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104 – 116 REGENT STREET REDFERN NEW SOUTH WALES

ABORIGINAL CULTURAL HERITAGE ASSESSMENT

DRAFT REPORT

WEE HUR REDFERN TRUST

7 December 2021

DOCUMENT INFORMATION

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Services required:	ABORIGINAL CULTURAL HERITAGE ASSESSMENT
Client:	Wee Hur Redfern Trust
Prepared by:	Ricardo Servin
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EXECUTIVE SUMMARY

This report has been prepared for Wee Hur Redfern Trust (the proponent) and details the Aboriginal Cultural Heritage Assessment (ACHA) of land situated at 104 – 116 Regent Street, Redfern, New South Wales (NSW) [the study area], within the City of Sydney Local Government Areas (LGAs), and the parish of Alexandria in the county of Cumberland.

The study area is bounded to the north by SP57425, to the east by SP60485 and William Lane, to the south by Margaret Street, and to the west by Regent Street. The study area is located in the suburb of Redfern, located 1.5 kilometres from Sydney Central Business District.

This ACHA was undertaken to assess the archaeological potential for Aboriginal material as part of a State Significant Development (SSD) being prepared under Part 5 of the *Environmental Planning and Assessment Act 1979*. The ACHA has been undertaken in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (Department of Environment Climate Change and Water NSW 2010).

This report is required to support a proposed submission for Secretary's Environmental Assessment Requirements (SEARs) for an Environmental Impact Statement (EIS) that is to be submitted for the proposed development.

Based on recent archaeological studies near the vicinity of the study area and predictive models, this area is not located within a landscape that could be considered to have been preferable for Aboriginal occupation. The study area is not considered to be located within close proximity to water sources and its mid-slope position would not be suitable for occupation.

The study area is located within dense residential, commercial and industrial centres. From 1967, the study area was used as a service station. In 2001, the property was refurbished and renovated. works carried out at that time included replacement of the existing underground petroleum storage system (UPSS), remediation of contaminated soils and refurbishment of the northern shop building. The site functioned as a service station from 1967 until it was vacated in 2020.

A field survey inspection identified that the entirety of the study area is covered by a variety of urban materials including concrete resulting in no visibility across the study area. The disturbance is particularly associated with the service station and underground fuel tanks and associated services as this would have required deep underground excavations which significantly impacted on any potential archaeological deposits present within the study area. No sites or areas containing potential archaeological material were identified within the study area.

As a result of extensive deep ground disturbance within the study area, it is unlikely for archaeological material to be present. Therefore, the proposed development and associated works are unlikely to impact on any archaeological material within the study area.

ABORIGINAL COMMUNITY CONSULTATION

Consultation with Aboriginal stakeholders has been completed in accordance with the Consultation Requirements (DECCW 2010a). A summary of this process is included below.

Stage	Component	Commenced	Completed
Stage 1	Letters to agencies	07/01/2021	N/A
	Registration of stakeholders	04/02/2021	24/02/2021
Stage 2	Project information	19/03/2021	N/A
Stage 3	Review of project methodology	19/03/2021	16/04/2021
Stage 4	Review of ACHA by Aboriginal stakeholders	16/06/2021	26/07/2021

Further information on the consultation completed for the project can be found in Section 2 and Appendix B of this report.

RECOMMENDATIONS

The following recommendations are derived from the findings described in this ACHA. The recommendations have been developed after considering the archaeological context, environmental information, consultation with the local Aboriginal community, and the findings of the Archaeological field survey and the predicted impact of the planning proposal on archaeological resources.

It is recommended that:

1. No further assessment or works are required to be undertaken for the study area. If during the project, unexpected finds or human remains, please follow recommendation 2.
2. In the event that unexpected finds occur during any activity within the study area, all works in the vicinity must cease immediately. The find must be left in place and protected from any further harm. Depending on the nature of the find, the following processes must be followed:
    1. If, human skeletal remains are encountered, all work must cease immediately and NSW Police must be contacted, they will then notify the Coroner's Office. Following this, if the remains are believed to be of Aboriginal origin, then the Aboriginal stakeholders and Heritage NSW must be notified.
3. A copy of this report should be forwarded to all Aboriginal stakeholder groups who have registered an interest in the project.
4. Interpretative signage has been recommended by the local Aboriginal community to indicate traditional ownership and previous use of the land by Indigenous populations.

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FIGURES

TABLES

1 INTRODUCTION

Austral Archaeology Pty Ltd (Austral) has been commissioned by Wee Hur Redfern Trust (the proponent) to undertake an Aboriginal Cultural Heritage Assessment report (ACHA) for the property at 104 – 116 Regent Street, Redfern, New South Wales (NSW) [the study area]. The location of the study area is shown in Figure 3.1, Figure 3.2, and Figure 3.3.

1.1 PURPOSE OF THE ACHA

The ACHA was undertaken to assess the potential harm that may occur to Aboriginal cultural heritage values as part of a State Significant Development (SSD) under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), for the proposal of a new tower block containing student accommodation to be constructed within the study area.

This report is required to support a proposed submission for Secretary's Environmental Assessment Requirements (SEARs) for an Environmental Impact Statement (EIS) that is to be submitted for the proposed development.

The project involves the construction of an 18 storey mixed-use building accommodating ground floor retail premises and 411 bed student housing accommodation with indoor and outdoor communal spaces, on-site bicycle parking and ancillary facilities.

1.2 ASSESSMENT OBJECTIVES

The scope of this ACHA report is based on the legal requirements, guidelines and policies of the Heritage NSW, formerly the Office of Environment and Heritage (OEH), formerly, the Department of Environment, Climate Change and Water (DECCW), Department of Environment and Climate Change (DECC) and Department of Environment and Climate (DEC).

The guiding document for this assessment is the *Code of Practice for the Investigation of Aboriginal objects in NSW* (DECCW 2010b) [Code of Practice].

Information provided in this assessment includes, but is not limited to:

- An assessment of archaeological significance and management recommendations.
- A literary review of available data, including previous studies/investigations from within and adjacent to the study area.
- An assessment of harm posed to Aboriginal objects, places or values as part of the project.
- A description of practical measures that have been used to protect, conserve, avoid or mitigate harm to Aboriginal objects, places and values.

1.3 SUMMARY OF LEGISLATIVE PROCESS

Aboriginal archaeological and cultural heritage assessments in NSW are carried out under the auspices of a range of State and Federal Acts, Regulations and Guidelines. The Acts and Regulations allow for the management and protection of Aboriginal places and objects, and the Guidelines set out best practice for community consultation in accordance with the requirements of the Acts.

This section outlines the Australian acts and guidelines that are applicable or have the potential to be triggered with regards to the proposed development. These are detailed in Table 1.1 to Table 1.4.

Table 1.1 Federal acts

Federal Acts:	Applicability and implications
Environment Protection and Biodiversity Conservation Act 1999	This act has not been triggered and so does not apply, as: • No sites listed on the National Heritage List (NHL) are present or in close proximity to the study area. • No sites listed on the Commonwealth Heritage List (CHL) are present or in close proximity to the study area.
Aboriginal and Torres Strait Islander Heritage Protection Amendment Act 1987	Applies, due to: This Act provides blanket protection for Aboriginal heritage in circumstances where such protection is not available at the state level. This Act may also override state and territory provisions.

Table 1.2 State acts

State Acts:	Applicability and implications
National Parks and Wildlife Act 1974 (NPW Act 1974)	Applies, due to: • Section 86 – Prohibits both knowingly and unknowingly, causing harm or desecration to any Aboriginal object or place without either an AHIP or other suitable defence from the Act. • Section 87 – Allows for activities carried out under an AHIP or following due diligence to be a defence against the harm of an Aboriginal object. • Section 89A – Requires that the Heritage NSW must be notified of any Aboriginal objects discovered, within a reasonable time. • Section 90 – Requires an application for an AHIP in the case of destruction of a site through development or relocation.
NPW Regulation 2009	Applies, due to: • Section 80A – States minimum standards of due diligence to have been carried out • Section 80C – Requires Aboriginal community consultation process to be undertaken before applying for an AHIP. • Section 80D – Requires production of a cultural heritage assessment report to accompany AHIP applications.
The Environmental Planning and Assessment Act 1979 (EP&A Act 1979)	Applies, due to: • This project is being assessed under Part 5 of the EP&A Act 1979. • Sections 86, 87, 89A and 90 of the NP&W Act 1974 will apply. • The Part 5 Guidelines will not apply.
NSW Heritage Act 1977	There are no sites listed on the State Heritage Register associated with the study area, and therefore Section 57 of this act does not apply.

Table 1.3 State and local planning instruments

Planning Instruments	Applicability and implications
Local Environmental Plans (LEP)	The following LEP is applicable: • City of Sydney LEP 2012
Development Control Plans (DCP)	The following DCP is applicable: • Sydney DCP 2012

Table 1.4 Aboriginal community consultation guidelines

Guidelines	Applicability and implications
Consultation Requirements	The development is to be conducted in accordance with Part 4 of the EP&A Act. As the project is to be assessed under Part 6 of the NP&W Act, approvals under Section 90 of the NP&W Act 1974 as amended 2010 will be required, S89A of the Act will apply, and the Part 4 Guidelines will apply.

1.4 PROJECT TEAM AND QUALIFICATIONS

The following personnel have been involved in the preparation of this ACHA.

DAVID MARCUS (B.A. (B.A. (HONS.) ARCHAEOLOGY, MA. ARCHAEOLOGY)

David has significant experience in both Aboriginal and historical cultural heritage projects. David started his career in archaeology in 2000 and has worked in all roles from field assistant through to project manager. He commenced work for Austral Archaeology in 2010 and has been responsible for all aspects of the day-to-day running of Austral Archaeology. David also has highlevel skills in both physical and digital mapping and integration of digital data into GIS. David has completed various Aboriginal archaeological projects and is familiar with the archaeology of the North Shore.

AMANDA ATKINSON (BA. ARCH/PALEO, GRAD DIP ARCHAEOLOGY)

Amanda Atkinson is an Aboriginal heritage specialist with over 12 years' experience in Australian archaeology. Amanda has worked predominantly in eastern Australian states and in Western Australia. Amanda has extensive experience in Aboriginal consultation and has worked on some of the state's most complex Aboriginal heritage projects.

RICARDO SERVIN (B.A. ARCHAEOLOGY)

Ricardo Servin is an archaeologist with over 6 years' experience in Aboriginal cultural heritage and historical heritage projects across NSW, Victoria and Tasmania. Ricardo has managed sites of local and State significance and led teams of over 10 archaeologists on both historical and Aboriginal archaeological sites. As a heritage consultant Ricardo has written several assessment reports as the main author and has been a contributor to large scale reports. Ricardo has ample experience in lithic artefact analysis with experience in functional analysis.

WILLIAM ANDREWS (BSC. ENGINEERING, B.A ARCHAEOLOGY)

William Andrews is an archaeologist and GIS operator with Austral. William has a degree in Engineering (Surveying) and he chose to transition his career path towards archaeology, completing a degree in Archaeology in 2019. Prior to his career change, William had worked as a land surveyor which has given him the skills to specialise in spatial data collection techniques which are of significant benefit to Austral's projects and clients. This includes photogrammetry, laser scanning, GIS and in-field documentation methods.

Amanda Atkinson has reviewed this report for quality assurance and technical adequacy and had input into the management recommendations.

1.5 ABBREVIATIONS

The following are common abbreviations that are used within this report:

ACHAR	Aboriginal Cultural Heritage Assessment Report
AHIMS	Aboriginal Heritage Information Management System
AHMS	Archaeological & Heritage Management Solutions
Burra Charter	Burra Charter: Australia ICOMOS Charter for Places of Cultural Significance 2013
CBD	Central Business District
CHL	Commonwealth Heritage List
DEC	Department of Environment and Climate
DECC	Department of Environment and Climate Change
DECCW	Department of Environment, Climate Change and Water
DCP	Development Control Plan
EPA Act	Environmental Planning and Assessment Act 1979
EPBC Act	Environmental Protection and Biodiversity Act 1999
EPI	Environmental Planning Instrument
Heritage Act	NSW Heritage Act 1977
ICOMOS	International Council on Monuments and Sites
IHO	Interim Heritage Order
JMcDCHM	Jo McDonald Cultural Heritage Management Pty Ltd
LEP	Local Environmental Plan
LGA	Local Government Area
MLALC	Metropolitan Local Aboriginal Land Council
NIDC	National Indigenous Development Centre
NHL	National Heritage List
NPW Act	National Parks and Wildlife Act 1974
NSW	New South Wales
The Proponent	Antoniades Architects Pty Ltd (Antoniades)
OEH	Office of Environment and Heritage
PAD	Potential Archaeological Deposit
RNE	Register of the National Estate
Study Area	104 – 116 Regent Street, Redfern, NSW
Sydney DCP	Sydney *Development Control Plan* 2012
City of Sydney LEP	City of Sydney *Local Environmental Plan* 2012

Refer also to the document Heritage Terms and Abbreviations, published by the Heritage Office and available on the website: http://www.environment.nsw.gov.au/heritage/index.htm.

2 CONSULTATION PROCESS

This section outlines the consultation process that has been followed as part of the preparation of this ACHA.

2.1 INTRODUCTION

Stakeholder consultation for this project commenced in line with the Consultation Requirements (DECCW 2010a). Heritage NSW (2010a, p.iii) recognises that:

- Aboriginal people should have the right to maintain their culture.
- Aboriginal people should have the right to participate in matters that may affect their heritage directly.
- Aboriginal people are the primary determinants of the cultural significance of their heritage.

The Consultation Requirements outline a four-stage consultation process which includes:

- Stage 1 – Notification of the project proposal and registration of interest.
- Stage 2 – Presentation of information about the proposed project.
- Stage 3 – Gathering information about cultural significance.
- Stage 4 – Review of the draft cultural heritage assessment report.

Appendix B contains a consultation log and evidence of all correspondences that were sent and received as part of the consultation process.

2.2 STAGE 1: NOTIFICATION AND REGISTRATION OF INTEREST

The following section outlines the tasks that were undertaken as part of Stage 1 of the Consultation Requirements.

2.2.1 IDENTIFICATION OF RELEVANT ABORIGINAL STAKEHOLDERS

In accordance with the Consultation Requirements the following bodies were notified as part of the project proposal on 07 January 2021:

- A response was received from Heritage NSW with a list of stakeholders who may have an interest in the proposed development.
- The Metro LALC did not respond
- The City of Sydney Council did not respond
- The National Native Tittle Tribunal replied that they had no list of stakeholders who may have an interest in the proposed development.

A search conducted by the Office of the Registrar, *Aboriginal Land Rights Act 1983* (NSW) listed 47 Aboriginal stakeholders for the land within the study area. A copy of these letters and searches are included in Appendix B.

2.2.2 PUBLIC NOTICE

An advert was placed in the Wentworth Courier, to run on 27 January 2021, requesting the registration of cultural knowledge holders relevant to the project area. A copy of this advert is included in Appendix B of this report.

2.2.3 INVITATION TO REGISTER

Letters were also written to the relevant agencies suggested in Section 4.1.2 of the Consultation Requirements (DECCW 2010a) on 04 February 2021 and a search was made of the Native Title Tribunal on the same day.

Correspondence occurred via email and letters to the provided addresses.

As a result of the consultation procedure, the following groups shown in Table 2.1 registered as Aboriginal stakeholders with an interest in this project:

Table 2.1 Registered Aboriginal stakeholders

Organisation	Contact person
Didge Ngunawal Clan	Lilly Carroll
Ngambaa Cultural Connections	Kaarina Slater
Wailwan Aboriginal Group	Phillip Boney
Clive Freeman	Clive Freeman
Kamilaroi Yankuntjatjara Working Group	Phillip Kahn
A1 Indigenous Services	Carolyn Hickey
Waawaar Awaa Aboriginal Corporation	Rodney Gunther
Biamanga	Seli Storer
Goobah Developments	Basil Smith
Tocomwall	Danny Franks/Scott Franks
Butucarbin Aboriginal Corporation	Jennifer Beale

2.3 STAGE 2: PRESENTATION OF INFORMATION

All registered Aboriginal stakeholders were provided with information outlining the proposed works, including information relating to proposed impacts as well as the project's methodology on 19 March 2021. The following comments were received:

- Karina Slater from Ngambaa Cultural Connections responded on 24 March 2021 to confirm to have received project information.
- Phillip Boney from Wailwan Aboriginal Group responded on 24 March 2021 to confirm to have received project information.
- Clive Freeman responded on 24 Mach 2021 thanking for the project information sent.

Copies of all correspondence relating to the provision of project information to registered Aboriginal stakeholders are included in Appendix B of this report.

2.4 STAGE 3: GATHERING INFORMATION ABOUT CULTURAL SIGNIFICANCE

2.4.1 REVIEW OF DRAFT METHODOLOGY

On 19 March 2021, Austral provided each Aboriginal stakeholder with a copy of the project methodology. The methodology outlined the proposed assessment process that would be used in the completion of the project. Aboriginal stakeholders were provided with 28 days to review and provide feedback on the methodology. The following comments were received:

- Lilly Carroll from Didge Ngunawal Clan responded on 19 March 2021 that she agrees with the methodology.
- Rodney Gunther from Waawaar Awaa Aboriginal Corporation responded on 21 March 2021 asking if there was any geotechnical information available and requesting an AHIMS search of 5 kilometres and historical mapping.
- A response email to Rodney Gunther was sent on 29 March 2021 indicating that the AHIMS search provided covers a radius of 5 kilometres, that we have no geotechnical information available at this stage, and that historical maps will be provided in the report.
- Phillip Kahn from Kamilaroi Yankuntjatjara Working Group responded on 23 March 2021 to agree with the methodology.

- Kaarina Slater from Ngambaa Cultural Connections responded on 24 March 2021 to agree and accept methodology.
- Clive Freeman responded on 24 March 2021 agreeing with the methodology and that have no specific cultural protocols to insert.

Copies of all correspondence relating to the draft methodology from Aboriginal stakeholders are included in Appendix B of this report.

2.5 STAGE 4: REVIEW OF DRAFT ACHA REPORT

On 16 June 2021 a draft copy of this report was sent to all registered stakeholders. On 5 July 2021, a reply was received from Kadibulla Khan of the Kamilaroi-Yankuntjatjara Working Group. The contents of the email and the response sent on 26 July 2021 by Pauline Ramesy (Austrtal) are outlined in Table 2.2.

Table 2.2 Responses for stage 4 consultation

Kamilaroi-Yankuntjatjara Working Group	Austral
"…Interpretation plans is there a plan in place?, ways you can incorporate culture in interpretation is through native gardens, art work, design, digital display, yarning circles and or an app are some examples. It is unfortunate that the site was once a service station although when you say that "this area is not located within a landscape that could be considered to have been preferable for Aboriginal occupation" Aboriginal people utilised all of the land in its form even if it was not near a water source they would find water some way, by digging or wells and claypans. Our recommendation is we would like to push for monitoring of the sites as last chance to uncover any remaining material done by a Aboriginal RAP."	"…I have reviewed your recommendations and have addressed two out of the three requests within the report. 1. I have added that signage be placed to acknowledge the traditional custodians of the land on which the development is being built. 2. I have also amended this sentence to say: "Based on recent archaeological studies near the vicinity of the study area and existing predictive models, this area is considered to have low archaeological potential to contain evidence of past Aboriginal occupation", to specify that this conclusion is based on scientific analysis rather than a cultural one. Unfortunately, I am unable to recommend further monitoring of this site, as the previous impacts to it are substantial. The construction of the gas station would have impacted the ground heavily as well as the installation of the subterranean tanks. The potential for finding Aboriginal relics is therefore very improbable and would most likely prove to be an unsafe exercise, as there is a possibility of chemicals being present.

All copies of the consultation documents are included in Appendix B.

3 LANDSCAPE CONTEXT

The following section defines the study area, its environmental and cultural context.

3.1 THE STUDY AREA

The study area consists of the entirety of 104-116 Regent Street, NSW (Lot 10, DP1026349), located approximately 1.5 kilometres from Sydney CBD, within the City of Sydney Local Government Areas (LGA), and the parish of Alexandria in the county of Cumberland. It is also within the boundaries of the Metropolitan Local Aboriginal Council (MLALC). It is bounded to the north by SP57425, to the east by SP60485 and William Lane, to the south by Margaret Street, and to the west by Regent Street.

The location of the study area is shown in Figure 3.1, Figure 3.2, and Figure 3.3

3.2 DESCRIPTION OF ABORIGINAL CULTURAL HERITAGE VALUES

It is generally accepted that Aboriginal people have inhabited the Australian continent for at least 50,000 years, and NSW for over 42,000 years (Allen & O'Connell 2003, Bowler et al. 2003). Aboriginal culture is rich and involves custom, lore and a values system based upon the sustainability of their spiritual connection, belonging, obligation and responsibility to care for their land, people and environment (DECCW 2010c). Aboriginal cultural knowledge can be defined as:

> *"… accumulated knowledge which encompasses spiritual relationships, relationships with the natural environment and the sustainable use of natural resources, and relationships between people, which are reflected in language, narratives, social organisation, values, beliefs, and cultural laws and customs…"* (Andrews et al. 2006)

Aboriginal cultural heritage encompasses both tangible and intangible elements (DECCW 2010a, p.3). Tangible heritage may include:

- Items and places made and used by Aboriginal people such as stone tools, art sites and ceremonial or burial grounds.
- Contemporary and/or historical sites such as old mission buildings, massacre sites and cemeteries.
- Cultural landscapes which are "*a place or area valued by an Aboriginal group (or groups) because of their long and complex relationship with that land*" (Buggey 1999).

Aboriginal cultural heritage is not just confined to tangible sites and landscapes, but also includes intangible aspects such as peoples' memories, story-lines, dreaming stories, ceremonies, language and other cultural knowledge passed from generation to generation (DECCW 2010a, p.3).

A description of the Aboriginal values identified within or adjacent to the study area is contained in Table 3.1 and within Figure 3.4.

Table 3.1 Details of Aboriginal cultural heritage values in relation to the study area

Site name / AHIMS No.	Description	Association to study area
Wynyard Street Midden (# 45-6-2597	Wynyard Street Midden (# 45-6-2597 was recorded as an exposed midden in 1997 with no amendments or reviews to the site card since. Recent studies near the site have identified that there is no evidence of an exposed midden (AMAC 2020, Artefact Heritage Pty Ltd 2020). AMAC (2020) has determined that the archaeological significance of the site is no longer valid. However, indicating that this does not discount the possibility of Aboriginal and or cultural material being present in a disturbed state.	Located 250 metres to the south of the study area
244 Cleveland Street (#45-6-3848)	244 Cleveland Street (#45-6-3848) consists of 25 stone and glass artefacts recovered during archaeological test excavation undertaken by Jillian Comber in 2019. These artefacts indicate that people occupied the area pre and post-contact.	Located 800 metres to the south of the study area

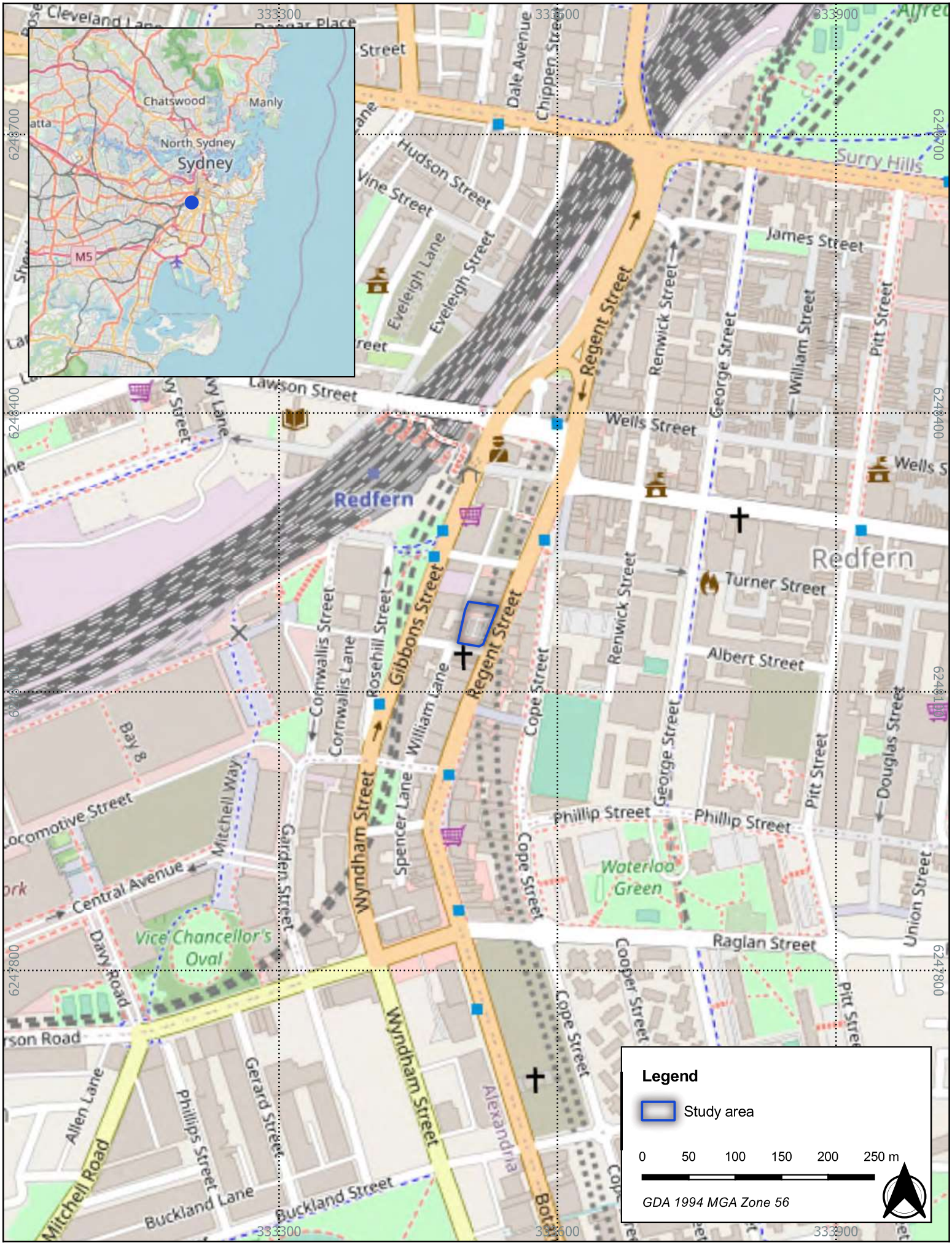

Figure 3.1 Location of the study area in a regional context

21001 104-116 Regent Street, Redfern

Source: OSM, NSW LPI Aerial

Drawn by: WA Date: 2021-04-14

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Figure 3.2 Detailed aerial of the study area

21001 104-116 Regent Street, Redfern

Source: OSM, NSW LPI Aerial

Drawn by: WA Date: 2021-04-14

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Figure 3.3 Study area in relation to cadastral boundaries

21001 104-116 Regent Street, Redfern

Source: OSM, NSW LPI Aerial, NSW DCDB

Drawn by: WA Date: 2021-04-14

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Figure 3.4 Identified Aboriginal values in relation to the study area

21001 104-116 Regent Street, Redfern

Source: OSM, NSW LPI Aerial

Drawn by: WA Date: 2021-05-03

AUSTRAL ARCHAEOLOGY

3.3 ENVIRONMENTAL CONTEXT

The following section discusses the study area in relation to its landscape, environmental and Aboriginal landscape resources. This environmental context has been prepared in accordance with Requirement 2 of The Code (DECCW 2010d, pp.8–9).

3.3.1 TOPOGRAPHY AND HYDROLOGY

The study area is located between gently undulating plains and rolling undulating rises of broad, level to very gently inclined, swales and dunes associated with the extensive Botany Lowlands dune system ((Bannerman & Hazelton 1990, pp.112–113).

The landform units identified within the study area are identified in Figure 3.5.

As shown in Figure 3.6, there were several swamps and small waterlines in the region surrounding the study area. According to Thorp (1994) sources indicate that there was a large swamp, known as Boxley's lagoon approximately one kilometre east of the study area. Also Blackwattle Creek and lagoon were located approximately 600 north and northwest of the study area.

These swamps in the area have likely fed into Shea's Creek (Alexandra Canal) located approximately two kilometres southwest of the study area, which is a tributary to Cooks River catchment that stretches from near Bankstown and discharges into Botany Bay.

The hydrological systems identified within and in the locality of the study area are identified in Figure 3.6.

Figure 3.5 Landform units identified within the study area

21001 104-116 Regent Street, Redfern

Source: OSM, NSW LPI Aerial

Drawn by: WA Date: 2021-04-14

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Figure 3.6 Hydrology of the study area and surrounding landscape 21001 104-116 Regent Street, Redfern

Source: OSM, NSW LPI Aerial

Drawn by: WA Date: 2021-05-03

AUSTRAL ARCHAEOLOGY

3.3.2 GEOLOGY AND SOILS

The underlying geology of the study area consists of Marine-deposited and aeolian-reworked coastal sand dunes associated with Quaternary (Holocene and Pleistocene) windblown, fine to medium-grained, well-sorted marine quartz sand (Bannerman & Hazelton 1990, p.112). The study area is positioned on the north western fringe of the Botany Lowlands system; which extends through the suburbs of Botany, Randwick and South Sydney. The Aeolian deposits are positioned on Triassic Age Ashfield Shale, which is underlain by Triassic Age Hawkesbury Sandstone.

The geological units identified within the study area are identified in Figure 3.7.

Soil landscapes have distinct morphological and topological characteristics that result in specific archaeological potential. Because they are defined by a combination of soils, topography, vegetation and weathering conditions, soil landscapes are essentially terrain units that provide a useful way to summarise archaeological potential and exposure.

The study area is located within the Tuggerah soil landscape (**tg**). This soil-landscape consists of a topsoil of speckled grey-brown loamy sand (**tg1**) overlying a deposit of bleached loose sand (**tg2**) and Grey-brown mottled sand (**tg3**) above a black soft sandy organic pan (**tg4**).

The soil landscapes identified within the study area are identified in Table 3.2 and Figure 3.8.

Table 3.2 Soil landscapes identified as being within study area

Soil landscape	Description
Tuggerah (tg1)	This is grey-brown speckled sand to loamy sand with apedal single-grained structure and porous sandy fabric. It generally occurs as topsoil (A1 horizon). This material consists of a mixture of small dark organic fragments and clean, well sorted, quartz sand grains. Colour ranges from brownish-grey (10YR 4/1) to brownish-black (10YR 2/3) or black (10YR 2/1) with increasing organic matter. It is characteristically water repellent. The pH is slightly acid (pH 6.0) to neutral (pH 7.0). Roots are abundant and charcoal fragments are often present. Stones are absent.
Tuggerah (tg2)	This is bleached sand with apedal single-grained structure an porous sandy fabric. It occurs as an A2 horizon. The surface condition is loose and the material is non-cohesive when dry and weakly coherent when moist. Dry colours are commonly bleached and moist colour ranges from light grey (7.5YR 8/1) and greyish-yellow (2.5Y 7/2) to dull yellow-orange (10YR 7/4). The pH ranges from moderately acid (pH 5.5) to neutral (pH 7.0). Charcoal and stones are absent and roots are rare.
Tuggerah (tg3)	This is mottled sand or loamy sand with apedal single-grained structure and loose sandy fabric. It occurs as subsoil in areas of poor drainage. It is weakly coherent when moist and non-cohesive when either dry or saturated. Colours range from brownish-grey (10YR 6/1) to greyish-brown (7.5YR 4/2). Faint grey mottles become increasingly common with depth. This material is seasonally waterlogged. The pH ranges from moderately acid (pH 5.5) to neutral (pH 7.0). Charcoal and stones are absent and roots are rare.
Tuggerah (tg4)	This is a black, soft, organic stained sand to loamy sand with apedal massive structure and sandy or, less commonly, earthy fabric. It often occurs as subsoil pan (B horizon) associated with tg5. This material consists of quartz sand grains coated and weakly cemented with black organic compounds. Colour is commonly black (10YR 1.7/1) or brownish-black (10YR 3/1). The pH ranges from moderately acid (pH 5.5) to neutral (pH 7.0). This material

	requires up to a moderate force to disrupt and is often hardsetting on exposure. Stones, charcoal and roots are absent.
Tuggerah (tg5)	This is brown soft iron stained sand to loamy sand with apedal massive structure and sandy or less commonly earthy, fabric. It generally occurs as subsoil (B horizon) and is commonly known as coffee rock. This material consists of quartz sand grains coated and weakly cemented with yellow and red sesquioxides. Colour varies from bright yellowish- brown (10YR 7/6) to brown (10YR 4/6). Dark brown and orange mottles are common. This material requires a moderate force to disrupt and is often hardsetting on exposure. The pH ranges from moderately acid (pH 5.5) to neutral (pH 7.0). Roots are rare, and stones and charcoal are absent.
Tuggerah (tg6)	This is yellow-orange sand to clayey sand with apedal single grained or apedal massive structure and sandy or earthy fabric. It usually occurs as deep subsoil (B horizon). This material consists of clay-coated quartz sand grains that are compacted, but not cemented. Colour varies from light yellow (2.5Y 7/4) to dull yellow-orange (10YR 7/3). The pH ranges from strongly acid (pH 4.5) to neutral (pH 7.0). Stones, charcoal and roots are absent.

Figure 3.3 Geological units identified within the study area

21001 104-116 Regent Street, Redfern

Source: OSM, NSW LPI Aerial, NSW Seamless Geology *Drawn by: WA* *Date: 2021-04-14*

AUSTRAL ARCHAEOLOGY

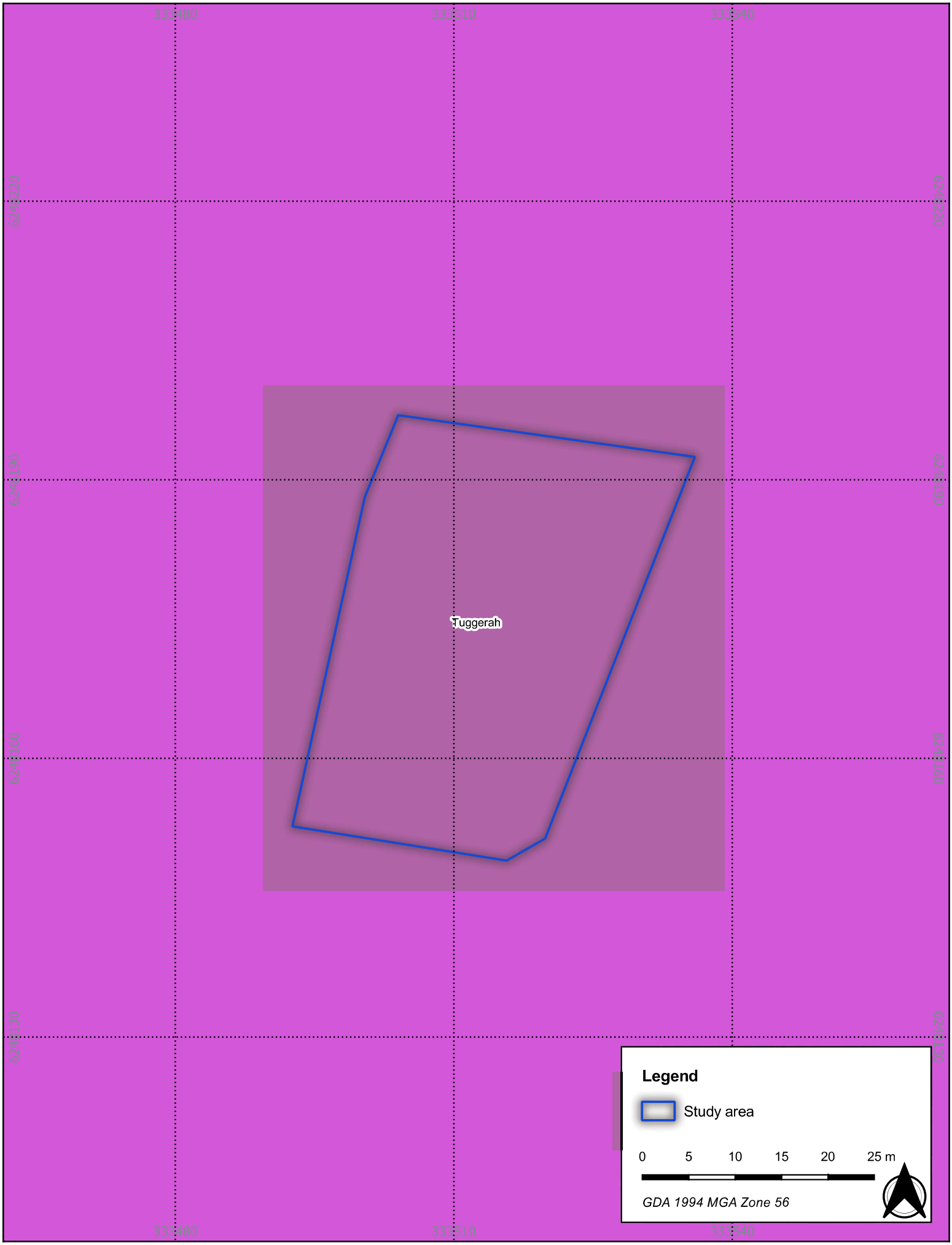

Figure 3.8 Soil landscapes identified within the study area and surrounding landscape

21001 104-116 Regent Street, Redfern

Source: OSM, NSW LPI Aerial, NSW Soil Landscapes *Drawn by: WA* *Date: 2021-05-03*

AUSTRAL ARCHAEOLOGY

3.3.3 CLIMATE AND VEGETATION

The Sydney Observatory Hill (site number: 066062) weather station is located approximately 3.7 kilometres north of the study area and provides climate and rainfall data. Summer mean average temperatures reach highs of 26ºC, and lows of 16.4 ºC (Bureau of Meteorology 2021). During winter temperatures reach highs of 18.9 ºC, and lows of 8.1 ºC (Bureau of Meteorology 2021). The highest mean rainfall is recorded during June with 133.1mm, and the lowest mean rainfall is recorded in September with 68.1mm (Bureau of Meteorology 2021).

The original native vegetation probably formed dry sclerophyll tall open-woodland or forest. Dominant tree species are smooth-barked apple *Angophora costata*, Sydney peppermint *Eucalyptus piperita*, and old man banksia *Banksia aemula*. The shrubby sclerophyllous understorey contains many species including bracken *Pteridium esculentum*, Christmas bush *Ceratopetalum gummiferum*, woody pear *Xylomelum pyriforme*, and prickly moses *Acacia ulicifolia* (Bannerman & Hazelton 1990, p.112).

3.3.4 LANDSCAPE RESOURCES

The surrounding region of the study area has been subject to extensive stages of urban development that have almost eliminated the original flora and fauna of the region. Coastal dry sclerophyll Forest and Coastal Heaths would have originally comprised the native vegetation landscape of the region(Bannerman & Hazelton 1990, p.113, Keith 2004, p.146). The Dry Sclerophyll Forest grows on sandstone landscapes in areas below 700 metre (m) elevation, where rainfall average varies from 1,000 to 1,300 mm (Keith 2004, p.146). This vegetation type encompasses a wide range of related forest and woodland communities(Bannerman & Hazelton 1990, p.113, Keith 2004).

The Coastal Heaths generally comprise a small overstorey of sparse Red Bloodwood, Heart-leaved Stringybark and Yellow-top Ash (Keith 2004, p.179). The low shrubby vegetation comprises a diverse array of sclerophyllous genera, and is interspersed with an equally rich complement of sedges and herbs, and a small number of grasses. Plant species within the area were likely exploited for food, seeds, nectars, fruits, roots and tubers. As an example, various species of native lilies with small tuberous roots were collected and eaten.

The flower-cones of the Banksia were soaked in water in bark or wooden containers to extract the nectar to make sweet drinks (Australian National Botanic Gardens 2019). The hearts of the Grass Tree stems were eaten and the nectar from the spike flowers was also collected and eaten. They could also be utilised for making tools such as spears, shafts and handles for stone implements, as well as carrying vessels of bark and woven fibre, digging sticks and a variety of other items utilitarian and non-utilitarian (Australian National Botanic Gardens 2019). The dry flower-stems of the smaller Grass Tree species were used for spears.

The region surrounding the study area would have provided an abundance of native animals for not only as a food source, but for a number of other materials. Mammals such as kangaroos and wallabies and arboreal mammals such as possums can be used as a food source and also for tool making. For example, tail sinews are known to have been used as a fastening cord, whilst ‘bone points’ which would have functioned as awls or piercers are an often abundant part of the archaeological record (Attenbrow 2010:118). Ethnographic observations of early European settlers noted that Aboriginal people used a variety of animal parts; claws, talons, bone, skin, teeth, shell, fur and feathers for a variety of tools and non-utilitarian functions. In summary, the study area would have provided a variety of resource and suitable climatic conditions for year-round occupation by Aboriginal groups inhabiting the area.

3.4 PAST LAND USE PRACTICES

The Redfern area was likely utilised by Europeans from the earliest years of the colony as its located close to fresh water and food resources which may have made it popular to the early colonists. The early years of the nineteenth century saw several large land grants made within Redfern. These included grants to Dr William Redfern granted 100 acres of land in 1817, William Hutchinson, John Thomas Campbell and William Chippendale. These land parcels were mainly used as farming land (Artefact Heritage Pty Ltd 2020).

The study area is located within land granted to Chippendale. Chippendale had been officially granted 95-acres in 1819, however, he and his family had been residing on the land since 1817,

during which time, the family had constructed a house and servants' quarters ((Office of Environment and Heritage 2018, Artefact Heritage Pty Ltd 2020). In 1821, Chippendale sold his grant to Solomon Levey, a convict turned colonial entrepreneur, who eventually owned most of Alexandria, Redfern and Waterloo(Office of Environment and Heritage 2018). After his death, in 1833 his land was sold to William Hutchinson (Office of Environment and Heritage 2018).

William Hutchinson subdivided the land in 1844 as the Chippendale Estate into six blocks, each to be inherited by his children. The blocks contained between seven and ten acres.

In the years following the 1842 subdivision of the Redfern Estate and 1844 subdivision of the Chippendale Estate, Redfern began to thrive(Artefact Heritage Pty Ltd 2020). By the 1850s, Redfern, and particularly Pitt Street in Redfern, had become an affluent and sought-after area. The architectural style of the residences built during this time reflect this affluence, as buildings were constructed with an attic storey, timber columns, French doors and stucco to resemble ashlar stonework (Artefact Heritage Pty Ltd 2020). Between George and Pitt Streets, the courthouse, post office, police station and fire station were built (Artefact Heritage Pty Ltd 2020).

Due to Redfern's central location, the coming of the Sydney to Parramatta railway line in 1855 further boosted its development (Artefact Heritage Pty Ltd 2020). Land resumptions for the rail line facilitated inner-city residential developments along the rail corridor, allowing for an increase in Redfern's population.

Historical maps and photographs show residential development within the study area from the 1880's. The majority of the structures within the study area date to the 1890's and include the former Bunnerong Hotel (later called the Captain Cook Hotel) and three two storey shop and dwellings(Artefact Heritage Pty Ltd 2020). The southern most property is currently occupied by a multistory apartment structure with split level basement facilities which were constructed in 1998.

The development of the railway, the extensive Eveleigh Railway Workshops, and an increasing number of factories in Redfern, Chippendale, Waterloo and Alexandria saw an increase in people moving to the Redfern area for employment in the late 1800s and early 1900s. From the mid 1900s Redfern became a centre for Aboriginal activism (see section 5.2). In recent decades, there has been a rapid gentrification of inner Sydney suburbs, including Redfern (Morgan 2012). In 2005, the NSW State Government formed the Redfern Waterloo Authority (RWA) with a focus on developing and gentrifying Redfern (Begg & K. De Souza 2009). This development has seen an influx of students and young professionals to the area along with the establishment of new cafes, restaurants and bars. Also, many of the industrial spaces have been redeveloped into residential spaces ((AHMS 2015)).

From 1967, the study area was used as a service station. In 2001, the property was refurbished and renovated. Works carried out at that time included replacement of the existing underground petroleum storage system (UPSS), remediation of contaminated soils and refurbishment of the northern shop building.

Figure 3.9 1943 Historical aerial of the study area

21001 104-116 Regent Street, Redfern

Source: OSM, NSW LPI Aerial, Six

Drawn by: WA Date: 2021-05-03

AUSTRAL ARCHAEOLOGY

Figure 3.6 1978 Historical aerial imagery of the study area

21001 104-116 Regent Street, Redfern

Source: OSM, NSW LPI Spatial Collaboration Portal *Drawn by: WA Date: 2021-04-14*

AUSTRAL ARCHAEOLOGY

Figure 3.7 1986 Historical aerial imagery of the study area

21001 104-116 Regent Street, Redfern

Source: OSM, NSW LPI Spatial Collaboration Portal

Drawn by: WA Date: 2021-04-14

AUSTRAL ARCHAEOLOGY

Figure 3.8 2005 Historical aerial imagery of the study area

21001 104-116 Regent Street, Redfern

Source: OSM, NSW LPI Spatial collaboration Portal

Drawn by: WA Date: 2021-04-14

AUSTRAL ARCHAEOLOGY

4 ARCHAEOLOGICAL CONTEXT

The range of environments and landscapes within the Redfern region had a profound influence on the lives of the Aboriginal people who lived there. As hunters and gatherers, Aboriginal people were reliant on their surroundings to provide food. Their transitory lifestyle affected population size, social interactions and degree of mobility, which can be confirmed in the archaeological record.

4.1 POPULATION AND CONTACT HISTORY

Population estimates at the time of contact are notoriously problematic as Aboriginal groups avoided the early settlers and were highly mobile. Another factor that complicates an accurate estimation is the effect of European diseases such as influenza and smallpox, which decimated Aboriginal populations soon after contact. Governor Philip estimated the number of Aboriginal people in coastal Sydney to be in the order of 1,000 individuals before 1792. However, it is unlikely that the early European explorers were able to successfully grasp the traditional population size. More recently, the population of the Sydney region at the time of European settlement has been estimated to lie within the range of 2,000 – 3,000 (McDonald, J, Rich, E & Barton, H 1994), and that of the Central Coast to be between 500 – 1,000 (Kohen 1986).

Early writers recorded several named Aboriginal groups as occupying the Sydney region after the First Fleet arrived in 1788. Many of the colonists' reports included the names of groups that were associated with certain areas of land (Attenbrow 2003).

At the time of European contact, the land surrounding the study area was inhabited by a clan of the Darug-speaking people. The Darug were comprised of multiple family groups, which included different languages and varying settlements around the harbour. These groups included the\ Gadigal, the Wanegal and the Cammeraygal. It was only after the 1870s that names such as the Darug came into use to describe Aboriginal language groups (Attenbrow 2002:31). In the second half of the 19th century, Reverend William Ridley recorded the language that he said was spoken at "George's River, Cowpasture and Appin...from the mouth of the George's River, Botany Bay, and for about 50 miles [80 kilometres] to the south-west" (Attenbrow 2003).

At the beginning of the 20th century, anthropologist/linguist RH Mathews discussed a dialect that he referred to as Dharruk, Dhar'rook or Dharook (Mathews & Everitt 1900)(Attenbrow 2002:32). Mathews stated that:

> *The Dharruk speaking people adjoined the Thurrawal on the north, extending along the coast to the Hawkesbury River, and inland to what are now Windsor, Penrith, Campbelltown, and intervening towns. The Dhar-rook dialect, very closely resembling the Gundungarra, was spoken at Campbelltown, Liverpool, Camden, Penrith, and possibly as far east as Sydney, where it merged into the Thurrawal (Mathews & Everitt 1900).*

By the late 1960s, linguist Arthur Capell was able to work with information recorded by Rev. Threlkeld in approximately 1824 to confirm the accepted language groups Darug, Dharawal, Darginung, Gundungurra and Awaba in the addition to the separate language of Guringai (Attenbrow 2003).

In the 1970s, archaeologists and anthropologists in the Sydney region adopted the names for the linguistic groups as specific by Capell (Attenbrow 2003). Although the exact language boundaries are still open for debate and mapped boundaries can only be indicative, Attenbrow(2003) states that two of the four language groups spoken in Sydney were the Darug (coastal dialect/s) and Darug (hinterland dialect).

However, Aboriginal people formed part of a dynamic culture which encouraged movement throughout the landscape in order to assist in the ceremonial and functional practicalities of daily life. As such, defined borders for tribal groups need to be recognised as an artificial constraint designed by anthropologists (Organ 1990). Furthermore, all ethnohistory should be employed with caution and Hiscock (2008) has argued that even very early historical accounts may not be a suitable basis for analogy with past cultural practices of Aboriginal people. As Aboriginal groups had to change their economic, cultural and political practices in order to cope with the social

impacts of disease in the historic period, he argues that it is likely that similar drastic changes happened in the past in response to “altered cultural and environmental circumstances” prior the arrival of Europeans.

By 1795, Europeans had begun harvesting areas along the Hawkesbury River, an important resource area for local Aboriginals. Competition for the land encouraged hostility between early European settlers and Aboriginals for more than two decades and many lives were lost on both sides (Kohen 1985).

Revered Fyshe Palmer wrote in June 1795:

The natives of the Hawkesbury lived on the wild yams on the banks. Cultivation has rooted out these, and poverty compelled them to steal Indian corn to support nature. The unfeeling settlers resented this by unparalleled severities (Kohen 1985).

By 1816, serious conflict had ended and, with dwindling natural resources due to the continued expansion of farmland and an influx of European settlers, local Aboriginal people came to rely increasingly on the settlers for basic necessities such as food, clothing and shelter (Kohen 1985).

In an attempt to ‘civilize’ Aboriginals, Governor Macquarie established a Native Institution and settlement in Blacktown (originally known as ‘Blacks Town”) in 1823 to teach Aboriginal families European farming techniques and ways of life. In 1833, the building was closed and the settlement was deemed a failure (Kohen 1985).

By 1820, the Cumberland Plain had been heavily occupied by over 24,000 European colonists(Attenbrow 2010, p.15). Introduced disease, beginning with the smallpox epidemic of 1789 – 1790, and resource pressure imposed on Darug groups by a steady stream of colonists ensured that populations and traditional activities were affected almost immediately. Early resistance to colonial incursions on tribal lands, like that led by the Bediagal man Pemulwuy, quickly gave way to a pattern of avoidance and the pursuit of traditional lifeways away from centres of European activity.

Aboriginal groups had to change their economic, cultural and political practices to cope with the social impacts of disease in the historic period. Hiscock argues that it is likely that similar drastic changes happened in the past in response to “altered cultural and environmental circumstances” following the arrival of Europeans (Hiscock 2008, p.17). Social disruption in the Cumberland Plains region caused by European settlement pushing Aboriginal people to the fringes of their traditional lands would have caused such drastic changes.

Of the three Darug clans, the Gadigal people occupied the land closely associated with the study area. Their traditional occupation of the area is believed to have been for at least 20,000 years prior to European arrival in 1788. The territory associated with the Gadigal people stretched from the south side of Port Jackson from South Head to Petersham (Heiss 2002).

4.2 PHYSICAL SETTING

Before European contact, Aboriginal people would have likely concentrated around resource rich areas associated with water. Several swamps and small waterlines were located within the low-lying areas of the undulating dune landform in the region surrounding the development site. Historical sources suggest there was a large swamp to the east, where Redfern Park is today, known as Boxley’s Lagoon (Artefact Heritage Pty Ltd 2020). Blackwattle Creek and Blackwattle Swamp were also located to the northwest of the site. Many of the swamps in the area would have fed into Shea’s Creek (Alexandra Canal) approximately 1.8 kilometres (km) to the southwest of the site, which is a tributary to Cooks River. The area between Eveleigh and Central Station was also part of an Aboriginal pathway or travel corridor running north-south, likely utilizing the higher ground/ ridgeline located to the east of the site.

There was a steady migration of Aboriginal people from rural centres due to the reasonable rent and employment opportunities of the area(Anderson 2000, pp.10–143, Artefact Heritage Pty Ltd 2020).

4.3 PREVIOUS ARCHAEOLOGICAL WORK

The material evidence of Aboriginal land-use has been compiled based upon a review of previous archaeological studies at a regional and local level, heritage database searches and field investigations.

4.3.1 REGIONAL ARCHAEOLOGICAL CONTEXT

The range of environments and landscapes within the Cumberland Plains had a profound influence on the lives of the Aboriginal people who lived there. As hunters and gatherers, Aboriginal people were reliant on their surroundings to provide food. Their transitory lifestyle affected population size, social interactions, and degree of mobility, which can be confirmed in the archaeological record.

Archaeological investigations of the Cumberland Plain, and in particular, the Redfern area, have been conducted in direct response to the spread of urban development. The limited ethnographic accounts of early settlers and explorers were once considered the primary source for evidence of the Aboriginal past. However, archaeological investigations have contributed a wealth of information on landscape occupation and with the recent spread of urban development within the environs, archaeological investigations have undergone a corresponding increase. The Cumberland Plain has become the most intensely investigated archaeological landscape in NSW in recent decades, and as a result, a comprehensive picture of the archaeological context of the region has been produced.

Aboriginal occupation of the Cumberland Plain primarily occurred during the mid to late Holocene (approximately 4,500 BP) and was related to an increase in Aboriginal population in the area and the introduction of a new stone tool technology, the ‘small tool tradition’. Archaeological evidence of the Cumberland Plains region indicates that the area was intensively occupied and that Aboriginal people utilised all landforms present within the region. However, occupation appears to have been concentrated within elevated areas in close proximity to reliable sources of water as they would have provided a stable source of water and by extension other sources which would have been used by Aboriginal groups (Kohen 1986, Dallas & Smith 1988).

REGIONAL ARCHAEOLOGICAL CONTEXT

In the last two decades, archaeological studies within the Cumberland Plain have cast new light on previously held views on Aboriginal population size and land use in Sydney. The limited ethnographic accounts of early settlers and explorers were once considered the primary source for archaeological enquiry. However, with the recent spread of urban development within the Liverpool environs, archaeological investigations have undergone a corresponding increase.

The major studies which have contributed to our understanding of the Cumberland Plains, and those with direct relevance to the study area through their proximity, are outlined below. Reference is made to the main trends garnered from these investigations that serve to provide a broad framework in which to base the current study.

Aboriginal occupation of the Greater Sydney regions extends back well into the Pleistocene, or before 10,000 years ago. Currently, the oldest accepted date for an archaeological site in the Sydney region is a date of about 15,000 Years Before Present (BP) which was obtained from Pitt Town (Williams et al. 2012). A similar date (14,700 BP) has long been established from Shaws Creek Rockshelter K2, located to the north of Penrith (Attenbrow 2003). Relatively early dates were also obtained by (McDonald 1995) for artefact bearing deposits at open site RS1 (AHIMS #45-5-0982) on Mulgoa Creek, Regentville. The majority of sites in the Sydney region, however, date to within the last 3,000 years to 5,000 years, as many researchers have proposed that occupation intensity increased from this period (Kohen 1986, McDonald, J, Rich, E & Barton, H 1994).

EARLY ARCHAEOLOGICAL MODELS

The model splits hunter gatherer sites into two main categories; ‘residential base camps’ and ‘activities areas’. People would reside in one general location or locations, probably in proximity to a good source of permanent water and with shelter from the elements, and travel throughout the local landscape to gather resources at known locations. The right-hand side of Figure 4.1 shows how this settlement pattern would look in terms of artefact discard. The majority of artefacts are deposited in proximity to the residential base camp, fewer at the various resource locations and a generally low amount throughout the rest of the landscape, mainly while travelling between activity

areas and the base camp. The model however, does not take into account the use of more than one base camp in an area or changing preferences of camping areas over time; nor does it account for the movement of resources over time.

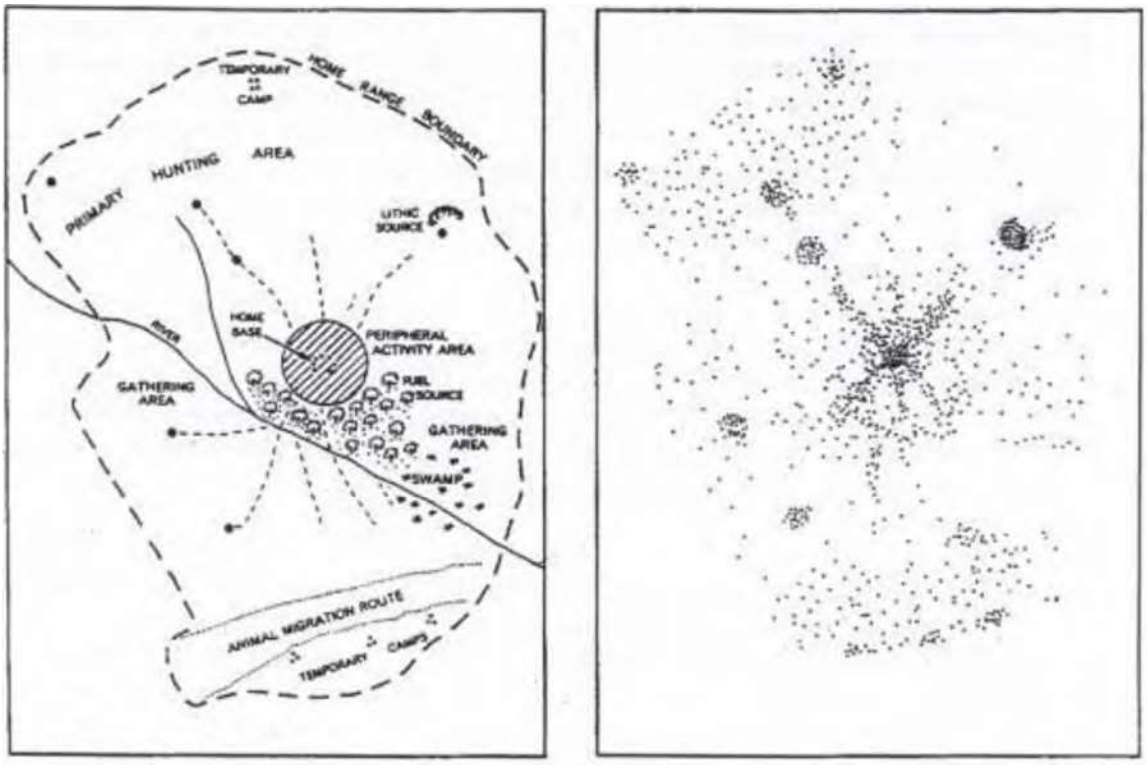

Figure 4.1 Foraging model (Foley 1981)

Another early model was developed by Kohen in his 1986 study (Kohen 1986). Kohen (1986) created a general model of site occurrence, chronology and function for the region. The chronological component of his model posits that the Aboriginal occupation of the Cumberland Plain primarily occurred during the mid to late Holocene (approximately 4,500 BP) and was related to an increase in Aboriginal population in the area and the introduction of a new stone tool technology, the 'small tool tradition'. Prior to the mid Holocene, Kohen (1986) argues that Aboriginal occupation of the area was concentrated on and around the Nepean River and the coast.

Similarly, Smith's (1989) work represented the first stage of a National Parks and Wildlife Service (NPWS) Planning Study for the Cumberland Plain. At the time, Smith calculated that less than 0.5% of the Cumberland Plain had been surveyed and/or studied systematically and only 17 sites had been excavated. Several surveys were conducted as part of Smith's investigation and in the 1,600 metre2 study area which she surveyed in the Rickaby's Creek and Londonderry area, four sites and one isolated find were located. A predictive site location model was developed by Smith for the southern Cumberland Plain based the results of her study. This included the theory that sites would be most commonly found along permanent creeks and around swamp margins. Creek flats and banks were considered to be focal topographical features for site location (Smith 1989).

As a direct consequence of numerous archaeological investigations being undertaken due to rapid development across the Cumberland Plain, an increasing number of Aboriginal sites have been identified and recorded in the last 15 to 20 years. Access to a greater amount of data allowed (McDonald 1997a, p.36) to undertake a more detailed analysis of site types and their distribution over the Cumberland Plain. Although McDonald noted that lack of archaeological visibility was a significant issue, she found open artefact scatters and open campsites to be the dominant site type (89% of all sites recorded), followed by isolated finds and a combination of open or other site types (3.5%), and scarred trees (2.1%). Open sites were found in all landscape units but McDonald determined the high proportion of sites located on creek banks appeared to be a reflection of surface visibility and taphonomy rather than being indicative of patterns of discard (McDonald 1997a). She also revealed that virtually none of the sites that had been excavated on the

Cumberland Plain could be characterised on the basis of surface evidence alone due to an obvious disparity between the numbers of surface and sub-surface artefacts (McDonald 1996).

After extensive salvage and test excavations carried out for the Rouse Hill Test Excavation Programme ((McDonald & Rich 1993, McDonald, J, Rich, E & Barton, H 1994) and the Rouse Hill (Stage 2) Infrastructure Project (McDonald 1996), several important characteristics relating to the Cumberland Plain were noted:

- *Most areas, even those with sparse or no surface manifestations, contain sub-surface archaeological deposits.*
- *Where open sites are found in aggrading and stable landscapes, some are intact and have the potential for subsurface structural integrity. Sites in alluvium possess potential for stratification.*
- *While ploughing occurs in many areas of the Cumberland Plain, this only affects the deposit up to 300 millimitres deep, and even then ploughed knapping floors have been located which are still relatively intact and depths of between 700 to 900 millimetres from the surface.*
- *Contrary to earlier models for open sites, many sites contain extremely high artefact densities with variability appearing to depend on the range of activity areas and site types present.*
- *The complexity of the archaeological record is also far greater than was previously identified on the basis of surface recording and limited test excavation. Intact knapping floors, backed blade manufacturing sites, heat treatment locations, a number of apparently specialised tool types and generalised camp sites were all found following more detailed investigations.*
- *Two Early Bondaian dates (between 5000 and 3000 BP) provide a context for backed blade manufacture.*

Overall site patterning is identifiable on the basis of environmental factors, where sites on permanent water are more complex (i.e. they represent foci for larger groups or are used repeatedly by smaller groups over a long period of time) than sites on ephemeral or temporary water lines (McDonald 1996:115).

McDonald, Mitchell and Barton (1994) also argued that environmental factors, such as stream order, were integral to developing a predictive model for the Cumberland Plain. Stream order modelling as a predictive tool can be utilised to anticipate the potential for Aboriginal camp site locations in the landscape based on the order of water permanence. McDonald (1997a a, 1997b b, 1999) in particular, has drawn on stream order modelling in order to forecast the potential nature and complexity of sites in the Cumberland Plain. These models can also be used to predict the possible range of activities carried out at a particular site and the frequency and/or duration of occupation.

Analysing stream order can allow researchers to locate areas of past water permanence, which would have been vital for Aboriginal people. Abundant food and other resources are more likely to occur in areas of water permanence which would in turn attract Aboriginal occupation. McDonald's excavations of open artefact scatter sites at the ADI site in St Marys provided evidence of such a correlation (McDonald 1997b, p.133).

According to McDonald, the range of lithic activities and the complexity of the resulting stone assemblage observed at a location of permanent water differ depending on stream order. Overall, artefact scatters in the vicinity of a higher order ranking streams reflect a greater range of activities (e.g. tool use, manufacture and maintenance, food processing and quarrying) than those located on lower order streams. Temporary or casual occupation of a site, reflected by an isolated knapping floor or tool discard, are more likely to occur on smaller, more temporary water courses (McDonald 1997a).

It is therefore possible, McDonald concluded, that stream order modelling could be utilised to make general predictions about the location and nature of Aboriginal sites on the Cumberland Plain. Water permanence (i.e. stream order), landscape unit (i.e. hill top, creek flat) as well as the proximity to artefact raw materials can result in variations in the density and complexity of an Aboriginal archaeological feature (McDonald 1997a; 2000:19). Site location and duration of occupation predictions, therefore, relate to stream order in the following ways:

- *In the headwaters of upper tributaries (i.e. first order creeks) archaeological evidence will be sparse and represent little more than a background scatter;*

- *In the middle reaches of minor tributaries (second order creeks) archaeological evidence will be sparse but indicate focussed activity (e.g. one-off camp locations, single episode knapping floors);*
- *In the lower reaches of tributary creeks (third order creeks) will be archaeological evidence for more frequent occupation. This will include repeated occupation by small groups, knapping floors (perhaps used and re-used), and evidence of more concentrated activities;*
- *On major creek lines and rivers (fourth order) archaeological evidence will indicate more permanent or repeated occupation. Sites will be complex, with a range of lithic activities represented, and may even be stratified;*
- *Creek junctions may provide foci for site activity; the size of the confluence (in terms of stream ranking nodes) could be expected to influence the size of the site;*
- *Ridge top locations between drainage lines will usually contain limited archaeological evidence although isolated knapping floors or other forms of one-off occupation may be in evidence in such a location (McDonald 2000:19).*

LATER WORK

A synthesis by ENSR (2008, pp.35–36) of sites excavated in the Blacktown region over the last 30 years yielded the following conclusions regarding the types of sites and artefacts that can be expected in the study area and the types of landforms upon which they are most likely to be present:

- *Silcrete outcroppings and natural concentrations are common on ridgelines and hilltops and have been extracted and used by Aboriginal people in the past giving these landforms a high likelihood of quarry or extraction sites being present;*
- *Rockshelters are not present in the Blacktown region as the underlying geology is not suitable;*
- *Open camp sites or artefact scatters are the most common site type in the region. Isolated artefacts, scarred trees and Potential Archaeological Deposits (PADs) also present;*
- *Most areas with artefacts present on the surface also contain subsurface deposits. Additionally, many landforms which have no evidence of Aboriginal cultural heritage on the surface may still retain subsurface deposits;*
- *Subsurface deposits are normally found in alluvium, river terraces, lower slopes, and other remnant soils (with less than 700 millimetres of topsoil). Based on research at Second Ponds Creek, lower slopes and river terraces have the potential to retain the highest concentration of artefactual material (40,909 lithics within lower slopes and 32,786 lithics within RH/SP 12, a river terrace). These areas also often retain good structural and stratigraphical archaeological integrity;*
- *A greater complexity of Aboriginal sites is broadly correlated with the permanence of water, with the larger tributaries containing more complex archaeological sites. The likelihood of a site being present is also often drastically reduced when the distance to a water source is greater than 150 metres;*
- *A large range of raw materials were utilised by Aboriginal people in the region, including silcrete (which is often the dominate material), indurated mudstone, chert, tuff, quartz, basalt, and quartzite. Silcrete artefacts can also often be heat treated; and*
- *Modern human activities can cause dramatic disturbance and can affect archaeological resources and their stratigraphic integrity. In particular, agricultural and horticultural activities* near creeks often modify creeklines and river terraces, destroying the archaeological resource.

Based on the results of subsurface testing at the Rouse Hill development on the northern Cumberland Plains, an updated predictive model was created by White and McDonald (2010). The predictive model identified four main factors which the authors decided determined artefact density and distribution. These were:

1) *Stream order, with higher order streams tending to have higher artefact densities and more continuous distributions than lower order streams;*
2) *Landform, with higher densities occurring on terraces and lower slopes, and with sparse discontinuous scatters on upper slopes;*
3) *Aspect on lower slopes associated with larger streams, with higher artefact densities occurring on landscapes facing north and north east; and*

4) *Distance from water, with higher artefact densities occurring 51-100 metres from 4th order streams, and within 50 metres of 2nd order streams (White and McDonald 2010:36).*

In agreement with Niche (2010:24), it is held that these results are directly transferable to other parts of the Cumberland Plains.

The most recent predictive model relevant to teh study area was created by Artefact Heritage (2020) for Lots 1-3/2 in Section 2 of DP3954, Lot 1 in DP184335 and SP57425 located adjacent to the north of the study area. The model suggests that:

- Aboriginal objects are likely to be present within proximity of water resources such as Waterloo Swamp and Shea's Creek. These resources are not located within the immediate vicinity of the study area.
- Aboriginal objects may be identified within intact soil deposits should they be present below the existing ground level.
- The area has been subject to substantial residential development. This has resulted in the removal of any old growth trees and the removal of the upper soil profile.

4.3.2 HERITAGE DATABASE SEARCH

A search of the Heritage NSW AHIMS database was undertaken on 07 January 2021 (Client Service ID 560014). The results from the AHIMS search identified 60 previously recorded sites within a 3-kilometre radius of the study area. The search indicates that Potential Archaeological Deposits (PAD) are the predominant site features with over 55% of known sites belonging to this category (Table 4.1 and Table 4.2). A review of the AHIMS listings indicates that no sites are recorded within the study area. (Figure 4.2 and Figure 4.3). The nearest site is located 250 metres to the south of the study area. Wynyard Street Midden (# 45-6-2597) was recorded as an exposed midden in 1997 with no amendments or reviews to the site card since then. Recent studies near the site have identified that there is no evidence of an exposed midden (AMAC 2020, Artefact Heritage Pty Ltd 2020). AMAC (2020) has determined that the archaeological significance of the site is no longer valid. Therefore this site is no longer registered as a valid site under the AHIIMS records.

However, AMAC (2020) indicates this does not discount the possibility of Aboriginal and or Cultural material being present in a disturbed state.

For the purpose of Figure 4.2 and Figure 4.3, it is assumed that the correct coordinate system has been registered for each site.

Table 4.1 Summary of sites recorded within the study area and adjacent

Name	AHIMS No.	Type	Location Landform	Cadastral Boundary
Wynyard Street Midden	(# 45-6-2597)	Midden	Not a site	-
244 Cleveland Street	45-6-3848	Artefact	Undulating Plain	Lot 1 DP 797483/Lot 1 DP 797484

Table 4.2 Summary of sites recorded within a 3 kilometres radius of the study area

Feature Type	Total	%
Aboriginal Ceremony and Dreaming, Artefact Shell	1	1.66
Aboriginal Resource and Gathering	2	3.33
Art (Pigment or Engraved), Artefact	2	3.33
Artefact	12	20
Artefact, Aboriginal Resource and Gathering, Non-Human Bone and Organic Material : -	1	1.66
Artefact, Potential Archaeological Deposit (PAD)	2	3.33
Burial, Aboriginal Ceremony and Dreaming : -, Artefact	1	1.66
Grinding Groove	1	1.66
Hearth, Potential Archaeological Deposit (PAD)	1	1.66
Modified Tree (Carved or Scarred)	1	1.66
Potential Archaeological Deposit (PAD)	29	48.33
Shell, Artefact	4	6.66
Shell, Artefact, Potential Archaeological Deposit (PAD)	1	1.66
Shell, Burial	1	1.66
Water Hole	1	1.66
TOTAL	**60**	

Figure 4.1 AHIMS Sites within a three kilometres radius

21001 104-116 Regent Street, Redfern

Source: OSM, NSW LPI Aerial, AHIMS

Drawn by: WA Date: 2021-04-14

AUSTRAL ARCHAEOLOGY

Figure 4.2 AHIMS sites in close proximity to the study area

21001 104-116 Regent Street, Redfern

Source: OSM, NSW LPI Aerial, AHIMS

Drawn by: WA Date: 2021-04-14

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4.3.3 LOCAL ARCHAEOLOGICAL CONTEXT

Archaeological investigations of the local region, and in particular the suburb of Redfern, have been conducted in response to the spread of urban development as well as within the framework of academic enquiries. The limited ethnographic accounts of early settlers and explorers were once considered the primary source for archaeological enquiry. However, with the recent spread of urban development within the Redfern environs, archaeological investigations have increased accordingly.

The major studies which have contributed to our understanding of the region, and those with direct relevance to the study area, are outlined in Table 4.3and Figure 4.4. Reference is made to the main trends garnered from these investigations which serve to provide a broad framework in which to base the current study.

Table 4.3 Summary of past reports within the vicinity of the study area

Reference	Location / date	Results
JMcDCHM (2004)	Located 1.3 kilometres northwest of the study area	An Aboriginal heritage assessment for the proposed upgrading of the Eastern Ave and Barff Rd integrated domain, Shepherd St entrance and pedestrian route to USYD central, City Rd improvements Faculty of Law Building and USYD Central, as part of a Campus 2010 and Building for the Future Program. The objectives of the study involved determining the extent, nature and integrity of archaeological relics and potential archaeological deposits in the development area, assess the significance of any such relics and PADs, assess potential development impacts to the relics and PADs and recommended management options to mitigate any potential impacts. The assessment concluded that due to the extent of previous land disturbance, no areas were assessed as having high potential for intact archaeological deposits. No Aboriginal objects and/or landscapes were identified within the study area. The proposed development had the potential to impact a number of PAD areas. However, these PADs were assessed as having low-moderate potential to contain intact archaeological deposit. If in-situ material were found in the area this would be of high archaeological significance. Test excavation was proposed within the locations of the Law Building, USYD Central and Maze Green
JMcDCHM (2005)	Located 1.3 kilometres northwest of the study area	Test excavation was carried out on the University of Sydney Darlington and Camperdown Campus in 2005, 1.3 kilometres northwest of the study area. The Geology Lawn was excavated in a series of 1m² test pits and showed a disturbed site with extensive quantities of demolition fill. These pits returned one flaked silcrete artefact on the surface of the B horizon. The second location within the site was on the Maze Green, previously the Old Darlington School playground area. This area also showed extensive disturbance, including redundant and unrecorded services with excavation recovering one flaked stone artefact from 15 pits, this artefact was located in the disturbed overburden. It was concluded that the area was situated within the watershed of Blackwattle Creek and concluded that the adjacent creek was an ephemeral water supply and other subsistence resources were not nearby; indicating that it was not a preferred area of occupation.

Reference	Location / date	Results
JMcDCHM (2006)	Located approximately 1.3 kilometres northwest of the study area	Previous survey assessment of the area (Jo McDonald Cultural Heritage Management 2004) identified that the proposed development contains several PADs of low to moderate archaeological potential and recommended a program of archaeological test excavation. Test excavation was conducted on the Darlington site in 2006 with results comprising a single silicified tuff artefact from eleven 1m² pits. The site showed signs of extensive disturbance, with the overburden consisting of extensive demolition fill (Jo McDonald Cultural Heritage Management 2006)
AHMS (2007a)	Located approximately 650 metres east of the study area	A preliminary Aboriginal and historical archaeological assessment of this site was undertaken to assess the location of potential archaeological resources within the subject site and their likely degree of integrity. Shallow remnant soil profiles were identified as part of the Tuggerah and Newport soil landscapes and it was considered that the former streams and waterways in the immediate locality would have provided past Aboriginal populations with an attractive resource zone. These soils were interpreted as having the potential to contain evidence of Aboriginal occupation
AHMS (AHMS 2007b)	Located approximately 120 metres south-east of the study area	An Aboriginal heritage impact assessment for the proposed development of a National Indigenous Development Centre (NIDC), located approximately 120 metres to the southeast of the current study area. The assessment identified that the soil profile of the study area comprised fill deposits across the site,\ ranging from 0.2 to 3 metres in depth. However, geotechnical testing identified substantial portions of natural Aeolian sand below the fill deposit. The identified sands were grey coloured, which indicated potential humic content from former vegetation, suggesting that the sands are A-horizon soil (AHMS 2007b). Due to the presence of A horizon sands below European fill and the abundance of resources associated with the former dunes in the region; it was concluded that the area had the potential for subsurface cultural material. The predictive modelling suggested site types could consist of artefact scatters, isolated artefacts, shell deposits or burials. It was determined that any development works that removed or destroyed the Aeolian sand deposits would potentially disturb Aboriginal archaeological deposits (AHMS 2007b). Test excavations confirmed the presence of Aeolian sand, but no Aboriginal objects were retrieved (AHMS 2007b).
Austral Archaeology (2007)	Located approximately 330 metres northeast of the study area	Austral Archaeology prepared a preliminary desktop assessment was for the proposed redevelopment of Redfern Courthouse and Police Station into a community health centre; located approximately 330 metres northeast of the study area. The assessment indicated that the site was present on former sand dune landform, with numerous resources available within the region (Austral Archaeology Pty Ltd 2007). However, the land-use history of the site indicated significant ground disturbance, including land clearance and construction of the Courthouse/Police Station with subsequent modifications and extensions to structures. An examination of a geotechnical investigation within the site also indicated that natural deposits had been significantly disturbed. Therefore, any potential Aboriginal sites or objects within subsurface contexts would have been removed or destroyed since European modification (Austral Archaeology Pty Ltd 2007). It was concluded that the area had a very low potential for subsurface cultural material (Austral Archaeology Pty Ltd 2007).

Reference	Location / date	Results
Biosis (2012a)	Located approximately 1.4 kilometres north of the study area	A due diligence assessment report for The Quay Project at Haymarket, approximately 1.4 km north of the study area was prepared by Biosis (2012a). The assessment determined that the area would have been an attractive place for Aboriginal people to occupy and camp on due to the topography and close proximity of resources. However, due to extensive modification of the area since the 18th century, it was considered highly likely that the natural soil profile had been completely removed, and with it any traces of Aboriginal occupation. The due diligence recommended that the works proceed without further investigation or approvals on the condition that if the works encountered any natural soil profiles they immediately cease until further archaeological investigation was undertaken (Higgs & Gibbins 2012a; 2012b).
Biosis (2012b)	Located approximately 1.4 kilometres north of the study area	Following the recommendation of the due diligence prepared by Biosis (2012a), Cultural Resources Management (CRM) encountered remnant deposits of natural topsoils while completing historical excavations at the Haymarket site and engaged Biosis to undertake excavations focused on recovering Aboriginal cultural heritage. The excavations comprised five 0.5 m x 0.5 m test pits focussed on areas retaining remnant soil profiles. The excavations revealed that the study area, while containing very shallow and minor portions of the original soil profile, was highly disturbed and no Aboriginal objects were identified (Biosis Pty Ltd 2012b).
Biosis (2012c)	Located approximately 1.2 kilometres northwest of the study area	Biosis (2012c) prepared an Aboriginal Cultural Heritage Assessment for the proposed student accommodation within the area. The assessment identified that while significant disturbance and impact to the immediate area had occurred since European occupation, there was potential for intact subsurface deposits below the disturbance layer. The archaeological sensitivity of the study area was considered to be further increased due to the site's close proximity to Blackwattle Creek (Biosis Pty Ltd 2012c). The assessment identified that the soil profile of the study area comprised fill deposits present from the current ground surface until 2.5 m depth. The assessment identified that below a layer of fill deposit of 2.5 metres depth from the surfaces, alluvial soils were potentially present to approximately 7 m depth. Due to the presence of these potentially sensitive soil deposits, the study area was registered on AHIMS as a PAD (AHIMS ID 45-6-3064) (Biosis Pty Ltd 2012c). It was not understood whether the buildings situated within the study area were built on top of original ground surfaces or built onto fill materials. It was also unknown whether the study area was situated on an area of reclaimed land surrounding Blackwattle Bay. It was discussed that if the study area was positioned on reclaimed land it should be considered to have low potential for Aboriginal cultural heritage. The assessment also asserted that if the alluvial deposits were natural then they should be considered to have high potential to contain intact archaeological deposits. It was recommended that the alluvial soils be avoided by construction works if possible and that test excavation for Aboriginal cultural heritage be conducted prior to the commencement of any development (Artefact Heritage Pty Ltd 2020, Biosis Pty Ltd 2012c).
AHMS (2014)	Located approximately 500 metres north of the study area	An Aboriginal Cultural Heritage Assessment was prepared by AHMS (2014). On the basis of background research, site inspection and predictive assessment it was considered that historical development of the site would have impacted the full depth of the former soils as the site was situated on Blacktown soils.

Reference	Location / date	Results
Artefact Heritage (2014)	Located approximately 580 metres northeast of the study area	Artefact Heritage (2014) undertook a due diligence assessment of an urban redevelopment site located approximately 580 metres northeast of the study area. The assessment identified that the area was completely obscured by bitumen and existing structures. The assessment was based on environmental and historical research as well as information recovered from the geotechnical investigation. Geotechnical investigation indicated that the A horizon sands had been removed from the area with fill appearing to have been directly deposited onto silty clay subsoil. It was considered that the site had low potential to contain Aboriginal objects or archaeological deposits (Artefact Heritage Pty Ltd 2014).
AHMS (2015)	Located approximately 100 metres west of the study area	AHMS (2015) prepared an Aboriginal and Historical Heritage Review for the Central to Eveleigh Corridor as part of the Central to Eveleigh Urban Transformation and Transport Program. The assessment was undertaken to assess the nature, extent and heritage significance of the study area and the subsequent implications on future planning. The review assessment consisted of an extensive review of previous heritage studies as well as extensive Aboriginal community consultation was undertaken. The assessment also included a predictive model for the presence of Aboriginal objects within the corridor. The assessment identified that Aboriginal occupation of the area is likely to have been concentrated on the resource-rich areas associated with water. In the northwest, these were the areas along Blackwattle Creek and the heads of Blackwattle Bay and Darling Harbour / Cockle Bay (AHMS 2015). In the southeast, these were the lagoons and dune swales, and Waterloo Swamps immediately to the south of the study area. Aboriginal use of the wider landscape is more complex and difficult to determine on the basis of the archaeological evidence presently available (AHMS 2015). However, early colonial documentary evidence indicates that a path ran roughly north-south through the study area, presumably following the higher ground, and it may be that use of this path extends back into the pre-Contact period. In addition, other resources such as silcrete may also have been available in the immediate locality(AHMS 2015). The assessment noted that the historical development and occupation of the area has affected the type of archaeological evidence of Aboriginal occupation that remains in the area. As the whole area has been cleared of native vegetation, removing any culturally marked trees that may have been present. Any sites present on outcropping rock in the Gymea soil landscape, such as engravings or grinding grooves, are also likely to have been removed. As a result, historical development across this area is likely to have largely or entirely removed evidence in the form of stone artefacts(AHMS 2015).

Reference	Location / date	Results
Artefact Heritage (2018a)	Located adjacent to the west of the study area	An Aboriginal Archaeological Assessment for a proposed urban redevelopment site adjacent to the west of the study area was undertaken by Artefact (2018a). The assessment area was completely obscured by bitumen and existing structures. The geotechnical report identified that there was substantial variation with the upper portions of the soil profile comprised of fill on top of sand, clay and laminate deposits and potentially intact sand deposits were present within the soil profile (Artefact Heritage Pty Ltd 2018a). The analysis concluded that while archaeologically sensitive sand deposits were potentially located below the existing ground surface, the study area was not located within an area that would have represented a preferred area of Aboriginal occupation and further archaeological assessment was recommended (Artefact Heritage Pty Ltd 2018a, Artefact Heritage 2020).
Artefact Heritage (2018b)	Located next to the northwest of the study area	An Aboriginal Archaeological Assessment for a proposed urban redevelopment of a site located next t the north west of the study area was undertaken by Artefact (2018b). The assessment identified that the area was completely obscured by bitumen and existing structures. The geotechnical report identified that potentially intact sand deposits were present within the soil profile (Artefact Heritage Pty Ltd 2018b, Artefact Heritage 2020). The analysis concluded that while archaeologically sensitive sand deposits were potentially located below the existing ground surface that the study area was not located within an area that would have represented a preferred area of Aboriginal occupation and, as a result, no further archaeological assessment was recommended (Artefact Heritage Pty Ltd 2018b).
Artefact Heritage (Artefact Heritage 2020)	Located adjacent to the north of the study area	Artefact Heritage (2020) undertook Aboriginal Cultural Heritage Assessment Report for the property located adjacent to the north of the study area. The assessment identified that the area has been subject to moderate- high levels of subsurface disturbance (Artefact Heritage 2020). The geotechnical report identified that the extent of subsurface disturbance shows the absence of substantial A-Horizon aeolian sands (Artefact Heritage 2020). The assessment concluded that the area is not located within a landscape context that could have been considered to be preferable for Aboriginal occupation. Additionally, the extent of disturbance has likely removed any Aboriginal objects (Artefact Heritage 2020).

5 PREDICTIVE STATEMENTS

In general, an archaeological predictive statement for any study area draws on surrounding environmental data, previous archaeological research and predictive models for Aboriginal occupation. Another essential aspect to predicting the archaeological integrity of a site and something that must be considered is previous land uses of the study area and degree of disturbance.

Pre-contact Aboriginal occupation of the region is likely to have been concentrated on the resource-rich areas associated with water. In the north-west, these were the areas along Blackwattle Creek and the heads of Blackwattle Bay and Darling Harbour / Cockle Bay. In the south-east, these were the lagoons and dune swales, and Waterloo Swamps immediately to the south. Aboriginal use of the wider landscape is more complex, and difficult to determine on the basis of the archaeological evidence presently available (AHMS 2015). According to AHMS (2015) the historical development and occupation of the area has affected the type of archaeological evidence of Aboriginal occupation that remain. The area has been cleared of native vegetation, removing any culturally marked trees that may have been present. However, the Tuggerah soil-landscape uppersoil profile is much deeper than the adjacent Blacktown soil landscape. Therefore sites within the Tuggerah soil landscape have the potential for the presence of Aboriginal archaeological evidence, most likely in the form of stone artefacts.

In summary, the main trends broadly seen across eastern NSW are that:

- Archaeological sites occur on most landforms.
- Site frequency and density are dependent on their location in the landscape.
- There is a dominance of low-density surface open artefact scatters and isolated finds.
- There is a noted paucity of scarred trees due to land clearance.
- Artefact scatters are commonly located in close proximity to permanent water sources along creek banks, alluvial flats and low slopes, largely concentrated within the first 100 metres of a creek line. More complex sites are usually located close to water sources with major confluences being key locations for occupation sites.
- Archaeological material is also present beyond the immediate creek surrounds in decreasing artefact densities.
- There may be concentrations of sites occurring on ridge tops and crests that are associated with pathways through the landscape.
- Subsurface archaeological deposits are often recovered in areas where no visible surface archaeological remains are evident.
- The dominant raw material used in artefact manufacture is silcrete and fine grained silicious material with smaller quantities of chert, quartz and volcanic stone seen.
- Artefact assemblages usually comprise a small proportion of formal tool types with the majority of assemblages dominated by flakes and debitage.
- While surface artefact scatters may indicate the presence of subsurface archaeological deposits, surface artefact distribution and density may not accurately reflect those of subsurface archaeological deposits.
- Aboriginal scarred trees may be present in areas where remnant old growth vegetation exists.

While these statements provide an adaptable framework for applying a predictive model to the study area, based on the previous models it is possible to further expound on the generalisations made above. The general studies of the Redfern region, the specific investigations surrounding the study area and the search of the AHIMS database have helped to predict what certain site types can be expected within the study area. These are:

- Aboriginal objects may be identified within intact soil deposits should they be present below the existing ground level.
- Aboriginal objects are likely to be present within proximity of water resources such as Waterloo Swamp and Shea's Creek. These resources are not located within the immediate vicinity of the study area.
- The study area is located on a slope landform that is not directly connected to the ridgeline identified within the AHMS (2015)) corridor assessment. It is considered unlikely that the study area would have represented a preferred area of Aboriginal occupation.

6 FIELD METHODS

A site specific investigation methodology has been developed for the project that complies with the Requirements of the Code of Practice (DECCW 2010d).

6.1 SURVEY METHODOLOGY

The survey was conducted on 26 March 2021 by Ricardo Servin (Archaeologist, Austral)

6.1.1 SURVEY OBJECTIVES

The objectives of the survey were to:

- Complete a systematic survey that targets areas that have been identified as having the potential to contain Aboriginal heritage values.
- Identify and record Aboriginal archaeological sites visible on the ground surface and areas of PAD.

6.1.2 SAMPLING STRATEGY

The survey methodology was designed to optimise the investigation of areas where archaeological materials may be present and visible, as well as investigation of the broader archaeological potential of all landform elements present within the study area, which included:

- A gently sloping landform

The specific survey methodology developed for this assessment was guided by the survey requirements as set out in Requirement 5 to 10 of the Code of Practice (DECCW 2010d) and based upon consideration of the overall landform pattern within the study area, known landform elements (after Speight 2009) and the location of the previously identified sites. The survey targeted portions of the study area with services that likely required deep excavation for the former service station to understand the extent of impact to subsurface deposits and assesses any potential for archaeological material to be present within the study area.

6.1.3 SURVEY METHODS

The archaeological survey consisted of pedestrian traverses completed by Ricardo Servin. A key survey variable is ground visibility, which considers the amount of ground surface which is not covered by any vegetation; and exposure, which defines areas where dispersed surface soils and vegetative matter afford a clear assessment of the ground, were assessed across the study area and within each landform element. Overall survey coverage and calculated survey effectiveness was recorded. Note that the effectiveness of the field survey was largely dependent on the degree of ground surface visibility. Where surface visibility was restricted by dense vegetation cover, the potential for PADs was assessed, particularly in association with those landforms identified within the predictive model as more likely to contain Aboriginal archaeological sites. The potential of these areas and all landform elements within the study area was considered against available evidence of land disturbance.

Photographs were taken of all survey units and landforms as well as representative surface visibility, and where present, surface exposures, soil profiles and disturbances relevant to the interpretation of the stratigraphic conditions and archaeological potential within each survey unit.

7 ARCHAEOLOGICAL RESULTS

The following section outlines the results of the archaeological investigations conducted within the study area.

7.1 ARCHAEOLOGICAL SURVEY RESULTS

7.1.1 VISIBILITY

In most archaeological reports and guidelines visibility refers to GSV, and is usually a percentage estimate of the ground surface that is visible and allowing for the detection of (usually stone) artefacts that may be present on the ground surface (DECCW 2010d). The study area is located within an urban site with current structures completely obstructing the natural ground surface (Figure 7.1).

Figure 7.1 Northwest facing overview of the study area.

7.1.2 EXPOSURE

Exposure refers to those parts of the surveyed landforms whose topsoil has visibly been removed due to naturally occurring erosion or man-made disturbances. Usually expressed as a percentage of the total land surface, it is a theory predicting the nature of geomorphological change (DECCW 2010d)

7.1.3 DISCUSSION OF RESULTS

The study area consists of a former service station located on a gentle sloping landform. The entirety of the study area is covered by a variety of urban materials including concrete resulting in no visibility across the study area (Figure 7.2). To the north of the study area, there is a two-story building(Figure 7.3. The ground floor of this building is associated with the service station shop and potential storage.

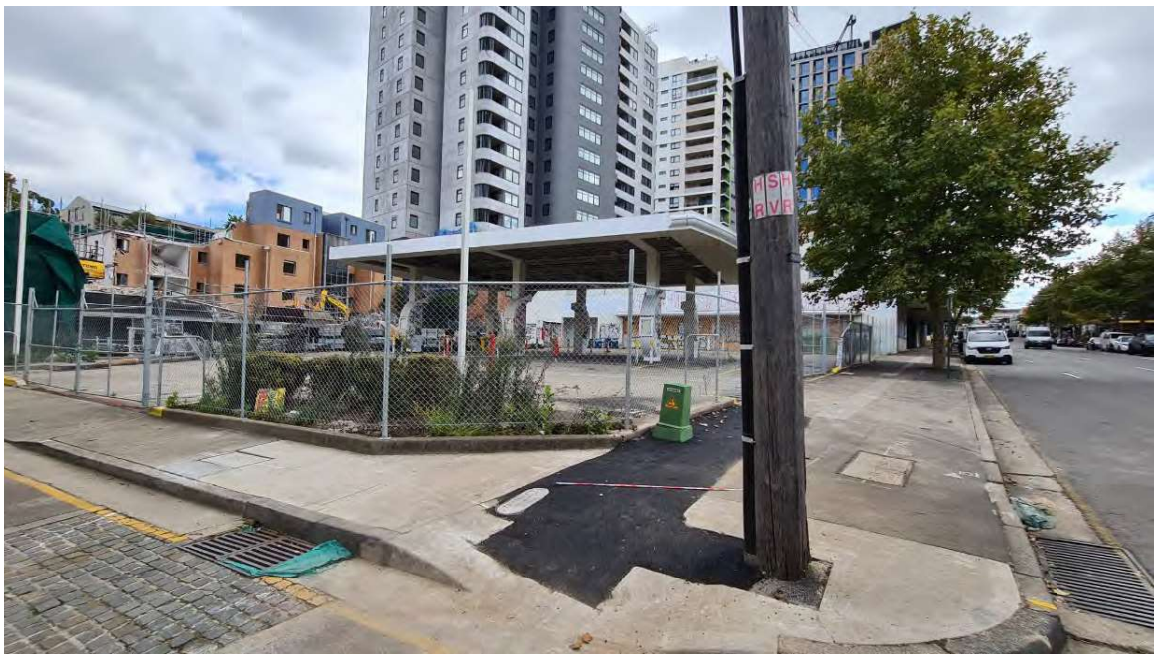

Figure 7.2 Northerwest facing overview of the study area.

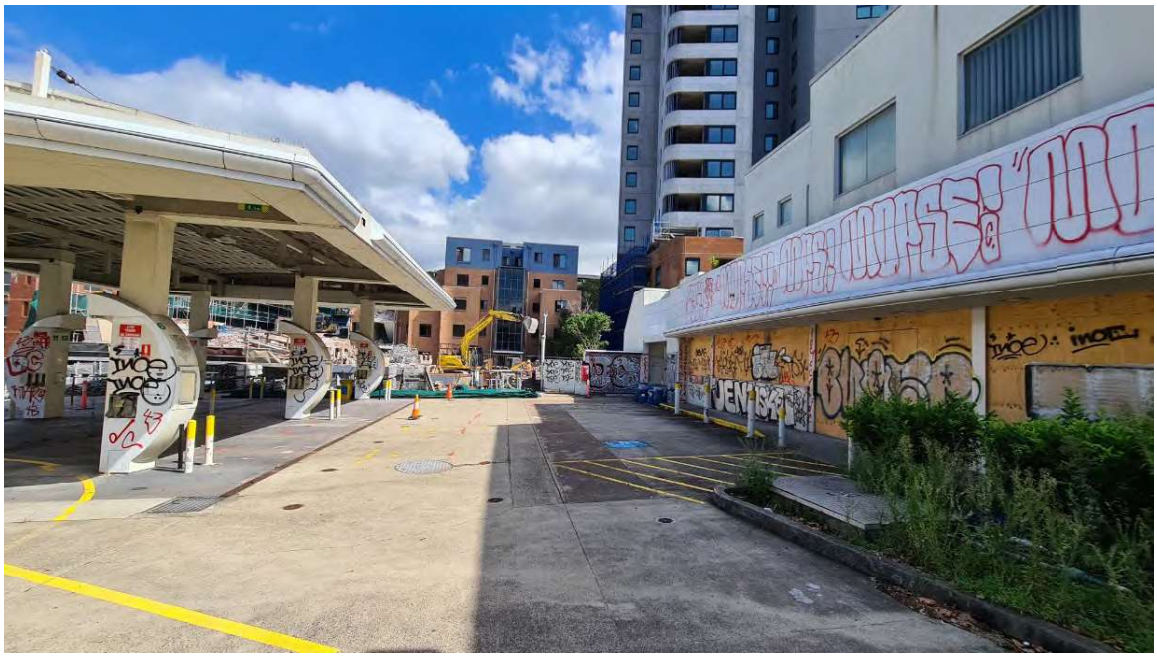

Figure 7.3 West facing view showing two storey building to the north of the study area.

The fuel dispenser forecourt is located at the centre of the study area(Figure 7.4). It consists of six fuel pumps arranged on a north-south alignment, distributed on three driveways from east to west with two pumps each and covered by a large canopy with six columns. Barrier posts are located on each fuel pump. The fuel dispenser forecourt is located on an elevated ground. There are three manholes on the north and south side of the forecourt potentially associated with the large underground fuel tanks for the service station (Figure 7.5).

Figure 7.4 **North facing view of the study area showing fuel dispenser forecourt and two storey building to the north.**

Figure 7.5 **West facing view showing fuel dispenser forecourt and manholes.**

There are several other manholes distributed across the site potentially associated with underground fuel tanks and services related to the service station. There are drain grates on an east-west alignment to the north, centre and east covering the extent of the forecourt. There is also a long drain grate along the eastern boundary and the southern boundary of the study area.

There are electric poles located on each corner of the study area. Small gardening areas are located on the northeast, southeast and southwest corners of the study area (Figure 7.6). These seem to be above the existing ground level and unlikely to contain any natural deposits.

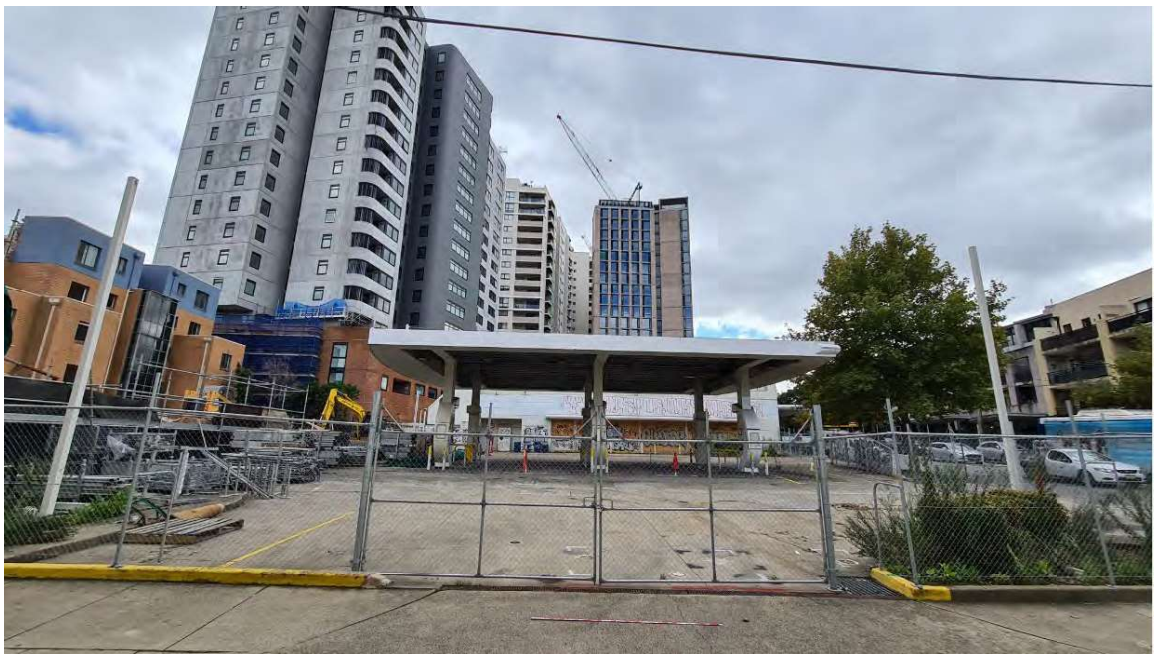

Figure 7.6 **North facing view of study area showing electric poles and gardening areas aboveground level.**

A description of these results, as they relate to the survey units and observed landforms within the study area can be seen in Table 7.1.

Table 7.1 **Survey coverage**

Landform	Survey unit area (m²)	Visibility (%)	Exposure (%)	Effective coverage area (m²)	Effective coverage (%)
Slope	**0**	**0**	**0**	**0**	**0**

Based on these results, the archaeological survey identified that the study area has been subject to extensive degrees of subsurface ground disturbance most recently associated with the former service station.

Several manholes were identified across the study area. These manholes are potentially related to large underground fuel tanks and underground services associated with the former service station. Underground fuel tanks would have required deep excavation works for encasement and installation. These deep excavation works would have likely removed any A -Horizon aeolian sands deposits that could have contained cultural material.

The archaeological survey did not identify any Aboriginal objects or areas where Aboriginal objects would be likely to occur.

8 ANALYSIS AND DISCUSSION

The following section presents an analysis and discussion of the results of the archaeological investigation,

8.1 SITE INTEGRITY AND EXTENT

The study area contains a former service station that includes large underground fuel tanks and associated services and a two-storey building to the north of the study area. As a result, the study area contains high levels of ground disturbance particularly associated with the underground fuel tanks and services associated with the former service station.

8.2 ARCHAEOLOGICAL ANALYSIS

Archaeological studies in the local area suggest that site distribution is characterised by proximity to permanent water sources, and landform types such as lower slopes, spurs, river terraces and alluvial flats.

Predictive modelling suggests that resource-rich areas associated with water would have been preferable for Aboriginal occupation. While several creek lines and swamps are located within the region, the study area is not considered to be located in close proximity to these resources. Therefore, the study area is not located within a landscape context which is considered to have been preferable for Aboriginal occupation when compared to other landscape features.

8.3 DISCUSSION

Based on recent archaeological studies near the vicinity of the study area and existing predictive models, this area is considered to have low archaeological potential to contain evidence of past Aboriginal occupation. Aboriginal people would have likely concentrated around resource-rich areas associated with water. Occupation appears to have been concentrated within elevated areas in close proximity to reliable sources of water as they would have provided a stable source of water and by extension other sources which would have been used by Aboriginal groups. The study area is not considered to be located within close proximity to water sources and its mid-slope position would not be suitable for occupation. However, as several creek lines and swamps were located within the region, the study area could have been within travel routes to and from water sources.

The study area is located within dense residential, commercial and industrial centres. The entirety of the study area has been identified to contain high levels of disturbance most recently associated with a former service station. While recent archaeological assessments near the study area have identified the presence of intact sand deposits underneath fill deposits associated to urban development, the study area is unlikely to contain intact A horizon sand deposits. Disturbance within the study area is particularly associated with underground fuel tanks and associated services as this would have required deep underground excavations which significantly impacted on any potential archaeological deposits present within the study area.

While recent studies near the vicinity of the study area have identified the Tuggerah soil landscape to contain a deeper upper soil profile which provides greater potential for the presence of Aboriginal archaeological evidence; the study area presents deep underground disturbance associated to the former service station. The deep excavations required for the encasement and installation of underground fuel tanks and associated services would have likely reached natural B and C horizons impacting any intact A horizon sand deposits

As a result of extensive deep ground disturbance within the study area, it is unlikely for any archaeological material to be present.

A reassessment of archaeological sensitivity is outlined in Figure 8.1.

Figure 8.1 Revised archaeological sensitivity

21001 104-116 Regent Street, Redfern

Source: OSM, NSW LPI Aerial

Drawn by: WA Date: 2021-05-03

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9 CULTURAL HERITAGE VALUES

An assessment of significance seeks to determine and establish the importance or value that a place, site or item may have to the community at large. The concept of cultural significance is intrinsically connected to the physical fabric of the item or place, its location, setting and relationship with other items in its surroundings. The assessment of cultural significance is ideally a holistic approach that draws upon the response these factors evoke from the community.

9.1 BASIS FOR THE ASSESSMENT

The significance values provided in the Australia ICOMOS *Charter for the Conservation of Places of Cultural Significance* (the Burra Charter) are considered to be the best practice heritage management guidelines in Australia (Australia ICOMOS 2013a). The Burra Charter defines cultural significance as:

> *"…aesthetic, historic, scientific, social or spiritual value for past, present or future generations. Cultural significance is embodied in the place itself, its fabric, setting, use, associations, meanings, records, related places and related objects. Places may have a range of values for different individuals or groups." (Australia ICOMOS 2013a, p.2)*

The Burra Charter significance values outlined in Table 9.1; these are frequently adopted by cultural heritage managers and government agencies as a framework for a more holistic assessment of significance.

Table 9.1 Definitions of Burra Charter significance values (Australia ICOMOS 2013b)

Value	Definition
Aesthetic	Refers to the sensory and perceptual experience of a place. That is how a person responds to visual and non-visual aspects such as sounds, smells and other factors having a strong impact on human thoughts, feelings and attitudes. Aesthetic qualities may include the concept of beauty and formal aesthetic ideals. Expressions of aesthetics are culturally influenced.
Historic	Refers to all aspects of history. For example, the history of aesthetics, art and architecture, science, spirituality and society. It therefore often underlies other values. A place may have historic value because it has influenced, or has been influenced by, a historic event, phase, movement or activity, person or group of people. It may be the site of an important event. For any place the significance will be greater where the evidence of the association or event survives at the place, or where the setting is substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of such change or absence of evidence.
Scientific	Refers to the information content of a place and its ability to reveal more about an aspect of the past through examination or investigation of the place, including the use of archaeological techniques. The relative scientific value of a place is likely to depend on the importance of the information or data involved, on its rarity, quality or representativeness, and its potential to contribute further important information about the place itself or a type or class of place or to address important research questions.
Social	Refers to the associations that a place has for a particular community or cultural group and the social or cultural meanings that it holds for them.

Value	Definition
Spiritual	Refers to the intangible values and meanings embodied in or evoked by a place which give it importance in the spiritual identity, or the traditional knowledge, art and practices of a cultural group. Spiritual value may also be reflected in the intensity of aesthetic and emotional responses or community associations, and be expressed through cultural practices and related places. The qualities of the place may inspire a strong and/or spontaneous emotional or metaphysical response in people, expanding their understanding of their place, purpose and obligations in the world, particularly in relation to the spiritual realm. The term spiritual value was recognised as a separate value in the Burra Charter, 1999. It is still included in the definition of social value in the Commonwealth and most state jurisdictions. Spiritual values may be interdependent on the social values and physical properties of a place.

In addition to the Burra Charter significance values, other criteria's and guidelines have been formulated by other government agencies and bodies in NSW to assess the significance of heritage places in NSW. Of particular relevance to this assessment are the guidelines prepared by the Australian Heritage Council and the Department of the Environment, Water, Heritage and the Arts (DEWHA), and Heritage NSW (Australian Heritage Council & DEWHA 2009, DECCW 2010d, OEH 2011, NSW Heritage Office 2001).

The Guide (OEH 2011, p.10) states that the following criteria from the NSW Heritage Office (2001, p.9) should be considered:

- **Social value:** Does the subject area have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons?
- **Historic value:** Is the subject area important to the cultural or natural history of the local area and/or region and/or state?
- **Scientific value:** Does the subject area have potential to yield information that will contribute to an understanding of the cultural or natural history of the local area and/or region and/or state?
- **Aesthetic value:** Is the subject area important in demonstrating aesthetic characteristics in the local area and/or region and/or state?

OEH (2011, p.10) states that when considering the Burra Charter criteria, a grading system must be employed. Austral will use the following grading system to assess the cultural values of the study area and its constituent features. These are outlined in Table 9.2.

Table 9.2 Gradings used to assess the cultural values of the study area

Grading	Definition
Exceptional	The study area is considered to have rare or outstanding significance values against this criterion. The significance values are likely to be relevant at a state or national level.
High	The study area is considered to possess considerable significant values against this criterion. The significance values are likely to be very important at a local or state level.
Moderate	The study area is considered to have significance values against this criterion; these are likely to have limited heritage value but may contribute to broader significance values at a local or State level.
Little	The study area is considered to have little or no significance values against this criterion.

9.2 ASSESSMENT OF SIGNIFICANCE

The following section addresses the Burra Charter significance values with reference to the overall study area.

9.2.1 AESTHETIC SIGNIFICANCE VALUES

Aesthetic values refer to the sensory, scenic, architectural and creative aspects of the place. These values may be related to the landscape and are often closely associated with social and cultural values.

The study area is located on a slope within an area that has undergone significant stages of urban development and as a result, the pre-European environment has largely been lost. The study area contains a former service station. As a result, the aesthetic value of the study area has been significantly affected.

Based on this assessment, the study area is considered to have **low** aesthetic significance values.

9.2.2 HISTORIC SIGNIFICANCE VALUES

The assessment of historic values refers to associations with particular places associated with Aboriginal history. Historic values may not be limited to physical values, but may relate to intangible elements that relate to memories, stories or experiences.

The study area is not known to have any historic associations with Aboriginal people.

Based on this assessment, the study area is considered to have **low** historic significance values.

9.2.3 SCIENTIFIC SIGNIFICANCE VALUES

Scientific significance generally relates to the ability of archaeological objects or sites to answer research questions that are important to the understanding of the past life-ways of Aboriginal people. Australia ICOMOS (2013b, p.5) suggests that to appreciate scientific value, that the following question is asked: "*Would further investigation of the place have the potential to reveal substantial new information and new understandings about people, places, processes or practices which are not available from other sources?*".

In addition to the above criteria, The Guide (OEH 2011, p.10) also suggests that consideration is given to the Australian Heritage Council and DEWHA (2009) criteria, which are particularly useful when considering scientific potential:

- **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?

As high levels of disturbance have been identified within the study area, most recently associated with the former service station which would have required deep underground ground disturbance it is considered unlikely for undisturbed archaeological deposits to be present within the study area. As a result, the study area is considered to have **low** scientific significance.

9.2.4 SOCIAL AND SPIRITUAL SIGNIFICANCE VALUES

As social and spiritual significance are interdependent, Austral has undertaken a combined assessment of these values. The Consultation Requirements specify that the social or cultural values of a place can only be identified through consultation with Aboriginal people.

Based on this assessment, the study area is considered to have **Low** social and spiritual significance values.

9.3 STATEMENT OF SIGNIFICANCE

The statements of significance have been formulated using the Burra Charter significance values and relevant NSW guidelines (DECCW 2010d, OEH 2011, Australia ICOMOS 2013a).

Heritage NSW specifies the importance of considering cultural landscapes when determining and assessing Aboriginal cultural values. The principle behind this is that '*For Aboriginal people, the significance of individual features is derived from their inter-relatedness within the cultural landscape. This means features cannot be assessed in isolation and any assessment must consider the feature and its associations in a holistic manner"* (DECCW 2010e).

No archaeological values have been identified as being associated with the study area. It has been determined that the study area is not located within a landscape that could be considered to have been preferable for Aboriginal occupation. Furthermore, the study area has been subject to extensive stages of ground disturbance most recently associated with a former service station that required deep excavation works for the installation of underground fuel tanks and associated services as well as general clearance and levelling of the ground. As a result, the study area is unlikely to contain any undisturbed archaeological deposits.

The study area is determined to contain low archaeological significance.

10 IMPACT ASSESSMENT

This section outlines, according to Heritage NSW guidelines, the potential harm that the proposed activity may have on identified Aboriginal objects and places within the study area (DECCW 2010d, OEH 2011).

10.1 LAND USE HISTORY

The study area is found within dense residential, commercial and industrial centres. The study area has been subject to extensive stages of ground disturbance most recently associated with a former service station that required deep excavation works for the installation of underground fuel tanks and associated services as well as clearance and ground levelling for the station and a two storey building on the northern portion of the study area.

10.2 PROPOSED ACTIVITY

The proposal comprises the redevelopment of the site as summarised below:

Construction of an 18-storey building comprising a total of 9,562m² gross floor area with a mix of land use activities including:

- Level 1: 72 m² of retail floorspace, 490m² of communal area for the student accommodation, 102 bicycle parking spaces, loading and waste management facilities and ancillary services and facilities.
- Upper levels: student accommodation providing a total of 411 beds, including ensuite rooms, studios and two-bedroom configurations, with indoor and outdoor communal spaces on Levels 2, 4 and 16 and additional indoor communal areas on Levels 2 and 4.

Hard and soft landscaping within the outdoor communal terraces on the roof-top of the podium level and Levels 4 and 16.

Public domain improvements including provision of a landscaped through-site link connecting William Lane to Margaret Street and associated improvements to the Regent Street and Margaret Street frontages, including awnings and footpath upgrades.

10.3 ASSESSING HARM

This section outlines the assessment process for addressing potential harm to Aboriginal objects and/or places within the study area, as outlined by Heritage NSW (OEH 2011, p.12).

10.3.1 ECOLOGICALLY SUSTAINABLE DEVELOPMENT

An objective of the NPW Act, under Section 2A(1)(b)(i) is to conserve "*places, objects and features of significance to Aboriginal people*" through applying the principles of ecologically sustainable development (ESD) (Section 2A(2)). ESD is defined in Section 6(2) of the *Protection of the Environment Administration Act 1991* (NSW) as "…*the effective integration of social, economic and environmental considerations in decision-making processes".* ESD can be achieved with regards to Aboriginal cultural heritage, by applying principle of inter-generational equity, and the precautionary principle to the nature of the proposed activity, with the aim of achieving beneficial outcomes for both the development, and Aboriginal cultural heritage.

INTERGENERATIONAL EQUITY

The principle of intergenerational equity is where the present generation ensure the health, diversity and productivity of the environment for the benefit of future generations. The Department of Environment and Climate Change (DECC), now Heritage NSW, states that in terms of Aboriginal cultural heritage "*intergenerational equity can be considered in terms of the cumulative impacts to Aboriginal objects and places in a region. If few Aboriginal objects and places remain in a region (for example, because of impacts under previous AHIPs), fewer opportunities remain for future generations of Aboriginal people to enjoy the cultural benefits of those Aboriginal objects and places.*" (DECC 2009, p.26).

The assessment of intergenerational equity and understanding of cumulative impacts should consider information about the integrity, rarity or representativeness of the Aboriginal objects and/or places that may be harmed and how they illustrate the occupation and use of the land by Aboriginal people across the locality (DECC 2009, p.26).

Where there is uncertainty over whether the principle of intergenerational equity can be followed, the precautionary principle should be applied.

PRECAUTIONARY PRINCIPLE

Heritage NSW defines the Precautionary Principle as "*if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing cost-effective measures to prevent environmental degradation*" (DECC 2009, p.26).

The application of the precautionary principle should be guided through:

- A careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment.
- An assessment of the risk—weighted consequences of various options.

DECC (2009, p.26) states that the precautionary principle is relevant to the consideration of potential impacts to Aboriginal cultural heritage, where:

- The proposal involves a risk of serious or irreversible damage to Aboriginal objects and/or places or to the value of those objects and/or places.
- There is uncertainty about the Aboriginal cultural heritage values, scientific, or archaeological values, including in relation to the integrity, rarity or representativeness of the Aboriginal objects or places proposed to be impacted.

Where either of the above is likely, a precautionary approach should be taken and all effective measures implemented to prevent or reduce harm to Aboriginal cultural heritage values.

10.3.2 TYPES OF HARM

When considering the nature of harm to Aboriginal objects and/or places, it is necessary to quantify direct and indirect harm. The types of harm, as defined in the Guide (OEH 2011, p.12), and are summarised in Table 10.1. These definitions will be used to quantify the nature of harm to identified Aboriginal objects and/or places that have been identified as part of this assessment. The Code states that the degree of harm can be either total or partial (DECCW 2010b, p.21).

Table 10.1 Definition of types of harm

Type of harm	Definition
Direct harm	May occur as the result of any activity which disturbs the ground including, but not limited to, site preparation activities, installation of services and infrastructure, roadworks, excavating detention ponds and other drainage or flood mitigation measures, and changes in water flows affecting the value of a cultural site.
Indirect harm	May affect sites or features located immediately beyond, or within, the area of the proposed activity. Examples of indirect impacts include, but are not limited to, increased impact on art in a shelter site from increased visitation, destruction from increased erosion and changes in access to wild food resources.

10.4 IMPACT ASSESSMENT

This ACHA has included a programme of investigations that have characterised the nature, extent and significance of Aboriginal sites within the study area.

The proposed development will require the demolition of the existing service station building and any remaining structures following completion of site remediation works (in accordance with a separate local development application [D/2020/1095] lodged with the City of Sydney) for the construction of the proposed 18-storey mixed-use building. No sites or potential archaeological deposits have been identified within the study area. Therefore, the proposed development and associated works are unlikely to impact on any archaeological material.

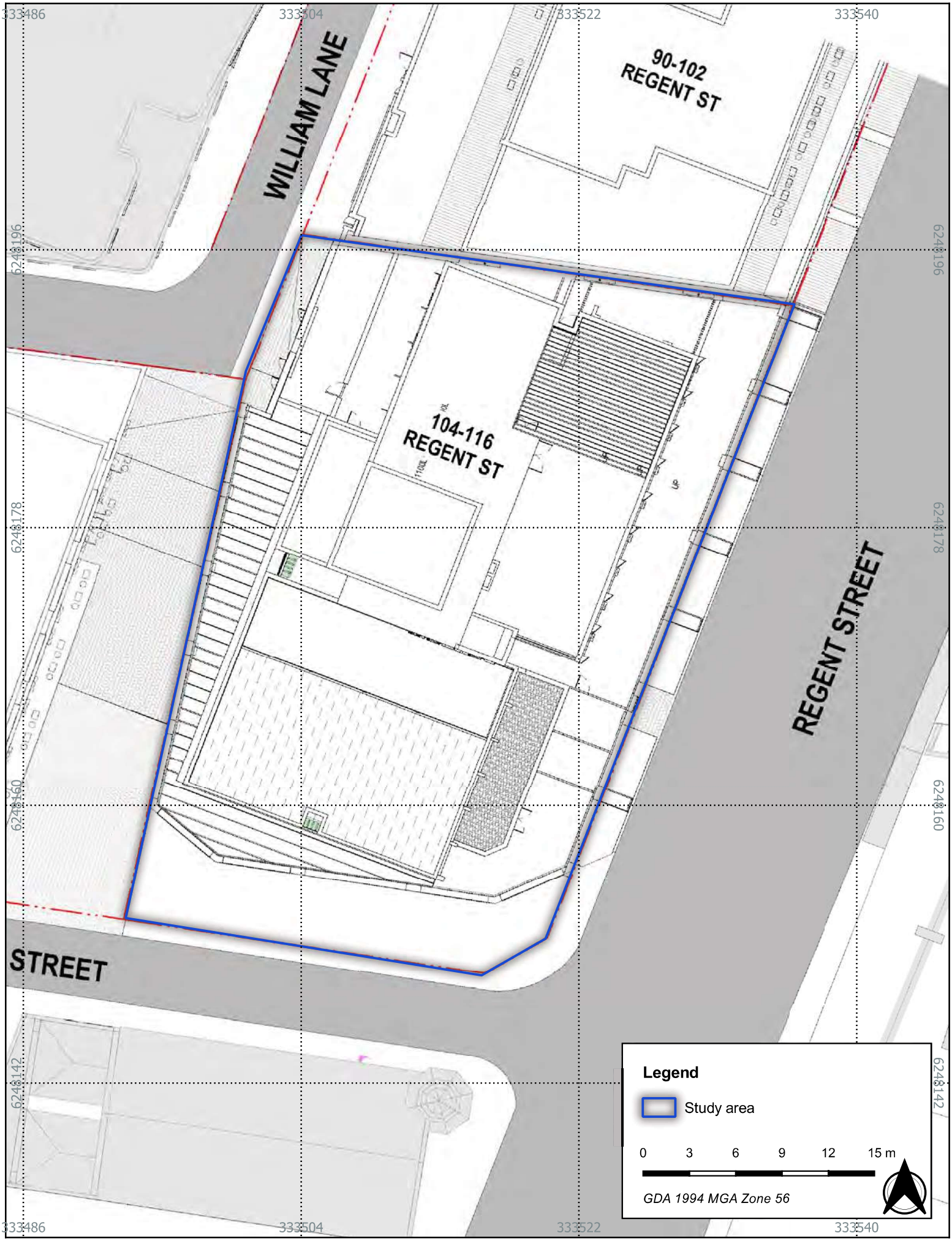

Figure 10.1 Details of the proposed activity in relation to identified Aboriginal sites

21001 104-116 Regent Street, Redfern

Source: Wee Hur 20009DA

Drawn by: WA Date: 2021-12-07

AUSTRAL ARCHAEOLOGY

11 AVOIDING AND MINIMISING HARM

The Burra Charter, advocates a cautious approach to change: "*do as much as necessary to care for the place and to make it useable, but otherwise change it as little as possible so that its cultural significance is retained*" (Australia ICOMOS 2013a, p.1). Based on this principle, this section identifies the measures that have been taken to avoid harm and what conservation outcomes have been achieved through the preparation of this ACHA.

11.1 DEVELOPMENT OF PRACTICAL MEASURES TO AVOID HARM

The existing underground fuel tanks and associated service pipelines related to the existing service station have significantly impacted on any potential archaeological deposits present within the study area. It is unlikely for any intact archaeological material to remain within the study area and, therefore, the proposed development will not harm any archaeological material within the study area.

11.2 APPLICATION OF PRINCIPLES OF ESD AND CUMULATIVE IMPACTS

The removal of the existing service station and associated petro supply system will provide a positive impact on the natural environment through the removal of contaminated soils and their source contaminants.

The proposed development is unlikely to harm any archaeological material within the study area.

11.3 STRATEGIES TO MINIMISE HARM

The proposed development will not impact on any identified archaeological material within the study area.

12 RECOMMENDATIONS

The following recommendations are derived from the findings described in this ACHA. The recommendations have been developed after considering the archaeological context, environmental information, consultation with the local Aboriginal community, and the findings of the archaeological survey and the predicted impact of the planning proposal on archaeological resources.

It is recommended that:

1. No further assessment or works are required to be undertaken for the study area. If during the project, unexpected finds or human remains, please follow recommendation 2.
2. In the event that unexpected finds occur during any activity within the study area, all works must in the vicinity must cease immediately. The find must be left in place and protected from any further harm. Depending on the nature of the find, the following processes must be followed:
    1. If, human skeletal remains are encountered, all work must cease immediately and NSW Police must be contacted, they will then notify the Coroner's Office. Following this, if the remains are believed to be of Aboriginal origin, then the Aboriginal stakeholders and Heritage NSW must be notified.
3. A copy of this report should be forwarded to all Aboriginal stakeholder groups who have registered an interest in the project.
4. Interprative signage has been recommended by the local Aboriginal community to indicate traditional ownership and previous use of the land by Indigenous populations.

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14 APPENDICES

APPENDIX A – AHIMS

APPENDIX B - CONSULTATION