Site 9, Sydney Olympic Park

Archaeological Assessment

Report to Ecove Group

March 2016

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EXECUTIVE SUMMARY

Ecove Group have proposed a mixed use development at Site 9, Sydney Olympic Park (the proposal). The proposed development consists of a 38-storey building which includes above ground car parking over five levels, retail facilities on the ground level, a residential tower, and two levels of offices.

The proposed mixed use development at the site is being assessed as a State Significant Development, and Secretary's Environmental Assessment Requirements (SEARs) have been issued for the site. The requirements for heritage are as follows:

- Prepare an Aboriginal and non-Aboriginal archaeological assessment detailing the likely impacts and outline the proposed management and mitigation measures to protect and preserve the archaeology
- Prepare a Heritage Impact Assessment addressing visual impacts of the proposed high rise development on State Heritage Items in the vicinity, including the Newington Armament Depot and Nature Reserve (Millennium Parklands).

Artefact Heritage have been engaged by Ecove Group to undertake an Aboriginal and non-Aboriginal archaeological assessment for a proposed development at Site 9, Sydney Olympic Park. This report will provide an Aboriginal and non-Aboriginal archaeological assessment. A Heritage Impact Statement will be provided in a separate report to meet the SEARs requirements.

Overview of findings

- The study area has been largely used for agricultural and pastoral purposes since the nineteenth century until the late-twentieth century
- There is a high level of landform modification in the study area from late twentieth century contamination fills and subsequent urban redevelopment for Sydney Olympic Park
- There is nil-low potential for historical archaeological 'relics' or Aboriginal heritage to be located within the study area
- The proposed works are unlikely to impact archaeological relics or Aboriginal heritage in the study area.

Recommendations

- The proposed works are not expected to impact archaeological relics or Aboriginal heritage and therefore no further archaeological investigation or mitigation is required.
- If environmental testing shows that the north-western corner of the study area has not been ground-disrupted from landfill remediation practices, there is a nil-low potential to identify historical and Aboriginal archaeological objects. An unexpected finds policy would be put in place, involving the following actions in the case of archaeological remains being located:
  - Stop work within the affected area, protect the potential archaeological find, and inform environment staff or supervisor.

- Contact a suitable qualified archaeologist to assess the potential archaeological find.
- If historical archaeological ‘relics’ are identified, works in the affected area should cease, and the NSW Heritage Division should be informed. Further archaeological mitigation may be required prior to works recommencing.
- If Aboriginal objects are uncovered during excavation, work should cease, and an archaeologist, the Office of Environment and Heritage (OEH), and the Metropolitan Local Aboriginal Land Council (MLALC) should be informed.
- If human remains are found, work should cease, the site should be secured and the NSW Police and OEH should be notified

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1.0 INTRODUCTION

1.1 Project Background

Ecove Group have proposed a mixed use development at Site 9, Sydney Olympic Park (the proposal). The proposed development consists of a 38-storey building which includes above ground car parking over five levels, retail facilities on the ground level, a residential tower, and two levels of offices.

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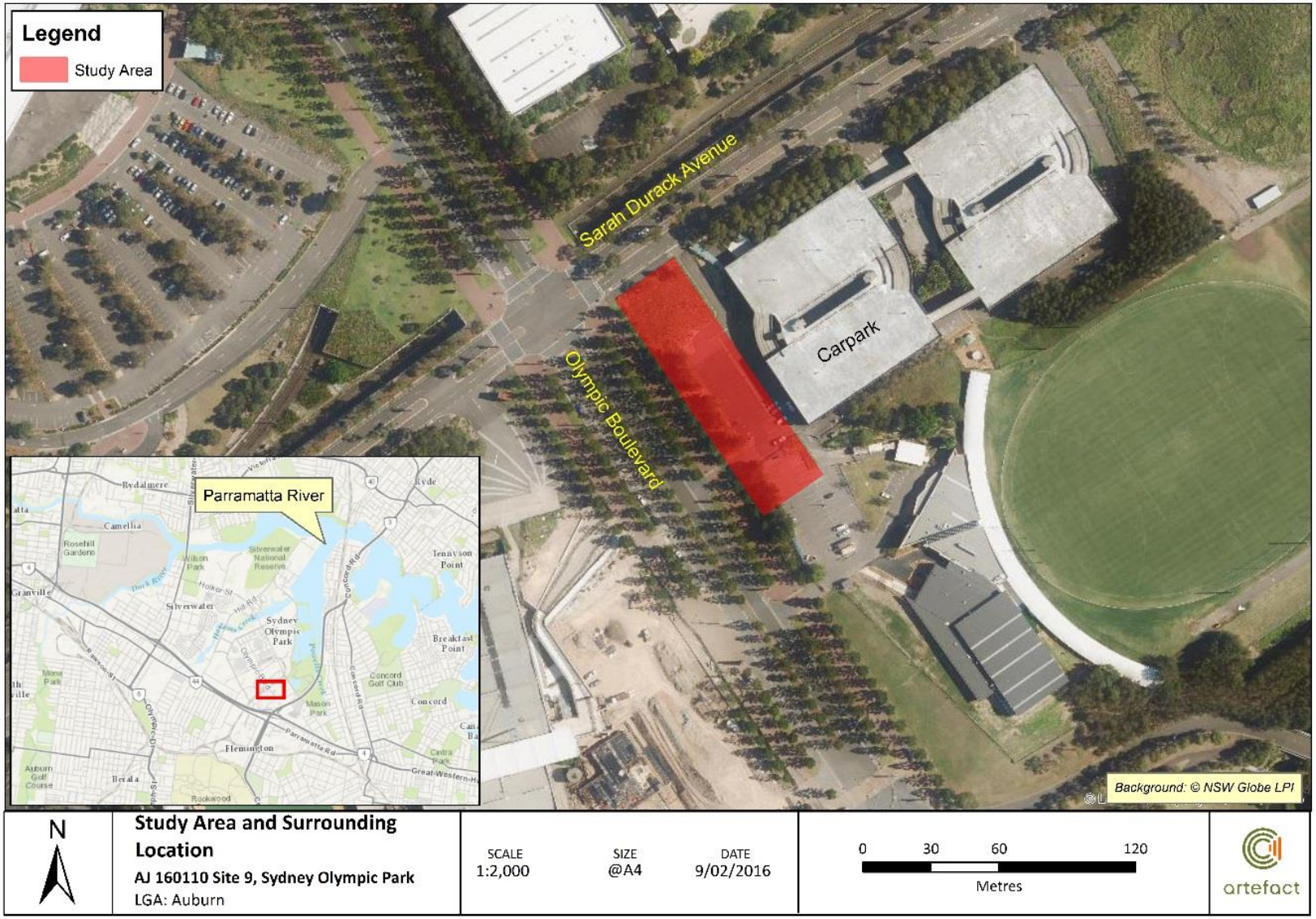
1.2 Study Area

Site 9, Sydney Olympic Park is located on the south-eastern corner of Sarah Durack Avenue and Olympic Boulevard. Sydney Olympic Park is located in the Local Government Area (LGA) of Auburn and the Metropolitan Local Aboriginal Land Council (MLALC).

The study area for this archaeological assessment consists of the building footprint for the proposed development, illustrated in Figure 1 below. This is a rectangular area parallel to Olympic Drive approximately 115 metres long and 30 metres wide. The study area is presently in use as a bitumen carpark with a small grassed garden area in its northern extent and tree plantings along its western side.

Figure 1: Location of study area



1.3 Report Methodology

This report investigates the Aboriginal and non-Aboriginal (historical) archaeological potential of the study area. It provides an assessment of the archaeological potential and outlines any management and mitigation measures that may be required to protect and preserve the archaeology. This assessment is being conducted to satisfy requirements outlined in the issued SEARs for the Site 9 development proposal under the *State Environmental Planning Policy (Major Projects) 2005* [SEPP].

It is prepared in accordance with the:

- Office of Environment & Heritage's *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (2010).
- NSW Heritage Division's guidelines of *Assessing Significance for Historical Archaeological Sites and Relics* (2009).
- Statutory planning controls for the study area under the *State Environmental Planning Policy (Major Projects) 2005*.
- Statutory design controls for the study area under the *Sydney Olympic Park Master Plan 2030,* which falls under the *Sydney Olympic Park Authority Act 2001.*

1.4 Limitations

This report provides an assessment of Aboriginal and non-Aboriginal (historical) archaeological resources only. Built heritage impact assessment is provided in a separate report. Under the Due Diligence Code of Practice Guidelines (OEH 2010) Aboriginal community consultation was not required to conduct this assessment.

1.5 Authorship

This report was prepared by Shona Lindsay (Graduate Heritage Consultant) and Duncan Jones (Heritage Consultant), with management input and review by Abi Cryerhall (Principal, Historic Heritage).

2.0 STATUTORY CONTEXT

2.1 Introduction

There are several items of State legislation that are relevant to the study area. A summary of these Acts and the implications for the proposed development follow. Under SSD provisions, consent is not needed

2.2 State Legislation

2.2.1 Environmental Planning and Assessment Act 1979

The *Environment Planning and Assessment Act 1979* (EP&A Act) is administered by the Department of the Premier and Cabinet and provides planning controls and requirements for environmental assessment in the development approval process. This Act has three main parts of direct relevance to Aboriginal cultural heritage. Namely, Part 3 which governs the preparation of planning instruments, Part 4 which relates to development assessment process for local government (consent) authorities and Part 5 which relates to activity approvals by governing (determining) authorities.

Planning decisions within Local Government Areas (LGAs) are guided by Local Environmental Plans (LEPs) and Regional Environmental Plans (REPs). Each LGA is required to develop and maintain an LEP that includes Aboriginal and historical heritage items which are protected under the EP&A Act 1979 and the *Heritage Act 1977* (Heritage Act*).* The study area is located in the Auburn LGA.

The proposal will be assessed under Part 4, Division 4.1 of the EP&A Act, which establishes an assessment and approval regime for State Significant Development (SSD). Part 4, Division 4.1 applies to development that is declared to be SSD by a State Environmental Planning Policy (SEPP). Section 89J of the EP&A Act specifies that approvals or permits under Part 4 or Section 139 of the Heritage Act are not required for approved SSD projects. However, approval from the Minister of Planning and Environment is required and an EIS must be submitted. The EIS must address the impact of the project on heritage items, through the framework of existing heritage legislation including the Heritage Act*,* and the local LEPs and Development Control Plans (DCPs).

Auburn City Council LEP 2010

The study area falls within the Auburn LEP 2010. The Auburn LEP aims to conserve the heritage significance of heritage items and conservation areas, including associated fabric, setting and views; and to protect archaeological sites. The LEP stipulates development controls in relation to developments proposed on or near heritage listed properties, archaeological sites, or Aboriginal places of heritage significance.

There are no heritage items on the Auburn LEP 2010 that are located within the study area.

2.2.2 State Environmental Planning Policy (Major Development) [SEPP] 2005

The *State Environmental Planning Policy (Major Development) [SEPP] 2005* aims to facilitate the development, redevelopment or protection of important urban, coastal and regional sites of economic, environmental or social significance to the State. This is in order to facilitate the orderly use, development or conservation of those State significant sites for the benefit of the State. It facilitates service delivery outcomes for a range of public services and to provide for the development of major sites for a public purpose or redevelopment of major sites no longer appropriate or suitable for public purposes.

Development projects which are governed by SEPP legislation require Secretary's Environmental Assessment Requirements (SEARs) to be issued by the legislative authority in order for consent on major works to proceed. The Site 9, Sydney Olympic Park project has been issued with two heritage-related SEARs requirements, one of which this archaeological assessment is aimed to fulfil.

Heritage provisions under SEPP legislation require developmental consent for activities that demolish, move, alter or excavate a heritage item or known archaeological site. It also requires that potential impacts from development projects to heritage items be assessed.

2.2.3 Sydney Olympic Park Authority Act 2001

The *Sydney Olympic Park Authority Act* (SOPAA) 2001 aims to ensure that Sydney Olympic Park becomes an active and vibrant centre within metropolitan Sydney, and premium destination for cultural, entertainment, recreation and sporting events. It ensures that any new development carried out in the designated Sydney Olympic Park precinct accords with best practice accessibility, environmental and town planning standards. Provisions outlined in the SOPAA and subordinate statutory documents applies to the area of Sydney Olympic Park, shown in Figure 2 below.

Sydney Olympic Park Master Plan 2030

Sydney Olympic Park Master Plan 2030 (SOPMP) is a statutory document under the SOPAA 2001 which provides detailed design controls for development proposals. In relation to heritage, the SOPMP states that development should:

> *Conserve heritage items, the Abattoir Heritage Conservation Area, Showground Road and significant trees (SOPMP 2010: 30).*

The SOPMP divides the Sydney Olympic Park into a number of precinct with specific development controls. The study area is located in the Boundary Creek Precinct (illustrated in Figure 3below). The SOPMP outlines no special controls in regard to heritage for development in this precinct.

Figure 2: Boundary of Sydney Olympic Park, study area in blue

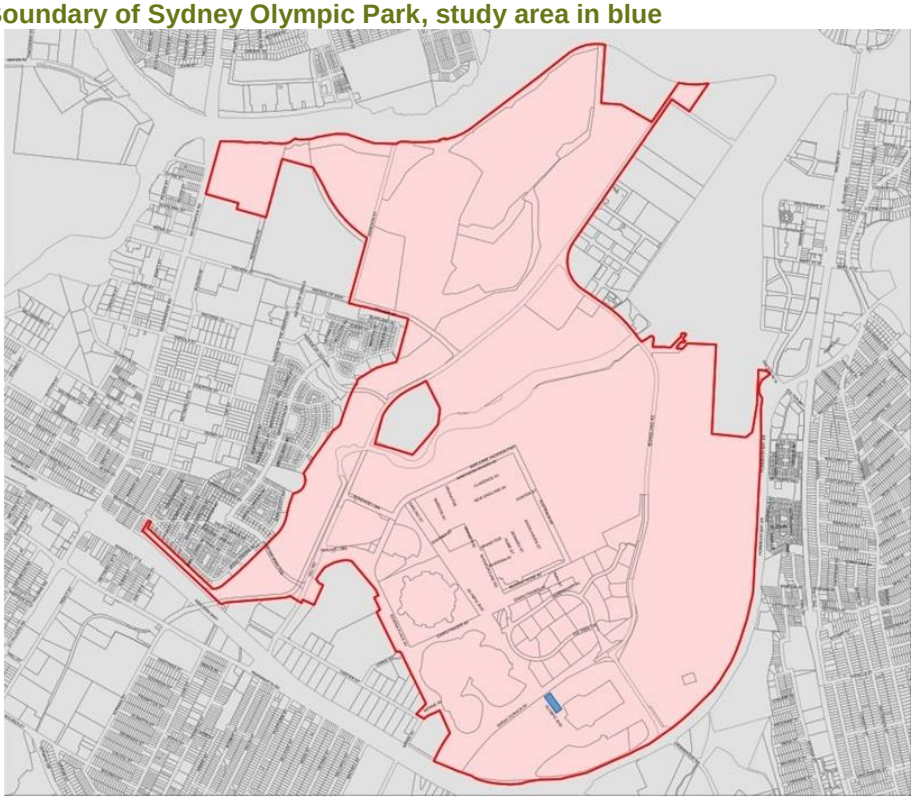
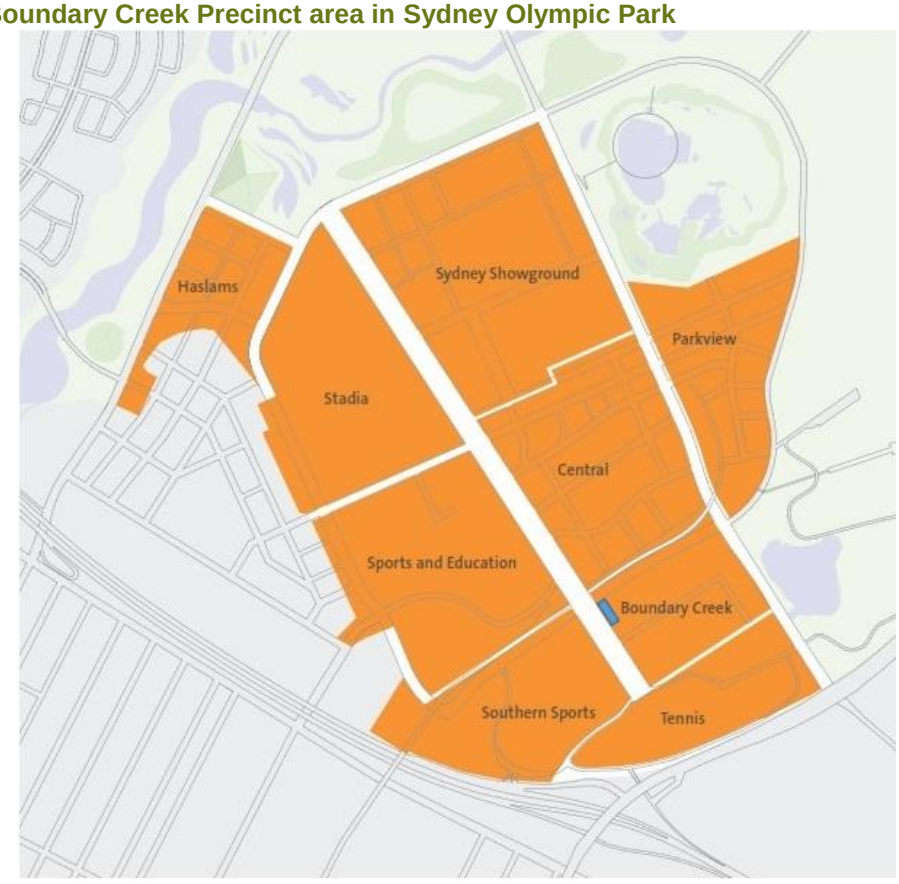


Figure 3: Boundary Creek Precinct area in Sydney Olympic Park



2.2.4 National Parks and Wildlife Act 1974

The *National Parks & Wildlife Act 1974* (the NP&W 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 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 for the Protection of Aboriginal Objects in New South Wales* (the Code) was introduced in October 2010 by the OEH. 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 guidelines, work may proceed without an AHIP.

2.2.5 Heritage Act 1977

The NSW *Heritage Act 1977* (Heritage Act) provides protection for items of 'environmental heritage' in NSW. 'Environmental heritage' includes places, buildings, works, relics, movable objects or precincts considered significant based on historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic values.

Archaeological Relics

The Heritage Act also provides protection for 'relics', which includes archaeological material or deposits. Section 4 (1) of the Heritage Act (as amended in 2009) defines a relic as:

> *"...any deposit, artefact, object or material evidence that:*
>
> *(a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and*
>
> *(b) is of State or local heritage significance"*

Section 139 to 145 of the Heritage Act prevents the excavation or disturbance of land known or likely to contain relics, unless under an excavation permit. Section 139 (1) states:

A person must not disturb or excavate any land knowingly or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, damaged or destroyed unless the disturbance is carried out in accordance with an excavation permit.

As a SSD project, separate approval or permits under the Heritage Act is not required.

State Heritage Register

The State Heritage Register (SHR) was established under Section 22 of the Heritage Act and is a list of places and objects of particular importance to the people of NSW, including archaeological sites. The SHR is administered by the NSW Heritage Division of the Office of Environment and Heritage (OEH) and includes a diverse range of over 1500 items, in both private and public ownership.

However, there are no SHR items located within the study area.

3.0 HISTORICAL BACKGROUND

3.1 Aboriginal Ethnohistory

Aboriginal occupation of the Homebush Bay area is likely to date back to before 15,000 years ago (before sea levels had stabilised at modern levels during the ice age). However, there are few scientifically dated sites within the area. At present the oldest (and one of the only) dated sites within the area is the John Curtin Reserve rock shelter on Toongabbie Creek (some 6 kilometres northwest of Homebush Bay), which has an initial occupation date of around 5,600 years ago. By about 6,000 years ago, waters had completely flooded over the old coastal plain, and the current Sydney environment was largely stabilised. The vast majority of sites in the area date to within the last 5,000 years, well after the sea had reached its present level.

The traditional land owners of the area Sydney Olympic Park is situated on are the Wann clan, known as the Wann-gal. The lands of the Wann-gal stretched along the southern shore of the Parramatta River between Cockle Bay (Cadi-gal land) and Rose Hill (Burramatta-gal land). To the north were the Wallumetta-gal. The Wann-gal and their ancestors lived in Homebush bay for thousands of years, utilising the resources of the bay.[1]

After the first fleet arrived in 1788, contact between the Wann-gal and the Europeans began when boats used Parramatta River to get from Sydney Cove to Rose Hill, where a European settlement had developed. In 1789, wide spread smallpox claimed the lives of many Aboriginal people in the Sydney area, and is likely to have impacted the Wann-gal at Homebush Bay. Several encounters and conflicts between Europeans and Aboriginal people are documented for the Homebush Bay area throughout the 1790s, and in the early 1800s Aboriginal people were working for and supplying fish to the Blaxlands on their Newington Property but by the 1850s the records become more scarce. Despite the land grants, it is likely that the cleared land was continually used by Aboriginal people up until the late nineteenth century.[2]

Physical evidence of the usage of the Homebush Bay area by Aboriginal people has been found in the form of stone artefacts located in the area. In addition, several scarred trees have been found within remnant forest. Aboriginal shell middens were known to have lined Homebush Bay and the Parramatta River but were destroyed in the limekilns in the eighteenth and nineteenth centuries and subsequent alterations to the shoreline.[3]

3.2 Early Land Grants and Subdivision 1788 - 1906

After the European settlement of Sydney Cove in 1788, the Homebush Bay area came be to known as ‘The Flats’ after the extensive mangroves and mud flats in the region.[4] The first land grant in the area was allotted to Thomas Laycock in 1794, which he called ‘Liberty Plains’.[5] In 1810 this farm was sold to D’Arcy Wentworth who named the site ‘Home Bush’ (Figure 4). D’Arcy Wentworth was a public servant and surgeon in the colony, and acquired surrounding land grants, increasing his property in size to 920 hectares. A homestead and later a horse racing track was built on the land in 1825 (Figure 5).[6] The horse racing track was used as the headquarters of the Australian Jockey Club between 1841 and 1860 (Figure 6).[7] D’arcy Wentworth continued to own the land until he died in

[1] http://www.sopa.nsw.gov.au/our_park/history_and_heritage/indigenous_history
[2] *ibid.*
[3] *ibid.*
[4] *ibid.*
[5] http://adb.anu.edu.au/biography/wentworth-darcy-1545
[6] *ibid.*
[7] http://www.sopa.nsw.gov.au/our_park/history_and_heritage/colonial_history

1827 and left his property to his son Charles Wentworth (who had been a member of the first European exploration party to find a route through the Blue Mountains).[8]

Louisa Meredith rented the property in the 1830s and described the area as completely empty:

> *"The house stood on the highest ground on the estate and for some hundreds of acres all around not a native tree nor even a stump was visible, so completely had the land been cleared."*[9]

Although it was largely cleared, she describes the area as having a lot of remaining wildlife. She writes of the plentiful dingoes in the area, possums, flying foxes, goannas, lizards and snakes. Most of these, it is presumed, were living in the uncleared or less disturbed areas of mangroves, wetland or forest and other parts of Homebush Bay.[10]

Figure 4: Pre-1850s Concord parish map showing Wentworth land grant. Approximate location of study area outlined in red. (Source: LPI)

[8] http://www.sopa.nsw.gov.au/our_park/history_and_heritage/colonial_history
[9] Mrs Charles Meredith, Notes and Sketches of New South Wales During a Residence in the Colony from 1839 to 1844, p.56
[10] *ibid.*

Figure 5: Front view of Wentworth's homestead in 1917 (Source: State Library NSW)

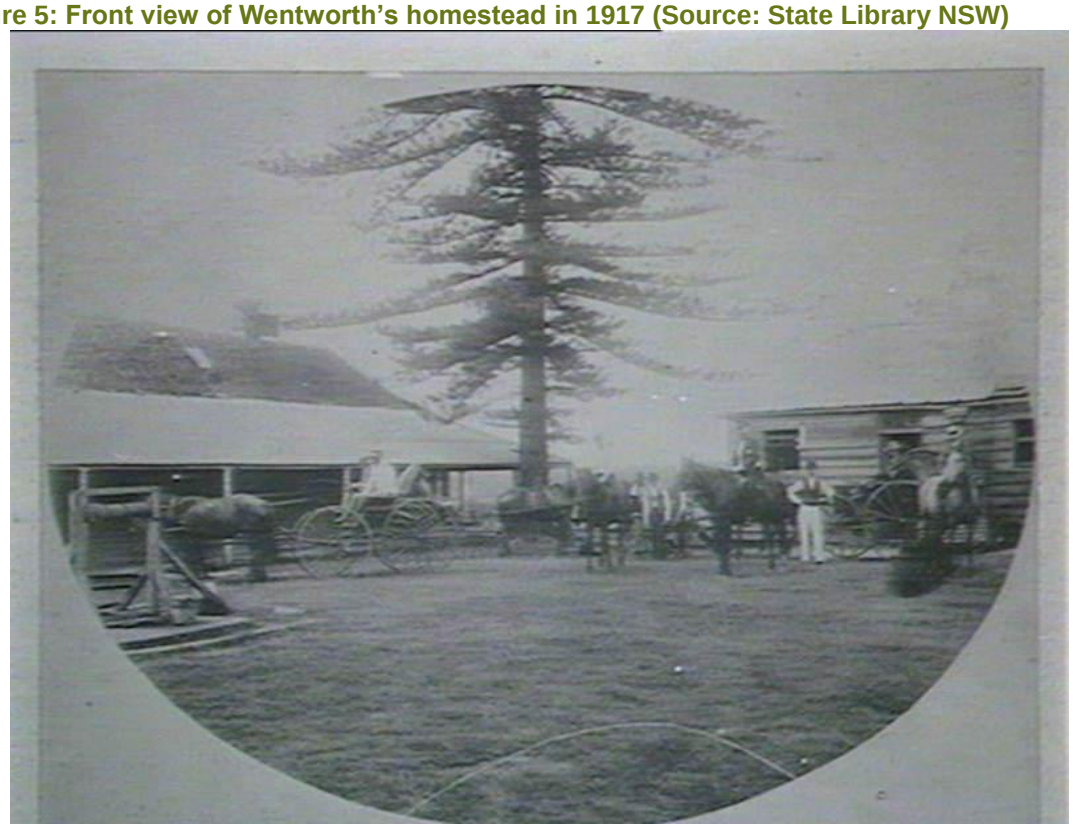


Figure 6: Homebush horse racing track in 1854 (Source: National Library of Australia)

In 1881, a proposal was made for subdividing the southeast portion of Wentworth's estate for residential development. This subdivision was called the Homebush Park Estate. By 1883, some of the land had been subdivided, but it was another three years before the first lot was sold. It was still not heavily populated by 1890, and only allotments near Parramatta Road were favourable.[11] By 1906

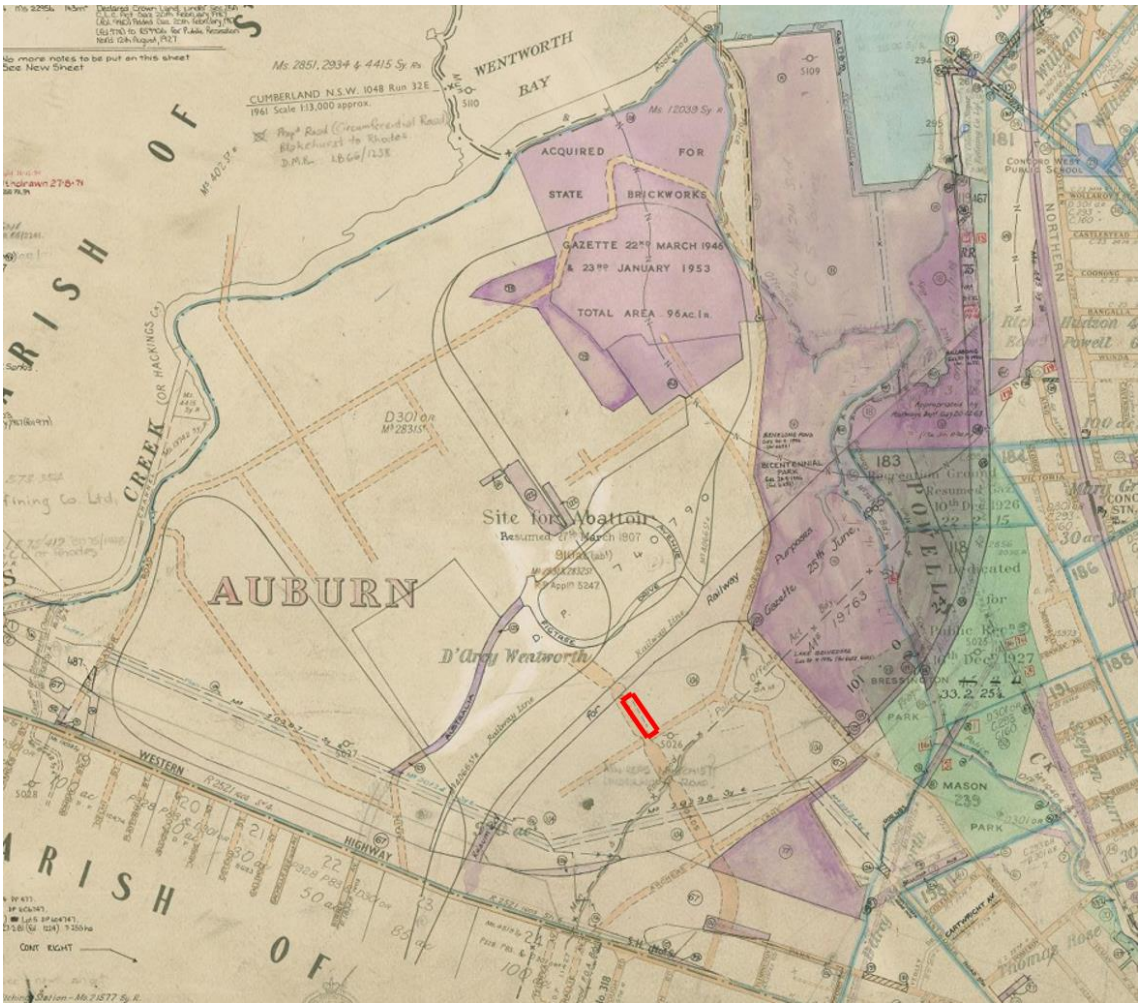
[11] Godden Mackay 1990, pg. 5.

the farm buildings and horse racing track had become derelict and the site became a favourable choice by the government for the State Abattoir.[12]

3.3 Twentieth century industries 1907-1988

An area of Homebush was resumed for the State Abattoir in 1907 and was built on the site in 1910 after the Glebe Island Abattoir was deemed as publically unsafe following the plague. This saw development of servicing roads for the abattoir and associated buildings. A branch railway line through the abattoir site was constructed by 1908, which included the levelling of the site.[13] This railway line was further developed in 1910, with site levelling, excavating, and roadways and platforms being constructed.[14] After poor management practices the abattoir ran into a deficit and closed in 1988.[15]

Figure 7: 1916 St John Parish map of area with approximate study area shown in red. State Abattoir located in centre of the map, and the brick works to the north (Source: LPI)



A State Brick Works was located at the northern side of Homebush from 1911. Access roads were constructed and a railway line was developed to provide access to the Brick Works. The Brick Works was used until its closure in 1940, when it was taken over by the Naval Armament Depot as a

[12] http://adb.anu.edu.au/biography/wentworth-darcy-1545
[13] Godden Mackay 1990, pg. 5.
[14] *ibid.*
[15] http://www.sopa.nsw.gov.au/our_park/history_and_heritage/industrial_history

munitions store. It was later reopened following the end of World War Two until it ceased trading in 1988. The area has been rehabilitated as a wetland area with a raised walkway for visitors.[16]

The Newington Armament Depot, which lay to the north of Homebush, was expanded after World War One, and took over some of the facilities in Homebush such as the Brick Works pit and some land that was part of the State Abattoir for storage of munitions.[17]

As industrial development in Sydney expanded in the mid-twentieth century, locations to discard industrial waste were required. Homebush, at that time relatively undeveloped, was chosen as a dumping location for toxic waste, including waste from factories such as Timbrol and Union Carbide that were located nearby in Rhodes.[18] Wentworth Bay was filled in with industrial waste and the natural ecology of the area was severely damaged. The area nearest Homebush Bay became a shipbreaking yard in 1966, with many of the wrecks still visible today. By 1988 there was an estimated 9 million cubic metres of waste and contaminated soils spread over 400 hectares within the 760-hectare site (Figure 8).[19]

Figure 8: View of the waste deposited in Homebush Bay taken in 1972 (Source: State Library of NSW)

3.4 Sydney Olympic Park Redevelopment 1990s

The southern portion of Homebush was developed as Sydney Olympic Park following the 1993 successful bid for Sydney to host the 2000 Olympic and Paralympic Games. Part of this development was the construction of sports facilities, competitor housing, roads, and rejuvenation of parklands and streetscapes. Rehabilitation and stabilisation of the area was conducted due to the contamination from prior industrial use.

In July 2001, the Sydney Olympic Park Authority (SOPA) was established, a statutory body of the NSW Government under the *Sydney Olympic Park Authority Act 2001*. The Authority's charter is to

[16] http://www.sopa.nsw.gov.au/our_park/history_and_heritage/industrial_history
[17] Newington Armament Depot and Nature Reserve CMP 2013
[18] http://www.sopa.nsw.gov.au/our_park/history_and_heritage/industrial_history
[19] http://www.sopa.nsw.gov.au/our_park/history_and_heritage/site_remediation

manage and promote the 640-hectare Sydney Olympic Park site, including protection of the 425-hectare Millennium Parklands, which included the Newington Armament Depot and Nature Reserve.[20]

[20] Newington Armament Depot and Nature Reserve CMP 2013

4.0 SITE ANALYSIS

4.1 Introduction

A site visit was conducted on the 3 February 2016 with an aim to locate any visible archaeological remains, assess the natural landform of the area and identify areas of previous disturbance. The site inspection was conducted on foot and a photographic record was made.

4.2 Site Description

The study area is predominantly used as a bitumen carpark, and is bordered by Sarah Durack Avenue to the north, and Olympic Boulevard to the west (Figure 9, Figure 10). The carpark has an access ramp off Sarah Durack Avenue, and an access road off Olympic Boulevard (Figure 12, Figure 13). A drainage system runs down the centre of the carpark (Figure 11). The northern area is a vegetation area with young trees and grasses (Figure 14, Figure 17, Figure 18). A smaller vegetation area is to the south (Figure 15). A row of young trees lines the western side of the study area, with an adjacent pine tree corridor (Figure 16, Figure 17). A multi-storey car park is located to the east of the study area (Figure 12). Local services are located in the study area, including electrical lines, controller box, and a stormwater drain (Figure 19, Figure 20, Figure 21, Figure 22).

Figure 9: View of car park facing north

Figure 10: View of carpark and vegetation area facing north west

Figure 11: View of carpark facing south west

Figure 12: Access ramp to carpark from Sarah Durack Avenue (facing south)

Figure 13: Access road to carpark from Olympic Boulevard (facing west)

Figure 14: Vegetation area in the north of study area (facing west)

Figure 15: Vegetation area in south of study area with access road to left (facing west)

Figure 16: Row of young trees in the west of study area (facing north)

Figure 17: View of vegetation area and row of young trees facing south

Figure 18: View of exposed soil in vegetation area facing north.

Figure 19: Stormwater drain running down middle of carpark (facing south)

Figure 20: Electrical controller box in north-western corner (facing southwest)

Figure 21: Services located in study area (facing southeast)

Figure 22: Services located in study area (facing east)

4.3 Geotechnical Investigations

Environmental and geotechnical investigations were conducted on the 3 December 2002 by URS for Sydney Olympic Park Authority. Five boreholes were excavated in the study area and one excavated outside of the study area (BH111) to investigate subsurface contamination for site development (Figure 23). The results showed that the top 3 to 7 meters was manmade fill deposited from the Golf Drive Range Landfill. Below this deposited fill were clays overlying shale bedrock with an average depth of 8 meters (Figure 24). A summary of results from each borehole is provided in Table 1.

Table 1: Summary of borehole log[21]

Borehole ID	Depth (cm) – approx.	Description
BH111	0 – 3 3-720 720-880 880-930	Asphalt Fill – foam, glass, wood in a sandy clay matrix Clay Highly weathered shale
BH112	0-3 3-630 630-880 880-945	Ashphalt Fill – foam, glass, wood in a sandy clay matrix Clay Highly weathered shale
BH113	0-3 3-420 420-760 760-790 790-1000	Ashphalt Fill – foam, glass, wood in a sandy clay matrix Clay Highly weathered shale Slightly weathered shale
BH114	0-3 3-440 440-700 700-750	Ashphalt Fill – foam, glass, wood in a sandy clay matrix Clayey sand Highly weathered shale
BH115	0-3 3-310 310-460 460-570	Ashphalt Fill – foam, glass, wood in a sandy clay matrix Clay Highly weathered shale
BH116	0-700 700-780 780-1045	Fill – foam, glass, wood in a sandy clay matrix Highly weathered shale Slightly weathered shale

[21] URS 2002

Figure 23: Location of boreholes, study area outlined in red (Source: URS Environmental and Geotechnical investigations report 2002)

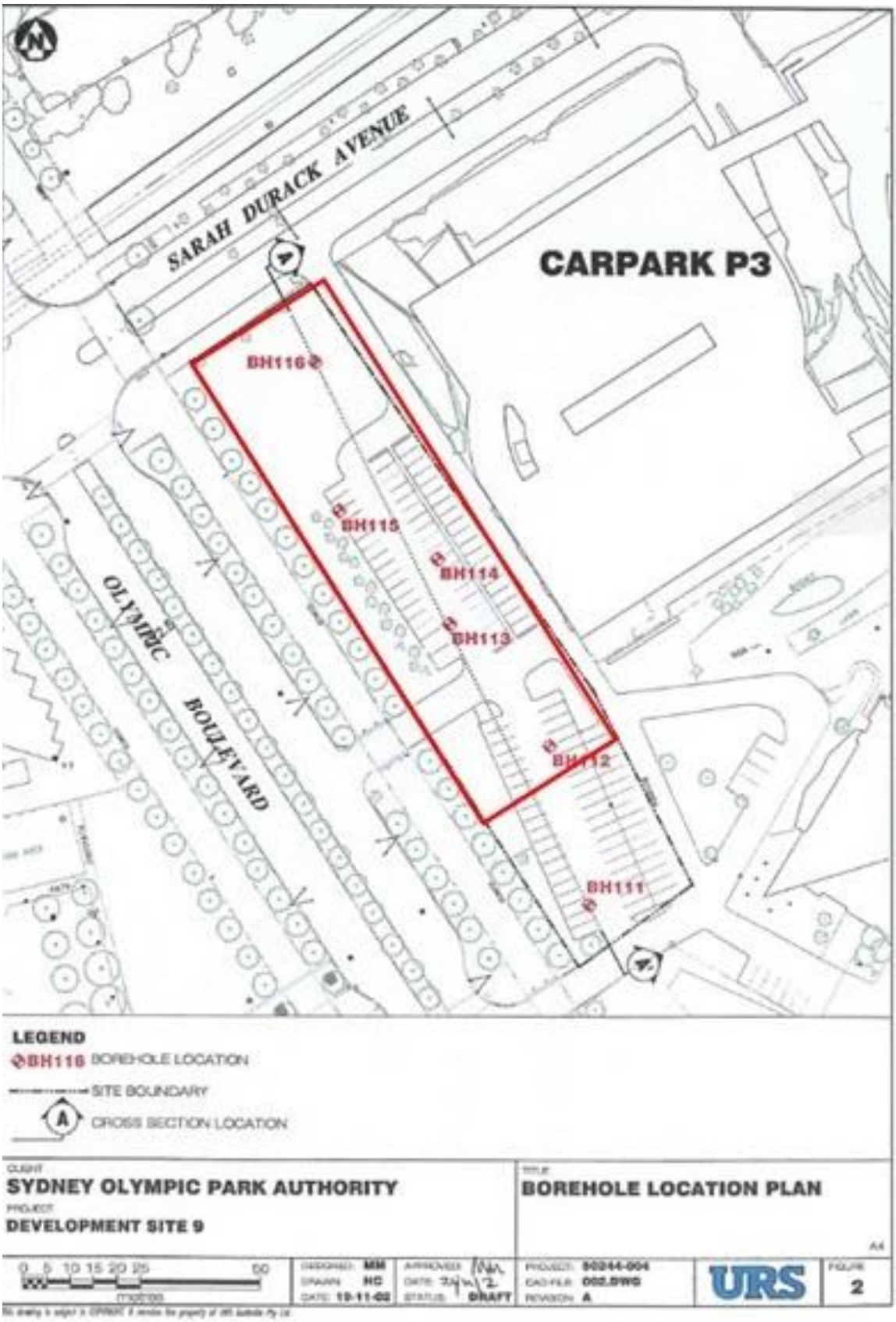
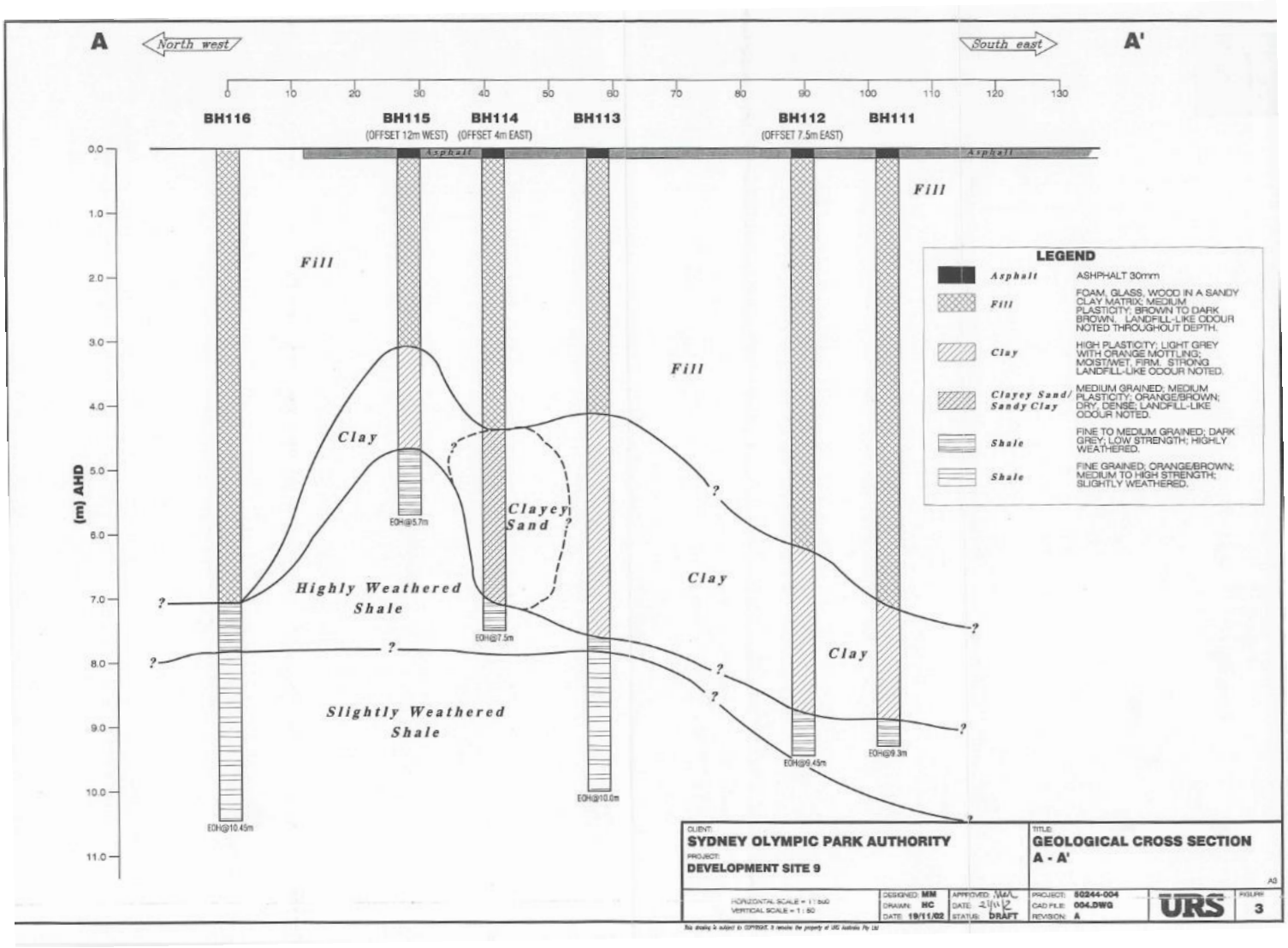


Figure 24: Results of geotechnical borehole investigation at Site 9, showing introduced fill deposits (Source: URS Environmental and Geotechnical Investigations 2002)



4.4 Previous Impacts

The Homebush Bay area was used as a dumping ground for industrial waste from nearby factories since the 1960s up until the 1990s. Waste remediation documentation from 1996 shows that up to 60 hectares north of Boundary Creek was classified as 'Unhealthy Land' under the Public Health Act 1991[22] and that the study area was also located in an area that was in breach of safety requirements of the Environmentally Hazardous Chemicals Act 1985 (see Figure 25).

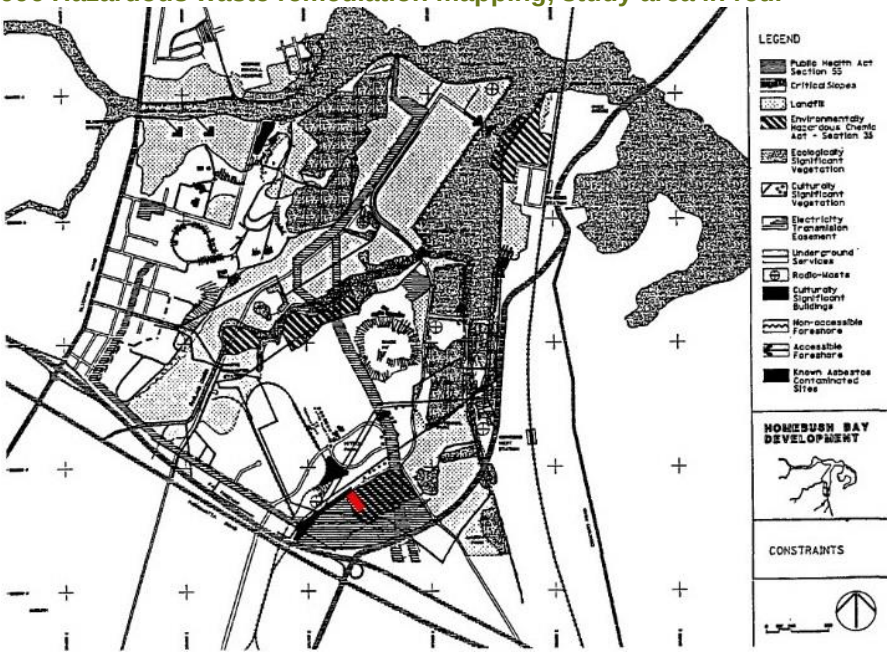
Remediation strategies prior to the development of Olympic Boulevard for the 2000 Sydney Olympic Games involved extensive earthworks to manage these ground toxins. Much of the ground surface was excavated and moved to new artificial landforms located near the study area – specifically where the Tom Wills Oval and the Bicentennial Marker are located. In the process Boundary Creek was diverted to the south of its original location in order to avoid chemical leaching into the waterway. This area was then reclassified by the SOPA in 2010 as the 'Golf Driving Range Landfill'[23].

The extent of this landfill area is unclear. The edge of the 'Golf Driving Range Landfill' is located through the study area, covering the entire area except for a small (approximately 300m^2) portion in the northwest corner (Figure 26). Geotechnical reports discussed in Section 4.3 above show that boreholes analysed in the study area have revealed deep deposits (up to seven metres) of man-made contaminated fill. While the northwest corner of the study area lies outside of the more recent contaminated land mapping, it is highly likely to have been an area of extensive earthworks during the waste remediation process.

Further ground surface impacts have occurred after the waste remediation process with the construction of the car park and garden beds. The grass garden in the northern part of the study area is grown in introduced topsoil. Further impacts have been caused by services excavation for stormwater drains, sewer lines, electricity and traffic signal lines in and around the study area.

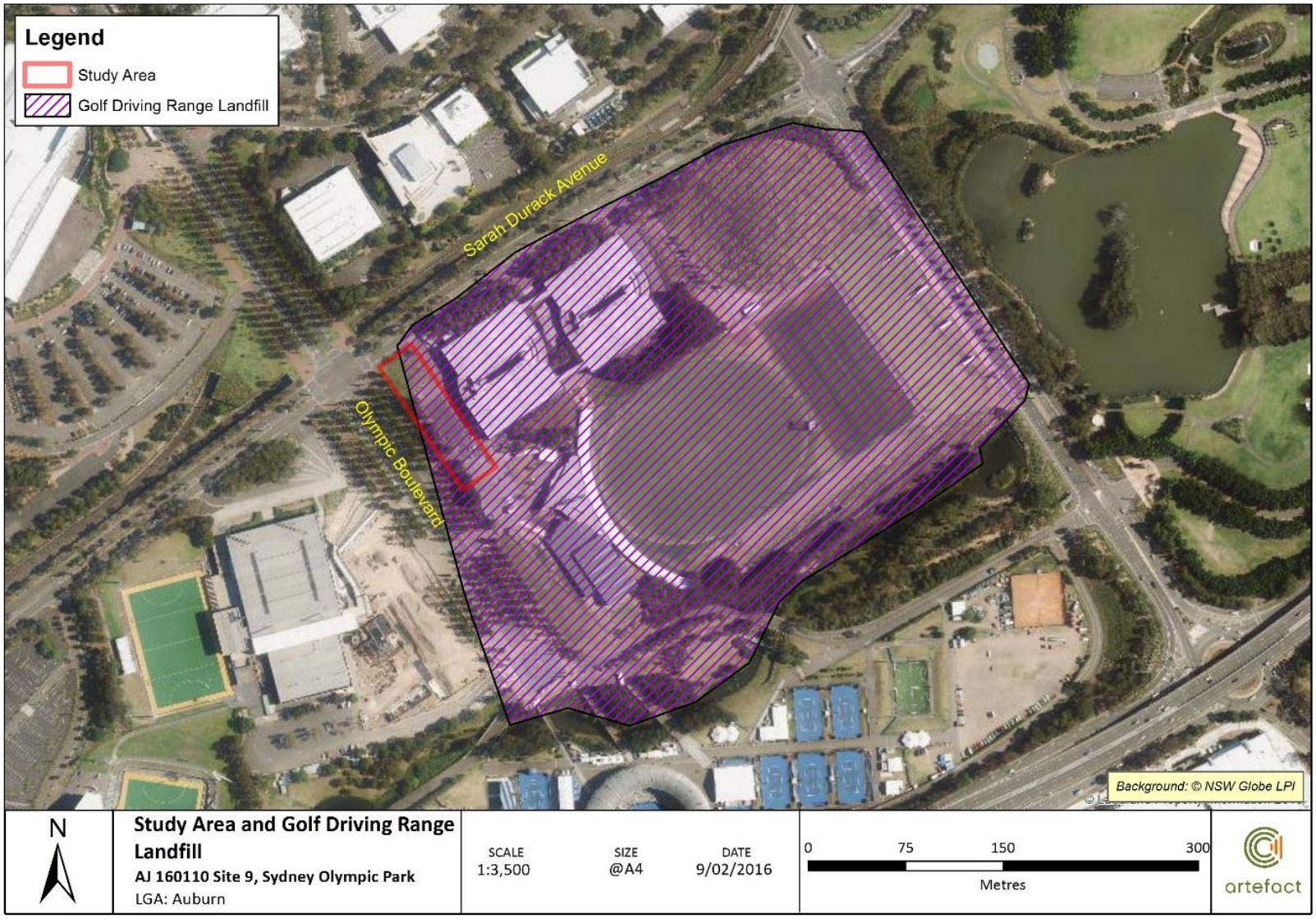
Because of these impacts, the study area has been classified as highly disturbed.

Figure 25: 1996 Hazardous waste remediation mapping, study area in red.



[22] Whithers, N.J. 1996. "Embracing Risk Management: The Homebush-Newington Experience", report by AXIS Environmental Consultants for the Olympic Co-ordination Authority. CSIRO Publishing, Melbourne. Pp 131 – 132.
[23] Sydney Olympic Park Remediated Lands Management Policy 2014, p8.

Figure 26: Extent of 'Golf Driving Range Landfill' in relation to the study area (Source: Sydney Olympic Park Authority 2014)



5.0 ARCHAEOLOGICAL ASSESSMENT

5.1 Aboriginal Archaeological Assessment

Assessing Aboriginal archaeological potential is closely related to analysing environmental factors to fit predictive models of archaeological site location. Predictive models for the Sydney area, consistent with the OEH due diligence guidelines, note that Aboriginal archaeological sites are more likely located within 200 metres of water, within sand dune systems, located on ridge lines or near caves, rock shelters or cliff faces.[24] Modern ground disturbance significantly reduces the likelihood of locating and identifying Aboriginal archaeological objects. This chapter will assess these factors to determine the likelihood of locating Aboriginal archaeological objects.

5.1.1 Environmental Context

Landform, Geology and Soils

The study area is located on a mild southward sloping hill located near to Homebush Bay. The local area has low relief with slopes usually less than <5%. The underlying geology of the study area consists of middle Triassic epoch black to dark-grey shale and laminate deposits belonging to the Wianamatta Group.

The study area was originally located on Blacktown soils. The Blacktown soils are shallow (<100cm) hard setting mottled red and brown podzolic soils on crests and yellow podzolic soils on lower slopes and along drainage lines. The Blacktown soil landscape is generally associated with gently undulating rises. The soils are primarily poorly drained with very little erosional activity with minor sheet and gully erosion in zones stripped of vegetation.[25]

The study area today has had extensive modern ground disturbance however, and the natural Blacktown soil profile is almost entirely absent from the area. The soils in the study area, from geotechnical studies, are predominantly degrading organic landfill deposits. Areas of Blacktown soil profiles may still exist in isolated areas of the study area.

Hydrology

The study area is located in the drainage catchment of Boundary Creek which runs into the man-made Belvedere Lake in Bicentennial Park. Prior to the use of the Homebush Bay area as a landfill in the late twentieth century, Boundary Creek was a tributary of Powell's Creek, which flows into Homebush Bay from the south. The study area is located approximately 180 metres north of the present course of Boundary Creek. The present course of Boundary Creek is located between landfill mounds and is not an intact natural creek bank (Figure 27, Figure 28).

[24] Office of Environment and Heritage 2010 *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales,* p12.
[25] *ibid.*

Figure 27: View of modified creek banks of Boundary Creek, west aspect

Figure 28: Boundary Creek with artificial retaining embankment, northeast aspect

Natural Resources

Aboriginal people were highly mobile hunter-gatherers utilising different landscapes and resource strategies across the Sydney basin. Different resources may have been available seasonally, necessitating movement or trade across the landscape.[26] Aboriginal people hunted kangaroo and wallaby and snared possums and other small animals and birds for food and skins. Plants were likewise an important source of nutrition for past Aboriginal peoples with numerous plant species utilised for food, manufacture and medicinal purposes.[27].

Given the location of the study area within close proximity to fresh water sources as well as the shore of Homebush Bay it is likely that Aboriginal people would have employed a range of subsistence activities to take advantage of their local environment. Coastal resources such as saltwater fish and shellfish would have been available to groups as well as small animals, plants, freshwater fish and eels.[28] Banksia flowers, wild honey, varieties of wild yam and Burrawong nut were recorded as important food sources, particularly for inland groups. Small animals such as bandicoots and wallabies were hunted with traps and snares.[29]

Modern Land Use and Disturbance

European land use has severely disturbed the ground surface in the study area. Early European forest clearing activities for agriculture is likely to have caused minor disturbance of potential Aboriginal archaeological deposits. The use of the Homebush Bay region, and the study area in particular (see Section 4.4 above) as an industrial waste dumping site has caused the near-total removal of intact archaeological deposits throughout the study area. It is unlikely that any Aboriginal archaeological deposits would remain in the area after the dumping of landfill and the landfill remediation policies involving consolidating landfill deposits in artificial hills and mounds in the area.

5.1.2 Aboriginal Archaeological Context

AHIMS Search

The locations and details of Aboriginal sites are considered culturally sensitive information. It is recommended that this information and associated maps are removed from the report if it is to be made publically available.

[26] Attenbrow 2010: 78
[27] Attenbrow 2010: 41
[28] Tench 1793:230, Kohen 1986:77
[29] Collins 1798, Kohen 1985:9

The AHIMS search provides information on the archaeological context of the area, and helps ascertain whether there are any previously recorded Aboriginal sites within the study area. An extensive search of the AHIMS site register was conducted on the 2nd of February 2016 with the following parameters:

GDA 1994 MGA 56	319451 – 323539 E 6250504 – 6254602 N
Buffer	50 metres
Number of sites	2
AHIMS Search ID	209867

The search area was centred upon the study area, with a wide buffer of two kilometres in order to give context and account for errors in the AHIMS system. A total of 2 recorded Aboriginal sites were identified within the search area, both of which are located outside of the study area. These sites are illustrated in respect to the study area on Figure 29 below.

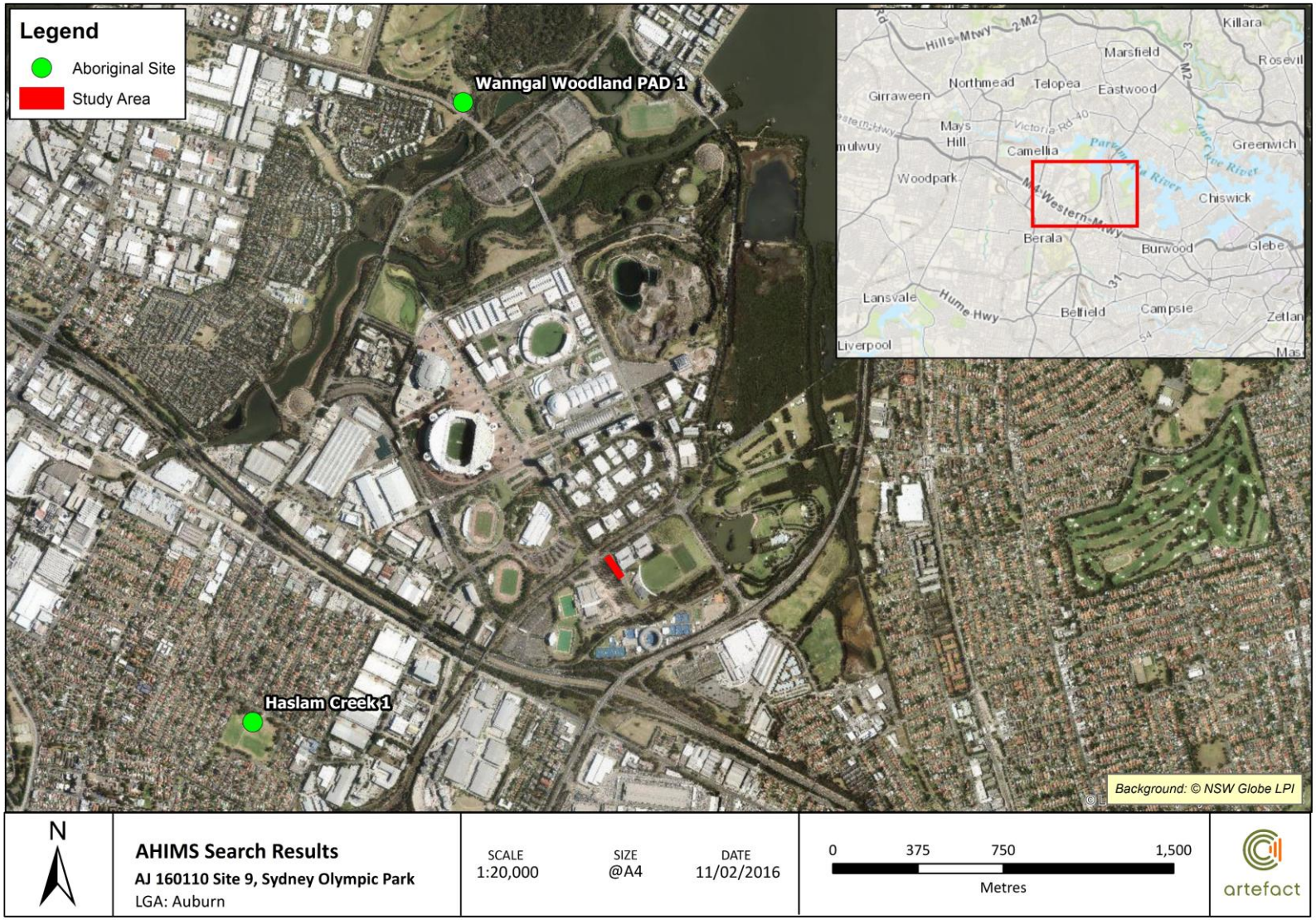
These two Aboriginal sites consisted of an artefact site and a potential archaeological deposit (PAD). While the AHIMS search area was large and located near to a historically resource-rich waterway, it is likely that the significant history of industrial development in the Homebush Bay area has damaged or destroyed Aboriginal archaeological sites.

Based upon the AHIMS data presented in Table 2 below, the most likely sites to be located in the study area are artefact sites or potential archaeological deposits (PADs).

Table 2: Frequency of site types near the study area, based on AHIMS search data

Site Type	Frequency	Percentage
Artefact Site	1	50%
Potential Archaeological Deposit (PAD)	1	50%
TOTAL	**2**	**100%**

Figure 29: Map of AHIMS search results



Ethno-historical Background

Prior to the appropriation of their land by Europeans, Aboriginal people lived in small family or clan groups that were associated with particular territories or places. It seems that territorial boundaries were fairly fluid, although details are not known. The language group spoken across Sydney was known as Darug (Dharruk – alternate spelling). The first written use of this term was in 1900, as before the late 1800s language groups or dialects were not discussed in the literature.[30] The Darug language group is thought to have extended from Appin in the south to the Hawkesbury River, west of the Georges River, Parramatta, the Lane Cove River and to Berowra Creek.[31] This area was home to a number of different clan groups throughout the Cumberland Plain.

Early historical accounts of Aboriginal people are inevitably subject to the writer's bias, however, they do provide valuable observations of Aboriginal customs and life during the early period of European occupation. Language dialects varied across the Cumberland Plain, although early Europeans recorded observations of interaction and mutual intelligibility between Darug speakers from different regions. Captain Watkin Tench detailed an interaction between two Aboriginal men, one from the coast and one from inland, and noted the range of variability between dialects. Tench observed that though the men conversed on par and understood each other perfectly, many words for common things bore no similarities, yet other words were only slightly different.[32]

There are two possible groups or clans associated with the local area. Bediagal or Bidjigal were observed in association with Arrowanelly 'Island at the Flats' an island originally on the western side of Botany Bay near the mouth of the Bay.[33] Alternatively, Wangal, Wann-gal or Won-gal were observed from the southern shore of the Parramatta River from near Darling Harbour to Rose Hill.[34]

The existing archaeological record is limited to certain materials and objects that were able to withstand degradation and decay. As a result, the most common type of Aboriginal objects remaining in the archaeological record are stone artefacts, followed by bone and shell. The locality of the study area along an undulating landscape within close proximity to fresh water sources indicates that the predominant site type would be stone artefact sites and open camp sites.

5.1.3 Assessment of Aboriginal Archaeological Potential

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

Historical research has shown that previous land uses have heavily impacted the study area from the mid- twentieth century until the late- twentieth century.

This Aboriginal Archaeological Assessment has identified that a large portion of the study area has been subject to these past ground disturbances. The Code of Practice defines disturbed land:

> *Sec 7.5 (4) For the purposes of this clause, land is disturbed if it is has been the subject of human activity that has changed the lands surface, being changes that remain clear and observable.*

[30] Mathews and Everitt 1900
[31] Attenbrow 2010:34
[32] Tench 1793:122
[33] Attenbrow 2010: 24
[34] Attenbrow 2010: 26

This includes disturbed land via:

> *(f) construction or installation of utilities and other similar services (such as above or below ground electrical infrastructure, water or sewerage pipelines, stormwater drainage and other similar infrastructure),*
>
> *(h) construction of earthworks associated with anything in paragraphs (a) – (g)*

The study area has been impacted by landform modification, predominantly associated with twentieth century industrial waste dumping and subsequent earthworks enacted to remediate the site of contaminants. In order to 'cap' soil contaminants, a hard-stand car park was built on top of these landfill deposits, with non-natural soil introduced to allow vegetation to grow.

During the site inspection, no Aboriginal objects or natural soil were identified within the study area. It is unlikely that Aboriginal objects will be located in an area with introduced modern landfill that extends up to 7 metres below ground. As such, the study area has been concluded to not have the potential to contain Aboriginal objects.

5.2 Historical Archaeological Assessment

Historical archaeological potential is assessed by identifying former land uses and associated features through historical research, and evaluating whether subsequent actions (either natural or human) may have impacted on evidence for these former land uses. This chapter will assess these factors to determine the potential for intact archaeological remains to be located in the study area.

5.2.1 Land Use Summary

There are four major phases of land use associated with the study area:

- Phase 1: Vegetation clearance for European farming, including the construction of a farmhouse and horse racing track, and later subdivision.
- Phase 2: The area was part of the State Abattoir and continued to be used as a cleared farming area up until the mid- twentieth century, with a stock road in the western portion of the study area.
- Phase 3: Used for waste disposal in the late twentieth century associated with the Golf Driving Range Landfill deposit.
- Phase 4: Remediation of contaminated landfill involved extensive earthworks in the study area. Subsequently redeveloped into a carpark prior to the 2000 Olympic Games, with excavation for services and surface landscaping.

5.2.2 Relevant Archaeological Studies

There have been previous archaeological studies in the vicinity of Sydney Olympic Park, and Homebush Bay, but none have been conducted specifically of the study area.

Urbis, August 2015, 2 Figtree Drive, Sydney Olympic Park, Historic and Aboriginal Archaeological Assessment, prepared for Mirvac.

Urbis undertook a historic and Aboriginal archaeological assessment and prepared a heritage impact statement of 2 Figtree Drive, Sydney Olympic Park in August 2015. The assessment deemed the area to have no evidence of aboriginal occupation and previous excavations of the site had revealed the ground surface was largely an introduced or reformed top soil, and no evidence of previous structures of land use were found.

This site is located to the north east of the study area.

Godden Mackay Pty Ltd, August 1990, State Abattoir Homebush Buildings Archaeological Assessment., prepared for NSW Property Services Group.

This report investigated the State Abattoir which is north of the study area. It primarily focused on the built heritage of the site, with a detailed historical review of the site.

5.2.3 Potential Archaeology

Analysis of parish maps, aerial photographs, archival documents, and photographs suggests that the study area has low potential to contain archaeological deposits and features associated with the early habitation and subsequent development of the area. Generally, the study area has been subject to low intensity agricultural uses, with the largest built feature being the construction of a stock road. In the mid-twentieth century contaminated landfill was deposited in the study area and later remediated through large-scale earthworks.

The archaeological potential of the study area will be presented using the following grades:

Nil-Low Potential: land use history suggests limited development or use, or there is likely to be quite high impacts in these areas, however deeper sub-surface features such as wells, cesspits or isolated archaeological deposits may survive.

Moderate Potential: land use history suggests limited phases of low-moderate development intensity, or that there are impacts in this area. A range of archaeological remains are likely to survive, including building footings and shallower remains as well as deeper sub-surface features.

High Potential: substantially intact archaeological remains could survive in these areas.

Phase 1: Early Land Grants and Subdivision

Land-use during this phase is characterised by land clearance and cattle grazing. The study area was located within land sold to D'Arcy Wentworth in the early nineteenth century. A farmhouse, associated outbuildings, roads, and a horse racing track were constructed on this property, although likely not in the study area. The 1854 sketch of the horse racing track illustrates that a timber structure was present and possibly a starter's box. In the background some other buildings are illustrated, possibly part of the farm buildings or stables. The land was largely divided into paddocks for agriculture, and later subdivisions for the proposed Homebush Estate were never developed for housing in the study area. There is no evidence that any structures were constructed on land within the study area.

Potential archaeological remains typically associated with nineteenth century agricultural use are ephemeral in nature. Activities such as tree clearance, fence construction, the development of unsealed roads and agricultural planting leave little material evidence and are not likely to be located. The horse racing track and its associated wooden buildings would have low potential to be in the study area as well.

There is nil-low potential for archaeological relics associated with the Wentworth Estate and the horse racing track to be present within the study area.

Phase 2: Twentieth Century Industries

This phase of land use saw the development of the State Abattoir, the Brick Works, and the Newington Armoury Depot in the area. Analysis of aerial photos, maps, and historic documents and plans show that the study area was cleared agricultural land with a stock road running on the western side.

Potential archaeological remains typically associated with twentieth century agricultural use are difficult to locate or identify. Activities such as fence construction, the development of unsealed roads and agricultural planting leave little material evidence and are not likely to be located. Possible remains associated with the stock road could include materials associated with embankments, retaining walls or brick edging.

There is nil-low potential for archaeological relics associated with the State Ownership phase to be present within the study area.

Phase 3: Industrial Waste Depository

The study area was utilised as a landfill for toxic and non-toxic waste from nearby industrial areas (Rhodes, Concord, Silverwater, Parramatta). No industrial facilities were constructed in the study area however.

There is nil potential for archaeological relics associated with the industrial use to be present within the study area.

Phase 4: Sydney Olympic Park Redevelopment

The current phase of the study area is a bitumen carpark with garden beds built on introduced topsoil. This area was developed from the 1990s until the present day.

There is nil potential for archaeological relics associated with post-industrial development to be present within the study area.

5.2.4 Summary of Archaeological Potential

The potential for the archaeological remains to be located within the study area for each phase is summarised below:

- Phase 1: Early Land Grants and Subdivision – nil-low potential for archaeological relics associated with early land grants such as postholes, isolated rubbish deposits, timber farm buildings, unsealed roads, and material evidence of the horse racing track
- Phase 2: Twentieth Century Industries – nil-low potential for archaeological relics associated with the stock road for the State Abattoir, including evidence of road embankments, retaining walls and brick edging
- Phase 3: Industrial Waste Depository – nil potential for archaeological relics associated with industrial development in the study area
- Phase 4: Sydney Olympic Park Redevelopment – nil potential for archaeological relics associated with post-industrial development in the study area.

5.2.5 Archaeological Significance

The Heritage Division of the Office of Environment and Heritage (OEH) issued a new set of guidelines in 2009: Assessing Significance for Historical Archaeological Sites and 'Relics'. In accordance with the 2009 guidelines, the following section presents a discussion of the potential archaeological resource's research potential and an assessment against the NSW heritage significance criteria.

Archaeological Research Potential

Consideration of archaeological research potential is required when undertaking a significance assessment of an historical archaeological site. Bickford and Sullivan espoused the principles and developed a framework in order to assess archaeological research potential. These principles have been incorporated into three questions and should be used as a guide for assessing the significance of an archaeological site.[35]

- Can the site contribute knowledge that no other site can?
- Can the site contribute knowledge that no other resource can?
- Is this knowledge relevant to general questions about human history or other substantive questions relating to Australian history, or does it contribute to other major research questions?

The study area has nil - low potential to contain an archaeological resource that may be able to support and enhance the current state of knowledge about its phases of occupation. Any surviving archaeological remains within the study area are likely to have been removed when the manmade landfill was deposited. Given the disturbed nature of the study area the potential archaeological resource is unlikely to contribute to current archaeological research agendas.

5.2.6 Statement of Historical Archaeological Significance

Owing to the land-use history and the high level of previous impacts, there is nil-low potential for significant archaeological remains within the study area. As such, the potential archaeological resource is unlikely to contribute to our understanding or appreciation of the past and does not meet any of the significance assessment criteria.

[35] Bickford, A and S Sullivan, pp. 23-24

6.0 ARCHAEOLOGICAL IMPACT ASSESSMENT

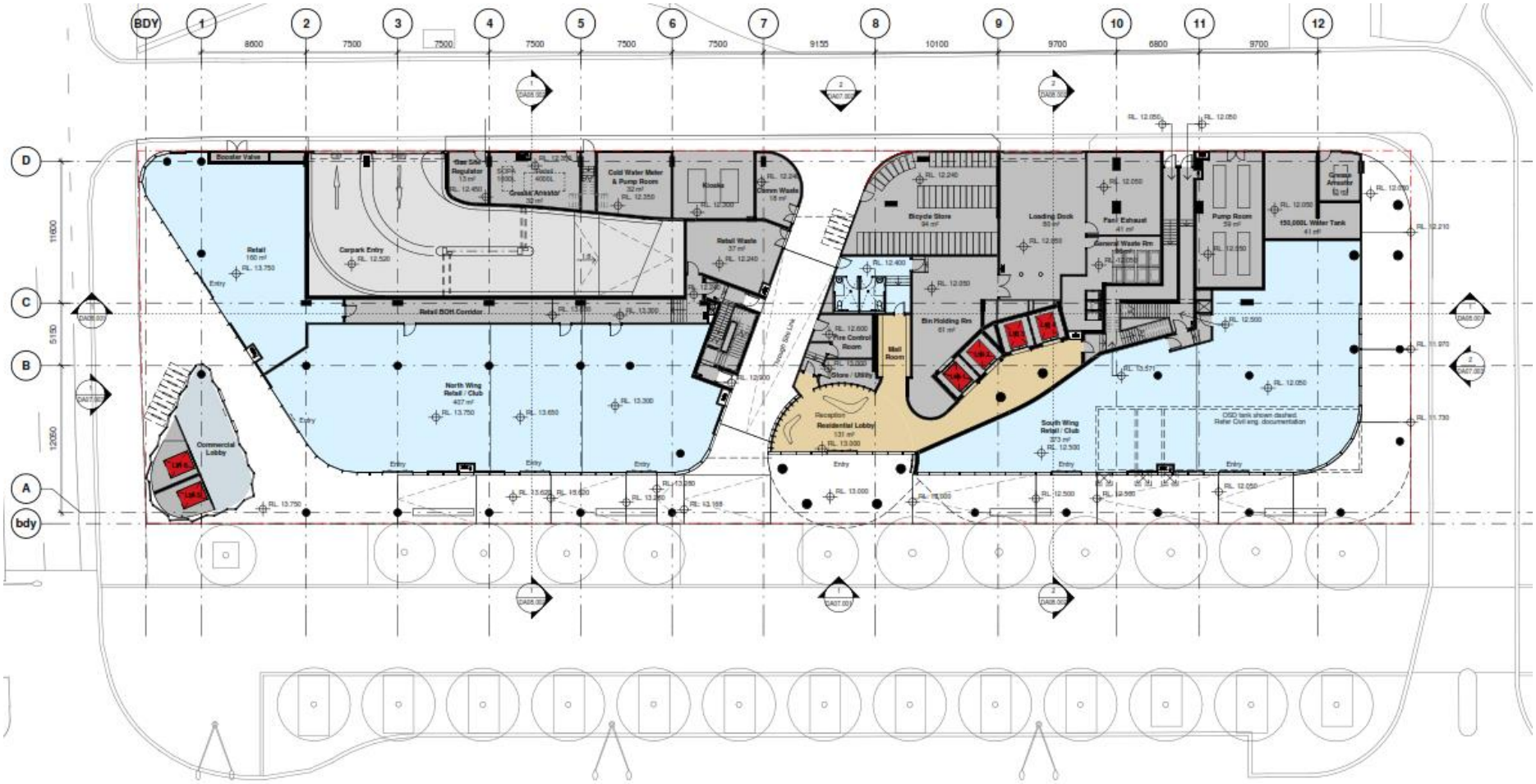
6.1 Proposed Development

Ecove Group have proposed a mixed use development at Site 9, Sydney Olympic Park. This will consist of a 38-storey building which includes above ground car parking over five levels, retail facilities on the ground level, a resident tower, and two levels of offices.

Due to ground contaminant remediation policies, the majority of sub-surface excavation will consist of piling excavation for the installation of structural support columns. The proposed piling depths are between 8.5 to 9 metres into the underlying shale bedrock. Approximately 57 columns of up to 900mm diameter will be constructed, with 1600mm-wide band-beams excavated to 500mm depth on the outer eastern and western edges of the building.

With this excavation program, the sub-surface impacts will not affect the entire building footprint.

Figure 30: Proposed ground floor plan, orientated approximately east-northeast (Source: Bates Smart Architects)



6.2 Impacts to Potential Archaeological Resources

6.2.1 Aboriginal Archaeological Impacts

Due to the highly disturbed nature of the ground, archaeological deposits are not likely to exist. The proposed development is unlikely to impact any Aboriginal archaeological objects.

6.2.2 Historical Archaeological Impacts

Due to the highly disturbed nature of the ground, archaeological deposits are not likely to exist. The proposed development is unlikely to impact historical archaeological 'relics'.

6.3 Mitigation

The proposal is unlikely to impact any intact archaeological remains therefore no further archaeological investigation or mitigation is required.

If environmental testing shows that the north-western corner of the study area has not been disrupted by landfill remediation practices, there is a nil-low potential to identify historical archaeological remains associated with the State Abattoir stock road. There would also be a nil-low potential to encounter isolated Aboriginal objects.

An unexpected finds policy would be implemented in the event of Aboriginal or non-Aboriginal archaeological deposits being identified during ground works and excavation.

An unexpected finds policy would involve the following actions:

- Stop work within the affected area, protect the potential archaeological find, and inform environment staff or supervisor.
- Contact a suitable qualified archaeologist to assess the potential archaeological find.
- If historical archaeological 'relics' are identified, works in the affected area should cease, and the NSW Heritage Division should be informed. Further archaeological mitigation may be required prior to works recommencing.
- If Aboriginal objects are uncovered during excavation, work should cease, and an archaeologist, the Office of Environment and Heritage (OEH), and the Metropolitan Local Aboriginal Land Council (MLALC) should be informed.
- If human remains are found, work should cease, the site should be secured and the NSW Police and OEH should be notified.

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

- The study area has been largely used for agricultural and pastoral purposes since the nineteenth century until the late-twentieth century
- There is a high level of landform modification in the study area from late twentieth century contamination fills and subsequent urban redevelopment for Sydney Olympic Park
- There is nil-low potential for historical archaeological 'relics' or Aboriginal heritage to be located within the study area
- The proposed works are unlikely to impact archaeological relics or Aboriginal heritage in the study area.

7.2 Recommendations

- The proposed works are not expected to impact archaeological relics or Aboriginal heritage and therefore no further archaeological investigation or mitigation is required.
- If environmental testing shows that the north-western corner of the study area has not been ground-disrupted from landfill remediation practices, there is a nil-low potential to identify historical and Aboriginal archaeological objects. An unexpected finds policy would be put in place, involving the following actions in the case of archaeological remains being located:
  - Stop work within the affected area, protect the potential archaeological find, and inform environment staff or supervisor.
  - Contact a suitable qualified archaeologist to assess the potential archaeological find.
  - If historical archaeological 'relics' are identified, works in the affected area should cease, and the NSW Heritage Division should be informed. Further archaeological mitigation may be required prior to works recommencing.
  - If Aboriginal objects are uncovered during excavation, work should cease, and an archaeologist, the Office of Environment and Heritage (OEH), and the Metropolitan Local Aboriginal Land Council (MLALC) should be informed.
  - If human remains are found, work should cease, the site should be secured and the NSW Police and OEH should be notified.

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