

Central Barangaroo Archaeological Research Design & Methodology

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Volume 2, Appendices

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for Aqualand

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Barangaroo Central Early Works Stage 1: Maritime Archaeological Research Design and Methodology

Report prepared for AMBS Ecology & Heritage
for Aqualand

August 2025

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1. Introduction

1.1 Project background

MTS Heritage Pty Ltd (MTS Heritage) has been engaged by AMBS Ecology and Heritage Pty Ltd (AMBS) to prepare a Maritime Archaeological Research Design and Methodology (MARDM) for proposed Early Works Stage 1 at Central Barangaroo.

The Stage 1 early works (SSD 39587022) include:

- Partial demolition of an existing shoring wall and capping beam along Hickson Road.
- Construction of a 153m long x 17.6m deep secant pile retention wall and associated works along Hickson Road.
- Additional interface works to the perimeter retention wall of the Barangaroo Metro Station Box.
- Installation of temporary stormwater diversion works along Hickson Road and Barton Street.
- Relocation of services.
- Construction of two temporary substations to enable connection to a future extended Ausgrid high voltage network.

These early works are to support the future public domain upgrade works along Hickson Road and facilitate the future mixed-use development proposed for the site. They will be followed by additional site preparation works including a larger perimeter retention wall, bulk excavation and remediation program (Stage 2 works).

This MARDM has been prepared to guide the initial archaeological test excavation. The MARDM has been prepared in conjunction and consultation with AMBS who are preparing the ARDM for the overlapping historical archaeological portions for these archaeological works. The aim of the archaeological test excavation is to investigate the archaeological potential of the subject site and to inform the future archaeological program of works for the Stage 2 bulk excavation works.

1.2 Site location

The subject site is located in Central Barangaroo, which forms part of the wider Barangaroo Precinct comprising a total area of 22ha. It is located in the north-western edge of Sydney CBD and falls within City of Sydney Local Government Area (LGA) (Figure 1.1). Barangaroo Precinct interfaces with Hickson Road in the east, the foreshore in the west, Walsh Bay to the north and Darling Harbour in the south (Figure 1.2).

The Precinct is divided into three distinct development areas, including:

- **Barangaroo South (approx. 7.5ha)** – Located at the southernmost end of Barangaroo Precinct. Progressively built over the last six years, this area includes mixed-use neighbourhood comprising commercial office buildings, mixed use buildings, shops, cafes, hotel and community uses.
- **Central Barangaroo (approx. 5.2ha; the subject site)** – Located between Barangaroo South and Barangaroo Reserve. This area is currently vacant and undergoing site preparation works to facilitate a mixed-use area with a focus on retail activation, residential and community uses.
- **Barangaroo Reserve (approve 6.1ha)** – Located at the northern end of the Precinct, this area includes Barangaroo Reserve. Featuring open space and lookout points to Sydney



Harbour, Nawi Cove and Marrinawi Cove. Barangaroo Reserve features the Cutaway – a future arts and cultural entertainment space.

The above results in a total area of 18.8ha. The residual 3.2ha is represented by the reshaping of the former industrial headland into Barangaroo Reserve and the creation of Nawi Cove as a substantial water body within the Barangaroo site, forming the original 22ha.

1.3 Objective

The objective of the maritime archaeological test excavation at the Central Barangaroo site is to investigate the archaeological potential of the subject site. The MAA assessment identified the potential for relics relating to both the former maritime structures built at the site, as well as the operation of former wharves. The test excavation is a unique opportunity for a maritime archaeological excavation to be conducted within a mostly dry environment. The test excavation will inform the future archaeological works on the site by identifying the presence, extent, condition and variety of archaeological relics.

Archaeological testing on the site will target areas where known wharves, seawalls, and other potential archaeological deposits may be present based on the historical research and historical mapping prepared by MTS Heritage (2023), supplemented by additional mapping by AMBS (2025).

1.4 Authorship and acknowledgements

This MARDM has been prepared by Chris Lewczak (Principal Maritime Archaeologist, MTS Heritage). Fiona Leslie (Principal Heritage Consultant, Mountains Heritage) reviewed the draft report.

We would like to acknowledge the assistance kindly provided by Lian Ramage (Heritage Team Lead, AMBS) and Rhian Jones (Senior Heritage Consultant, AMBS).



Figure 1.1: General location of the subject site at Barangaroo Central, NSW



Legend

-  Subject site

Map Source: NSW Six Maps (NSW Spatial Data)



Legend

 Subject Site

Figure 1.2: Location and extent of the subject site at Barangaroo Central, Sydney

Map Source: NSW Six Maps (NSW Spatial Data)



2. Historical Summary and Archaeological Potential

2.1 Summary History

A summary of the history of the site is presented in Table 2.1 below and is based on the historical research and analysis prepared for the Stage 1 and Stage 2 works by MTS Heritage (MTS Heritage 2023, MTS Heritage 2025). Relevant historical maps and plans are also included to illustrate major phases of site development.

Table 2.1: Summary chronology for the subject site

Phase	Major Historical Events
<p>Phase 1: Early European Settlement (1788-1820s)</p>	<p>Early colonial use of ‘Long Cove’ included gathering shellfish for sources of both food and lime.</p> <p>First wharves constructed in Darling Harbour by 1811, including Market Wharf towards the southern end of Darling Harbour. Early development is concentrated in this area.</p> <p>There are no know foreshore or maritime uses of the subject site during this time.</p>
<p>Phase 2: Early Development (1820s-1870s)</p>	<p>First known reclamation and a possible wharf appears in 1831. The wharf was constructed by James Jenkins, who operated a boat building operation closer to Market Wharf.</p> <p>By 1841 neighbouring allotments began to be developed. Edward Cureton, a publican, was granted permission to construct a stone wharf that was built by 1851. This stone wharf remains in operation long after it is sold to a boat builder, Mr Miller, who operated it as ‘Millers Boat Wharf’ from the site.</p> <p>Thomas Agar constructs a sizable wharf by 1838. Agar ran an exporting business, exporting various products back to London, including casks of tallow, ox hides and bales of wool. It is possible he operated his business from this site. The size of the wharf does not suggest that international trading vessels were using the wharf. It was more likely Agar employed smaller vessels to transport his imported and exported products from his wharf to and from Sydney Cove, and later, larger Darling Harbour Wharves. After his death in 1852, the wharf is converted into a “bath” sometime around 1866.</p> <p>At the southern end of the subject site the Australian Gas Light Company was established. The original gas works operation included two buildings, however, by 1855, reclamation works took place and involved the construction of stone seawalls.</p> <p>Large sections in the northern portion of the site are not developed and are noted on plans as ‘Government Ground.’</p> <p>John Terry Hughes was a brewer, flour miller and hotel-keeper, whose property is close to the northeastern corner of the subject site. Hughes is believed to have started quarrying a portion of his land. This property is sold to Henry Osborne, who is known to have continued and possibly expanded the quarry on the property. Osborne is also</p>



	<p>known to have undertaken reclamation works for the purposes for building a wharf in 1865.</p> <p>Spark occupied the northeastern portion of the subject site. Spark was a prominent merchant who was the registered agent for vessels loading or discharging at various wharves around Sydney, namely those in the 'cove' (Sydney Cove, now known as Circular Quay). It is unknown if his property was used as part of his business dealings, however, it is known his cargo was recorded as 'in harbour discharging.' This reference could be regarding vessels moored in Darling Harbour and their cargo transported to shore via the use of smaller vessels known as 'lighters'</p> <p>Thomas Langford took over the Spark allotment in 1856, and constructed a boatshed and slipway. There is no evidence to suggest that Langford was a boatbuilder. By 1865 the property is incorporated into John Cuthbert's shipbuilding yard.</p> <p>Cuthbert, who had formerly operated a shipyard to the south of the subject site, purchased James Munn's former property at Miller's Point and established a new shipyard to accommodate his growing business in 1861. Cuthbert's operation included the construction of at least one wharf and two slipways, located entirely outside the subject site. Historical photographs show that the shipbuilding operation extended far out into Darling Harbour and is likely to have extended into the subject site. This shipbuilding site is eventually taken over by T.A Dibb's who expands the shipbuilding operations in the 1870s.</p>
<p>Phase 3: Later Industrial Development (1870s-1900s)</p>	<p>Rowntree purchases Jenkin's original allotment and established a boat repair yard on the property, and a floating dock positioned in front. His floating dock was in operation until 1880 when the property is sold to the AGL site and the floating dock sold.</p> <p>Dibb's shipyard site was redeveloped by 1877, including slipways and new jetties and stores. This included the replacement of Langford's wharf (Wharf 4) and three new longer and wider jetties. The seaward ends of Jetties 4, 3 and 2 appear to extend into the subject site. Shipbuilding and repair operations would have also taken place over designated moorings in the harbour. Not shown on maps are potential harbour moorings used by vessels waiting for a berth or slip to become available. This would have facilitated minor repairs that could be undertaken while the vessel was at one of the harbour moorings away from the shoreline.</p> <p>Osborne's property includes a stone wharf fronting Darling Harbour in 1875. The property is eventually sold to Archibald McLean. McLean was a shipowner who was granted permission to construct two wharves on his property, however, only one is likely to have been built. The only depiction of maritime infrastructure on the property is a plan from 1903, which shows one large wharf having been resumed in 1900. There is no record of ships berthing at the wharf, or goods imported or exported from his property. Given the late date for the construction of the wharf, it is possible that the wharf was not used for long before the 1900 Government resumptions.</p>



<p>Phase 4: Resumption and Renewal (1900s-1960s)</p>	<p>Resumptions force the closure of existing maritime industrial sites and the construction of a series of 'rat-proofing' seawalls. Improvement were also made to existing seawalls with the use of concrete plates.</p> <p>Closures included Dibb's shipbuilding yard and McLean's Wharf.</p> <p>A new, larger wharfage system was constructed on the site between 1910 and 1919. These wharves follow the new standard design and extend further in to Darling Harbour.</p>
<p>Phase 5: Reclamation and Recent Use (1960s-Present)</p>	<p>A new scheme was proposed to modernise the harbour once again to keep up with the shipping needs. The upgrade of the existing wharves involved the sinking of concrete caissons immediately in front of the outer end of the 1910-1919 wharves, with the area immediately behind reclaimed and used to store cargo containers.</p> <p>As the approach was to install the concrete caisson walls and backfill behind, it is likely that only those piles that were in the way of the construction footprint of the concrete caissons were removed. The remainder are likely to have been left, or only partially cut down and used to help stabilise the reclamation fills</p>

2.2 Potential for maritime archaeology

An assessment on the potential for maritime archaeological relics within the whole of the subject site was prepared by MTS Heritage for the Stage 1 and Stage 2 works (MTS Heritage 2023; MTS Heritage 2025). A summary of this archaeological potential is presented in Table 2.2 below.

Table 2.2: Summary of maritime archaeological potential at the subject site by historical phase.

Phase	Potential for maritime archaeological relics	Significance
<p>Phase 1: Early European Settlement (1788-1820s)</p>	<p>Low</p> <p>No known maritime infrastructure, aligned houses or other structures.</p> <p>If remains of early unidentified maritime infrastructure or shipwrecks are present within the subject site, previous archaeological assessment has indicated that such remains would have high archaeological research value.</p>	<p>State</p>
<p>Phase 2: Early Development (1820s-1870s)</p>	<p>Moderate</p> <p>Stone walls erected for reclamation works and construction of stone and timber wharves, including</p> <ul style="list-style-type: none"> - Agar's wharf (c.1838) - Cureton (c.1851) - Spark/Langford wharf (c.1856) <p>Maritime archaeological deposits on and within the former seabed around these wharf locations</p> <p>Remains of both of these wharves and any associated maritime archaeological deposits that relate to their use on the former seabed would have high archaeological research value.</p>	<p>Potentially State Significant if substantially intact deposits are identified</p> <p>Local</p>



	<p>Structural remains associated with the operation of the wharf and archaeological deposits on and with the former seabed relating to Rowntree’s floating dock may survive.</p> <p>Low</p> <p>Maritime archaeological deposits located within the former harbour area associated with activities along the former foreshore, including vessels mooring and lightering operations over the water; and relics associated with Cuthbert’s Shipbuilding Yard overwater operations.</p> <p>Shipwrecks or shipwreck-related material.</p>	<p>Local</p> <p>State/Local</p>
<p>Phase 3:</p> <p>Later Industrial Development (1870s-1900s)</p>	<p>High</p> <p>Structural remains associated with Cuthbert’s/ Dibbs Shipbuilding yards, including wharves, maritime archaeological deposits associated with their use on and within the former seabed.</p> <p>Low</p> <p>Structural remains associated with McLean’s wharf and associated deposits on seabed.</p> <p>Shipwrecks or shipwreck-related material.</p>	<p>Local</p> <p>Local</p> <p>State/Local</p>
<p>Phase 4:</p> <p>Resumption and Renewal (1900s-1960s)</p>	<p>High</p> <p>Post-1900 maritime archaeological deposits on seabed adjacent to berth on each wharf.</p> <p>Moderate-High</p> <p>Seawalls, piles and associated wharf infrastructure</p>	<p>Local</p> <p>Local</p>
<p>Phase 5:</p> <p>Reclamation and Recent Use (1960s-Present)</p>	<p>N/A</p>	<p>NIL</p>

2.3 Statement of Heritage Significance

Below is the statement of significance preparing for the Central Barangaroo site by MTS Heritage (MTS Heritage 2023; MTS Heritage 2025). The full statement of significance has been included as Annexure A to this MARDM.

Statement of Heritage Significance

The northern end of Darling Harbour, south of Millers Point, has been associated with maritime industry and trade in Sydney Harbour since the 1830s. The subject site, at this time, was predominately within the waters of Darling Harbour, with the exception of small reclamation events and stone wharves constructed at its southern end. The commencement of shipbuilding to the north increased the harbour area, added to the existing maritime infrastructure.



Successive redevelopment of the waterfront area, included reclamation and the addition of jetties during the mid-to-late nineteenth century, resulted in the construction of early wharves and jetties within the subject site. Structural remains of these early wharves and jetties likely survive at the subject site, below reclamation fill. This early phase of development was carried out by private contractors and not undertaken to any one standard. Given the concentration of shipbuilding and trade services associated with former jetties at the subject site, it is likely that maritime archaeological deposits accumulated on the seabed, particularly at Dibb's Shipbuilding yard and Rowntree's floating dock. These archaeological deposits have the potential to provide significant insights into shipbuilding and repair from the 1860s onwards. Deposits relating to earlier shipbuilding and repair done overwater by Cuthbert, may also have survived at the subject site, below reclamation fill.

The evolution of wharves at the subject site continued until the resumption of wharves and creation of the Sydney Harbour Trust in 1900. After this time, seawalls were improved to be 'rat proofed' and new wharves were built under the standard Walsh design.

The potential maritime archaeological remains at the subject site represent over 180 years of maritime commerce and trade that functioned alongside other wharves located on the eastern side of Darling Harbour. Depending on their integrity, condition and extent, such remains may represent the earliest private maritime infrastructure development in Sydney Harbour and could be State significant for their historical heritage and research values and rarity.



3. Research Design and Methodology

3.1 Research framework

The following maritime archaeological research design provide a research framework and methodology for the proposed archaeological test excavation. The proposed archaeological research design questions are focused around three main research topics.

- The construction of pre-1900 wharves at Darling harbour and whether physical evidence of this activity has survived; and
- If they survive, does artefact patterning occur within the former seabed deposits that demonstrates changing use of the former wharves; and
- What is the integrity and archaeological potential of the seabed.

These research topics are discussed further below.

Construction of pre-1900 wharves at Darling Harbour

Some of Sydney's earliest private wharves were constructed along the eastern side of Darling Harbour. The earliest known wharf to have been built at the subject site is associated with Agar and Sparke, and dates from as early as the 1820s (Phase 2). These structures were likely a combination of stonewalled wharves associated with early reclamation that later wharves that incorporated timber extensions into deeper water. Being constructed in the early 1820s, no standard designs or plans are known to have been survived, and proposals for expansion or repairs are even less likely to have been recorded.

Similarly, the post 1870s upgrades to maritime industries and infrastructure at the subject site were undertaken by private entities, taking advantage of the growth of the intra, and international maritime trade (Phase 3). Cuthbert's Shipbuilding Yard, that later transferred to Dibb's, was a large shipbuilding and repair yard that featured for over 30 years. The subject site includes the seaward section of the wharves associated with this former industry. Archaeological investigations would be able to provide insight into specific wharf construction, including pile type and use and possible repair works.

Archaeological test excavation would also be able to provide insight into the survivability of the early sites identified in Phase 2, and how they were removed, integrated or built directly over the top of during subsequent redevelopment works (Phase 3) and later largescale redevelopment (Phases 4 and 5).

Research Questions

- *Has archaeological evidence of the former Sparke's and Agar's wharf survived? If so, what is the extent, condition and significance of the remains?*
- *What do the remains of these wharves and any other early maritime wharves tell us about early construction techniques for wharves built in Sydney Harbour?*
- *What does the construction type, such as stone wharves or timber, tell us about any specific uses of the wharf(s) that cannot be gained from the historical record?*
- *Is there archaeological evidence associated with the decommissioning/removal of earlier wharves?*
- *Is there archaeological evidence of Rowntree's floating wharf operation, including onshore or overwater operations?*



Artefact patterning on and within the seabed

Previous maritime archaeological excavations in Australia and internationally have described artefact patterning associated with wharf archaeological sites. These concentration areas are:

- The area immediately underneath the wharf extending to the gap between the wharf and the berthed side of the vessel; and
- The opposite side of the vessel.

The artefact patterning associated with maritime archaeological sites in Sydney Harbour has not been investigated in any great detail, and those that have been undertaken have largely been underwater excavations. The Central Barangaroo site presents a unique opportunity to undertake a more controlled excavation technique to investigate artefact patterning in a terrestrial environment.

Artefact patterning and concentrations of artefacts on and within the seabed deposits can be influenced by three critical factors, biological (impact from animals), physical (impact from wave, current and other human impacts) and chemical (chemical reaction of relics within the marine environment).

The Central Barangaroo site historically includes foreshore/beach environments (Phase 1) prior to the earliest known development and reclamation phases (Phase 2). Continued redevelopment on an 'as needed' approach have generally expanded or extended existing maritime infrastructure. These would generally start as shallow water sites, extending into deeper water as vessel became longer and deeper craft. Any maritime archaeological deposits are not likely to have been impacted by the movement of sail boats to and from these wharf sites following reclamation of the foreshore.

Other direct physical impacts to the seabed would have been limited to demolition and construction of new wharves following reclamation. Previous archaeological works at Barangaroo have shown that piles and other below deck elements have been retained *in situ* with reclaimed fill introduced directly above the structural elements. As such, it is likely that there has been minimal impacts to the seabed during successive redevelopment of the maritime industries at Central Barangaroo.

Typically, biological impacts to archaeological sites from marine borers and other burrowing sea creatures would have the potential to disturb the archaeological site through bioturbation as well as, increased oxygen levels in the seabed deposits. This can aid chemical impacts to relics where increased oxygen levels can accelerate corrosion. Excavations in Sydney Harbour have identified denser, silty clay deposits present below the initial seabed deposits. Successive reclamation at the Central Barangaroo site is likely to have slowed any biological and chemical changes within archaeological deposits by changing the environment and sealing any archaeological deposits.

Research Questions

- *Is there evidence of artefact patterning at any wharf remains present on at the site, including at Agar's, Sparkes, McLaren, and Cuthbert/Dibb's wharf sites?*
- *Is there evidence of stratified deposits within the seabed deposits on the site? Or are artefacts found on the deeper and stiffer clay deposits where they have come to rest below the seabed?*
- *What can artefact patterning, or lack thereof, inform us about other similar maritime archaeological sites in Sydney Harbour?*
- *Do these deposits have research potential?*

Visibility and archaeological potential of the former seabed



Regarding survivability, the Central Barangaroo site has historically included parts of the Darling Harbour seabed until the final reclamation works in the late 1960s. The earliest phases of use on the site would have included vessels anchored or moored in the Harbour to load and unload onto smaller vessels that could access the wharves. The maritime archaeological potential in these areas may be limited based on their frequency of use and potential accidental or deliberate discard and accumulation of deposits of the seabed is unknown. The use of such designated mooring and anchorages were known to have been used by the Dibb’s shipyard operations from the 1870s onwards (Phase 3), where accumulation of deposits relating to ship repair and overwater fit out may be higher.

It may not be possible to identify these sites during this archaeological testing phase as these exact locations are not mapped, however, if former seabed deposits are excavated, questions regarding the potential to identify such sites during future works at the site.

- *Are former seabed deposits easily identifiable below reclamation fills?*
- *Are potential seabed surface sites, such as anchorages and moorings sites likely to be visible in the archaeological record?*

3.2 General strategy and approach

The following archaeological test excavation methodology has been prepared in association with AMBS, and specific maritime archaeological requirements have been integrated into this methodology.

3.3 Proposed testing locations

The archaeological testing program proposes to excavate six (6) test trenches to investigate the presence of maritime structures and archaeological deposits at the subject site. Trenches have also been proposed by AMBS to test the potential for archaeological deposits to have survived within areas of the site that have been remediated or excavated previously. The proposed trenches are outlined in Table 3.1 and Figure 3.1 below.

Table 3.1: Summary of proposed test trenches (Adapted from AMBS 2025).

Trench	Indicative Size	Purpose
1	40 x 5m	In the vicinity of the AGL Gasworks structures and wharf. Trench positioned to determine the impacted of the remediation process on the former gasworks site.
2	20 x 10m	Across the site of Cureton’s Wharf (1851) and associated structures. Proposed location for the electrical substation and switchboard.
3	20 x 10m	Across the site of Agar’s Wharf (1841) and associated structures.
4	20 x 5m	Across the site of McLean’s Wharf (late 1890s).
5	20 x 5m	Across the site of Rowntree’s wharfage (c.1872) and associated structures Trench is to assess if this site has been impacted by the c.2015 remediation process.
6	20 x 5m	Dibb’s Wharf extension (late 1890s). Trench is to assess the potential impact to this area from the construction of the Metro station in 2018-2019.



Figure 3.1: Proposed archaeological test trench locations (Source: AMBS 2025).



3.4 Excavation methodology

The following archaeological testing methodology has been developed by AMBS in collaboration with MTS Heritage. The method for excavation has been developed to ensure continuity between the historical and maritime archaeological excavation on the site. It is the intention of both AMBS and MTS Heritage to use the same archaeological field crew across the site for both the historical and maritime archaeological excavations.

The following sections have been reproduced from the AMBS ARDM report.

Machine Excavation

An appropriately sized excavator (approx. 12-tonne) and experienced operator will remove the overburden and modern fills under the direction of the Excavation Director. Delicate work at archaeological levels may require a smaller sized excavator (approx. 5-tonne). Both excavators will need a variety of bucket sizes including a flat-bladed mud/batter bucket.

Once structural remains are encountered (likely from the post-1900 finger wharves), they will be cleaned and investigated by hand, before being recorded and surveyed. If there is potential for earlier phases of use to survive below, certain portions of the later fills and/or structural elements may be removed by machine to allow for earlier features or deposits to be located. If possible, smaller deeper sondages may be machine-excavated to determine the depth of reclamation fills, maritime deposits on the former seabed, or expose underlying bedrock or natural sands. Excavation at depth may either be done by benching the trenches to allow an archaeologist to clean and record from within the trench, or may be straight-sided and only recorded by photography and/or survey if safe access is not possible.

Manual excavation

Where structural remains and significant features are exposed, generally they will be cleaned and investigated by hand. If archaeological remains are uncovered in areas of contamination, there may be limitations on manual excavation (ie. additional PPE, use of long tools to minimise contact with the ground, no collection of artefacts etc.).

- *All underfloor areas will be excavated in a 1 x 1m grid in 50mm spits and wet-sieved (if possible) with comprehensive collection of artefacts.*
- *Cesspits, wells, cisterns and rubbish pits will be excavated in 100mm spits with stratigraphic priority, or along tip lines (if identifiable) and wet-sieved (if possible) with comprehensive collection of artefacts.*

Recording and sampling

Every effort will be made to ensure best-practice single context stratigraphic recording techniques are employed. As discussed above, if safe access to deep trenches is not possible, or in contaminated areas, photography and/or survey may be prioritised over more time-intensive methods such as the production of scale plans or sections.

- *All excavation will be surveyed (millimetre accuracy) in order to spatially record all deposits, features and relics.*
- *All contexts and structural elements will be recorded using archaeological best practice, including:*
 - *Location, dimensions and characteristics of all archaeological features and deposits will be recorded on pro-forma context sheets.*
 - *Digital photographs including JPEG and RAW of cleaned features.*



- *Scale plans, sections and elevation drawings, if relevant.*
- *Photogrammetry/orthophotography, if relevant.*
- *Sequential number of features and deposits to facilitate the preparation of a Harris Matrix and artefact labelling*
- *Preparation and development of a Harris Matrix, to show stratigraphic relationships between all recorded features and deposits.*
- *Soil, pollen and other environmental samples taken from relevant deposits at the discretion of the Excavation Directors for analysis by a palynologist. Typically, these samples are collected in the hopes that analysis will provide insight into the pre-1788 environment, farming and dietary practices.*
- *Samples of building materials including (but not limited to) bricks, mortar and timber will be collected from structures as relevant.*

Archaeological sieving of former seabed deposits

If identified, seabed deposits located immediately adjacent to wharf and seawalls, as well as in the area on the seabed on the opposite side of a vessel moored at the wharf, would be tested for potential maritime archaeological deposits. If safe access to these deposits was possible, a sondage would be manually excavated. Any sondage trenches would preferably be laid perpendicular, where possible, on the outside of the wharf remains (i.e. starting against the wharf and extending away). Depending on the alignment of the wharf remains and test excavation trench, it may only be possible to place a sondage trench running parallel to the wharf remains.

The former seabed deposits are predicted to be a combination of decomposing silty clays. The deposits would be excavated in nominal spit depths, each spit no deeper than 200mm. The total depth of each sondage would be determined by variables, including depth of excavation, deposit material and safety. The aim would be to gather information relating to archaeological potential, and not to excavate the entirety of the site or deposits. The material would be placed in buckets and would be wet sieved.

A wet sieve station would be established in a designated area at the site. All deposits would be passed through a two-mesh sieve system. The first would be a screen with a larger 5mm aperture, with a smaller 2mm mesh underneath to catch smaller artefacts. The sieve would be operated by both AMBS and MTS Heritage archaeologists and would work with the Collections Manager (outlined below in Artefact Collection Strategy).

If access to former seabed deposits is not safely accessible for manual excavation, a mechanical excavator may be used to take a sample of the deposit. This method has less archaeological control, however, sampling a specific area would still allow for a greater understanding of the archaeological potential and inform future stages of works at the site. The size of excavator and bucket would depend on the depth and associated reach needed to access the deposits. The sample size would be similar to the manual excavated sondage, approximately 1.4m wide (bucket width) and approximately 0.5m in depth. Material collected in the bucket would be sieved at the established sieve station.

Artefact collection and sieving strategy

Artefacts may be collected from secure deposits where it is believed they have research potential, or at the discretion of the Excavation Directors (Primary and Secondary). The determination of whether comprehensive collection of an assemblage, retention of selected diagnostic fragments, or a representative sample of the artefacts will be made by the Excavation Directors, upon advice from



AMBS Collections Manager based on the types of deposits encountered. Certain types of artefact-rich deposits are best investigated through wet or dry sieving, depending on the density of the soil matrix and size of the artefacts.

3.5 Artefact analysis

Artefacts will be cleaned, bagged, and labelled in accordance with the archaeological context and securely stored onsite or at the AMBS office for further analysis. Artefacts will be processed and catalogued using a specially designed Access database in line with prior AMBS and other excavations. The analysis will be presented in the final Test Excavation Report. The management of the artefact analysis will be overseen by the AMBS Collections Manager with input from the Excavation Directors, including Chris Lewczak (MTS Heritage). If required, additional specialists will be engaged to provide advice on specific artefact assemblages.

3.6 Excavation Personnel

It is proposed that Chris Lewczak would be the nominated Maritime Archaeologist and will be Co-Primary Excavation Director with Rhian Jones, Senior Heritage Consultant with AMBS. Chris will be responsible for the investigation, recording and management of the maritime archaeological remains identified at the subject site, in consultation with Rhian Jones, and Ronan Mc Eleney (nominated Secondary Excavation Director). He will design and execute all appropriate archaeological methodologies for the correct testing, monitoring, inspection and/or salvage of the maritime archaeological resource.

3.7 Reporting

Chris would be responsible for writing and integrating maritime archaeological specific results for input into the Test Excavation Report. As per discussions with HNSW, it has been agreed that the testing results report can be relatively short document with minimal discussion and analysis, designed to facilitate a quick transition from the archaeological testing program to the wider salvage. The focus of the report would be to reassess the potential and inform the locations and methodologies for the next stage of archaeological work. These results would be submitted to HNSW and the results used to update this ARDM/MARDM, or form the basis of a new ARDM/MARDM if required.

The testing report would include the following information:

- Georeferenced plans showing the location of test trenches and archaeological finds.
- Description and photographs of archaeological remains, including preliminary identification of the phase and date if possible.
- Preliminary response to research questions as relevant to the revision of this MARDM for the remainder of the archaeological investigations (ie. not all research questions may be able to be addressed at the conclusion of the testing).

The results from the testing, including detailed discussion of the archaeology and post-excavation analysis will be fully incorporated into the final excavation report which will be prepared at the conclusion of the full archaeological program.



References

AMBS Ecological and Heritage Pty Ltd, 2025. *Central Barangaroo Archaeological Research Design and Methodology: SSD-39587022 Early Works Stage 1*. Report prepared for Aqualand Pty Ltd.

MTS Heritage Pty Ltd, 2023. *Barangaroo Central Early Works Phase 1: Maritime Archaeological Assessment*. Report prepared for Urbis Pty Ltd.

MTS Heritage Pty Ltd, 2025. *Barangaroo Central Early Works Phase 2: Maritime Archaeological Assessment*. Report prepared for Urbis Pty Ltd.



Annexure A: Significance Assessment for Barangaroo Central prepared by MTS Heritage

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

The subject site demonstrates the evolution of a portion of Sydney's maritime and industrial history that commenced in the 1820s through to the late twentieth century. Many of the early allotments granted in Darling Harbour were located outside of the subject site, however the maritime activity associated with the early stone reclamation and wharf frontages may fall within the project area, including berthed or anchored vessels.

The historical occupation and maritime use of the site commenced from the 1830s onwards, with records showing several prominent people and early industries present at the subject site during the mid-to-late nineteenth century. These included:

- Jenkins, an emancipated convict who built a stone wharf and was a known boat builder occupied a property at the southern end of the subject site from 1830 to 1870;
- Thomas Agar, a Sydney Alderman who also established an import / export business on his Darling Harbour allotment from 1830s to 1850s;
- Rowntree's occupation of the waterfront for the operation of his floating dock, from 18xx to 18xx; and
- The Cuthbert/Dibbs shipbuilding yard being one of the most extensive shipbuilding yards in the colony, dating from the 1840s through to 1900.

These individuals and business transformed Darling Harbour into a maritime industrial and commercial hub. Archaeological remains associated with these early industries are likely to be able to demonstrate this transformation and provide physical evidence of the evolution of the site, including reclamation and changes to the wharves over 180 years of use and occupation.

The maritime archaeological remains associated with the early grantees of the site up until the 1850s, and associated with Rowntree's floating Dock and the Cuthbert/Dibbs shipbuilding era may be of State heritage significance for their historical heritage value, depending on their integrity, condition and extent.

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

Maritime archaeological remains at the subject site may be associated with several prominent persons and maritime industries in NSW. These include:

- John Cuthbert's Shipbuilding Yard which occupied a large area at the northern end of Darling Harbour, as well as operations over water. This became the most extensive shipyard in the colony.
- Thomas Dibbs who took over Cuthbert's operation in the 1870s and expanded the operation, including new wharves. Dibbs was a prominent figure in the history of NSW, principally for his success in the banking industry (Abbot 1972 in Casey and Lowe 2017).
- AGL gas works - Australia's first gas production facility. This facility led to a significant change to the lives of people in the colony, with the advent of street lighting and gas to homes and businesses.
- Henry Walsh, engineer-in-chief of the Sydney Harbour Trust. The redevelopment of Darling Harbour, including the subject site, after the resumption of lands in 1901, can be directly related to Walsh. Specifications created by Walsh were certainly implemented at Darling



Harbour, however they are not individual or specific to the subject site and were implemented elsewhere across Sydney Harbour.

The archaeological remains associated with the Cuthbert and Dibbs Shipbuilding industry and associated maritime archaeological deposits may be of State heritage significance for their historical associations. The maritime archaeological remains associated with the AGL site and of Henry Walsh would be of Local significance.

Criterion (c) - an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);

The known and potential maritime archaeological remains present within the subject site associated with the c.1830s to 1900s wharves are likely to have the capacity to demonstrate creative and/or technical achievements relating to the construction and maintenance of wharves by private contractors and not done on any one standard.

The post 1900s resumption and the construction of wharves in Darling Harbour after reclamation were based on a design standard created for the redevelopment works of Sydney Harbour. Maritime archaeological remains of these wharves would not be unique, when compared with earlier wharves.

The archaeological remains of the former wharves and associated maritime archaeological deposits at the subject site would be locally significant under this criterion.

Criterion (d) - an item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons (or the local area);

The wharves and associated maritime infrastructure present at Darling Harbour within the subject site up until the 1900s were private holdings that were operated independently. The 1900s wharf redevelopment under the Sydney Harbour Trust integrated the wharves at Darling Harbour into the larger wharf system in operation in Sydney Harbour. While these wharves at Darling Harbour, and particularly within the subject site, were an integral part of the goods transportation and waterside warehousing needs from the turn of the century onwards, there were no single community or cultural groups who were associated with the wharves. As such, the potential maritime archaeological remains predicted at the subject site are not likely to be significant under this criterion.

Criterion (e) - an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the local area);

There is a high potential for maritime archaeological remains associated with wharves built within the subject site in Darling Harbour, dating from the 1830s through to the 1930s, under the reclamation on what was the former seabed. Historical records regarding the construction of the early wharves from the 1830s is limited with only primary sources, mostly maps, revealing the location and likely construction type of each wharf and reclamation event. The maritime archaeological remains present under the reclamation fill, are likely to contribute to our understanding of the materials and construction method used to build the wharves, as well as how wharves were removed and replaced over time.

Previous historical archaeological investigations conducted adjacent to the subject site have shown the extent of these maritime archaeological remains. These have included stone reclamation walls, that have served as wharfage and the full configuration of wharf and piling techniques.



Artefacts discarded, accidentally or deliberately, from the former wharves present at the subject site, and from vessels moored alongside can contribute new knowledge of the variety of traffic and goods that passed between Sydney and the rest of the world from the early 19th century through to the 20th century. Through 180 years of maritime operations in Darling Harbour and within the subject site, such relics have the potential to contribute to our understanding of the working operation of the wharves.

The archaeological sites associated with the former wharves built at the subject site have the potential to contribute to a greater understanding of wharf construction that has rarely been documented in the archaeological record to-date.

Additionally, there is the potential for maritime archaeological deposits associated with overwater operations within the subject site. This includes potential archaeological remains discarded on the seabed that are associated with the early to mid-nineteenth century movement of cargo and the use of smaller vessels associated with early shipbuilding. Archaeological remains associated with pre-1850s Australian shipbuilding could contribute to our currently limited knowledge and understanding of early shipbuilding techniques.

As the subject site is located on the former foreshore area of Darling Harbour, and later included shipbuilding industries, there is the potential for unknown and/or undocumented shipwrecks to be present. The discovery of the UDHB1 shipwreck, known as the 'Barangaroo Boat', on the boundary of Cuthbert's and Langford's properties, is believed to be the earliest known Australian built shipwreck. Not much is known about the earliest phase of shipbuilding in the colony, and evidence is likely to be limited to identified shipwrecks themselves. In addition to shipbuilding at the site, there is the potential for shipwrecks to have been consumed by the successive reclamation works that extended over the former harbour.

Substantially intact archaeological remains of the former wharves and associated maritime archaeological deposits in the subject site that are attributed to the early shipbuilding phase and reclamation works would be of State Significance under this criterion.

Substantially intact archaeological remains relating to the post 1850s development and use of the subject site, including the wharves constructed after the 1900 resumptions, would likely be of local significance for their research value.

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

The maritime archaeological resource that may be present under the reclamation fill across the subject site in Darling Harbour is a finite resource relating to a specific maritime industry in Sydney. The subject site is likely to include remains of the early harbour development, dating from the 1830s, and could include Jenkins' and Agar's stone reclamation works and wharf. Additionally there may be maritime archaeological deposits on the seabed that relates to the use of both early wharves.

Potential maritime archaeological remains are also likely to include remains of the intense redevelopment of the early maritime industry that occurred in the subject site from the 1840s to 1900s resumption works. These archaeological remains under the reclamation fill on the former seabed are likely to relate to the physical structures of the wharves (piles, seawalls, supporting infrastructure), as well as relics associated with over 180 years of industrial occupation and use.

Archaeological remains associated with the post-1900 resumption development of the harbour are still present today and would not be considered rare. Woolloomooloo, Walsh Bay and Jones Bay wharves are all surviving examples of the post 1900 resumption redevelopment designed by Henry



Walsh. While many wharves have been removed from the harbour there are surviving examples today.

Substantially intact maritime archaeological remains associated with the pre 1850s wharves, shipbuilding and their associated archaeological deposits at the subject site would be considered to be State significant for their rarity.

The remainder of the maritime archaeological deposits from the post 1850s wharves and shipbuilding, including their associated archaeological deposits in the subject area are likely to be of local heritage significance under this criterion.

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

Former wharves that may survive below reclamation fill, within the subject site, are not likely to be intact and are unlikely to provide a complete picture of the maritime industries present before the resumption of wharves in 1900. As such, potential maritime archaeological relics are not likely to retain the principal characteristics of their type or design and are unlikely to meet threshold for State or local heritage significance under this criterion.

Statement of Significance

The northern end of Darling Harbour, south of Millers Point, has been associated with maritime industry and trade in Sydney Harbour since the 1830s. The subject site, at this time, was predominately within the waters of Darling Harbour, with the exception of small reclamation events and stone wharves constructed at its southern end. The commencement of shipbuilding to the north increased the harbour area, added to the existing maritime infrastructure.

Successive redevelopment of the waterfront area, included reclamation and the addition of jetties during the mid-to-late nineteenth century, resulted in the construction of early wharves and jetties within the subject site. Structural remains of these early wharves and jetties likely survive at the subject site, below reclamation fill. This early phase of development was carried out by private contractors and not undertaken to any one standard. Given the concentration of shipbuilding and trade services associated with former jetties at the subject site, it is likely that maritime archaeological deposits accumulated on the seabed, particularly at Dibb's Shipbuilding yard and Rowntree's floating dock. These archaeological deposits have the potential to provide significant insights into shipbuilding and repair from the 1860s onwards. Deposits relating to earlier shipbuilding and repair done overwater by Cuthbert, may also have survived at the subject site, below reclamation fill.

The evolution of wharves at the subject site continued until the resumption of wharves and creation of the Sydney Harbour Trust in 1900. After this time, seawalls were improved to be 'rat proofed' and new wharves were built under the standard Walsh design.

The potential maritime archaeological remains at the subject site represent over 180 years of maritime commerce and trade that functioned alongside other wharves located on the eastern side of Darling Harbour. Depending on their integrity, condition and extent, such remains may represent the earliest private maritime infrastructure development in Sydney Harbour and could be State significant for their historical heritage and research values and rarity.

Appendix B — Historic Plan Overlays (AMBS)



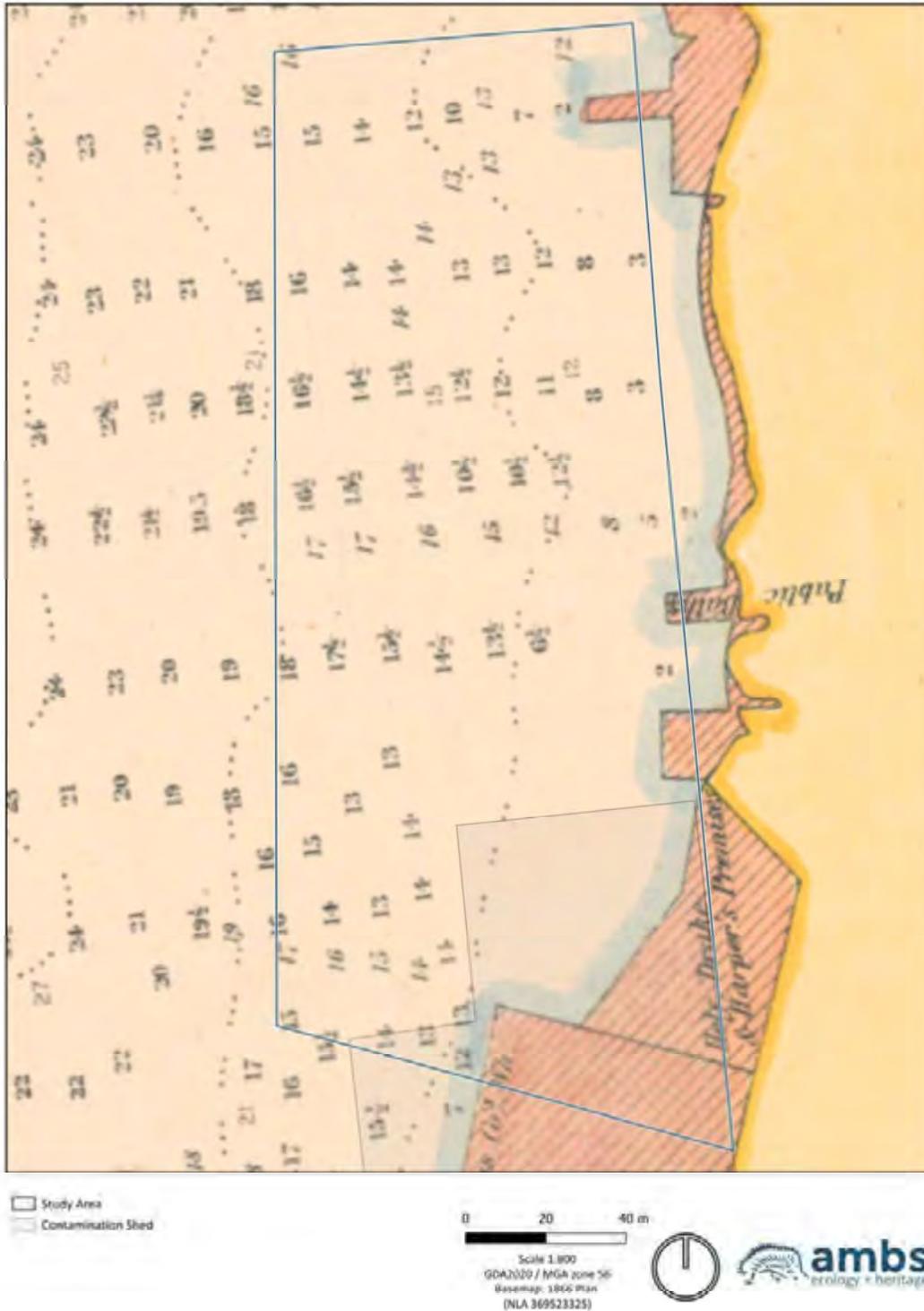
1833 Survey Plan, Sections 67 and 93, showing Langdon, Cureton, Forster Church, Agars, Govrnt Ground, Terry Hughes and Bryce as owners of properties within or adjacent to the Project Area. CoS Archives Historical Atlas, Image no. A-00880344 and A-00880318.



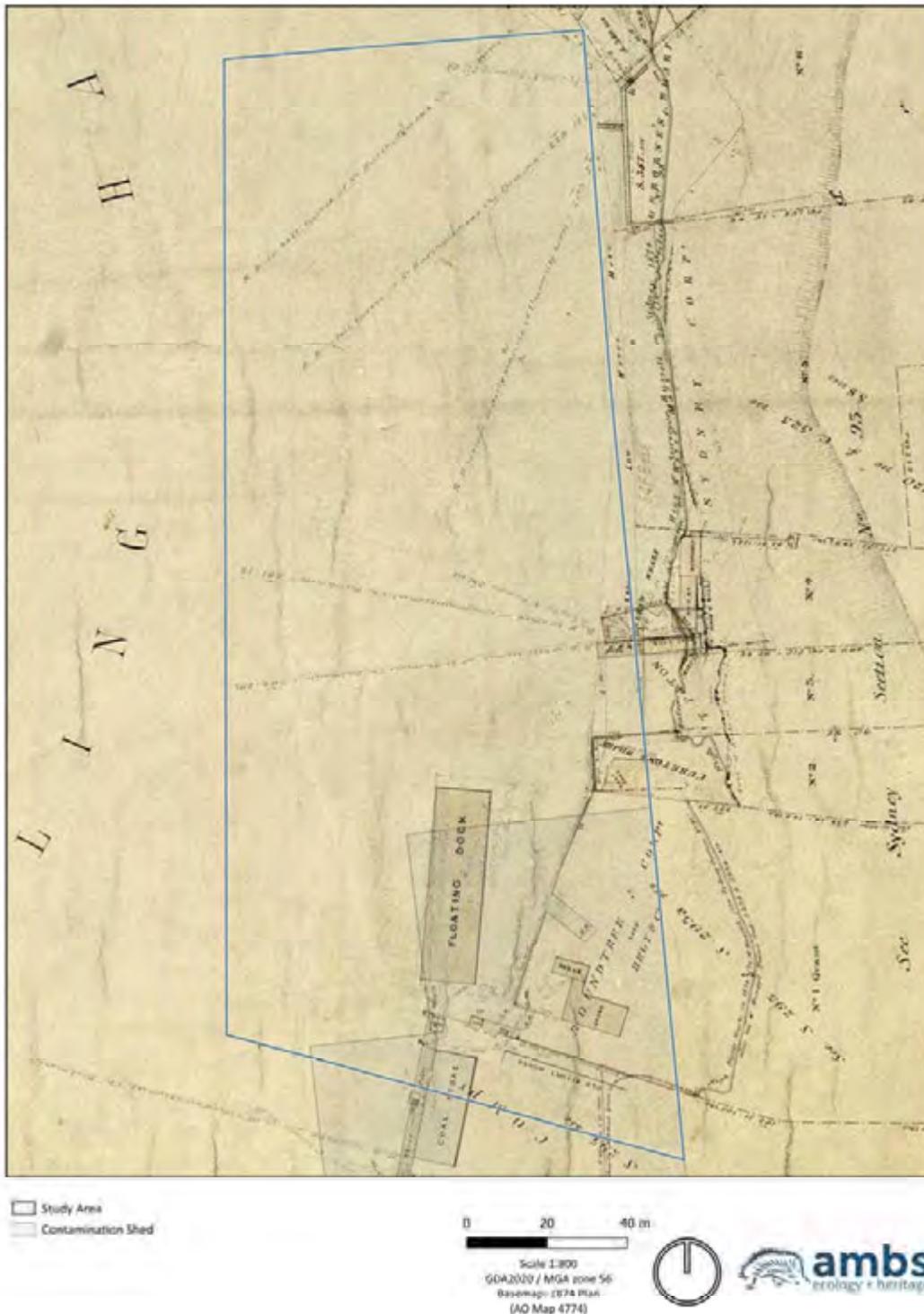
1855 City of Sydney Detail Plans, Sheet 2 showing the development of the AGL Gasworks to the south and Cureton and Agars Wharves. Agars Wharf (north) is labelled as 'Trafalgar Wharf'. CoS Archive Historical Atlas, Image no. A-00880164.



1865 Trigonometrical Survey, Sections A2 and C2, showing new buildings at the AGL Gasworks, at Hely, Drake and Harper's property (Lot 1, formerly owned by Jenkins), and on both Cureton and Agars Wharves. CoS Archive, Historical Atlas, Image no. A-00880372 and A-00880379.



1866 Plan of Darling Harbour made by order of the Harbour Commissioners showing extent of reclamation and structures along the harbour foreshore at this time (orange). Note that Agars/Trafalgar Wharf is clearly identified as 'Public Baths'. This is the only plan that shows a jetty extending out into the harbour from Hughes/Osborne's property in the northeast corner of the Project Area; it is not known whether this jetty was actually built. NLA Image no. 369523325.



1875 Darling Harbour Frontage survey, Section No.1 plan showing detailed depictions of the buildings and wharfrage within the Project Area. An iron coal store Two timber 'store', floating dock and some kind of formal inlet are shown at Roundtree [sic] & Comp^y property; a timber 'Boat Shed' is shown on the southwest corner of Cureton's Wharf; a slip and Boat Shed are shown on the south side of Burkley's Wharf with the northern section labelled as 'Jetty' with the H.W. (high water) and L.W. (low water) marks drawn on for Paton and Buckley's foreshores. The stone wall labelled as 'Osbourne's Wharf' to the north was uncovered and excavated below Hickson Road during the 2018 Sydney Metro project. MHNSW, AO Map 4774.



1880 H. Percy Dove's Plans of Sydney, Maps 24, 25 and 26 showing the AGL Gasworks has purchased the land to the north, 'Australian Gaslight Co's Property late Rountrees Wharf'. Miller's Boat Shed is shown as being constructed of timber (yellow) and the seaward end of Dibb's Jetty 2 is shown extending into the Project Area in the north. CoS Archives, Historical Atlas, Image nos. A-00880125, A-0880124, A-00880126.



1895 Metropolitan Detail Series, Sections 67, 92, 93, show AGL have constructed a large Retort House in the southeast corner of the Project Area. SLNSW Image no. FL4378722, FL4378736, FL4378737.



Study Area
Contamination Shed

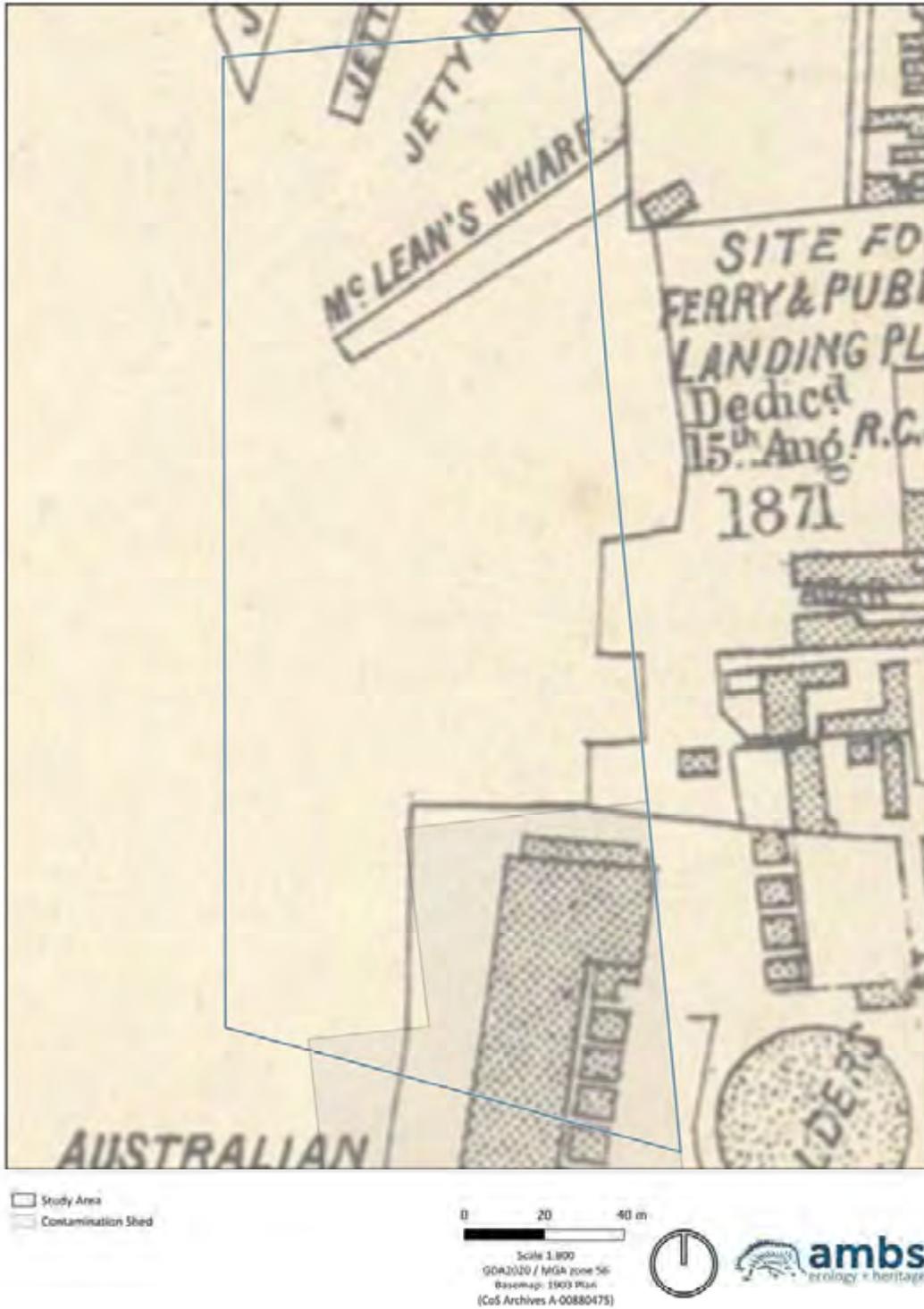
0 20 40 m

Scale 1:1000
GDA2020 / MGA zone 56
Basemap: 1901 Resumption Plan
(Plans F, G, H)



ambs
ecology + heritage

The 1901 Resumption Plan uses the 1895 Metropolitan Detail Series as a basemap, with red annotations to show the structures to be demolished. MHNSW Plan F, G and H.



1903 plan showing the AGL Retort House and Mc Lean's Wharf appear to still be in use at this time. CoS Archives Historical Atlas, Image no. A-00880475.

Appendix C — Historic Plan Overlays with Barangaroo South (2011-2012) and Sydney Metro (2018) Archaeological Survey (ArcSurv)



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BARANGAROO SOUTH

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GUY HAZELL
FOR

BARANGAROO CENTRAL

PREVIOUS EXCAVATION AREAS

FILE: Barangaroo Central - Drawing003



DATUM: MGA2020 ZONE56 - AHD

DATE DRAWN: 13/04/2025

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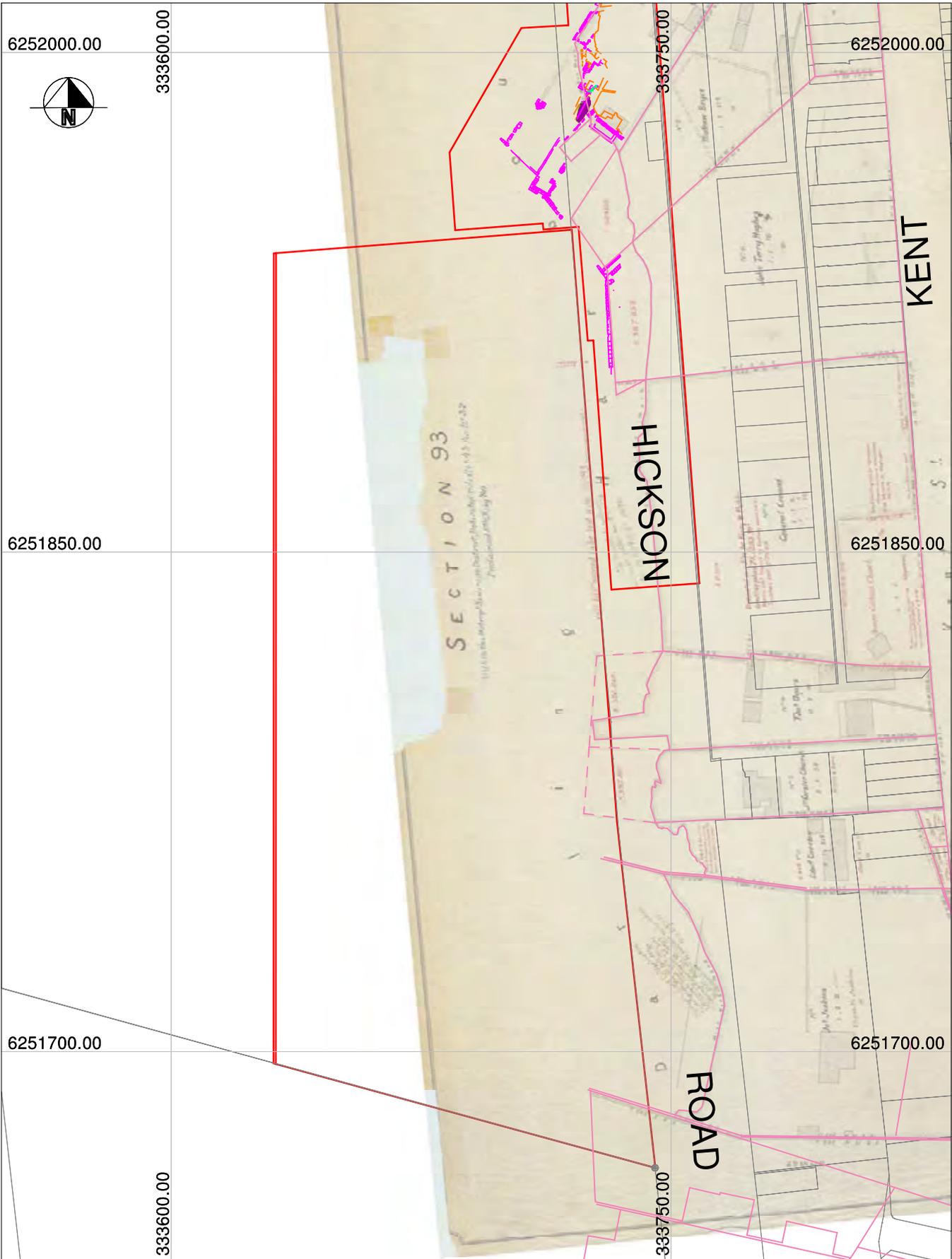
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GUY HAZELL
FOR
ambs
ecology + heritage

BARANGAROO CENTRAL
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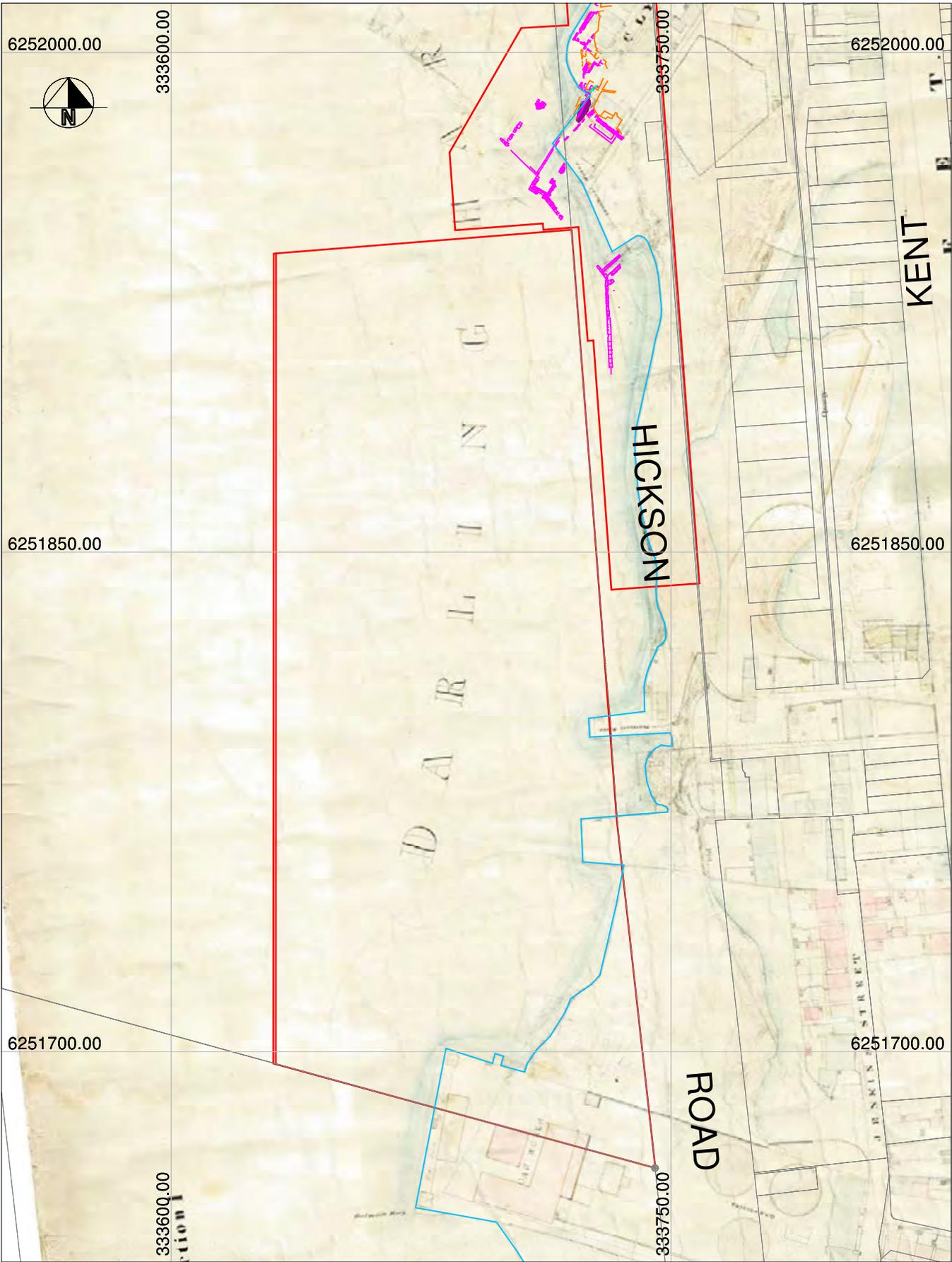
FILE: Barangaroo Central - Drawing002
DATE DRAWN: 13/04/2025
DATE OF POINT ACQUISITION:



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BARANGAROO CENTRAL
1833 HISTORICAL PLAN SECTION 93
DATUM: MGA2020 ZONE56 - AHD
0 25 50
SCALE: 1:1500 @A4

FILE: Barangaroo Central - Drawing002
DATE DRAWN: 13/04/2025
DATE OF POINT ACQUISITION:



GUY HAZELL
FOR

BARANGAROO CENTRAL
1855-56 HISTORICAL PLAN

FILE: Barangaroo Central - Drawing002

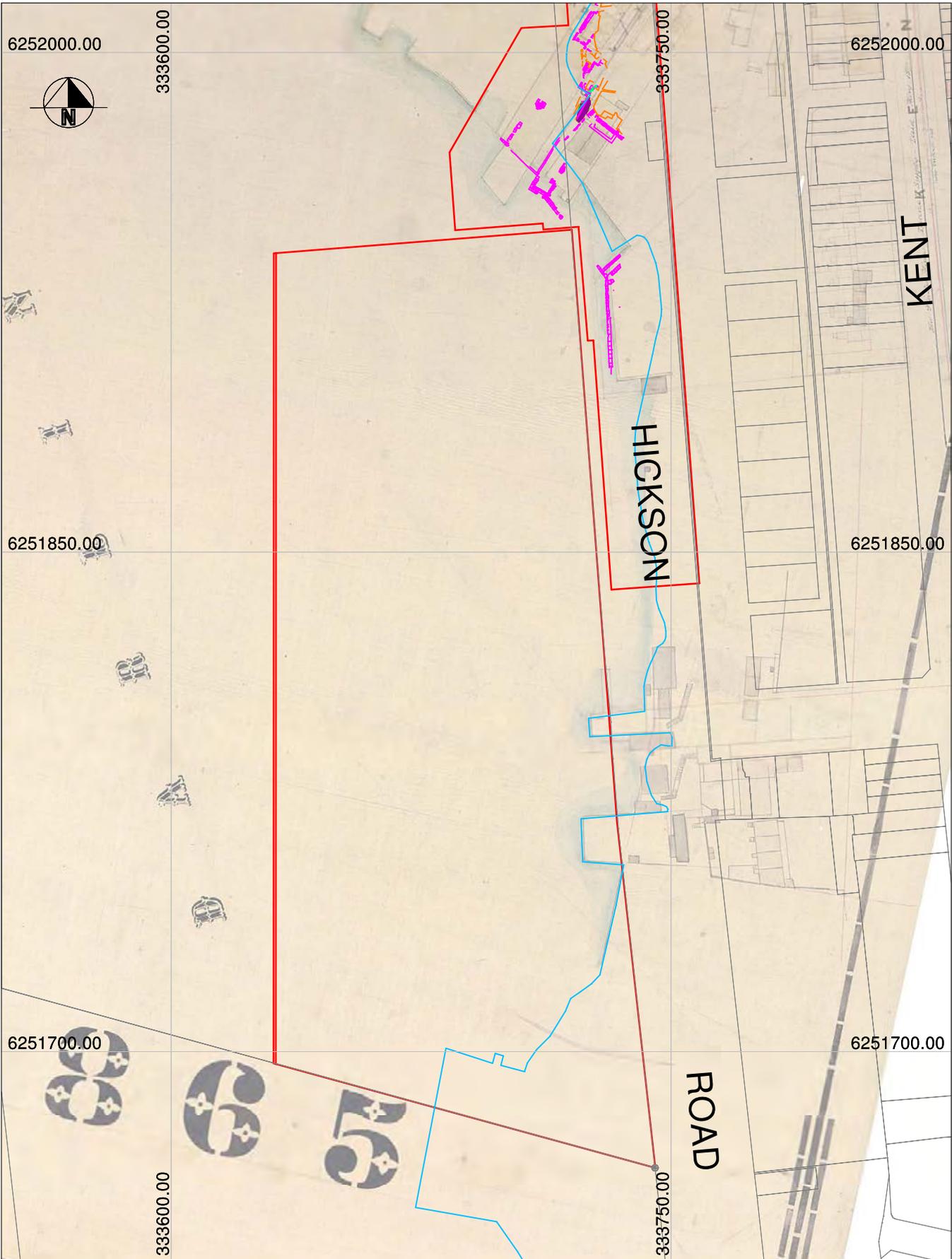


DATUM: MGA2020 ZONE56 - AHD

DATE DRAWN: 13/04/2025
DATE OF POINT ACQUISITION:



SCALE: 1:1500 @A4



GUY HAZELL
FOR

BARANGAROO CENTRAL

1865 HISTORICAL PLAN A2

FILE: Barangaroo Central - Drawing002



DATUM: MGA2020 ZONE56 - AHD

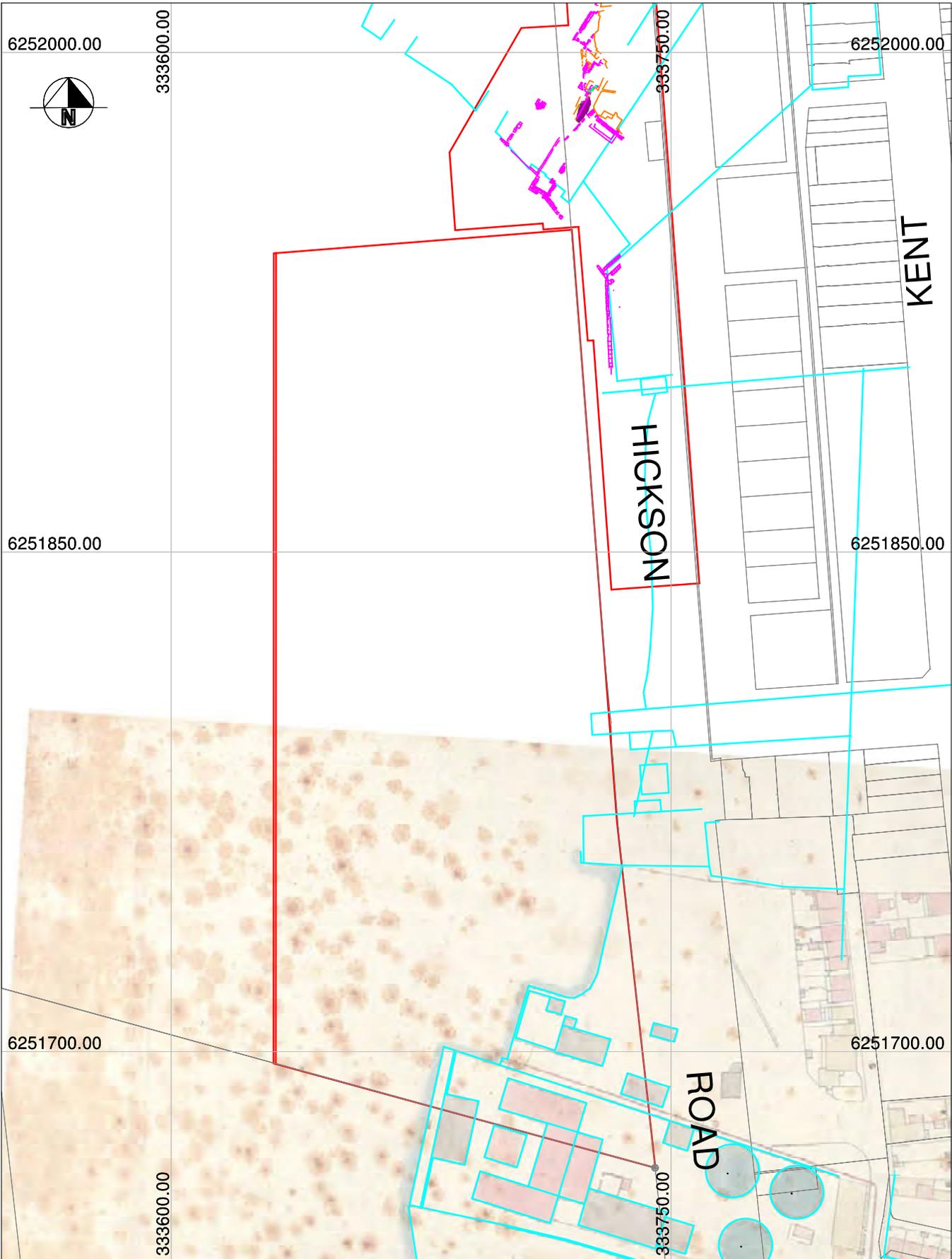
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DATE OF POINT ACQUISITION:

SCALE: 1:1500 @A4



GUY HAZELL
FOR



BARANGAROO CENTRAL

1865 HISTORICAL PLAN C2

DATUM: MGA2020 ZONE56 - AHD

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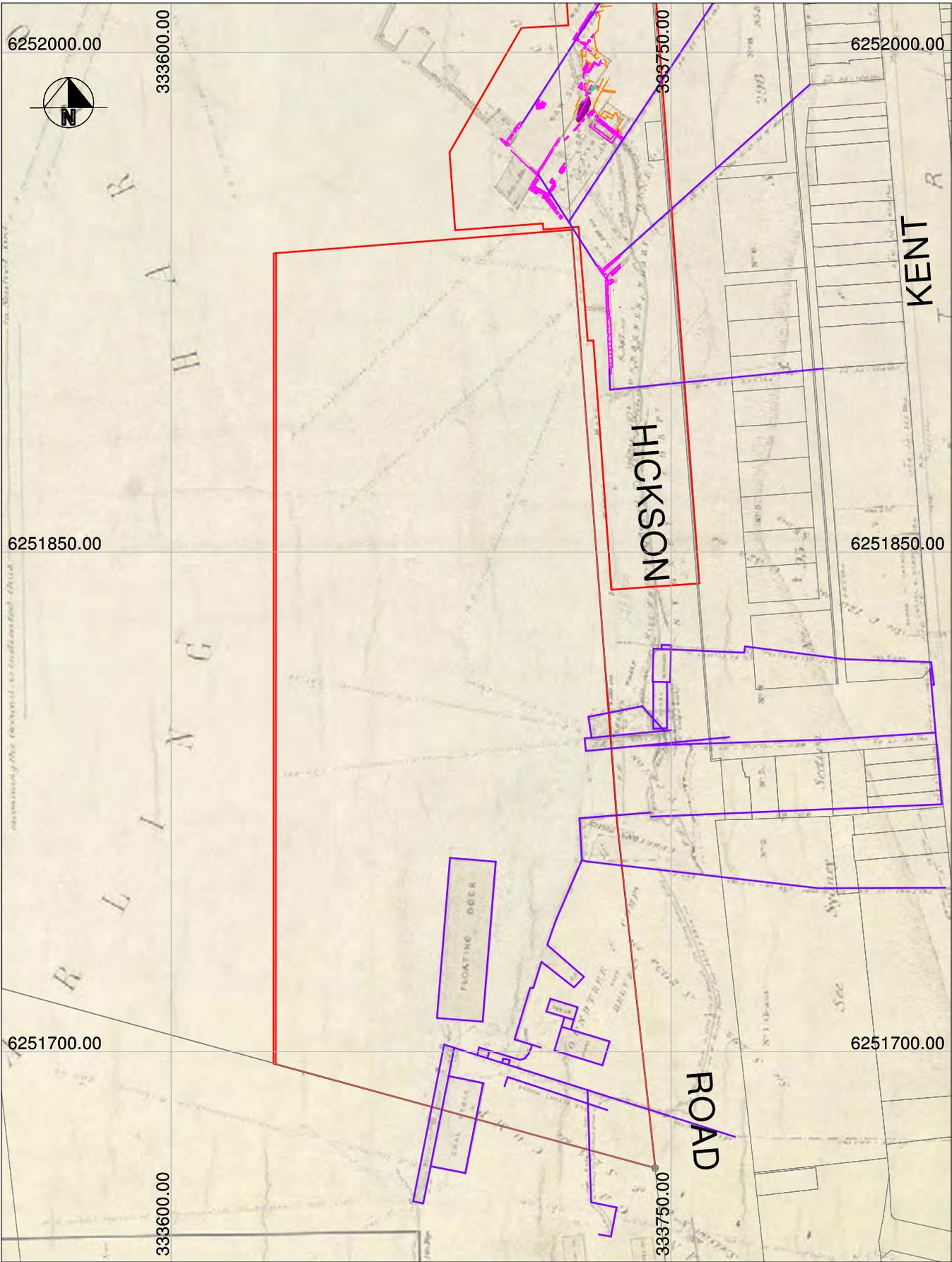


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FILE: Barangaroo Central - Drawing002

DATE DRAWN: 13/04/2025

DATE OF POINT ACQUISITION:



GUY HAZELL
FOR

BARANGAROO CENTRAL
1874 HISTORICAL PLAN

FILE: Barangaroo Central - Drawing002



DATUM: MGA2020 ZONE56 - AHD

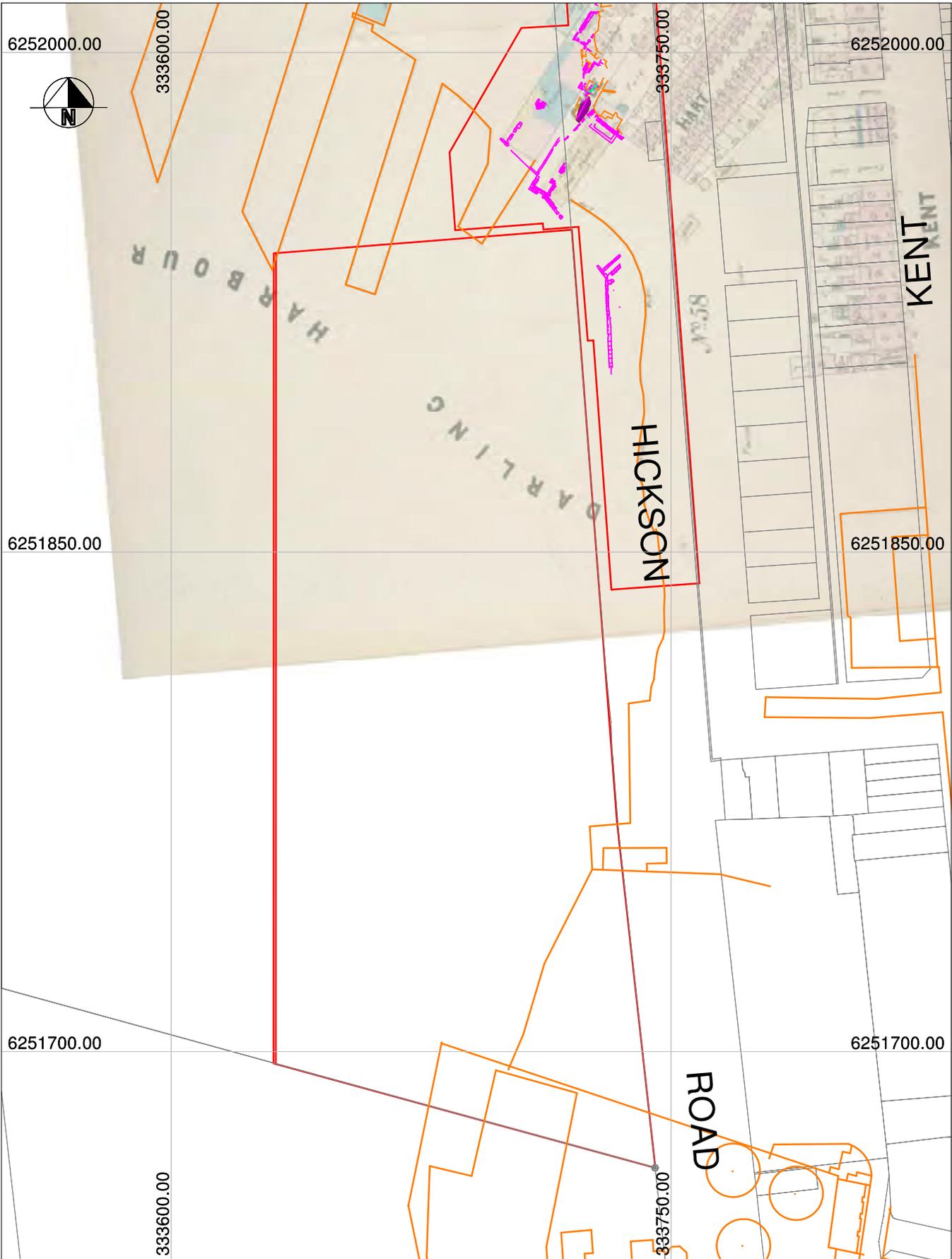
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DATE OF POINT ACQUISITION:



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GUY HAZELL
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BARANGAROO CENTRAL
1880 HISTORICAL PLAN DOVE 58

DATUM: MGA2020 ZONE56 - AHD

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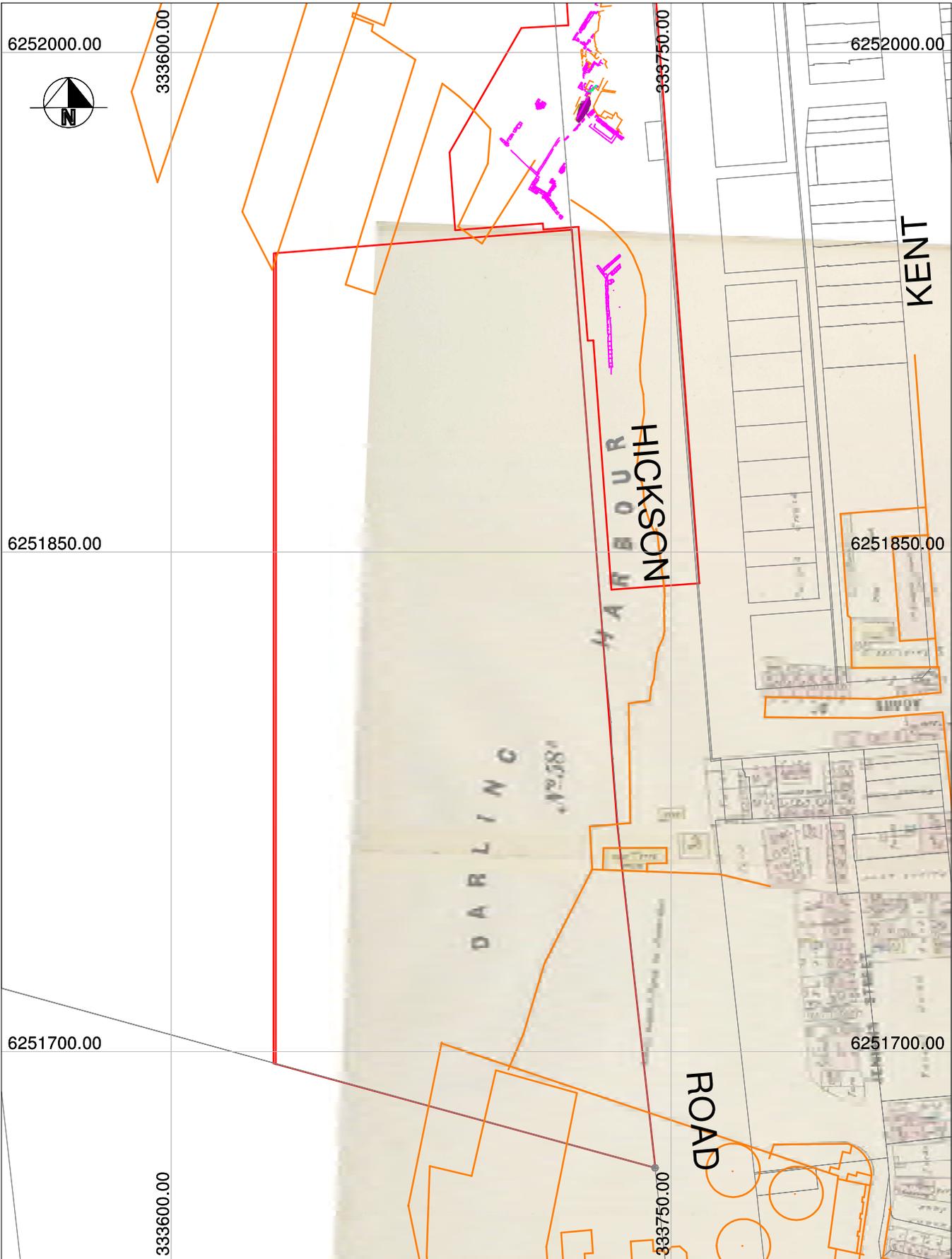


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FILE: Barangaroo Central - Drawing002

DATE DRAWN: 13/04/2025

DATE OF POINT ACQUISITION:



GUY HAZELL
FOR



BARANGAROO CENTRAL
1880 HISTORICAL PLAN DOVE 58A

DATUM: MGA2020 ZONE56 - AHD

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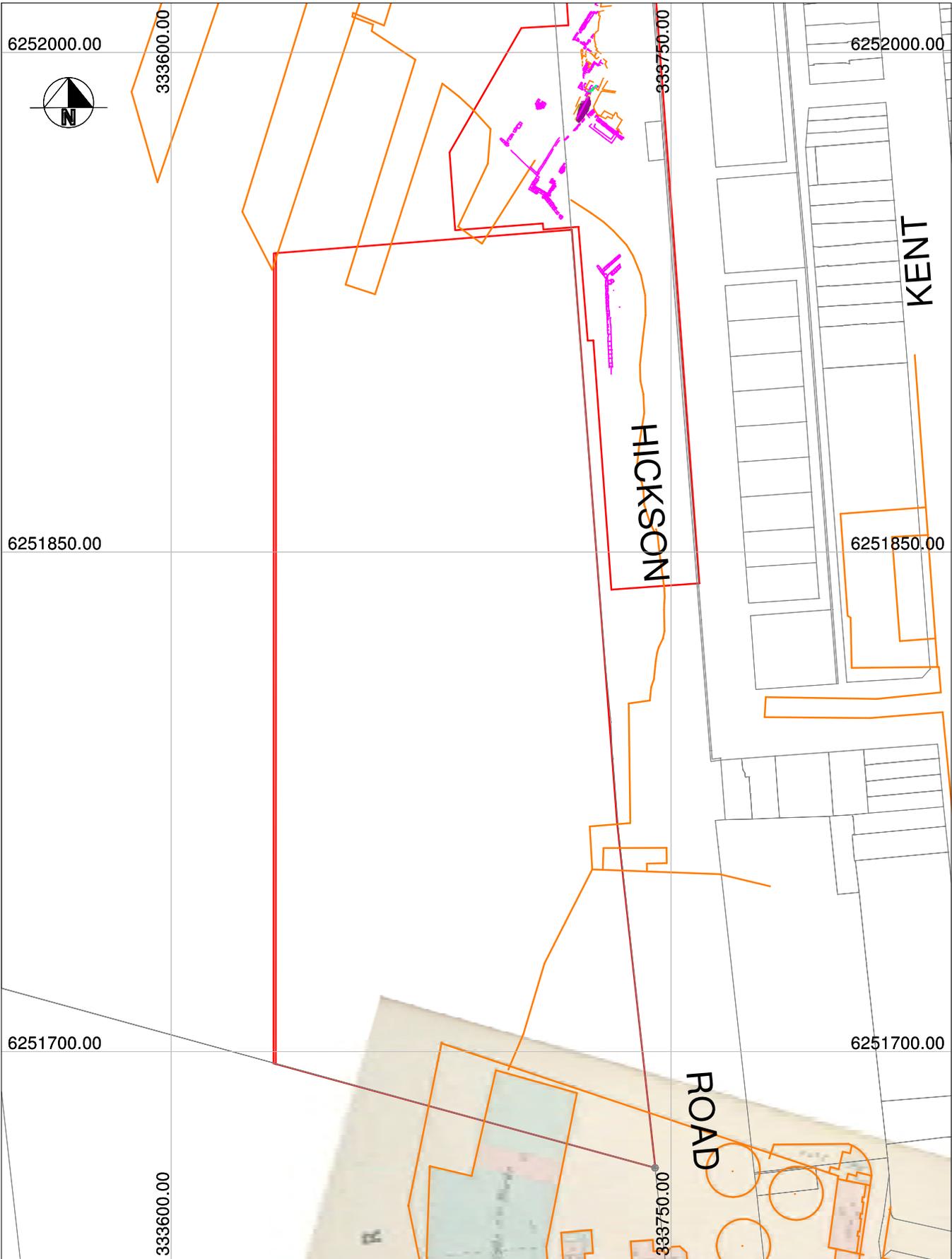


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FILE: Barangaroo Central - Drawing002

DATE DRAWN: 13/04/2025

DATE OF POINT ACQUISITION:



GUY HAZELL
FOR



BARANGAROO CENTRAL

1880 HISTORICAL PLAN DOVE 60A

DATUM: MGA2020 ZONE56 - AHD

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SCALE: 1:1500 @A4

FILE: Barangaroo Central - Drawing002

DATE DRAWN: 13/04/2025

DATE OF POINT ACQUISITION:



GUY HAZELL
FOR



BARANGAROO CENTRAL

EXTENT OF CONTAMINATION SHEDS 12-2018

DATUM: MGA2020 ZONE56 - AHD

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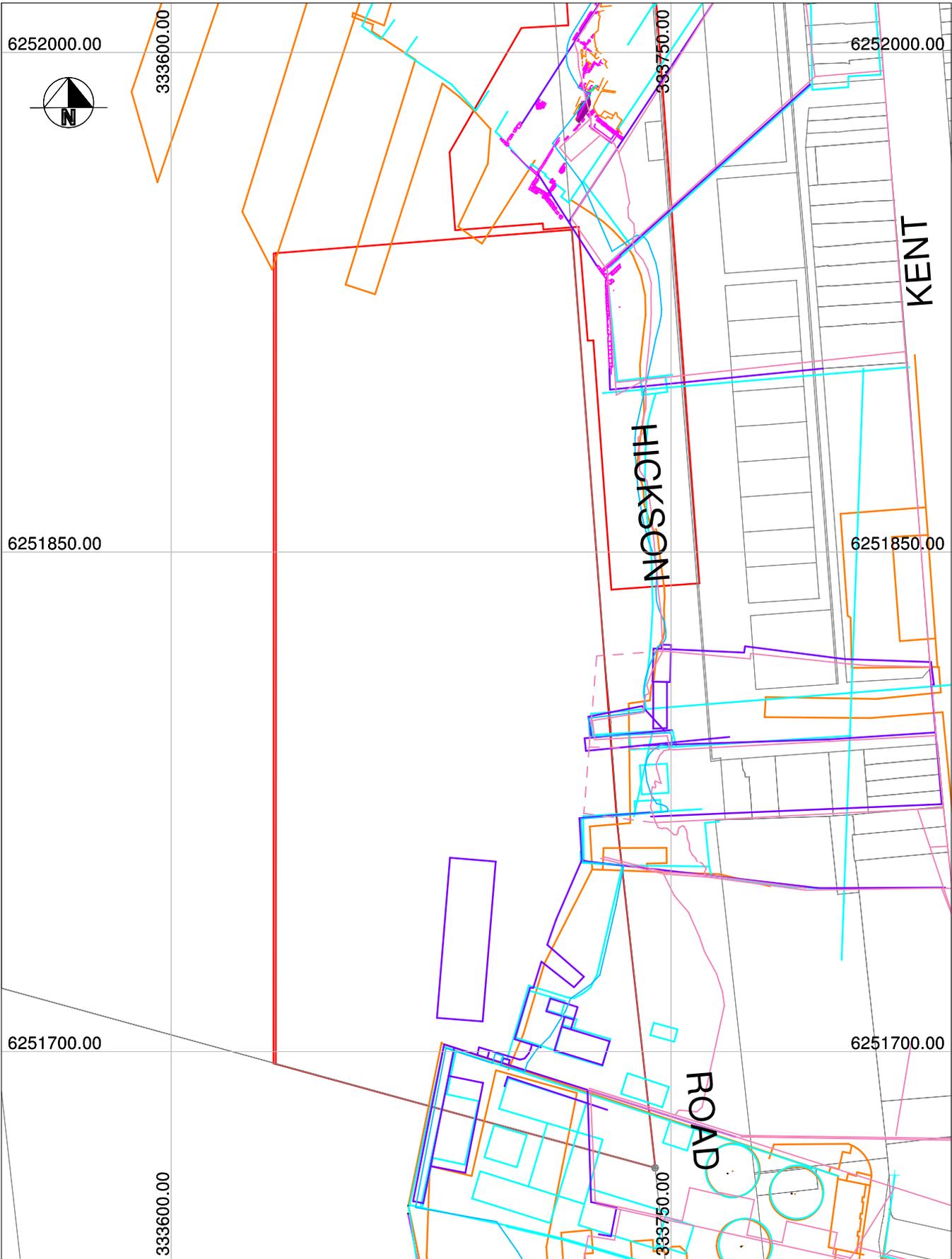


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FILE: Barangaroo Central - Drawing001

DATE DRAWN: 12/04/2025

DATE OF POINT ACQUISITION:



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ROAD

GUY HAZELL
FOR

BARANGAROO CENTRAL

FILE: Barangaroo Central - Drawing002

1833 LINES 1855 LINES 1865 LINES 1874 LINES

1875 LINES 1880 LINES



DATUM: MGA2020 ZONE56 - AHD

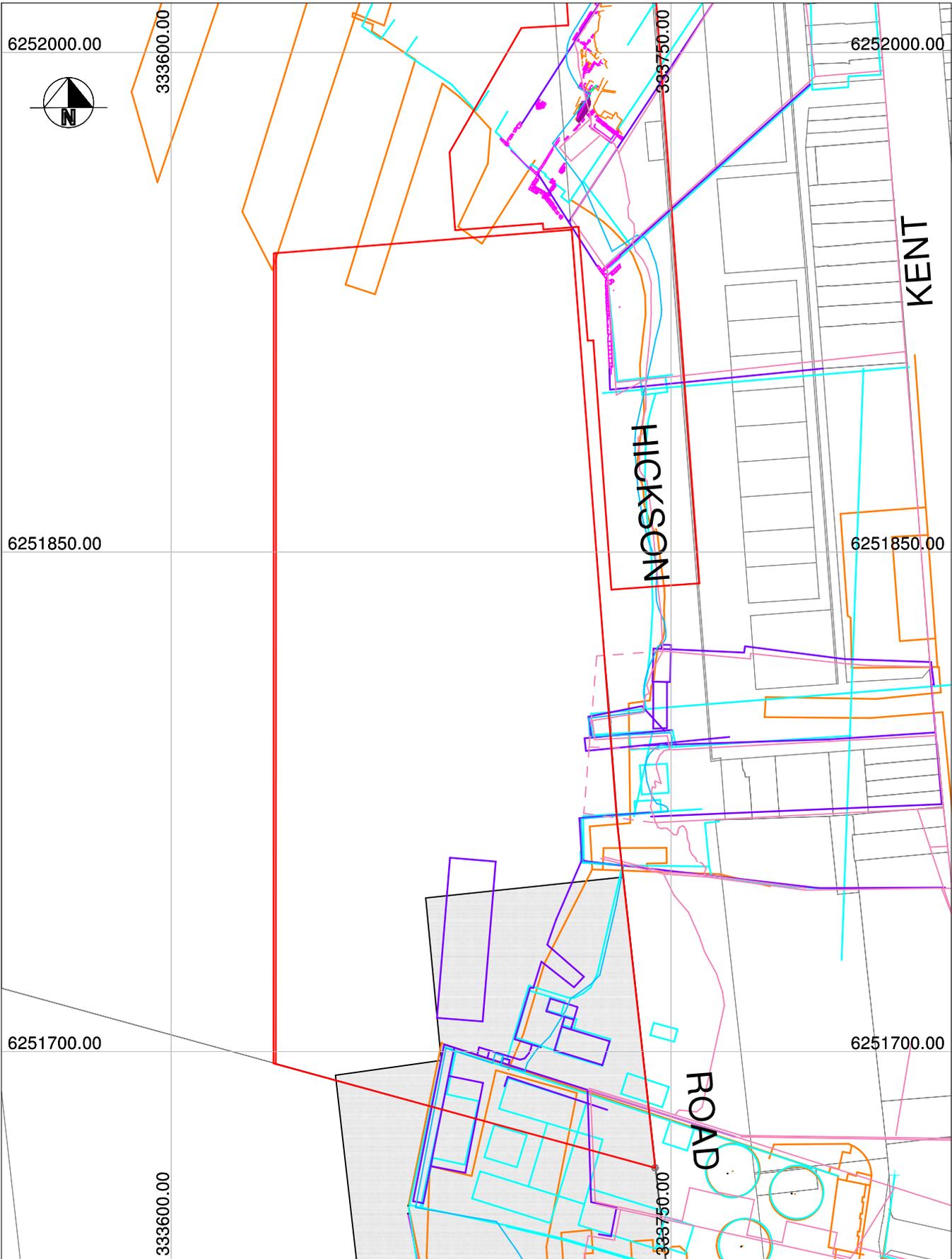
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DATE OF POINT ACQUISITION:



SCALE: 1:1500 @A4



GUY HAZELL
FOR

BARANGAROO CENTRAL

FILE: Barangaroo Central - Drawing002

1833 LINES | 1855 LINES | 1865 LINES | 1874 LINES

1875 LINES | 1880 LINES

DATUM: MGA2020 ZONE56 - AHD

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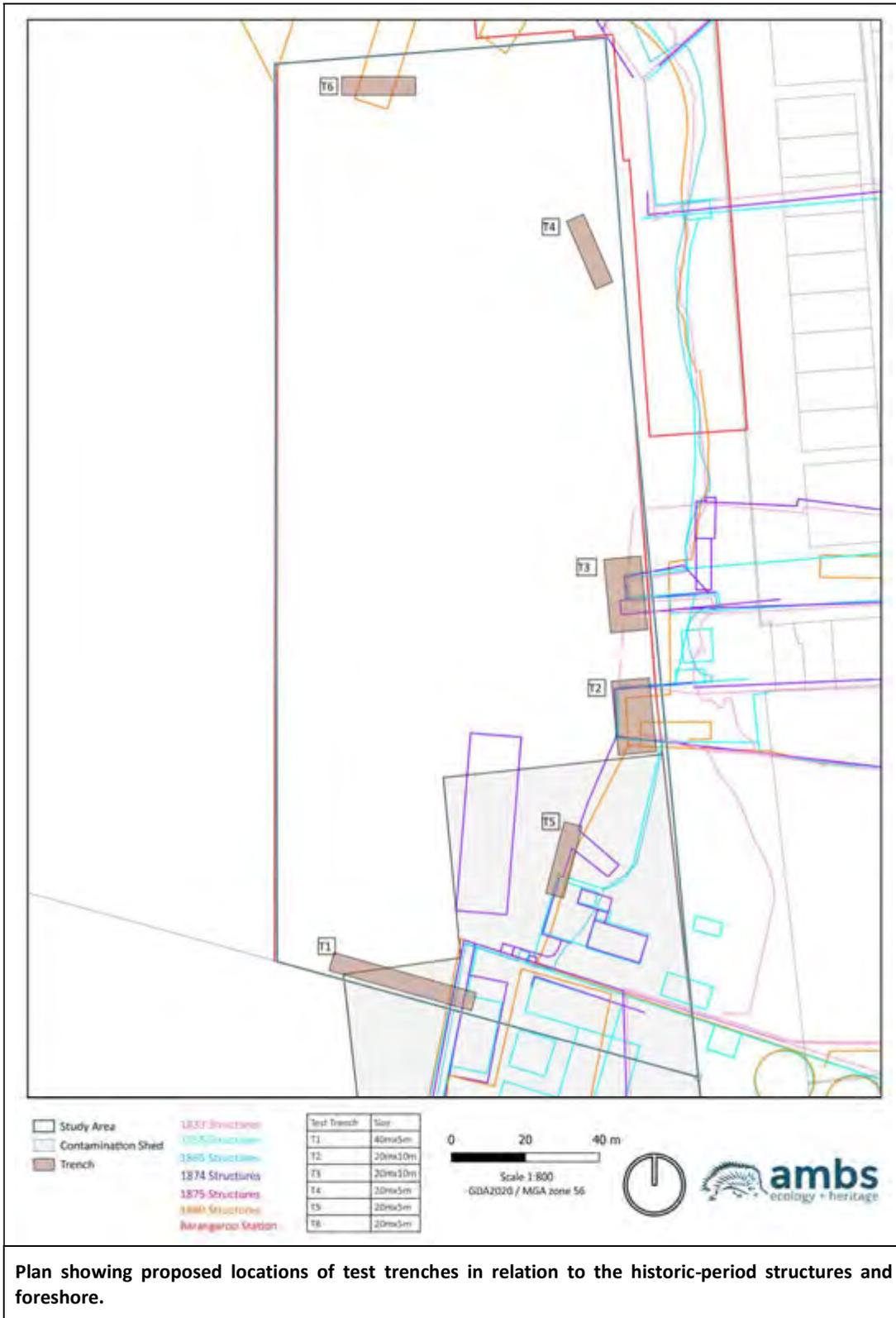
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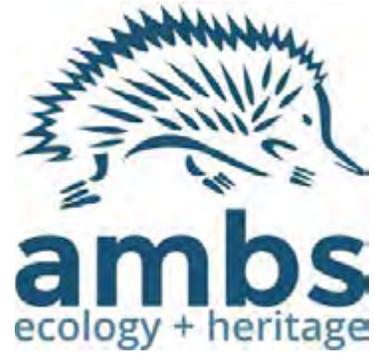


Appendix D — Proposed Test Trenches



Plan showing proposed locations of test trenches in relation to the historic-period structures and foreshore.

Appendix E — Draft Unexpected Finds Procedure



Central Barangaroo Heritage Induction and Unexpected Finds Procedure

SSD-39587022 Early Works Stage 1

Prepared by AMBS Ecology & Heritage and MTS Heritage
For Aqualand

Final

August 2025

AMBS Reference: 25580

Document Information

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1 Introduction

As a part of the proposed early works at Central Barangaroo, the Aboriginal and historical archaeological resources must be managed in accordance with the SSD 39587022 Development Consent Conditions C21(h), C41-C46 and D48-D49. Condition C21 states:

Condition C21 – Prior to the commencement of any earthwork or construction, a Construction Environmental Management Plan (CEMP) must be submitted to the Certifier. The CEMP must address, but not be limited to, the following matters were relevant:

h) an unexpected finds policy for Aboriginal and non-Aboriginal heritage and associated communications procedure

Condition C41 states:

Condition C41 – Prior to the commencement of works and following test excavations, the Applicant must prepare an Archaeological research Design Methodology (ARDM). The ARDM shall:

d) Contain an unexpected finds policy, that outlines all aspects pertaining to the possible discovery of unanticipated finds at the site including:

i. Briefing and education of project staff in the processes associated with the identification and discovery of unexpected heritage items and the subsequent processes, including steps specific for maritime heritage items, associated with excavation/conservation/storage/interpretation and display of any discovered items.

Condition D48 states:

Condition D48 – All works must cease immediately if a relic or Aboriginal object is unexpectedly discovered. The Applicant must notify the Heritage Council of NSW in respect of a relic and notify the Planning Secretary and the Heritage Council of NSW in respect of an Aboriginal object.¹ Building work may recommence at a time confirmed by either the Heritage Council of NSW or the Secretary of the Department of Planning and Environment.

This Heritage Induction and Unexpected Finds Procedure aims to satisfy the above Development Consent Conditions and will be updated based on the results of the testing program and/or periodically as required. It will be implemented for the duration of the project. A copy of this document should be available onsite, with hard copies of the Unexpected Finds Procedure flowchart (Section 6) displayed onsite. All staff involved in this work must receive this heritage induction and sign that they understand their responsibilities with regard to the management of unexpected heritage items.

1.1 Proposed works

At present, the proposed works are those proposed in the 2025 ARDM and MARDM, and identified in the Early Works EWDA-1 EIS (SSD 39587022). The works include the following scope:

- Partial demolition of an existing shoring wall capping beam along Hickson Road;
- Construction of a new secant pile retention wall (approx. 150m long);

¹ N.B HNSW confirmed to AMBS and Aqualand at the meeting held on 13 May 2025 that they are the correct body to notify.

- Excavation of land related to construction of the secant pile retention wall;
- Localised remediation related to the secant pile retention wall;
- Associated Archaeological Investigations in the area of excavation and works;
- Sydney Metro / Hickson Road interfaces – perimeter retention wall interface works, and Hickson Road public domain interface works; and
- Relocation of stormwater and other services to enable the permanent works outlined above.

These early works are to support the future mixed-use development proposed for the site. They will be followed by additional site preparation works including a larger perimeter retention wall, bulk excavation and remediation program (Stage 2, SSD 4692221).

1.2 Study area

The Project Area is located within the concrete apron of the Barangaroo foreshore. It is bounded by Barangaroo Reserve and Nawi Cove to the north, Hickson Road to the east, Barton Street and Hickson Park to the south, and the waters of Darling Harbour to the west (Lot 52 DP 1301725) within the Sydney Local Government Area (LGA). There are no listed State or local heritage items within the Project Area, however it is located in close proximity to the western edge of the Millers Point & Dawes Point Village Precinct (SHR 01682) and Millers Point/Dawes Point Conservation Area (SHR 00884, see also 2012 Sydney LEP Conservation Area CA35) which are assessed as having State significance (Figure 1.1). It is also in close proximity to Dalgety's Bond Stores, Munn's slipway and Sewerage Pumping Station No.14, which are listed on the Infrastructure NSW S170 Heritage and Conservation Register as having local significance (Figure 1.2).



Figure 1.1 Plan showing location of study area in relation to the State significant Millers Point & Dawes Point Village Precinct (SHR 01682).



Figure 1.2 Plan showing the study area in relation to heritage items of local significance and conservation area as listed on the 2012 City of Sydney LEP.

2 Archaeological investigation methodologies

The day-to-day management of the archaeological investigations at the Central Barangaroo Project Area will be undertaken by the joint AMBS and MTS Heritage team, under the direction of the approved Excavation Directors for the project, Rhian Jones, Senior Heritage Consultant (Historical) AMBS and Chris Lewczak, Principal Heritage Consultant (Maritime) MTS Heritage as co-Primary Excavation Directors, and Ronan Mc Eleney, Senior Heritage Consultant (Historical) AMBS as Secondary Excavation Director. Should advice or management of Aboriginal objects or places be required it will be provided under the direction of Chris Langeluddecke, Director Heritage, AMBS.

The archaeological investigations will be staged and employ a variety of methodologies. The first stage consists of the excavation of discrete test trenches using both machine and hand-excavation. This will likely be followed by a second stage of open-area salvage excavation of key areas, structures and deposits above approximately RL -1.0m. The final stage of archaeological investigation is likely to involve a combination of targeted testing and salvage of maritime deposits below approximately RL-1.0m on the former seabed, and monitoring and/or period inspections of the bulk-excavation across the Project Area.

Test trenches

Test trenches will be marked out by an archaeological surveyor (if required) and machine excavated under the supervision of the Excavation Director(s) before hand-excavation commences. The trenches may need to be benched at a 1:1 or 1:1.2m ratio, or shoring-boxes employed to allow for safe access. Battering is not a preferred method, however may be used if benching or shoring is not possible.

Machine excavation

Mechanical removal of any extant concrete slabs across the site and underlying hardstand deposits may be monitored by the heritage team in those areas assessed as having moderate potential to verify the presence, integrity and significance of predicted archaeological resource. Where significant *in situ* archaeological remains with good integrity are exposed, open area excavation will proceed following removal of the overburden and once the area has been made safe.

Monitoring and periodic site inspections

Archaeological monitoring and/or periodic site inspections will involve one of the Excavation Directors, Site Manager or Trench Supervisor observing the works for the presence of archaeological remains. Brief work stoppages may be required for any remains to be cleaned and identified, and a hold point may be required if the remains require further investigation. If archaeological monitoring is required, the machine excavator operator and other personnel must respond to any reasonable directives requested by the supervising archaeologist.

Open area excavation

Open area excavation will proceed once the area of archaeological sensitivity with intact archaeological remains has been made safe. Hand-excavation will be undertaken under the supervision of the Excavation Directors in accordance with the methodology outlined in the ARDM and MARDM to ensure that all significant archaeological relics, features, and deposits are appropriately managed and recorded.

Sieving

Certain deposits, particularly any surviving former seabed deposits, may require wet sieving to recover artefacts. This will involve soil being stockpiled in buckets or discrete locations and passed through a two-mesh screen system over a skip bin.

3 Potential archaeological resource

Wharf and seawall related material

There is a high archaeological potential for remains of former wharves and seawalls to be present within the Project Area (Figure 3.1) as covered by the ARDM and MARDM prepared for the project. Previous archaeological excavations either side of the Project Area have uncovered and recorded various pile remains associated with the different phases of development at the site. The location of piles associated with former wharf sites are largely known based on historical mapping. Identifying piles in areas where no known wharves or seawalls have been documented has the potential to provide an understanding of the historical use and occupation of a site that is missing from the historical record. Timber piles were used both for the wharf construction as well as for timber seawalls and bracing behind walls constructed from stone.

Other associated construction material associated with both wharf and seawall construction that may be found are the supports. These supports include wharf ties, also known as known as 'deadman anchors' and consists of a mass that is buried behind the structure that acts as an anchor that is 'tied' to the wharf or seawall. These anchors act as a structural brace to pull the structure back and hold them upright. Such supports are known to have been used on wharves recorded in Sydney Harbour from the 1860s onwards. However, it is unknown if similar construction techniques were used for early wharves. These deadman anchors are considered rare and, if unexpected found, may provide information relating to early wharf and seawall construction.

Early wharves constructed in Sydney Harbour were ‘ballasted’, a method used to hold the wharf or jetty piles in place one installed. The sandstone substrate needed to hold piles in place is much deeper than piling depths associated with early piled wharves. Ballast was placed around the piles to compact and hold the piles in place. Ballasted remains, if used, would appear on and pressed into the surface of the former seabed, and appear as a rubble layer. Wharf remains and relics can be found on, within and below these ballasted deposits.

If a suspected wharf, seawall support or ballasted deposits are identified through the proposed works, all works within the area must cease immediately and the Project/Site Manager should be notified at first instance. The Project/Site Manager should contact the one of the Excavation Directors (see Flowchart for contact information) and arrange for them to inspect the potential find to confirm its nature, extent, condition and significance.

If the find is suspected to be a maritime relic, the MTS Heritage Excavation Director (Maritime Archaeologist) will advise on the correct management and determine when work may recommence in consultation with the other Excavation Directors and the Project/Site Manager

If the find is confirmed to be a maritime relic, the object should be cordoned off with protective fencing or similar, and both Heritage NSW (Ph: 02 9873 8500) notified and engaged with in accordance with the Unexpected Finds Procedure.



Figure 3.1 Areas where archaeological remains may be encountered during the early works.

4 Unexpected finds procedure

In addition to the anticipated archaeological resource and methodologies set out in the 2025 ARDM and MARDM, summarised above, it is possible that other archaeological items may also be encountered during the course of the works. Any such remains not assessed in the ARDM or MARDM documents will be managed under an Unexpected Finds Procedure. This Unexpected Finds Procedure must be followed by all on-site personnel including all contractors, subcontractors or any person undertaking work on the site for the duration of the project.

5 What is an unexpected find?

An 'unexpected find' can be defined as:

- Any unanticipated discovery of an Aboriginal object or site, or Non-Aboriginal archaeological work or relic, which Aqualand does not have approval to disturb and/or is not covered under an existing management process or plan;
- A find that has not been identified, assessed or referenced in the 2025 ARDM or MARDM;
- A find that is not covered by the current SSD approval;
- Human skeletal remains;
- A shipwreck and/or articles associated with a shipwreck.

The following procedures are consistent with those presented in the EIS submission prepared by Urbis 2022 titled Appendix O *Aboriginal Cultural Heritage Assessment, Central Barangaroo, Hickson Road, Barangaroo, NSW Gadigal Country*. Consultancy Report to Aqualand Pty Ltd, 1 August 2022 (Section 6.2:49).

As per the definition provided in Condition D49:

Condition D49 – In this condition:

“relic” means any deposit, artefact, object or material evidence that:

- (a) Relates to the settlement of the area that comprises new South Wales, not being Aboriginal settlement, and*
- (b) Is of State or local heritage significance; and*

“Aboriginal object” means:

Any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with or both) the occupation of that area by persons of non-Aboriginal extraction and includes Aboriginal remains.

Aboriginal objects

Previous Aboriginal heritage assessment undertaken for the Project EIS have identified that there is a low likelihood that any Aboriginal heritage sites or objects remain present in the Project area of works. In the unlikely event that potential heritage finds are identified during works, all works should immediately cease, and the Unexpected Finds Procedure should be followed.

If a suspected Aboriginal object is identified through the proposed works, all works within the area must cease immediately and the Project/Site Manager should be notified at first instance. The Project/Site Manager should contact the AMBS project archaeologist on (02) 9518 4489 and arrange for them to inspect the potential Aboriginal object to confirm the nature of the find.

If the AMBS project archaeologist advises that the find is not a potential Aboriginal object, work may recommence in consultation with the Project/Site Manager

If the find is confirmed to be Aboriginal heritage, the object should be cordoned off with protective fencing or similar, and both Heritage NSW (Ph: 02 9873 8500) and the project RAPs should be notified and engaged with in accordance with the unexpected finds procedure. RAP representatives will be given the opportunity to participate if additional archaeological works are required in order to manage unexpected Aboriginal heritage finds, including site and artefact recording, archaeological excavation, or monitoring. All Aboriginal heritage reports produced as a result of the unexpected finds being identified will be given to the RAPs for their review, comment, and input prior to finalisation.

Human skeletal remains and Aboriginal burials

It is unlikely that Aboriginal burials are present within the area of the proposed works. However, should any suspected human remains be identified during works, all works in the area must cease with both the NSW Police (Ph: 02 9265 6499) and Heritage NSW (Ph: 02 9873 8500) immediately notified. All bones must be treated as potential human skeletal remains and work around them must stop while they are protected and investigated urgently. An appropriately qualified specialist will be permitted on site to assess the potential human remains. Work will only re-commence once the requirements of that procedure have been satisfied.

Shipwreck and/or articles associated with a shipwreck

It is exceptionally rare for shipwrecks to be found within reclamation areas in Australia. There are two that are known to have been found and archaeologically recorded.

The Honeysuckle shipwreck, believed to be the former 1871 steamer *Leo*, was found within the reclamation deposits in Newcastle. Historical archaeological works for the proposed development came across the intact 28 m hull of the vessel within the sandy reclamation fill. The wreck is believed to be abandoned during the reclamation works where the company in charge of the reclamation works dumped the vessel during these works. The site was excavated and recorded by a Maritime Archaeologist, who assessed the wreck as being of local significance, but was noted to be a rare and unique insight into vessel of its age and type. The wreck was eventually dismantled and removed.

The discovery of UDHB1 ('Barangaroo Boat') during the 2018 archaeological investigations at the Barangaroo Metro Station to the northeast of the Central Barangaroo Project Area was classed as an 'unexpected find' as it was not predicted by the initial historical archaeological assessment or ARD. It is rare for such an unrecorded, well-preserved wreck to be encountered in the inter-tidal zone of the terrestrial harbour foreshore (ie not within deeper maritime or former seabed deposits). The significance and complexity of UDHB1 required a separate management document identifying the appropriate methodologies for the excavation, removal, storage and conservation of the item (see Casey & Lowe, *Cosmos Archaeology and ICS 2018 Barangaroo Station, Sydney Metro Archaeological Relics Management Plan for The Removal & Conservation of Unidentified Darling Harbour Barangaroo No. 1 (UDHB1)*, report prepared for JHCPBG and TfNSW).

While it is rare to find shipwreck material within reclamation deposits, shipwreck articles, such as anchors, propellers and potential disarticulated hull remains have been archaeologically recorded within similar reclamation fills. It has been hypothesised that anchors were sometimes placed along or behind foreshore areas that were reclaimed to allow tethered vessels to be pulled into shallow water areas to discharge their material. Similarly, a propeller found at the site of the Balmain Water Police development is also thought to have been used as an anchoring object (*AHMS 2003, Balmain Water Police Historical Archaeological Excavation Report*).

The discarding of anchors and propellers is unusual, as both items were expensive, and it was not uncommon for them to be sold to be used on another similar sized vessel. Their discarding in reclamation fills is considered rare and unusual.

If a suspected shipwreck, or shipwreck article, is identified through the proposed works, all works within the area must cease immediately and the Project/Site Manager should be notified at first instance. The Project/Site Manager should contact the MTS Excavation Director (Maritime Archaeologist) on 0416 046 292 and arrange for him to inspect the potential find to confirm its nature, extent, condition and significance.

If the MTS Heritage Excavation Director (Maritime Archaeologist) advises that the find is not a potential maritime relic, work may recommence in consultation with the Project/Site Manager

If the find is confirmed to be a maritime relic, the object should be cordoned off with protective fencing or similar, and both Heritage NSW (Ph: 02 9873 8500) notified and engaged with in accordance with the Unexpected Finds Procedure.

Assessment of unexpected finds and additional management

Any unexpected finds must be assessed by a suitably qualified archaeologist to determine if the find is considered to be an Aboriginal object or place, meets the threshold to be an archaeological work or relic, human skeletal remains or shipwreck and/or articles associated with a shipwreck. Should unexpected finds of a complex nature, particularly human skeletal remains, shipwreck and/or articles associated with a shipwreck, be encountered during any works within the Project Area, they may require the preparation of specialist management plans, to be developed in consultation with HNSW and/or specialist experts.

5.1 Implementation of procedure

If any Aboriginal objects, places or non-Aboriginal heritage items are uncovered during the project works outside of the planned archaeological investigations, the Unexpected Finds Procedure is triggered, works would cease, and the Unexpected Finds Procedure be implemented. This Unexpected Finds Procedure details the steps to be taken when an unexpected find is discovered during the project.

Details of the consultation with the RAPs throughout the EIS assessment process are outlined in Chapter 3 of the ACHA report included with the Project EIS). Detailed consultation records are included in Appendix C and D of that report (Urbis 2022).

Any unexpected heritage finds must be assessed by a suitably qualified archaeologist to determine if the find meets the threshold to be an archaeological relic. In order to facilitate this assessment, the following steps need to be undertaken. A diagram has been provided to clearly show the steps to be taken on-site. The diagram should be made as a hard-copy and clearly displayed on-site where it will be visible to all personnel.

Table 5.1 Steps to be implemented following the discovery of an unexpected find.

Step	Task	Responsibility
1	Stop work immediately, protect the find	
1.1	Stop work immediately and notify the project manager and/or supervisor. Works cannot proceed until written approval from the archaeologist has been provided.	Contractor/Subcontractor/ Supervisor

Step	Task	Responsibility
1.2	<p>Establish a 'no-go zone' around the find. A suggested boundary is 2m. The zone should be clearly marked, preferably with fencing or tape to ensure all personnel are aware of the restriction.</p> <p>No ground disturbing work is to be undertaken within the zone until the find has been assessed by a suitably qualified archaeologist and written approval has been given for work to proceed.</p> <p>Inform all on-site personnel about the no-go zone.</p>	Project Manager or Supervisor
2	Engage an archaeologist	
2.1	<p>Contact the nominated archaeologist to discuss the location and nature of the find and arrange an inspection.</p> <p>Provide as much information as possible to the archaeologist, including a markup of the location and photographs of the find in place. Do not remove or disturb the find.</p> <p>The archaeologist may request for the no-go zone to be extended based on the information provided in this step.</p>	Project Manager or Supervisor
3	Assessment by archaeologist	
3.1	<p>Occasionally the archaeologist may determine from the photographs and information provided in Step 2.1 that it is not necessary to inspect the item (for example the find is not an archaeological relic).</p> <p>Written approval in the form of an email will be provided to the Project Manager with a clear justification for works to proceed.</p>	Excavation Director(s)
3.2	<p>Arrange access for the archaeologist to inspect the find as soon as practicable. In most cases, a site inspection is required to provide an assessment of the find.</p> <p>The archaeologist will inspect and record the find to ascertain the nature and significance of the find.</p>	Project Manager/Supervisor and Archaeologist
3.3	Where it can be determined on-site that the find has no significance and/or integrity or is determined not to be a historical work or relic or Aboriginal object, the archaeologist will provide written approval in the form of an email to the Project Manager for works to proceed.	Excavation Director(s)
3.4	The significance of some finds may not be able to be provided on-site and will require additional assessment. Where additional assessment is required to determine significance of the find, the archaeologist will provide written approval in the form of a memo to the Project Manager for works to proceed.	Excavation Director(s)
3.5	If the relic, on investigation, proves to be part of a feature or an archaeologically sensitive area which would meet the threshold for local or State significance, the archaeologist would inform the project supervisor and Heritage NSW, in writing, with details of the nature, integrity and significance of the relic to determine the appropriate management strategy. Works would not proceed until the archaeologist provides a clearance certificate affirming that archaeological investigations have been completed, artefacts retained for analysis, and that no relics remain in situ.	Excavation Director(s)
3.6	If the find is identified by the archaeologist as an Aboriginal object, consultation with the project RAPs will be required to identify appropriate management and impact mitigation options, including any needed additional archaeological investigations such as excavations.	Excavation Director(s)
4	Provide advice	
4.1	Based on the findings of the inspection, and additional assessment where required, the archaeologist will provide written approval to the Project Manager as soon as practicable before any works can proceed.	Excavation Director(s)
4.2	The Project Manager should review the approval to ensure that all requirements are met and communicate the approval to on-site personnel.	Project Manager
5	Resume work	

Step	Task	Responsibility
5.1	Where the unexpected find is a historical work or relic, work cannot resume until written approval has been provided by the archaeologist. Where the unexpected find is an Aboriginal object, works may not resume until written approval has been provided by Heritage NSW. When written approval had been received, works may resume.	Project Manager
5.2	If additional archaeological management has been required, works cannot proceed until all archaeological excavations/heritage reporting and other heritage approval conditions are completed. A clearance certificate will be provided before works can proceed.	Excavation Director(s) and Project Manager
5.3	If additional unexpected finds are discovered, this procedure must begin again from Step 1.	All

5.2 Aboriginal Community Consultation

Consultation and engagement with the project's Registered Aboriginal Parties (RAPs) was initiated during the EIS assessment process in accordance with the Heritage NSW *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010).

As per the ACHA, no Aboriginal heritage sites or areas of Aboriginal archaeological potential were identified within the Project Area, and no further Aboriginal heritage investigations are required. As such, no further Aboriginal community consultation for the Project Area is required during construction unless an unexpected Aboriginal heritage object is identified during works.

In the event that an unexpected Aboriginal heritage object is identified during works, the RAPs will be consulted with to identify appropriate management and mitigation options, as facilitated by the project archaeologist and in accordance with Heritage NSW Aboriginal community consultation requirements.

The following 12 RAPs registered their interest in being consulted with for the project, and were engaged with throughout the Aboriginal Cultural Heritage Assessment (ACHA) and EIS assessment process:

- Metropolitan Local Aboriginal Land Council
- A1 Indigenous Services
- Butucarbin Heritage
- Corroboree Aboriginal Corporation
- Darug Custodian Aboriginal Corporation
- Didge Ngunawal Clan
- Gunjeewong Cultural Heritage Aboriginal Corporation
- Kamilaroi Yankuntjatjara Working Group
- Thoorga Nura
- Tocomwall
- Woka Aboriginal Corporation
- Wori Woilywa

6 Examples of unexpected finds

The archaeological impacts of the proposed early works are primarily associated with the installation of the secant pile wall along Hickson Road, perimeter pile wall at the interface with the Metro station box, and the archaeological investigations. As areas of identified archaeological potential are located within the works area (Figure 3.1) unexpected finds would most likely consist of footings of earlier buildings, stone or timber elements associated with maritime infrastructure

from the early nineteenth and twentieth centuries such as jetty piles, seawalls and wharf frontages, reclamation fills that may be sterile or may contain large quantities of artefacts, cobbled, flagged or paved surfaces (brick, stone or tightly-compacted industrial waste material). As discussed above in Section 5, other types of unexpected remains may include human skeletal remains (bones, teeth) and shipwrecks and/or articles associated with shipwrecks (primarily timber, metal, organic). Examples of both the assessed potential archaeological resource and unexpected finds are provided below.



Figure 6.1 Timber, sandstone and concrete wharf foundations uncovered at Barangaroo South, 2012.



Figure 6.2 Sandstone pavers uncovered at Barangaroo South, 2012.



Figure 6.3 A timber boat ramp (centre) survived in southern Darling Harbour, despite numerous modern concrete piles. Darling Walk (now Darling Quarter), 2009.



Figure 6.4 Timber wharf piles and sandstone rubble revetments within the reclamation fills along the foreshore, Barangaroo South, 2012.



Figure 6.5 It can take an expert eye to identify the difference between an unexpected State or nationally significant find such as the 'Barangaroo Boat' UDHB1 (top) from anticipated, locally significant remains, such as the random timbers found stored on one of the adjoining wharves (bottom). Barangaroo Metro, 2018.



Figure 6.6: Examples of miscellaneous maritime archaeological heritage finds (Source: MTS Heritage).

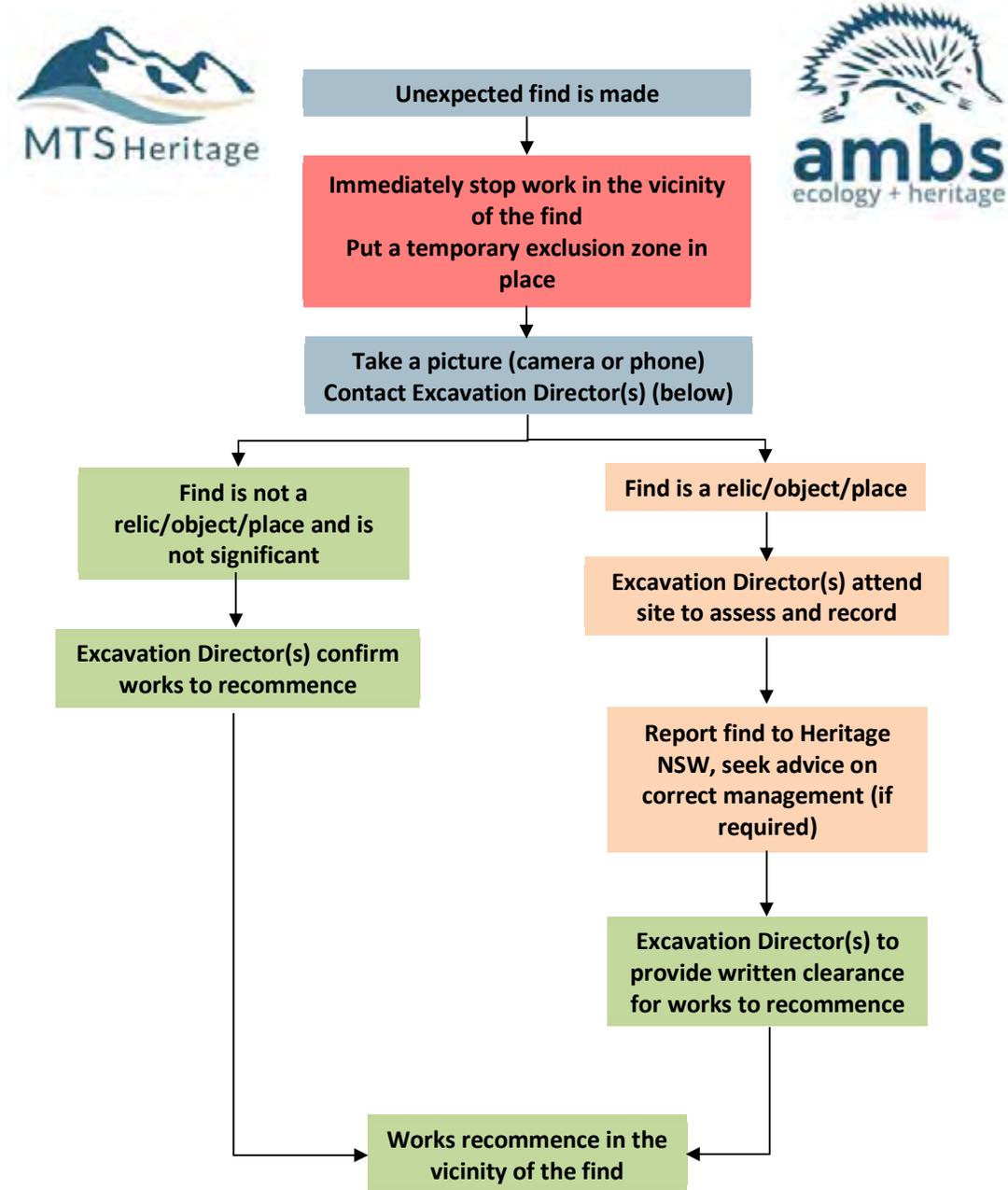


Figure 6.7 Ceramic fragments recovered from Barangaroo Metro site, 2018.



Figure 6.8 Small miscellaneous artefacts such as buttons, leather, metal and timber objects can survive in the fills around Darling Harbour, such as these found at Barangaroo South, 2012.

7 Unexpected finds procedure flowchart



Contact	Role	Phone	Email
Rhian Jones (AMBS)	Co-Primary Excavation Director (call first)	(02) 9518 4489	r.jones@ambs.com.au
Chris Lewczak (MTS Heritage)	Co-Primary Excavation Director (call if can't get Rhian)	0416 046 292	chris.lewczak@mtsheritage.com.au
Ronan Mc Eleney (AMBS)	Secondary excavation Director (call if can't get Rhian or Chris)	(02) 9518 4489	r.mceleney@ambs.com.au

Appendix F — Selected CVs and Response to Excavation Director Criteria

Qualifications BA (Hons) First Class, University of Sydney 2007
BA (Advanced), University of Sydney 2006

Employment History

2024 – Present AMBS Ecology & Heritage – Senior Heritage Consultant
2012 – 2023 Casey & Lowe Archaeology and Heritage – Senior Archaeologist / Manager
2016 Port Arthur Historic Site Management Authority – Archaeologist & Planner
2009 – 2011 Archaeological Development Services, Belfast Office – Archaeologist & Planner
2007 – 2012 Paphos Theatre Project, University of Sydney – Senior Team Member (volunteer)

Professional Affiliations

- Australasian Society for Historical Archaeology (ASHA)

Select Bibliography & Presentations

2023 Jones, R. *Dirt and Decolonisation: Archaeology and Heritage Interpretation at the Parramatta Female Factory and Institutions Precinct*. Presented at ASHA-ICAHMS workshop (ICOMOS GA 2023).

2023 Jones, R. Seretis, K. and H. Winter, *Bedrock, Boats & Buttons: A Tale of Two Foreshores*. Presented at SHAP workshop.

2018 Jones, R. *The Parramatta Female Factory: Real and Imagined*. Presented at ASHA Conference, University of New England, Parramatta.

2018 Jones, R. "Send my love': defiance and material culture at the Parramatta Industrial School for Girls", *AHA Journal of the Australasian Society for Historical Archaeology*, vol. 36, pp.47-58.

2017 Jones, R. "Send My Love": *Stories of Defiance and Counterculture at the Parramatta Industrial School for Girls*. Presented at ASHA Conference, Tasmania.

Professional Experience

Rhian Jones has been working as a professional archaeologist since graduating in 2007, primarily in the private sector in Australia, as well as notable projects in Cyprus, Republic of Ireland and Northern Ireland. She has extensive fieldwork experience through working on industrial, domestic and urban sites in Australia as an Excavation Director, holding Section 140 and Section 60 permits for local and State significant heritage projects. She has successfully managed CSSI and SSD projects delivering excellent heritage outcomes within the appropriate time and budgetary constraints. Rhian has been selected to work on three UNESCO World Heritage Listed sites (Nea Paphos Cyprus, Port Arthur Tasmania, and Parramatta Park New South Wales) and has a personal interest in interpretation, community engagement and education programs.

Select Key Projects for Darling Harbour and Sydney Harbour

Major Projects and Large-Scale

Archaeological Excavations

2016-2025: Parramatta North Project, Excavation Director, for Property NSW, Department of Planning, Housing and Infrastructure. State and Nationally significant site of the Parramatta Female Factory and Norma Parker Centre.

- 2025 Monitoring of new and upgraded pathways across the Heritage Core.
- 2024 Conservation works in the Artisan's Yard.
- 2023 Monitoring of services upgrades for Norma Parker Centre/Kamballa.
- 2022 Monitoring of services upgrades and infrastructure for Western Sydney Start-Up Hub (WSSH).
- 2022 Consultant for WSSH Interpretation Package.
- 2021 Archaeological Testing for WSSH.
- 2016-2017 Archaeological Testing for

2017-2019: Circular Quay Tower (CQT), 33-35 Pitt Street. Secondary Excavation Director, for Lendlease. Open area salvage excavation and site management of multi-phase urban and ecologically complex site on the banks of the Tank Stream and Sydney Cove | Warrane foreshore.

2018: Sydney Metro City and Southwest – Tunnel, Stations and Excavation Works Barangaroo Station. Secondary Excavation Director for JHCPB Joint Venture. Site manager for the final weeks of open area salvage excavation of maritime infrastructure, buildings and salvage of wreck UDHB1 along the eastern edge of Darling Harbour.

2018: Sydney Metro City and Southwest – Tunnel, Stations and Excavation Works Blues Point. Secondary Excavation Director, for JHCPBG Joint Venture. Open area salvage excavation of Blues Point dive site, including domestic structures and maritime infrastructure on the north side of Sydney Harbour.

2014-2018: Darling Harbour Live. Senior Archaeologist, for Lendlease. Multi-stage project including open area salvage, testing and monitoring across the southern Darling Harbour shoreline. Sites included the ICC and Exhibition Centre and Sofitel (west edge of Darling Harbour), Tumberlong Park and

Darling Square/Darling Quarter (south edge of Darling Harbour).

2012: Barangaroo South. Senior Archaeologist, for Lendlease Development. Open area salvage excavation of commercial structures and maritime infrastructure along the eastern edge of Darling Harbour.

2008-2009: Darling Quarter/Darling Walk. Archaeologist, for Bovis Lendlease. Open area salvage of domestic, commercial and industrial structures and maritime infrastructure across the southeast edge of Darling Harbour/Cockle Bay.

Selected Reporting: Excavation & Monitoring

2024: Circular Quay Tower (CQT), 182 George & 33-35 Pitt Streets Sydney, Archaeological Investigation, April 2024. Report to Lendlease Development.

2024: Parramatta North Program, Western Sydney Start Up Hub, Archaeological Testing 2021, April 2024. Report to Property & Development NSW.

2022: Archaeological Investigation Temporary Works Site Henry Lawson Reserve, Blues Point. Report to Sydney Metro, May 2022.

2022: Barangaroo South Archaeological Investigations. Contributing author to trench reports for Barangaroo South. Reports to Lendlease, July 2022.

2018: PNGC Cumberland Hospital (East Campus) Site & Norma Parker Centre/Kamballa Site, Historical Archaeological Testing Report Volume 1. Report to UrbanGrowth NSW Development Corporation, November 2018.

2018: Darling Harbour Live. Contributing author of final excavation reports for The Boulevard, ICC Hotel, Darling Square, NE Plot, SE Plot, N Plot, Haymarket Testing, Reports to Lendlease.

2013: Darling Quarter (formerly Darling Walk). Contributing author to trench reports for Darling Quarter/Darling Walk. Reports to Lendlease, December 2013.

EXCAVATION DIRECTOR APPLICATION
RHIAN JONES, SENIOR HERITAGE CONSULTANT
AMBS ECOLOGY AND HERITAGE



1. A TERTIARY HONOURS (OR MASTERS/PHD) DEGREE OR GRADUATE DIPLOMA IN ARCHAEOLOGY AND THREE YEARS RELEVANT AND CUMULATIVE PROFESSIONAL EXPERIENCE* IN HISTORICAL ARCHAEOLOGY OR A RELATED ARCHAEOLOGICAL FIELD.

Tertiary Honours Degree:

2007: Bachelor of Arts (Hons) First Class, University of Sydney, Classical Archaeology. I submitted a 20,000 word thesis focussing on statistical and thematic analysis of votive offerings to Demeter and Persephone at three sites in Greece.

2006: BA (Advanced), University of Sydney, double major in Classical Archaeology and Heritage Studies.

I have 14 years professional experience in historical archaeology:

- May 2024 – present: Senior Heritage Consultant, AMBS Ecology + Heritage, Sydney
- March 2012 – May 2024: Senior Archaeologist, Casey & Lowe Archaeology and Heritage, Sydney
- January - March 2015: Archaeologist, Stage 1 Penitentiary Ablutions Block excavations, Port Arthur
- March 2012: Archaeologist, GML Heritage, Sydney
- November 2011 - March 2012: Archaeologist, Australian Museum Consulting, Sydney
- 2010-2011: Site Assistant/Archaeologist: Archaeological Development Services, Belfast, United Kingdom
- 2008-2009: Archaeologist, Casey & Lowe Archaeology and Heritage, Sydney
- 2008: Archaeologist, GML Heritage, Sydney

2. A DEMONSTRATED UNDERSTANDING OF NSW HERITAGE LEGISLATION ASSESSING HERITAGE SIGNIFICANCE CRITERIA AND RELEVANT ARCHAEOLOGICAL GUIDELINES/BEST PRACTICE METHODS AND STANDARDS INCLUDING, BUT NOT LIMITED TO, RELEVANT ARCHAEOLOGY PUBLICATIONS ISSUED BY THE HERITAGE COUNCIL OF NSW.

I have a major in Heritage Studies from the University of Sydney and have spent the last 14 years refining my understanding of NSW heritage legislation through both written assessments, impact statements, research designs and management strategies, and extensive fieldwork. The following examples are specifically chosen to support my application for Primary Excavation Director, Testing and/or Monitoring (State Significance) at the Parramatta Female Factory and Institutions Precinct, Cumberland Hospital (East campus), focussing on my experience with assessing and re-assessing heritage significance and potential, and best practice methods.

Relevant Project: Norma Parker Centre/Kamballa, Parramatta North Program 2023, Property & Development (Monitoring).

Role: Secondary Excavation Director

Example: As Secondary Excavation Director for this project I was responsible for coordinating the open area salvage and monitoring of the services upgrades for Norma Parker Centre/Kamballa. This included advising on appropriate routes and works to eliminate or minimise impacts within archaeologically and social significant areas.

Relevant Project: 33-35 Pitt Street, Lendlease Circular Quay Tower (CQT)

Role: Secondary Excavation Director

Example: As Secondary Excavation Director for this project I was responsible for coordinating the open area salvage of this site in several stages from 2017-2019. During the interval between the approval of the original S140 application and the commencement of construction, it was determined that while the majority of the site was outside the curtilage of the State significant Tank Stream, a small portion

of the study area fell within the SHR boundary. I was an author of the S60 application that was submitted to enable approval of the works within the Tank Stream curtilage, and was responsible for ensuring that sufficient environmental data, including sediment cores for scientific analysis as well as palynological and shell samples, was collected to satisfy the conditions of consent of the S60 approval.

3. DEMONSTRATED EXPERIENCE IN THE INVESTIGATION OF COMPARABLE OR RELEVANT HISTORICAL ARCHAEOLOGICAL SITES (ESPECIALLY AUSTRALIAN HISTORICAL ARCHAEOLOGY) PROJECT MANAGEMENT AND PREPARING WRITTEN ARCHAEOLOGICAL ASSESSMENTS/SITE MANAGEMENT RECOMMENDATIONS.

My previous role as Secondary Excavation Director at the Cumberland Hospital (East campus) across several testing and monitoring projects for this site has given me direct experience with the types of archaeological remains likely to be encountered, insight into the challenges of carefully and safely excavating and recording them, as well as their level of significance. I have authored and contributed to numerous Archaeological assessments, Heritage Impact Statements, S140 and S60 Applications, the majority of which included an excavation methodology and research design section. A selection of reports with methodologies and research designs related to the PNP/Cumberland Hospital (East campus) area includes:

- *PNP, Western Sydney Start Up Hub (WSSH) S60 Application & Archaeological Research Design for Testing.* Report to Department of Planning, Industry & Environment, November 2020.
- *PNUT, Cumberland Hospital (East Campus) Site, Female Factory/Lunatic Asylum Precinct, Historical Archaeological Impact Statement & Archaeological Research Design, S60 Application for Heritage Repairs, Building C104a.* Report to UrbanGrowth NSW, April 2017.
- *PNUT, Norma Parker Centre/Kambala Site, Historical Archaeological Research Design, S60 Application for Underpinning of the Main Building (Building N01).* Report to UrbanGrowth NSW, February 2017.
- *PNUT, Cumberland Precinct, Historical Archaeological Research Design S60 Application for: Archaeological, Environmental and Geotechnical Testing.* Report to UrbanGrowth NSW, September 2015.

Relevant Project: Parramatta North Urban Transformation Testing 2016-2017 (Testing & Salvage)

Role: Site Director (Heritage Repairs & Underpinning)

Example: As Site Director for the Heritage Repairs and Underpinning components of the PNUT Testing Program, I wrote a large portion of the S65A Application for these works in July 2016, and was then responsible for the testing to determine whether the underpinning works could be carried out under a Standard Exemption, or whether an additional S60 Application was required. Of the six buildings that required underpinning, four Standard Exemptions had already been submitted; and two additional S60 Applications were submitted and approved. As Site Director, I made the recommendation that the archaeology present at both Building N01 in the Norma Parker precinct and Building C104a within the Female Factory precinct was of State significance, which was supported by both the Primary Excavation Director, Dr Mary Casey, and Secondary Excavation Director, Mike Hincks. I then prepared the S60 Applications, including the Research Design, which were reviewed by Dr Casey, clearly proving the State significance of the site under Criterion D (social value) for its association with the Parra Girls community, Criteria E (research potential) even though the artefacts were from disturbed contexts I have argued that the building itself should be considered an archaeological context, and Criteria F rarity, given the small number of comparable children or girls institutions that have been excavated and published. In the case of the archaeological resource at Building N01, I was able to determine that State significant archaeology was present from a single artefact adhered to the underside of the 1960s concrete slab (a modified ceramic object similar to those found on a variety of institutional sites across Australia, including Port Arthur), and confirmed the extent of the deposit with three small test trenches which informed my decision that additional approvals would be required for the works.

4. **ABILITY TO DEMONSTRATE THAT WORK UNDER ANY APPROVALS PREVIOUSLY GRANTED BY THE HERITAGE COUNCIL HAS BEEN COMPLETED IN ACCORDANCE WITH THE CONDITIONS OF THAT APPROVAL AND THE FINAL REPORT HAS BEEN SUBMITTED TO THE HERITAGE COUNCIL.**

I have previously been Secondary Excavation Director for the following sites of local significance:

- 33-35 Pitt Street LLCQT, 2017-2019 (Testing, Monitoring & Open Area Salvage).
- Sydney Metro Temporary Work Site, Blues Point, 2019 (Open Area Salvage).
- 153-165 Brougham Street, Telford Place, Woolloomooloo, 2016-2017 (Testing & Salvage).
- 100 Harris Street, Pyrmont, 2016 (Testing & Salvage).
- 46-52 Wentworth Avenue, Surry Hills, 2016 (Testing & Open Area Salvage).

I have previously been Secondary Excavation Director for the following sites listed on the SHR or containing archaeological remains of State significance:

- Monitoring Services Upgrades, Norma Parker Centre/Kamballa, Parramatta North Program, 2023.
- Monitoring Services Upgrades and infrastructure, Western Sydney Start-Up Hub (WSSH), Cumberland Hospital (East campus), 2022.
- Archaeological Testing Program, WSSH, Cumberland Hospital (East campus), 2021.
- Sydney Metro Barangaroo Station, Hickson Road, Barangaroo, 2019 (Open Area Salvage)
While this site was assessed as having potential for State significant archaeological remains only if substantial remains of Cuthbert's shipyard, and/or limekilns had survived, this site was truly unique in the rare preservation of a pre-1855 timber boat wreck (UDHB1). I was responsible for coordinating the large team of archaeologists, maritime archaeologists and conservators and project management with the Sydney Metro team in the final weeks of this project.
- Fenwick & Co. Boat Store, Illoura Reserve, Balmain, 2017-2018 (Monitoring).

All these projects have been completed in accordance with the permit consent conditions, both for the fieldwork components and methodologies as established in the Assessment or Research Design and reporting requirement, apart from the Sydney Metro projects and LLCQT site; these reports are in progress.

TEST EXCAVATION

LOCAL SIGNIFICANCE

1. **EXCAVATION DIRECTOR NEEDS EXCAVATION DIRECTOR NEEDS TO DEMONSTRATE HIS/HER UNDERSTANDING OF THE MEANING (DATE, TYPE, COMMON APPLICATION IN THE PAST) OF BASIC ARTEFACTS AND BUILDING MATERIALS LIKELY TO BE ENCOUNTERED;**

I have monitored, excavated, recorded and planned at a variety of sites in Sydney and Parramatta, as well as Ireland and Cyprus. I can recognise and interpret a wide variety of building types, materials and construction techniques. I have been required to recognise and distinguish between and interpret building materials that relate to the construction, occupation, modification and destruction of buildings that range from the large-scale industrial/maritime structures on the Darling Harbour foreshore, Barangaroo, and Exhibition and Entertainment Centre, to domestic occupancy in Macquarie-era Parramatta and Sydney. I have been fortunate enough to receive specialist training in building materials during my employment by Casey & Lowe. This work has provided me with the skills to recognise and excavate a wide variety of archaeological features and structures, as well as the ability to identify and date building materials and artefacts from the historic period.

Relevant Project: George Street Culvert, Parramatta Park (2015)

Role: Senior Archaeologist

Example: The George Street Culvert has six known phases of construction and repair, based on historic plans and accounts. During the investigations my identification of a weir on the southern side of the culvert, not shown on any known historic plans, likely dates from the 1860s-1870s due to the combination of sandstock bricks (not commonly used after the 1860s) and hydraulic or hard lime cement (not readily available in Australia prior to the 1860s). Interestingly, there are a number of discrepancies between the historic accounts of the culvert widening and the building materials; while the culvert may have been widened a second time between 1887 and 1895, the sandstone blocks are still bonded with shell mortar. I presented a number of explanations including the lower cost of shell mortar, its use to match existing materials in the culvert, or inconsistencies in the survey regarding whether the culvert structure or the road is being measured.

2. **EXCAVATION DIRECTOR NEEDS TO DEMONSTRATE HIS/HER ABILITY TO RECOGNIZE AND INTERPRET TAPHONOMIC PROCESSES AND THEIR MEANING;**

AND

RECOGNITION BY THE EXCAVATION DIRECTOR OF ANY LIMITATIONS RE THE ABOVE;

I have an excellent understanding of taphonomic processes through both natural and man-made events, particularly as they relate to the formation of useable land at Darling Harbour, Circular Quay, The Rocks and the modification of pre-European landscapes at Parramatta and St Marys. As Secondary Excavation Director on both the Circular Quay and Blues Point sites on either side of Sydney Harbour I was required to identify and interpret complex stratigraphic site formations and taphonomic processes associated with multiple harbour foreshore reclamation events.

Relevant Project: Sydney Metro Blues Point Temporary Works Site (2018)

Role: Secondary Excavation Director

Example: The sloping topography of Blues Point Reserve made it slightly difficult to assess the potential of the site, as any rocky outcrops could have been heavily scarped during either the construction of the 1860s structures, or the conversion from domestic and industrial use into a grassed park during the 1970s. The open area excavation revealed that underlying rocky topography of the shoreline had been incorporated into the footings of the retaining walls and seawalls of the site, and

the alignment of the houses had been set slightly askew to reflect the natural ground. Evidence of a natural run-off channel from the higher ground outside the study area down towards the harbour shoreline was carefully recorded in section drawings and photogrammetry. Parts of this channel contained concentrations of shell that is most likely midden material; either eroded downslope from undisturbed middens prior to the construction of the houses, or deliberately introduced to the area for the production of shell or lime mortar. It is hoped that the results of the palynological analysis will help clarify why the shell was present at the site, and the site is a good case study in how natural landscapes can form and be modified during both the pre-European and post-1788 periods.

Limitations re the above:

Excavation strategies, such as test trenching, may influence the interpretation of site formations, while large-scale open area excavations can sometimes obscure stratigraphic relationships. I am confident of my ability to recognise and address such limitations that are an inherent part of the excavation process. A typical approach to managing challenging sites is to discuss the process with the Excavation Directors and Supervisors to reach agreement on these process as this will then influence recording and interpretation of the archaeology. I approach every site as a unique item that requires flexibility and willingness to embrace new methodologies in response to the specific archaeological record. Any of sites where I have been responsible as a supervisor or site director can speak to my abilities in single context, stratigraphic recording. I have encountered complex stratigraphy with depths of over 3m at 33-35 Pitt St CQT Tower, which is a rare level of preservation on Sydney sites. I have developed the ability to accurately record large and small-scale archaeological sites as well as establish site-specific phasing and interpretation of archaeological remains, as well as contribute to a range of broader research questions. I have experience of all stages of recording, including written, photographic, planning, Harris matrices and sampling methodologies, and best-practice use of survey plans and photogrammetry, which has increased the accuracy of recording the site in the field, and efficiency in writing the excavation report.

Relevant Project: 33-35 Pitt Street CQT (2017-2019)

Role: Secondary Excavation Director

Example: This site was an excellent example of how a cursory examination of artefact and building material date can conflict with stratigraphic and taphonomic information. The ground level across the site had been altered with up to 4m of introduced bulk fills; some fills included early locally produced pottery, including lead-glazed pottery made by Thomas Ball c.1804-1820s, and several fragments of a wine cooler made by John Moreton c.1823-1840s, but the fill appeared to be used as part of a bulk levelling event in the early 1900s. Closer examination of the entire artefact assemblage by a ceramic specialist showed that the fill did indeed seem to be an early 20th-century deposit that contained a few much older ceramic items. The earliest deposits recorded at the site contained similar lead-glazed ceramics, but also included export Chinese ceramics, and had evidence of being mixed by the waterborne motion of the intertidal zone. At this site both open area excavation and test trench methodologies were employed in order to understand the nature of the various fills; accurate recording and survey was essential as the site was excavated over a period of nearly two years. The phasing of the fills was determined by accurate recording of the stratigraphy and knowing the difference between the use of imported fills onto a site (including earlier rubbish deposits from other areas) versus deposits that had been mixed or moved through natural processes such as wave action and sedimentation.

3. EXCAVATION DIRECTOR NEEDS TO DEMONSTRATE HIS/HER ABILITY TO COMPLETE ADEQUATE RECORDING OF STRATIGRAPHY, SOIL, FEATURES WITHOUT NEEDING TO RE-EXCAVATE PREVIOUS TRENCHES; INCLUDING PROVISION OF MEASURED DRAWINGS AND SURVEY.

Any of sites where I have been responsible as a supervisor or site director can speak to my abilities in single context, stratigraphic recording. I have encountered complex stratigraphy with depths of over 3m at the 33-35 Pitt St CQT site, which is a rare level of preservation on Sydney sites. I have developed the ability to accurately record large and small-scale archaeological sites as well as establish site-specific phasing and interpretation of archaeological remains, as well as contribute to a range of broader research questions. I have experience of all stages of recording, including written, survey, photographic, planning, Harris matrices and sampling methodologies. Casey & Lowe provides a team environment for undertaking archaeological recording, including best-practice use of survey plans and photogrammetry, which has increased the accuracy of recording the site in the field, and efficiency in writing the excavation report.

Relevant Project: Parramatta Observatory, Parramatta Park (2014)

Role: Senior Archaeologist / Supervisor

Example: As Supervisor, I was responsible for the majority of the stratigraphic excavation and recording of the archaeological features and natural soil profile. This involved the removal of topsoil across the area, the re-excavation of test trenches that had been excavated a number of years ago, the excavation of new test trenches and investigation of a limited number of features. Given the constraints of testing, rather than open area excavation, I had to be certain that each trench was flawlessly recorded in order to fully understand the site. The methodologies used, including the reason and location of each test trench, the importance of photogrammetry and survey, plans and sections (drawn at 1:50 and 1:20 respectively), sampling strategy, as well as matrices and context sheets are detailed in the forthcoming excavation report. The report discusses the new information about the size and footprint of the Observatory structure that builds on the data from earlier excavations, and provides a clearer understanding of the types of building materials and evidence for dismantling and reuse of building materials during the dismantling or demolition of the Observatory. A limited number of archaeological features survived relating to the construction and use of the Observatory, therefore the response to the research questions relating to the nature of the remains was succinct. I was able to expand on the research questions relating to the significance of the structure and its role in scientific observations and Enlightenment ideas in colonial Sydney by investigating and analysing primary historic resources, such as the images and plans and Historical Records of Australia in relation to the archaeological findings.

4. EXCAVATION DIRECTOR NEEDS TO DEMONSTRATE UNDERSTANDING OF AUSTRALIAN HISTORIC AND ENVIRONMENTAL CONTEXT AS DEMONSTRATED IN ARCHAEOLOGICAL EXCAVATION METHODOLOGY AND RESEARCH DESIGN.

I have authored and contributed to numerous Archaeological Assessments, Heritage Impact Statements and S140 and S60 Applications, the majority of which included an excavation methodology and research design section. A selection of reports with methodologies and research designs related to the PNP/Cumberland Hospital (East campus) area includes:

- *PNP Western Sydney Start Up Hub (WSSH) S60 Application & Archaeological Research Design for Testing.* Report to Property & Development, November 2020.
- *PNP Archaeological Management Strategy & Archaeological Research Framework.* Report to Property & Development, September 2020.
- *PNUT Cumberland Hospital (East campus) Site, Female Factory/Lunatic Asylum Precinct, Historical Archaeological Impact Statement & Archaeological Research Design, S60 Application for Heritage Repairs, Building C104a.* Report to UrbanGrowth NSW, April 2017.
- *PNUT, Norma Parker Centre/Kambala Site, Historical Archaeological Research Design, S60 Application for Underpinning of the Main Building (Building N01).* Report to UrbanGrowth NSW, February 2017.

Other selected reporting is listed in the accompanying CV.

5. EXCAVATION DIRECTOR NEEDS TO DEMONSTRATE HIS/HER ABILITY TO PREPARE A REPORT THAT CLEARLY IDENTIFIES WHAT WAS DONE, WHY, WHAT NEW INFORMATION WAS RECOVERED AND WHAT IT MEANS.

I have authored and contributed to over 50 reports detailing the results of testing, monitoring and open area salvage excavations, all of which have included both summaries and detailed discussion of the purpose, context and results of archaeological investigations. A selection of reports of monitoring and testing at to the PNP/Cumberland Hospital (East campus) area includes:

- *PNP Norma Parker Centre/Kamballa Archaeological Monitoring, 2023*. Report to Property & Development, April 2024.
- *PNP Western Sydney Start-Up Hub (WSSH) Archaeological Monitoring 2022*. Report to Property & Development, April 2024.
- *PNP Western Sydney Start-Up Hub (WSSH) Archaeological Testing 2021*. Report to Property & Development, November 2021, updated April 2024.
- *PNGC Cumberland Hospital (East Campus) Site & Norma Parker Centre/Kamballa Site, Historical Archaeological Testing Report Volume 1*. Report to UrbanGrowth NSW Development Corporation, November 2018.

Other selected reporting is listed in the accompanying CV.

TEST EXCAVATION

STATE SIGNIFICANCE

6. EXCAVATION DIRECTOR NEEDS DEMONSTRATE HIS/HER ABILITY TO MANAGE/WORK WITHIN A MULTI-FACETED TEAM OF HERITAGE PROFESSIONALS;

Every site brings together various professions and experts, and part of the challenge is to ensure that the archaeological works are carried out smoothly and in conjunction with the requirements of other heritage professionals. At times, this means prioritising tasks to yield accurate information for or finishing areas in a particular order to progress the overall works. At other times it is necessary to clearly and concisely communicate why the archaeology program must be prioritised in order to provide an appropriate heritage outcome.

Relevant Project: Sydney Metro Barangaroo Station (2018)

Role: Secondary Excavation Director

Example: The biggest collaborative team I have managed was during the final weeks of the salvage of the pre-1855 timber wreck UDHBI on Parramatta Station where I was responsible for the management of a diverse team of archaeologists, maritime archaeologists and conservators, many of whom had never worked on a construction site before. Negotiating the differing approaches and attitudes of a team of 50+ people under extraordinarily difficult working conditions and immensely tight timeframe was challenging, particularly as I had been bought in to manage the project towards the end of the program and had no previous experience with maritime archaeological or conservation protocols. But by employing enthusiasm, good humour and a great deal of tact I was able to support the Primary Excavation Director and complete the project as quickly as humanly possible and to an international-standard of recording and conservation.

7. EXCAVATION DIRECTOR NEEDS TO DEMONSTRATE HIS/HER COMMITMENT TO OPERATING WITHIN THE PRINCIPLES OUTLINED IN RELEVANT HERITAGE COUNCIL'S GUIDELINES AND POLICIES, INCLUDING BUT NOT LIMITED TO: *HISTORICAL ARCHAEOLOGY CODE OF PRACTICE AND THE BURRA CHARTER.*

I have always endeavoured to meet the highest standards of best practice and ethical conduct. Every report and excavation has always been undertaken with reference to the Heritage Council's guidelines and in accordance with specific policies. My experiences in excavating in the Republic of Ireland, Northern Ireland, and UNESCO World Heritage Sites in Cyprus, Tasmania and Parramatta have also given me a grounding in international best practices and a wider understanding of heritage and archaeological principles.

Relevant Project: Stage 1 Penitentiary Ablutions Block, Port Arthur Historical Management Authority (2015)

Role: Senior Archaeologist / Planner

Example: As one of only 6 archaeologists chosen to work on the largest excavations ever undertaken at the Port Arthur Historic Site, I was able to share my experience working within NSW Heritage legislation and guidelines, while also adapting to specific UNESCO best practices as set out in the PAHSMA CMP and other documents such as the ICOMOS Burra Charter. This was the first time I had a participatory role using survey and photogrammetry equipment, and specialist onsite artefact conservation equipment, all of which are normally outsourced to a specialist on Sydney historical excavations. This gave me far more insight into the strengths and weaknesses of these technologies, and how they can best be applied.

MONITORING

LOCAL & STATE SIGNIFICANCE

1. EXCAVATION DIRECTOR NEEDS TO DEMONSTRATE PREVIOUS EXPERIENCE WITH AND DEMONSTRATED UNDERSTANDING OF HOW TO USE A MACHINE EXCAVATOR EFFECTIVELY AND SAFELY

I have monitored excavations using 3-tonne to 30-tonne machines on urban and industrial sites including Darling Harbour Live (Exhibition & Convention Centre), Haymarket; PS 3, Parramatta Square; and Cumberland Press. I have also carried out machine excavations in rural sites in Western Sydney (three sites at former ADI Site, St Marys) and Northern Ireland (Co Tipperary bog projects, Kernan Hill to Derryvale Pipeline). As such, I have been responsible for the safety of myself, the machine operator and other archaeologists and workers in a variety of landscapes and conditions, from 40-degree Australian heat, to the pouring rain of Irish bogs.

Relevant Project: 4-6 Parramatta Square, 12-28 Darcy Street (2016)

Role: Site Director

Example: As Site Director, I undertook a large amount of machine excavation prior to any other staff being onsite. There were three machines onsite; a 30-tonne excavator, a 15-tonne excavator and a 5-tonne excavator. I determined which machine was suitable for the site-specific tasks, often having to argue my case forcefully with the civil contractors such as explaining the gross unsuitability of using a 30-tonne excavator (which we had not requested) to do anything apart from hammer and remove the concrete slabs. With an almost daily change of operators, I had to specify that we were only happy using two or three operators who I decided had the delicacy and skill for archaeological excavation. I personally wrote and delivered a tool box talk to every operator who was working onsite to discuss the types of fabric we were expecting, the use of slow, careful, horizontal excavation, the importance of communicating with the archaeologist, and the reciprocal need for the operator to tell the archaeologist if any of the tasks or conditions may create a safety concern.

2. EXCAVATION DIRECTOR NEEDS TO DEMONSTRATE ABILITY TO UNDERSTAND WHEN IT IS NECESSARY TO CHANGE FROM MACHINE TO MANUAL INVESTIGATION

The decision to switch from machine to manual investigation is dependent on many things including the underlying topography and soil landscape, the types of remains expected and depth of surviving fill. I am confident in my ability to make this decision based on my experience of machine excavating 3+m of fill across the Tank Stream Valley with no impacts to the delicate timber structures from first decades of the colony, the sun-baked basal clays and river sand terraces of Parramatta, and the rocky bedrock outcrops of the harbour foreshore.

Relevant Project: 33-35 Pitt St CQT (2017-2019)

Role: Secondary Excavation Director

Example: This site was located on the western edge of the Tank Stream Valley at Sydney Cove, and had multiple phases of bulk fills totally 3+m over timber fences and walkways dating from the early 1800s. As it was staged excavation over several years I had to balance the needs of moving quickly to meet area hand-overs with the importance of protecting the fragile waterlogged timbers, as well as determining the safest and most appropriate locations to dig large test trenches to investigate the underlying topography and natural deposits including extensive shell beds. The shift from machine excavation to hand excavation was often made multiple times a day in the most sensitive areas to ensure best-practice recording and sampling strategies were used.

Qualifications Bachelor of Sciences (Hons) Archaeology and Palaeoecology, Queens University Belfast, 2003

Employment History

2024– Present	AMBS Ecology & Heritage, Australia – Senior Heritage Consultant
2016 – 2024	Casey & Lowe – Senior Heritage Consultant and Manager
2016	Port Arthur Management Authority, Archaeologist
2013 – 2016	AMBS Ecology and Heritage, Australia – Project Officer
2009 – 2013	Freelance Archaeologist
2003 – 2008	Archaeological Development Services, Ireland – Archaeologist

Expertise

- Historic and pre-historic archaeological excavation.
- Historical research.
- Archaeological monitoring.
- Archaeological photography and planning.
- General site management and client co-ordination.
- Ability to teach and supervise students, volunteers and junior staff.
- Excavation of human remains.
- Able to carry-out processing, cataloguing and statistical analysis of a variety of artefacts.
- Archaeological excavation analysis.
- Good communication and interpersonal skills.

Professional Affiliations

- Member of ASHA, 2014-Present

Select Bibliography & Presentations

- Various presentations to Sydney Metro Heritage Working Group and DeMestre family, Hunter Street West ETP (2024-2025)
- Historic Archaeological Excavations at Pitt Street North, Sydney Metro Station (2023)
- 8PS 160 – 180 Church Street, Parramatta, Trench Report Area P, Lot 16 for Walkers, (2023)
- Historical Archaeological Excavations at Prince of Wales Hospital, Campus Extension, Randwick (2019)
- Historical Archaeological Excavations at 2-6 Hassall Street, Parramatta (2019)
- Archaeological Testing, Western Sydney Stadium, for Lendlease (2019)
- Guided tours of the Penitentiary excavations, Port Arthur Historic Site (PAHSMA), Tasmania (2016)
- 14-28 Ultimo Road, Ultimo Historical Archaeological Excavation Report for The University of Technology Sydney (2015)
- Fairfield Transport Interchange Upgrade: Archaeological Report & Archival Photographic Recording for Transport NSW (2015)
- Barangaroo South, Trench Report, Area L for Lendlease (2024)
- Brookvale Community Health Centre: Historic Heritage Impact Assessment and Preliminary Aboriginal Heritage Assessment for Johnstaff (2015)

- M1 Pacific Motorway widening and replacement, Tuggerah to Doyalson: Historic Heritage Impact Assessment for SMEC Australia Pty Ltd (2014)
- 141-149 Bathurst Street, Historical Archaeological Assessment and Research Design for NBRS + Partners, 2013

Professional Experience

Ronan has been a consultant archaeologist for over twenty years, and during this time he has worked on historic and prehistoric archaeological excavations in Australia and in Ireland. Ronan's specialist areas include archaeological excavation, analysis, report writing and, artefact and soil sample processing. Ronan has been an archaeological consultant on a wide range of development projects including motorway construction, housing developments, gas pipeline installations, Storm water out flows and renovations to heritage listed buildings. Ronan was a senior archaeologist with the University of Sydney's annual mission to Paphos, Cyprus between 2010 and 2014 and worked on excavations at Port Arthur in 2016.

Select Key Projects

AMBS ECOLOGY AND HERITAGE 2024 - present

- Eastern Tunnel Project, Sydney Metro, Hunter Street (Excavation Director), October 2024-present

CASEY & LOWE 2016 - 2024

- 2-6 Hassall Street, Sydney, April-May 2019, (Secondary Director)
- Prince of Wales Hospital, Campus Extension, Randwick, February-March 2019 (Secondary Director)
- Blues Point Metro Site, Sydney, November 2018 (Site Director)
- Ravensworth, Glencore Mine, November 2018 (Site Director)
- Barangaroo Metro Station, Sydney, August-October 2018 (Site Director)
- Pitt Street North, Park Street Sydney, April – June 2018 (Site Director)
- Waterloo Metro Station, Waterloo, Sydney, December 2017 – April 2018 (Supervisor)
- Western Sydney Stadium, Parramatta, June- September 2017 (Supervisor)
- 160 – 182 Church Street (Parramatta Square, 8PS), January – May 2017 (Supervisor)
- 12-38 Darcy Street (Parramatta Square, PS4-6), September – October 2016 (Assistant Surveyor).

- Darling Harbour Live, Northeast Plot, August – September 2016 (Senior Archaeologist)

PORT ARTHUR HISTORIC SITE MANAGEMENT AUTHORITY 2016

- Excavations in the Penitentiary Yard, January -March 2016 (Archaeologist)

AUSTRALIAN MUSEUM CONSULTING 2011 - 2016

- Inner West Light Rail Extension, Sydney, January 2013 – June 2014 (Senior Archaeologist)
- Fairfield Transport Interchange, Fairfield, 2014 (Supervisor)
- 34 - 42 Union Street, McMahons Point, 2014 (Secondary Director)
- 209 Castlereagh Street, Sydney, January – May 2014 (Supervisor)
- Dr Chau Chak Wing Building, Ultimo, Sydney, November 2011 – November 2014 (Senior Archaeologist and Report Author)

EXCAVATION DIRECTOR APPLICATION
RONAN MC ELENEY, SENIOR HERITAGE CONSULTANT
AMBS ECOLOGY AND HERITAGE



1. A TERTIARY HONOURS (OR MASTERS/PHD) DEGREE OR GRADUATE DIPLOMA IN ARCHAEOLOGY AND THREE YEARS RELEVANT AND CUMULATIVE PROFESSIONAL EXPERIENCE* IN HISTORICAL ARCHAEOLOGY OR A RELATED ARCHAEOLOGICAL FIELD.

Tertiary Honours Degree:

Bachelor of Science (Hons), Archaeology and Palaeoecology – Queens University Belfast - 2003

I have 22 Years Professional Experience in Historical Archaeology:

- 2024- Present: AMBS Ecology & Heritage, Sydney, Senior Heritage Manger
- 2016 - 2024: Casey & Lowe Archaeology and Heritage, Sydney, Senior Archaeologist
- 2013 - 2016: Australian Museum Consulting, Historic Heritage, Project Officer/Archaeologist
- 2012: Casey & Lowe Archaeology & Heritage, Sydney, Archaeologist/Supervisor
- 2012: Kelleher Nightingale, Consultant Archaeologist
- 2011 – 2012: Australian Museum Business Services, Project Officer
- 2009 – 2011: Archaeological Development Services (NI), Belfast, Consultant Archaeologist
- 2010 – 2013: University of Sydney's archaeological excavations at Nea Paphos in Cyprus, Senior Team Member, Trench Supervisor
- 2008 – 2009: Casey & Lowe Archaeology & Heritage, Sydney, Archaeologist/Supervisor
- 2003 – 2008: Archaeology Development Services (NI), Belfast, Consultant Archaeologist

I have been employed as an archaeologist in either sub-contractor or permanent positions continually since 2003 with Archaeological Development Services Ltd in Ireland (2003 – 2008 and 2009-2011), Casey & Lowe Pty Ltd (2008-2009, 2012, 2016-2024), Kelleher and Nightingale Consulting, NSW Aus (2012), Australian Museum Business Services (2013-2016) and my current position at AMBS Ecology and Heritage. I have 14 years' experience as a site director in historical archaeology in NSW. I have managed/supervised the excavation of a range of site types including residential, commercial and industrial. I have been secondary Excavation Director for open area excavations at locally significant sites and testing excavations at State Significant sites, and Site Director at State and locally significant sites in NSW.

2. A DEMONSTRATED UNDERSTANDING OF NSW HERITAGE LEGISLATION ASSESSING HERITAGE SIGNIFICANCE CRITERIA AND RELEVANT ARCHAEOLOGICAL GUIDELINES/BEST PRACTICE METHODS AND STANDARDS INCLUDING, BUT NOT LIMITED TO, RELEVANT ARCHAEOLOGY PUBLICATIONS ISSUED BY THE HERITAGE COUNCIL OF NSW.

I have been employed as an archaeologist within Australia since November 2011, having also spent a year working in Australian historical archaeology in 2008/2009. I have been the primary author and contributed to archaeological assessments, impact assessments, research designs, interpretation strategies, specialist artefact reports and final excavation reports. In 2013 I completed the 141 -149 Bathurst Street, Historical Archaeological Assessment and Research Design. During 2014 I completed the following archaeological reports: Fairfield Transport Interchange Upgrade: Final Archaeological Report, 77 Kent Street, Millers Point: Excavation Report and Inner West Light Rail Extension: Final Archaeological Report. In 2015 I completed the-34-42 Union Street Excavation Report. In 2019 I completed co-writing the archaeological testing report for Parramatta Stadium. I contributed a trench report for Casey & Lowe's Excavations at Barangaroo South. In 2023-2024 I prepared a trench report for excavations at 8 Parramatta Square and three of the four trench reports for Casey & Lowe's excavation at Pitt Street North Metro Station, for which I also compiled and edited the final report. These documents were prepared in accordance with, and reference to the *Burra Charter* (The Australia ICOMOS charter for the conservation of places of cultural significance), the NSW Heritage Manual (1996), published by the Heritage Office and Department of Urban Affairs and Planning (now the Heritage Branch, Office of Environment and Heritage, Department of Premier and Cabinet), and associated supplementary publications including Archaeological Assessments (1996), Assessing Heritage Significance (2001) and Assessing Significance

For Historical Archaeological Sites and Relics (2009). Where appropriate, during excavations I adhere to the recording standards and conventions set out in the Archaeology Site Manual published by the Museum of London Archaeology Service (1994).

I have sound knowledge of the requirements of Sections 139 to 146 of the Heritage Act 1977, for locally significant archaeological sites, and Sections 57 to 69 of Part 4, for State significant sites. I have experience in developing appropriate excavation methodologies and strategies for individual sites and understand that assessing the significance of an archaeological resource is an ongoing process and it is essential that constant assessment continues throughout the excavation process and during the final reporting stage. The assessment of significance for any heritage item should always begin with the NSW heritage assessment criteria and significance assessments are based on these criteria.

3. DEMONSTRATED EXPERIENCE IN THE INVESTIGATION OF COMPARABLE OR RELEVANT HISTORICAL ARCHAEOLOGICAL SITES (ESPECIALLY AUSTRALIAN HISTORICAL ARCHAEOLOGY) PROJECT MANAGEMENT AND PREPARING WRITTEN ARCHAEOLOGICAL ASSESSMENTS/SITE MANAGEMENT RECOMMENDATIONS.

I began my career as an archaeologist in Ireland, where I worked with Archaeological Development Services Ltd (ADS Ltd) between 2003 and 2008 and again during 2010-2011. I worked as a site assistant and then archaeologist on a wide range of infrastructure and residential projects, excavating sites ranging from Neolithic sites through to the Post Medieval period. These sites were in a variety of settings, including rural arable land, wetlands and high-density urban environments.

Since commencing my archaeological career in Australia, I have worked on historical archaeological excavations of local and state significance primarily in the greater Sydney Area of NSW but also in Port Arthur in Tasmania. I have supervised and/or directed the open area excavation of historical archaeological remains, involving both small and large teams, at Hunter Street (Sydney Metro West ETP), Barangaroo Station (Sydney Metro City and Southwest TSE) 8 Parramatta Square, 141 -149 Bathurst Street Sydney, Darling Walk in Darling Harbour and Barangaroo South Stage 2. I have worked in a supervisory and/or management capacity on three previous sites in Darling Harbour, detailed below, and this experience has familiarised me with the features that may be encountered at Barangaroo Central, such as sandstone seawalls, wharf structures, yard surfaces and weigh bridges.

Relevant Project: Darling Walk, 2008.

Role: Supervisor

Example: In 2008, working as a subcontractor for Casey and Lowe Pty and in addition to other roles on site, I supervised the excavation of Barkers Mill Pond on the Darling Walk site. The mill pond was constructed of long timbers and clay and was filled and levelled in the 1860s with rubbish deposits. Some of the key elements of that area were the timber and clay sidings of the pond itself, a stone water channel and a timber sluice cut through reclamation fills and leading to the earlier foreshore of the harbour. I was responsible for the excavation, cleaning and recording of the area, while supervising a team of archaeologists and student. I also monitored the mechanical removal of overburden material separating each of the phases. Elsewhere on the site I assisted in the excavation and recording of wharfs and other foreshore features. The site was multi-phased and involved the investigation of 19th century residential houses, industrial structures and yards, reclamation fills and natural deposits.

Relevant Project: Barangaroo South, 2012.

Role: Supervisor

Example: In 2012, again working as a subcontracted supervisor for Casey and Lowe Pty, I supervised the excavation of a portion of Grafton Wharf. I was responsible for the excavation, cleaning and recording of the area, while supervising a small team of archaeologists. I also monitored the mechanical removal of overburden. The excavation area I supervised contained multiple phases of deposits, structures related to Grafton Wharf, a sea wall and timber wharf structures. Building on the experience I had from working on the Darling Walk, I was able to identify building materials and attribute them to an archaeological phase as well as clearly interpret the functions of the various spaces in each of the phases, offices, manufacturing areas, road ways, yards etc.

Relevant Project: Sydney Metro City and Southwest – Tunnel, Stations and Excavation Works Barangaroo Station, 2018.

Role: Site Director/Archaeology Manager

Example: As Site Director of excavations at Barangaroo Station, I was responsible for overseeing the implementation of the excavation methodology under the Excavation Director. I was also responsible for monitoring the mechanical removal of overburden and reclamation fills over and around foreshore features such as sea walls and wharfs. These duties led to the discovery of the Barangaroo Boat (UDHB1) and monitoring further, more detailed, mechanical excavation to expose its extent and setting. As Site Manager, my duties included liaising with the client around time frames and the provision of equipment, storage areas and health and safety issues. It also involved sourcing and procuring conservation materials.

4. ABILITY TO DEMONSTRATE THAT WORK UNDER ANY APPROVALS PREVIOUSLY GRANTED BY THE HERITAGE COUNCIL HAS BEEN COMPLETED IN ACCORDANCE WITH THE CONDITIONS OF THAT APPROVAL AND THE FINAL REPORT HAS BEEN SUBMITTED TO THE HERITAGE COUNCIL.

I have previously been Primary Excavation Director for the following SSD approvals:

- Sydney Metro Eastern Tunnel Project (ETP) – Historical Archaeology Director; a multi-site project involving testing and open area salvage excavations of both State and locally significant archaeology. This project is nearing completion, with final reporting in preparation.

I have previously been Secondary Excavation Director for the following S140 approvals:

- 34-42 Union Street, McMahons Point, Application no. 2014/s140/25 (Testing & Salvage).
- 2B-6 Hassall Street, Parramatta, Application no. 2018/s140/030 (Testing and Salvage).
- Prince of Wales Hospital Randwick Campus Redevelopment, Application no. 2018/s140/035 (Testing and Salvage).

I have also been named Secondary Excavation Director on the following S60 and S65 approvals:

- Liverpool Courthouse (former) and potential archaeological site, Application no. HMS ID 2548
- Hadley Park, Castlereagh, Application no. HMS ID 2088 (completion pending)
- Bay 5 ASN Building, The Rocks (completion pending)
- Catherine Park House, Drainage Works (completion pending)

These projects were completed in accordance with the permit consent conditions for the fieldwork components and methodologies as established in the Assessment and Research Design and for reporting requirements, except when noted as completion pending.

5. ADDITIONAL INFORMATION - HISTORICAL ARCHAEOLOGICAL FIELDWORK EXPERIENCE

<i>Test Excavation – Local Significance</i>	
<ul style="list-style-type: none"> • Excavation Director needs to demonstrate his/her understanding of the meaning (date, type, common application in the past) of basic fabric types likely to be encountered) • Excavation Director needs to demonstrate his/her ability to recognize and interpret taphonomic processes and his/her meaning; • Recognition by the Excavation Director of any limitations of the above • Excavation Director needs to demonstrate his/her ability to complete adequate recording of stratigraphy, soil, features without needing to re-excavate previous trenches; and • Excavation Director needs to demonstrate his/her ability to prepare a report that clearly identifies what was done, why, what new information was recovered and what it means. 	<ul style="list-style-type: none"> • I have been involved in the assessment, survey and excavation of a range of rural, industrial, commercial and residential site types to sufficiently identify the date and provenance of basic finds and materials likely to be encountered within the study area. I have undertaken a range of assessment and excavation projects which has resulted in my ability to identify basic fabric types. Assessments include 141-149 Bathurst Street Sydney (commercial and residential heritage), M1 Pacific Motorway widening and replacement, Tuggerah to Doyalson (early rural settler homestead) and 34-42 Union Street assessment (urban residential). I have received training from artifact specialists on the identification of building materials from throughout the Australian historical period. • While Studying Palaeoecology at Queens University Belfast I performed fieldwork for and wrote an assignment based on the results on coleoptera remains in peat bogs. This assignment gave me background knowledge of soil formation processes which I would further develop throughout my archaeology career. I have excavated prehistoric sites where the archaeological features were cut into undisturbed natural clays covered by agricultural top soils, urban sites where the natural clay was overlaid by multiple layers of archaeological deposits, reclaimed land where the archaeological features (such as seawalls) had abutted coastlines that had since been altered, Bronze age timber roads that had been preserved in bog land, monitored the removal of naturally deposited sands within a dammed-off section of a river estuary, excavated between 30 and 50 human skeletons from a series of early Christian graveyard sites and excavated test pits on several Aboriginal archaeology surveys. This range of experience has given me the ability to recognize the traits such as the stickiness, plasticity and consistence that differentiate undisturbed sub-soils from archaeological deposits. • I have also encountered a range of natural processes that can have a detrimental effect on the archaeological resources of a given site. These natural processes include river and marine erosion, flood damage and bioturbation. Examples of bioturbation which I have come across include tree-

	<p>bowls (which can be mistaken for postholes), damage from roots and rodent or insect activity. I am confident in undertaking the excavation of a given study area, however, should any fabric or materials be uncovered which I cannot identify, these will be examined by a relevant specialist.</p> <ul style="list-style-type: none"> • I have a high degree of competency in recording archaeological sites using single and multiple-context recording systems and training others how to do so. I have experience in preparing Harris matrices, scale plans and sections and photographic recording to a level which does not require the re-excavation of trenches. I have never needed to re-excavate a previously excavated trench to complete or augment any archaeological recording, nor to my knowledge has anyone else ever had to re-excavate a trench that I have excavated for those purposes. • I have prepared multiple reports that have identified what was done, why, what new information was recovered and what it meant. For example, at 88 Harris Street Pyrmont, I both participated in the mechanical excavation and the recording of 14 test trenches on the site, and authored the archaeological testing report for the site. This report outlined the stratigraphy encountered in each of the test trenches, clearly indicated the presence or absence of archaeological features or deposits and made recommendations on how to proceed with the proposed development on the site. The new information garnered from the testing was used to produce a colour-coded site map that indicated how the archaeological resources of the site should be managed in various areas of the site. This allowed the client to schedule future works to be co-ordinated with the continued archaeological investigation of the site.
<p><i>Test Excavation – State Significance</i></p> <ul style="list-style-type: none"> • Excavation Director needs to demonstrate his/her ability to manage/work within a multi-faceted team of heritage professionals; • Excavation Director needs to demonstrate his/her commitment to operating within the principles outlined in relevant Heritage Council's guidelines and policies, including but not limited to: Historical Archaeology Code of Practice and the Burra Charter 	<ul style="list-style-type: none"> • As Site Director of the testing program of works related to the WSSH project at Parramatta North, I coordinated with heritage architects, surveyors and heritage stone workers. The collaborative nature of this work demonstrated to me the importance of resolving competing priorities when trying to produce a positive heritage outcome. • Undertaking successful archaeological excavations that produce positive heritage outcomes and maximize the information garnered from the archaeological resource requires an understanding of the Historical Archaeology Code of Practice and the <i>Burra Charter</i>. My excavation experience starting in

	<p>Ireland, continuing to Australia and including excavation in the Hellenic theatre in Paphos Cyprus and working on the UNESCO World Heritage site at Port Arthur provided me with a solid understanding of the importance of working within best practice guidelines and polices. I have managed projects in NSW from the initial assessment phase through to the final excavation report whilst ensuring all works were undertaken in line with NSW Heritage guidelines and polices and best practice. These projects have involved the knowledge and expertise of heritage architects, artefact and conservation specialists, soil specialists, photogrammetry and surveyors.</p>
<p><i>Monitoring – Local and State Significance</i></p> <ul style="list-style-type: none"> Excavation Director needs to meet ALL of the requirements listed for “Test Excavation” above, <p>AND Excavation Director needs to demonstrate:</p> <ul style="list-style-type: none"> Previous experience with and demonstrated understanding of how to use a machine excavator effectively and safely; Demonstrated ability to understand when it is necessary to change from machine to manual investigation. 	<ul style="list-style-type: none"> I have approximately 20 years’ experience in undertaking archaeological excavations with a mechanical excavator. With very few exceptions all projects I have worked on in Ireland and Australia have involved the use of machine excavation to reveal archaeological structures and deposits. Projects undertaken in Australia which demonstrate this experience include works on the former Liverpool Courthouse, WSSH Parramatta North (exposing Female Factory structural elements) Parramatta Stadium (identifying potential remains of the first government farm) 209 Castlereagh Street (exposing features relating to an 1810s public house) and directing mechanical clearance of soils around the Barangaroo boat UDHB1 at Barangaroo Metro Station. I also monitored bulk soil excavations at the University of Sydney’s excavations of the Hellenic Theatre at Nea Paphos in Cyprus. I have monitored machine excavators on over fifty archaeological sites in Ireland, Cyprus and Australia and I have never had a reportable safety incident. The key safety issues when working with a machine excavator are to not enter the swing radius of the excavator arm, to always remain within view of the excavator operator and to always make sure that you have the operator’s attention before approaching the excavator. Recently I have been providing more junior staff with on-site training on working with machine excavators. The testing I carried out in the southern car park at Parramatta Stadium which identified the probable remains of a Government Farm building is a good example of my understanding when it is necessary to change from machine to mechanical investigation. The test trench in question was on a raised traffic island. Following the removal of, first the grass on the traffic island and then the

	<p>modern topsoil, a layer of crushed sandstone was exposed. At this point I manually cleaned up the surface of the crushed sandstone deposit, whereupon it became clear that it was a construction fill relating to the concrete curbing surround the traffic island. Changing back to machine excavation the crushed sandstone material was then partially removed. As it was being removed broken and crushed sandstock bricks became visible. This then caused me to cease all machine investigation in the trench and finish the investigation manually.</p> <ul style="list-style-type: none"> • The experience outlined above demonstrates the successful implementation of mechanical excavation prior to commencing hand excavation.
<p><i>Larger Scale/Complex Excavation – Local Significance</i></p> <ul style="list-style-type: none"> • Documentation showing the nominee has been approved as Excavation Director on five (5) or more prior permits for excavation of lesser scope such as archaeological testing or monitoring permits (and/or section 63 approvals) • Excavation Director needs to demonstrate that ALL the abovementioned projects have been completed in accordance with the permit consent conditions; • Excavation Director needs to demonstrate his/her excavation experience as a Site Director or Trench/Area supervisor on at least three (3) sites subject to open area excavation; • Excavation Director needs to demonstrate his/her experience and/or clear evidence of a capacity to: <ul style="list-style-type: none"> (a) manage project timeframes, budgets, client’s requirements; as well as (b) manage community interest/Public Relations issues; AND • Excavation Director needs to demonstrate his/her ability to synthesize excavation and post excavation analysis/historical research into a report that responds to identified research questions and makes a positive contribution to community understanding of the history and significance of the place. • Excavation Director needs to demonstrate his/her ability to manage/work within a multi-faceted team of heritage professionals; 	<ul style="list-style-type: none"> • To date I have been approved Primary Excavation Director on one SSD approval, Secondary Excavation Director on three S140 permits and four S60 and S65 permits. • In 2018 I acted as Site Director on two on the new Sydney Metro Railway Stations; Pitt Street North (now Gadigal Station) and Barangaroo Station. Both of which involved large areas of open excavation. Since 2008 I have been an Area supervisor on multiple historical archaeology sites subject to open area excavation including: Darling Walk, 8 Parramatta Square, 141-149 Bathurst Street and Barangaroo South (Stage 2). All these sites involved the identification, excavation, recording and interpretation of multiple phases of archaeological features and in each case I wrote the relevant Trench Report. • As Site Director during the Parramatta Stadium Archaeology Investigations 2017-2019, I was responsible for excavating and recording multiple trenches to investigate the survival of archaeological remains from the Government Farm in Parramatta Park. I liaised with the client, the civil works team and the Indigenous archaeological team. • I have been involved in several open days since beginning my career in Australian archaeology. Most recently, at the Waterloo Metro Station site, I oversaw the safety preparations to ensure public safety on the site. This involved the establishment of safe walkways around the site and the securing of all deep excavations. I was also involved in the selection of artefacts for display and was on-hand during the day to answer questions from the attendees. At the PNUT site, North Parramatta, I was assigned with presenting a short talk and answering questions on the Asylum for the Criminally Insane. This was a

	<p>uniquely challenging and enjoyable experience given the array of different people who attended, from young children to the elderly, local historians, fellow heritage professionals, government officials and an array of other stakeholders. In 2016, I had the opportunity to work on a three-month long excavation at Port Arthur. The site is a major tourist attraction and a listed World Heritage site and as such could experience numbers of up to 5000 people a day. Working in the penitentiary yard as part of the excavation crew I would answer a huge volume of questions daily about archaeological procedures, the site itself and the artefacts and features uncovered. Working on these various site open days and open sites has increased my appreciation of the public's interest in history and archaeology and heightened my awareness of the importance of positive heritage outcomes for the wider community.</p> <ul style="list-style-type: none"> • In my twenty years as an archaeologist, I have authored multiple assessments, impact statements and research designs; all with the long-term aim of providing cohesive and interesting research questions and evidence for historic lives. I believe that the best method for insuring a positive (and accurate) contribution to the community's understanding of the history and significance of a place is in using both the historical research and the archaeological findings to achieve a balanced picture of that place during its history. I also believe that when the archaeological findings and the historical research do not agree, then this should be highlighted, not as an illustration of the shortcomings of either discipline but as an opportunity for further research. • My experience of onsite historical archaeological investigations has illustrated to me the benefits of using multi-disciplinary collaboration to obtain positive heritage results from excavations. Graphic information obtained from historians can be conveyed to surveyors and photogrammetry to aid in the accurate mapping and interpretation of sites. Final post-excavation reports are always augmented by a series of specialist reports produced by soil, artefact and organic specialists. During production of the 34-42 Union Street Final report I was responsible for managing the production of the specialist reports in conjunction with each of the relevant specialists.
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<i>Larger Scale/Complex Excavation – State Significance</i>	
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<ul style="list-style-type: none"> • Excavation Director needs to clearly demonstrate his/her understanding of the significance and archaeological research potential of sites of State significance 	<ul style="list-style-type: none"> • During my time working for Casey & Lowe Pty Ltd and Australian Museum Business Services I worked on multiple various sites of State significance
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<p>and of the loss of information that can be incurred by application of less than best practice and/or rigorous methods both on-site and during preparation off site (including reviews of the site assessment).</p> <ul style="list-style-type: none">• Excavation Director needs to clearly demonstrate his/her experience in project management of on-site interpretation.	<p>including the Parramatta Female Factory and the First Government Farm Parramatta. I conducted a document review, as a condition of a testing program for Parramatta Square Trunk Sewer project, of the Parramatta Town Drain. This involved a reassessment of significance of the drain, in which I had reassessed Town Drain as being of State Significance. This was done using mapping to estimate the original length of the drain and what proportion of it had been removed over decades of excavation and removal. Ultimately, the reassessment hinged on the degree of loss that had been incurred on the structure and the rarity of the remaining sections of it.</p> <ul style="list-style-type: none">• I believe the key to accurate on-site interpretation is to incorporate information collected in a rigorously prepared heritage assessment and to use it in conjunction with the physical remains encountered on site to identify archaeological features exposed on site, while remaining aware of the inherent shortcomings of historical documentation. An example of where I was able to critically analyze the historical information to interpret the 8 Parramatta Square site, where I correctly identified the rear wall of an 1890s terrace, based on their shape, size and construction materials, close to the present street frontage. This allowed for the remapping of the area to allow for a previously undetected street widening event. I was then able to redeploy the excavation team to other parts of the area to more accurately target the earlier, more significant archaeological remains.
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Curriculum Vitae

Chris Lewczak

B.Archaeology Hons.

Principal Heritage Consultant



Objective

To undertake maritime archaeological assessments that lead to the protection and conservation of maritime heritage sites.

Career History

Chris has an Honours Degree in Historical and Maritime Archaeology from Flinders University. With 25 years of experience as an archaeologist and heritage specialist on maritime archaeological projects, Chris has worked throughout Australia and on international projects. These projects have included gas exploration and infrastructure development, undersea cable route options, harbour and foreshore development.

Chris has extensive field experience in maritime archaeology that includes working on-board survey and dredging vessels, co-ordinating and undertaking archaeological survey and reviewing of geophysical survey data, such as multi-beam, side scan and magnetometer results. Chris has worked in remote locations including on Whaling Station sites in far western South Australia and in Darwin, Australia.

Chris' expertise range from providing technical heritage advice, historical development and impact mapping, through to carrying out impact assessments. He has also carried out guest lectures at various universities specifically relating to archaeological field methods in maritime archaeology and heritage practices.

Areas of Expertise

- Maritime and historical archaeological assessment
- Maritime archaeological survey and excavations
- Historical archaeological excavation (monitoring and test excavation)
- Significance assessment
- Heritage advice and heritage impact assessment
- Conservation Management Plans

Education/Qualifications

- Bachelor of Archaeology (Honours – Maritime Archaeology), Flinders University, 2000

Memberships and Affiliations

Member and Councillor, Australasian Institute for Maritime Archaeology



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Project Examples

Mussel Farming Modification, Jervis Bay, NSW – Underwater Cultural Heritage Assessment

Client: Department of Primary Industries and Regional Development

Role: Project Maritime Archaeologist

Start / End Dates: September 2024 – Ongoing

Scope / Description: Department of Primary Industries and Regional Development are proposing to relocate existing mussel farming leases currently in Jervis Bay, and create new leases to facilitate the growth of aquaculture farming in NSW. As the proposed works would involve the construction of new ropes secured to the seabed, an underwater cultural heritage assessment was required to assess the impact this work would have on known and potential underwater cultural heritage articles in the area. The assessment included potential impacts to submerged cultural heritage landscapes, shipwrecks, sunken WW2 aircraft and other historic articles on and within the seabed. The assessment and design of the works is still ongoing with the project has been designed to minimise impacts to any potential underwater cultural heritage that may be present within Jervis Bay.

Beach Protection and Amenity Nourishment Project, Stockton Beach, Newcastle, NSW – Maritime Archaeological Statement of Heritage Impact

Client: Bluecoast Consulting Engineers for City of Newcastle

Role: Project Maritime Archaeologist

Start / End Dates: June 2023 – February 2024

Scope / Description: City of Newcastle proposed to undertake a sand nourishment project at the southern end of Stockton Beach for the purposes of providing asset protection and amenity. A maritime archaeological assessment was needed as there are two known shipwrecks at Stockton Beach, as well as the potential for another 20 vessels and other possible underwater cultural heritage articles recorded as being in the vicinity of the project area that have yet to be found. The assessment identified the dumping of 100,000 m³ sand would have a minor to negligible impact on the known and potential shipwrecks in the proposed nourishment area.

This nourishment project is proposed to also be used to monitor sand movement across the two known shipwrecks to better understand the potential for accumulation and/or erosion of sand for a larger nourishment project in the future.

Capital Dredging and Scour Protection Works at the Overseas Passenger Terminal – Maritime Archaeological Assessment and Maritime Archaeological Excavation

Client: Port Authority of NSW

Role: Project Lead and Maritime Archaeologist

Start / End Dates: December 2019 – May 2023



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Scope / Description: Chris prepared the maritime archaeological assessment for the proposed capital dredging works proposed at the OPT. The assessment was prepared in association with Cosmos Archaeology, and identified remains associated with the former Wharf No.7 at Campbells Cove. Dredging works would impact the end of the former wharf, where known maritime archaeological remains associated with the former wharf were identified during survey works.

A maritime archaeological excavation was conducted within the Project area under a Section 140 heritage permit from Heritage NSW. The excavation included the placement of two trenches on the seabed, one trench placed in the location between the outer edge of the former wharf and a berthed vessel, and the other placed opposite side of a berthed vessel. These were placed to identify any potential artefact patterning that may have occurred. Also, the second trench was also in an area where vessels moored waiting for berthing space between 1800 and 1901.

The archaeological works recovered over 4,000 artefacts from the trenches, relating to the use of the former wharf, as well as, artefacts relating to the use of the area as a temporary mooring for vessels between 1800 and 1901. The final archaeological report is currently in preparation.

Maritime Archaeological Assessment, archival recording and permit to improve Wharves 1 to 6 at the Cairns Wharf Complex, Cairns

Client: Ports North

Role: Heritage Lead and Maritime Archaeologist

Start/End Dates: April 2018 – April 2020

Scope/Description: Chris undertook a maritime archaeological survey and assessment for the proposed redevelopment of Wharves 1 to 5, and removal of Wharf 6 at the Cairns Wharf Complex. The wharves are listed on the Queensland State Heritage Register and required strengthening to allow for their continued use as a functioning wharf. The Project included the demolition of Wharf 6, a timber wharf constructed during WWII and used by the US for the War in the Pacific. The assessment included the identification of remains of former early wharves constructed in the area, as well as other potential maritime archaeological remains on the seabed and behind the current wharf. The assessment was completed in association with other disciplines, including marine engineering services to develop a strategy for the works to proceed. The assessment involved the successful application for a permit for the works to be completed.

Chris also undertook archival recording work prior to the commencement of construction works, as well as recordings of timber piles and beams during the deconstruction of Wharf 6. The results of the archival recording were used to understand rapid wharf construction used by the US during WWII, and assist with the permanent heritage interpretation installed at the conclusion of the Project.

Maritime Archaeological Statement of Heritage Impact for proposed New Wharves at the Australian National Maritime Museum, Sydney Harbour.

Client: Australian National Maritime Museum

Role: Maritime Archaeologist

Start/End Dates: June 2018 – 2019



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Scope/Description: The Australian National Maritime Museum proposed to construct two new wharves in Darling Harbour to house part of the museums floating collection. Expansion of the ANMM's wharves would be placed over the top of earlier identified wharf structures within Sydney Harbour. Chris undertook a maritime archaeological assessment to identify the potential for remains associated with the former wharves that dated back to the 1880s and assess the potential for unknown shipwreck to be within the construction footprint. The assessment identified potential archaeological remains associated with the early maritime use of the harbour and outlined potential for these remains to be incorporated into the development and ongoing activities at the maritime museum.

The maritime archaeological assessment has resulted in a consideration for the redesign of the proposed wharves constructed to limit impacts potential maritime archaeological remains present on the seabed.

Maritime and Historical archaeological assessment at Carss Park, Sydney

Client: Georges River Council and Office of Environment and Heritage

Role: Maritime Archaeologist

Start/End Dates: 2018

Scope/Description: Chris prepared a desktop maritime and historical archaeological assessment of section of Carss Park where former maritime infrastructure and archaeological remains had been buried under historical reclamation works. The assessment was to facilitate new green development plans along the foreshore of Sydney Harbour, and the works involved excavation of deep foundations for associated infrastructure. Remains of a private house and jetty were discovered during the historical research within the project area and liaison with the (then) NSW Heritage Division was required to identify mitigation options for the proposed works. The greenway development was able to be modified to allow for the development to occur, and not impact on any maritime archaeological remains.

Appendix G – HNSW Comment Matrix

Attachment A – Detailed Environmental Heritage Advice (HNSW HMS ID 11133 – 28 July 2025.)	Response (AMBS)
Maritime archaeologist Chris Lewczak should be updated as co-Primary Excavation Director (ED) for the project.	Updated in Section 5.1 Project Roles (p29), and Appendix A MARDM Section 3.6 Excavation Personnel (p16).
HNSW note that all former maritime infrastructure sites/relics as well as seabed deposits should be considered maritime archaeology. As such, any testing of maritime infrastructure sites/relics and seabed should be supervised by the nominated maritime archaeological ED. Section 6.2 of the ARDM should be updated to reflect this.	New text added in Section 6.2 (p37). Headings 6.2 and 6.3 have been combined to reflect that the historical and maritime archaeological resource will be managed in the same manner under the supervision of the co-Primary Excavation Directors.
The ARDM and MARDEM should be updated to include a decision tree regarding safe access and/or contamination of archaeological trenches/testing areas. The decision tree should define a threshold for safe access and include options for archaeological testing/recording should thresholds be met.	<p>A decision tree showing preliminary guidance for determining safe work conditions and best-practice archaeological methodologies to be employed has been created (Figure 6.2 p.40), this will be refined during the testing program in consultation with the project hygienist, safety officer and/or other suitably qualified person, HNSW and once the in-ground constraints are better understood.</p> <p>New text added to Section 6.2.9: <i>The thresholds for safe work in contaminated areas and PPE/RPE requirements will be determined by the project hygienist, safety officer and/or other suitably qualified person. If best-practice methodologies cannot be employed, advice will be sought from HNSW on how to proceed.</i></p>
HNSW note that the current approach for the management of any identified State significant archaeology is preservation and conservation in situ as a preferred heritage outcome. As such, any proposed mitigation of State significant relics that does not include in situ conservation (including salvage excavation), should be clearly justified in the Testing Results Report (Section 6.2.6).	<p>Additional text added at end of Section 6.2.6 (p39): <i>The testing report will detail the further management and proposed mitigation for any State significant archaeological remains identified in the testing and/or during the course of the next stage of salvage and/or monitoring. Any proposed mitigation measures will require clear and appropriate justification to be developed in consultation with HNSW.</i></p>
Provision for a weekly email summary to be issued to HNSW during archaeological site works. The emails should include a summary of findings,	<p>New section added (p39): <i>Section 6.2.8 Weekly summary and onsite inspections</i></p>

Attachment A – Detailed Environmental Heritage Advice (HNSW HMS ID 11133 – 28 July 2025.)	Response (AMBS)
<p>photographs and any relevant discussion. HNSW will also be given the opportunity to attend regular site visits during archaeological works.</p>	<p><i>AMBS and MTS Heritage are committed to providing best-practice heritage outcomes for the archaeological resource through consultation with HNSW. To this end, we propose to issue weekly summary emails including photographs and discussion of the main findings as the works progress. HNSW will be given the opportunity to inspect the archaeological investigations on a regular basis and will be informed of any substantial and significant finds as soon as practicable.</i></p>
<p>Please update the ARDM to include requirements for the final excavation report to be submitted to HNSW within 12 months following the completion of archaeological work. The final excavation report should also be submitted to the NSW Heritage Library.</p>	<p>Added to Section 6.2.6 Testing Results Report (p38-39) which details how the testing report will be incorporated into the final excavation report.</p>