Hunter Indoor Sports Centre

Aboriginal Archaeological Technical Report

LGA: Newcastle

Report to EJE Architecture

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artefact

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EXECUTIVE SUMMARY

Artefact Heritage and Environment Pty Ltd (Artefact Heritage) has been commissioned by EJE Architecture on behalf of Basketball Association of Newcastle Limited (BANL) to prepare this report in accordance with the technical requirements of the Secretary's Environmental Assessment Requirements (SEARs), and in support of the State Significant Development Application (SSD-65595459) for the proposed Hunter Indoor Sport Centre with courts, indoor stadium, amenities and associated civil and landscaping works, at 2 Monash Road and 24 Wallarah Road, New Lambton.

This Aboriginal Technical Report (ATR) is being undertaken to identify Aboriginal objects or places within the study area and assess the scientific significance of any Aboriginal objects or places which are found. This report will evaluate impacts to any identified Aboriginal objects or places and develop management measures for any proposed impacts associated with the development of the Hunter Indoor Sports Centre project.

The assessment found that the study area is unlikely to contain Aboriginal objects based on the following:

- An AHIMS extensive search and a review of previous archaeological literature did not reveal any previously known Aboriginal sites within the study area
- No previously unrecorded Aboriginal objects, sites or areas of PAD were identified within the study area as a result of the archaeological survey
- One scatter of exposed shell was identified near a former dummy gun emplacement on the northern boundary of the study area. It is considered that it is likely based on the lack of midden deposits observed through geotechnical study (Kleinfelder 2023), the disturbance and modification of the study area landform, and the overall likelihood for the shell to be redeposited that the scatter is not of Aboriginal origin

Based on the results of this assessment and in accordance with Aboriginal heritage guidelines mandated in the SEARs for the proposal, the following recommendations are made:

- No further archaeological investigation is recommended for the study area based on the results of the desktop research, AHIMS extensive search and archaeological survey.
- An ACHAR must be prepared to address Requirement 11 of the SEARs.
- Consultation with Aboriginal stakeholders must be commenced in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010a).
- If changes are made to the proposal that may result in impacts to areas not assessed by this ATR further assessment must be undertaken.

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1.0 INTRODUCTION

1.1 Project brief

Artefact Heritage and Environment Pty Ltd (Artefact Heritage) has been commissioned by EJE Architecture on behalf of Basketball Association of Newcastle Limited (BANL) to prepare this report in accordance with the technical requirements of the Secretary's Environmental Assessment Requirements (SEARs).

This Aboriginal Technical Report (ATR) supports the Response to Submissions (RTS) and Amendment Report for State Significant Development Application (SSD- 65595459) for the proposed Hunter Indoor Sport Centre (HISC) at 2 Monash Road and 24 Wallarah Road, New Lambton. SSD-65595459 sought development consent for an indoor stadium, amenities and associated civil and landscaping works.

The Amendment Report seeks changes to the original development proposal SSD-65595459.

The key project amendments include moving the building footprint and carpark west, adding turfed open space near Turton Road, and shifting the access driveway south. The realigned pedestrian promenade within the carpark includes a bridge over the open space.

The height at the south-eastern corner of the building will be increased to provide flexibility to use the upper level of the building for gymnastics and other activities, there are also minor internal reconfigurations to fit the revised footprint.

Within the public domain works include widening the Turton Road footpath, adding pedestrian safety fencing, and retaining the existing cycle/pathway on the south eastern corner of the site. The landscaping and public domain changes mean that four trees on the Turton Road frontage (previously proposed to be removed) can now be retained.

On the southern edge of the site, landscaping elements have been removed. Space is provided for the future expansion of pedestrian / cycleway route along this corridor (works to be delivered by others).

The active recreation area, including a half basketball court, has been deleted from the proposal.

Development consent is sought for the entire proposal.

Relevant requirements from the SEARs are listed in Table 1.

Table 1: Planning Secretary's Environmental Requirements

Item No.	Project SSD-65565459	Section of report
11.	***Aboriginal Cultural Heritage:*** Provide an Aboriginal Cultural Heritage Assessment Report prepared in accordance with the relevant guidelines, identifying, describing and assessing any impacts on any Aboriginal cultural heritage values on the land.	Addressed in this report

1.2 Description of site and locality

The site is located at 2 Monash Road and 24 Wallarah Road, New Lambton, within the Newcastle local government area (LGA), as illustrated in Figure 1. The site comprises multiple parcels of land and is legally described as:

- Lot 2380 DP755247
- Lot 2379 DP755247
- Lot 2378 DP755247
- Lot 2377 DP755247
- Lot 1 DP1304081.

The project area is situated within a public recreation area (RE1) extending east to west, and surrounded to the north by Lambton High School, and to the south by Lambton Ker-rai Creek and residential properties. The nearest water source is Lambton Ker-rai Creek, a concrete stormwater channel which runs just outside the southern section of the study area.

1.3 Aims and objectives

This report has been prepared in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010a; hereafter the Code of Practice). The aim of this report is to identify whether Aboriginal objects or places will be harmed by the proposal, and to recommend whether management or mitigation measures are required. This report will support an ACHAR and the relevant planning approval pathway.

The objectives of this report are to:

- Review existing knowledge: Review previous archaeological works and AHIMS search results
- Review landscape context: Assess archaeological implications of the landscape features through desktop study (soil landscapes, historic land use, geomorphic character, and natural resources) relevant to the study area
- Summarise and discuss the local and regional archaeological character of Aboriginal land use and its material traces based on the finds of the previous two steps
- Develop a predictive model for the nature and distribution of archaeological evidence of Aboriginal land use based on the previous three steps
- Complete an archaeological survey to test the predictions developed in the previous step. Archaeological survey will not include test excavations or any ground disturbing works and is limited to a walkover of the study area
- Discuss results of the archaeological survey and re-evaluate the local and regional archaeological character
- Assess likely impacts to Aboriginal objects and Potential Archaeological Deposits (PADs) based on the current design plans
- Consider any practical measures that may be required to protect and conserve identified Aboriginal objects and places identified within the study area

1.4 Limitations and constraints

The scope of this ATR is based on information provided by the proponent to date. Land located outside the study area boundary has not been assessed.

This report excludes historical heritage assessment and excludes provision of any advice under the *Heritage Act 1977.* A separate Historical Archaeological Assessment (HAA) has been prepared by Artefact Heritage and Environment (Artefact Heritage).

1.5 Authors and contributors

This report has been prepared by Matthew Finlayson (Senior Heritage Consultant, Artefact) and Kristen Tola (Heritage Consultant, Artefact). Mapping has been prepared by Mike Douglas (GIS Officer, Artefact). Historical context was largely compiled by Dr Stephen Gapps (Historian, Artefact) and Dr Elizabeth Bonshek (Senior Heritage Consultant, Artefact), and has been adapted for the current study area. Technical review and management have been provided by Ryan Taddeucci (Aboriginal Heritage Team Leader, Artefact), and Samantha Higgs (Country & Culture Team Leader, Artefact). A summary of the authors, contributors and their role are provided below in Table 2.

Table 2. Summary of authors and contributors

Authors and Contributors	Qualifications	Experience	Tasks
Jenny Winnett	Bachelor of Arts (Honours – Archaeology)	15+ years	• Project Management
Ryan Taddeucci (Aboriginal Team Leader)	Bachelor of Arts (Honours – Archaeology) Master of Museum Studies Graduate Certificate (Maritime Archaeology)	11+ years	• Technical Support and Review
Dr Samantha Higgs	Bachelor of Arts (Hons) Archaeology PhD Archaeology and Anthropology	20+ years	• Quality Control • Technical Review
Mike Douglas (GIS Officer)	Bachelor of Arts (North American Archaeology) Master of Science (Geology) Master's Certificate in GIS Science	20+ years	• Preparation of mapping • GIS support
Dr Stephen Gapps (Historian)	Bachelor of Arts (Hons) History Master of Applied History PhD History	20+ years	• Background Histories
Dr Elizabeth Bonshek (Senior Heritage Consultant)	Master of Arts (Archaeology and Anthropology) PhD Archaeology and Anthropology	20+ years	• Background Histories
Matthew Finlayson	Bachelor of Arts, Archaeology Master of Heritage Management	5+ years	• Report preparation • Internal Review
Kristen Tola (Heritage Consultant)	Bachelor of Arts (Hons) Classical Studies Master of Cultural Heritage and Museum Studies (Heritage Practice) Graduate Certificate (Archaeology)	15+ years	• Project management • Report preparation • Site inspection

Figure 1. The study area

2.0 STATUTORY REQUIREMENTS

2.1 Commonwealth legislation

2.1.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment and Heritage Legislation Amendment Act (No.1) 2003* amends the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) to include 'national heritage' as a matter of National Environmental Significance and protects listed places to the fullest extent under the Constitution. It also establishes the National Heritage List (NHL) and the Commonwealth Heritage List (CHL).

The *Australian Heritage Council Act 2003* (AHC Act) establishes a new heritage advisory body - the Australian Heritage Council (AHC) - to the Minister for the Environment and Heritage and retains the Register of the National Estate (RNE).

The *Australian Heritage Council (Consequential and Transitional Provisions) Act* 2003 repeals the *Australian Heritage Commission Act* 1975, amends various Acts as a consequence of this repeal and allows the transition to the current heritage system.

Together the above three Acts provide protection for Australia's natural, Indigenous and non-Indigenous heritage. Features of the Acts include:

- the NHL of places of national heritage significance
- the CHL of heritage places owned or managed by the Commonwealth
- the creation of the AHC, an independent expert body to advise the Minster on the listing and protection of heritage places
- continued management of the Register of the National Estate (RNE).

A register search was conducted on 24 October 2023. A summary is outlined below:

- There are no items listed on the NHL located within the study area for this assessment.
- There are no items listed on the CHL located within the study area for this assessment.
- There are no items listed on the RNE located within the study area for this assessment.

2.1.2 Aboriginal and Torres Strait Islander Heritage Protection Act 1984

The Commonwealth *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (ATSIHP Act), deals with Aboriginal cultural property (intangible heritage) in a wider sense. Such intangible heritage includes any places, objects and folklore that 'are of particular significance to Aboriginals in accordance with Aboriginal tradition'.

Where an Aboriginal individual or organisation is concerned that intangible values within the proposal are not being adequately protected, they can apply to the Minister for a declaration over a place.

A search of the Federal Gazette was completed on 24 October 2023, to identify any declarations under the ATSIHP Act relevant to the study area. There are no known declarations under the ATSIHP Act in relation to the study area.

2.1.3 Native Title Act 1993

The main purpose of the *Native Title Act 1993* is to recognise and protect native title. Native title is the rights and interests in land and waters that Aboriginal and Torres Strait Islanders have under their traditional laws and customs.

The following list is indicative of the type of land, which might be subject to native title:

- vacant Crown land and any other public or Crown lands including oceans and inland waterways, beaches and foreshores, State forests, national parks and public reserves
- pastoral leases
- land held by government agencies
- land held in trust for Aboriginal communities.

Under the amended *Native Title Act 1993*, Native Title is extinguished by the following:

- private freehold land, valid grants of private freehold land or waters
- residential, commercial or exclusive possession leases
- mining dissection leases
- community purpose leases (e.g. religious, sporting or charitable purposes)
- scheduled interests that give exclusive possession
- public works (e.g. schools, public amenities, hospitals etc.).

Section 24KA of the *Native Title Act 1993*, requires that native title claimants are notified of any 'future act' which may result in a change in land use for Crown lands affected by claims. A 'future act' is defined in section 233 of the Act as a proposed activity or development on land and/or waters that may affect native title, by extinguishing (removing) it or creating interests that are inconsistent with the existence or exercise of native title. If, after one month, there were no response to the notification, then the proponent will be deemed to have fulfilled their obligations under the Act.

A search of the National Native Title Tribunal database was completed on 23 October 2023. The searches did not identify any Native title claims or Indigenous Land Use Agreements within the study area.

2.2 State legislation

2.2.1 National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NPW Act), administered by Heritage NSW, Department of Climate Change, Energy, the Environment and Water (DCCEEW), 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).

The protection provided to Aboriginal objects applies irrespective of the level of their significance or issues of land tenure. However, areas are only gazetted as Aboriginal places if the Minister is satisfied that sufficient evidence exists to demonstrate that the location was and/or is of special significance to Aboriginal culture.

There are no gazetted Aboriginal places in the study area. All Aboriginal objects, whether recorded or not, are protected under the NPW Act.

Section 86 of the NPW Act identifies that it is an offence to harm or desecrate an Aboriginal object and/or an Aboriginal place. Section 86 outlines penalty units applicable where it is identified that a person or corporation is in breach of Section 86.

The NPW Act defines harm to an object or place as any act or omission that:

(a) destroys, defaces or damages the object or place, or

(b) in relation to an object moves the object from the land on which it had been situated, or

(c) is specified by the regulations, or

(d) causes or permits the object or place to be harmed in a manner referred to in paragraph (a), (b) or (c)

The NPW Act provides several defences against harm. The most relevant in this context is an Aboriginal Heritage Impact Permit (AHIP) issued under section 90 of the NPW Act by Heritage NSW prior to any harm to Aboriginal objects or places. Various factors are considered by Heritage NSW in the AHIP application process, such as site significance, Aboriginal consultation requirements, Ecological Sustainable Development (ESD) principles, project justification and consideration of alternatives.

Section 90 of the NPW Act does not apply to projects declared to be SSD under Part 4 of the EP&A Act. As the current proposal is a declared SSD, assessment and approval will be issued under the EPA Act. Application for an AHIP under the NPW Act is not required where the project is declared SSD and project approvals issued by DCCEEW.

2.2.2 Environmental Planning and Assessment Act 1979

The EP&A Act establishes the framework for cultural heritage values to be formally assessed in the land use planning, development assessment and environmental impact assessment processes. Part 3, Division 3.4 deals with the development of Local Environmental Plans (LEPs). Planning decisions within Local Government Areas (LGAs) are guided by LEPs.

Each LGA is required to develop and maintain an LEP that includes a local register of heritage items which are protected under the EP&A Act and the *Heritage Act 1977*. The study area is located within the boundaries of the Newcastle LGA and is covered by the Newcastle LEP 2012.

There are no heritage items listed on the Newcastle LEP 2012 located within the study area.

The closest heritage item on the Newcastle LEP 2012 is located 750 metres to the west of the subject site:

- Brick Stormwater Culvert off Tyrone Street (# I693)

There are no Aboriginal heritage values associated with this heritage item, and no indication that Aboriginal objects would be present within the vicinity of the heritage item.

Part 4 of the EP&A Act establishes provisions for the assessment and approval of certain projects as SSD. Impacts to Aboriginal objects will be authorised by the Conditions of Approval for the project issued by the Department of Planning, Housing and Infrastructure under the EP&A Act.

This project is being assessed under Part 4 Division 4.12(8) of the EP&A Act. The Planning Secretary's Environmental Assessment Requirements (SEARs) for the project (SSD-65595459) were issued on 22 January 2024.

Relevant requirements from the SEARs are listed in Table 1.

2.2.3 NSW Native Title Act 1994

The *Native Title Act 1994* was introduced to ensure that the laws of NSW are consistent with the Commonwealth *Native Title Act 1993*. Native Title claims, registers and Indigenous Land Use Agreements are administered under the Act. Refer to Section 2.1.3 for results and implications.

2.2.4 Aboriginal Lands Right Act 1983

The *Aboriginal Land Rights Act 1983* (ALR Act) established Aboriginal Land Councils (at State and Local levels). These bodies have a statutory obligation under the ALR Act to:

> *(a) take action to protect the culture and heritage of Aboriginal persons in the council's area, subject to any other law, and*
>
> *(b) promote awareness in the community of the culture and heritage of Aboriginal persons in the council's area.*

Aboriginal Land Claims (ALC) are administered under the Aboriginal Land Rights Act 1983. The land is subject to undetermined ALC 55192 lodged by Awabakal Local Aboriginal Land Council on 26/06/2023.

The study area is within the boundary of the Awabakal Local Aboriginal Land Council (LALC).

3.0 ARCHAEOLOGICAL CONTEXT

3.1 AHIMS search

NOTE: The location of Aboriginal sites is considered culturally sensitive information. It is advised that this information, including the AHIMS data appearing on mapping below, must be removed from this report if it is to enter the public domain.

An extensive search of the Aboriginal Heritage Information Management System (AHIMS) was undertaken on 23 October 2023 (Client Service ID: 831842) to determine the location of Aboriginal sites in relation to the current study area. A subsequent search of the AHIMS was undertaken on 21 May 2025 (Client Service ID: 1006573). That search identified two AHIMS sites within the search parameters. No Aboriginal sites are recorded within the study area. However, the two PAD (AHIMS ID 38-4-2263 and AHIMS ID 38-4-2371) were identified within the search area and both are located within the Hamilton soil landscape. The nearest AHIMS recorded site is 550m southeast from the study area.

The parameters of the search were as follows:

GDA 1994 MGA Zone:	56
Eastings:	379530.0 – 381530.0
Northings:	6355941.0 – 6357941.0
Buffer	2,000 metres
Number of sites:	1

No Aboriginal sites are recorded within the study area. One Potential Archaeological Deposit (PAD) (AHIMS ID 38-4-2263) was identified within the search area, located approximately 800m southeast of the study area.

The results of the search are summarised in Table 3. The distribution of recorded sites within the AHIMS extensive search area is shown in Figure 2, a detail showing the nearest sites in relation to the study area can be seen in Figure 3.

Table 3: Frequency of site features in AHIMS search results

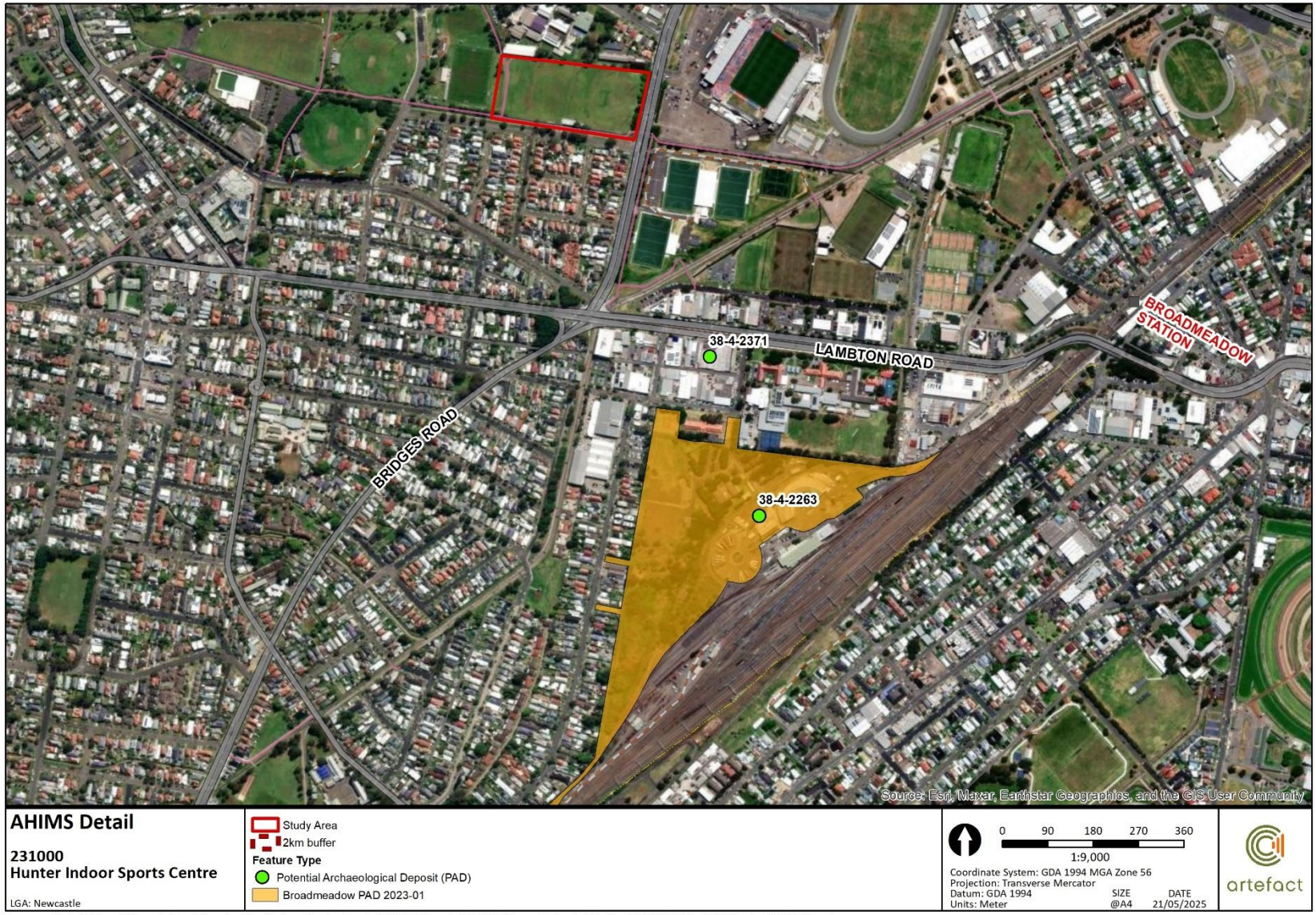
Site Features	Frequency	Percentage
Potential Archaeological Deposit (PAD)	2	100%
Total	**2**	**100%**

Regional archaeological evidence suggests the availability of fresh water and resources was a significant factor in repeated and long-term occupation of the Newcastle – Hunter region (Section 3.2.2). Certain site types, such as culturally modified trees, are particularly vulnerable to destruction through historical occupation. As a result, more resilient site types, such as stone artefacts, are predominant in the archaeological record. Because of this, the nature and location of registered Aboriginal sites is an imperfect reflection of past Aboriginal occupation. Furthermore, the surviving archaeological record is also a reflection not only of historical land-use, disturbance, and the post-depositional events, but also reflects the sampling bias of previous archaeological investigation.

AHIMS ID 38-4-1223 and AHIMS ID 38-4-2371 have been identified as PAD based on the soil modelling which indicates the potential presence of underlying sand bodies which may retain artefactual material. The study area, AHIMS ID 38-4-1223 and AHIMS ID 38-4-2371 are all understood to be part of the same landform, which may indicate similar potential exists within the study area.

Figure 2. Distribution of AHIMS site in relation to the study area

Figure 3. Detail of extensive AHIMS search



3.2 Review of existing archaeological literature

3.2.1 Brief Aboriginal history of the Newcastle area

Mulubinba and Awaba

Before the Europeans arrived in the area and called the river Maiyaa the 'Hunter River' and established a penal outpost, the land and waters around present-day Newcastle city were called *Mulubinba* – meaning 'place of sea ferns' in the Awabakal language. Awabakal Country traditionally stretched from Lake Macquarie to Newcastle, and parts of the lower Hunter Valley region. The Awaba people on the south side of the Hunter River had close connections with the Worimi whose lands extended north from Stockton to Port Stephens, and also with the Wonnarua in the Hunter Valley and coastal Darkinjung on the Central Coast.[1]

An important historical source on traditional Aboriginal life are the diaries and works of the Reverend Lancelot Threlkeld who opened a Christian mission for Aboriginal people near Newcastle in 1826. Over a period of twenty-one years, Threlkeld recorded the language and some Dreaming stories of the Awabakal people with the guidance of Birabaan (Biraban), a man of some standing who became a translator, interpreter, and intermediary for Threlkeld and other colonists.[2]

The mouth of the Hunter River or *Maiyaa* (which means 'snake' in the Awabakal language), and its surrounding beaches, woodlands and waterways provided a rich array of resources for the Awaba and their neighbours. In the surrounding open forests fire-stick farming was practiced to keep terrain clear and encourage animals and plant regrowth. Men hunted larger animals such as kangaroos, wallaby and emus, whilst the women and children hunted smaller animals and collected fruits, berries and medicinal plants. The giant lily and wild yams were important staples. Tall, open forests of river and swamp oak, broad leaved paperbarks and the occasional cabbage tree palm surrounded the area. The cabbage tree's fibres were used to make fishing line and nets, and its broad leaves used for roof thatching. Varieties of banksia and tea tree, Sydney golden wattle and blady grass grew closer to the beachfront. All these were used by the Awabakal for food and medicine.[3]

Awabakal were saltwater people – their settlements were concentrated around *Maiyaa* and the coast. On the coast people caught fish such as *parimankaan* (salmon), *kirul* (mullet), and collected many types of shellfish including *munboonkaan* (oysters), pipis and mussels. Women dived for lobsters and fished using lines and nets, while men generally fished using *kalaara* (spears) made with sharpened stones or shellfish. Whales that stranded on the beach were an important feasting moment, and missionary Threlkeld noted that on these occasions messengers were despatched to all the neighbouring tribes who gathered to partake in the feast.[4]

The Awabakal used *nauwai* or *kuueeyung* (tied-bark canoes) to skilfully navigate rivers and fish in deeper coastal waters. Often made from the bark of the Stringy-bark tree, a stone axe was used to

[1] University of Newcastle Special Collections, 2013. "The many names of Newcastle – Mulubinba." There is one reference to the people of Newcastle being known as the Mulubinba (Moolabinda), rather than the place. J F Mann who arrived at Brisbane Water in 1842 recalled that the 'the New-castle, or "Moolabinda" tribe' was 'at enmity' with the coastal Darkinjung (or Wannungine) around Brisbane Water. However European observers were renowned for mistaking or conflating place and people. J F Mann, 'Brisbane Water 95 Years Ago. Quaint Story Of Olden Times', *Gosford Times and Wyong District Advocate* 29 October 1936, p. 9

[2] Threlkeld did not use the term 'Awabakal' to describe the people he worked with or their language that he documented; the term is thought to have derived from the works of a later linguist, adapting the Aboriginal name for Lake Macquarie – Awaba. Biraban was born around Lake Macquarie but grew up in Sydney after he was taken there when he was a boy to work as a servant. He returned to the Lake Macquarie / Newcastle area in 1833 where he was recognised a chief and took the name Biraban meaning 'eagle hawk'. His fluency in English meant he was engaged for work as a translator, guide and constable. See Cary, 2010

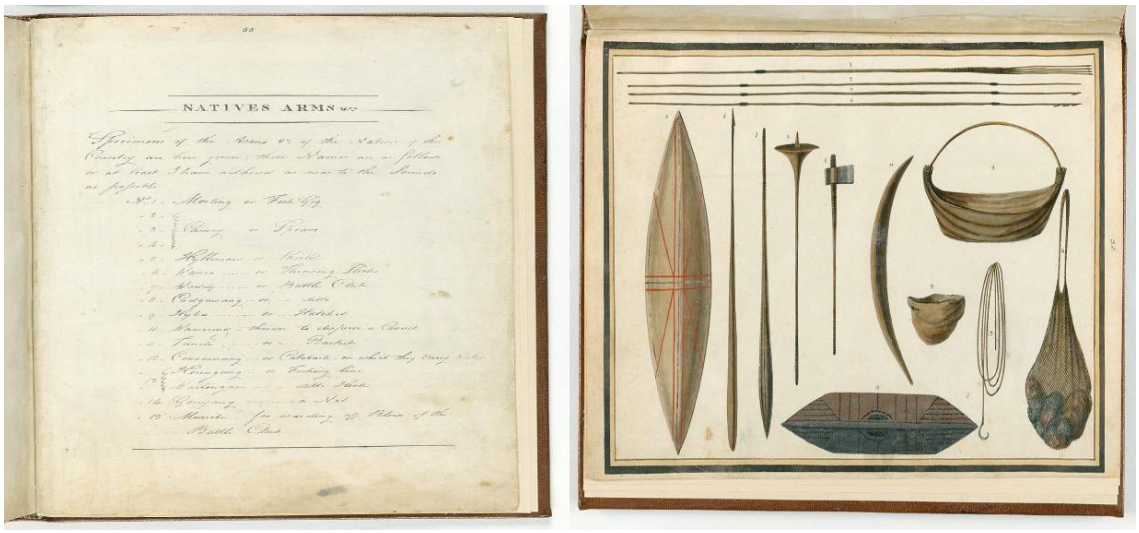
[3] Miromaa Aboriginal Language & Technology Centre, 2020:12; AMBS 2005: 31.

[4] AMBS 2005: 33

cut the shape of the canoe and the bark would be carefully prised from the tree, immersed in water and then passed over a hot fire to cure and shape it. Most canoes were generally around 4 to 5 metres in length and each end was bound with vine and plugged with clay or grass tree resin. A small fire was kept on a bed of clay in the canoe. Long poles were used and paddles made of seasoned hardwood and were shaped like a large spoon and generally used in a kneeling position from the middle of the canoe, with one in each hand. Anchors were made with vine ropes and large stones. Hundreds of shell middens found along the foreshores and catchments of the waterways and coast around Mulubinba attest to thousands of years of sustainable fishing practices and coastal life in the region.[5]

Sustaining these resources was critical and Awabakal well understood this and moved through areas of their Country in regular cycles, in tune with seasonal conditions. This helped ensure they didn't hunt, fish or harvest an area too much so there would be food for the next season. They also had totem animals that were not hunted. For example, at Lake Macquarie the men had 'great veneration' for the flying fox believing that 'if a man were to kill one purposely, he will also be killed.' According to Threlkeld 'they would not look at it nor speak its name.' The women were unaffected by the flying fox but had a similar relationship with a small bird like a woodpecker. Totems also had a bearing in kinship and marriage.[6]

Figure 4. 'Native Arms' T. R. Browne, Newcastle NSW, 1813 (Source: State Library NSW)



Wooden weapons and utensils such as boomerangs, woomeras (spear-throwers) and digging sticks were made from trees such as Wild Myrtle. Various plant gums and resins were used as adhesives for certain weapons and tools. Various stones were used to make axe heads, scrapers, knives, chisels and spear heads. In the Newcastle area chert (a flint-like quartz) was mined for tool-making. All these tools and other items would have been traded amongst the Awabakal clans as well as with neighbouring groups including Wonnarua and Worimi people, and further afield. Threlkeld reported that in the winter of 1826 Biraban, who had become his 'assistant' at the Lake Macquarie mission, 'went to the mountains with upwards of 60 spears to exchange for opossum cord made of the fur'.[7]

[5] Worimi Conservation Lands, (n.d)
[6] Brayshaw, 1987:35, 76; Worimi Conservation Lands, (n.d); Fawcett, 1898: 152; Threlkeld in Gunson 1974:55
[7] Brayshaw,1987: 35; Maynard et al 2021; Threlkeld in Gunson 1974:42, 54, 206

Figure 5. Corroboree at Newcastle, 1818 (Source: State Library of NSW)

European-introduced diseases had a catastrophic effect on Aboriginal people, who had no immunity to cholera, smallpox, influenza, measles and venereal disease. From the first outbreak of smallpox in 1789 at least 50 percent, possibly 90 percent of Sydney Aboriginal people had died from the disease. With extensive trade and kinship networks along the coast, Mulubinba was no doubt effected, and later bouts of influenza took their toll in the 1820s and 1830s in the region. The cultural and natural landscape, too, was systematically decimated by colonists. After Newcastle was established as a penal colony for re-offending convicts in 1804, they felled swathes of forests and dug out ancient shell middens for lime, used in the mortar for construction of buildings.[8]

Still, there was a strong surviving Aboriginal presence in the Newcastle region for many years. During the 1820s, former convict and artist Joseph Lycett travelled to Newcastle and Lake Macquarie and painted several watercolours depicting the daily life of Aboriginal communities at this time. Though these images are from a colonial perspective, they are valuable in showing Country prior to intensive colonial development, as well as the diverse cultural, social and economic activities of the Awabakal and Worimi peoples in particular.[9]

In 1818, 'the attacks of the Natives' were reported as a constant problem at Port Stephens. Convicts were regularly punished for 'harming Aborigines'. In the Hunter Valley, conflict broke out largely between the Wonnarua and the increasing number of settlers occupying their lands. Yet at the same time Aboriginal people were working closely with the colonists around Newcastle, often employed as trackers in search of escaped convicts.[10]

By the 1820s the settlement at Newcastle was growing rapidly. Surveyor Henry Dangar remarked upon the speed of settlement in the Hunter Valley in the 1820s:

> From March 1822 to November 1826, when I left the surveys of that district, the amazing extent of 372,141 acres were appropriated to settlers … altogether 604,305 acres … which, in

[8] See AMBS 2005
[9] See Maynard 2014
[10] Hunter Living Histories, https://livinghistories.newcastle.edu.au/nodes/view/57446

> 1822, possessed little more than its aboriginal inhabitants ... Here in 1827 were upwards of 25,000 head of horned cattle, and 80,000 fine and improved-wool sheep.[11]

Survival and Opportunity

Aboriginal people could not contain such an influx of people and sheep and cattle on their lands. Many however, moved in towards the settlement rather than away from it. In 1837 the missionary Threlkeld complained that Aboriginal people at Lake Macquarie had all:

> 'taken up their abode for the present at Newcastle, leaving at this place not a single resident tribe; and we are only now occasionally visited by the small remnants of the inhabitants of the Lake.'[12]

In 1839, Threlkeld explained that some were 'engaged in fishing, some as water carriers, messengers, servants, and some on board the numerous vessels … [and] many have learned to become good horsemen'.[13]

Still, the early promise of work for Aboriginal people in the centres of Newcastle and at Port Stephens dissipated as more Europeans arrived in the district. In 1840 the visiting American Charles Wilkes observed people camped near Newcastle as 'wretched in the extreme'.[14]

In 1854 there was still a 'blacks camp' on the beach at Newcastle. One man took up a role as a guide. *The Australian* newspaper reported that 'the black fellow, Harry Brown of Newcastle' led all the 'fishing, boating, shooting or oystering parties' in the area. Harry had been at Threlkeld's mission but found a niche as a well-known and respected guide for Europeans. He also accompanied the European explorer Ludwig Leichhardt on an expedition.[15]

From the late 19th century many Aboriginal people were forced by oppressive government policies to reserves and missions such as at Karuah. The expanding town centre of Newcastle saw few Awabakal or other Aboriginal people until from the mid-twentieth century, struggles for Aboriginal rights meant more people could live and work where they chose. By 2021, 7,410 people in the City of Newcastle LGA identified as being Aboriginal or Torres Strait Islander. Over the past fifty years, a range of community organisations and Aboriginal groups have been established to improve the quality of life for City of Newcastle's Aboriginal community, including the Awabakal Local Aboriginal Land Council, Worimi Local Aboriginal Land Council and many other local Aboriginal groups and knowledge holders. A number of organisations have developed resources in Awabakal language, including programs developed by Miromaa Language and Technology Centre. The Wollotuka Institute at the University of Newcastle provides support to Indigenous students at the University and facilitates an Elders in Residence and Cultural Mentors programme to 'reinforce the significance and teachings of our cultures'.[16]

3.2.2 Archaeological investigations in the Newcastle area

Archaeological investigations within the local area are limited, a number of relevant studies have been summarised below.

[11] Dangar (1828: 127-28)
[12] Threlkeld, L. E., 'The Annual Report on the Mission to Aborigines, Lake Macquarie, New South Wales', 1837 and 1839, online at https://hunterlivinghistories.com/dreaming/
[13] Threlkeld (1837; 1839).
[14] Wilkes (1845) p. 262
[15] *Maitland Mercury*, 21 June 1854, p. 2; 'Dr Leichhardt's expedition', *The Australian*, 30 December 1845, p. 4; Blyton, (2015) pp. 63-82
[16] University of Newcastle, 2022.

AMBS 2005 Aboriginal Heritage Study: Newcastle Local Government Area. Report to Newcastle City Council.

AMBS divided the local landscape into four areas, one of which was the Lower Hunter Plain which also characterises the study area. AMBS documented that at the time of their study the Lower Hunter Plain had been subject to a number or archaeological surveys and test excavations in locations that had been little developed (AMBS 2005).

AMBS summarised salvage excavations carried out in Central Newcastle, including one conducted by Douglas, Tuck and Steele located roughly three kilometres east of the study area (Douglas, Tuck & Steele 2001). That excavation was undertaken in a site located beneath multiple layers of historical building construction and fill, situated in Quaternary sands 200m south of the Hunter River. The excavation recovered over 4,000 flaked stone artefacts and large quantities of shell and bone (AMBS 2005). Higginbotham excavated at the Convict Lumberyard and Stockade Newcastle, located four kilometres east of the site, and encountered Aboriginal artefacts which subsequently were assessed as likely to have been derived from imported gravel (Higginbotham 1998).

With regard to level landforms that are away from water, and which have been cleared of vegetation (such as the study area), AMBS summarised site distribution as:

> *Open camp sites are mostly surface and associated subsurface scatters of stone artefacts, sometimes associated with fireplaces. They exist throughout all areas of the landscape, although larger and denser sites tend to be found on river banks and lower slopes facing watercourses, as well as ridgelines and other areas that offer movement routes. The spatial relationship of open camp sites, and the materials within open camp sites, has been subject to extensive research, particularly in the Central Lowlands of the Upper Hunter Valley. Open camp sites range from dense scatters of continuous artefacts extending over hundreds of square metres, to sites with widely spaced discrete archaeological resources (AMBS 2005:67).*

AMBS suggested that prior to the impacts of historical development locations in urban Newcastle, the location of the study area, could have been of high archaeological sensitivity due to their proximity to the Hunter River and its tributaries (AMBS 2005). AMBS nevertheless assessed the landscape as having low archaeological sensitivity because of the urban development that occurred as the city grew (AMBS 2005).

AHMS 2011 Section 90 Aboriginal Heritage Impact Permit #1098622 Excavation Report. Prepared for Yum Restaurants Pty Ltd

This report examined a study area located 3.3 kilometres east of the site and 300m south of the Hunter River. Soils comprised a complex interlayering of levee deposits and sand dunes, as was the case in Artefact's 2016 study below. The upper layer of the site constituted a midden; however, shell material did not extend to deeper soil units. A total of 5,534 Aboriginal objects were retrieved, over 90 per cent of which were tuff. In contrast to Artefact (2016) below, AHMS identified backing (blunting on one side) to almost 60 per cent of artefacts.

Artefact Heritage 2016 Wickham Transport Interchange Test and Salvage Excavation Report. Prepared for GHD on behalf of Transport for NSW

Artefact carried out a program of archaeological test and salvage excavation at the Newcastle Interchange, located 3 kilometres east of the site and 230m south of the Hunter River. Excavation and salvage were carried out through mechanical excavation. Stratigraphy revealed a complex layering of

soils and sands representing site formation through destabilisation and successive deposition of units including swamp deposits, natural sand layers of dune stabilisation and disturbed/fill laden soils.

The excavation program retrieved 3,394 Aboriginal objects, with the greatest concentration of these deriving from the lower phases of dune stabilisation. Tuff constituted over 97 per cent of the artefact count. The small proportion of cortex and cores identified in the excavation indicates that primary lithic reduction occurred away from the site. Very little backing was identified on artefacts. Through a program of radiocarbon dating, Artefact proposed that the sand dunes of the site had been in occupation for up to 7,000 years, interrupted by a period in which the site was inundated by a swamp and abandoned.

Umwelt 2020 Newcastle Light Rail Project- Works Conducted Under AHIP C0002170. Report to Downer EDI Works Pty Ltd

Umwelt were engaged to carry out works under AHIP C0002170 that required archaeological management of four Aboriginal sites prior to their whole impact as a result of the Newcastle Light Rail Project, located at closest 4 kilometres east of the study area. These sites included one area of PAD, two surface artefact scatters and one isolated artefact.

Umwelt retrieved 3,189 artefacts, 99 per cent of which were tuff. Based on the relative deposition of artefacts within different soil units, Umwelt concluded that in upper natural preserved layers, the archaeological record reflected the location in use for the gathering of tuff pebbles from the Hunter River shoreline. Primary, secondary and tertiary reduction took place on site, with usable flakes and cores removed to an occupation site elsewhere. In contrast, as represented by artefact deposition in deeper spits containing evidence of stabilised dunes, it would appear that constant occupation occurred on these dune surfaces.

Artefact Heritage 2023 Broadmeadow Locomotive Precinct Masterplan Planning Proposal Aboriginal Cultural Heritage Assessment

Artefact prepared a report to support a Master Planning proposal for the rezoning of the Broadmeadow Locomotive Precinct. This considered the impacts that any future construction proposals might have on Aboriginal cultural heritage and the potential archaeological resources in the study area. During the visual inspection, it was noted that a large proportion of the study area was overgrown which impacted ground visibility and exposure as defined by the Code of Practice.

The assessment determined that the study area contains one Aboriginal site Broadmeadow PAD 2023-01 (AHIMS ID 38-4-2263) which was identified as a PAD, but with no associated surface artefacts. The assessment of the PAD as a site was based on the background research, results from boreholes taken throughout the study area which revealed intact sub-surface soils, and cultural knowledge holders understanding of the site as having once been a kangaroo and wallaby ranging ground.

3.3 Conclusion and summary

Prior to settlement and industrialisation of the area, the Lambton and New Lambton areas offered resources for Aboriginal people including a nearby hunting range at Broadmeadow for kangaroos, bird life and lizards, and fresh water from the local creeks. It was also close to marine and estuarine resources where many varieties of shellfish were collected, such as *munboonkaan* (oysters), pipis and mussels.

While the AHIMS search did not reveal any sites within the study area this does not exclude the possibility of sites being present. AMBS' (2005) survey concluded that sites might be found anywhere, even in industrialised areas beneath historical buildings, construction and fill. AMBS (2005) identified

urban areas as likely to have had high sensitivity prior to landscape modification, based on the nature of the environment and the use by Aboriginal people of this type of resource which was close to the Hunter River and its tributaries.

Previous archaeological studies have shown that the Hamilton Soil landscape, which characterises the study area is associated with high archaeological sensitivity, including areas located in Quaternary sands 200m near water. The reports summarised above have examined landforms in which Quaternary soils have been predominated by Holocene dune formations, subsequent swamp deposits and later deposition of sands. All reports have identified Aboriginal occupation during periods when stabilised dune formations were present. However, the presence of previously identified significant Aboriginal sites in Quaternary sands and in the Hamilton soil landscape has been strongly tied to proximity to the Hunter River as a more reliable predictor of large occupation sites.

Some diversity was evident between Artefact and Umwelt's findings: Artefact found that their location likely did not function for primary reduction, whereas Umwelt found that primary, secondary, and tertiary reduction did occur in their study area (Artefact 2016; Umwelt 2020). Similar diversity is present between the finding of AHMS that backing was present to 60 per cent of artefacts, against Artefact which found very little artefact backing. AHMS also found that midden materials were present in the upper layer of the site and did not extend to deeper soil units, whereas Artefact identified the greatest concentration of Aboriginal objects from the lower phases of dune stabilisation. This site patterning suggests that the distance to water may have implications for whether a location was used for primary reduction activities. Furthermore, regional modelling suggests open camp sites tend to be larger and denser when located on riverbanks and lower slopes facing water courses, as well as ridgelines and other areas that offer movement routes. This modelling may suggest that sites which occur further away from water and on the sloped plain may be less likely to have been occupied for longer periods of time, or that deposition of stone artefacts was less frequent or more incidental in these settings.

4.0 LANDSCAPE CONTEXT

4.1 Soils

The study area is within the Hamilton soil landscape (Figure 6). It consists of a level to gently undulating well-drained plain on Quaternary sand overlying clay deposits, with sediment depths up to 38m comprising 1-3m of sand underlain by stiff estuarine clay in the Lower Hunter Plain region south of the Hunter River estuary. The soils generally comprise an A1 soil horizon of brownish black coarse loamy sand to a general depth of 20-60 cm, above an A2 soil horizon of 15-30 cm of loose pale coarse sand, in turn above an A3 unit of over 60 cm of brown-orange soft sandy pan. The local relief measures less than 1 m with slope gradients of less than 2%, and elevations up to 12 m (Environment NSW 2021; Engel 1966).

Geotechnical Study (Kleinfelder 2023)

A geotechnical study was undertaken by Kleinfelder Australia Pty Ltd (2023) to inform the proposed basketball stadium development. Eight boreholes were excavated by the geotechnical team to a depth of 7.95 m below the ground surface and an additional 22 hand augers were completed to a depth of 2 m (Kleinfelder 2023:3).

Topsoil / fill depth across the study area ranges from 400 mm to 1.4 m (0.4 - 1.4 m) with groundwater table depth at 1 – 3 m below the surface. Fill across the site was generally characterised by a gravelly sandy clay with silt content, with trace coal and medium, angular gravels (Kleinfelder 2023:27). MW01 noted a thin lens of brown topsoil to a depth of 200 mm, overlying 300 mm of gravelly sandy clay fill. The water table at MW01 was noted at being at a depth of 2.1 m within a sandy clay deposit. The dispersal of identified ‘topsoil’ across a level of fill may be a result of landscaping over a deposit of sand dumped for levelling the oval, or potentially has been made in error. The upper soil profile is however generally consistent with the modelling of the Hamilton soil landscape.

No evidence of shell or potential cultural deposits were denoted in the borehole logs.

4.2 Geology

The study area is located on the Newcastle Coal Measures, within the Lambton subgroup which consists of coal, sandstone and minor conglomerate (Chestnut and Gobert 1976). It lies in the Hunter subregion of the Sydney Basin Bioregion on the east coast of Australia which covers a large part of the catchments of the Hawkesbury-Nepean, Hunter and Shoalhaven River systems.

The geology of the Sydney Basin broadly consists of three major lithological groups: Permian coal measures and other sedimentary geological units; Triassic sedimentary units including sandstone, siltstone, and shale; and Quaternary units deposited by alluvial, fluvial, and aeolian processes during the Pleistocene and Holocene epochs. The depositional environment of the sedimentary rock are coastal landscapes of cliffs, beaches and estuaries formed when the earth’s crust expanded, subsided and filled with sediment between the late Carboniferous and Triassic. Early stages of development were as a continental rift that filled with marine volcanic sediments, but deposition shifted to river and swamp environments in a cold climate in the early Permian.

Coal deposits accumulated and the upper parts of the basin were covered in quartz sandstone by extremely large, braided rivers whose headwaters lay hundreds or even thousands of kilometres away and flowed in from the south and the northwest to deposit the Hawkesbury Sandstone. Shallow marine sediments and later more river sediments continued to accumulate in the basin during the

Jurassic, but all of these younger rocks have been eroded, leaving only a thin cap of shale over the resistant sandstones (NSW NPWS 2003).

4.3 Hydrology

The hydrological systems in the Hunter subregion of the Sydney basin are in general, connected with the Permian-Triassic rock aquifers, alluvial aquifers along major rivers and creeks and aeolian sand aquifer in the coastal zone of the subregion (Bioregional assessment 2019). The Hunter River and associated alluvial valley is the dominant feature of the Newcastle LGA.

The Hunter River is a barrier estuary formed by the deposition of sediments in swamps and flats lying between the Inner and Outer coastal barrier sands. The alluvial valley extends from Newcastle Harbour to Singleton, the valley is up to 100 metres deep. The South Channel of the Hunter River flows 4.7 kilometres north of the study area. The canalised perennial Styx Creek flows in a highly altered course, at closest 440m east of the study area before merging with Lambton Ker-rai Creek, an ephemeral water course running just outside of the southern boundary of the study area.

The entire study area is within 10m of Lambton Ker-rai Creek, which is likely a completely anthropogenic drainage canal constructed to service nearby farms and to drain the former coastal swamp water table. It is located on gently undulating plain within a crescent shaped basin formed by rising hills from the northwest to the southeast (Figure 7).

4.4 Vegetation and other resources

The study area has been completely cleared of vegetation for urban development.

Various vegetative groups are associated with the Quaternary sands of the lower Hunter Valley alluvial plain. Although natural vegetation at time of contact has been extensively cleared, in upper reaches of the floodplain remnants of tall open forest include river oak along riverbanks. In lower reaches where some saline influences occur Swamp oak dominates. Closer to the coastal zone, Swamp mahogany, Broad leaved paperbark and Cabbage tree palm occur. Narrow alluvial plains often support remnants of closed forest, including Flooded gum and Waterhousia and Weeping lillypilly.

The Hunter River contains about fifteen species of commercially important fish, crustacea and molluscs, including mullet, jewfish, prawn and oyster. Aquatic invertebrates such as worms, gastropods, molluscs and crustaceans are extremely abundant in Fullerton Cove. The wetlands of the region are rich in animal life and would have provided abundant resources for Aboriginal people, including estuarine fish, water birds, and a variety of lizards. Large wetlands such as Hexham Swamp support large populations and a greater diversity of native plants and animals than do small wetlands, and they provide essential habitat for specialised species that often depend on larger areas for survival. The tributary drainage lines and their associated catchments would also have provided habitat for a variety of mammals, including possum, wallaroo, kangaroo, swamp wallaby, swamp rat, sugar glider, squirrel glider and bandicoot (AMBS 2005).

Peter Townsend, Aboriginal culture and heritage officer of the Awabakal LALC, observed that the area was a resource area for kangaroos (Artefact Heritage 2023).

Figure 6. Soil landscape of the study area and surrounds

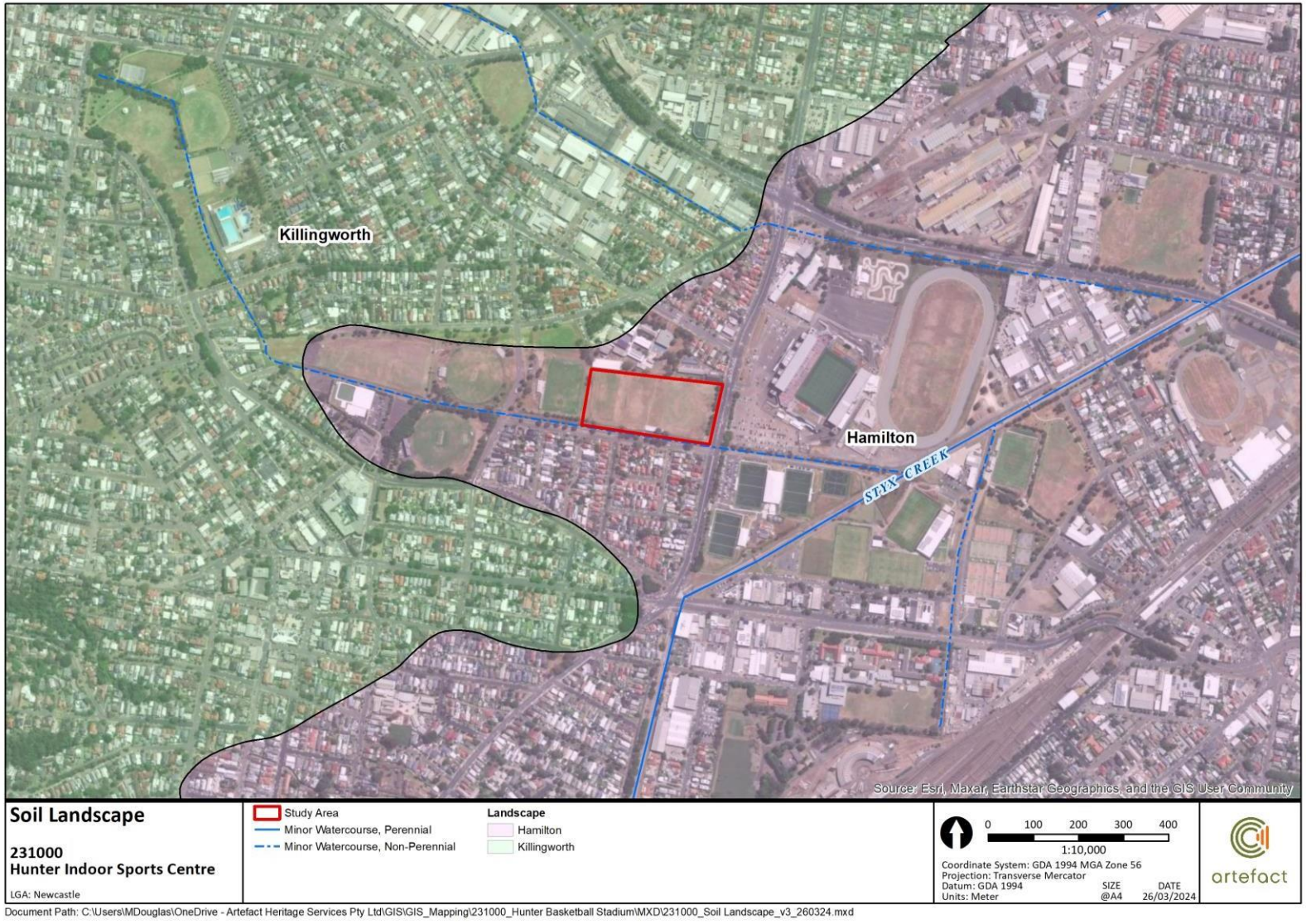
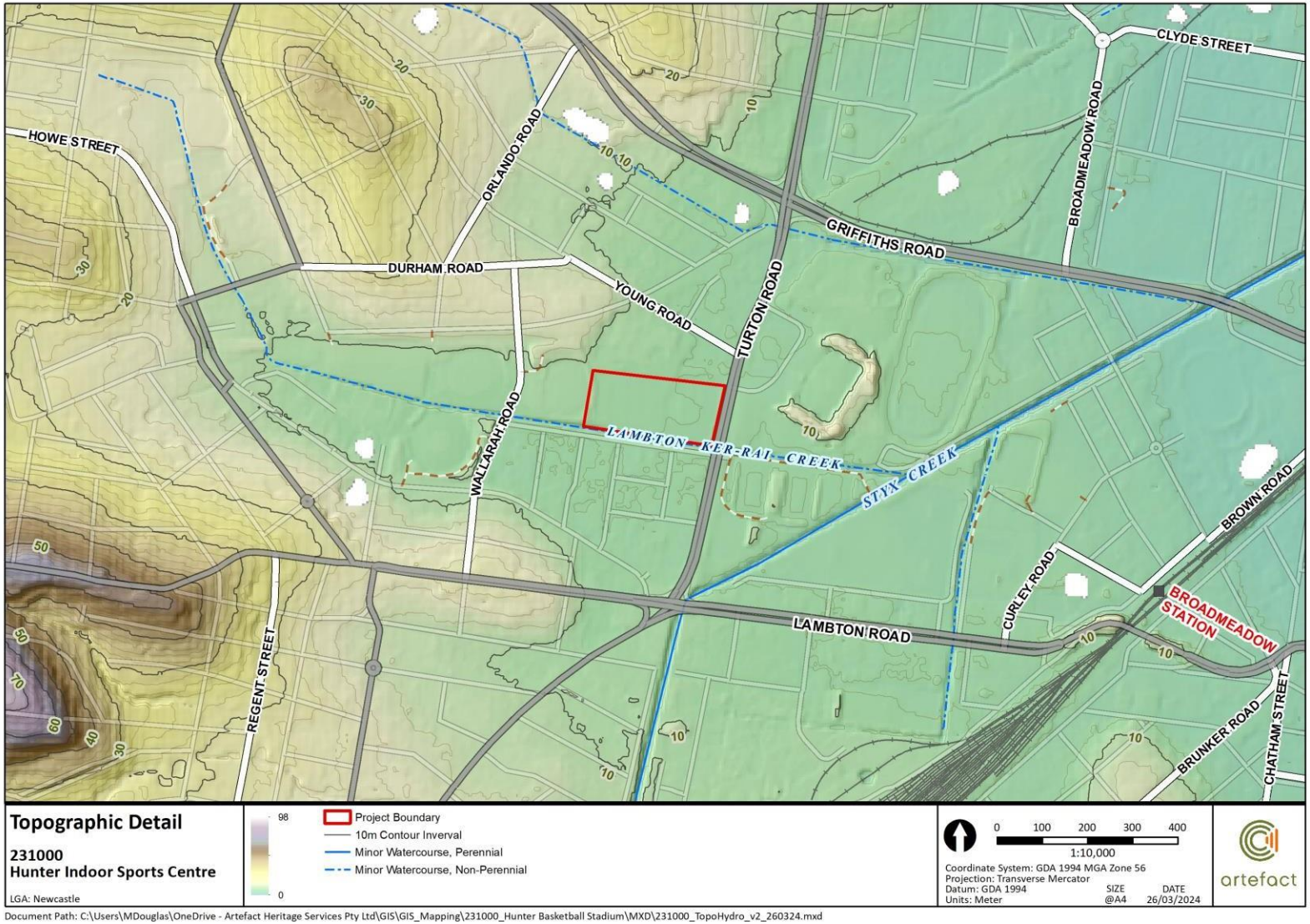


Figure 7. Study area topography and local hydrology



4.5 Historical land disturbance

The purpose of this section is to examine evidence for significant ground disturbance that may have resulted from historical construction or processes in the site that may have impacted to survivability of Aboriginal objects.

The first European settlement in Newcastle occurred in 1801, when James Grant's exploring party left a permanent camp at Newcastle and Governor Phillip Gidley King soon sent the colony's only qualified coal miner John Place to what was called the Coal River. A small detachment of soldiers soon followed, and a nascent settlement began on the mouth of the Hunter River, roughly 5 kilometres east of the study area. Within a few years, exploitation of Newcastle coal by convict gangs was occurring at a relatively large scale. By 1801 a ship loaded with Newcastle coal was sent to the Cape of Good Hope, becoming NSW's first coal export. Soon, precious red cedar trees that grew in thick stands along the riverbanks were being logged by parties of armed convicts and conflict with Aboriginal people began. (Dunn, 2020, 37).

In 1831, roughly 2,000 acres of land in Newcastle and Hamilton – including the government coal mines – were granted to the Australian Agricultural Company (University of Newcastle Special Collections 2022), preventing development. In the 1860s the government established Newcastle Pasturage Reserve was a large 1,600-acre parcel of land encompassing Lambton, Hamilton, Broadmeadow, Adamstown, New Lambton and Waratah suburbs, and was also known as the Commonage (Newcastle Libraries 2023). Although this land formed part of the government leased land for coal mining, throughout the 1870s and 1880s representations were made by residents for the government to enable land purchases. The introduction of the Newcastle Pasturage Reserve Act 1889 allowed occupants to purchase their properties (University of Newcastle Special Collections 2023). The study area was not developed and held over as a public reserve.

Evidence from aerial imagery

This section examines changes to land surface use and disturbance as evident from historical aerial imaging, at approximately 10-year intervals. In the following images, the study area has been outlined in red.

1944 (Figure 8): This is the earliest aerial image available. The study area was the location of a dummy gun station, consisting of four timber replicas of gun emplacements positioned in an arc pattern, and with a track or road entering the area from the main road on the east of the study area. Heavy anti-aircraft batteries were installed across Newcastle by the Newcastle Anti-Aircraft Group in September 1943 during World War II as part of military defences. The east portion of the study area appears to have been a sporting oval, possibly a cricket ground with pitch in the centre, with a small structure on the southwest boundary.

Early drains or stormwater channels are visible to the south of the study area boundary. The study area is likely to have comprised former coastal swamp which has required installation of anthropogenic drainage channels and deposition of secondary fill. It cannot be reliably inferred based off the 1944 image whether the fill observed in the geotechnical report had been deposited on-site by this point in time (Kleinfelder 2023).

1955 (Figure 9): The site remains much the same as in 1944, except that the dummy gun emplacements are no longer visible and the two small buildings with courtyard in the northern section and the small structure on the southern boundary of the oval are no longer visible in the study area. Furthermore, there is a mown field directly to the west of the study area.

1969 (Figure 10): A large complex of buildings with hardstand carparking and an access road has been constructed on the large extent of land northwest from the study area. There are also another

two large structures which are parallel to the northern boundary of the study area. Within the southern boundary there is a small structure. To the east and west of the study area, the roads are sealed and developed for vehicular traffic. The oval to the west has been fenced and several structures built within the enclosed area.

1978 (Figure 11): The area appears to have new vegetation planted along the boundaries of the fields. The building parallel to the northern boundary and closest to the study area appears to have been extended east and west from its original footprint. The small structure within the southern boundary remains.

2004 (Figure 12): There are no significant changes to the study area, which remains an open sports field with one structure on the southern boundary. A footpath has been constructed in the southeast corner of the study area. Minor building development has occurred in the land to the north and adjacent to the building complex and extant structures but is not within the study area. The sporting field to the west has been further developed with roads, car parking and additional structures, as well as reconfiguration of the field boundaries.

2023 (Figure 13): The 2023 aerial image depicts the study area as per its present form as an undeveloped grassed sports field.

The construction of the WW2 era dummy gun emplacements is unlikely to have resulted in significant disturbance to the overall ground surfaces of the study. Most of the site displays evidence of sporadic ground disturbance in specific areas associated with the military gun emplacements in the western portion of the study area.

The locations of ground disturbance identified through aerial imaging shown below have been collated and overlaid on a current aerial image in Figure 13. The evidence of aerial imaging suggests that the study area has been subject to substantial landform modification through filling and levelling of the study area. The study area and surrounds are likely to have comprised former coastal swamp which has necessitated installation of canals and deposition of secondary fill across the site.

Figure 8. Aerial photograph c.1944

Figure 9. Aerial photograph c.1955

Figure 10. Aerial photograph c.1969

Figure 11. Aerial photograph c.1978

Figure 12. Aerial photograph c. 2004

Figure 13. Aerial photograph – present (Google Maps 2023)

5.0 SUMMARY AND PREDICTIONS

5.1 Regional and local archaeological character

An understanding about Aboriginal history, land use and archaeological character of the region is made through the archaeological information from the area, historical evidence provided by the early Europeans colonists, consultation with RAPs and from information known about available natural resources. The environmental context of the study area being located on a gentle undulating plain on an ephemeral modified water course and 400 m from a perennial water source, namely Styx Creek and its associated tributaries, does not reliably indicate a higher likelihood for Aboriginal objects or sites such as midden complexes due to the extended distance from permanent water.

As Aboriginal people moved around the landscape sourcing resources, it would be likely that they moved across the landscape of the study area between water sources. It would also be likely that movement was related to socio/cultural factors such as gatherings and ceremonial obligations. Campsites would have provided temporary residences such as bark structures. It is difficult to ascertain whether a campsite existed at a given location, but correlations between stone artefact density and campsites are often assumed. While it would be likely that knapping would have occurred at a campsite, it would also be likely that knapping would have occurred during movement across the landscape, as tools were prepared or repaired as needed.

Archaeological data suggests that stone artefact sites are the most common Aboriginal site type in the Newcastle area. Areas of PAD as well as a modified tree have been recorded in the broader region around the study area. Sites closer to the study area are more frequently found to be stone artefact assemblages (with the possibility of being areas of primary reduction) or areas of PAD as well as midden (shell material and bone), surface scatters, isolated artefacts. During the AHIMS search no registered sites were located within the study area, however one site of moderate significance was located in the same soil landscape as the study area consisting of an area of PAD. Previous assessments of the archaeological context of the site and surrounding areas have identified low-moderate archaeological and cultural significant materials, mostly stone artefact scatters or shell materials. The study area has the potential to be consistent with these previous reports.

Of specific interest are fine-grained siliceous materials commonly used in the production of flaked artefacts. The Hunter River is a source of fine-grained siliceous stone, including silcrete and mudstone (tuff), available as cobbles derived from sources all along its length. Although much of this material is now buried, it is possible that such cobbles may have been available from weathered outcrops of conglomerate in former river terraces and abandoned channels. The major stone materials known to occur within the Newcastle LGA are indurated mudstone or tuff and silcrete, with minor frequencies of quartz, fossilised wood, chert, porcellanite and local volcanics (AMBS 2005: 13-14).

In terms of regional character, observations of the Awabakal people at the time of colonisation reveal the area was a place of Aboriginal occupation and subsistence activities. The study area and its local surrounding land has potential to provide further information about Aboriginal land and resource use, stone tool manufacture, and the interaction of the Indigenous community and early settlers.

The study area falls within the Hamilton soil landscape that is associated with coal, sandstone and minor conglomerate and is typically Quaternary sand overlying estuarine clay deposits. It is important to note that such modelling is frequently broad scaled, and that variations in real local soil occurrences may occur. The potential preservation of archaeological remains is closely linked to the nature and depth of original soils, and the degree to which these soils have been preserved. While the study area has been subject to significant levels of disturbance associated with levelling and inferred secondary fill which has removed all original ground surfaces, large and relatively intact

occupation sites have been identified at depth below construction and fill deposits within the Newcastle region as evidenced by regional archaeological investigations of the Newcastle coast (AMBS 2005; AMBS 2011; Artefact Heritage 2016). The geotechnical study has however not identified any midden material at depth within the lower Quaternary sand body, nor are there distinct phases of dune stabilisation evident (Kleinfelder 2023). Available excavation data has identified large sites landforms in deep Quaternary soils have been predominated by Holocene dune formations, subsequent swamp deposits and later deposition of sands. The localised presence of the Hunter River to previously identified occupation sites within sand deposits has served as strong indicator of a likelihood of larger occupation sites in proximity to estuarine resources. All reports have identified Aboriginal occupation during periods when stabilised dune formations were present.

5.2 Predictive model

Based on a synthesis of information from the results of desktop research, landscape context and previous archaeological reports inside and surrounding the study area, the following predictive statements can be made:

- Based on the spatial patterning of recorded Aboriginal sites and on findings from previous studies in the region, the highest numbers of sites are likely to be located near waterways, swamp edges and on ridgelines. The study area is next to a significantly modified and canalised ephemeral watercourse and is more than 400 m from the perennial water source Styx Creek. Therefore, the study area is likely to have lower Aboriginal archaeological sensitivity for potential sites and in situ archaeological deposits.
- Based on existing registered Aboriginal sites in proximity to the study area, the most likely Aboriginal archaeological site type to occur in the study area will be subsurface artefact deposits or low-density surface artefact scatters, and possibly shell material with bone or midden.
- Artefact raw materials are likely to consist of tuff, mudstone, silcrete and chert.
- Archaeological material has the potential to be present in both shallow and deep subsurface deposits.
- Vegetation and surface clearance has impacted the study area and it is unlikely that any culturally modified trees will be present. The levelling and deposition of secondary fill across the study also likely precludes the presences of any original ground surfaces. Original topsoils where present have likely eroded or been blown over the fill by alluvial or aeolian processes (Kleinfelder 2023).
- Historical changes to landforms and deposits, including site erosion and loss, would be predicted near to creeks subject to incision and gullying arising from European land use practices.
- Historical processes of ground disturbance have had the potential to disturb the stratigraphic integrity of the Aboriginal archaeological record, or to remove it entirely. It is possible that Aboriginal archaeological deposits may be present underneath observed secondary fill across the study area, however geotechnical data does not suggest the presence of any estuarine shell midden deposits at depth (Kleinfelder 2023). The northwestern portion of the study area

has been subject to sub-surface disturbances for installation of dummy gun stations therefore it is likely that any sub-surface deposits there may have been impacted.

- The 1944 aerial potentially shows natural ground surfaces, however by 1943 gun emplacements constructed which are likely to have involved some excavation to construct. Subsequent to construction, the area appears to have been flattened for playing fields. No evidence can be inferred from the available aerials as to whether that flattening was achieved by deposition of secondary fill or whether surrounding natural surfaces were laterally bulldozed to create a new flat surface. However, the fill observed by Kleinfelder (2023) does not appear to be consistent with topsoil modelling for the Hamilton soil landscape (Section 4.1) Based on the potentially low-lying nature of the area and evidence in the earlier aerials that the neighbouring road and subdivision were on raised fill, it is moderately to highly likely the study area has been filled.

6.0 METHODOLOGY

6.1 Aims

The aims of archaeological survey are to:

- test the predictive model by ground truthing the findings of the desktop assessment.
- identify and record all Aboriginal objects visible within the study area.
- identify and define areas of PAD (as defined by the predictive model).
- gather enough information to assess scientific values of identified Aboriginal objects.

6.2 Survey personnel

The archaeological survey of the study area was undertaken by Kristen Tola (Heritage Consultant, Artefact Heritage) and Matthew Syron (Sites Officer, Awabakal LALC) on 1 November 2023.

6.3 Sample strategy

The sample strategy targeted the single landform which will potentially be impacted by the proposed future development. The survey utilised a single survey unit due to the consistent landform characteristics across the study area.

6.4 Survey procedure

An archaeological pedestrian survey of the study area was conducted in accordance with the Code of Practice. The study area was examined for Aboriginal objects, with a focus on areas with ground exposures.

The study area was walked in 15-20m transects south to north, starting in the southeastern corner and moving northwest. Two locations of the study area were under active use, therefore these areas were avoided during the survey and full survey coverage was not achieved. A non-differential GPS device was used to track progress and to mark waypoints or points of interest. A photographic recording was completed and a photographic log completed to record photographs taken during the survey.

6.5 Site recording procedure

An Aboriginal site is generally defined as an Aboriginal object or place. An Aboriginal object refers to any deposit, object or material evidence (not being a handicraft) relating to Aboriginal habitation of the area that comprises New South Wales (DECCW 2010a). Aboriginal objects may include stone tools, scarred trees or rock art. Some sites, or Aboriginal places, can also be intangible and although they might not be visible, these places have cultural significance to Aboriginal people.

Heritage NSW guidelines state, regarding definition of a site and its boundary, that one or more of the following criteria must be used when recording material traces of Aboriginal land use:

- The spatial extent of any visible Aboriginal objects, or direct evidence of their location.
- Obvious physical boundaries where present, e.g., mound site and middens (if visibility is good).
- Identification by the Aboriginal community on the basis of cultural information.

7.0 SURVEY RESULTS

7.1 Description of survey units

The total study area covers a footprint of approximately 31,986 m^2. Survey Unit 1 is comprised of two adjacent sporting fields, Wallarah and Blackley Ovals (Lots 2377-2380 DP755247) including the land on which the amenities block is located, and is bounded by Lambton High School to the north, Turton Road to the east, Monash Road and Lambton Ker-rai Creek to the south, and adjacent sports field on Wallarah Road to the west. The survey unit consists of a flat plain landform, rising slightly in a southwest direction.

Grassed fields dominate the study area with some structures such as drains, culverts and fencing. Outside the southern boundary of the study area are structures such as a concrete pathway, fencing, easement, and a stormwater channel. A building positioned on a concrete slab base (375 m^2) was located in the southern portion of the ovals but is also outside of the study area. Overall, visibility of the survey unit was extremely low due to a high coverage of manicured grass. The survey concentrated on sections of grass where erosion had caused some ground exposures. The study area has a visible anthropogenically modified ground surface which has been flattened either by lateral dispersal of topsoils or import of secondary fill (Kleinfelder 2023) (see Section 4.5). As such, the observed landform and elevation above surrounding modified and natural watercourses is not representative of the original ground surface level.

A concentration of whole shells and shell fragments were present in an exposure area at the northern boundary of the study area, representing shellfish that are common food resources in estuarine contexts, including *Anadara trapezia* (cockle), mud creeper, and oyster, as well as fragments of stone, charcoal and glass (Figure 21, Figure 22). It is not considered that this surface scatter of shell is indicative of a localised or sub-surface midden within the study area and rather has been dredged from nearby waterways and imported to the study area as aggregate for either the concrete dummy gun structures which have eroded, landscaping, or limited fill. This conclusion is supported by the geotechnical report (Kleinfelder 2023) which did not identify any potential in situ midden at depth across the study area.

Figure 14. View north east across sports fields showing boundary with Lambton High School and Turton Road.

Figure 15. View south west showing sloped rise in the landform with hills in the distant background of study area.

Figure 16. View west from east boundary of study area showing culverts.

Figure 17. View north showing footpath, fence and drainage area under the trees.

Figure 18. View east showing fenced edge of study area, with concrete pathway, easement and stormwater channel.

Figure 19. View south showing dense grass coverage.

Figure 20. View north towards gate showing eroded ground on boundary of study area.

Figure 21. Detail view of ground exposure showing shell materials on surface.

Figure 22. View west showing extent of exposed ground surface leading to an asphalt pathway.

Figure 23. View east showing exposure area and extent of ground surface disturbance.

Figure 24. View south east towards stormwater drain (Lambton Ker-rai Creek) outside southern boundary of the study area.

Figure 25. Detail view of stormwater channel wall showing shell and glass embedded within the concrete.

7.2 Analysis of survey coverage and effectiveness

Effective survey coverage is outlined in Table 4, and landform survey coverage is outlined in Table 5. Percentages in these tables are rounded to the nearest 10% as required by the Code of Practice. If the exposure and visibility are less than 5% of the total area surveyed, the value will be zero. Exposure (GSE) is the amount of bare ground for which erosion and exposure is sufficient to reveal buried artefacts on the ground surface. Visibility (GSV) is the amount of bare ground (no vegetation or leave litter) on the exposures which might reveal artefacts or other archaeological materials.

Table 4. Effective survey coverage

Survey Unit (SU)	Landform	Survey unit area (m^2)	Visibility (%)	Exposure (%)	Effective survey coverage (m^2)	Effective coverage (%)
1	Plain	31,986	0	0	0	0

Table 5. Landform survey coverage

Landform	Landform area (m^2)	Area effectively surveyed (m^2)	% of landform effectively surveyed	Number of sites
Plain	31,986	0	0	0

7.3 Aboriginal sites

7.3.1 Previously identified sites

No previously identified Aboriginal sites are located within the study area.

7.3.2 Newly identified sites

No new Aboriginal sites were identified as a result of the archaeological survey.

7.4 Summary of results

In summary, the results of the survey were highly constrained due to the overall poor ground visibility. The majority of the study area was covered by grass and there are built structures on the periphery of the study area (one building, shipping container, fencing, drains, culverts). Under these conditions it was not possible to adequately observe the ground surface. Where the ground exposures were present, no Aboriginal objects were observed.

An exposure of redeposited shell, charcoal, and glass was identified at the location of the northern boundary gate of the high school which coincides with the northern boundary of the study area. It is considered likely this exposure of shell represents redeposited shell derived from historical dredging of Newcastle's bays and estuaries.

Due to the likely tertiary context of the surface scatter and the intermixed estuarine shell species, it is considered that the scatter cannot be reliably proven beyond a reasonable doubt to be the remnants of an Aboriginal shell midden (Kleinfelder 2023). The disturbed context of the shell overlying inferred fill and in close spatial relation to rubble associated with a nearby dummy gun emplacement further suggests the material is not expressive of a midden deposit. The surface expression of the midden is also determined to be inconsistent with the presence of a sub-surface midden lens having been eroded or exposed.

The Aboriginal Culture and Heritage Officer of the Awabakal LALC observed that there were shell and glass materials embedded within the concrete stormwater channel of Lambton Ker-rai Creek to the immediate south of the survey area, which may be associated with a midden, as the materials might have been sourced directly from the area adjacent to the creek. The presence of shell and glass material in the concrete of the canal suggests potential use of localised material or aggregate during manufacturing of construction grade concrete. This may have included use of shell material from middens within local Newcastle estuaries. The use of midden shell for construction of European buildings is well documented in the historical record. The shell may also have been dredged directly from estuarine banks where oysters would naturally accumulate, particularly on estuarine back barrier channels.

Previous assessments on similar landform and soils have also identified low-moderate archaeological and cultural significant materials, mostly stone artefact scatters or shell materials. Historical levelling, inferred secondary filling or lateral dispersal of topsoils and construction of the dummy gun emplacements have significantly impacted on the study area and served to reduce its overall archaeological potential. While archaeological deposits have been identified below fill and historical disturbance layers within the Newcastle region, these sites have been identified in proximity to significant waterways such as the Hunter River. The geotechnical report as provided in Section 4.1 does not support the presence of intact Aboriginal shell midden within the study area below the recorded and varying levels of fill.

8.0 ANALYSIS AND DISCUSSION

Previous investigations have identified that there is lower Aboriginal archaeological potential for deposited archaeological and cultural material in areas which are more than 200m from perennial water sources, such as the study area. Furthermore, low archaeological sensitivity has been assessed in areas which have been subject to substantial urban development. Prior to the impacts of historical development locations in urban Newcastle, locations such as the study area may have had high archaeological sensitivity due to their proximity to the Hunter River and its tributaries.

Detailed mapping (Figure 6 and Figure 7) shows the study area within the Hamilton soil landscape which is associated with coal, sandstone and minor conglomerate within the Quaternary sands which overlie estuarine clay deposits. The potential preservation of archaeological remains is closely linked to the nature and depth of original soils, and the degree to which these soils have been preserved. Archaeological data suggests that artefact sites are the most common Aboriginal site type in the Newcastle area. Sites closer to the study area are more frequently found to be stone artefact assemblages (with the possibility of being areas of primary reduction) or areas of PAD as well as midden (shell material and bone), surface scatters, and isolated artefacts. The archaeological site survey was not effective due to the low ground surface visibility. However, it determined that the study area has been significantly impacted by modification of former coastal swamp to provide for pastoralism and later dummy gun emplacements, followed by levelling and potential filling for the sports oval.

Previous assessments of the archaeological context of the site and surrounding areas have identified low-moderate archaeological and cultural significant materials, mostly stone artefact scatters or shell materials. The observed shell scatter within the study area has however been determined to be likely re-deposited shell associated with the import of fill or as part of decomposed concrete aggregate. Due to the underlying fill (Kleinfelder 2023) and inconsistent surface expression of shell with a potential midden deposit, it is further unlikely the shell is in situ and of cultural origin. As such, the fragmentary shell is unlikely to be of Aboriginal origin and representative of in situ Aboriginal midden deposits within the study area.

A summary of the predictive statements and revision is provided in Table 6.

Table 6: Summary of predictive statements

Predictive statement	Revised predictive statement
Based on the spatial patterning of recorded Aboriginal sites and on findings from previous studies in the region, the highest numbers of sites are likely to be located near waterways, swamp edges and on ridgelines. The study area is next to a significantly modified and canalised ephemeral watercourse and is more than 400 m from the perennial water source Styx Creek. Therefore, the study area is likely to have lower Aboriginal archaeological sensitivity for potential sites and in situ archaeological deposits	The study area has been significantly levelled and modified to create a raised and level surface above the original level of the surrounding coastal swamp. As such, the study area does not meet the predictive model for increased archaeological sensitivity.
Based on existing registered Aboriginal sites in proximity to the study area, the most likely Aboriginal archaeological site type to occur in the study area will be subsurface artefact deposits or low-density surface artefact scatters, and possibly shell material with bone or midden	No change.

Predictive statement	Revised predictive statement
Artefact raw materials are likely to consist of tuff, mudstone, silcrete and chert.	No change. No Aboriginal objects were observed during the survey.
Archaeological material has the potential to be present in both shallow and deep subsurface deposits	The geotechnical report provided by Kleinfelder (2023) has demonstrated that the overall likelihood of intact midden material at sub-surface levels is low. An extensive borehole and augering program was undertaken across the study area that failed to identify any in situ lenses of shell in the soil profiles subject to geotechnical analysis to a depth of 8.95 m below the surface. The study area contains Quaternary sands which serve as a predictor of a higher likelihood to identify Aboriginal archaeological deposits However, the lack of a nearby major watercourse reliable estuarine resources serves to reduce the overall sensitivity of the study area. While the study area is raised on an upper contour above the nearby canal, the study area has been raised to its extant level anthropogenically and the nearby canal has been man-made.
Vegetation and surface clearance has impacted the study area and it is unlikely that any culturally modified trees will be present. The levelling and deposition of secondary fill across the study also likely precludes the presences of any original ground surfaces. Original topsoils where present have likely eroded or been blown over the fill by alluvial or aeolian processes (Kleinfelder 2023).	Surface disturbance and vegetation clearing has significantly impacted the upper portion of soils. Particularly, landscaping, levelling and import of fill and the construction and destruction of the dummy gun emplacements has disturbed the original topsoil profile.
Historical changes to landforms and deposits, including site erosion and loss, would be predicted near to creeks subject to incision and gullying arising from European land use practices	Historical changes to the landform have been observed to include clearing, drainage of the surrounding swampland, canalisation of the floodplain, construction of dummy guns and subsequent inferred filling and levelling of the study area.
Historical processes of ground disturbance have had the potential to disturb the stratigraphic integrity of the Aboriginal archaeological record, or to remove it entirely. It is possible that Aboriginal archaeological deposits may be present underneath observed secondary fill across the study area, however geotechnical data does not suggest the presence of any estuarine shell midden deposits at depth (Kleinfelder 2023). The northwestern portion of the study area has been subject to sub-surface disturbances for installation of dummy gun stations therefore it is likely that any sub-surface deposits there may have been impacted	Historical land-use and modification of the study area has substantially changed the original topography of the study area and its elevation over surrounding and local waterways. The geotechnical data is supported by the analysis of historical aerials and observations during the survey which have identified that the study area has been significantly disturbed, particularly through levelling and inferred input of secondary fill or lateral dispersal of original topsoils.

Predictive statement	Revised predictive statement
The northwestern portion of the study area has been subject to sub-surface disturbances for installation of dummy gun stations therefore it is likely that any sub-surface deposits there may have been impacted.	It is likely that the shell expression comprises eroded conglomerate from the former demolished dummy gun stations, or alternatively landscaping and fill. The geotechnical report does not suggest a moderate to high likelihood of intact midden at depth.
The 1944 aerial potentially shows natural ground surfaces, however by 1943 gun emplacements constructed which are likely to have involved some excavation to construct. Subsequent to construction, the area appears to have been flattened for playing fields. No evidence can be inferred from the available aerials as to whether that flattening was achieved by deposition of secondary fill or whether surrounding natural surfaces were laterally bulldozed to create a new flat surface. However, the fill observed by Kleinfelder (2023) does not appear to be consistent with topsoil modelling for the Hamilton soil landscape (Section 4.1) Based on the potentially low-lying nature of the area and evidence in the earlier aerials that the neighbouring road and subdivision were on raised fill, it is moderately to highly likely the study area has been filled	The fill layer observed by Kleinfelder's (2023) geotechnical report comprises a gravelly aggregate of sand, which is generally inconsistent with the modelling of the topsoil of the Hamilton soil landscape. Survey has confirmed the anthropogenically modified and raised level of the study area.

9.0 SIGNIFICANCE ASSESSMENT

9.1 Significance assessment criteria

In accordance with the Code of Practice, an assessment of the scientific value of an Aboriginal object is required in order to form the basis of its management. The Guide provides the following criteria for the assessment of scientific value:

- Research potential - does the evidence suggest any potential to contribute to an understanding of the area and/or region and/or state's natural and cultural history?
- Representativeness - how much variability (outside and/or inside the subject area) exists, what is already conserved, how much connectivity is there?
- Rarity - is the subject area important in demonstrating a distinctive way of life, custom, process, land-use, function or design no longer practised? Is it in danger of being lost or of exceptional interest?
- Education potential - does the subject area contain teaching sites or sites that might have teaching potential?

It is important to note that heritage significance is a dynamic value.

9.2 Statement of significance

No Aboriginal objects or sites have been identified that require an assessment of significance.

10.0 IMPACT ASSESSMENT

10.1 Description of likely impacts

Basketball Association of Newcastle Limited (BANL) proposes development and construction of the Hunter Indoor Sports Centre at Wallarah and Blackley Ovals in New Lambton, a project accompanied by site preparation, earthworks, extensive excavation as part of the construction of the building and installation of new services and a carparking area.

The proposed development comprises construction of a new basketball complex to facilitate approximately a stadium court and additional basketball courts with additional standard amenities and support spaces, including car parking. Key elements of the project will include:

- Site preparation and earthworks including excavation,
- Construction of a basketball stadium building,
- Vehicular access off Womboin Road and Turton Road. (EJE Architecture 2023).

10.2 Potential impacts to Aboriginal heritage

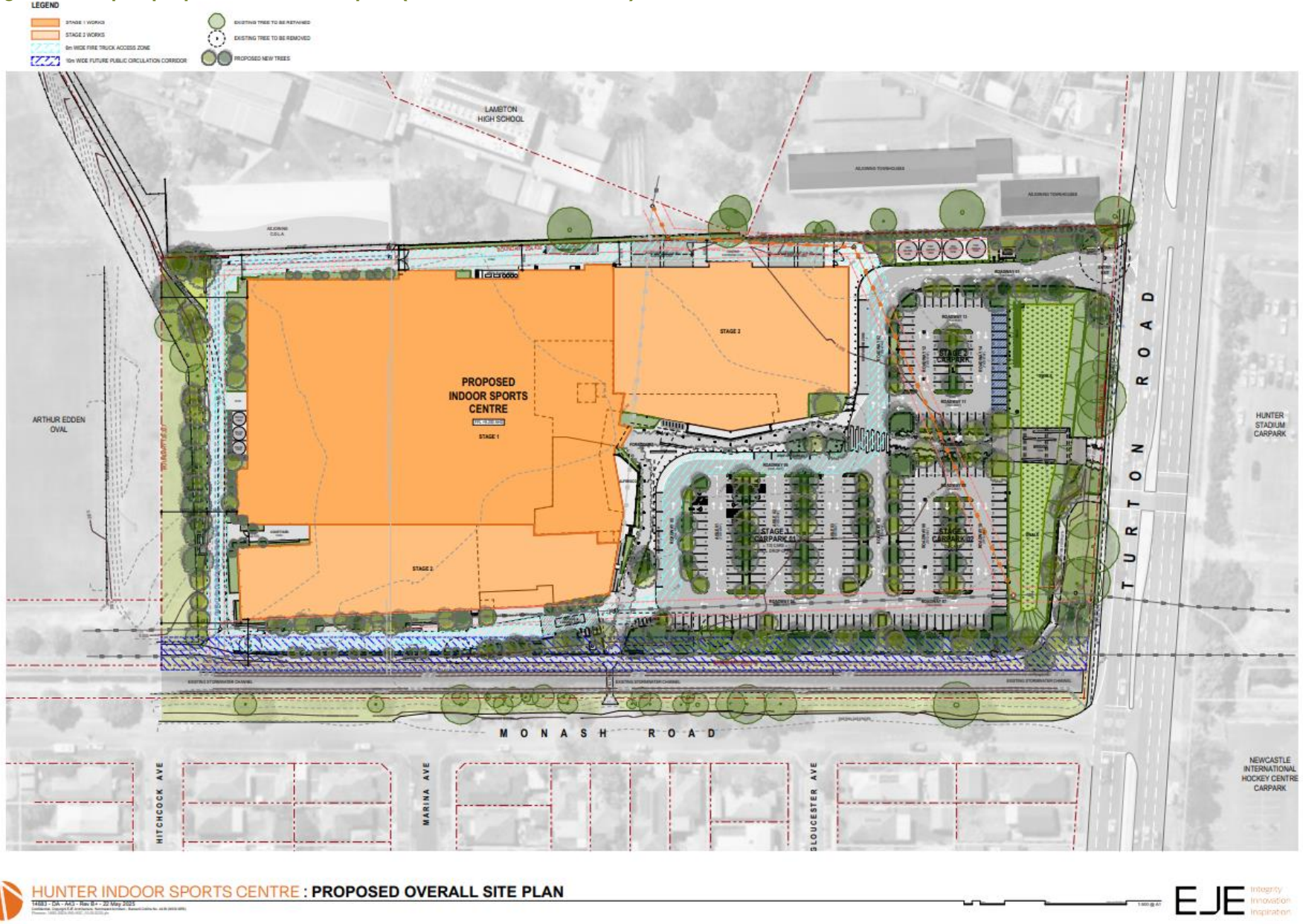
The definition of harm to an object or place under the NPW Act includes any act or omission that 'destroys, defaces or damages the object or place or in relation to an object – moves the object from land on which it had been situated.'

Direct harm may occur as a result of activities which disturb the ground surface including site preparation activities, earthworks and ground excavation, and the installation of services and infrastructure.

Indirect harm for Aboriginal heritage refers to impacts that may affect sites or features located immediately beyond or within the area of the proposed works. Indirect harm may include impacts from vibration, increased visitation, or increased erosion, including ancillary project activities (construction and/or operation) that are not located within the study area.

The proposed work has the potential to significantly impact the study area (Figure 26). The desktop research, AHIMS extensive search and archaeological survey failed to identify any Aboriginal objects or areas of PAD within the study area. On the basis of these results, the proposed works will not harm on any known Aboriginal sites and it is considered unlikely that any unidentified Aboriginal objects will be harmed.

Figure 26. Map of proposed overall site plan (Source: Urbis/EJE 2025)



11.0 MANAGEMENT AND MITIGATION MEASURES

11.1 Guiding principles

The overall guiding principle for cultural heritage management is that where possible Aboriginal sites should be conserved.

Where unavoidable impacts occur then measures to mitigate and manage impacts are proposed. Mitigation measures primarily concern preserving the heritage values of sites beyond the physical existence of the site. The most common methods involve detailed recording of Aboriginal objects, archaeological test and salvage excavations, artefact analysis and, where appropriate, reburial of Aboriginal objects in a location determined by the RAPs.

Mitigation measures vary depending on the assessment of archaeological significance of a particular Aboriginal site and are based on its research potential, rarity, representatives and educational value. In general, the significance of a site would influence the choice of preferred conservation outcomes and appropriate mitigation measures, usually on the following basis:

- Low archaeological significance – conservation where possible. SSD Conditions of Approval would be required to impact the site before work can commence.
- Moderate archaeological significance – conservation where possible. If conservation was not practicable, further archaeological investigation would be required such as salvage excavations or surface collection in accordance with the SSD Conditions of Approval.
- High archaeological significance – conservation as a priority. Where all other practical alternatives have been discounted mitigation measured such as comprehensive salvage excavations in accordance with the SSD Conditions of Approval would be required.

11.2 Archaeological significance and management protocol

In accordance with the above criteria, considering the likelihood of no presence of Aboriginal objects, the site is deemed to have low archaeological significance. Construction activities may proceed with caution. However, should unexpected discoveries of Aboriginal objects occur, further assessment will be necessary to evaluate their significance, assess potential impacts, and devise appropriate mitigation measures.

Although no specific mitigation measures are currently advised, it is recommended that the construction works be managed under an unexpected finds procedure to address any unforeseen discoveries effectively.

11.3 Aboriginal cultural heritage assessment report

An ACHAR must be prepared to address Requirement 11 of the SEARs based on the findings of this archaeological assessment and on the outcomes of the Aboriginal consultation process. Consultation with Aboriginal stakeholders is an important part of the ACHAR process. This process involves consultation with RAPs as prescribed in the NPW Regulation 2019 and the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010b; hereafter the Consultation Requirements). The draft ACHAR must be forwarded to RAPs for 28 days to review and comment prior to finalisation.

11.4 Changes to the project area

Advice provided within this report is based upon the most recent information provided by the proponent at the time of writing. Any changes made to the project should be assessed by an archaeologist in consultation with the RAPs. Any changes that may impact on Aboriginal sites not assessed as part of the project may warrant further investigation and result in changes to the recommended management and mitigation measures.

12.0 CONCLUSION

The following results and recommendations are based on consideration of the requirements of Aboriginal heritage guidelines including:

- The Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010b) – known as The Code of Practice
- Guide to investigating and assessing and reporting on Aboriginal Cultural Heritage in New South Wales (OEH 2011) – known as ACHAR guidelines
- The Aboriginal Cultural Heritage consultation requirements for proponents (DECCW 2010a) - known as Consultation Guidelines)
- Requirement 11 of the SEARS issued for the project (SSD-65595459)

12.1 Summary of findings

The assessment found that the study area is unlikely to contain Aboriginal objects based on the following:

- An AHIMS extensive search and a review of previous archaeological literature did not reveal any previously known Aboriginal sites within the study area.
- No previously unrecorded Aboriginal objects, sites or areas of PAD were identified within the study area as a result of the archaeological survey.
- One scatter of exposed shell was identified near a former dummy gun emplacement on the northern boundary of the study area. It is considered that it is likely based on the lack of midden deposits observed through geotechnical study (Kleinfelder 2023), the disturbance and modification of the study area landform, and the overall likelihood for the shell to be redeposited that the scatter is not of Aboriginal origin.

12.2 Recommendations

Based on the results of this assessment and in accordance with Aboriginal heritage guidelines mandated in the SEARs for the proposal, the following recommendations are made:

- No further archaeological investigation is recommended for the study area based on the results of the desktop research, AHIMS extensive search and archaeological survey.
- An ACHAR must be prepared to address Requirement 11 of the SEARs.
- Consultation with Aboriginal stakeholders must be commenced in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010a).
- If changes are made to the proposal that may result in impacts to areas not assessed by this ATR further assessment must be undertaken.

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 231000 HISC update

Client Service ID : 1006573

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
38-4-2263	Broadmeadow PAD 2023-01	GDA	56	380915	6356113	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Artefact Heritage and Environment - Pyrmont,Doctor.Michael Lever					**Permits**		
38-4-2371	Lambton Rd PAD-01	GDA	56	380817	6356428	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Heritage Now - Belmont,Ms.Crystal Phillips					**Permits**		

**** Site Status**

Valid - The site has been recorded and accepted onto the system as valid

Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.

Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground

Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 21/05/2025 for Kristen Tola for the following area at Datum :GDA, Zone : 56, Eastings : 379530.0 - 381530.0, Northings : 6355941.0 - 6357941.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 2

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