

ARCHAEOLOGY – HERITAGE – MEDIATION – ARBITRATION

NEW SYDNEY FISH MARKET

Maritime Heritage Impact Statement

PREPARED BY
REPORT TO
VERSION NO
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DAVID NUTLEY
URBANGROWTH NSW DEVELOPMENT CORPORATION
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DIRECTOR
JILLIAN COMBER

ASSOCIATE DIRECTOR, SYSTEMS
DAVID NUTLEY

ASSOCIATE DIRECTOR, PROJECTS
TORY STENING

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REV	DATE	PREPARED	EDITED	APPROVED
A	20-02-2018	David Nutley	Jillian Comber	Jillian Comber
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H	07-11-2018	David Nutley	Jillian Comber	Jillian Comber
I	27-03-2019	David Nutley	Jillian Comber	Jillian Comber

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EXECUTIVE SUMMARY

UrbanGrowth NSW Development Corporation (UrbanGrowth NSW) is currently preparing plans for the redevelopment of the new Sydney Fish Market within Blackwattle Bay. The Corporation has received Draft Secretary's Environmental Assessment. Requirements (SEARS) for the State Significant Development (SSD) Development Approval (DA's) for the Sydney Fish Markets.

Comber Consultants have been engaged by UrbanGrowth NSW to prepare a Maritime Heritage Impact Assessment (HIA) as part of the environmental risk assessment for the proposed DA. The HIA draws upon inter-related studies to contribute to the development of the SSD DA. The report identifies potential environmental risk impacts associated with the development within the marine environment.

The following report addresses SSD 8924. SSD 8925 will be addressed once concept plans are available.

The findings of this maritime Heritage Impact Assessment for SSD 8924 (Sydney Fish Markets – Concept development application and Stage 1 works comprising demolition and early works) and SSD 8925 (Sydney Fish Markets – Stage 2 main works) are:

1. The works under SSD 8924 and SSD 8925 have potential to disturb archaeological deposits of local significance within the sediment in the investigation area. The potential relics include those that may have originated from the use of the wharves as well as those carried into the bay via adjacent stormwater drains. The works under SSD 8924 and SSD 8925 therefore have potential to disturb archaeological deposits and relics submerged within the sediment in the investigation area. The potential relics include those that may have originated from the use of the wharves as well as those carried into the bay via adjacent stormwater drains.
2. Mitigation measures and archaeological test excavation strategy identified in Section 7 of this report should be adopted for the proposed works.
3. Site inductions for all employees, contractors and subcontractors engaged in undertaking works within the marine environment of the study area are to include protocols for responding to chance finds. These instructions should that in the event that a shipwreck or relic is located during construction works:
 - I. Work should cease immediately in the vicinity of the shipwreck or relic
 - II. A qualified maritime archaeologist should be engaged to:
 - a. Assess the significance of the shipwreck or relic
 - b. Provide management recommendations which could include recovery and conservation or reburial of the relic.
4. If a significant relic is uncovered during the redevelopment of the Bay, reuse strategies should be considered. Dependent upon the condition, material and significance of the item such opportunities could include:
 - Incorporation as a waterside feature in design and interpretation plans for the reuse of the current site of the Sydney Fish Market
 - Relocated into the public domain as an artwork, similar to the approach adopted at Pyrmont with the tumbling balls retained from the former Cane-ite works.
5. Any earthworks within the vicinity of the nineteenth century seawall and wharf should be monitored by a suitably qualified archaeologist. In the event that evidence of those structures is identified, work should immediately cease in that area to enable the archaeologist to assess the nature and significance of the feature and to provide advice on appropriate management.



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1.0 INTRODUCTION

BACKGROUND

LOCATION

APPROVAL STRATEGY

SUMMARY OF THE DEVELOPMENT

CONCEPT DEVELOPMENT APPLICATION

MAIN WORKS DEVELOPMENT APPLICATION

PURPOSE OF THIS REPORT

OWNERSHIP



1.0 INTRODUCTION AND OVERVIEW

1.1 Background

- 1.2 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 at the head of Blackwattle Bay, adjacent to the existing fish market. In June 2017 the Premier of NSW announced the appointment of Danish architects 3XN to lead the design team that includes Sydney firms BVN and Aspect Studios. They have been working with key stakeholders, including UrbanGrowth NSW Development Corporation (UrbanGrowth NSW) and 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.

1.3 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 Local Government Area.

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 36,800m². 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.

1.4 Approval Strategy

Pursuant to the provisions of the *Environmental Planning and Assessment Act 1979* and *State Environmental Planning Policy (State and Regional Development) 2011* ("SEPP SRD") the new fish market development is State Significant Development and the Minister for Planning is the consent authority.

To deliver the new fish market, the following applications will be lodged:

1. A concept development application seeking approval for concept proposals for the new fish market. This is to meet the requirements for a master plan contained in clause 40 of SREP26. This concept development application will also set out details of the first stage of the development being the demolition of land and water-based structures on the site including removal of marine piles and any resulting repairs to the existing sea wall;
2. A development application for the construction of the new fish market;
3. An application to amend the planning controls applying to the site to enable the proposed development to be a permissible use on all of the site. This is to be achieved by an amendment to *Sydney Regional Environmental Plan No 26—City West* ("SREP26").

These applications will be lodged concurrently.



1.5 Summary of the development

The proposal is to build a new fish market with a contemporary urban design to 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.

1.5.1 Concept development application

The Concept development application seeks approval for:

1. the use of the site for the fish market including waterfront commercial and tourist facilities and ancillary uses and the distribution of uses;
2. a gross floor area of approximately 58,000m² contained within a defined building envelope;
3. waterfront structures such as wharves;
4. concepts for improvements to the public domain including promenades, access to Blackwattle Bay and landscaping;
5. pedestrian cycle and road access and circulation principles;
6. principles for infrastructure provision and waste management.

This concept development application will also set out details of the first stage of the development being the demolition of land and water-based structures on the site including removal of marine piles and any resulting repairs to the existing sea wall, and related services relocations.

1.5.2 Main Works development application

The Main Works development application seeks approval for:

1. the construction of a new fish market including land and water-based structures.
2. the use of the site for the fish market including waterfront commercial and tourist facilities and ancillary uses and the distribution of uses;
3. a gross floor area of approximately 26,000m² as calculated according to the definition of GFA under SREP 26 (approximately 25,600m² as calculated according to the definition of GFA under the Standard Instrument).
4. public domain works including promenades access to Blackwattle Bay and landscaping;
5. pedestrian, cycle and road access and circulation;
6. infrastructure provision and waste management;
7. associated works as required.

The proposed uses comprise:

Below Ground Level

- Parking for service and delivery, and private vehicles up to approximately 417 vehicles;
- Plant and storage;
- Waste Management facilities; and
- End of journey facilities.

**Ground Level - Outside of Building Envelope**

- Up to three operational wharves for fishing fleet servicing and product unloading/loading, multi-purpose wharf space, private-operated ferry stop, recreational vehicles and the like;
- Vehicular access driveways; and
- Publicly accessible promenade.

Ground Level - Within Building Envelope

- Wholesale services space including product storage and processing; and
- Auction floor and associated refrigeration and handling space.
- Loading dock including limited delivery and service vehicle parking area;
- Waste management facilities;
- Office space including buyers room;
- Staff amenities, plant and storage.

Upper Ground Level (L1)

- Retail premises including fresh food retail, food and drink premises including harbourside dining;
- External/shared dining space;
- Ancillary back of house space and staff amenities; and
- Circulation areas.

Upper Level 2

- Catering space;
- The Sydney Seafood School;
- Tenant and subtenant office space; and
- Plant and storage space.

1.6 Purpose of this report

The purpose of this report is to address the SEARs:

- SSD 8924 Sydney Fish Markets – Concept development application and Stage 1 works comprising demolition and early works, page 5, Section 11 – Heritage and Archaeology:
 - *A detailed maritime archaeological assessment should be undertaken by a suitably qualified and experienced maritime archaeologist. This assessment should identify the archaeological potential and significance of maritime heritage sites including shipwrecks, maritime infrastructure, archaeological items and/or relics (both above and below water) that may be impacted by the proposal. The assessment should also include procedures and management strategies for the unexpected discovery of heritage items and/or relics. Underwater surveys may also need to be undertaken and may require remote sensing and/or diver based investigations.*
- SSD 8925 Sydney Fish Markets – Stage 2 main works page 5, Section 11 – Heritage and Archaeology:
 - *If required for the detailed design, a detailed maritime archaeological assessment should be undertaken by a suitably qualified and experienced maritime archaeologist. This assessment should identify the archaeological potential and significance of maritime heritage sites including shipwrecks, maritime infrastructure, archaeological items and/or relics (both above and below water) that may be impacted by the proposal. The assessment should also include procedures and management strategies for the unexpected discovery of heritage items and/or relics. Underwater surveys may also need to be undertaken and may require remote sensing and/or diver based investigations.*

Comber Consultants have been engaged by UrbanGrowth NSW to prepare this Maritime Heritage Impact Assessment (MHIA) for the proposed DA.

1.7 Ownership

The sea bed of the marine zone of Blackwattle Bay is controlled by Roads and Maritime Services, a New South Wales Government agency. The land associated with the existing Sydney Fish Market is government-owned.

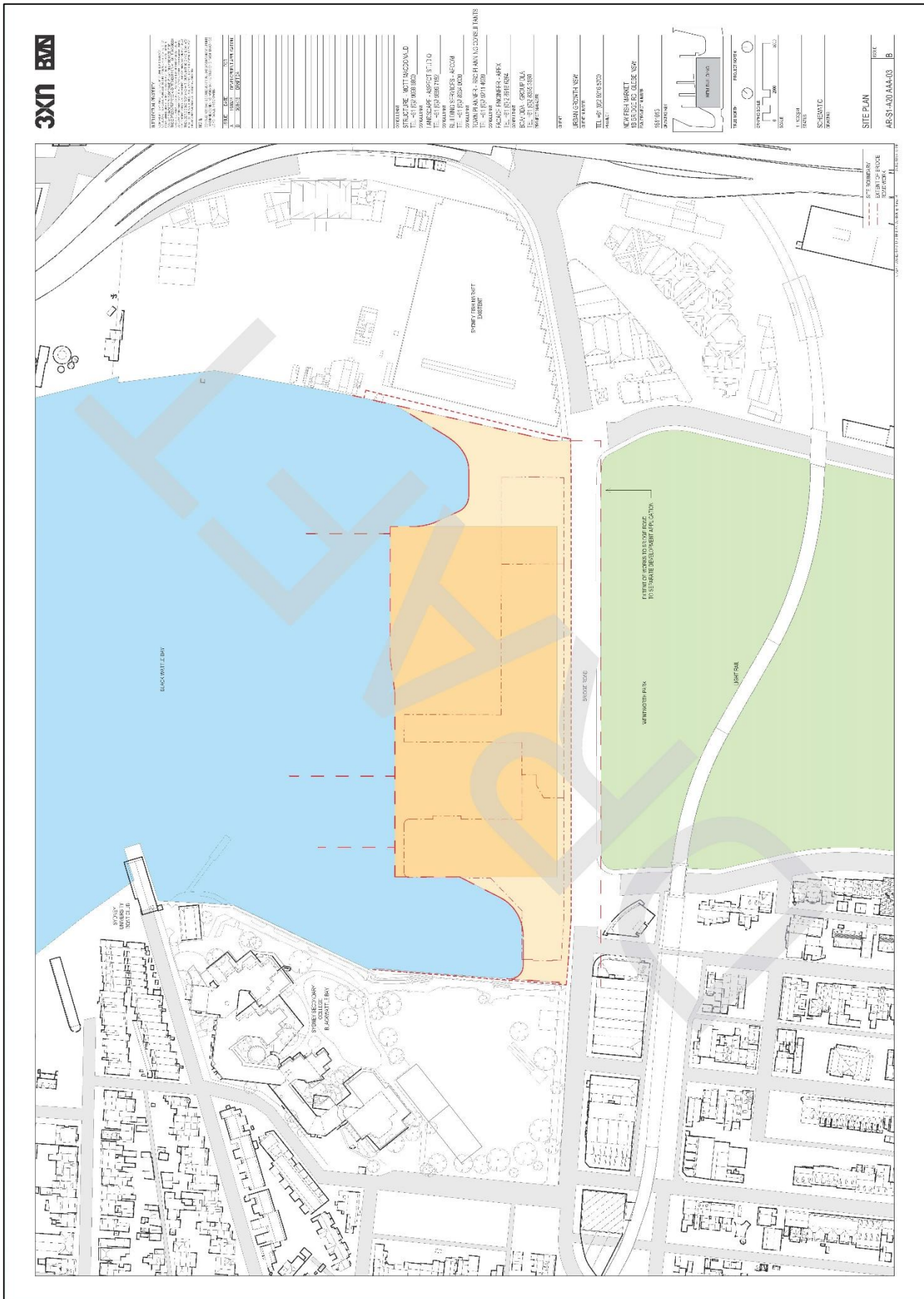


Figure 1: Bays Market Precinct investigation area (UrbanGrowth NSW)

2.0 PROPOSED WORKS

GENERAL

STAGE 1 - DEMOLITION & EARLY WORKS (SSD 8924)

STAGE 2 – MAIN WORKS (SSD 8925)

2.0 PROPOSED WORKS

2.1 Proposed Works - General

The 'New Sydney Fish Market SSD Pack 1 – Concept and Demolition document (November 10th 2017) delineates the investigation area and overlays the proposed footprint of the redevelopment over the existing site plan (Figure 2). It also includes an Early Works Demolition' plan (Figure 3), a long section (Figure 4), a cross section (Figure 5) and a basement plan (Figure 6).

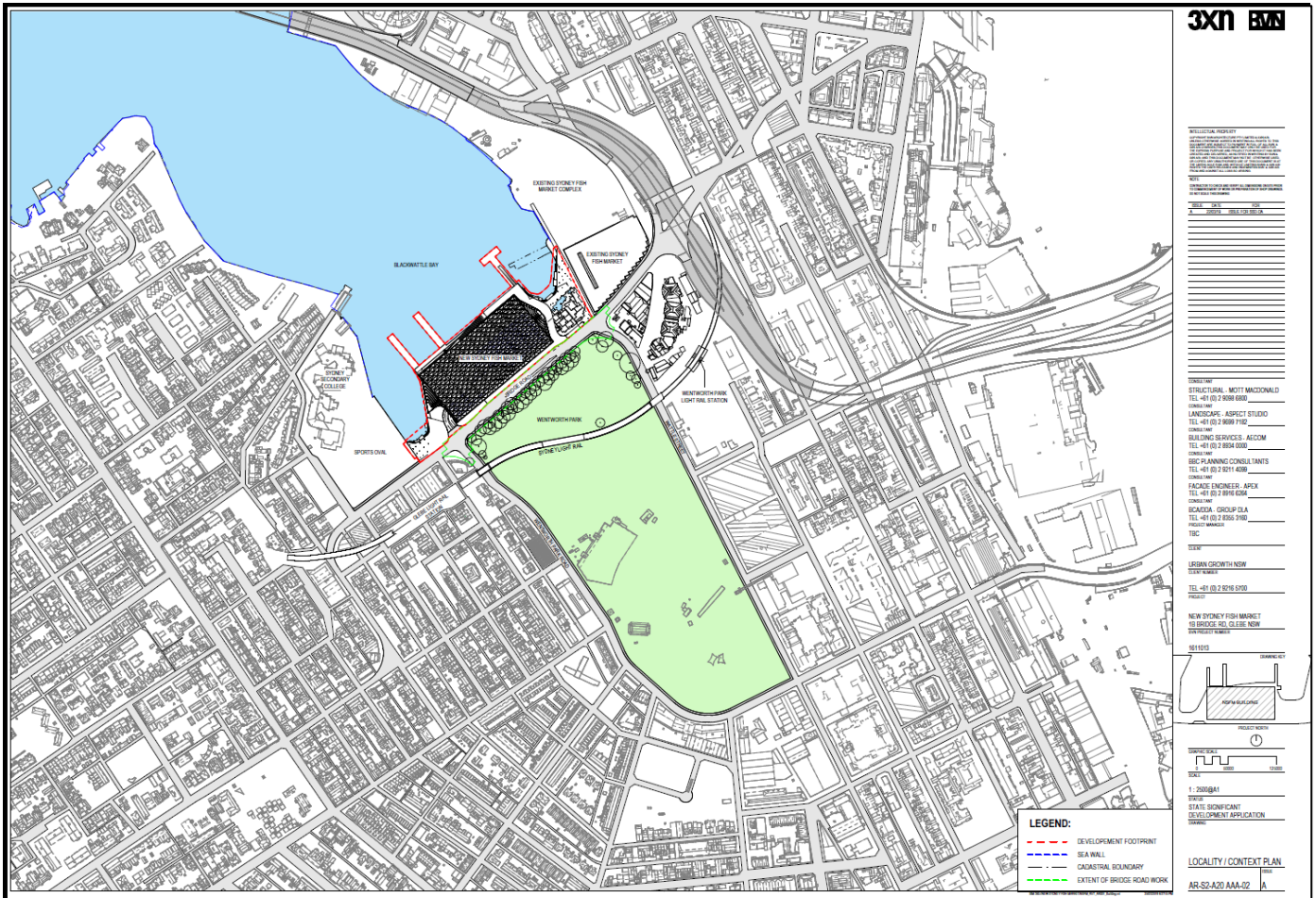


Figure 2: Development footprint for the New Sydney Fish Market. Site Plan -AR-S2-A20 AAA-02, Issue A. Date: 22-03-2019)

The proposed works include demolition of all existing buildings and wharf structures along the southern foreshore (Figure 5). This will include removal of existing platforms and full extraction of support piles. These works will be conducted prior to installation of a cofferdam for the construction phase (Stage 2).

The new structure for the wharf will include a basement that will be excavated to RL -0.3m. The wharf will be supported on piles (Figures 6 & 7). The proposed excavation and construction works will be conducted within the cofferdam.

2.2 Proposed Works - Stage 1 - demolition and early works (SSD 8924)

The proposed Scope for Stage 1 (Figures 3 & 4) comprises of:

- Demolition of existing infrastructure including concrete batch plant, timber wharf and other marine structures
- Removal of marine piles and any resulting repairs to the existing sea wall (Waste Management Plan for the New Fish Market - AECOM Australia Pty Ltd, 16-Feb-2018)
- Site mobilization and establishment (including installing environmental controls)
- Services verification, relocations and installation of temporary services
- Any required localised remediation works
- Early civil works (cofferdam, piling, temporary works, drainage and other inground services)

The structures to be demolished consist of all existing structures along the southern foreshore of Blackwattle Bay (Figure 3). The Scope of works refers to demolition of a timber wharf 'and other marine structures' and including other existing wharves in the investigation area (Figure 4).

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.

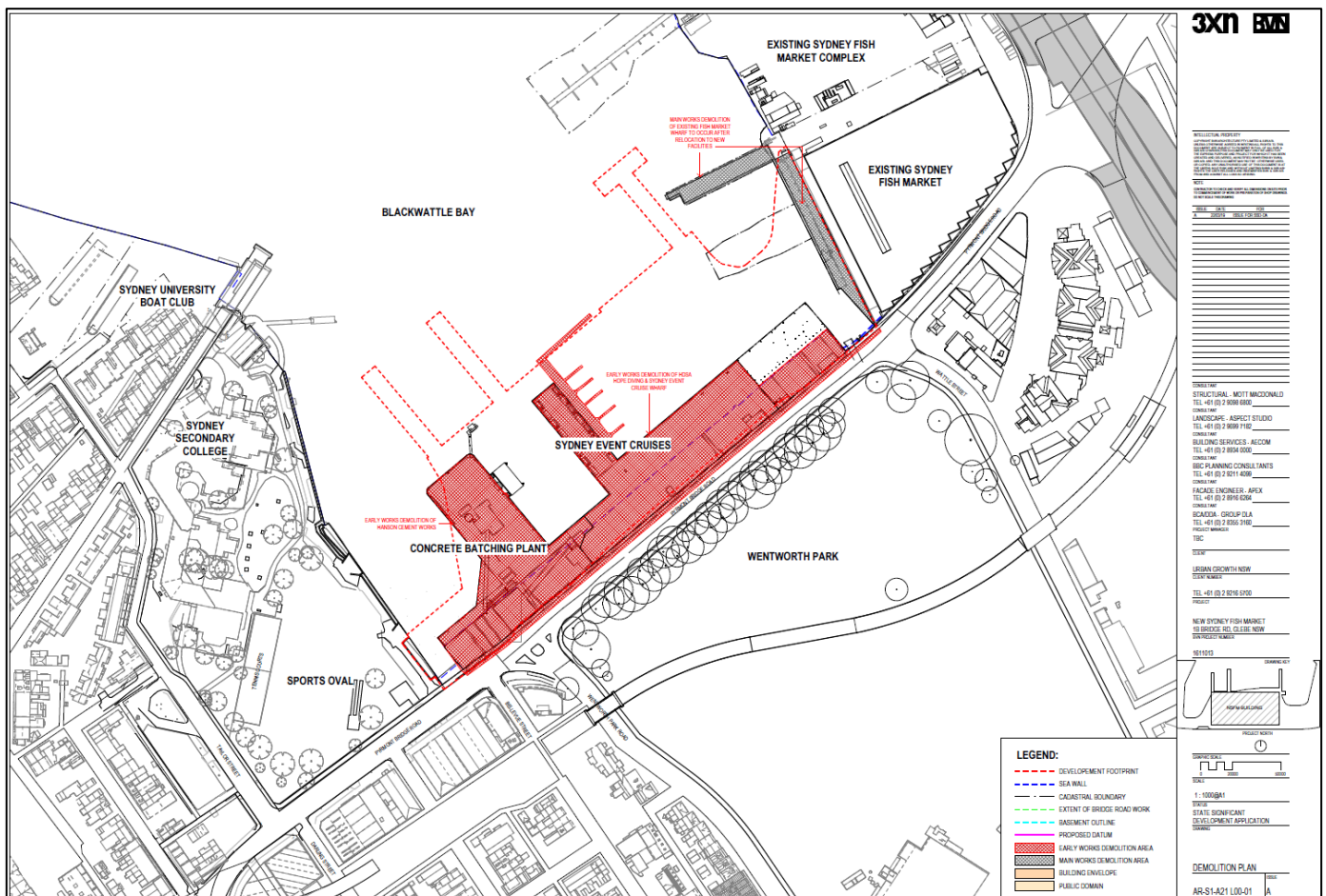


Figure 3: Demolition Plan – Structures to be demolished (AR-S1-A21 L00-01 Issue A. Date: 23-03-2019)

Recommendations for identifying and minimising impacts submerged within sediments in the vicinity of these structures and piles are contained in Section 7 of this report.



Figure 4: Demolition zone of existing Blackwattle Infrastructure
(CEMP – Sydney Fish Markets Stage 1 (draft) (Section 2.1.3, Thelem Consulting, February 2018))

2.3 Proposed Works - Stage 2 – Main Works (SSD 8925)

The Stage 2 works include the construction of the new Sydney Fish Market wharves. These will be supported on piles driven through sediments within the head of the bay and into bedrock. The exact number and diameter of piles is not yet known but, from the GFA Measurement SREP 26 plans, (Figure 6) and Concept Proposal (Figure 7) are estimated to be close to 300. In addition, the draft SSD DA Stage 2 Works document (3XN) indicates the construction of five new mooring jetties extending into the Bay on the northern side of the footprint of the main wharf area.

The proposed Scope for Stage 2 – Main Works includes the following which have direct or potential relevance to the marine environment:

- Site establishment and install environmental controls (by Main Works Contractor)
- Cofferdam construction and dewatering of site (Figure 5)
- Repositioning of the seabed to facilitate a basement area (Figures 5 & 6)
- Foundation works – piling and secant pile wall (Figures 7 & 8)
- Install tower cranes
- Slab and column construction (FRP) of basement, ground level, upper ground level and level 2
- Construct operational and recreational wharfs
- Public area infrastructure works (promenade, controlled water feature, bridge connection, and recreational water features)

These works are to be conducted in the marine precinct and will involve extensive disturbance of sediments in the investigation area.



Figure 5: Site Activities for Stage 2 (Main Works) – substructure works and cofferdam – staging program

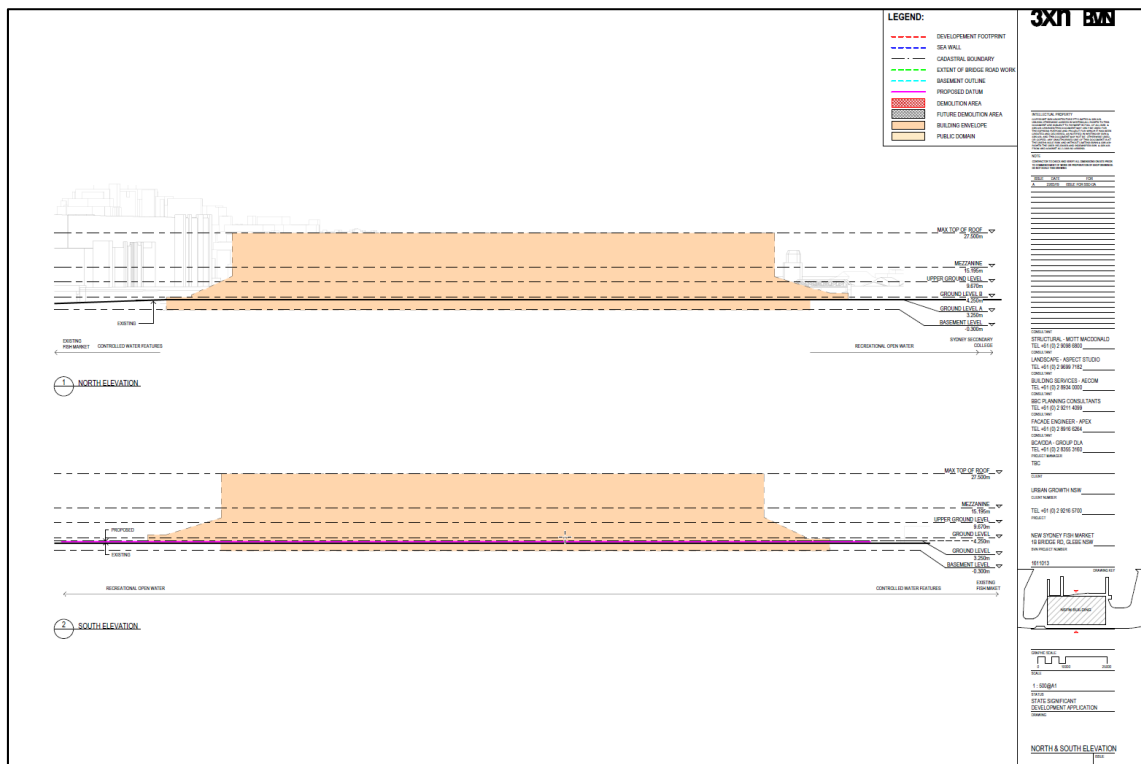


Figure 6: North & South elevations showing extent of basement excavations (3XN & BVN Plan AR-S1-C10 AAA-02 Version A. Date 22-03-2019)

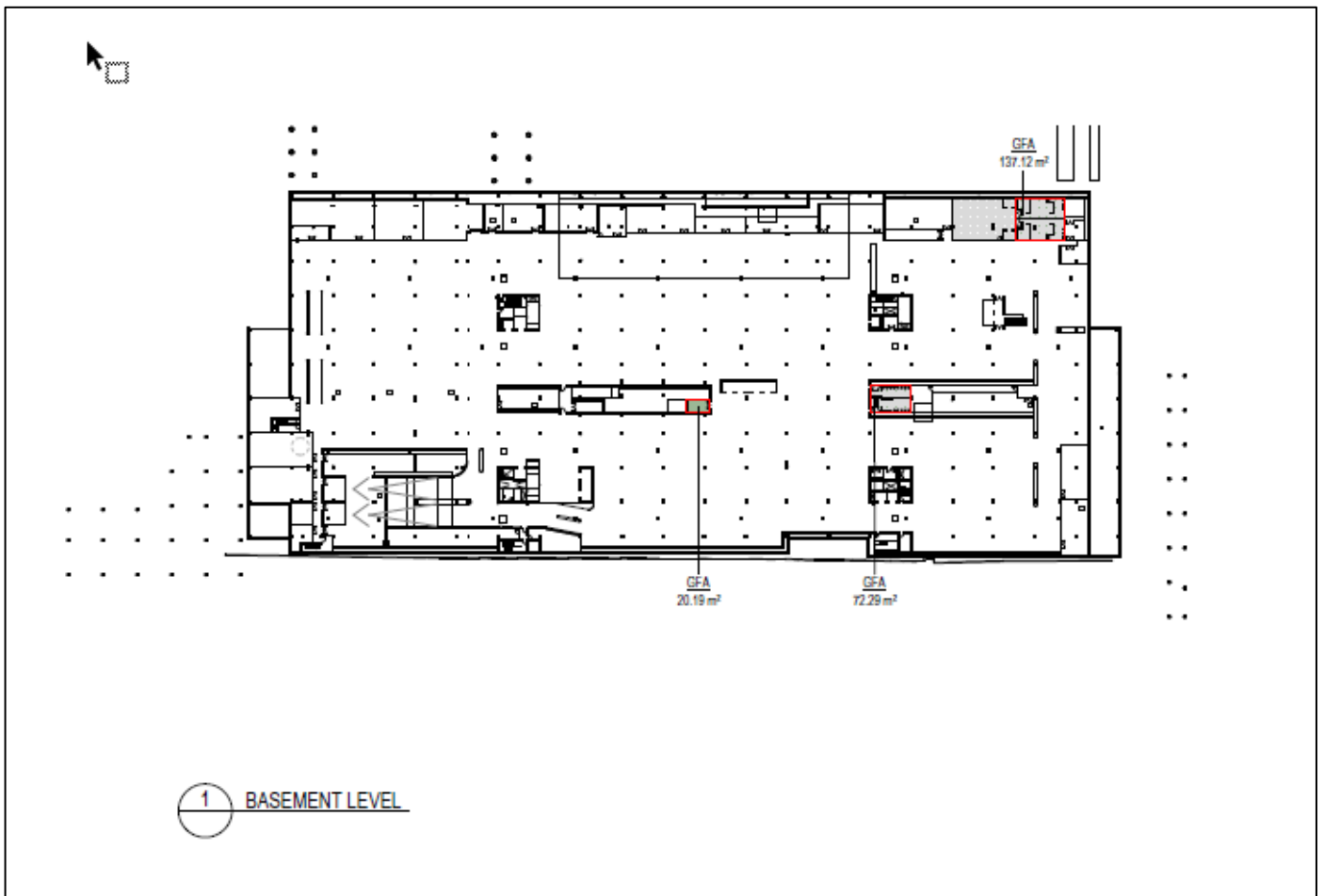


Figure 7: GFA Measurement SREP 26 plans AR-S2-L10 AAA-01 Issue A Date: 23-03-2019)

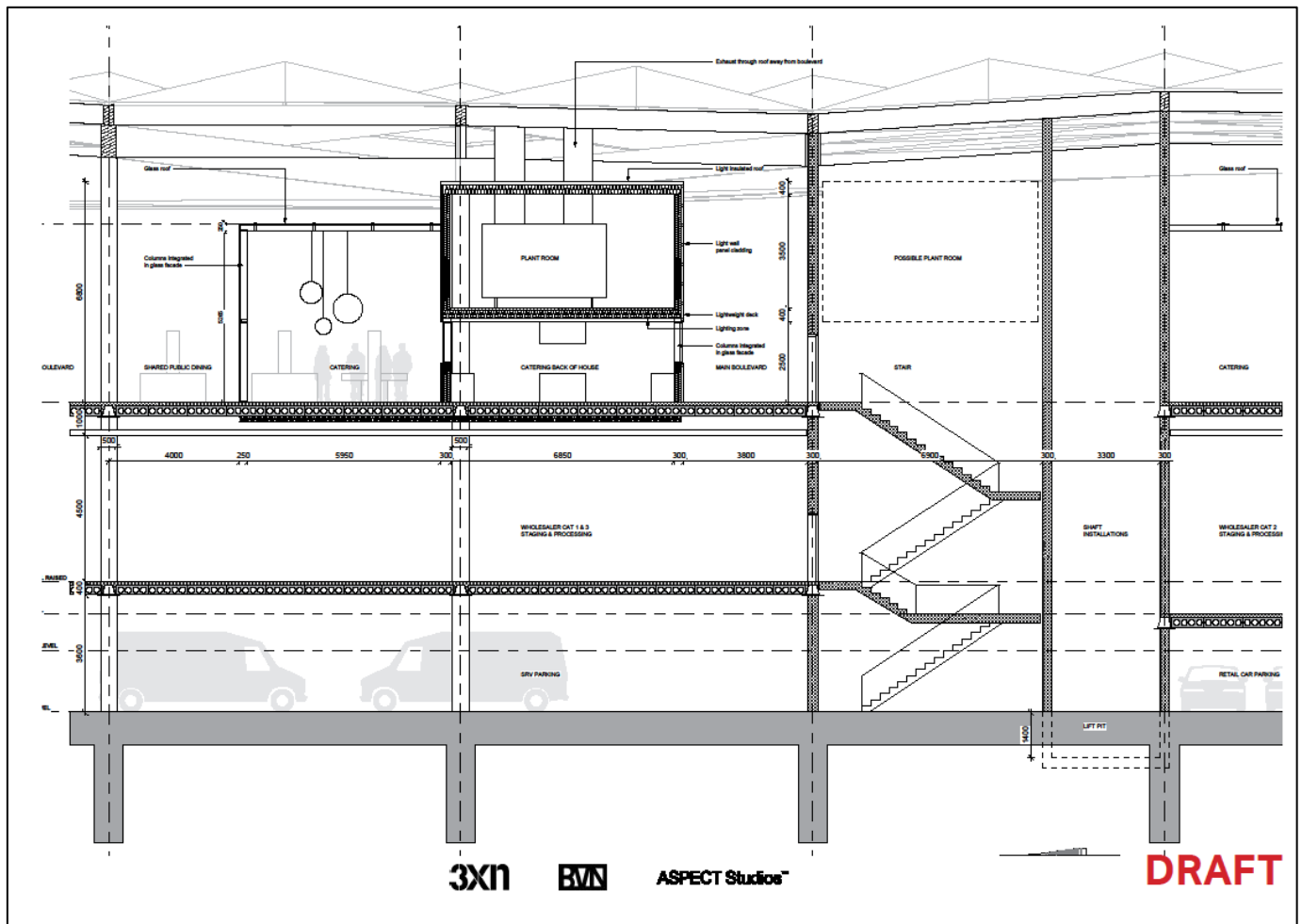


Figure 8: Concept Proposal – Draft cross section showing the proposed new Sydney Fish Market supported on piles (SSD-DA Package: (SSD-DA Package: Stage 2 Main Works Proposal prepared by 3XN BVN & Aspect Studios – 4.0 Built Form & Urban Design - Building Overview - n.d., File 1251_180202_SSD-DA Stage 2 Main Works_3XN Placeholder copy)

3.0 LITERATURE REVIEW

INTRODUCTION

NSW MARITIME HERITAGE DATABASE

ARCHAEOLOGICAL POTENTIAL OF WHARVES ON PARRAMATTA RIVER

EXISTING BMD HERITAGE IMPACT ASSESSMENT STUDIES

ANALYSIS OF OTHER SOURCES OF MARITIME HERITAGE IN THE BAY

CLEARANCE DIVING WITHIN THE BAY

STRATEGIES AND PLANS

3.0 LITERATURE REVIEW

3.1 Introduction

The following literature review is taken from the 2017 Maritime Archaeological Assessment (Nutley 2017).

3.2 New South Wales Maritime Heritage Database

The New South Wales Maritime Heritage Database maintained by the Heritage Division of the Office of Environment and Heritage contains a comprehensive listing of reported instances of shipwrecks and/or reported locations of ‘ship graveyards’ or other abandoned hulks that have been found to date. Ships were abandoned due to being obsolete, surplus to requirements or no longer seaworthy. These instances of abandoned shipwrecks often went unreported in media or official records. Such vessels could be left in backwaters, deep water (where they would not interfere with shipping movements) or under landfill.

The New South Wales maritime heritage database, (Accessed 11 July 2017), does not record any shipwrecks within Blackwattle Bay. It does reference Strides shipbreaking yard in regard to the dismantling of the tug *Bustler* before that vessel was towed to sea and scuttled. The database refers to Strides of Blackwattle Bay. Strides, established in 1858, was on the western end of what is now Blackwattle Bay Park and faced Rozelle Bay rather than Blackwattle Bay itself (Figure 2). That location is outside of the current investigation area (Figure 9; EDAW 1999:6).

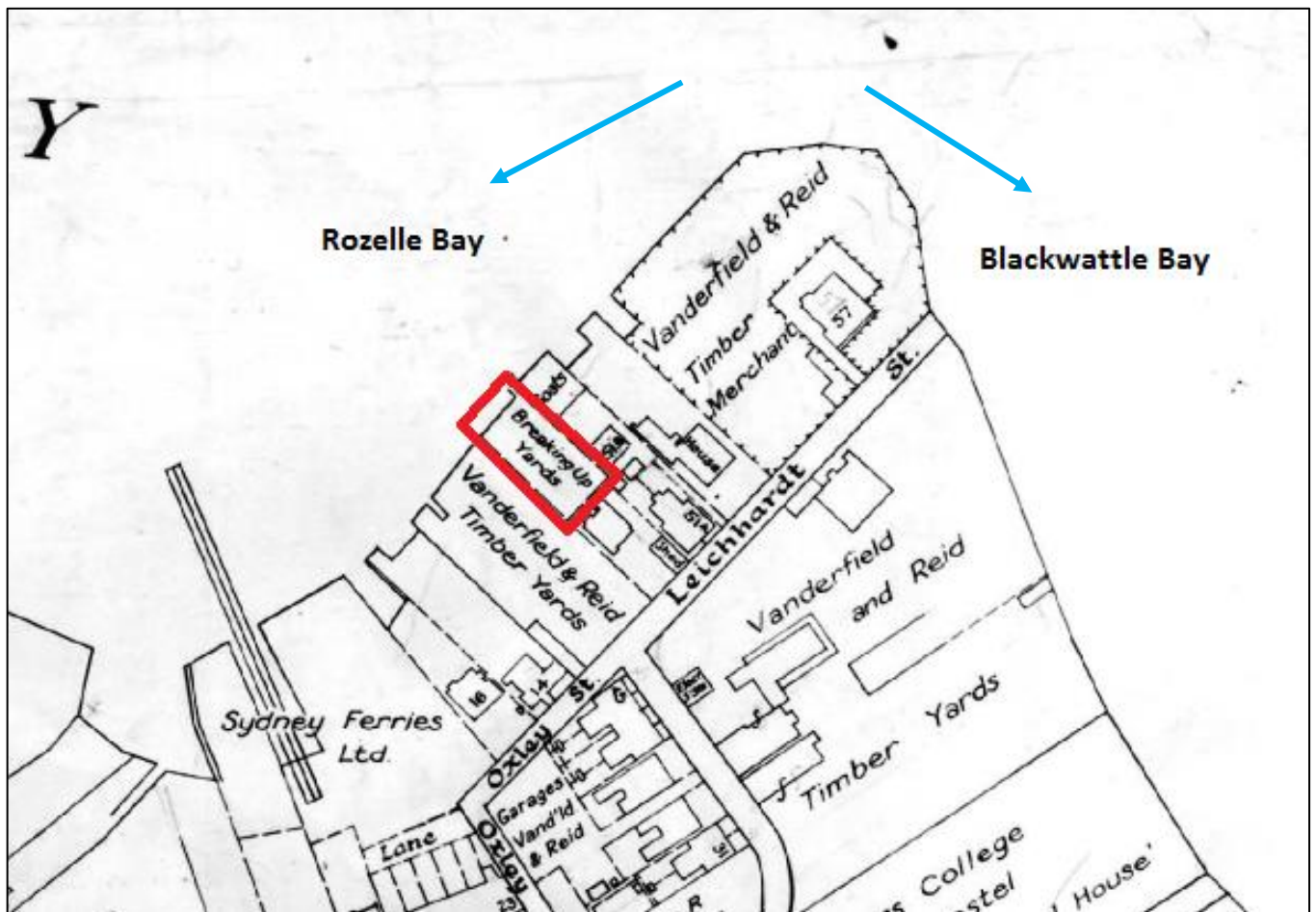


Figure 9: Strides ship breaking works, labelled on the 1939 map above as ‘Breaking up Yards’ (outlined in red). Glebe Municipality 1939 Drawn by W. T. Evesson – March 1939. (City of Sydney’s Historical Atlas of Sydney accessed online 19-19-2017)

3.3 Archaeological potential of wharves on Parramatta River

Archaeological investigations of wharf sites around Australia reveal important information about potential for cultural deposits within riverine sediments adjacent to wharves.

Wharves and jetties are the focal point of the arrivals and departures of shipping services. Depositional material has been shown to include equipment, cargo and personal items. For wharves with high volumes of shipping movements, or those associated with stormwater drains, the quantities of depositional can be considerable.

Archaeological excavation by Bower and Staniforth (1993) of the riverbed adjacent to Queens Wharf on the Parramatta River in New South Wales undertook test excavations that identified over 10,000 artefacts cover a time period from much of the nineteenth and twentieth century (Nutley 2006:94). The collection included cultural items that had fallen from the wharf, from vessels using the wharf and many that had accumulated at the site as a result of adjacent stormwater drainage from elsewhere in Parramatta. The test excavations were conducted using an excavator mounted on a barge and depositing the excavated material onto a steel mesh screen mounted on a second barge. The archaeologists sorted through the deposited load which was periodically washed by water from raised from the river in the excavator bucket. The resulting collection included belt buckles, fob watches, lipsticks, bracelets, a necklace, cutlery, coins (dating from 1827 to 1952), shoe and boot leather, shako badges (from military head-dress), building materials, animal bones, glassware, stoneware and ceramics. The collection was a graphic illustration of the history of that locality and is now included in the Parramatta Heritage Centre as an important component of Parramatta history.



Photograph 1: 1993 testing of sediments at Queens Wharf, Parramatta excavation by Australian National Maritime Museum (Source –D Nutley)

In the 1970s, early archaeological investigations of wharf and jetty sites was conducted in South Australia by the Society for Underwater Historical Research. A project that they conducted at the Holdfast Bay jetty recovered over 5, 00 items (Nutley 2006:94).



3.4 Existing Bays Market District heritage impact assessment studies regarding the Sydney Fish market area

Shipwrecks

This gap analysis included a review of the history of Blackwattle Bay contained in heritage studies previously undertaken for the Bays Market District (City Plan 2013, 2017; Artefact 2017). These histories indicate that Blackwattle Bay began as a swamp. An undated Parish Map of Petersham shows what is now Blackwattle Bay as 'Blackwattle Cove Swamp' (City Plan Heritage 2013:23). The extent of the swamp is even clearer in a circa 1830 map with an overlay of the modern shoreline (City Plan Heritage 2017:13; Artefact 2017:17). The investigation area is still labelled as 'Black Wattle Bay Swamp' (sic) in Woolcott and Clarke's 1854 map of the City of Sydney (City Plan 2013:25) and as 'Black Wattle Swamp' in an 1857 map (Artefact 2017:10).

The swamp area was of little use as a navigable waterway but the freshwater of Black Water Creek that fed into the swamp provided an opportunity to relocate slaughterhouses that had become a bane to the inner-city area. It was assumed that the creek water and tides would flush the waste out of the Bay but this did not occur and the creek and swamp became fouled and a public health risk (City Plan Heritage 2013:24-25). The slaughterhouses were relocated to Homebush Bay by 1860 but raw sewerage and other industrial waste continued to be discharged into the southern end of the Bay (City Plan 2013:25-26). A stone causeway with a timber bridge in the centre (now Pyrmont Bridge Road) was built in 1859 and was accompanied by discussion of reclamation of the swamp, south of the causeway. The reclamation progressed after completion of the causeway in 1875 with silt dredged from the Bay (City Plan Heritage 2017:16) and surplus rubbish from Pyrmont and other quarries (City Plan Heritage 2013:27; Artefact 2017:18).

The origin of the current navigable waters of Blackwattle Bay, precludes the presence of areas of excessive depth within which shipwrecks could be scuttled without impacting on shipping movements. In addition, given the proximity to industrial activities and to numerous workers and residents in the area, any shipwreck events (eg, through explosions, fire, storm events etc) would have been reported as newsworthy items. The absence of any reported shipwreck events makes the presence of shipwrecks from such sources highly unlikely. In addition, any vessel that foundered within the Bay would need to have been removed to maintain the waterway.

As the history of the Bay includes land reclamation, the potential for decommissioned or unseaworthy vessels to have been included in landfill is considered in the Gap analysis in Section 3.3 below. Such occurrences are generally associated with a vessel that has already been abandoned on or near the original shoreline or which has been towed to the area to act as a seawall to shore up the area to be reclaimed. Such inclusions may not be formally recorded and subsequent reclamation can remove any indication of the site. Due to the proximity of Strides shipbreaking yard (Figure 2) north-west of the investigation area and the concentration of shipbuilding activities on the eastern side of Pyrmont Peninsula, the potential for shipwrecks to be present from that source is also considered in Section 3.3.

Conversion of the swamp to an area useful for shipping required considerable transformation of Blackwattle Bay. In addition to dredging to provide a navigable waterway and berthing facilities, (ie wharves and jetties), modification to the shoreline was also needed to provide suitable areas for unloading, stockpiling and transshipment of goods and materials. Prior to reclamation, land along the eastern shore consisted of steep cliffs and small springs with little room for wharfage. Areas where land reclamation have occurred within the Bay since the 1870s include the eastern, southern and western shorelines where the reclaimed land was used for industrial purposes. These include extensive areas for timber merchants and the southern shore which was used variously for the transshipment of coal, blue metal and other materials.

A 2013 study of Berrys Bay (Nutley 2014) refers to the torpedo boat *Avernus* which is reported to have been included in landfill 'at Glebe' in the 1940s. Consideration is therefore given to this vessel due to the southern and western shores of Blackwattle Bay being within the suburb of Glebe. The *Avernus*, along with the *Acheron*, was based at the Berrys Bay Torpedo Depot from 1879 under the control of the New South Wales Torpedo Corp (Nutley 2014:18; Gillett 2003). The Corp was renamed the NSW Torpedo and Signalling Corp in 1879 – the same year that two torpedo launches were completed by the Atlas Engineering Company at Pyrmont. For their time, they were of a design that had only recently been developed for the Royal Navy (Nutley 2013; Gillett:2003). Although no further details are available about the location of the *Avernus*, the 1940s date for its inclusion within reclamation works at Glebe post-dates reclamation works within the investigation area.

Wharves and jetties and seawalls

The earliest indication of wharves extending into Blackwattle Bay are shown on an 1865 Trigonometrical Survey (City Plan Heritage 2017:28). These predate land reclamation on the eastern shoreline and any surviving evidence of those structures would be within reclaimed land. The pre-reclamation portions of these wharves may be present beneath the 1886 western

extent of Miller Street and Gipps Street (Figure 3). The 1886 the parish map of Petersham and Camperdown (Figure 3), shows short and apparently insubstantial wharves extending from those streets in much the same location as those. There are no other details of these items to indicate the industries with which they were associated or whether they were timber or stone structures.

The Blackwattle Bay Maritime Precinct study by City Plan in 2013 provides a detailed history of the development of the wharves and seawalls at the head of the Bay, (with the exception of the Howard Smith Ltd Coal Depot and wharf, now occupied by Hanson Heidelberg Cement concrete batching plant). The 1886 map (Figure 10) shows the initial wharf that was built along the seawall on the northern side of Pyrmont Bridge Road (this section now known as Bridge Road) (Figure 7). The 2013 study notes that the seawall and wharf were constructed in 1885-86 (City Plan Heritage 2013:5) and the wharf consisted of two rows of timber piles extending about 9.14m beyond the seawall. The Sydney Harbour Trust initiated improvements to this wharf in 1904 to allow their use as coal and metal depots. The wharf along Bridge Road was reconstructed in 1910-1911 ‘when a seawall of close piling and Monier plates was erected 4.71m further out’ and 13.7m from the original seawall (City Plan Heritage 2013:29). The area was then backfilled to extend the coal depot area and provide a stable surface for other material including blue metal (City Plan Heritage 2013:29).

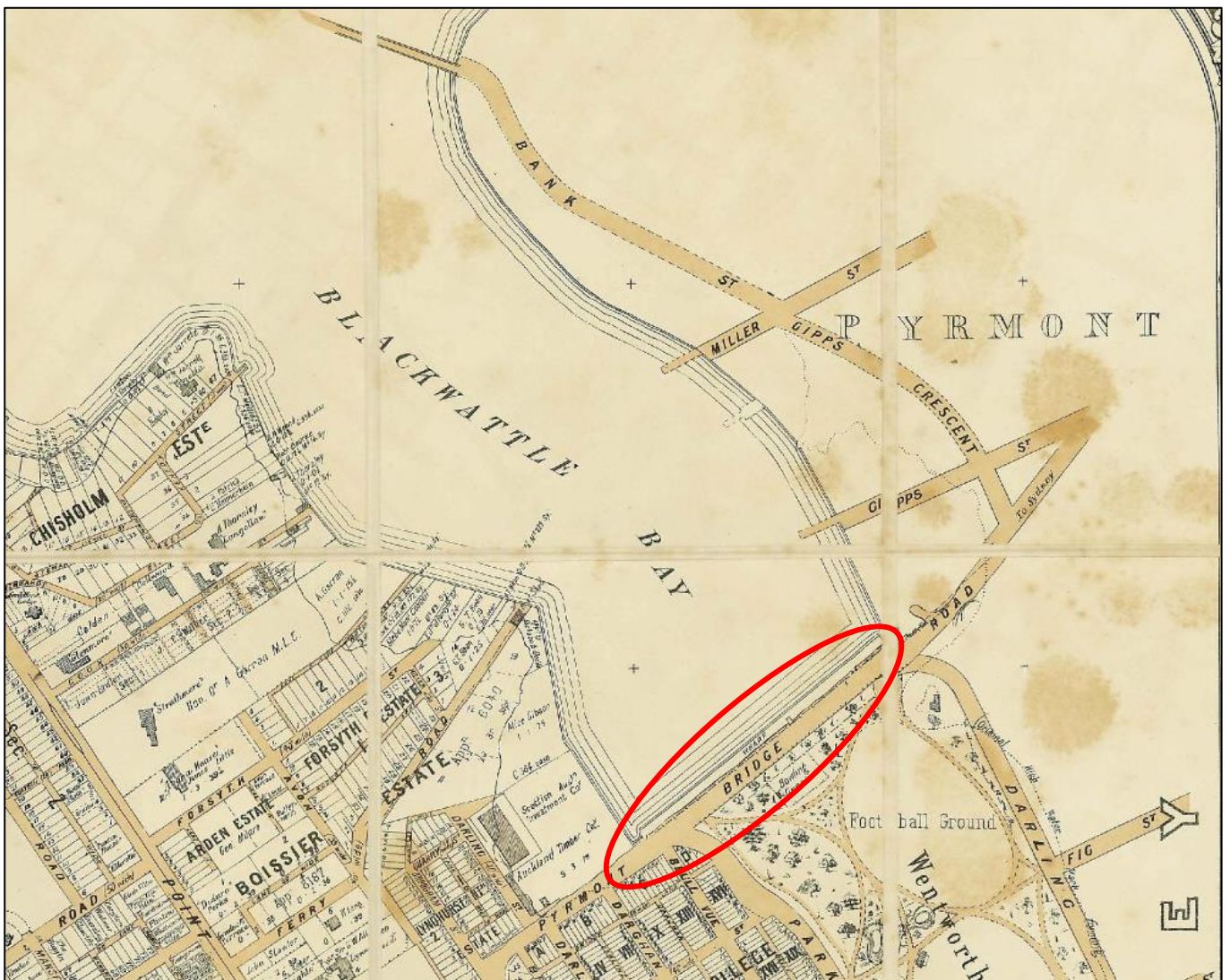


Figure 10: Portion of the 1886 parish map of Petersham and Camperdown showing the post-reclamation wharves on the eastern side of Blackwattle Bay extending from Miller Street and Gipps Street and the 9.4 wide wharf at the head of the Bay on the northern side of Pyrmont Bridge Road (circled).

The Trust also undertook further dredging works in the Bay, ‘removing thousands of tons of rock, clay, sewerage and “found objects”, (City Plan Heritage 2013:29). This second phase of dredging would have therefore removed a considerable amount of any cultural deposits that had accumulated in the Bay to that point in time.



The reclamation works along the western shore of Blackwattle Bay are shown in the parish map of Petersham (1899). The map also shows an indent on the reclaimed eastern shore which may be a dock for shipping or a slipway. A subsequent parish map of Petersham provides details of the reclamation works on the eastern shore along with a number of jetties extending into the Bay (City Plan Heritage 2017:23). These reclamations appear to have been made by private concerns such as the Harris family and F. Buckle. F. Buckle's reclamation is of particular interest in terms of the section of sandstone seawall that survives along the eastern shore of Blackwattle Bay. His reclamation was limited to a very narrow strip that encompasses the extent of the current sandstone seawall. It would appear that this was specifically related to his family's commercial interests. A 1908 Sydney Harbour Trust map of Port Jackson shows a narrow wharf at the southern end of this structure labelled F. Buckle & Sons. It aligns with the northern side of the original alignment of Gipps Street and what appears to be a slipway for Saxton and Binns Timber Yard (City Plan Heritage 2017: Figure 13:23). The F. Buckle frontage is now adjacent to the existing Fish Market parking lot and Saxton and Binns was on the site of the existing Sydney Fish Market.

The 2017 City Plan Heritage report includes a 1924 Sydney Harbour Trust map showing the Howard Smith wharf – at that time the only structure extending northward into the Bay from those owned by Public Works Department and the State Metal Quarries (City Plan heritage 2017:20). No further information on the construction and subsequent modifications to this structure has been documented for the Bays Market District Investigation area to date.

Redeposited materials from stormwater channels

Stormwater has fed into Blackwattle Bay through a system of stormwater channels that commenced in 1850 (City Plan Heritage 2013:28). The stormwater channels are likely to have carried cultural items into the Bay and deposited these adjacent to the outlets of those channels. In July 1992, archaeological investigations in Parramatta River adjacent to Queens Wharf, Parramatta, have shown the potential for a wide variety of such material to be redeposited adjacent to stormwater drains (Nutley 2005; Bower and Staniforth 1993).

In Blackwattle Bay, dredging works for land reclamation in the latter part of the nineteenth century and continued into the early part of the twentieth century (City Plan Heritage 2013:27). These dredging programs will have removed much of the early deposits of cultural material that had flowed down the stormwater channels. 1901

3.5 Other sources of maritime heritage within the Bay

Shipbuilding yards:

If there had been a presence of shipbuilding yards in the investigation area there would be potential for underwater archaeological remains to be present in the form of slipways, construction tools and other equipment as well as discarded structural components. The New South Wales maritime heritage database – (Accessed 11 July 2017) includes references to a number of shipbuilding yards at Pyrmont on the eastern side of the peninsula. No references have been found to shipbuilding yards in Blackwattle Bay (Table 1), either in the Heritage Office maritime heritage database or the Sands Directory. In addition, a compilation of New South Wales Shipbuilders and Boat Builders from the Register of Australian and New Zealand Vessels, (Flapan 2008 http://www.boatregister.net/NSW_Builders.htm - accessed 29/08/2017), does not include any reference to shipbuilding in Blackwattle Bay. In the absence of any known shipbuilding yards within Blackwattle Bay, it can be assumed that vessels listed as being built at Pyrmont, New South Wales were not built within Blackwattle Bay.

Name	Date range	Location	Source
John Sands	1884	Pyrmont	http://www.environment.nsw.gov.au/maritimeheritageapp/ViewSiteDetail.aspx?siteid=872
Russell, John William & Bourne, W.; also Russell, John William	1831-1853	Pyrmont	Sands Directory
James Bower & Co; also Bower & Drake; Bower & Duke	1873-1875	Pyrmont	http://www.boatregister.net/NSW_Builders.htm
James Underwood	1798, also 1800-1807	Pyrmont	http://www.australiaonnet.com/economy-business/industries/ship-building.html
Davey & Co.	1879	Pyrmont	Sands Directory
Fenwick, Andrew & family	1871	Pyrmont	Sands Directory
Holdsworth	1856	Pyrmont	Sands Directory
Jeffery, H.E.	1870	Pyrmont	Sands Directory
Thomas Chowne	1840-1863	Johnstons Bay, Pyrmont	Listing for Former CSR Tablet House Including Interiors



John William Russell	1843	Pymont Bay	Listing for Former CSR Tablet House Including Interiors
Drake, David; also Drake, David Ltd.	1879-1934	42 Mill Street Pymont	Sands Directory
H. E. Jeffery	1870	Pymont	http://www.environment.nsw.gov.au/maritimeheritageapp/ViewSiteDetail.aspx?siteid=1432

Table 1

3.6 Clearance diving within the Bay

In 2012, Manly Hydraulics Laboratory of the former Department of Public Works, undertook a survey of the southern section of Blackwattle Bay covering the area in front of the current and proposed new Sydney Fish Market (pers comm, Colin Browne 11 July 2017). A Waterways Construction Group report contains the results of that survey and subsequent clearance diving undertaken on behalf of Roads and Maritime Services (Waterway Construction Group Seabed:2012). The 2012 report includes a list of sixty-nine objects identified in the initial survey and the results of the subsequent clearance diving. Ten of the surveyed items could not be relocated - either due to being no longer present, (eg, washed away by tides/currents), or buried deeper within the silt. Most of the identified features consisted of miscellaneous items such as shopping trolleys, plastic chairs, wheelie bins, and assorted pieces of metal. Various types of timber were also located. These included a couple of wharf timbers, and a timber pylon.

The survey did not locate any significant structures or objects of archaeological value lying above the seabed.

3.7 Strategies and plans

The following strategies and master plans contain principles for the redevelopment of the Bays Market Precinct. The master plans are deemed as Development Control Plans but will be considered as part of the current SSP Proposal. Those that inform the management of the maritime archaeological potential of the Bay are:

1. Rozelle and Blackwattle Bay Master Plan (Waterways Authority 2000)

- Principles:
 - Future development should retain the existing diversity and maritime character of the precinct*
 - Development is to encourage the conservation of and adaptation for re-use of existing structures of heritage significance.* (This principle applies to any significance maritime infrastructure that may be present within the Bay or under landfill around the Bay.)
- The 2000 Masterplan identifies Maritime Heritage Precinct Site B1 (former coal loader site) (p39) as an area for provision of on-site parking. The nature of this parking facility is not specified but, if were to be an underground structure, there would be potential for uncovering significant relics or remains of former structures of heritage significance in that location.

2. Bays Market District masterplanning principles 01 August 2017.

- This document includes the following principles, in relation to landscape and environment
 - Explore and interpret the history of the site*
 - Pursue leading edge sustainability outcomes*

In addition, under Principle 3: Explore and interpret the history of the site, this document notes that:

The site has a distinctive history, geography and mercantile role, which requires a considered response. Landscaping, public art and events can be informed by past uses and traditions, and can be used as cultural and educational tools to educate residents, workers and visitors.

These principles both help to inform the management of the maritime archaeological potential of the Bay area.

4.0 SITE INSPECTION

INTRODUCTION

SOUTHERN SHORELINE

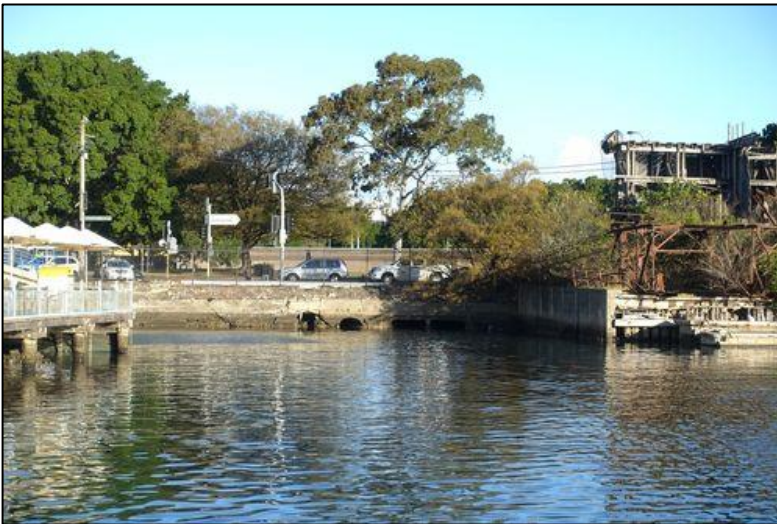
4.0 SITE INSPECTION

4.1 Introduction

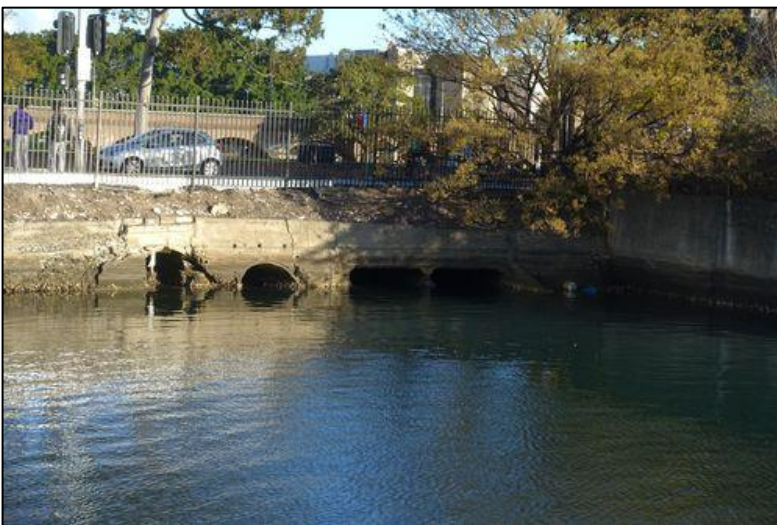
An inspection of the foreshores of the redevelopment area for the new Sydney Fish Market was conducted by the author on Monday 28th August 2017). This inspection extended from the northern boundary of the Fish Market car Park, (the boundary adjacent to the Hymix concrete batching plant), to the western shore of Blackwattle Bay adjacent to the Hanson Heidelberg Cement Group wharf. The inspection included observations of seawalls did not include grounds of the former coal loader or wharf structures along the southern or eastern shores as wharf structures were outside of the scope of this assessment. The following are the results of the site inspection.

4.2 Southern shoreline – proposed new Sydney Fish Market frontage

In the south-east corner of the Bay, north of the former coal loader are four stormwater outlets set in concrete facing along the northern side of Pyrmont Bridge Road (Photographs 2-3).

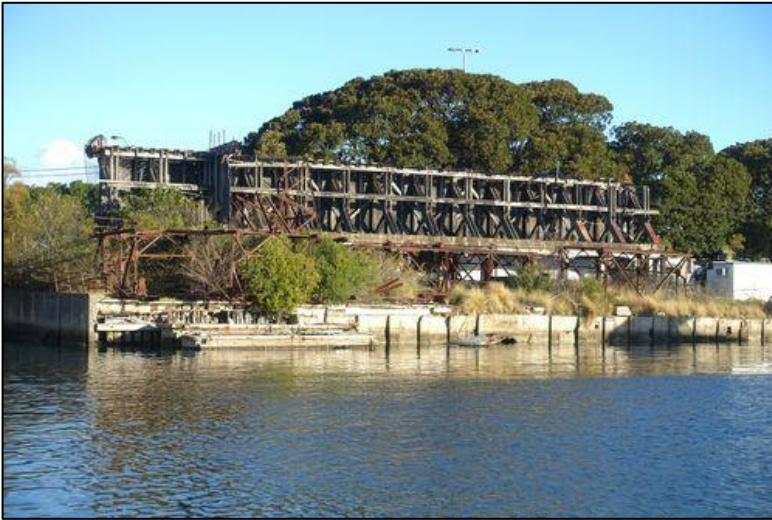


Photograph 2: Stormwater outlets east of the coal loader along Pyrmont Bridge Road

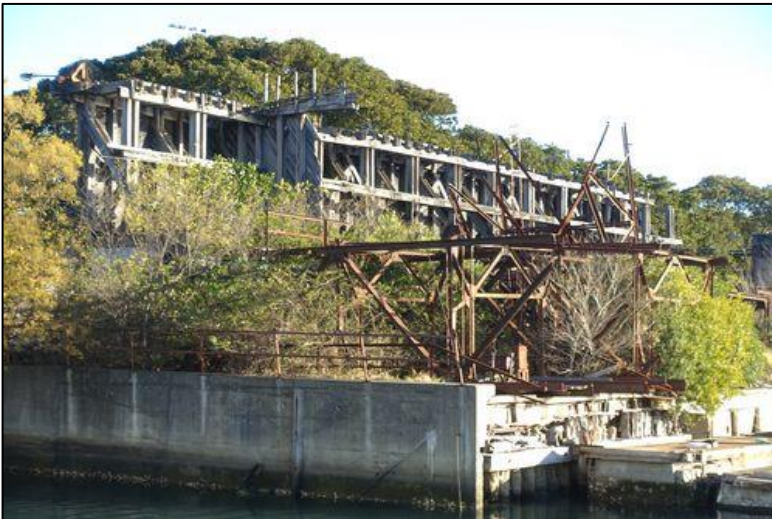


Photograph 3: Stormwater outlets east of the coal loader

The remains of the coal loader stand on 1953 era reinforced concrete beams and concrete columns cast within steel tubes and with seaward walls of concrete plating (Murphy 1997:21). (Photograph 4). Along the north-east frontage are the remains of close-set timber pylons of the former jetty that extended northwards (Photographs 4-5).



Photograph 4: Remains of the coal loader on the northern side of Pyrmont Bridge Road



Photograph 5: Seawall surrounding the coal loader and timber pylons on north-eastern frontage from former wharf

West of the coal loader, concrete Monier plates form a seawall on the southern side of the decking of the concrete wharf extension. The wharf, set over the waters of the Bay, is supported on steel pylons (Photograph 6).



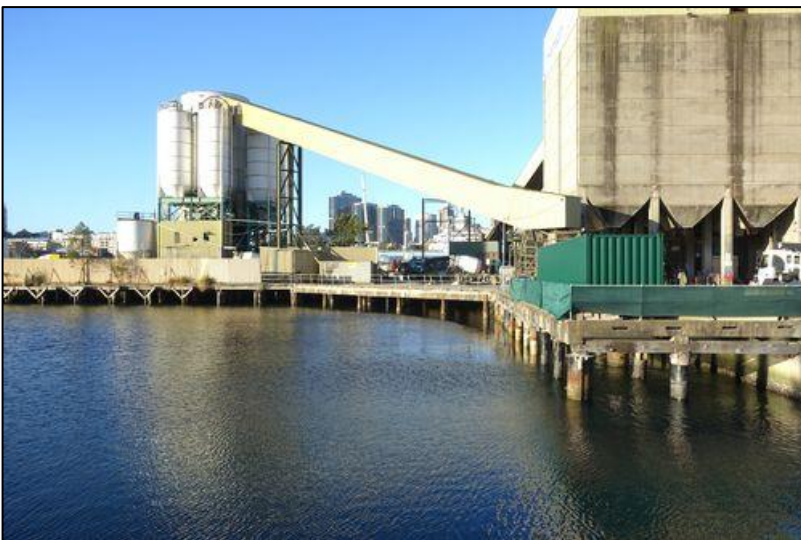
Photograph 6: Underside of the reinforced concrete deck of the wharf east of the coal loader showing seawall that runs the length of the site about 20m from Bridge Road.

The Blackwattle Bay Marina wharf, to the east of the Hanson Heidelberg cement works, is set on pylons in various stages of decay (Photograph 7).



Photograph 7: Blackwattle Bay Marina B2 showing timber pylons and bracing beams

Further west is the Hanson Heidelberg Cement concrete batching plant (Photograph 8) which would become a part of the new Sydney Fish Market complex. Maps of the Investigation area indicate that wharfage in this location has been present since the 1920s. As noted in Section 3.2 of this report, no details of its construction and subsequent alterations have been completed to date. All pylons on this wharf that could be observed during the site inspection appear to have been replaced and/or sheathed. A Development Application (DA 9449) has been lodged by the Hansen Construction Material Pty Ltd with the Department of Planning and Environment for the demolition of the existing structures on this site but excluding the wharf.



Photograph 8: Hanson Heidelberg Cement wharf area

5.0 ARCHAEOLOGICAL POTENTIAL

SHIPWRECKS

MARITIME INFRASTRUCTURE

OTHER POTENTIAL RELICS WITHIN THE WATERS OF THE BAY

SUMMARY OF ARCHAEOLOGICAL POTENTIAL



5.0 ARCHAEOLOGICAL POTENTIAL

5.1 Shipwrecks

The analysis of the history of Blackwattle Bay, concludes that there is little likelihood of shipwrecks within the current waters of the Bay and only a small potential for historic shipwrecks to be located within landfill in the areas of proposed redevelopment of on the eastern shores of the Bay.

No historical evidence has been found to indicate that other vessels may be part of landfill works around Blackwattle Bay.

5.2 Maritime infrastructure

Studies to date have included details of the evolution of part of the wharf complex at the southern end of the Bay – with the exclusion of the c1920s Howard Smith wharf and depot is currently occupied by the Hanson Heidelberg Cement concrete batching plant.

The footprint of the new Sydney Fish Market development area sits over the footprint of the 1885-1886 wharf which was built along the seawall on the northern side of Pyrmont Bridge Road (this section now known as Bridge Road) (City Plan Heritage 2013:5) (Figure 7). The 2013 study notes that the wharf extended 9.14m beyond the seawall.

The c1920s Howard Smith wharf and depot is currently occupied by the Hanson Heidelberg Cement Group's concrete batching plant. This wharf has retained much of the original form shown in 1920s maps, with the exception of a triangular apron inserted on the western side. Impacts on any archaeological deposits that may have accumulated beneath the wharf since that time will be limited to disturbance accompanying with replacement of deteriorated piles.

5.3 Other potential relics within the new Sydney Fish Markets investigation area

Section 4 of this report has identified the potential for relics to flow down stormwater channels and to have been redeposited. In addition, existing studies have documented the history of industrial activities along the shoreline and shipping within the Bay. Through these activities, there is potential for items of equipment and other materials to have been discarded or to accidentally fallen into the Bay.

Nineteenth and early twentieth century dredging within the Bay will have removed substantial amounts of pre-dredging cultural deposits. However, post-dredging cultural deposits may be present beneath or adjacent to the wharves.

5.4 Summary of Archaeological Potential

There are no indicators to suggest the existence of shipwrecks to be present with the marine component of the Bay.

No maritime infrastructure that pre-dates reclamation works will be present in the investigation area.

The 1885-86 seawall has potential to provide details of its construction and of cumulative impacts arising from subsequent wharf development and maintenance.

The remains of timber pylons associated the 1885-86 wharf may be present within the sea bed. However, as the extent to which the wharf extended beyond the seawall is known (9.14m), the precise location of these pylons does not hold significant archaeological potential.

There is a low level of potential for archaeological deposits to be present within the vicinity of former wharves at the southern end of the Bay and from the late nineteenth century and early to mid-twentieth century timber jetties that once extended from the eastern shoreline. These deposits would be expected to consist of individual items that have fallen from the jetties or from vessels using those facilities and items that have been transported into the bay via the storm water drains at the head of the bay. Due to disturbance from propeller wash, these items are unlikely to form coherent layers of archaeological deposits.

6.0 SIGNIFICANCE ASSESSMENT

HERITAGE SIGNIFICANCE

BASIS OF HERITAGE SIGNIFICANCE

STATEMENT OF SIGNIFICANCE



6.0 SIGNIFICANCE ASSESSMENT

6.1 Heritage Significance

Heritage significance is an expression of the cultural value afforded a place, site or item. This assessment of significance is in accordance with the standard assessment criteria adopted by the Heritage Division of New South Wales as embodied in the Burra Charter.

The following assessment is based on the analysis of the literature review in Section 3 of this report.

6.2 Criteria

Criterion (a): Historic Significance - (evolution): an item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area).

Although no historic shipwrecks are known to be present within the investigation area, there is potential for these to be present under landfill. In the event that such relics are present, they could have potential to be of local or State significance in providing archaeological evidence of their construction and function in the late colonial or early post-colonial phases of the evolution of New South Wales.

Maritime infrastructure dating from the second half of the nineteenth century, in the form of the 1885-86 Government wharf and seawall at the southern end of Blackwattle Bay has potential to provide archaeological evidence of the construction and function of these items and their associated industries in colonial New South Wales at a level of local or State significance.

Relics, whether deposited from the wharves, from vessels at those wharves or transported through the stormwater channels and re-deposited into the Bay have potential to have preserved items associated with industrial and non-industrial activities both within and beyond the current investigation area. These items have potential to be of local significance.

Criterion (b): Associative Significance – (association): an item has strong or special association with the life or works of a person, or group of persons, or importance in NSW's cultural or natural history (or the cultural or natural history of the local area);

There are no identified maritime archaeological items of potential associative significance within the investigation area.

Criterion (c): Aesthetic Significance - (scenic qualities / creative accomplishments) an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the cultural or natural history of the local area);

There are no identified maritime archaeological items of potential aesthetic significance within the current investigation area.

Criterion (d): Social Significance - (contemporary community esteem): an item has a strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons (or the cultural or natural history of the local area);

There are no identified maritime archaeological items of potential social significance within the current investigation area.

Criterion (e): Technical/Research Significance - (archaeological, educational, research potential and scientific values): an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area);

The seawall and 1885-86 Government wharf at the southern end of Blackwattle Bay has potential to reveal technical details about construction of the wharf and to be significant at a local level.

Criterion (f): Rarity - an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area);

Shipwrecks in landfill are a small sub-set of the inventory of shipwrecks as a whole and, being supported by landfill, are likely to have been preserved close to their original form. Australian built vessels of that era were often poorly documented and such sites have the potential to provide significant insights into the materials and design elements of these vessels.

The seawall and remains of the 1885-86 Government wharf have potential to have retained significant form and information not available in archival records. These items have potential to be of local significance



Criterion (g): *Representativeness - an item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places of cultural or natural environments (or the cultural or natural history of the local area).*

There are no identified maritime archaeological items of potential social significance within the current investigation area.

6.3 Statement of significance

The maritime history of site of the proposed new Sydney Fish Market in Blackwattle Bay is one of the evolution of industrialisation, from a swamp to an area for waste disposal to an area for transshipment of various materials associated with the commercial development of Sydney and the State. The evolution of the maritime infrastructure, including wharves, jetties and dredging works have formed the background to the current form and character of the Bay. The seawall an 1885-86 Government wharf at the southern shoreline and represents the process of land reclamation in the latter part of the nineteenth century.

7.0 IMPACT AND MITIGATION

COFFERDAM INSTALLATION

REMOVAL OF EXISTING PILES

INSTALLATION OF NEW PILES

SILT RESISTRIUTION

AREAS NOT SUBJECT TO SEDIMENT DISTURBANCE

UNEXPECTED FINDS PROCEDURE

INTERPRETATION



7.0 IMPACT AND MITIGATION

7.1 Cofferdam installation

Potential impacts

The installation of the southern wall of the cofferdam has the potential damage to remains of a nineteenth century seawall and government wharf along the southern shore.

As noted in section 2.1, the area within the cofferdam will not be dewatered. Any relics located on the seabed within the cofferdam would not be subjected to drying and accelerated decomposition.

Mitigation

The location of the nineteenth century seawall and original wharf along Bridge Street mapped by RPS Group (Appendix A). It is recommended that design development shows the relationship of the cofferdam to the sea wall and ensure that there is no impact to the seawall.

7.2 Removal of existing piles, installation of new piles and silt redistribution

Potential impacts

Removal of existing piles:

Existing piles are to 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. The number of piles to be extracted and the number that are cut off is unknown. While cutting off piles has minimal potential impact on archaeological deposits. However, pile extraction has potential to disturb a significant proportion of the marine environment of the adjacent seabed area. Such relics may be in the form of remnants of tools or other equipment, as well as relics that have been transported via stormwater drains.

Installation of new piles:

The diameter of each of the new piles and the number of new piles is not yet known. If assumed to be at least 1m diameter and ~300 piles, this represents an area of direct disturbance of some 237m², not including disturbance radiating out from the pile driving. This has the potential to affect a large proportion of the investigation areas and to disturb artefacts that may be relics within the definition of the NSW *Heritage Act 1977* and associated with the industrial history of the wharves. Such artefacts may include items such as tools or other equipment, as well as artefacts that have been transported via stormwater drains.

Silt redistribution:

In addition, approximately 560m³ will be moved and redistributed as per the Basement Plan (Appendix B). The combined impact of pile extraction, introduction of new piles and redistribution of sediment will impact a large proportion of the seabed within the study area.

Historic shipwrecks:

No historic shipwrecks are predicted to be within the investigation area or impacted by the proposed works.

Mitigation

Mitigation measures are limited by:

- Contamination in the sediments at the head of the bay. Contaminants arising from the history of coal and other industrial activity in this area poses an unacceptable health risk which precludes the use of divers to engage in archaeological excavation.
- The depth of the water in the works area ranges from 4-7m. In portions of the study area, this precludes deployment of barge mounted excavator such as that utilised at Queens Wharf, Parramatta (see section 3.3). However, the accessible areas are those close to the head of the bay adjacent to the sea wall and close to the line of the original wharves.
- The cofferdam, which will allow control of water depth, will only be installed after the existing wharf piles have been extracted and associated disturbance to archaeological deposits has occurred.

In order to assess the presence of relics of local or State significance, within the meaning of the NSW *Heritage Act 1976*, it is recommended that the archaeological testing is undertaken. This testing should take place prior to disturbance of the seabed

through (a) the extraction of existing piles, (b) installation of the cofferdam, (c) redistribution of the c560m³ of sediment, and (d) installation of new piles.

The recommended archaeological test excavation strategy is:

1. Use of a mechanical, barge mounted excavator, (a 'long reach excavator' if depth is an issue), to extract test samples from the top half metre of seabed sediment adjacent to and beneath the existing wharves and deposit them onto an adjacent screen for examination by an archaeological team equipped with pressure hoses (See Section 3.3 above).
2. The test sampling would be conducted in longitudinal trenches, each trench 1m in width, 10m in length, 0.5m deep. The sediment could be returned to the seabed within a silt curtain surrounding a barge mounted sieve screen.
3. The test trenches should be located in the areas of greatest potential for accumulation during the history of the wharves and in the areas of least disturbance during that history (see Figure 11).
4. Recovered artefacts would be identified, catalogued, assessed for their significance, and archivally recorded.
5. The NSW Heritage Council would be notified of any artefacts assessed as being relics under the NSW *Heritage Act 1977*.
6. Such relics would have potential for inclusion in an interpretation program to inform the public of the history of the investigation area.

The area of coverage for the archaeological test excavations should include sampling adjacent to the existing wharves as well as those areas designated for silt redistribution. Figure 11 is an indicative mapping of the distribution of the test trenches, including those area that will only be accessible once existing wharf platforms have been removed.

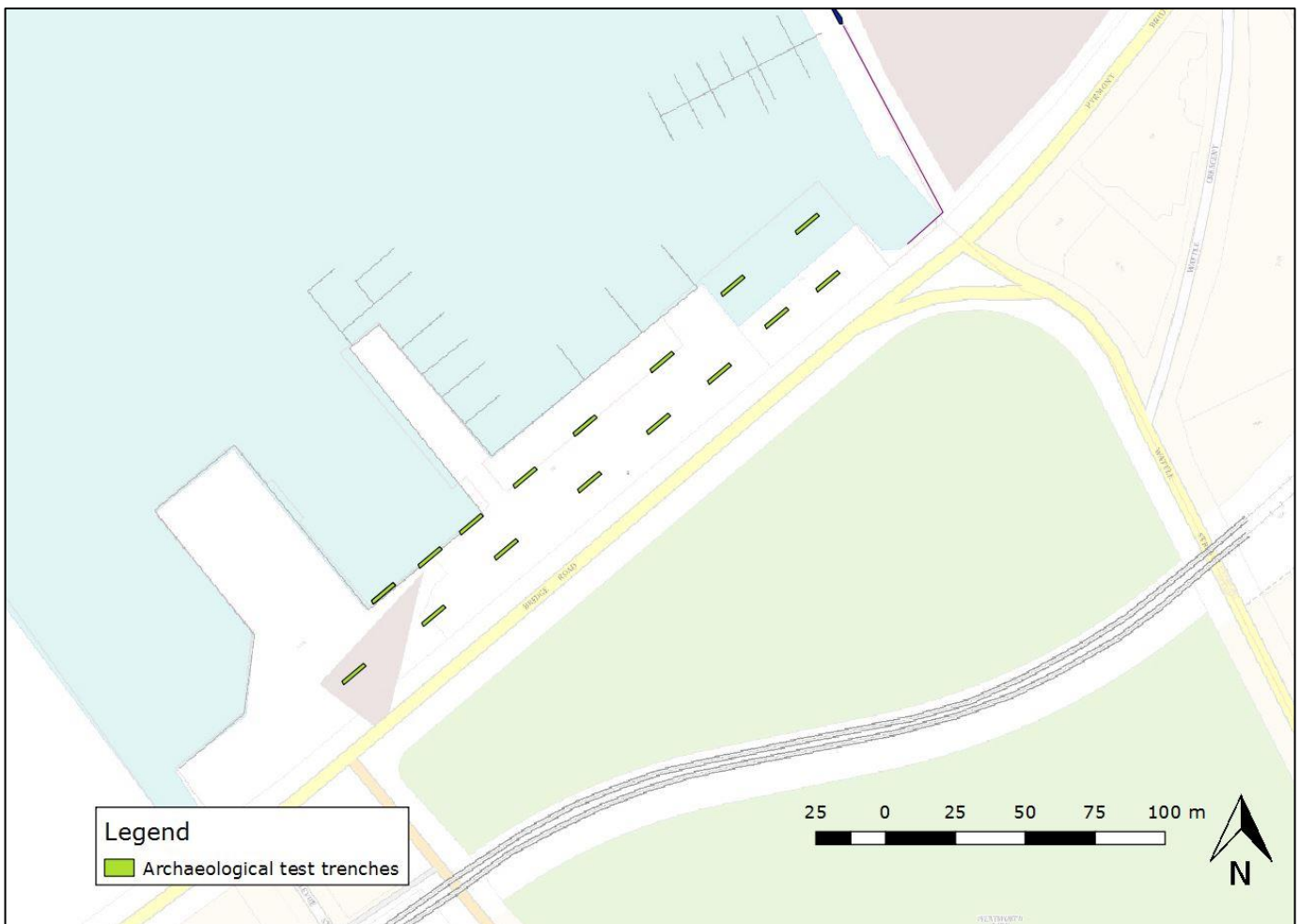


Figure 11: Indicative distribution of archaeological test excavations (Land and Property Information Place Point map in QGIS)

Site inductions for all employees, contractors and subcontractors engaged in undertaking works within the marine environment of the study area are to include protocols for responding to chance finds. These instructions should that in the event that a shipwreck or relic is located during construction works:

- i. Work should cease immediately in the vicinity of the shipwreck or relic



- ii. A qualified maritime archaeologist should be engaged to:
 - a. Assess the significance of the shipwreck or relic
 - b. Provide management recommendations which could include recovery and conservation or reburial of the relic.

7.3 Areas not subject to sediment disturbance:

For marine areas that are not subject to removal of existing piles, installation of new piles, trenching, installation of cofferdam or other disturbance of sediment within the marine environment, no mitigation measures are required, however, in the event that a potential relic is detected, the procedures in section 7.2 must be adopted.

7.4 Earthworks along the southern shore

Potential impacts

Earthworks, including piling, trenching for services, has potential to damage remains of a nineteenth century seawall and government wharf along the southern shore.

Mitigation

Any earthworks within the vicinity of the nineteenth century seawall and wharf should be monitored by a suitably qualified archaeologist. In the event that evidence of those structures is identified, work should immediately cease in that area to enable the archaeologist to assess the nature and significance of the feature and to provide advice on appropriate management.

7.5 Interpretation

The maritime history contained in this report and maritime archaeological evidence should be included in an interpretation plan. As indicated in the Bays Market District masterplanning principles (01 August 2017), physical evidence of the history of the evolution of the maritime character of Blackwattle Bay would provide opportunities to:

- *Explore and interpret the history of the site*
- *Pursue leading edge sustainability outcomes*

The strategies may range from *in-situ* preservation (preferred), archival recording, recovery and conservation of key components, to physical and/or electronic and printed interpretation materials.

For example, if a significant relic is uncovered during the redevelopment of the Bay, reuse strategies should be considered. Dependent upon the condition, material and significance of the item such opportunities could include:

- Incorporation as a waterside feature in design and interpretation plans for the reuse of the existing Sydney Fish Market site
- Relocation into the public domain as an artwork, similar to the approach adopted at Pyrmont with the tumbling balls retained from the former Cane-ite works.

8.0 RECOMMENDATIONS



8.0 RECOMMENDATIONS

The following recommendations are made on the basis of:

- The research and analysis outlined contained in this report.
- Results of the assessment as outlined in this report.

IT IS RECOMMENDED THAT:

The findings of this maritime Heritage Impact Assessment for SSD 8924 (Sydney Fish Markets – Concept development application and Stage 1 works comprising demolition and early works) and SSD 8925 (Sydney Fish Markets – Stage 2 main works) are:

1. The works under SSD 8924 and SSD 8925 have potential to disturb archaeological deposits of local significance within the sediment in the investigation area. The potential relics include those that may have originated from the use of the wharves as well as those carried into the bay via adjacent stormwater drains. The works under SSD 8924 and SSD 8925 therefore have potential to disturb archaeological deposits and relics submerged within the sediment in the investigation area. The potential relics include those that may have originated from the use of the wharves as well as those carried into the bay via adjacent stormwater drains.
2. Mitigation measures and archaeological test excavation strategy identified in Section 7 of this report should be adopted for the proposed works.
3. Site inductions for all employees, contractors and subcontractors engaged in undertaking works within the marine environment of the study area are to include protocols for responding to chance finds. These instructions should that in the event that a shipwreck or relic is located during construction works:
 - I. Work should cease immediately in the vicinity of the shipwreck or relic
 - II. A qualified maritime archaeologist should be engaged to:
 - a. Assess the significance of the shipwreck or relic
 - b. Provide management recommendations which could include recovery and conservation or reburial of the relic.
4. If a significant relic is uncovered during the redevelopment of the Bay, reuse strategies should be considered. Dependent upon the condition, material and significance of the item such opportunities could include:
 - Incorporation as a waterside feature in design and interpretation plans for the reuse of the current site of the Sydney Fish Market
 - Relocated into the public domain as an artwork, similar to the approach adopted at Pyrmont with the tumbling balls retained from the former Cane-ite works.
5. Any earthworks within the vicinity of the nineteenth century seawall and wharf should be monitored by a suitably qualified archaeologist. In the event that evidence of those structures is identified, work should immediately cease in that area to enable the archaeologist to assess the nature and significance of the feature and to provide advice on appropriate management.

REFERENCES



REFERENCES

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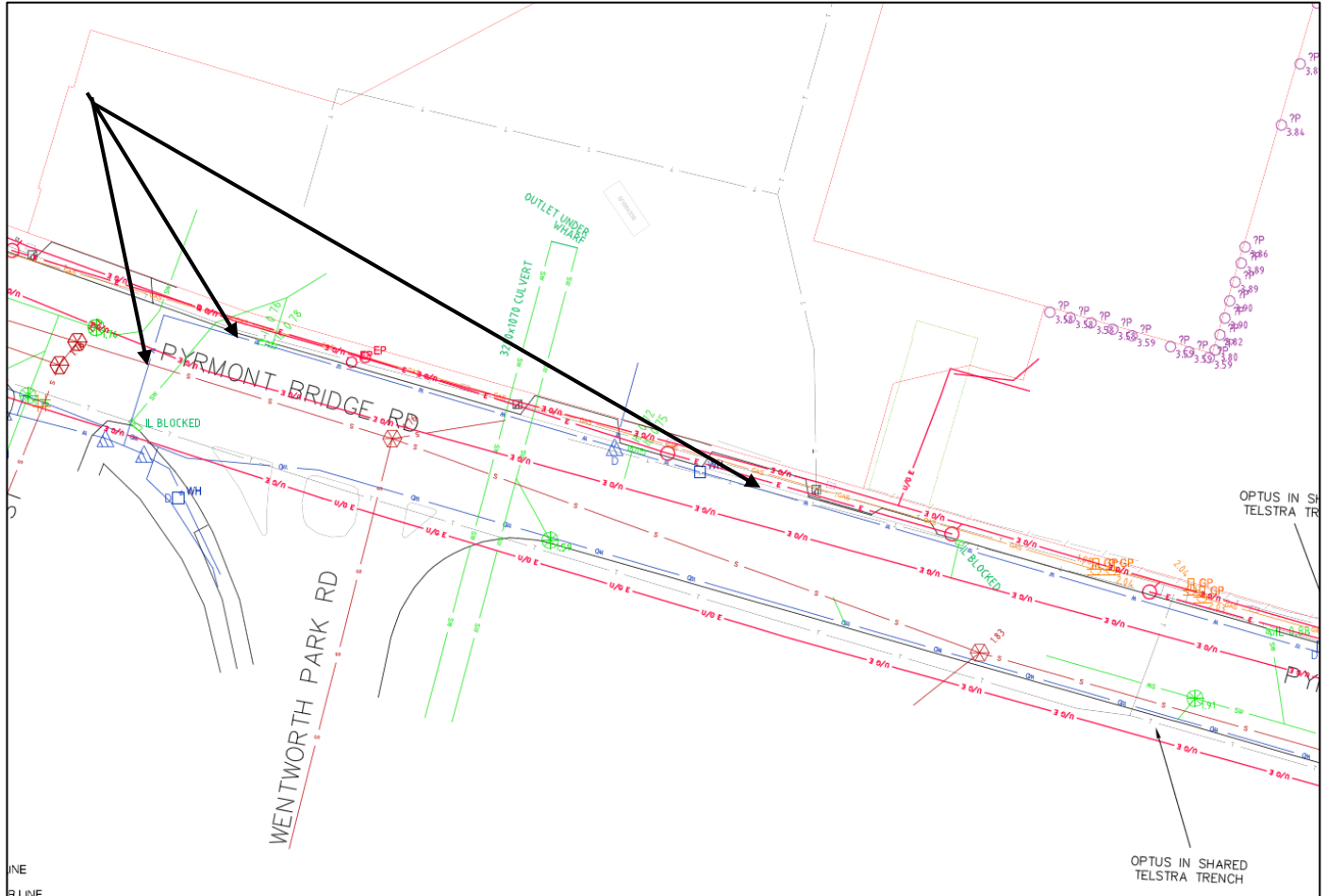
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APPENDIX A

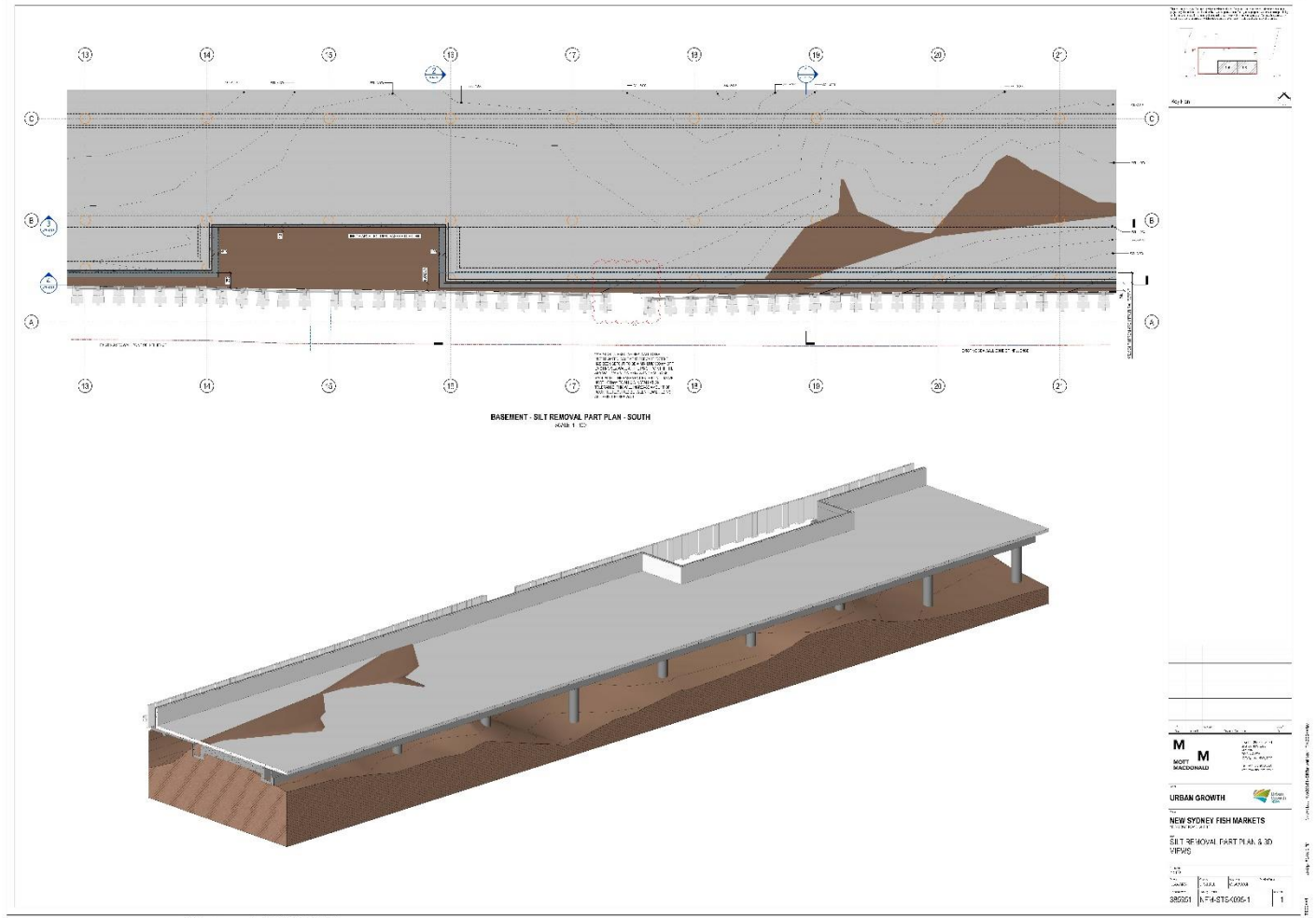
Portion of RPS plan: PRELIMINARY 3rd DRAFT DATA - BAYS MARKET DISTRICT 2016.02.11 showing the location of nineteenth century seawall (Blue line with 'W' and marked by arrows)

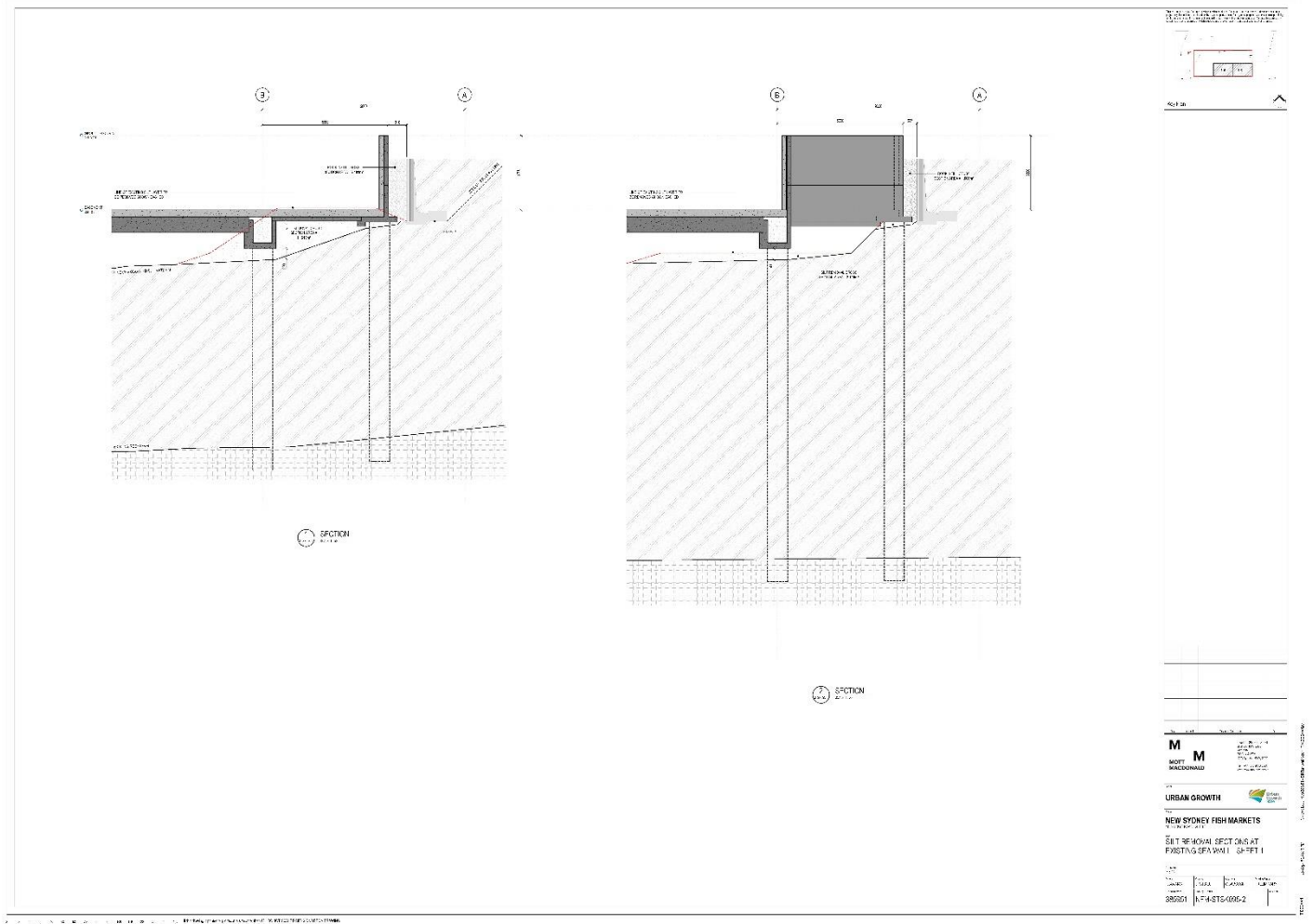




APPENDIX B

Silt Removal Sections Along Existing Sea Wall:











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COMBER CONSULTANTS PTY LTD

ABN 96 109 670 573

76 EDWIN STREET NORTH

CROYDON, NSW, 2132

T 02 9799 6000

F 02 9799 6011

www.comber.net.au

DIRECTOR

JILLIAN COMBER

ASSOCIATE DIRECTOR, SYSTEMS

DAVID NUTLEY

ASSOCIATE DIRECTOR, PROJECTS

TORY STENING