quality guidelines or site specific disposal criteria, hydrated lime will be added and thoroughly mixed;
- The monitoring results will be reviewed at least daily and compared against predetermined water quality objectives prior to discharge, subject to approval. The application of hydrated lime will continue until the water quality objectives are met; or
- Alternatively, the acidic waters can be disposed of to a licensed treatment facility in accordance with the NSW EPA (2014) Waste Classification Guidelines.

11. Waste

In addition to the requirements set out in the Waste documents related to SEAR's Key Issue 17 and the requirements set out in the ASSMP document referenced in Section 4.5 Table 3, including the Waste Management Plan produced by AECOM, this plan provides a response to SEARs Key Issue 17 with respect to the controls applicable to Stage 1 and Stage 2 construction works

11.1 Legislation and guidance

Legislation and guidance documents outlined in Table 8 will be referred to during the Stage 1 and Stage 2 construction works.

Table 8: Waste Legislation and Guidance

Legislation / Guidance	Objectives
Waste Avoidance and Resource Recovery Act 2001	To promote extended responsibility in place of industry waste reduction plans. Objectives include: • To encourage efficient use of resources; • To minimise the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste; • To ensure that industry shares with the community the responsibility for reducing and dealing with waste; and • To ensure the efficient funding of waste and resource management planning, programs and service delivery
Protection of the Environment Operations Act (POEO) 1997 & Amendment Act 2011	Administered by the Environmental Protection Authority (EPA) to enable the Government to establish instruments for setting environmental standards, goals, protocols and guidelines. The owner of a premises, the employer or any person carrying on the activity which causes a pollution incident is to *immediately* notify the relevant authorities when material harm to the environment is caused or threatened. A list of each relevant authority is provided in the POEO Amendment Act and will be noted in the Site's incident register.
POEO (Waste) Regulation 2014	Contains provisions relating to the waste levy, waste tracking and management requirements for certain waste types, payment schemes for local councils, consumer packaging recycling and other miscellaneous provisions
NSW EPA's Waste Classification Guidelines (Part 1) 2014	To assist waste generators to effectively manage, treat and dispose of waste to ensure the environmental and human health risks associated with waste are managed appropriately and in accordance with the POEO Act and is associated regulations.
Council of Australian Governments National Construction Code 2016	The National Construction Code 2016 sets the minimum requirements for the design, construction, and performance of buildings throughout Australia

Legislation / Guidance	Objectives
City of Sydney (2013) Sydney Development Control Plan 2012	The Sydney Development Control Plan (DCP) has been prepared by Council in accordance with Section 74C of the Environmental Planning and Assessment Act 1979 and is intended to provide detailed provisions to: • Encourage development to respond to its context and is compatible with the existing built environment and public domain; • Recognise and reinforce the distinctive characteristics of Council's neighbourhoods and streets; • Build upon objectives and controls under the Sydney Local Environment Plan 2012; • Protect and enhance public domain; • Achieve objectives of Council's Sustainable Sydney 2030 Strategy; • Encourage design that maintains and enhances the character and heritage significance of heritage items and heritage conservation areas; and • Encourage ecologically sustainable development and reduce the impacts of development on the environment. Section 3.14 of the DCP sets out waste management requirements to: • Reduce the amount of construction and demolition waste going to landfill; • Reduce the amount of waste generated in the operation of a development from going to landfill; and • Ensure waste from within developments can be collected and disposed in a manner that is healthy, efficient, minimises disruption to amenity and is conducive to the overall minimisation of waste generated.
Department of Environment & Climate Change NSW (2008) Better Practice Guide for Waste Management in Multi-unit Dwellings	This guide has been developed to assist council staff, architects, residential developers and building management incorporate better practice in the design, establishment, operation and ongoing management of waste services in residential multi-unit developments. It outlines various essential points to be considered when designing a waste management system for medium or high-density residential, mixed-use and integrated housing developments
NSW EPA (2012) Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities	This guide provides advice to help architects, developers, council staff and building managers to incorporate better waste management practice into the design, establishment, operation and ongoing management of waste services in commercial and industrial developments.
NSW EPA (2014) NSW Waste Avoidance and Resource Recovery Strategy 2014-21	A key component of the State Government's vision for the environmental and economic future of the state that will be supported financially by the *Waste Less, Recycle More* funding initiative providing long-term targets for 6 key result areas including reduced illegal dumping.
Sydney Local Environment Plan 2012	The Sydney Local Environment Plan 2012 aims to make local environmental planning provisions for land in the City of Sydney in accordance with relevant standard environmental planning instruments under Section 33A of the Environmental Planning and Assessment Act 1979 No. 203. The Sydney Local Environment Plan 2012 is the overarching planning instrument under which the Sydney Development Control Plan 2012 is implemented.

11.2 Stage 1 and Stage 2 Works Waste Management

11.2.1 Waste Streams and Classifications

The early works, demolition and construction activities are anticipated to generate the following broad waste streams:

- Demolition wastes, including ENM (subject to assessment / classification), hazardous waste, uncontrolled fill material and spoil;
- Construction waste;
- Plant maintenance waste;
- Packaging waste;
- Work compound (on-site employees) waste; and
- Wastewater (from dewatering, plant maintenance and construction activities).

A summary of likely waste types arising from site preparation and construction activities, along with their waste classifications and proposed management methods, is provided in Table 9.

Table 9: Potential waste types, classifications and management methods

Waste Type	NSW EPA Classification	Proposed Reuse / Recycling / Disposal Method
Piling, Demolition, and Construction		
Sediment fencing, geotextile materials	General solid (non-putrescible) waste	Reuse at other sites where possible or disposal to landfill
Fill material	Solid waste (non-putrescible) requiring classification	Off-site reprocessing or disposal to landfill
Excavated natural material (ENM)	General solid waste (non-putrescible)	Off-site re-use
Virgin excavated natural material (VENM)	General solid waste (non-putrescible)	Off-site reuse
Concrete, bricks, sand/soil, metal, timber and gyprock/plasterboard	General solid waste (non-putrescible)	Off-site recycling
Conduits and pipes	General solid (non-putrescible) waste	Off-site recycling
Bulk electrical cabling	General solid (non-putrescible) waste	Off-site recycling
Insulation material	General solid (non-putrescible) waste	Off-site disposal
Glass recycling	General solid (non-putrescible) waste	Off-site recycling
Asbestos (including ACM)	Special Waste	Off-site disposal at licensed facility
Fluorescent light fittings	Hazardous waste	Off-site recycling or disposal
Lead paint	Hazardous waste	Off-site disposal
Insulation material	Hazardous waste	Off-site recycling or disposal
Sediment	Liquid Waste (if it is not dewatered to a spadable level)	Off-site disposal at licensed facility
Saturated soil	Liquid Waste (if it is not dewatered to a spadable level)	Off-site disposal at licensed facility
Plant Maintenance		

Waste Type	NSW EPA Classification	Proposed Reuse / Recycling / Disposal Method
Empty oil and other drums / tins (e.g. fuel, chemicals, paints, spill clean ups)	Hazardous waste if the containers were previously used to store Dangerous Goods (Class 1, 3, 4, 5 or 8) and from which residues have not been removed by washing or vacuuming. General solid (non-putrescible) waste if the containers have been cleaned by washing or vacuuming.	Transport to comply with the transport of Dangerous Goods Code applies in preparation for off-site recycling or disposal at licensed facility. (Note: Discharge to sewer subject to Trade Waste Agreement with local Council)
Air filters and rags	General solid (non-putrescible) waste	Disposal at landfill
Oil filters	Hazardous waste	Off-site recycling
Batteries	Hazardous waste	Off-site recycling
Packaging		
Packaging materials, including wood, plastic (including stretch wrap or LLPE), cardboard and metals	General solid (non-putrescible) waste	Off-site recycling
Wooden crates	General solid (non-putrescible) waste	Reused for similar projects, returned to suppliers, or off-site recycling
Work Compound and Associated Offices		
Recyclable beverage containers (glass and plastic bottles, aluminium cans), tin cans	General solid (non-putrescible) waste	Co-mingled recycling at off-site facility
Clean paper and cardboard	General solid (non-putrescible) waste	Paper and cardboard recycling at off-site licenced facility
General domestic waste generated by workers (soiled paper and cardboard, food stuffs, polystyrene)	General solid (non-putrescible) waste mixed with putrescible waste	Disposal at landfill
Waste water, pump-out waste and septage (sewage)	Liquid (trade) waste	Off-site disposal at licensed facility or disposal direct to sewer where arranged with Council

Note: JBS&G's RAP outlines procedures for classification for offsite disposal of soil / sediment / liquid waste.

11.2.2 Stage 1 and Stage 2 Construction Waste

The contractors shall manage the storage, movement and disposal of demolition waste by nominating dedicated waste storage areas in close proximity to the demolition activity.

Where possible, all waste shall be segregated into component parts to assist with disposal, recycling or reuse. All demolition waste shall be disposed of at licensed waste disposal facilities, with waste disposal receipts obtained and retained in the project files.

Refer to the waste management section of this CEMP for more information on waste classification, transportation and management.

11.2.3 Adjoining and Adjacent Property

Where the works may impact the structural integrity of adjoining, adjacent buildings and properties, a structural engineer will be engaged to determine the need for temporary support such as shoring, underpinning or propping.

If the work is to be carried out in close proximity to adjoining or adjacent buildings, the Contractor shall ensure a detailed survey of adjoining property (inclusive of footpaths, roadways, property access and egress, flora and fauna, etc.) is conducted to identify and record pre-existing conditions. It may also be necessary to engage an appropriately qualified occupational hygienist or environmental consultant to determine impacts, develop controls and monitor effectiveness for vibration, noise and concussion.

11.2.4 Stage 1 and Stage 2 Works Waste Avoidance

The demolition contractor will:

- Take advantage of opportunities for beneficial reuse for ENM and/or VENM generated from excavation works if possible;
- Apply practical building designs and construction techniques;
- Sort and segregate site preparation and construction wastes to ensure efficient recycling of wastes;
- Store wastes on site appropriately to prevent cross-contamination and/or mixing of different waste;
- Exercise a preference for long lifespan and/or high potential for re-use in selecting construction materials;
- Re-use formwork where appropriate;
- Reduce packaging waste by:
    - Returning packaging to suppliers where possible and practicable;
    - Purchasing in bulk;
    - Requesting cardboard or metal drums rather than plastics;
    - Requesting metal straps rather than shrink wrap; and
    - Using returnable packaging such as pallets and reels; and
- Ensure subcontractors are informed of and implement site waste management procedures.

11.2.5 Reuse, Recycle and Disposal

The contractors will implement the following with respect to re-use, recycling and disposal of site preparation and construction waste:

- Provide separate waste bins for recyclable and non-recyclable general wastes;
- Assess excavation spoil for contamination status and beneficial re-use;
- Waste oil to be recycled or disposed of in an appropriate manner;
- Retain roofing material cut-offs for re-use;
- Retain used crates for storage purposes unless damaged;
- Recycle cardboard, glass and metal wastes;
- Return packaging to suppliers where possible and practicable;
- Recycle or dispose of solid waste timber, brick, concrete, tiles, asphalt, and rock (where such waste cannot be re-used on site) to an appropriately licensed construction and demolition (C&D) waste recycling facility or an appropriately licensed landfill;
- Dispose of all asbestos, hazardous and/or intractable wastes in accordance with WorkCover NSW and NSW EPA requirements; and
- Batteries to be delivered to off-site recycling facilities/centres.

11.3 Waste Segregation, Storage, and Servicing

11.3.1 Waste Segregation and Storage

Waste materials produced from site preparation, early works, demolition and construction activities are to be segregated and stored separately on site.

It is anticipated that the site will provide allowances for separate storage (e.g. separate skip bins and/or appropriately managed stockpiles) of the following waste types:

- Bricks, roof tiles, concrete and scrap metal;
- Metal/steel (if any, in a condition suitable for recycling at metal recycling facilities);
- Timber;
- Glass;
- Hardstand rubble;
- Excavation spoil (uncontaminated);
- Contaminated excavation spoil (if present);
- Hazardous waste;
- Paper and cardboard;
- Recyclable general waste; and
- Non-recyclable general waste.

If there is insufficient space onsite for full segregation of waste types, the principal contractor will consult with waste/recycling collection facilities to confirm which waste types may be co-mingled prior to removal from the site.

11.3.2 Waste Storage Areas

Areas designated for waste storage will:

- Allow unimpeded access by site personnel and waste disposal contractors;
- Have in place adequate environmental management controls to prevent off-site migration of waste materials and/or contamination from the waste; and
- Not present hazards to human health or the environment.

11.3.3 Waste Servicing and Transport Off-site

The principal contractors are to:

- Arrange for suitable waste collection contractors to remove site preparation and construction waste from site;
- Ensure waste bins are not filled beyond recommended filling levels;
- Ensure that all bins and loads of waste materials leaving site are covered;
- Maintain waste disposal documentation detailing, at a minimum:
    - Descriptions and estimated amounts of all waste materials removed from site;
    - Details of the waste/recycling collection contractor(s) and facilities receiving the waste/recyclables;
    - Records of waste/recycling collection vehicle movements (e.g. date and time of loads removed, licence plate of collection vehicles, tip dockets from receiving facility);
    - Waste classification documentation for materials disposed to off-site recycling or landfill facilities; and
- Remove waste during hours approved by Council.

11.3.4 Contaminated / Hazardous Waste

Contaminated and/or hazardous materials, where identified, are to be removed by appropriately licensed contractors and transported to facilities licensed to accept such materials for treatment and/or disposal in accordance with NSW EPA regulations.

Where unexpected materials are encountered which are, or are suspected of being, contaminated or hazardous, the following shall be undertaken as a minimum:

- Work near the suspect material is to stop immediately and access to the area restricted;
- Site manager is to contact a qualified hazardous materials assessor and/or environmental consultant (as necessary) to arrange an assessment of the suspect material and advise on subsequent management procedures; and
- The unexpected finds protocol detailed in JBS&G's RAP shall be implemented.

11.3.5 Liquid Waste Management

Wastewater or liquid waste generated from demolition or construction activities is not permitted to enter the storm water system of Blackwattle Bay or migrate off-site.

Areas, if any, designated on site for wash-down of equipment plant or machinery are to be appropriately bundled and isolated from the local storm water system and groundwater.

Liquid waste / wastewater is to be removed by a suitably qualified liquid waste contractor and transported to an appropriately licensed facility for treatment and/or disposal in accordance with NSW EPA regulations.

11.3.6 Spills Management

Spillages are to be immediately contained (if safe to do so) and the site manager notified as soon as possible.

Spill containment kits and spill control equipment are to be provided and maintained in sufficient numbers and at appropriate locations to allow ready and rapid access by site personnel. Safety Data Sheets (SDSs) will also be available to provide advice on spill clean-up and disposal.

11.3.7 Signage

Standard signage is to be posted in all storage/waste collection areas.

All waste containers are required to be labelled correctly and clearly to identify materials stored within.

11.3.8 Site Inductions

Waste management measures and procedures are to be included in the site induction for all personnel working at the site.

With respect to waste management, the site induction is to include, at a minimum:

- An outline of this CEMP;
- Legal obligations;
- Emergency response procedures on site;
- Waste storage locations and separation of waste;
- Litter management in transit and on site;
- Implications of poor waste management practices;
- Correct use of spill kits; and
- Responsibility and reporting (including identification of personnel responsible for onsite waste management and individual responsibilities).

11.3.9 Monitoring and Reporting

Records are to include volumes or tonnages of waste re-used, recycled, or disposed to landfill and will be maintained by the building contractor. Additionally, dockets/receipts verifying recycling and/or disposal in accordance with the W&RMP are to be retained.

Site personnel will undertake daily visual inspections of waste storage areas to identify and rectify any issues concerning waste management at the site, as well as identifying opportunities for improvement. A written record of these inspections, which will include observations made and the results of any remedial actions taken, is to be undertaken and retained by the building contractor as part of the construction environmental management documentation.

Suggested roles and responsibilities for waste management at the site are provided in Table 10. Where possible, a construction environmental manager will be appointed for the site preparation and construction work. Where a construction environmental manager is not appointed, responsibilities in Table 10 for the construction environmental manager will become those of the site manager.

Table 10: Suggested roles and responsibilities for site preparation and construction waste management

Site Manager	• Ensuring plant and equipment are well maintained; • Ordering only the required amount of materials; • Keeping materials segregated to maximise reuse and recycling; • Ensuring that waste sorting and storage areas are maintained in a tidy and functional state and do no present hazards to human health or the environment; • Ensure hazardous/contaminated materials are appropriately managed and disposed; • Ensure site records and documentation is kept and is complete; • Ensure this W&RMP is implemented; and • Liaise with Council as required.
Construction Environmental Manager or equivalent	• Ensuring staff and contractors are aware of site requirements for waste management; • Developing or identifying, and using, local commercial opportunities for re-use of materials where re-use on-site is impractical; • Facilitate waste collection by Council; • Engage suitable waste collection/disposal contractors; • Approval of off-site waste disposal locations and checking licensing requirements; • Arranging for the assessment of potentially hazardous and/or contaminated materials and liquid wastes; and • Monitoring, inspection and reporting requirement

11.4 Acid Sulfate Soil Management

The controls detailed in the JBS&G ASSMP are applicable to Stage 1 and Stage 2 construction works.

11.4.1 Site features

A review of the acid sulfate soil (ASS) risk map prepared by Department of Land and Water Conservation (199713) indicated that the site is located in an area classed as having a 'high probability' of ASS occurrence within bottom sediments of the Bay.

11.4.2 ASS environment

ASS is commonly found in low lying coastal floodplains, estuaries, rivers and creeks. They are naturally occurring sediments rich in iron sulfides that form sulfuric acid when exposed to oxygen. Acid sulfate soils include potential acid sulfate soils (PASS) and actual acid sulfate soils (AASS).

11.4.3 ASS management - general

Where potential or actual ASS is encountered during excavation and piling works, the general management procedures detailed in the JBS&G ASSMP are to be applied.

11.4.4 Waste classification and off-site disposal

If required, the soil will be disposed to an appropriately licensed landfill following a waste classification by an appropriately qualified environmental consultant.

The waste classification and disposal will be undertaken in general accordance with the Waste Classification Guidelines – Part 1: Classifying Wastes and Part 4: Acid sulfate soils (NSW EPA, 2014).

11.4.5 Asbestos

If asbestos is encountered during demolition, an occupational hygienist and licensed asbestos removalist shall be engaged. An asbestos register will also be prepared for the project which will identify the location and type of asbestos or asbestos containing material (ACM) on site. The foreman will ensure the asbestos register is kept up to date and made available to the demolition contractor.

Asbestos hazards will be managed in line with the requirements of the JBS&G RAP and HMRP.

APPENDIX A: Abbreviations

Acronym	Meaning
ACM	Asbestos Containing Material
AEC	Areas of Environmental Concern
AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment and Conservation Council
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
ASRIS	Australian Soil Resource Information System
ASS	Acid Sulfate Soil
AST	Above ground Storage Tank
bgs	below ground surface
BH	Borehole
COPC	Chemical of Potential Concern
CoS	The Council of the City of Sydney
DO	Dissolved Oxygen
DP	Deposited Plan
DQO	Data Quality Objectives
EBH	Environmental Borehole
EC	Electrical Conductivity
eH	Oxidation/Reduction Potential
EIL	Ecological Investigation Level
ESA	Environmental Site Assessment
ESL	Ecological Screening Level
GIL	Groundwater Investigation Level
HIL	Health-based Investigation Level
HSL	Health Screening Level
IP	Interface Probe
LEP	Local Environmental Plan
LNAPL	Light Non-aqueous Phase Liquid
LOR	Limit of Reporting
µg/L	micrograms per litre
mg/kg	milligrams per kilogram
mg/L	milligrams per litre
NATA	National Association of Testing Authorities

Acronym	Meaning
NEPC	National Environment Protection Council
NEPM	National Environment Protection (Assessment of Site Contamination) Measure
NL	Non Limiting
NSW DEC	New South Wales Department of Environment and Conservation
NSW EPA	New South Wales Environment Protection Authority
NSW OEH	New South Wales Office of Environment and Heritage
OCP	Organochlorine Pesticide
OPP	Organophosphorus Pesticides
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PID	Photoionisation Detector
ppm	parts per million
PSI	Preliminary Site Investigation
PVC	Polyvinyl Chloride
QA	Quality Assurance
QC	Quality Control
RPD	Relative Percent Difference
SAQP	Sampling, Analysis and Quality Plan
SEARs	Secretary's Environmental Assessment Requirements
SFM	Sydney Fish Market Pty Ltd
SIL	Soil Investigation Level
SOP	Standard Operating Procedures
SWL	Standing Water Level
TDS	Total Dissolved Solid
TEQ	Toxicity Equivalence Quotient
TRH	Total Recoverable Hydrocarbon
UrbanGrowth NSW	UrbanGrowth NSW Development Corporation
USCS	Unified Soil Classification System
UST	Underground Storage Tank
VOC	Volatile Organic Compound

APPENDIX B: Construction Staging – Stage 1

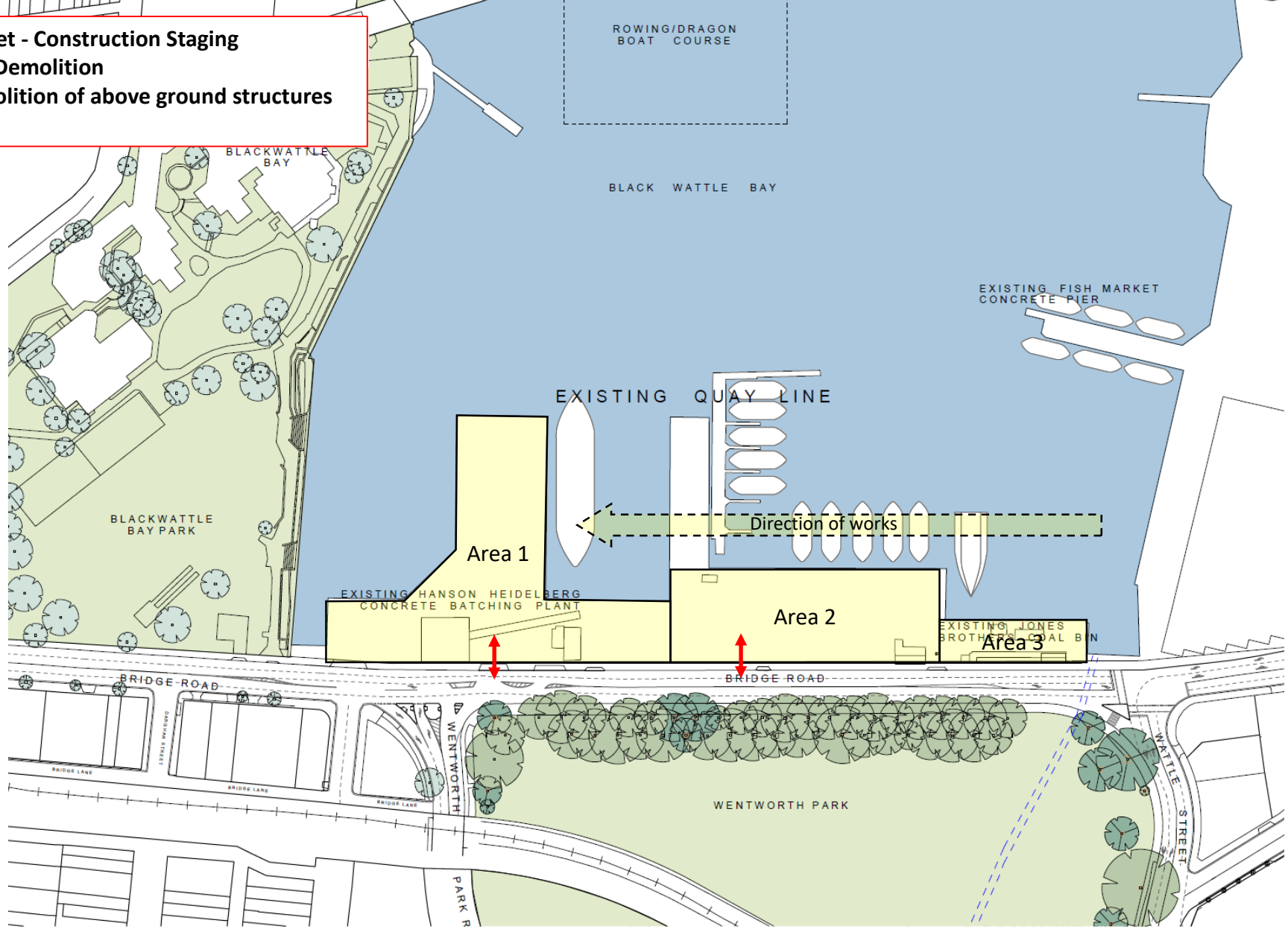
UrbanGrowth NSW Development Corporation

The new Sydney Fish Market – Construction Staging – Early Works

April 2019

NSW GOVERNMENT | UrbanGrowth NSW Development Corporation

New fish market - Construction Staging
Early Works – Demolition
Stage 1 – Demolition of above ground structures on Wharfs



Building Description Description

Area 1: Concrete Batching Plant Structures

Area 2: Black Wattle Bay Marina buildings

Area 3: Coal Loader

Construction Staging

- **Construction vehicle entrance/exit via existing Hanson and BBM gates**

NORTH WENTWORTH PARK
MORETON BAY FIG TREES
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NORTH WENTWORTH PARK
NON - MORETON BAY FIG TREES
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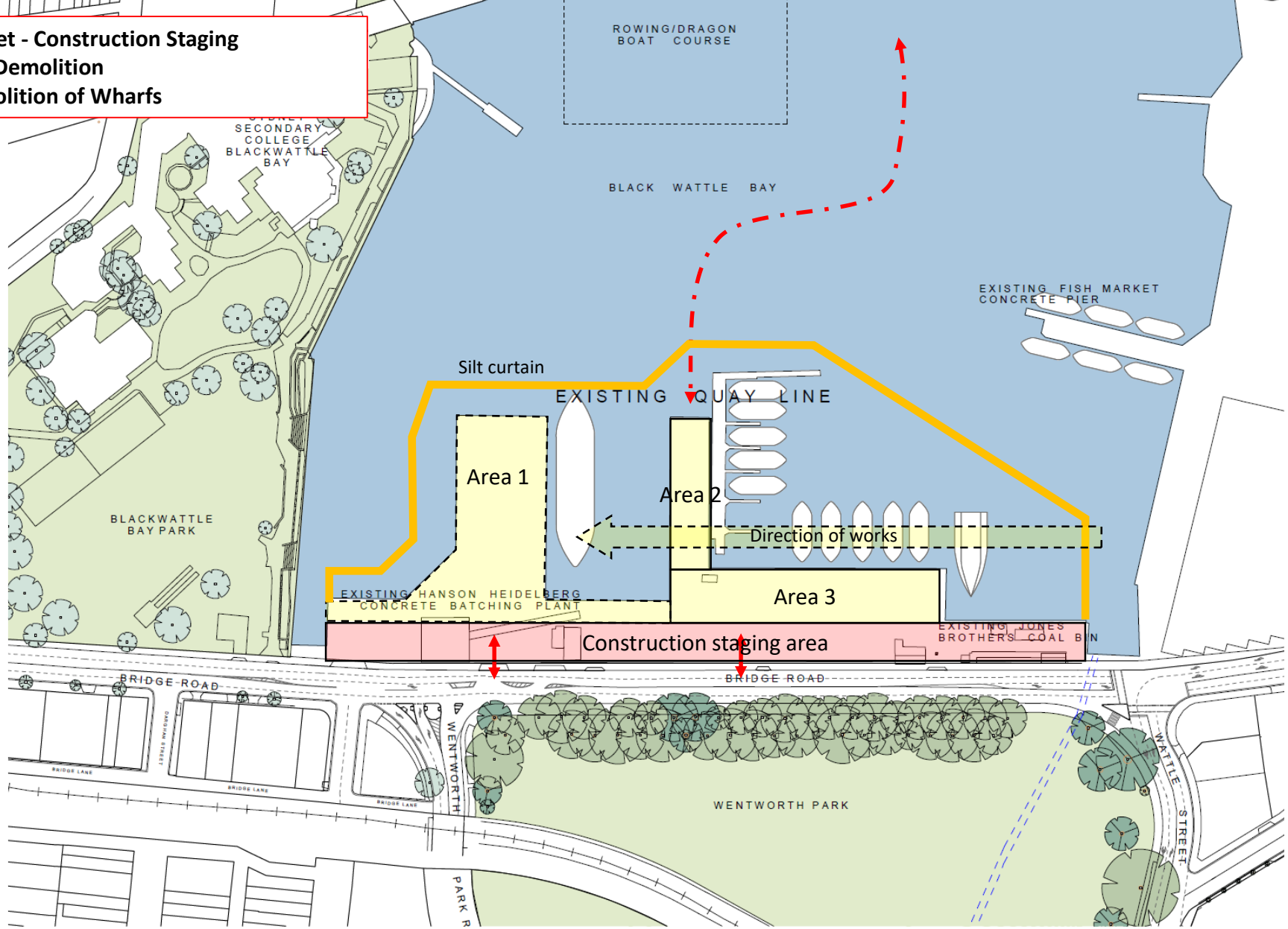
OUTER SITE EXTENTS TREES

SFM	
DRAWING TITLE: Site Plan	
PHASE: CONCEPT	DATE: 11-Aug-17

New fish market - Construction Staging
Early Works – Demolition
Stage 2 – Demolition of Wharfs



Wharf Description

- **Area 1: Reinforced concrete deck supported by hardwood girders and headstocks, in turn supported by turpentine piles.**
- **Area 2: Asphalt applied to reinforced concrete deck supported by concrete reinforced substructure, in turn supported by a mix of turpentine & raking reinforced concrete piles.**
- **Area 3: Post tensioned reinforced concrete slab supported by post tensioned reinforced concrete beams, in turn supported by steel piles.**

Construction Staging

- **Entrance via existing Hanson and BBM gates**
- **Area 1 may be left insitu depending on Main works builders requirements for construction staging**

NORTH WENTWORTH PARK
MORETON BAY FIG TREES
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OUTER SITE EXTENTS TREES

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Site Plan

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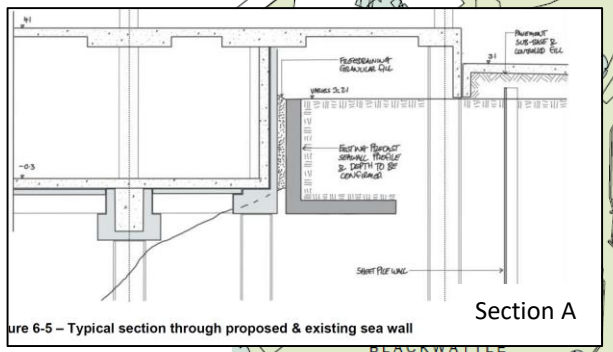
New fish market - Construction Staging
Early Works – Demolition
Stage 3 – Make good existing seawall



ure 6-5 – Typical section through proposed & existing sea wall

ROWING/DRAGON BOAT COURSE

SYDNEY SECONDARY COLLEGE BLACKWATTLE BAY

BLACK WATTLE BAY

EXISTING FISH MARKET CONCRETE PIER

BLACKWATTLE BAY PARK

Silt curtain

Section A

Direction of works

Extent of existing sea wall

Construction staging area

EXISTING JONES BROTHERS COAL BIN

BRIDGE ROAD

BRIDGE ROAD

WENTWORTH PARK

WENTWORTH

WATTLE STREET

PARK R

NORTH WENTWORTH PARK
MORETON BAY FIG TREES
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NORTH WENTWORTH PARK
NON - MORETON BAY FIG TREES
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OUTER SITE EXTENTS TREES

Make good existing seawall Description

- **Structural make good works to Sea wall**
- **Cap sea wall with concrete reinforced capping beam to match existing hardstand**

Construction Staging

- **Entrance via existing Hanson and BBM gates**

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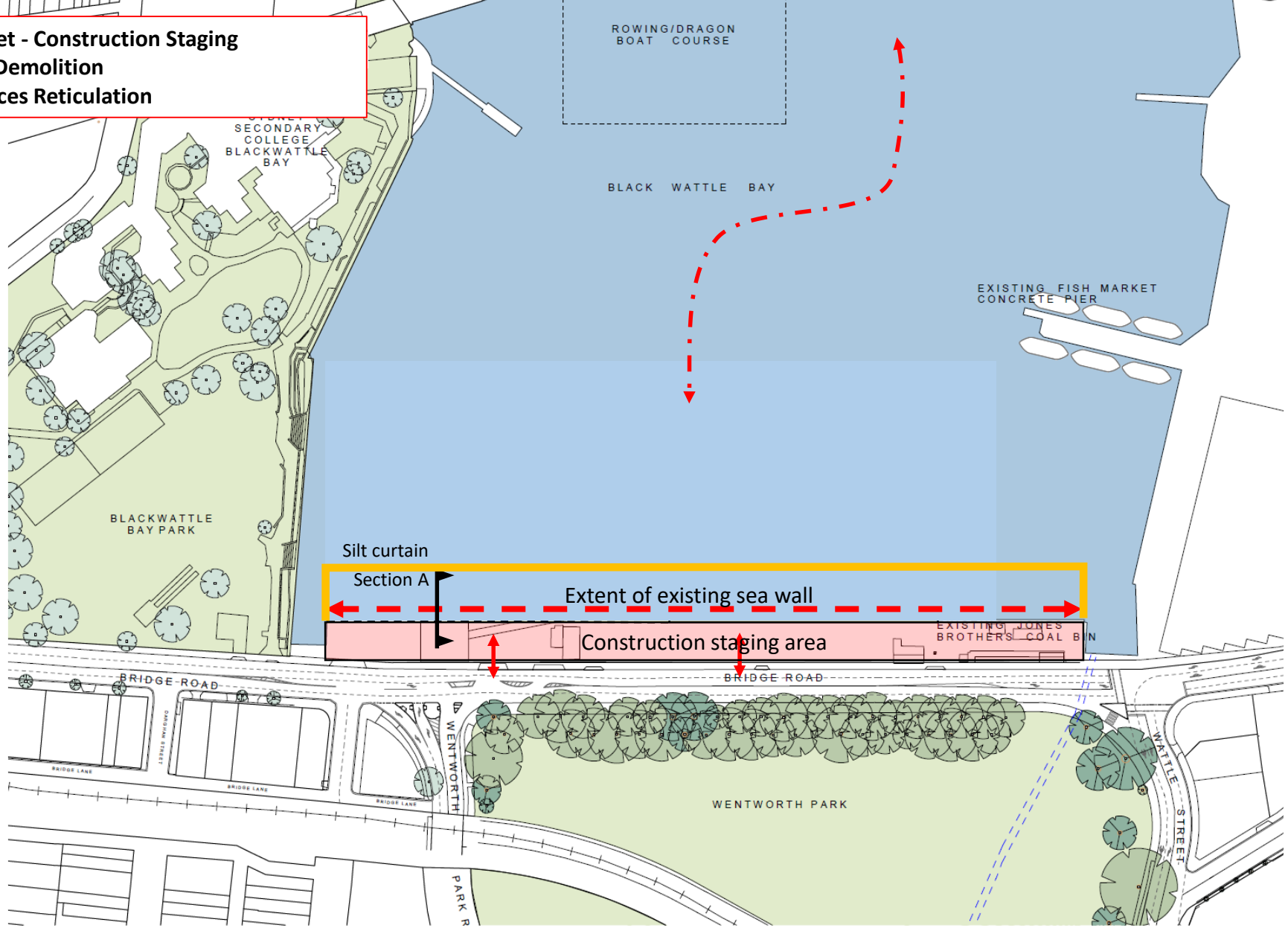
PHASE: CONCEPT	DATE: 11-Aug-17

New fish market - Construction Staging
Early Works – Demolition
Stage 4 – Services Reticulation



Services Reticulation Description

- **Underground existing overhead services**
- **Provide lead-in connections for water, wastewater, gas and electricity**

Construction Staging

- **Entrance via existing Hanson and BBM gates**

NORTH WENTWORTH PARK
MORETON BAY FIG TREES
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OUTER SITE EXTENTS TREES

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DRAWING TITLE
Site Plan

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APPENDIX C: Construction Staging – Stage 2

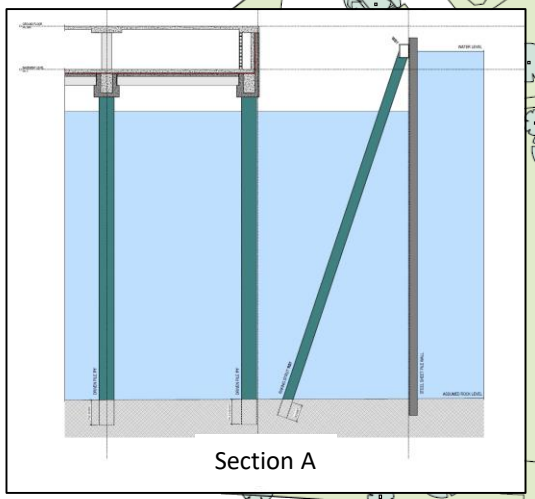
UrbanGrowth NSW Development Corporation

The new Sydney Fish Market – Construction Staging – Main Works

April 2019

NSW GOVERNMENT | UrbanGrowth NSW Development Corporation

New fish market - Construction Staging
Main Works
Stage 1 – Installation of marine piling and coffer dam. Bridge Road upgrade works



ROWING/DRAGON BOAT COURSE
BLACKWATTLE BAY
BLACK WATTLE BAY
Direction of works
EXISTING FISH MARKET CONCRETE PIER
Silt curtain
Cofferdam outline
Barge
Section A
Construction staging area
Bridge Road upgrade works
JONES BROTHERS COAL BIN
BRIDGE ROAD
WENTWORTH PARK
WENTWORTH STREET
WATTLE STREET
PARK R

Marine Piling Description
- **210 x Steel Hollow Section (CHS) piles driven into Class III rock.**
- **16 x CHS raking piles around core locations.**

Cofferdam Description
- **Single skin sheet pile coffer dam wall made up of 450 x AZ1400 sheetpiles x 20m long**
- **Sheetpiles installed landside on South elevation and waterside on all other elevations.**
- **Structural steel wailer beams**
- **Raking and cantilevered props to rock**

Bridge Road upgrade works
- **Intersection, road and services upgrade works – see separate staging plans**

Construction Staging
- **Entrance via existing Hanson and BBM gate**
- **Gap in cofferdam maintained on northern elevation for barge access until all piling complete**

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NORTH WENTWORTH PARK NON - MORETON BAY FIG TREES 15 / 56
OUTER SITE EXTENTS TREES

3XN BVN NEW SYDNEY FISH MARKET

DESIGN TEAM MEETING - 2017.09.07

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Site Plan
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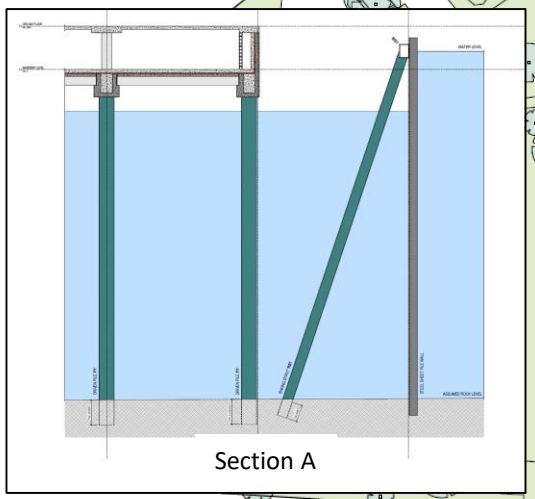
New fish market - Construction Staging
Main Works
Stage 2 – Dewatering and pile cutoff. Bridge Road upgrade works



ROWING/DRAGON BOAT COURSE

BLACKWATTLE BAY

BLACK WATTLE BAY

Direction of works

EXISTING FISH MARKET CONCRETE PIER

Silt curtain

Barge

Cofferdam outline

Section A

Construction staging area

Bridge Road upgrade works

BRIDGE ROAD

WENTWORTH PARK

WENTWORTH STREET

WATTLE STREET

PARK R

JONES BROTHERS COAL BIN

Dewatering Description

- **Dewater approx. 2m of water to expose top of piles using submersible pumps**

Pile cutoff Description

226 x piles trimmed to receive pile capBridge Road upgrade works

- **Intersection, road and services upgrade works – see separate staging plans**

Construction Staging

- **Entrance via existing Hanson gate**
- **Small barge 'locked' inside cofferdam for pile trimming works**
- **Large barge outside coffer dam for pile trimming works**

NORTH WENTWORTH PARK
MORETON BAY FIG TREES
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NORTH WENTWORTH PARK
NON - MORETON BAY FIG TREES
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OUTER SITE EXTENTS TREES

SFM	
DRAWING TITLE	Site Plan
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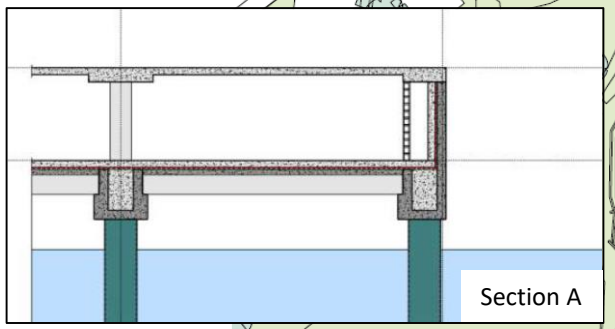
New fish market - Construction Staging
Main Works
Stage 3 – Substructure RL-0.3. Bridge Road upgrade works



ROWING/DRAGON BOAT COURSE

BLACKWATTLE BAY

BLACK WATTLE BAY

Direction of works

EXISTING FISH MARKET CONCRETE PIER

Silt curtain

Cofferdam outline

Barge

Section A

BLACKWATTLE BAY PARK

Construction staging area

Bridge Road upgrade works

BRIDGE ROAD

WENTWORTH PARK

WENTWORTH STREET

WATTLE STREET

PARK R

NORTH WENTWORTH PARK
MORETON BAY FIG TREES
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OUTER SITE EXTENTS TREES

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Precast substructure Description

- **Basement Slab: Precast pile caps, beams and slabs installed to entire basement area**
- **Basement Walls: Precast and cast insitu walls to entire basement perimeter**
- **Cast insitu slab to entire basement area to RL -0.3**

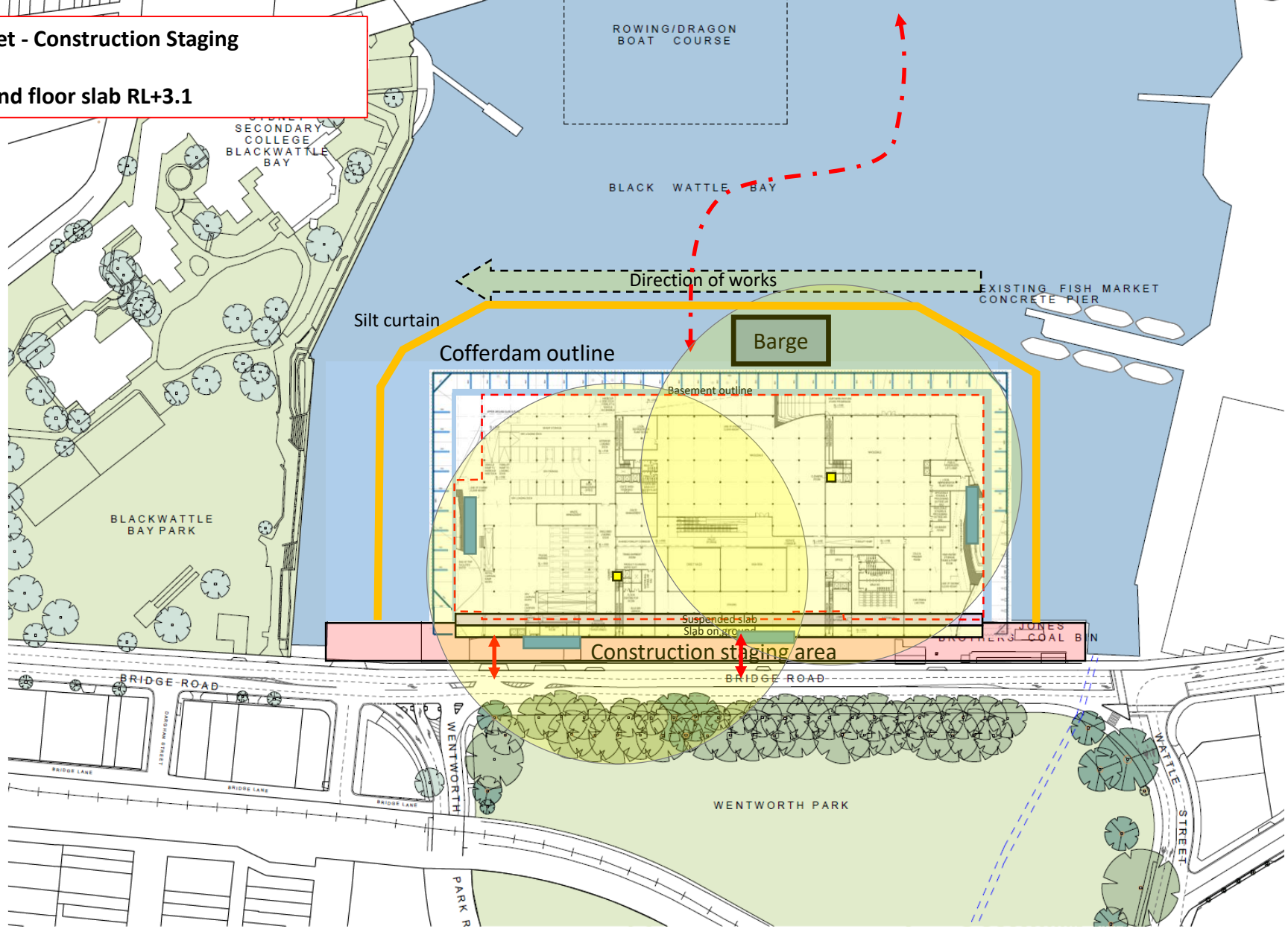
Bridge Road upgrade works

- **Intersection, road and services upgrade works – see separate staging plans**

Construction Staging

- **Entrance via existing Hanson and BBM gates**

New fish market - Construction Staging
Main Works
Stage 4 – Ground floor slab RL+3.1



Ground floor slab Description

- **Cast insitu slab to entire basement area to RL+3.1**
- **Cast insitu suspended slab over sea wall at RL+3.1**
- **Cast insitu slab on ground and piles**

Construction Staging

- **Entrance via existing Hanson and BBM gates**
- **Tower cranes plus supplementary mobile crainage**

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MORETON BAY FIG TREES
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NORTH WENTWORTH PARK
NON - MORETON BAY FIG TREES
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OUTER SITE EXTENTS TREES

SFM	
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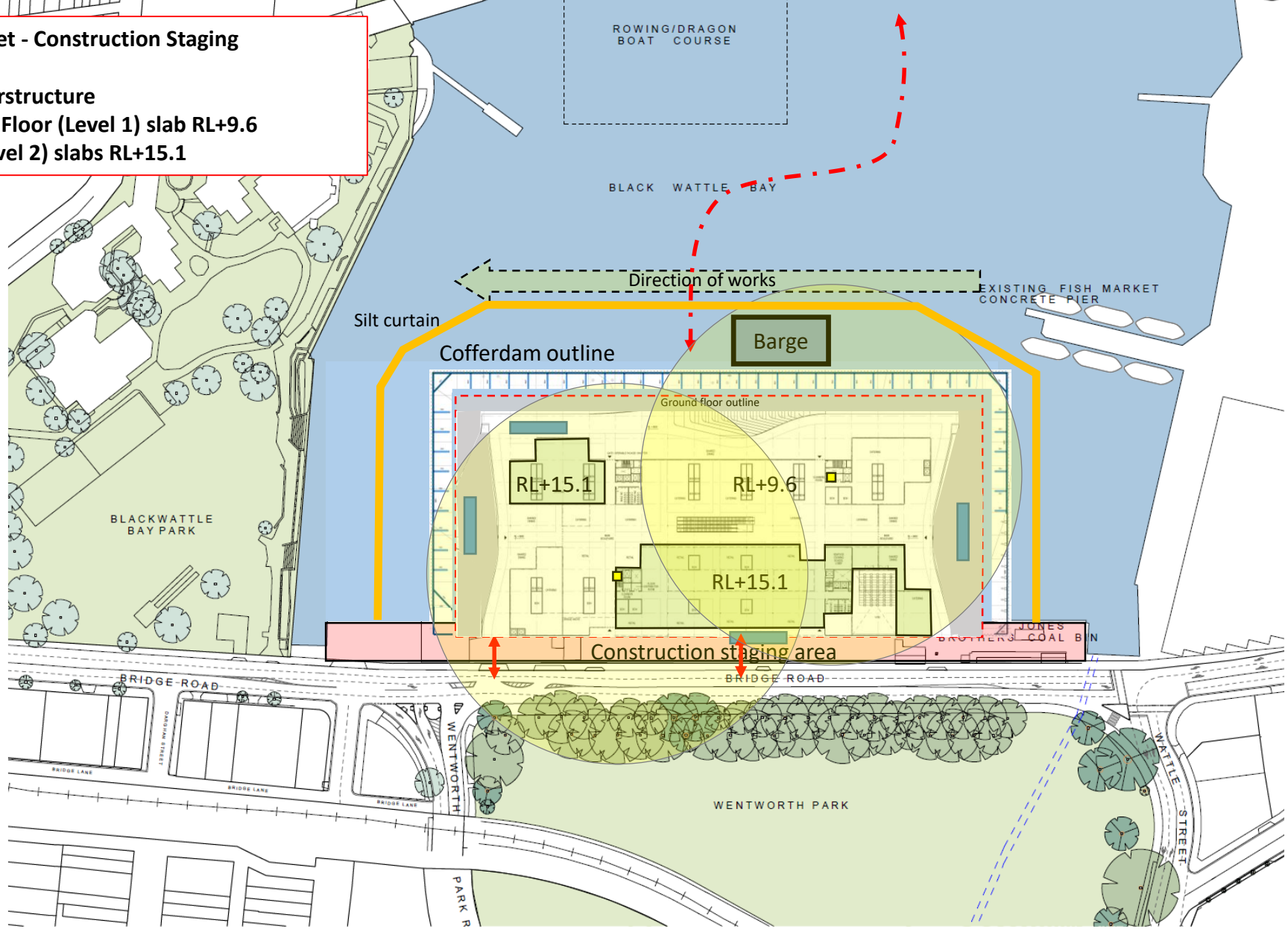
New fish market - Construction Staging
Main Works
Stage 5 – Superstructure
Upper Ground Floor (Level 1) slab RL+9.6
Mezzanine (Level 2) slabs RL+15.1



Ground floor slab Description

- **Cast insitu suspended slab at RL+9.6**
- **Cast insitu suspended slab at RL+15.1**

Construction Staging

- **Entrance via existing Hanson and BBM gates**
- **Tower cranes plus supplementary mobile crainage**

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OUTER SITE EXTENTS TREES

SFM

DRAWING TITLE
Site Plan

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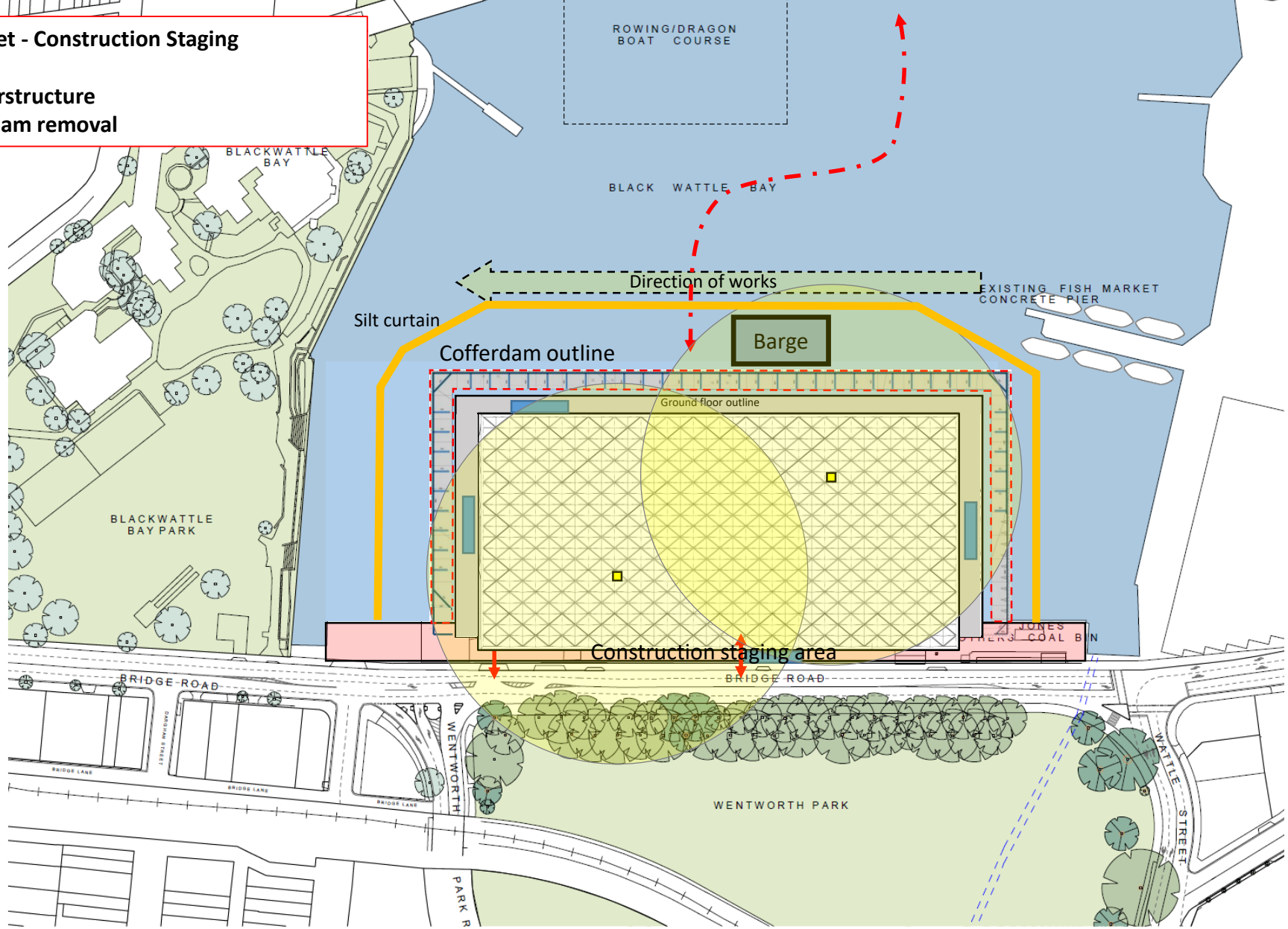
New fish market - Construction Staging
Main Works
Stage 6 – Superstructure
Roof & Cofferdam removal



Roof Description

- **Structural steel columns x 220**
- **CLT primary structure. 600 beams 1.2m x 0.4m x 10.8m**
- **Structural steel secondary structure**
- **Prefabricated roof modules x 200.**

Cofferdam removal description

- **Remove sheetpiles, structural steel wailer beams and raking & cantilevered props via barge**

Construction Staging

- **Entrance via existing Hanson and BBM gates**
- **Tower cranes plus supplementary mobile crainage**

NORTH WENTWORTH PARK
MORETON BAY FIG TREES
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NORTH WENTWORTH PARK
NON - MORETON BAY FIG TREES
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OUTER SITE EXTENTS TREES

3XN BVN NEW SYDNEY FISH MARKET

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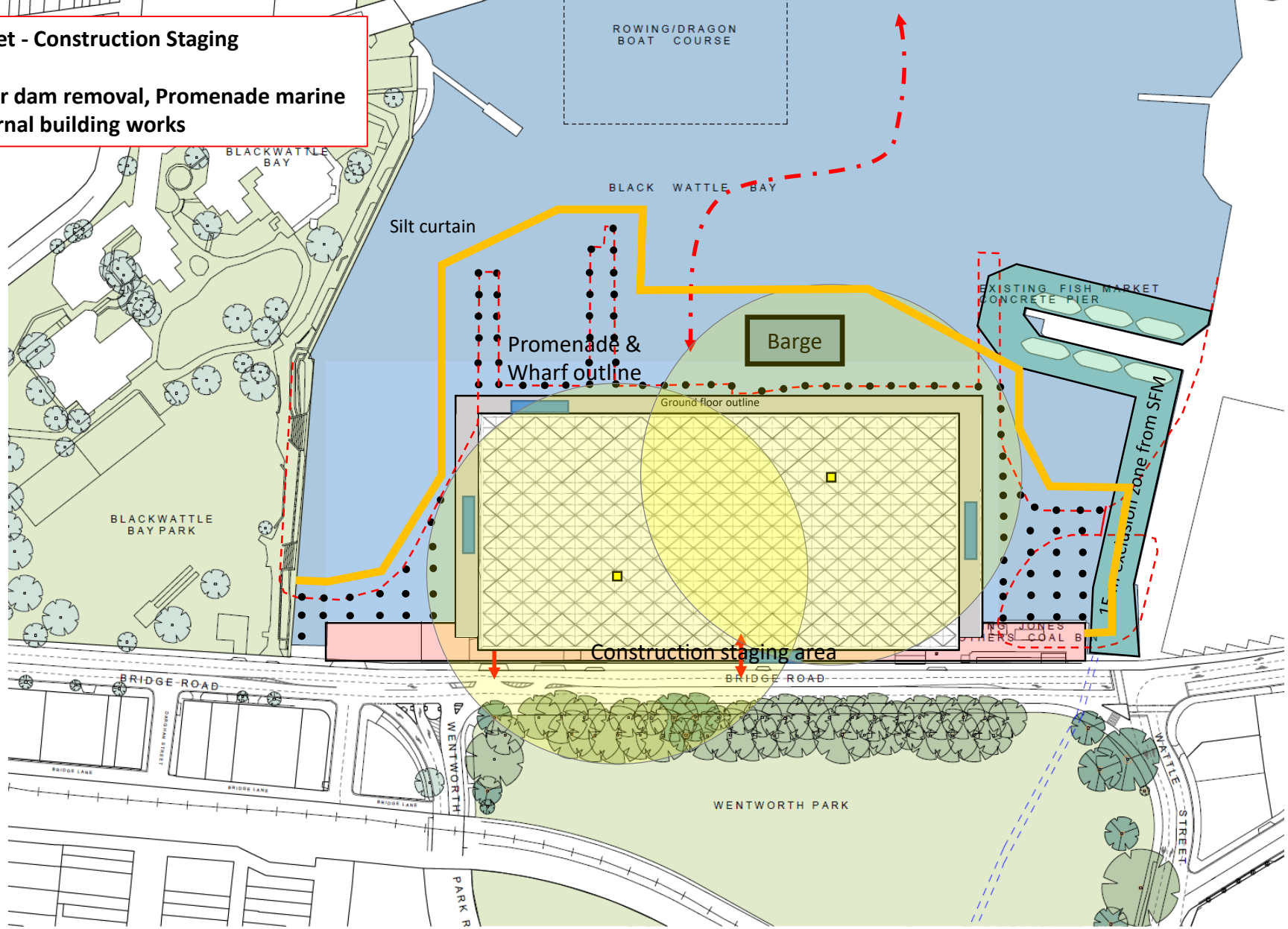
SFM	
DRAWING TITLE: Site Plan	
PHASE: CONCEPT	DATE: 11-Aug-17

New fish market - Construction Staging
Main Works
Stage 7 – Coffer dam removal, Promenade marine piling and internal building works



NORTH WENTWORTH PARK MORETON BAY FIG TREES 41 / 56

NORTH WENTWORTH PARK NON - MORETON BAY FIG TREES 15 / 56

OUTER SITE EXTENTS TREES

SFM	
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3XN BVN NEW SYDNEY FISH MARKET

DESIGN TEAM MEETING - 2017.09.07

Cofferdam removal description

- **Remove sheetpiles, structural steel wailer beams and raking & cantilevered props via barge**

Promenade marine piling Description

- **100 x Steel Hollow Section (CHS) piles driven into Class III rock.**

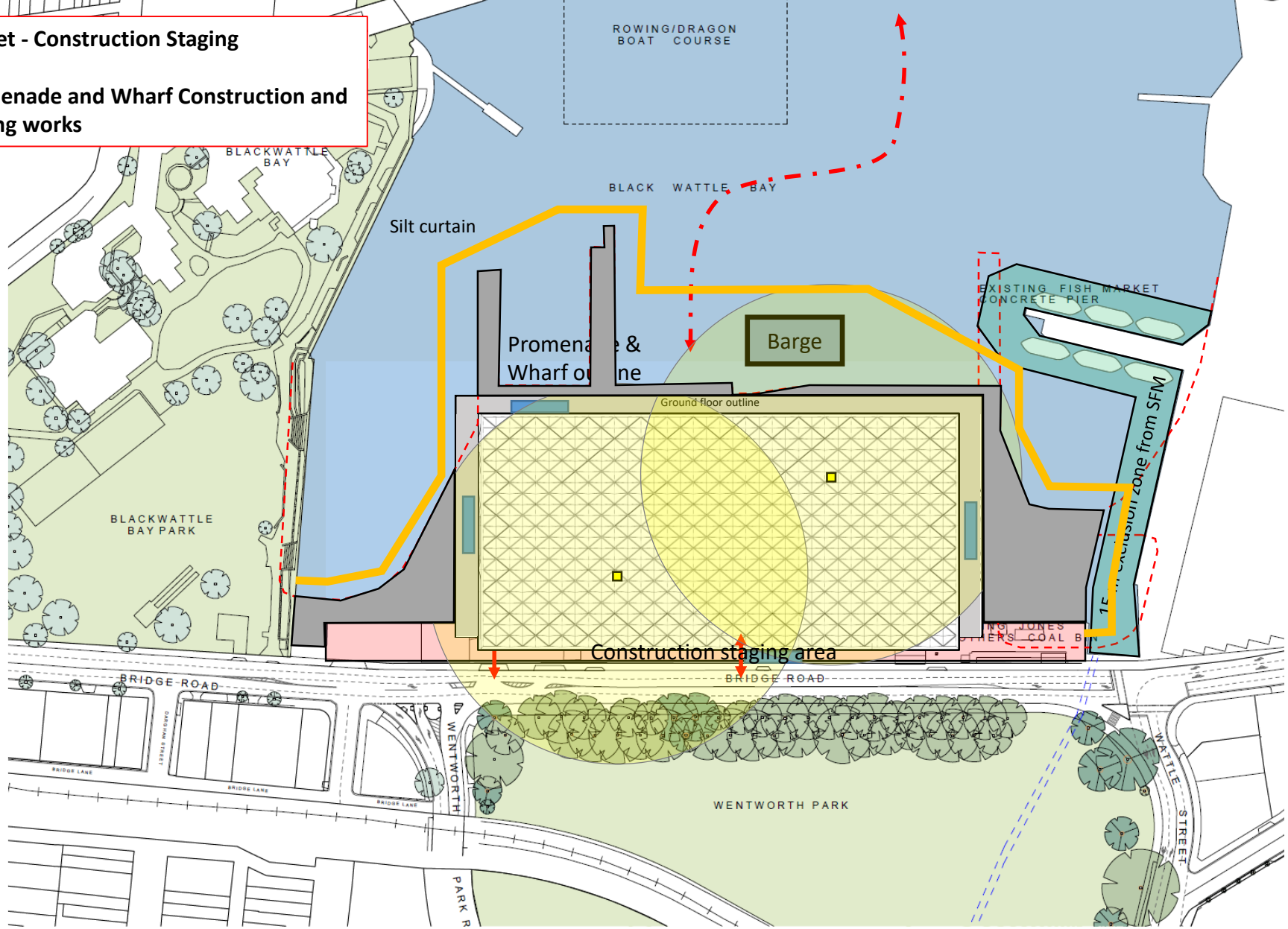
Internal Works description

- **Fitout, Services, Facacde**

Construction Staging

- **Entrance via existing Hanson and BBM gates**
- **Tower cranes plus supplementary mobile crainage**

New fish market - Construction Staging
Main Works
Stage 8 – Promenade and Wharf Construction and internal building works



Promenade and Wharf Construction description

- **Installation of precast promenade and wharf elements by barge**

Internal Works description

- **Fitout, Services, Facacde**

Construction Staging

- **Entrance via existing Hanson and BBM gates**
- **Tower cranes plus supplementary mobile crainage**

NORTH WENTWORTH PARK
MORETON BAY FIG TREES
41 / 56

NORTH WENTWORTH PARK
NON - MORETON BAY FIG TREES
15 / 56

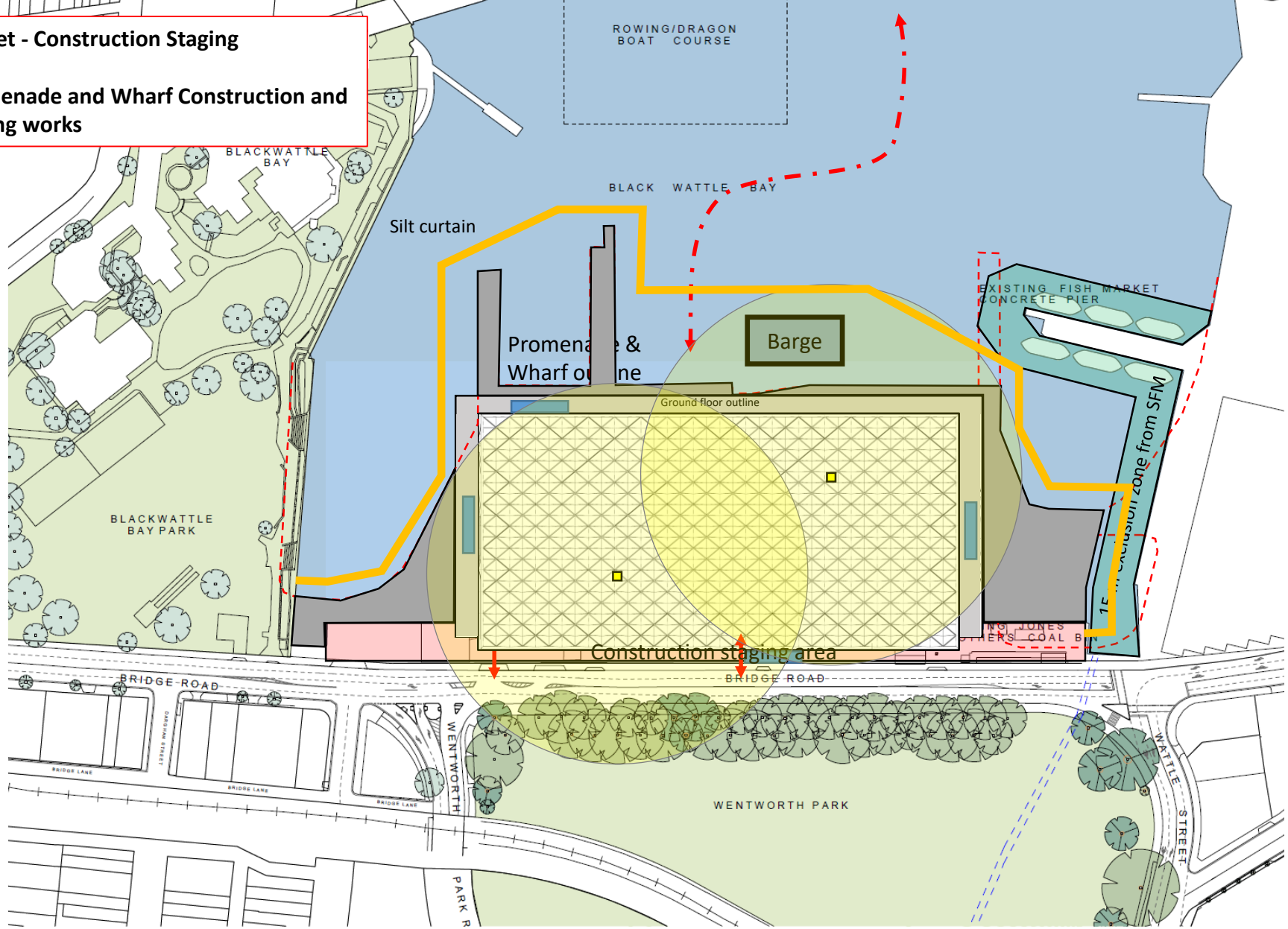
OUTER SITE EXTENTS TREES

SFM	
DRAWING TITLE: Site Plan	
PHASE: CONCEPT	DATE: 11-Aug-17

3XN BVN NEW SYDNEY FISH MARKET

DESIGN TEAM MEETING - 2017.09.07

New fish market - Construction Staging
Main Works
Stage 9 – Promenade and Wharf Construction and internal building works



Promenade and Wharf Construction description

- **Installation of precast promenade and wharf elements by barge**

Internal Works description

- **Fitout, Services, Facacde**

Construction Staging

- **Entrance via existing Hanson and BBM gates**
- **Tower cranes plus supplementary mobile crainage**

NORTH WENTWORTH PARK
MORETON BAY FIG TREES
41 / 56

NORTH WENTWORTH PARK
NON - MORETON BAY FIG TREES
15 / 56

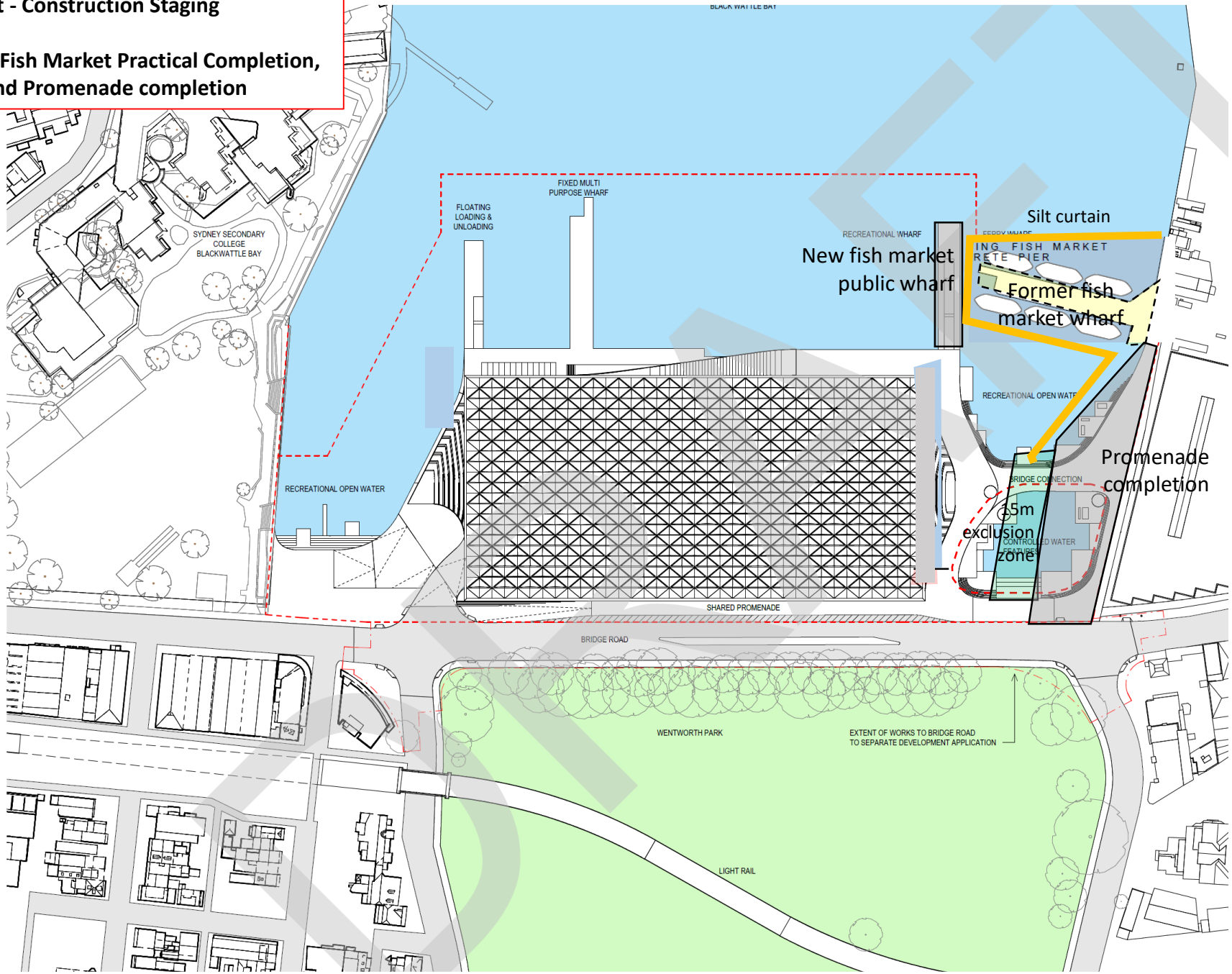
OUTER SITE EXTENTS TREES

SFM	
DRAWING TITLE: Site Plan	
PHASE: CONCEPT	DATE: 11-Aug-17

3XN BVN NEW SYDNEY FISH MARKET

DESIGN TEAM MEETING - 2017.09.07

New fish market - Construction Staging
Main Works
Stage 10 – New Fish Market Practical Completion, Wharf works, and Promenade completion



New Fish Market Practical Completion description

- **Testing commissioning and opening of new fish market for operation.**

Warf works description

- **Demolition of former fish market wharf**
- **Construction of new fish market public wharf**

Promenade completion description

- **Marine piling, precast promenade, and landscaping works to tie into former fish market site.**

Construction Staging

- **Entrance via former fish market site**