ABORIGINAL HERITAGE DUE DILIGENCE ASSESSMENT

Bushells Factory Redevelopment

160 Burwood Road

CONCORD

Job No. 2715
June 2017

Heritage 21
CULTURAL BUILT HERITAGE IN THE 21ST CENTURY

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TABLE OF CONTENTS

Cover page: Subject site at 160 Burwood Road, Concord as viewed from the Exile Bay foreshore. (Source: Heritage 21, 30.03.16)

Issue	Description	Date	Issued by
1	Draft report (D1) issued for comment.	07.06.17	KB
2	Report Issued (RI) for Planning Proposal	13.06.17	KB

1.0 INTRODUCTION & STUDY AREA

1.1 Background

Heritage 21 was appointed by NixAnderson, in August 2016, to provide Heritage and Archaeological Consultancy services in relation to the redevelopment of the former Bushells Factory located at 160 Burwood Road, Concord (study area). Heritage 21 commissioned Vanessa Hardy of Cultural Heritage Connections Pty Ltd to undertake a due diligence Aboriginal heritage assessment of the study area.

This *Aboriginal Heritage Due Diligence Assessment* ('report'), in conjunction with a *Statement of Heritage Impact* (June 2017), has been prepared by Heritage 21 on behalf of FreshFood Sydney Pty Ltd and NixAnderson to accompany a Planning Proposal seeking to rezone the site to facilitate future residential development.

1.2 Report Outline and Terminology

The following section (Section 2.0) of this report provides a summary of the environmental context of the study area. Section 3.0 examines the archaeological background and Section 4.0 presents the results of the site inspection. Section 5.0 provides a discussion and presents recommendations arising from the assessment.

The following definition is used throughout this report:

AHIMS: Aboriginal Heritage Information Management System which is maintained by the NSW Office of Environment & Heritage

IMT: A fine-grained siliceous stone known as either 'indurated mudstone' or 'silicified tuff'. While easily recognisable, this stone type is variable and various studies have been unable to conclude whether it sedimentary or igneous. Therefore, it has been suggested that a neutral term 'IMT' be used to describe the material. That term is used in this report.

1.3 Study Area and Potential Impacts

The study area site is located at 160 Burwood Road, Concord and has an area of approximately 3.9 hectares (see Figure 1 and Figure 2 below). It consists of the following lots:

- Lot 2, DP230294
- Lot 398, DP752023
- Lot 399, DP752023
- Lot 5, DP129325

The site includes a multi-storey brick and concrete c 1950s factory building with a prominent chimney stack as well as associated later buildings, roadways, carparks and landscaped areas. The site has a frontage to Burwood Road of approximately 170 metres and also fronts Exile Bay.

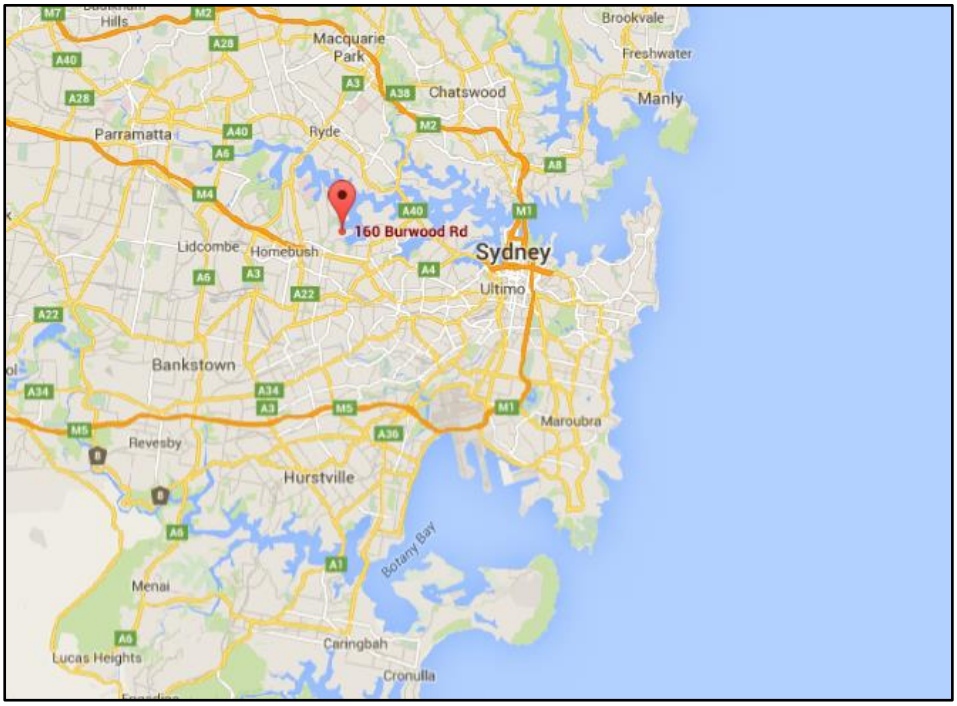

Figure 1. Map showing the location of the subject site indicated by the red arrow relative to Sydney's CBD.[1]

Figure 2. Current aerial photograph of the site (red outline).[2]

[1] Google, 'Google Maps', 2016, http://maps.google.com.au/ accessed 8 March 2016.
[2] NSW Land and Property Information, 'SIX Maps', n.d., http://maps.six.nsw.gov.au/ accessed 8 March 2016.

1.4 Study Area Context and Aims

No Aboriginal objects have been previously recorded within the study area boundaries.

The assessment has been designed to meet the requirements of the former Department of Environment, Climate Change and Water's (DECCW), now Office of Environment & Heritage (OEH), *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (hereafter 'Code of Practice').[3] A summary of the due diligence process is presented in Figure 3.

The major aims of a due diligence assessment includes the following:

- identify whether or not Aboriginal objects are, or are likely to be, present in the area;
- if objects are present or likely to be present, determine whether or not the proposed development activities are likely to harm Aboriginal objects; and
- determine whether further assessment or an Aboriginal Heritage Impact Permit (AHIP) is required.

In order to meet these objectives, the following tasks are required:

- undertake a search of the OEH AHIMS and a review of site cards for those sites within close proximity of the study area;
- check for landscape features which may indicate the presence of Aboriginal objects;
- undertake a desktop assessment using relevant background data to categorise the study area and form predictions about the likely presence of cultural sites;
- liaison with Metropolitan Local Aboriginal Land Council (MLALC);
- undertake a site inspection to check the desktop conclusions as well as to look for Aboriginal objects and any other relevant features that may not have been revealed during background review; and
- if necessary, consider strategies to avoid harming Aboriginal objects.

1.5 Legislation Summary

1.5.1 National Parks and Wildlife Act 1974 (amended 2010)

The *National Parks and Wildlife Act 1974* (NPW Act) protects Aboriginal objects and Aboriginal places in NSW. It has been amended by the National Parks and Wildlife Regulation 2009 (NPW Regulation). Under the NPW Act, the following are offences unless an exemption or defence is provided for under the Act:

- a person must not knowingly harm or desecrate an Aboriginal object (knowing offence)

[3] NSW Department of Environment, Climate Change and Water, *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*, 2010.

- a person must not harm or desecrate an Aboriginal object or Aboriginal place (strict liability offence)

The maximum penalty for the knowing offence is $550,000 or $275,000 (depending on whether there are aggravating circumstances) and 1 or 2 years' goal for an individual. For a corporation the maximum penalty for the knowing offence is $1.1 million. The maximum penalty for the strict liability offence is $110,000 or $55,000 (depending whether there are aggravating circumstances) for an individual or $220,000 for a corporation.

Harm includes acts or omissions that "destroy, deface or damage" an Aboriginal object or Aboriginal Place, and in relation to an object, move the object from the land on which it has been situated. Harm does not include something that is trivial or negligible.

Section 91 of the Act also obliges any person who discovers an Aboriginal object to report it to the OEH for it to be entered on the AHIMS.

An Aboriginal object is defined as:

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

An Aboriginal object is legally protected irrespective of land tenure, the significance of the object and whether or not it has been recorded.

"Aboriginal Places" are places so declared under Section 84 of the Act.

Anyone who exercises due diligence in determining that their actions will not harm Aboriginal objects has a defence against prosecution for the strict liability offence if they later harm an object. Due diligence can be exercised by complying with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*[4] (or industry-specific codes of practice) that has been adopted under the National Parks and Wildlife Regulation 2009. The code provides a process to enable a reasonable determination of whether or not Aboriginal objects will be harmed by an activity or whether further investigation or an Aboriginal Heritage Impact Permit (AHIP) are required.

There is also a range of defined exemptions and low impact activities defined in the Regulation for which due diligence is not required. These include undertaking specified farming, land management, maintenance, surveying or environmental rehabilitation works.

[4] NSW Department of Environment, Climate Change and Water, *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*, 2010.

Clause 80B Defence of carrying out certain low impact activities: section 87 (4)

(1) It is a defence to a prosecution for an offence under section 86 (2) of the Act, if the defendant establishes that the act or omission concerned:

(a) was maintenance work of the following kind on land that has been disturbed: (i) maintenance of existing roads, fire and other trails and tracks,

Under the amended Act a permit will no longer be required to *look for* Aboriginal objects providing the investigation is undertaken in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW*.[5] Archaeological test excavations that follow the code do not require an AHIP. If objects are present and harm cannot be avoided it is necessary to apply for an AHIP.

There are also requirements for consultation with Aboriginal people relating to AHIP applications. These are set out in the *Aboriginal cultural heritage consultation requirements for proponents 2010*.[6]

1.5.2 Environmental Planning and Assessment Act 1979

The *EP&A Act* requires that environmental impacts are considered in land use planning and decision-making. The definition of 'environmental impacts' includes impacts on the cultural heritage of the project area. The Act sets out specific statutory assessment processes including:

- Part 4: Development that requires consent under consideration of environmental planning instruments.

- Part 5: An assessment process for activities undertaken by public authorities and for developments that do not require development consent but an approval under another mechanism.

[5] NSW Department of Environment, Climate Change and Water, *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales: Part 6 National Parks and Wildlife Act*, 2010.
[6] NSW Department of Environment, Climate Change and Water, *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*, 2010.

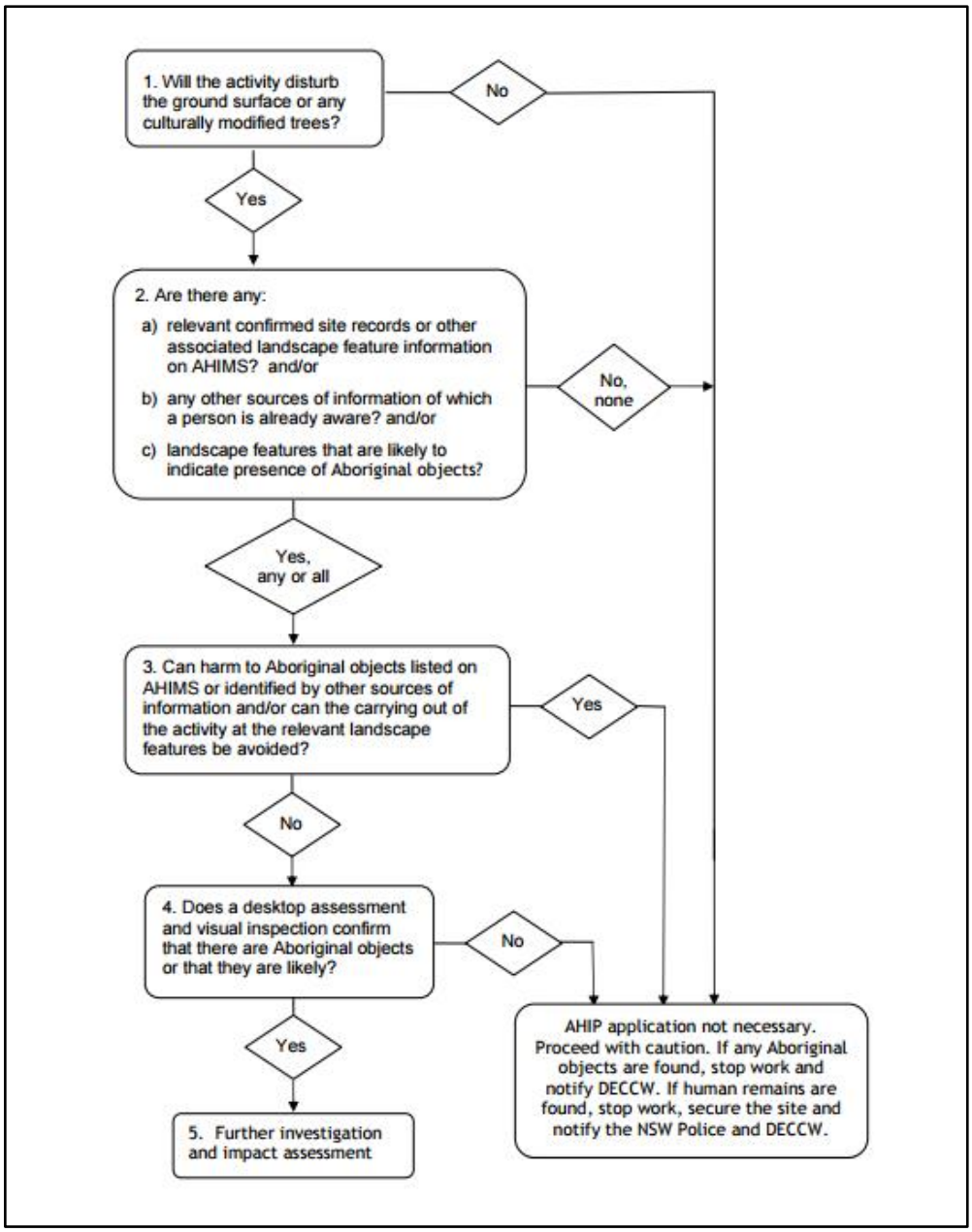

Figure 3. Due diligence process.[7]

1.6 Aboriginal Consultation

The Metropolitan Local Aboriginal Land Council (MLALC) was contacted prior to the site inspection and invited to participate in the due diligence assessment. Unfortunately, the sites officer Jay Daly was unexpectedly unable to attend site on the day the archaeologist attended. Further contact was made to present some information about the nature of the site.

[7] NSW Department of Environment, Climate Change and Water, *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*, 2010.

Heritage 21 and Cultural Heritage Connections recognises that Aboriginal people are the determinants of the cultural significance of their heritage. This is also recognised by OEH who provide a guideline for minimum requirements for consultation with Aboriginal stakeholders.[8] These are only legally required where archaeological testing or an AHIP is required.

1.7 Limitations and Authorship

This assessment is limited to a consideration of the Aboriginal archaeological potential of the study area.

No assessment of the cultural value of the area has been made by Aboriginal stakeholders, therefore the assessment is limited to a consideration of the archaeological (scientific) value and the likely presence of Aboriginal objects.

No assessment of non-Aboriginal archaeological potential has been undertaken.

Analysis of the archaeological background, design of the methodology, field inspection and reporting for the assessment was undertaken by Vanessa Hardy (BA Hons), archaeologist and Director of Cultural Heritage Connections Pty Ltd.

1.8 Copyright

[8] NSW Department of Environment, Climate Change and Water, *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*, 2010.

2.0 ENVIRONMENTAL CONTEXT

Analysis of the environmental context is essential for developing accurate models of cultural activity, site distribution patterns and the archaeological potential of any given area. Environmental characteristics influence the types of archaeological sites. An understanding of how the landscape looked and behaved in the past can help us to predict where Aboriginal people may have undertaken various activities and therefore the types of archaeological sites that may be found in the present. In addition, environmental processes influence the preservation of sites. Heavy erosion or acidic soils are likely to destroy or damage certain types of evidence, reducing the likelihood of locating evidence of past occupation.

The study area is located within the Sydney Basin. Its environmental setting is discussed below.

2.1 Landscape and Geology

The study area is within the Sydney Basin, which is underlain by Triassic sediments. The central portion of the Basin is the Cumberland Lowlands, an area of plains and gently undulating low hills on Wianamatta Group Shales. To the north and south as the Basin rises it is transversed by the drowned valleys of the Parramatta and Georges Rivers. The action of these rivers has exposed the underlying Hawkesbury Sandstone and produced the 'rugged to undulating' valleys of the Harbour Foreshores physiographic region.[9] The study area is within the Harbour Foreshores region fronting Exile Bay on the Parramatta River.

The due diligence Code of Practice provides a list of landscape features which can indicate an area has potential to contain Aboriginal occupation evidence. These are listed as areas on land that is *not disturbed* that are:

- within 200 metres of waters;
- located within a sand dune system;
- located on a ridge top, ridge line or headland;
- located within 200 metres below or above a cliff face; or
- within 20 metres of or in a cave, rock shelter, or a cave mouth.

The study area is within 200 metres of waters, namely Exile Bay. Burwood Road which the project area also fronts, runs along a natural ridge line.

The original landscape of the area would have been sloping down from the south (Burwood Road frontage) to the northern waterfront.

Stone suitable for tool manufacture occurs across the Cumberland Lowlands. Recorded artefacts have been made from silcrete, chert, IMT (see terminology provided in Section 1.2), quartz,

[9] G. A. Chapman and C. L. Murphy, *Soil Landscapes of Sydney 1:100 000*, Sydney, Soil Conservation Service of NSW, 1989.

quartzite and basalt. Many of these materials can be commonly found as cobbles or boulders eroding out of deposits near creek lines. The most commonly recorded material type in the Lowlands is silcrete. Two large outcrops of St Marys formation silcrete occur at Plumpton Ridge and at Marsden Park with smaller outcrops known at Riverstone and Erskine Park.[10] There are other numerous local sources for suitable stone including creek gravels.

2.2 Soils

The study area falls within the Gymea erosional soil landscape.[11] This soil type is common along the Harbour foreshores as well as the Parramatta and Georges Rivers. It is based on Hawkesbury Sandstone geology. The landscape of this soil type is typically undulating to rolling low hills. Slopes range from 10 to 25% with local relief of 20-80 metres. The sideslopes include varying width sandstone benches (10-100 metres) often forming broken scarps.[12]

Topsoil (A1 horizon) of the Gymea Landscape is a loose, coarse loamy sand to sandy loam, porous with an apedal single grained structure. Its colour can range from brownish-black where high levels of organic matter are present to a bleached dull yellow-orange. Its pH ranges from slightly to strongly acidic. Sandstone and ironstone inclusions are common. Where erosion has occurred underlying clayey sands and sandy clay subsoils can be exposed. Bedrock may also be exposed.

On crests up to 30 centimetres of A Horizon generally overlies bedrock or B Horizon soils. Sideslope soils are discontinuous and rock outcrop may be present. Up to 30 centimetres of A Horizon is commonly present on the inside and outside of benches.[13]

A geotechnical report indicates that the site "*comprises a sequence of topsoil/concrete/asphalt overlying, fill overlying, natural soils, overlying, bedrock*".[14] Groundwater was found at 2.5 m in BH9.[15]

The fill was classified as silty/sandy clay with medium to high plasticity, generally well-compacted and included some sandstone floaters. Natural soils were predominantly medium to high plasticity silty clay and silty sand with some gravel. Bedrock was sandstone. The majority of the boreholes show that any residual topsoils likely to contain archaeological deposits are either not present or have been removed as part of the filling process. However four of the boreholes BH3, BH4, BH7 and BH8 all contained alluvial deposit.[16]

[10] Jo McDonald Cultural Heritage Management Pty Ltd, *Rouse Hill Infrastructure Project (Stage 3) Balmoral Road Release Area Indigenous & European Heritage Issues*, unpublished report to Rouse Hill Infrastructure Consortium (RHIC), 2002.
[11] G. A. Chapman et al, *Soil Landscapes Series Sheet 9130*, Sydney, Soil Conservation Service of NSW, 1989.
[12] G. A. Chapman and C. L. Murphy, *Soil Landscapes of Sydney 1:100 000*, Sydney, Soil Conservation Service of NSW, 1989.
[13] G. A. Chapman and C. L. Murphy, *Soil Landscapes of Sydney 1:100 000*, Sydney, Soil Conservation Service of NSW, 1989.
[14] Geotechnique Pty Ltd, *Proposed Redevelopment 160 Burwood Road: Concord Preliminary Geotechnical Investigation*, 2014.
[15] Geotechnique Pty Ltd, *Proposed Development Robert TImms Factory Site (Bushells) 160 Burwood Road: Concord Contamination Assessment of Soil*, 2014.
[16] Geotechnique Pty Ltd, *Concord Preliminary Geotechnical Investigation*, 2014.

In BH3 a fine to medium grained grey silty sand was located between 2.5 and 3 metres depth overlying weathered sandstone. In BH4 a fine to medium grained brown grey alluvial silty sand was recorded between 0.75 and 1 metre. In BH7 a fine to medium grained grey brown alluvial silty sand was found between 2.5-3 meters. In BH8 a fine to medium grained brown silty sand with some ironstone was recorded under 40 centimetres of fill to a depth of 1 metre.[17] The location of the boreholes is shown in Figure 4.

Figure 4. Location pf boreholes discussed in text.[18]

2.3 Flora and Fauna

The vegetation communities of the greater Sydney area have over 200 species with edible parts.[19] Many plants were exploited as a minor food resource, for example berries or plant nectars. Aboriginal firing of the landscape may have resulted in opening up of grasslands in the valleys and ridge tops, which, in turn, increased the habitat for large macropods.

The study area has been completely cleared since European settlement. In the past the area would have provided a wide variety of flora and fauna resources for the Aboriginal communities who lived there.

[17] Geotechnique Pty Ltd, *Concord Preliminary Geotechnical Investigation*, 2014.
[18] Geotechnique Pty Ltd, *Concord Preliminary Geotechnical Investigation*, 2014.
[19] V. Attenbrow, *Sydney's Aboriginal Past: Investigating the archaeological and historical records*, Sydney, UNSW Press, 2002.

The study area would have been vegetated with eucalypt woodland on sandy soils on Hawkesbury sandstone.[20] Trees in this area included red bloodwood (*Eucalyptus gummifera*) and smooth-barked apple (*Angophora costata*). Sheltered slopes may also include black ash (*E. sieberi*), Sydney peppermint (*E. piperita*). Shrubs included Coast Banksia (*Banksia integrifolia*), Black she-oak (*Allocasuarina littoralis*) Cheese Tree (*Glochidion ferdinandi*) and *Melaleuca nodosa.*[21]

Wood was used to make canoe poles, weapons, woomeras, boomerangs and was used for firewood. Plant resins were used to fix parts of tools together. Bark was used for huts, carrying vessels, canoes, shields, fishing lines, bedding, blankets and torches, amongst other things.[22] Fibres were used to make ropes that could then be used in traps and nets for trapping animals, birds and fish. Local knowledge of medicine plants was also an important part of Aboriginal culture.

Animal resources were important to the Aboriginal people of the region, not only as a food source but because they could also be used for manufacturing. The use of animal skin clothing and animal bone tools has been well documented.

Most Australian land mammals are available all year around as they are not migratory; however, some may be easier to catch at certain times, for example possums are less active in the winter months. Possums are frequently referred to as part of the diet of Aboriginal people in inland Sydney areas. It was thought that a marked difference would be found between the inland and coastal diet of groups in the Sydney area, due to the coastal availability of fish and shellfish. However, many of the same animal species are found in bone remains excavated at archaeological sites. In general, macropods are common and would have formed an important part of the diet.[23] Water based plants and animals would also have been exploited in the local area. Other less permanent resources include migratory birds, such as the mutton bird, and seasonally available eggs of both birds and reptiles.

Overall, the resources available to inhabitants of the study area region could have provided a varied and generally reliable resource to sustain the many economic and social requirements of large Aboriginal groups.

[20] D. Benson and J. Howell, *Taken for Granted: The bushland of Sydney and its suburbs*, Kenthurst, Kangaroo Press Pty Ltd, 1990.
[21] Benson and Howell, *Taken for Granted* &. Chapman and Murphy, *Soil Landscapes of Sydney 1:100 000*.
[22] V. Attenbrow, *Sydney's Aboriginal Past*, 113.
[23] V. Attenbrow, *Sydney's Aboriginal Past*, 71.

2.4 Land Use History

As mentioned above, the subject land is currently occupied by a factory and associated buildings as well as landscaped areas, access roads and car parking. It appears that the current phase of construction was undertaken in the 1950s and continued into the 1980s. An aerial photo (see Figure 5) from c. 1943 shows the land occupied by a jetty and associated building pre dating the current site buildings. Prior to this the nearby land had been extensively filled and reshaped. Land reclamation was undertaken in Exile Bay. The adjacent area that is now golf course would have been largely wetlands. The area was then used for dumping rubbish and subsequently filled.[24] Figure 6 shows reclamation works in the 1930s. The study area would have been a sloping sandstone landscape adjacent to the mangrove and salt marsh. Further information relating to land tenure and the later phases of development of the area is presented in the *Statement of Heritage Impact* prepared by Heritage 21 (June 2017) and will not be repeated here.

Figure 5. Detail from 1943 aerial imagery of the subject site with the approximate boundaries indicated. [25]

[24] Benson and Howell, *Taken for Granted*, 56.
[25] NSW Land and Property Information, 'SIX Maps' accessed 8 March 2016.

Figure 6. Reclamation works at Exile Bay, c.1930.[26]

[26] City of Canada Bay Council, 'Canada Bay Image Library', accessed 16 March 2016, http://imagelibrary.canadabay.nsw.gov.au/Library/#1458173124818_0.

3.0 ARCHAEOLOGICAL CONTEXT

For the purposes of determining settlement and site location patterns, archaeologists examine regional and local trends in the distribution of known sites in relation to environment and topography. This information can be used to provide a picture of behaviour in the past as well as indicate how evidence of that past behaviour might be preserved in the archaeological record. The following provides a brief overview of known regional and local archaeological evidence.

Timing of the Aboriginal occupation of the Sydney region has been subject of some research. An early date (41,700 +3000/-2000 BP (years before present)) was taken from artefacts found in gravels of the Cranebrook Terrace on the Nepean River[27], however there is some disputes over the actual age of the deposits.

A site (RTA-G1) excavated by McDonald from the Parramatta Sand Sheet in the city centre of Parramatta has been dated to 30,735 +/- 407 BP.[28] This date is considered more reliable. A rock shelter site north of Penrith on the Nepean, known as Shaws Creek K2, is another Pleistocene dated site, dated to 14,700 +/- 250 BP.[29] More recently, a salvage excavation at Pitt Town on the banks of the Hawkesbury River has the lowest deposits containing artefacts dated to 15,000 BP.[30]

The evidence of site dates demonstrates that Aboriginal people have inhabited the region for many thousands of years. In light of this it is expected that a range of evidence of that past habitation may be present.

Many hundreds of artefact sites (also known as open campsites or artefact scatters) have been recorded within the Cumberland Lowlands. This is despite the fact that at least 50% of the Cumberland Plain has already been developed to such an extent that any archaeological evidence that may have once been present has been destroyed. Open artefact scatters can range from a few discarded stone pieces (resulting from a one-off use of an area) to large sites which may have been visited by a large number of people and/or been repeatedly used over many years. In these larger sites, distinct areas relating to specific activities can sometimes be located, such as knapping floors where individuals would have sat to manufacture stone tools. They can also include other habitation remains such as animal bone, shell or fireplaces (known as hearths). In areas where sandstone rock overhangs are present sites are commonly located within the overhangs and other sites such as middens, where shellfish are processed and discarded occur along waterways.

[27] E. Stockton and W. Holland, "Environments in the Blue Mountains", *Archaeology & Physical Anthropology in Oceania*, 9, 36-65.
[28] Jo McDonald Cultural Heritage Management Pty Ltd, *Archaeological Salvage Excavation of Site RTA-G1, 109-113 George Street, Parramatta, New South Wales*, Report to Landcom, 2005.
[29] V. Attenbrow, *Sydney's Aboriginal Past*, 18.
[30] A. N. Williams et al., " A Terminal Pleistocene Open Site on the Hawkesbury River, Pitt Town, New South Wales", *Australian Archaeology*, 74, 85-97.

A search of the OEH AHIMS database was undertaken on 16 March 2016 for an area at datum: GDA, Zone: 56, Eastings: 322670 - 328670, Northings 6249000 – 6255000. A total of 54 sites were recorded within this area.

The approximate locations of the registered sites are shown in Figure 7 below. The location information for sites recorded within the AHIMS is subject to variation in recording methods. Coordinates provided are often indicative rather than exact. As can be seen by some of the site being recorded in the water, the accuracy of locations cannot always be relied on. The author cannot vouch for the accuracy of the information provided by OEH or other agencies.

The subject land is not listed on the *Canada Bay Local Environmental Plan* (LEP), the NSW State Heritage Register, the National Heritage List, Commonwealth Heritage List of the Register of the National Trust of Australia (NSW). No Aboriginal archaeological sites or places of cultural heritage significance were recorded on these databases.

The two closest sites to the study area registered on AHIMS are both areas of shell concentration, likely to be midden sites. The fact that the recordings were submitted based on written information rather than a site visit suggests their locations are approximate. Of the 54 sites in the, the majority contain some shell material whether in open sites or rock shelter (closed site) contexts. In addition two open campsites (open artefact scatters) and one set of grinding grooves have been recorded. Art sites are also more common in areas of Hawkesbury Sandstone geology rather than the shale soils of the Cumberland Plain. Eight art sites are listed on AHIMS with five of these being in shelters (paintings) and three in open contexts (petroglyphs or rock engravings). A burial site has also been recorded at Abbotsford.

The reports held in AHIMS associated with the database search included reports from the *Port Jackson Archaeological Project*.[31] This project was undertaken in the early to mid-1990s partly because it was recognised that the archaeology of Port Jackson and surrounds was comparatively poorly documented.[32] This is, to a large extent still the case compared to the extensive amount of work that has been carried out on the broader Cumberland Plain. Relatively few excavations have been undertaken in the sandstone geology of Sydney Harbour and its associated rivers.

Attenbrow notes that the physical evidence of the activities of the Aboriginal inhabitants was noted by the early non-indigenous settlers. Governor Phillip commented on the observations of rock engravings by exploration parties with the First Fleet and also ordered that the burial mounds along Middle Harbour be investigated.[33]

[31] V. Attenbrow, *The Port Jackson Archaeological Project: Report on Stage 1*, Anthropology Division, Australian Museum, 1990.
[32] V. Attenbrow, *The Port Jackson Archaeological Project: Report on Stage 1*, Anthropology Division, Australian Museum, 1990.
[33] V. Attenbrow, *The Port Jackson Archaeological Project,* 1.

Predictive site modelling for the Parramatta River and surrounds has been limited due to the lack of detailed information. In general terms more sites have been recorded on sandstone geology than shale.[34]

In summary, there would have been relatively large Aboriginal populations utilising the study area and surrounds. The wetlands and mangroves would have provided diverse resources. The number of sites recorded on AHIMS is a fraction of what once would have been present on the river shores. The major factor influencing the potential for unrecorded sites to be located will be the level of disturbance in this highly urban region.

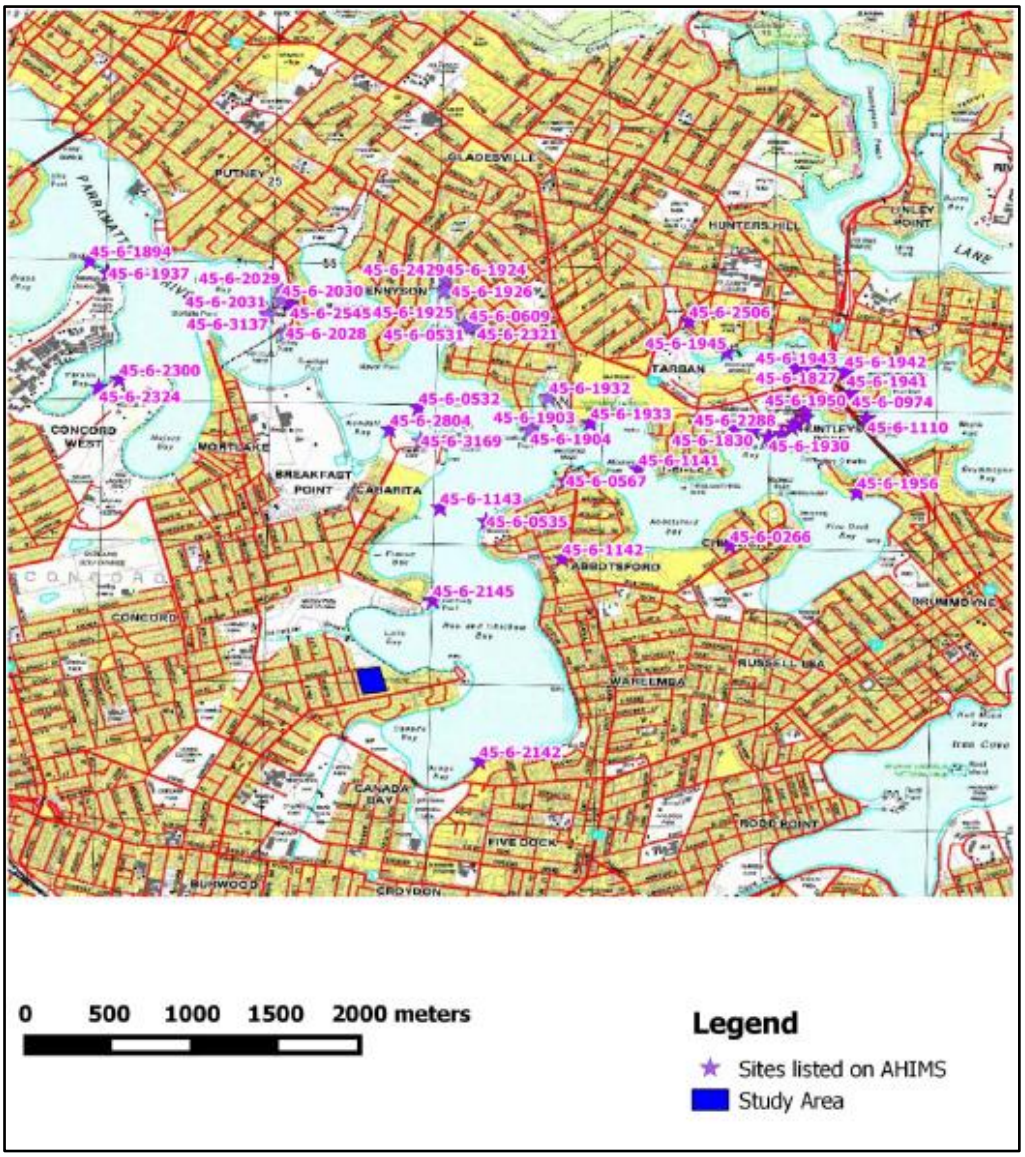

Figure 7. AHIMS site locations in relation to the study area (indicated in blue).[35]

[34] P. Irish, *Archaeological Research Directions: Report based on the findings of Stage 1 of the Aboriginal History Connections Program at the Sydney Olympic Parklands*, Sydney Olympic Park Authority, 2002, 21-22.

4.0 SITE INSPECTION

A site inspection was undertaken on Wednesday 30th March 2016. The archaeologist, Vanessa Hardy undertook the inspection. Kaylie Beasley, Heritage Consultant with Heritage 21 was also present. Conditions were fine and sunny. Unfortunately the MLALC sites officer did not attend. A telephone call to the MLALC office revealed the Sites Officer was away from work due to illness. As no prior notice was given of his inability to undertake the site inspection, it went ahead.

4.1 Aims and Methods

The aim of the site inspection was to determine whether any unrecorded Aboriginal objects or areas of sub-surface archaeological potential would be likely to occur in the study area and whether development of the subject land could have the potential to impact these sites or areas. The external parts of the study area were inspected on foot. No inspection was undertaken within standing buildings. In addition to the fenced area of the subject land the public foreshore access area was also inspected. Existing disturbances were noted.

4.2 Results

No Aboriginal objects were located during the site inspection. No trees with potential for Aboriginal scarring were located in the study area. No areas of sandstone or shelter overhangs were located within the study area. The entire area has been modified. As discussed in Section 2.0, the entire area has been subject to filling. Modifications to the filled surface include buildings and access roads as well as landscaped areas (see Figure 8).

4.3 Summary

No known sites are recorded within the study area boundaries. No Aboriginal objects were located during the site inspection. No trees with the potential for cultural scars were located within the study area. The site inspection revealed a disturbed (filled) landscape. No original natural ground surface was visible. The predictions for the likely presence of Aboriginal objects (discussed in Section 5.0) are therefore limited to sub-surface archaeological potential.

[35] AHIMS

Figure 8. The modified landscape of the study area. (Cultural Heritage Connections Pty Ltd/Heritage 21, 30.03.16)

Figure 9. Foreshore frontage of the study area. Note that the land is elevated and has been extensively filled. (Cultural Heritage Connections Pty Ltd/Heritage 21, 30.03.16).

5.0 DISCUSSION & RECOMMENDATIONS

This section provides a summary of the results of the assessment and a discussion of the due diligence requirements for the project. It also presents recommendations for ongoing management based on the assessment findings and the legislative context.

5.1 Development Impacts

No specific development plans have been considered as part of this assessment. It has been assumed that impacts could include the complete disturbance or removal of soils across the study area.

5.2 Due Diligence

Due diligence is defined in the Code of Practice as "*taking reasonable and practical steps to determine whether a person's actions will harm an Aboriginal object and, if so, what measures can be taken to avoid that harm*".

The following discussion relates to the generic due diligence process shown in Figure 3 as applied to the study area.

Step 1 – Yes is disturbance likely

It was determined that future development works would disturb the ground surface and may have the potential to disturb culturally modified trees.

Step 2 – Yes there are sensitive landforms in the study area

The due diligence Code of Practice provides a list of landscape features which can indicate an area has potential to contain Aboriginal occupation evidence. These are listed as areas on land that is *not disturbed* that are:

- within 200 metres of waters;
- located within a sand dune system;
- located on a ridge top, ridge line or headland;
- located within 200 metres below or above a cliff face; or
- within 20 metres of or in a cave, rock shelter, or a cave mouth.

The study area is within 200 metres of waters. Although the land meets the definition of *disturbed* under the due diligence guidelines, the assessment presented in this report includes a consideration of the likelihood of development having an impact on subsurface Aboriginal objects beneath the level of known surface disturbance.

Step 3 – Can impacts to the landform be avoided? – unknown

If impacts can be restricted to existing fill it is unlikely that any additional impacts to any sub-surface Aboriginal objects will occur.

Step 4 – Are Aboriginal objects present or likely to be present – unknown

No objects are known to be present, however if the existing fill on the site were to be removed in the areas where original alluvial deposit might be present, there is some potential for currently unknown objects to be subject to impact.

5.3 Discussion & Conclusions

On the basis of the findings of the above archaeological assessment and the legislative framework for protecting and assessing Aboriginal archaeological sites in NSW, the following conclusions and recommendations are provided.

The Parramatta River and its surrounds would have been a resource rich area able to support Aboriginal occupation in the past. The presence of sites registered on AHIMS in the general vicinity demonstrates that sites can survive despite urban development. However the level of disturbance in any given area will influence the probability of archaeological material being preserved.

As there was no natural ground surface visibility due to the filling of the subject land, it was not possible to inspect the alluvial soils to ascertain their archaeological potential.

The entire study area has been filled, probably at some point in the 1920s-1930s. The geotechnical assessment prepared by Geotechnique Pty Ltd[36] shows that in much of the study area the introduced fill is overlaying B horizon soils or bedrock. These areas have low to negligible potential for containing Aboriginal objects.

Four of the boreholes (BH3, BH4, BH7 & BH8) removed during geophysical testing show that there is some alluvial deposit under the fill and overlaying the subsoils/bedrock. If disturbance to these areas is likely during development it would be prudent to undertake further consideration of the archaeological potential prior to any disturbance.

While the potential for Aboriginal objects to occur in the alluvial areas is still only considered low to moderate, further geomorphological input would enable increased certainly on this matter. Ideally a brief assessment by a geomorphologist with experience in assessing soil preservation in archaeological contexts would provide further information.

[36] Geotechnique Pty Ltd, *Concord Preliminary Geotechnical Investigation*, 2014.

5.4 Recommendations

1. In areas where there are existing buildings and the geotechnical information shows no remnant A Horizon soils there is no need for additional archaeological assessment. There is no impediment to development in these areas on archaeological grounds and it is recommended that development can 'proceed with caution' as outlined in the due diligence guidelines.

2. If ground disturbance is proposed to the depth of the described alluvial soils, consideration should be given to further assessment of these areas. In the first instance it is recommended that a geomorphologist with experience in assessing soil preservation in archaeological contexts be consulted.

3. A copy of this report should be provided to the MLALC for comment.

4. On-site employees or contractors involved in ground surface disturbance should be made aware of the statutory obligations that apply to the discovery of Aboriginal objects.

5. If Aboriginal objects are uncovered during ground surface works, all works must cease and OEH should be contacted to determine a course of action.

6. In the unlikely event that suspected human remains are found all work must cease, the site should be secured and the NSW Police and should be notified to advise on a course of action. If the remains are found to be archaeological, OEH and the LALC should be contacted to assist in determining appropriate management.

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