Eastern Suburbs Memorial Park

Aboriginal Heritage Due Diligence Assessment

Artefact Project 160368

Report to Southern Metropolitan Cemeteries Trust

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EXECUTIVE SUMMARY

The Southern Metropolitan Cemeteries Trust (SMCT) proposes an extension of the Eastern Suburbs Memorial Park at Matraville. Detailed planning of this proposed development is not yet available; however, it is understood to likely include extensive excavation in levelling land and mitigating the effects of prior land use.

The location of the proposed development (study area) is Lot 4358 DP725015 in the Randwick Local Government Area. The study area is also known as Gwea Reserve, and is situated at Bumborah Point on the north shore of Botany Bay, in the suburb of North Botany.

The Southern Metropolitan Cemeteries Trust has entered into an agreement with the La Perouse Local Aboriginal Land Council (LaPLALC), and the NSW Aboriginal Land Council (NSWLALC). Under this agreement LaPLALC and NSWLALC have agreed to withdraw their Aboriginal land claims over the study area in exchange for various commitments by The Southern Metropolitan Cemeteries Trust.

These commitments include that SMCT will establish a dedicated Aboriginal Cemetery, will grant Security Burial Rights to LaPLALC, and will protect Aboriginal Cultural Heritage during the proposed development.

Chalk and Fitzgerald are acting for SMCT. Chalk and Fitzgerald have engaged Artefact Heritage to provide heritage and archaeological advice and to prepare an Aboriginal Heritage Due Diligence and Constraints Assessment to inform the planning framework of the proposed development. Historical Heritage advice and constraints are also briefly provided by Artefact in this report.

Findings

Aboriginal archaeological sensitivity

- The study area is considered of low sensitivity for Aboriginal archaeological values.
- The study area is within two areas of legislated archaeological sensitivity. It is a headland, and is within 200m of water.
- There are no recorded Aboriginal sites within the study area.
- One poorly recorded site may be present in the study area (rock engraving “45-6-0639 ‘Botany Bay; Bumborah Point”), however this has not been formally reidentified since recording in 1897.
- One Restricted site (AHIMS 45-6-2752) is located in or in the vicinity of the study area. Spatial and content detail for this site is not publicly available.
- A study of the historical land use of the study area indicates that it has been subject to significant disturbance that may include considerable changes to the study area landform.
- These disturbances include those associated with installation of multiple different subterranean infrastructures, and possibly deposition of material from the historical Bunnerong Power Station.

Historical archaeological sensitivity

- This study does not comprise a formal evaluation of historical heritage such as a Statement of Heritage Impact (SOHI).
- This report indicates that there is a moderate to high likelihood that the proposed activity will impact on recorded and unrecorded heritage

Recommendations

Aboriginal archaeological values

- Final recommendations regarding management of the Aboriginal cultural heritage values in the study area should only be made after the following steps:
- La Perouse LALC should be consulted as to their knowledge of the Aboriginal rock engraving in the study area, and to establish their opinion on the desirability or feasibility of possible efforts to relocate the Aboriginal rock engraving in the study area.
- La Perouse LALC must be consulted to establish whether the Restricted site 45-6-2752 is within the study area, and if so what measures must be taken to protect or manage it.
- Geotechnical and contamination reporting should be undertaken prior to any further heritage assessment of the study area.
- These geotechnical and contamination reports would inform the feasibility and need for any archaeological subsurface testing of the study area in the future.
- Geotechnical testing should avoid the potential location of the Aboriginal rock engraving in the study area, and a buffer of at least 10m around this potential location. The likely location of this engraving and an appropriate (10 metre) buffer zone are shown in Figure 24

Non-Aboriginal heritage values

- This report is not a Statement of Heritage Impact (SOHI). Nevertheless, it has identified that there are sufficient registered and potential unregistered heritage items within or near the study area, to require that a SOHI should be undertaken prior to the proposed development.

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1.0 INTRODUCTION AND BACKGROUND

1.1 Background

The Southern Metropolitan Cemeteries Trust (SMCT) proposes an extension of the Eastern Suburbs Memorial Park at Matraville. Detail of this proposed development is not yet available; however, it is understood to likely include significant excavation in levelling land and mitigating the effects of prior land use.

1.1.1 Proposal

The Southern Metropolitan Cemeteries Trust proposes to extend the Eastern Suburbs Memorial Park into the study area at Bumborah Point

Chalk and Fitzgerald are acting for SMCT. Chalk and Fitzgerald have engaged Artefact Heritage to provide a heritage assessment and heritage advice to support the proposed extension of the Eastern Suburbs Memorial Park. Aboriginal heritage is assessed here in accordance with the OEH Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW (2010). The assessment of non-Aboriginal heritage is of preliminary nature and adheres to relevant NSW Heritage Council guidelines.

1.2 Study Area

The location of the proposed development (study area) is Lot 4358 DP725015 in the Randwick Local Government Area

The study area is also known as Gwea Reserve, and is situated at Bumbora Point on the north shore of Botany Bay, in the suburb of North Botany.

The study area is an irregularly shaped polygon of about 3.5 ha in area. In the south it fronts Botany Bay at Bumbora Point. The study area is contained within a triangle formed by Prince of Wales Drive and Simblist Road to the west, Military Road to the north and the Eastern Suburbs Memorial Park to the east. Prince of Wales Drive and Simblist Road are located on reclaimed land.

Figure 1: Location of the study area – aerial view

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1.3 Legislative Context

The *National Parks & Wildlife Act 1974* (the NPW Act) provides statutory protection for all Aboriginal 'objects' (consisting of any material evidence of the Aboriginal occupation of NSW) and for 'Aboriginal Places' (areas of cultural significance to the Aboriginal community) under Section 90 of the Act. Aboriginal objects are afforded automatic statutory protection in NSW whereby it is an offence to:

> *'damage, deface or destroy Aboriginal sites without the prior consent of the Director-General of the National Parks and Wildlife Service (now the Office of Environment and Heritage - OEH)'.*

The NPW Act defines an Aboriginal 'object' as:

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

The Due Diligence Code of Practice was introduced in October 2010 by the OEH (formerly the Department of Environment, Climate Change and Water). The aim of the guidelines is to assist individuals and organisations to exercise due diligence when carrying out activities that may harm Aboriginal objects and to determine whether they should apply for consent in the form of an Aboriginal Heritage Impact Permit (AHIP).

A due diligence assessment should take reasonable and practicable steps to ascertain whether there is a likelihood that Aboriginal sites will be disturbed or impacted during the proposed development. If it is assessed that sites exist or have a likelihood of existing within the development area and may be impacted by the proposed development, further archaeological investigations may be required along with an AHIP. If it is found to be unlikely that Aboriginal sites exist within the study area and the due diligence assessment has been conducted according to the Due Diligence Code of Practice, work may proceed without an AHIP.

The *Native Title Act 1994* was introduced to work in conjunction with the *Commonwealth Native Title Act 1993*. Native Title claims, registers and Indigenous Land Use Agreements are administered under the Act. No active Native Title claims were identified in the study area.

1.4 Limitations

This document deals with primarily with Aboriginal archaeological heritage and includes an assessment of Aboriginal archaeological sensitivity. It does not comprise a comprehensive documentation of Aboriginal history, traditions or stories connected to the study area. The report also contains a brief assessment of historical heritage values in the study area.

1.5 Report Authorship

This report was prepared by Michael Lever (Senior Heritage Consultant) with input and review by Josh Symons (Principal Heritage Consultant).

2.0 BACKGROUND

2.1 Legislated Landform Areas of Archaeological Sensitivity

Archaeological sensitivity is closely related to levels of ground disturbance. However, other factors are also taken into account when assessing archaeological sensitivity, such as whether artefacts were located on the surface, and whether the area is within a sensitive landform unit according to the predictive statements.

The Due Diligence Code of Practice defines landscape features that indicate the likely existence of Aboriginal objects. These features include areas:

- Within 200 metres of waters, or
- Located within a sand dune system, or
- Located on a ridge top, ridge line or headland, or
- 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 wholly within two legislated landform areas of archaeological sensitivity. The study area is within 200 metres of water, being the current or historical coast line of Botany Bay. The study area is also located on a headland.

2.2 Landform Context

The study area is located near the opening of Botany Bay to the Tasman Sea, approximately 12 kilometres south of the Sydney CBD. The geology of this area consists of Triassic Hawkesbury sandstone partially overlaid with Quaternary marine sand and sand dune formations (Herbert, 1983).

During the late Pleistocene (126,000 years ago to 11,600 years ago), the Botany Bay area was a swampy sand plain surrounded by higher sandstone hills. With the rise in sea levels at the end of the ice age, and the beginning of the warmer Holocene period (11,600 years ago to present) marine sand was deposited onto the advancing shore line. These beach sands were then wind-blown onto the surrounding sandstone outcrops, forming into coastal barrier sand dunes. When the sea level stabilised approximately 7,000 years ago, these barrier dunes had altered the flow of local rivers to the present courses of the Cooks River and Georges River (Attenbrow, 2010, p. 35).

The Georges River rises in the Illawarra Plateau and spans 96 kilometres before it flows into Botany Bay from the southwest. The Cooks River flows into Botany Bay from the northwest. It is partially canalled and operates as the primary stormwater runoff for residential suburbs in south Sydney. Botany Bay is a relatively shallow sand-floored inlet, with most of the bay floor being ten metres or less in depth. The tidal accumulation of sand and riverine deposition of silt on the bay floor requires frequent dredging to ensure safe navigation for shipping.

The natural soil landscapes on these two peninsulas are mostly associated with the marine- and wind-deposited sand deposits at lower elevations, with sand dune formations stabilised against erosion by natural and re-planted vegetation. Marine-deposited siliceous and calcareous sands fringe the foreshore of Botany Bay. Hawkesbury sandstone predominates on the higher elevations in the study area, with thin layers of coarse sand and loam in vegetated areas that are resistant to erosional effects (Australian Museum Business Services, 2013; Sheppard, La Perouse Headland Conservation Management Plan Stage 2, prepared for NSW Department of Environment, Climate Change and Water (now OEH)., 2009).

These soil landscapes have been significantly disturbed by European agricultural and industrial activities. Vegetation clearance in some parts of the study area has exacerbated sand dune erosion. Dredging of the entrance to Botany Bay and foreshore stabilisation for navigation has altered the original shape of the headlands. Industrial facilities in the study area have also significantly disturbed the soil profile with deep ground excavation and the introduction of modern fill. In particular, the expansion of the Port of Botany Bay facilities, and of Sydney (Mascot) Airport runways has seen very large areas of seabed reclaimed as dry land.

The western margin of the study area was previously foreshore, but now is adjoined to roadway and substantial freight facilities built on reclaimed lands. The study area is currently dominated by a central local high point which reaches 15m above sea level. As will be detailed in depth later, this is not likely to be a natural landform. The study area declines from a high point in the south west foreshore of about 7 meters above sea level, where it is typified by steep natural and artificial banks. In its south central and south east portions the study area declines to low rocky outcrops and the sandy beach of Yarra Bay where it trends gently to sea level.

2.3 Ecological Setting

The landscape at Botany Bay prior to the arrival of Europeans was significantly more forested than it is today. Sclerophyll woodland vegetation, consisting of eucalypts, angophoras and banksias, were pivotal in securing the barrier dunes of the Kurnell and Brighton-Le-Sands area from erosion. It is possible that the relatively high proportion of salt-tolerant shrubs such as *Leptospermum laevigatum* and *Monotoca elliptica* was the result of more intense Aboriginal settlement and human initiated fire-regimes around the shores of Botany Bay from around 2,000 years ago (Benson & Eldershaw, 2007).

The study area has been ecologically mapped (Figure 2) as naturally occurring within a foreshore strip of low-lying swamp with swamp oak (*Casuarina glauca*) and swamp messmate (*Eucalyptus robusta*), adjacent to a large freshwater marsh and with a general hinterland of Eastern Suburbs Banksia scrub on sand and dunes (Benson & Howell, 1990, p. 90).

Figure 2: Modelled vegetation at 1788. Study area indicated in red (Benson & Howell 1990).

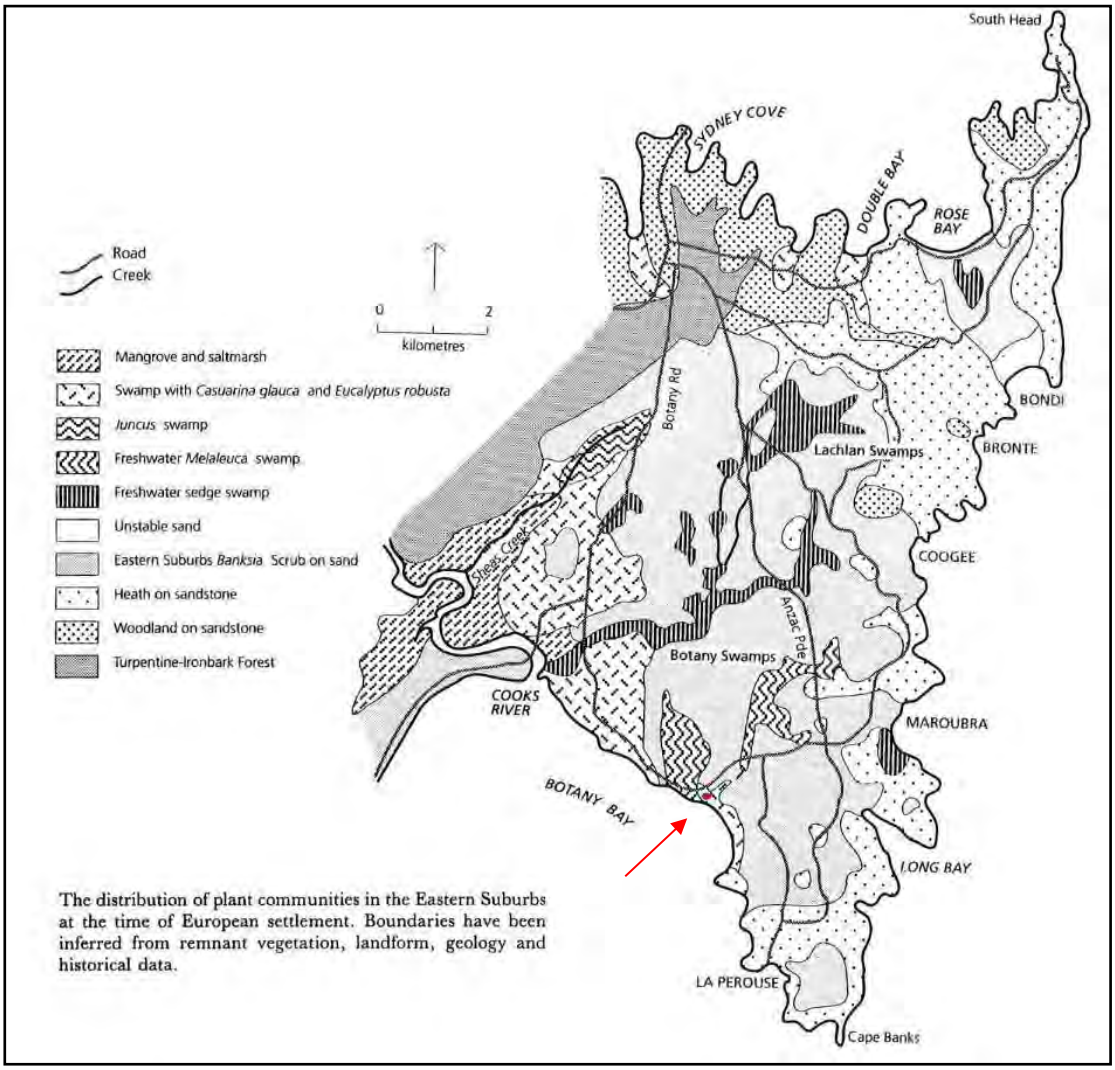


Figure 3: Eastern Suburbs scrub on sand at La Perouse (Benson & Howell 1990).

2.4 Aboriginal Heritage Information System (AHIMS) Search

The locations and details of Aboriginal sites are considered culturally sensitive information. It is recommended that this information, including the AHIMS data and GIS imagery, is removed from this report if it is to enter the public domain.

An extensive search of the Aboriginal Heritage Information System (AHIMS) database was carried out by Artefact on 12 December 2016 (Client ID: 258518).

The purpose of the AHIMS search was primarily to identify whether any Registered Aboriginal Sites were located within or near to the study area. A search buffer of approximately one km was applied to the study area. A total of eleven sites were located within this area. The results of this search are listed below in Table 1 and illustrated in Figure 5.

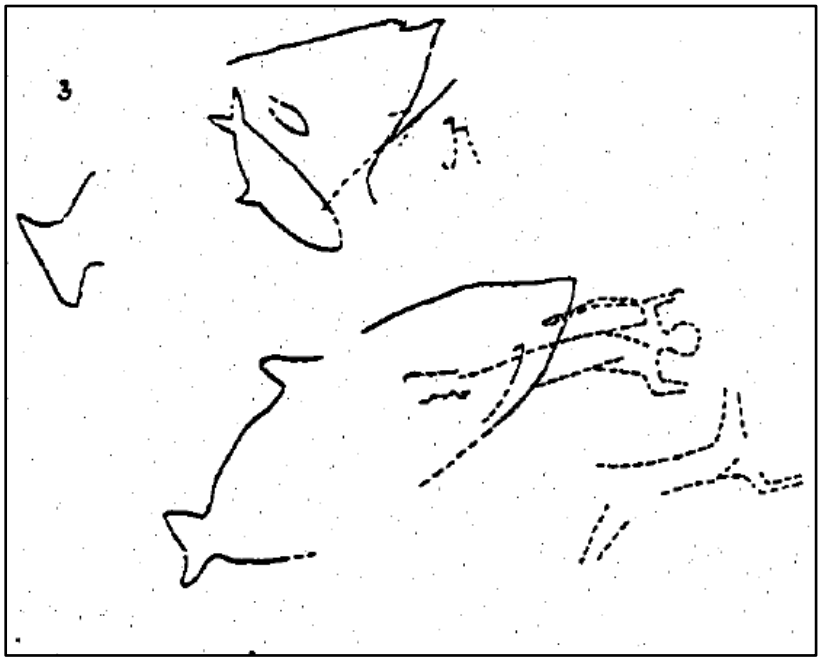
2.4.1 Sites within the study area

The AHIMS search results do not list the location of any recorded Aboriginal site within the study area.

The closest recorded Aboriginal site to the study area is 45-6-0639 'Botany Bay; Bumborah Point' is mapped as 60m west of the study area in the current location of Prince of Wales Drive. The site was recorded in 1897 by (Campbell, 1899, p. 6) and is described as including engravings of two whales, one with human-like figures. It was described as on a smooth rocky surface located 6m above the high-water mark in Botany Bay, near the Botany Cemetery. Campbell's illustration of this site is reproduced below. This site has not been recently relocated. The recorded location of this site is on lands that were reclaimed in the 1970s during the Port of Botany Bay expansion (Sydney Ports, 2001). It is possible,

particularly given the inaccuracies of earlier spatial recording equipment, that this site was / is in fact located in the study area.

Figure 4: Rock engraving recorded in or near the study area by Campbell (1899 - Plate 3, Figure 3)



One restricted site has been recorded within 1 km of the study area. No further details of its location are currently available. Restricted sites are characteristically sites of a sensitive cultural nature and may include burial or ritual sites. Prior to any proposed activity at the study area, potential impact to this site will need to be assessed by La Perouse LALC. As will be discussed further in analysis of previous archaeological reporting, Aboriginal people frequently used sandy areas including dunes for burials.

Table 1: Recorded sites types

AHIMS #	AHIMS name	Site Type	Longitude	Latitude	Distance to study area (m)
45-6-2752	Restriction applied.	Restricted	x	x	x
45-6-0639	Botany Bay; Bumborah Point;	Rock Engraving	151.222802080	-33.975965060	60
45-6-1237	Yarra Bay; Captain Phillip Monument;	Midden; Shell	151.228729070	-33.975130790	330
45-6-1152	Bumborah Point;	Midden; Shell	151.226738380	-33.969358090	570
45-6-0976	Botany Bay;	Shelter with Midden	151.227723140	-33.969363260	600
45-6-0886	Bare Island; Yarra Bay;	Shelter with Midden	151.230096730	-33.979641100	650

AHIMS #	AHIMS name	Site Type	Longitude	Latitude	Distance to study area (m)
45-6-0292	Yarra Point; Botany Bay	Midden	151.228732760	-33.982777510	750
45-6-2658	Little Bay Road PAD1	PAD	151.236663730	-33.976128490	950
45-5-2587	Frenchmans Bay Foredune	Midden; Shell	151.231085410	-33.984163970	950
45-6-0659	La Perouse	Rock Engraving	151.236667490	-33.981710260	1,000
45-6-0873	La Perouse Reserve	Rock Engraving	151.233284020	-33.983582400	1,100

Figure 5: AHIMS sites within 1 km of the study area

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2.4.2 Nature of proximal sites

The nature of the recorded AHIMS places within 1km of the study area reflects both the Aboriginal history of occupation along the local coast and the enduring nature of the fabric of these places.

Of the ten places that we know the nature of (excluding the Restricted site), 3 places (33%) are shell middens, 3 (33%) are engravings on local rock outcroppings, 2 (20%) are rock shelters, and there is one area of Potential Archaeological Deposit (PAD).

Middens are frequently deep accumulations of shell, resulting from many thousands of years of Aboriginal utilisation of a place. Although they are subject to natural erosion and were often used by colonists as sources of lime for building or garden fertiliser, they nevertheless often endure at least in part to the present day. The survival of middens can at times be enhanced through deposition of fill over them. Historical changes to the Botany Bay coastline may have resulted in the preservation of middens through their being submerged and their current location beneath Botany Bay.

Engravings on rock may be less subject to small-scale human impact, but they nevertheless weather away once they are no longer maintained and renewed.

Rock shelters are likely the most enduring Aboriginal sites in the surrounds of the study area. The evidence of Aboriginal life that they contain can be damaged through weathering and human interference.

The relatively low numbers of Aboriginal archaeological sites that have been recorded in the vicinity of the study area likely reflect historical disturbances to the area, and the apparent lack of archaeological survey and investigation within potentially undisturbed locations.

2.5 Aboriginal Ethnohistoric Background

Many Aboriginal tribal boundaries in Australia have been determined from linguistic evidence. They are therefore only approximations. Social interaction, tribal boundaries and linguistic evidence may not always correlate. Further, a western understanding of the nature of borders and boundaries appears often incompatible with Aboriginal behaviour and understandings (Stanner, 1965).

British colonisation had a profound and devastating effect on the Aboriginal population of the Sydney region. In the early days of the colony, Aboriginal people were displaced from their land as the British claimed areas for settlement and agriculture. The colonists, often at the expense of the local Aboriginal groups, claimed resources such as pasture, timber, fishing grounds and water sources. Overall, the devastation of Aboriginal culture, came about through invasion and often massacres by the British military and armed civilians, accompanied with the spread of European diseases. It is thought that over half the Aboriginal people of the Sydney region died during the 1789 smallpox epidemic (Karskens, 2010).

As a result of this dispossession and disease, Aboriginal traditional life practices were often not encountered by early recorders, or were only encountered by them in drastically altered form.

A likely example of this is that historically Aboriginal people have often been depicted as largely nomadic and predominantly living in ephemeral huts or shelters. In the past decade, research has indicated that these descriptions may be both inaccurate and also written to serve a colonialist imperative. They are likely inaccurate as they probably depict displaced Aboriginal people living in temporary camps rather than in their previous homes (Memmott, 2007). This is quite explicit in a passage by Thomas Mitchell describing Aboriginals of the Hawkesbury in 1831

> *…these first inhabitants, hemmed in by the power of the white population, and deprived of the liberty which they formerly enjoyed of wandering at will through their native wilds, were compelled to seek a precarious shelter amidst the close thickets and rocky fastnesses which afforded them a temporary home, but scarcely a subsistence. (Mitchell, 1839 [2017])*

The narrative of nomadism also likely serves colonialist narratives by depicting Aboriginal people as transient and without established settlements or villages. In this way, historical authors may have sought to strengthen notions of European ownership of Australia, and to diminish Aboriginal territorial claims. Recent re-examination of works by first white explorers such as Mitchell, and also recent archaeological investigations, support the proposal that at first encounter with Europeans, some apparently undisplaced Australian Aboriginal groups lived in what explorers described as 'villages' of relatively robust huts (Memmott, 2007) (McDonald, J -The Australian, 2016). This was also described in Cook's journals of his survey of Botany Bay in 1770. Cook described seeing groups of Aboriginal people associated with 'hutts' or 'houses' in a number of different locations, Joseph Banks made similar observations (Attenbrow, 2010, p. 29)

Based upon evidence from archaeological sites located on the Parramatta River and Nepean River, Aboriginal people have been living in the Sydney Basin and surrounding areas for at a minimum of 36,000 years (Attenbrow, 2010). Before the sea reached its present level around 7,000 years ago, the Botany Bay area would have been freshwater valleys and swamplands (Attenbrow, 2012), with local Aboriginal people subsisting on a diet of land animals and plants, supplemented with freshwater fish resources (Attenbrow, 2010, pp. 70-79). Following the inundation of the coast line, Aboriginal people in the study area primarily utilised marine foods of sea fish and shell-fish for their subsistence needs. The majority of archaeological evidence in the Sydney Basin has been dated as occurring within the last 3,000 to 5,000 years, probably reflecting the increased use of the foreshore areas by Aboriginal people who occupied areas around the modern coastline. Older occupation sites are likely to exist along the now submerged coastline (Australian Museum Business Services, 2013, p. 15).

Ethnographic accounts written by European explorers and settlers in the late 18th century emphasise the maritime way of life of the Aboriginal people around Botany Bay. Small groups of Aboriginal people were recorded to camp near freshwater sources, often residing in rock shelters or occasionally utilising bark huts. Bark canoes were regularly used for line fishing and spear fishing in Botany Bay. Collecting shell-fish on the tidal banks of the bay was also recorded by Europeans (Australian Museum Business Services, 2013).

These accounts of Aboriginal diets have been corroborated by archaeological evidence from the numerous midden sites which are located on the foreshores of Sydney Harbour and Botany Bay. The shell midden site at Captain Cook's Landing Place in Kurnell, on the south-eastern foreshore of Botany Bay, was excavated between 1968 and 1971. Deposits at this site have been dated and show that they have been accumulating for at least 1,200 years. Based upon the large extent of materials recovered, it is likely that this shell midden site, and other nearby rock art and burial sites, extends for much of the Kurnell foreshore on either side of Cook's Creek (Attenbrow, 2010, p. 172; Irish, 2007, pp. 11-18).

Large quantities of Aboriginal artefacts, including shell fish-hooks (Figure 6) retouched stone artefact flakes, ground stone hatchets and bone points (Figure 7) were recovered. Fish bones and shell comprise the majority of food resource remains, including snapper, bream, mud oyster and Sydney cockle. Lesser quantities of land and sea animal bones, including dingo, seal, whale, dolphin, wallabies and mutton birds are also present in the midden site (Attenbrow, 2010, pp. 172-173).

Aboriginal people were also recorded as burying their dead in coastal sandy environments, in middens and in rock shelters. Archaeological evidence in the study area further substantiates this practice, with a number of Aboriginal burials along the Botany Bay foreshore having been discovered. One rock shelter near Inscription Point on the south head of Botany Bay has revealed up to 18 complete or partial sets of human remains, all of which have been reburied at the site at the request of the local Aboriginal community. Grave goods of stone artefacts and bone points were present in many of these burials, as well as midden deposits of discarded fish and animal bones (Irish, 2007, p. 19).

Figure 6: Shell fish hooks recovered from Captain Cook's Landing Place Midden site, image reproduced from Irish 2007, p 16.

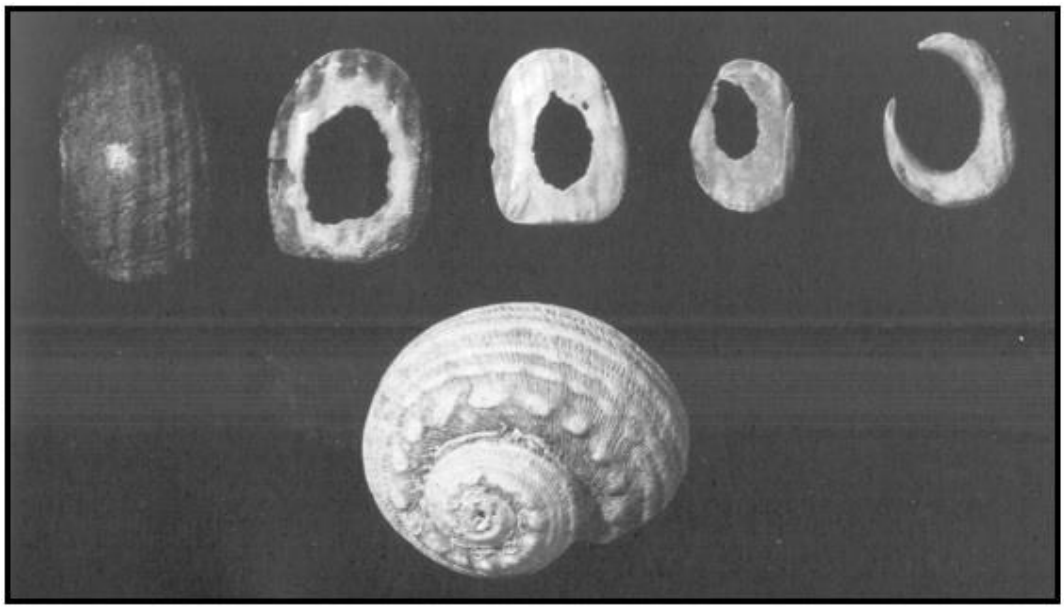


Figure 7: Bone points recovered from Captain Cook's Landing Place Midden site, image reproduced from Irish 2007, p17.

Aboriginal people often utilised the exposed Hawkesbury sandstone rock faces around Sydney Harbour and Botany Bay to engrave and draw art. Several rock art sites have been recorded on the exposed sandstone faces and caves at La Perouse near Bare Island, as well as on the Kurnell foreshore. Motifs on rock art in the area show frequent engravings of footprints and fish (Irish, 2007, p. 17).

2.6 Aboriginal Historical Background

The sandy soils of the La Perouse peninsula were little suited to agriculture and were unattractive to European settlers. As a result, the La Perouse area formed a hub to which many dispossessed Aboriginal people moved. In 1885 three hectares of land at La Perouse were declared Sydney's first 'Reserve for the Use of Aborigines' to be run by the Aborigines Protection Board. Several Christian missions were active at La Perouse, with the most long-lasting being the Protestant La Perouse Aboriginal Mission. The interaction between La Perouse Aboriginals and European locals and sightseers was of concern to the NSW Aborigines Protection Board, and orders and plans were drawn up to relocate the Aboriginal population. The Aboriginal community refused to move. During the Depression, from the late 1920's, hundreds of impoverished non-Aboriginal people camped in the area. The area continued as a low-income locale through to the second half of the 20th century (Office of Environment and Heritage, 2017).

During the late 1960's, movements to gentrify the area led to attempts to assimilate Aboriginal inhabitants through introduction of a non-Aboriginal population. Again, Aboriginal residents successfully resisted such efforts. In 1973 the La Perouse Reserve was handed to the NSW Aboriginal Lands Trust. In 1984, in the first successful case of its kind in NSW, the La Perouse Aboriginal Community won freehold title to the Reserve under the NSW Aboriginal Lands Right Act (Office of Environment and Heritage, 2017).

La Perouse has seen continuous Aboriginal presence possibly dating back 30,000 years or more. The current and recent historical inhabitants may not all be of the same Aboriginal groups as those encountered in 1788. Nevertheless, the general ongoing Aboriginal presence at La Perouse is likely a continuation of very old tradition.

2.7 Historical Context

This section provides an overview of the historical development of the study area and of events that may have impacted on the archaeological record within it.

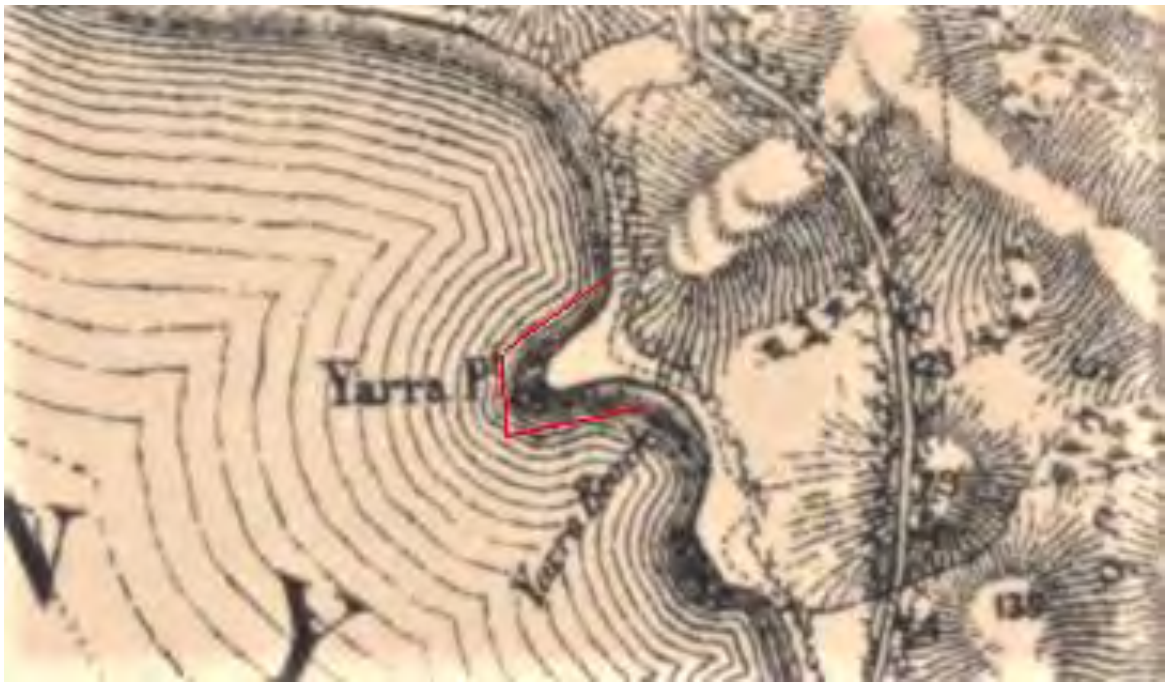
2.7.1 1788 - 1901

La Perouse and its surrounds were not the location of concerted settlement efforts by Europeans during the 19th century. This was largely due to the sandy soil which was little suited for agriculture, as illustrated by the history of abandoned settlement there by the first fleet. The primary colonial uses of the La Perouse headland were as a military lookout and camp to guard Botany Bay from incursions by smugglers. Being perceived as remote from other (non-Aboriginal) inhabitants of Sydney, an infectious diseases hospital was set up there in 1885 (Office of Environment and Heritage, 2017).

The study area at Bumborah Point is not widely mentioned in historical sources consulted.

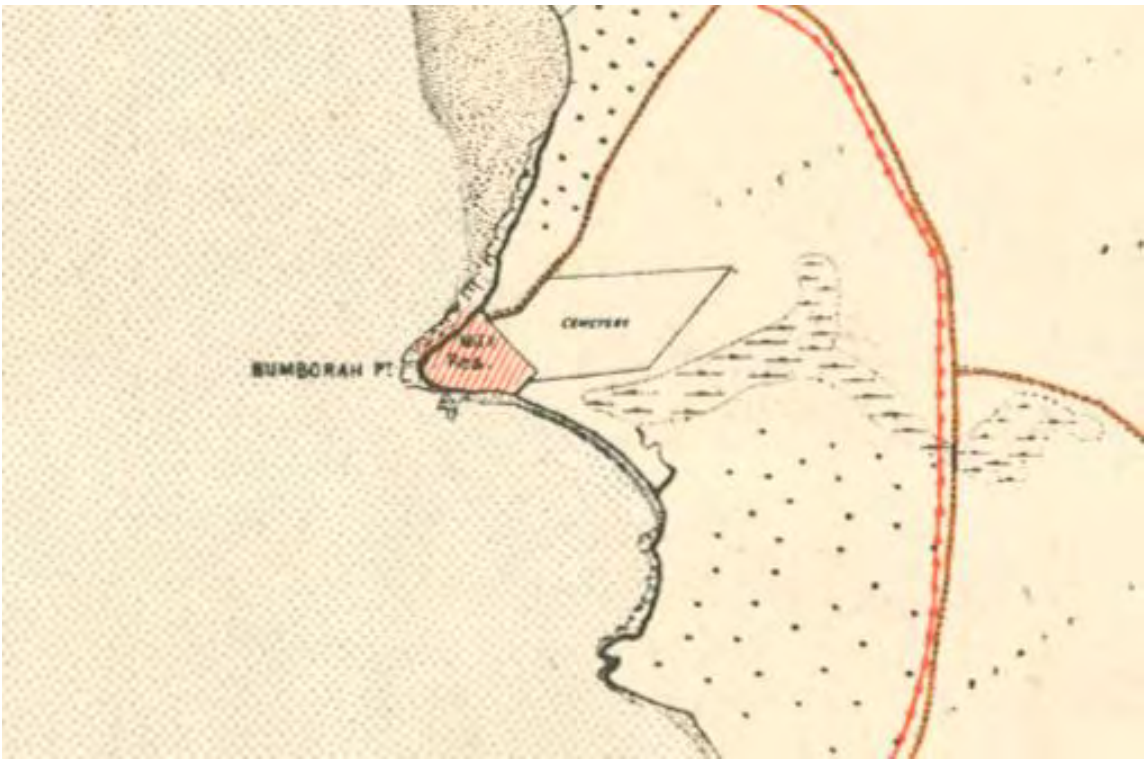
The study area was topographically mapped in some detail by Parrott in 1881 as part of his map of the Sydney area. It is seen marked 'Yarra Point', broadly outlined in red in Figure 8 (Parrott, 1881). It is visible as a level, jutting headland, fenced off from the nearby dune formation which appears here to only commence some 160m north east of the coast. This level nature would correlate with the above-mentioned vegetative mapping of the area as low-lying and swampy with a sandy scrub hinterland (Benson & Howell, 1995). Visible to the south east of the study area is an area of relatively level land that is the eventual location of the Botany cemetery.

Figure 8: The study area shown as 'Yarra Point" in 1881



The study area is displayed on mapping dated to 1893, marked as a 'Military Reserve' (Figure 9). The study area was likely connected in some way to the more substantial military installations at La Perouse headland. This early mapping does not indicate what, if any, structures may have been present in the study area at the time. The location of dune-fields surrounding the study area are indicated in Figure 9 as dispersed points.

Figure 9: Bumborah Point Military Reserve. Map dated 1893. NLA

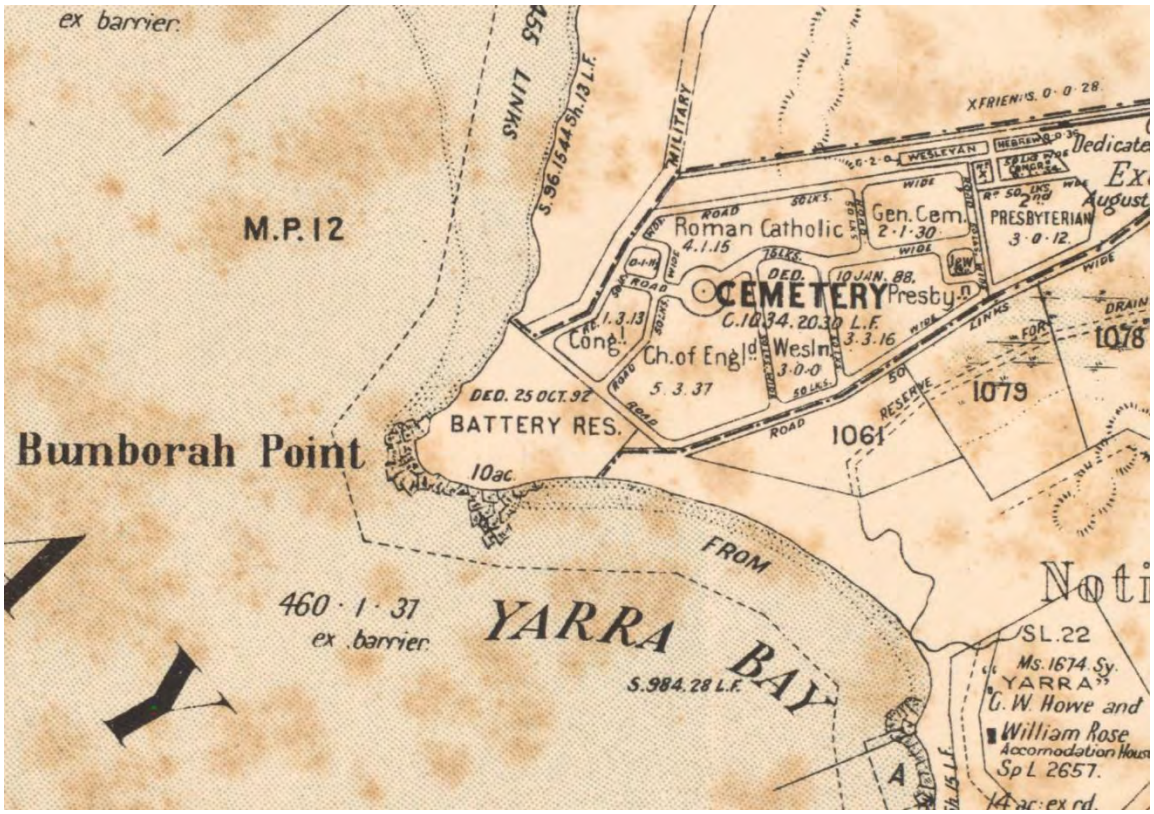


Several years later in 1893, the study area was mapped as a 'Battery Reserve' (Figure 10). No mention of infrastructure there has been identified, and it seems likely that as a localised level vantage point, the study area was merely an open field into which guns could be rolled in the event they were required.

The Battery Reserve at Bumborah point would likely only have played a supporting role in the strategic artillery control of smuggling and possible naval incursions into Botany Bay. Far more substantial and permanent gun emplacements were located at Kurnell and La-Perouse, in particular at Bare Island where large guns had been installed by 1890 (OEH, 2017). Nevertheless, the relatively low study area at Bumborah Point may have possessed an artillery advantage over the gun emplacements at Bare Island and Kurnell which are on relatively elevated land. Given the short distance between the north and south heads of Botany Bay, cannons on elevated land that were targeting any vessel passing between the heads would need to be declined sufficiently to directly fire upon the vessels. If such guns could not be sufficiently declined, then vessels could avoid damage by sailing below the line of fire. This is a common consideration in coastal artillery, which is best addressed through placement of guns on low-lying vantage points (such as Bumborah Point) (Fort Gilkicker , 2017)

The Botany cemetery is mapped, and is seen to abut a local dune ridge mapped to its north. In keeping with previous mapping of the study area, no ridges or dunes are indicated within the study area in Figure 10.

Figure 10: Bumborah Point Battery Reserve. Dated about 1898. NLA



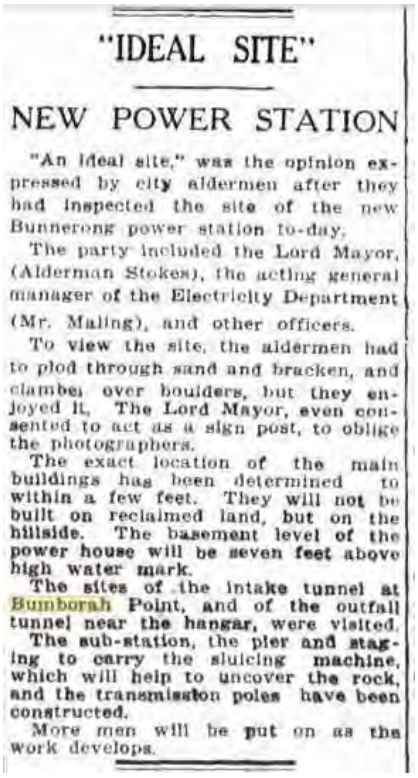
2.7.2 1901 – Mid 1940's

By the early 20th century, the study area was superfluous to military requirements. On 24 July 1920, an advertisement appeared in the *Sydney Morning Herald* calling for offers to lease the Bumborah Point Battery Reserve for five years. The repeat of similar advertisements at the same time may

indicate that the Reserve was less than desirable real estate. Further, it seems unlikely that the Reserve would have contained significant infrastructure, as such infrastructure would usually have been listed on these advertisements for its lease.

The rapid growth of Sydney saw considerable new demand for electricity. Vacant government lands in La Perouse immediately north east of the study area were considered ideal for the new coal-fired Bunnerong power station.

Figure 11: The *Sun* (Sydney) 4 February 1926



"IDEAL SITE"

NEW POWER STATION

"An ideal site," was the opinion expressed by city aldermen after they had inspected the site of the new Bunnerong power station to-day.

The party included the Lord Mayor, (Alderman Stokes), the acting general manager of the Electricity Department (Mr. Maling), and other officers.

To view the site, the aldermen had to plod through sand and bracken, and clamber over boulders, but they enjoyed it. The Lord Mayor, even consented to act as a sign post, to oblige the photographers.

The exact location of the main buildings has been determined to within a few feet. They will not be built on reclaimed land, but on the hillside. The basement level of the power house will be seven feet above high water mark.

The sites of the intake tunnel at Bumborah Point, and of the outfall tunnel near the hangar, were visited.

The sub-station, the pier and staging to carry the sluicing machine, which will help to uncover the rock, and the transmission poles have been constructed.

More men will be put on as the work develops.

The construction of the Bunnerong power station had very large impact on the local sands. The following image shows preliminary excavation for the power station, and indicates the scale and nature of activity that may have extended into the study area (Figure 12).

Figure 12: Construction works on the Bunnerong power station. Dated about 1928 (NLA)

The Bunnerong power station was situated in lands immediately to the north east of the study area at Bumborah Point. The study area provided the shortest route and a low-lying path between the Bunnerong power station and Botany Bay. As the news article above (Figure 11) mentions, the study area was acquired by the Power Plant, and large sea water intake tunnels were excavated through it. These were built to the size needed to process 1.8 million litres of sea water daily (Randwick City Council, 2017). A separate open channel diverted used water to the north of the power point, to an outlet in the current location of the Port of Botany. The extent of this water management infrastructure is shown in Figure 13. The study area is approximately outlined in magenta, the mouth of the outflow canal is indicated with a red arrow and the intake tunnel with a green arrow.

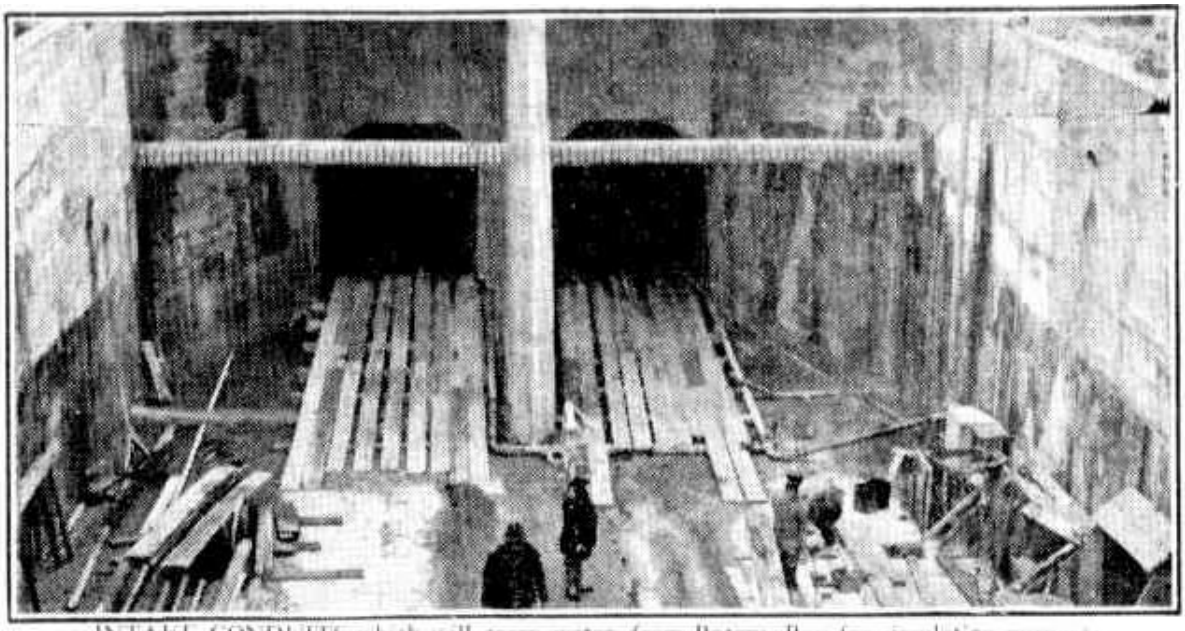
Figure 13: Bunnerong Power Station in 1941. Sea water intake indicated with green arrow & outlet indicated with red arrow

The following figures (Figure 14 and Figure 15) illustrate the nature of earth disturbance associated with works within and near to the study area. They show that these works included mass removal of overlying sands and then tunnelling and / or cut and fill through underlying bedrock. Figure 14 shows formwork being laid for a canal leading northwards from the power station to the current location of Port Botany, the chimney of which is visible in the background. This is not within the study area, but the figure illustrates the intensive and widespread nature of disturbance associated with water-management infrastructure for the Power Station. This disturbance includes the presence of numerous rail-lines to service construction. The construction of such rail lines is likely to have also occurred in the wider surrounds of construction of water intake tunnels in the study area at Bumborah Point (Figure 15).

Figure 14: Earthworks for Bunnerong power station water infrastructure. *Construction and Local Government Journal* 10.10.1928. p7

Figure 15 illustrates the construction of the tunnels which carried water from Bumborah Point to the Bunnerong power station. They appear to consist of poured concrete above mined rock and construction of them will likely have resulted in major disturbance to their immediate location and wider surrounds.

Figure 15: Intake conduits from Bumborah Point to Bunnerong power station. The *Sun* (Sydney) 22 September 1927.



INTAKE CONDUITS which will carry water from Botany Bay for circulating purposes.

The amount of waste and spoil created in excavation of the Bunnerong power station and its infrastructure was considerable. In 1927, spoil from the power station was deposited about 1.8 km north west of the station, along the coast at Foreshore Road Banksmeadow. This waste provided an added 3.5 hectares (8 acres) of reclaimed land – an expanse equal in size to the study area at Bumborah Point (URS, 2011, p. 9). It is also possible that spoil from these works will have been deposited on the study area, as a vacant piece of land immediately next to the power plant.

The Bunnerong power station and its infrastructure was built using the latest technology of the time, including the use of large amounts of asbestos (Randwick City Council, 2017). The Bunnerong power station commenced generation in 1929, and was enlarged in 1939. At one time it was capable of providing one third of NSW power demands. Pollution and disposal of spent fuel from the power station was an ongoing issue. The likely quantity of waste generated can be appreciated from Figure 13 dated to 1941 (above) and Figure 16 dated to 1935 below. In these images the power station is seen adjacent to large open air dumps of coal and possibly waste. Even if burnt waste only comprised a small proportion of the original fuel mass, this would still constitute very large quantities of material to be disposed of. It is not unlikely that the study area, as a vacant piece of land adjacent to the Bunnerong power station, may have been used by the power station as an ancillary area possibly for stockpiling of fuel or waste.

Figure 16: Bunnerong power station in 1935. View to east. Royal Australian Historical Society

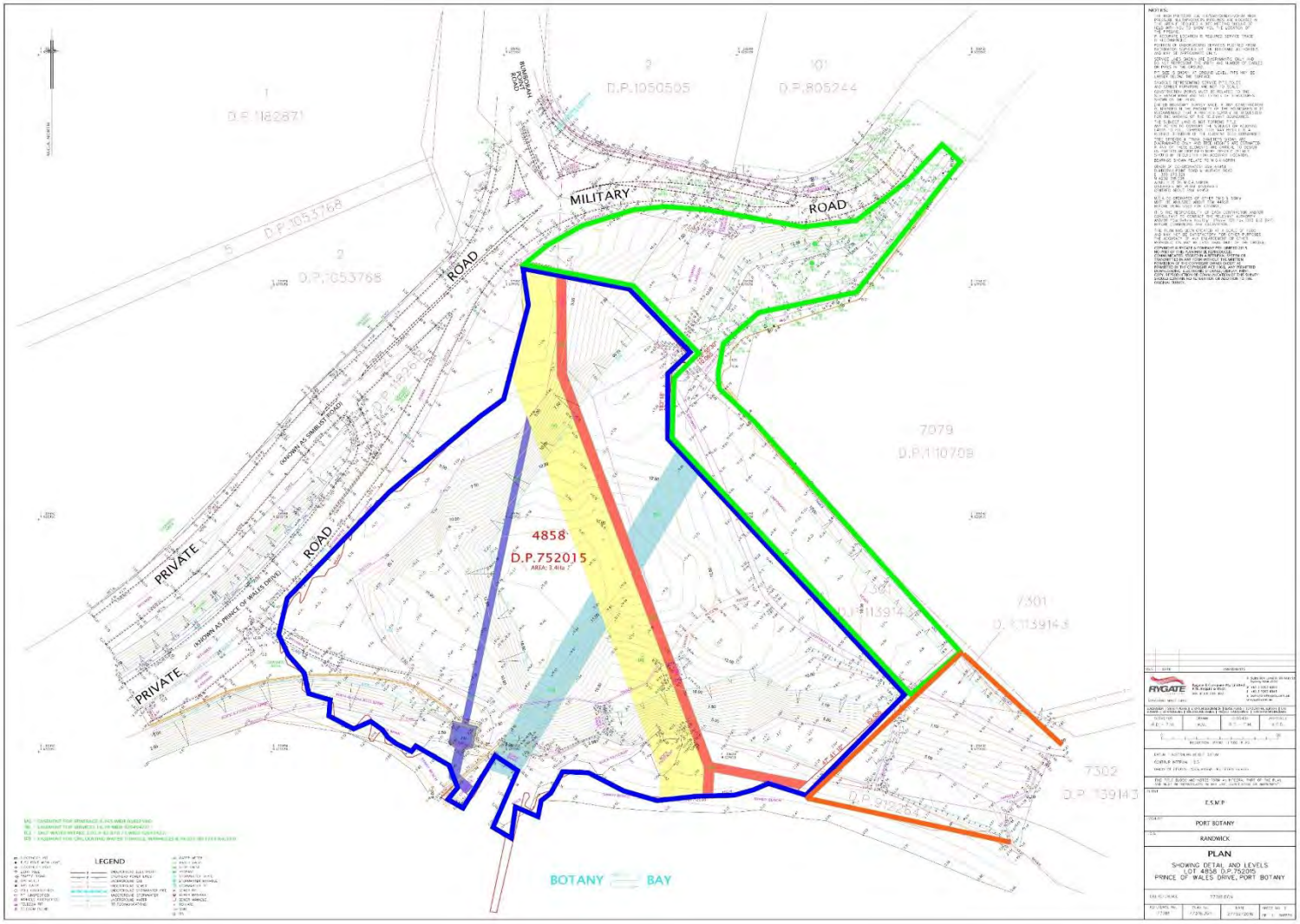
Once construction of the tunnels within the study area at Bumborah Point was complete, the study area appears to have fallen into disuse. In 1934 the Commonwealth Government advertised the study area for lease for 20 years (The *Sun* (Sydney) 11 June 1934).

2.7.3 Tunnels beneath the study area

The course of the Bunnerong power station intake tunnels for sea water are shown on Figure 17, marked in purple. A second large tunnel or set of tunnels is also mapped as passing through the study area. There are varying accounts as to what these tunnels comprise. On client-supplied mapping (Figure 17) is a light blue transect that is labelled “Easement for circulating water tunnels, manholes &

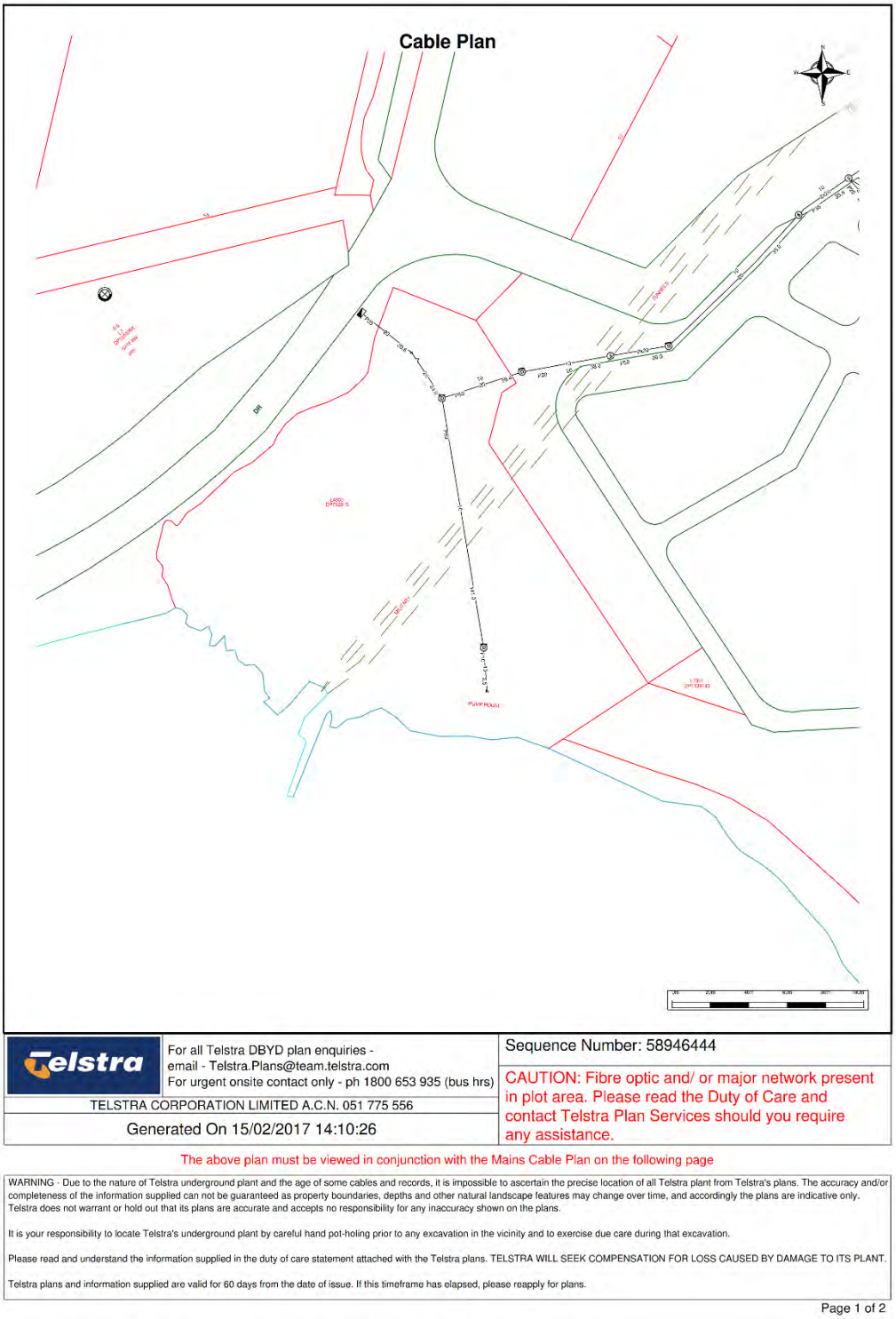
inlets (BK 1784 No. 979). This does not seem to align with the Bunnerong power station. It is possible that a second less documented set of infrastructure was developed here, perhaps not connected to the Bunnerong power station.

Figure 17: Client- supplied plan of below-ground services and easements in the study area. Purple = Power Station water intake, light blue = unidentified tunnels, Yellow = easement for services, including gas pipeline from Kurnell, Red = Sewer easement



The same transect mapped in blue on client plans is mapped in broken tan lines on Tesltra DBYD mapping – but is labelled ‘military tunnels’

Figure 18: Telstra DBYD plans for Bumborah Point



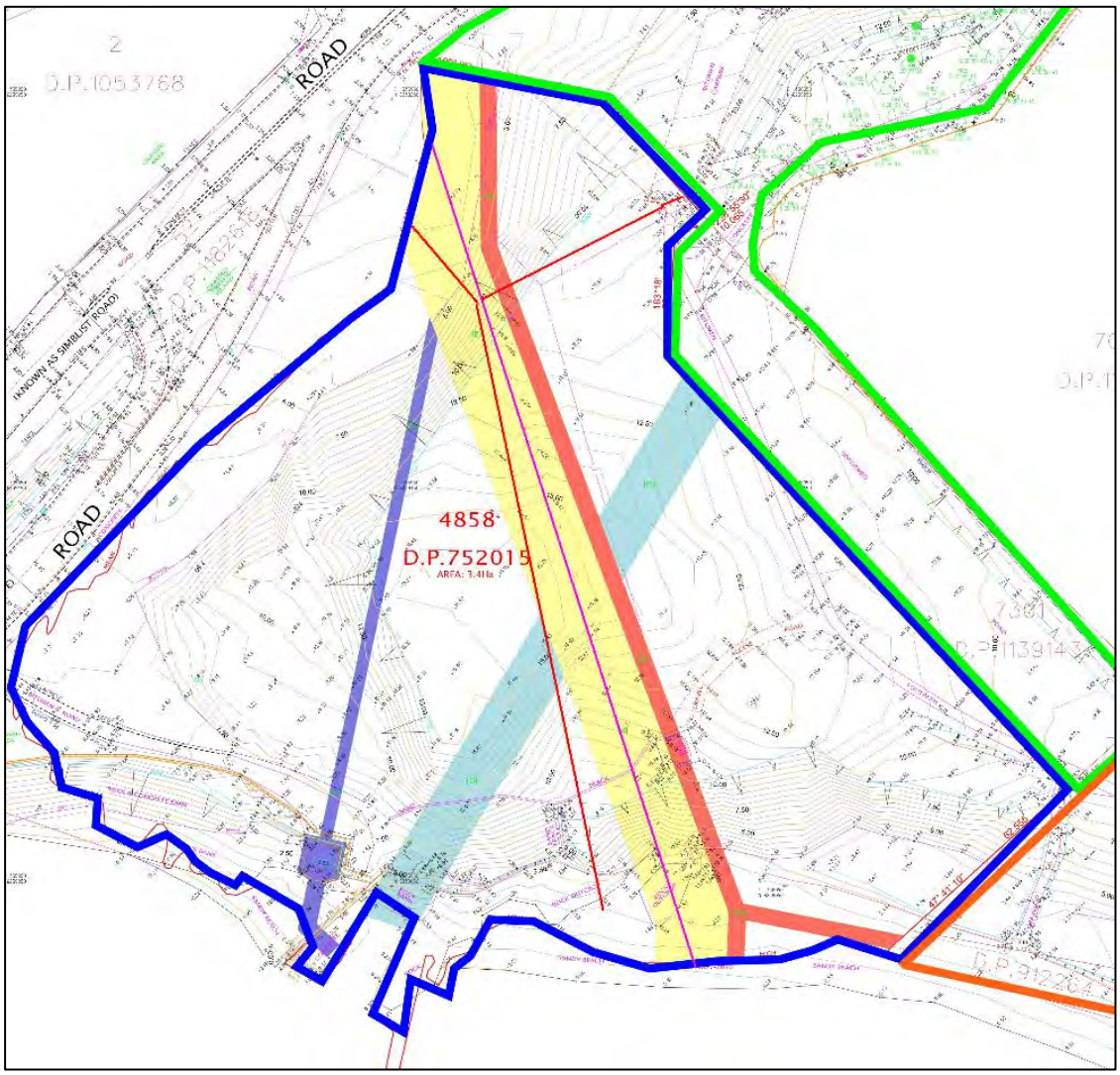
This report has not identified any information on military tunnels in the study area. Whatever the purpose of these tunnels was, they pass through the bulk of the study area, and are likely to have resulted in significant ground disturbance during their construction. It has not been determined

whether these tunnels were constructed using the more disruptive 'cut and cover' method, or by tunnelling. Nevertheless, undertaking major earthworks of any nature in such a small area, is likely to have resulted in considerable disturbance to soils. The total level of documented modern disturbance to the study area is best estimated by considering the evidence above, along with mapping provided by the client. This mapping has been overlain with representation of services located through Dial Before You Dig (DBYD) (Figure 17).

Services or items that pass through the study area include:

- Caltex Petroleum – The main high pressure LPG pipeline from Kurnell carrying 5,500,000,000 litres of fuel annually (shown *approximately* in magenta), within easement in yellow
- Former Bunnerong power station inflow (shown in purple)
- Tunnels – unidentified purpose (variously given as military or water tunnels) shown in light blue
- Sewer mains (shown in light red)
- Telstra cable (shown in dark red)

Figure 19: Study area showing total of known underground infrastructure



2.7.4 Mid-1940's to present

The potential use of the study area by the Bunnerong power station as a dumping ground, along with evidence of previous disturbance may be visible in Figure 20. Here the study area is seen apparently strewn with machinery or huts, and the southern portion of the study area, towards the bay frontage, is formed of dark material raised in a pyramidal form. This likely represents cover material of various origins placed over the excavated concrete intake / outlet pipes and tunnels that run beneath it to the bay. This material would not appear to be the natural light-coloured sands of the area. Striations are visible in the ground surface running up to the peak of this heap. Such striations would not seem typical of ground-cover vegetation. Rather, it is possible that they represent excavator bucket marks in dark ash, waste, or expended coal. This may have been used to infill localised low points resulting from excavation of the underlying water management tunnels.

Figure 20: Bunnerong power station and the study area (in red) in the mid 1940's (NLA)

Greater detail of the activities in this area can be estimated from an extract from Figure 20 marked up with information provided by the client and Telstra as to the location of the water intake and unidentified tunnels. The purple line on the image below represents the salt water intake line which ranged between three and ten metres width, and the light blue line represents the unidentified tunnels ("military tunnel[s]") which are approximately 15 metres wide. These tunnels terminate at the concrete outflow pipe and outlet visible in the foreground. It is notable that the two lines of these tunnels meet beneath the local high point of the study area.

The local high point seen below, located over the water tunnels, is fairly certain then not to represent a natural dune feature. No such dune had been mapped in the study area in 1881 (Parrott, 1881) or

subsequently. It appears most likely therefore that the high point shown in Figure 20 and Figure 21 represents an artificial build-up of dark-coloured material, possibly furnace waste, dumped over the location of major tunnels. It also seems apparent from this image that the scale of soil disturbance in the study area is of such an extent that it is unlikely that considerable expanses of natural landform or soil surfaces will have survived in the study area.

Figure 21: Crop from Figure 16 marked with location of power station infrastructure.

In 1951 the study area was characterised by sparsely vegetated uneven ground intersected by multiple paths or roads and localised disturbance (Figure 22 below). Whatever the structures or objects seen in Figure 21 were, they appear to have been removed by 1951. This process of removal and remediation is in itself likely to have caused further disturbance to the ground surface of the study area.

Figure 22: Study area in 1951 (NLA)

The Bunnerong power station was decommissioned in 1973, and was demolished from the late 1970's onwards. Later stages of demolition were delayed by the newly appreciated dangers of asbestos, and the large quantities of asbestos contained on the site. If waste from the power station was deposited across the study area, it is possible that this includes contaminated material.

The mouth of the tunnels at Bumborah Point have been infilled with rock, which precludes any attempt to physically determine their nature.

2.7.5 Conclusions of Historical Context

The study area is shown in three 19th-century maps as level land. The study area has been significantly impacted by major local developments which have likely disturbed the entirety of the natural sands in the study area. These developments include:

- The study area was devegetated, to allow for multiple small rail lines and other infrastructure to service the construction of major tunnels that serviced the Bunnerong power station to the immediate north east.
- Construction of these tunnels was partially described as using mechanical sluicing or mechanical excavation to expose the underlying bedrock. The removal, stockpiling and movement of such large quantities of sand in a relatively small and contained area, hemmed on three sides by the sea, would almost certainly have caused significant disturbance to the entirety of the study area.
- Pictorial evidence and evidence from mapping of known subsurface structures indicates that the current local high point in the study area is not a natural dune but a post-construction dump likely to infill the site of tunnel construction. The material in this dump may not be sand, but may largely consist of furnace ash or other waste from the Bunnerong power station.
- It is likely that the study area has been generally used as a dump, specifically by the Bunnerong power station.
- Significant tunnels beneath the study area, apparently not connected to the Bunnerong power station have also been provisionally identified. It has not been within the remit of this preliminary report to determine their nature or historical significance.
- The study area has also been excavated or tunnelled for installation of sewer, telecommunications and major petrochemical pipelines. These will likely have caused further significant disturbance to the study area.
- Demolition of the Bunnerong power station was delayed due to the presence of toxic materials including asbestos. Background research has shown that some of the contaminated waste materials from the power station may have been deposited on the study area.

Based on the historical information reviewed above, it seems likely that the study area at Bumborah Point has undergone repeat phases of significant excavation, construction and general construction - associated disturbance. It is unlikely that any substantial Aboriginal archaeological remains will have survived the multiple phases of disturbance in the study area.

2.8 Geotechnical testing results

Geotechnical testing has the potential to clarify the impacts of previous historical activities on the archaeological potential of the study area. No Geotechnical test results were available at the time of this assessment.

2.9 Previous Archaeological Assessments

Archaeological sensitivity in the study area is likely chiefly a result of the high levels of disturbance that have been documented within the study area. Nevertheless, several pertinent reports are analysed here to provide a background as to what the archaeological record around the study area may once have been. The study area itself does not appear to have been within a dune formation however dunes are immediately nearby.

Donlon (2005) investigated an Aboriginal burial at the Rose Bay Golf Club. She cited earlier (now unavailable) work (Donlon, 1995) regarding the location of recorded Aboriginal burials in Sydney. Donlon (1995) found that 23% of burials were found in beach dunes, 21% in rock shelters and 17% in the current harbour. Donlon (1995) found that Aboriginal burials in sands did not generally extend deeper than 1m below natural ground level at the time of burial. The total burials in these three types of location in Sydney represent 61% of all recorded Aboriginal burial places. These three landform context types are local to the wider surrounds of the study area.

JMCHM (2009) carried out an an archaeological report in the same foreshore dune that was excavated by Donlon (2005). This found high concentrations of Aboriginal stone artefacts in the truncated preserved upper portions of a foreshore dune (JMCHM , 2009). The two reports by Donlon (2005) and JMCHM (2009) were undertaken in very similar natural conditions to those near the current +study area. The indications from their reports is that foreshore dunes in the Sydney region were once intensively utilised by Aboriginal people as living and burial grounds.

Probably the most detailed and recent archaeological report on the La Perouse headland and surrounds is Sheppard (Sheppard, 2009). Sheppard found that little if any archaeological work had been carried out in the immediate surrounds of La Perouse. Sheppard notes that the most frequent surviving Aboriginal site type in south east Sydney are rock engravings. These surviving items are only a small percentage of those once recorded but which can no longer be identified. Sheppard proposed these sites “are covered by grass, faded, are barely visible or have been damaged or destroyed by the construction of roads” (Sheppard, 2009, p. 26).

2.10 Conclusions of Background Assessment

The study area is mapped as having constituted level headland, fronting foreshore which ranges from steeply banked elevated rocky outcrop, to sandy beachfront. Headland formation and proximity to water are legislated features of archaeological potential. Aboriginal people in the past will likely have used the water frontage for extraction and consumption of marine resources, and may have preferentially camped near these resources.

The study area is within the immediate surrounds of areas of possible elevated archaeological sensitivity associated with dune formations.

However, historical impacts on the study area are likely to have considerably reduced archaeological potential within it. The study area has been subject to significant disturbance and is unlikely to contain significant extents of preserved Aboriginal archaeological deposits.

It is possible that isolated areas of preserved sands remain in the study area. It is also possible that rock outcroppings including a recorded Aboriginal rock engraving may be present in the study area. Detection of these preserved areas and rock outcroppings, and the general assessment of archaeological potential in the study area require a site inspection.

3.0 SITE INSPECTION

3.1 Initial Onsite Meeting

A preliminary onsite meeting was held on 12 December 2016 with Alyce Howard (Senior Heritage Consultant and Mr Alex Jorgensen.

The meeting noted several potential areas of investigation (email A. Howard to A. Jorgensen, S. Wallace, J. Symons 13 December 2016):

- The presence of fill and disturbance along the western border of the project area, and likely reduced archaeological potential in that location.
- The presence of sandstone outcrops may indicate the presence of Aboriginal engravings. One such engraving may have been recorded in the study area.
- That the remainder of the project area comprised original headland landform.
- That the potential existed for historical heritage in the study area.
- That more research was required in order to better understand heritage values within the project area.

This report has addressed the requirement for further research raised in the on-site meeting. This report has identified:

- Substantial historical impacts to the study area including poorly identified tunnel infrastructure.
- That the entire western boundary of the study area is reclaimed lands
- That the current landform is unlikely to represent preserved natural lands
- That more detailed inspection will be required to establish the presence of possible sandstone engravings.
- That Aboriginal material cultural remains may be present in any undisturbed locations.
- That geotechnical soil testing would greatly inform the understanding of disturbance, site formation and preservation.
- Given the potential presence of pollutants in the soils of the study area associated with historical activity and the presence of substantial petrochemical infrastructure, it would be necessary to undertake geotechnical and contamination testing before any subsurface archaeological investigation is undertaken in the study area.

4.0 HISTORICAL HERITAGE & PLANNING

4.1 Limitations

The following does not constitute a formal Statement of Heritage Impact or Heritage Assessment. It is constrained to a search of relevant statutory and other relevant registers, and recommendations based on information identified during research for the Aboriginal Due Diligence assessment of the study area. It is intended as an initial appraisal of the level of heritage mitigation that may be required for the proposed activity. Potential planning constraints are briefly mentioned.

4.1.1 Items within the study area

- The Port Botany Revetment Wall is listed on the Sydney Ports Corporation Heritage Section 170 Inventory as SHI number 4560022. This extends along Prince of Wales Drive and partially extends into the western extremity of the study area (Figure 23)
- The Yarra Bay Beach and Reserve is listed on the Randwick Local Environment Plan (2012) as item I245, and partially extends into the eastern extremity of the study area (Figure 23)
- The entire study area currently **is within** the Randwick Local Environment Plan (2012) as part of the Botany Bay conservation area. It is also subject to the Randwick City Council Development Control Plan (DCP 2013) (Figure 23).

4.1.2 Items adjacent to or possibly within the study area

- The study area is at closest 1.3km from the Bunnerong Power Station Canal. This is a listed item on the Sydney Ports Corporation Heritage Section 170 Inventory as SHI number 4560027 (Figure 23).
- The study area **is** likely to contain remnant infrastructure of the Bunnerong power station which may be of state heritage significance.
- The study area **may** contain tunnels of historical significance in addition to those known to be associated with the Bunnerong power station.

Figure 23: Heritage and conservation items near the study area

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5.0 FINDINGS AND RECCOMENDATIONS

Findings

Aboriginal archaeological sensitivity

- The study area is considered of low sensitivity for Aboriginal archaeological values.
- The study area is within two areas of legislated archaeological sensitivity. It is a headland, and is within 200m of water.
- One poorly recorded site may be present in the study area (rock engraving "45-6-0639 'Botany Bay; Bumborah Point"), however this has not been formally reidentified since recording in 1897.
- A study of the historical land use of the study area indicates that it has been subject to significant disturbance that may include considerable changes to the study area landform.
- These disturbances include those associated with installation of multiple different subterranean infrastructures, and possibly deposition of material from the Bunnerong Power Station.

Historical archaeological sensitivity

- This study does not comprise a formal evaluation of historical heritage such as a Statement of Heritage Impact (SOHI).
- This report indicates that there is a moderate to high likelihood that the proposed activity will impact on recorded and unrecorded heritage

Recommendations

Aboriginal archaeological values

- Final recommendations regarding management of the Aboriginal cultural heritage values in the study area should only be made after the following steps:
- Geotechnical and contamination reporting should be undertaken prior to any further heritage assessment of the study area
- These geotechnical and contamination reports would inform the feasibility and need for any archaeological subsurface testing of the study area in the future
- Geotechnical testing should avoid the potential location of the Aboriginal rock engraving in the study area, and a buffer of at least 10m around this potential location. The likely location of this engraving and an appropriate (10 metre) buffer zone are shown in Figure 24
- La Perouse LALC should be consulted as to their knowledge of the Aboriginal rock engraving in the study area, and to establish their opinion on the desirability or feasibility of possible efforts to relocate the Aboriginal rock engraving in the study area.

Non-Aboriginal heritage values

- This report is not a Statement of Heritage Impact (SOHI). Nevertheless, it has identified that there are sufficient registered and potential unregistered heritage items within or near the study area, to require that a SOHI should be undertaken prior to the proposed development.

Figure 24: Possible location of AHIMS site 45-6-0639 showing protective buffer

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