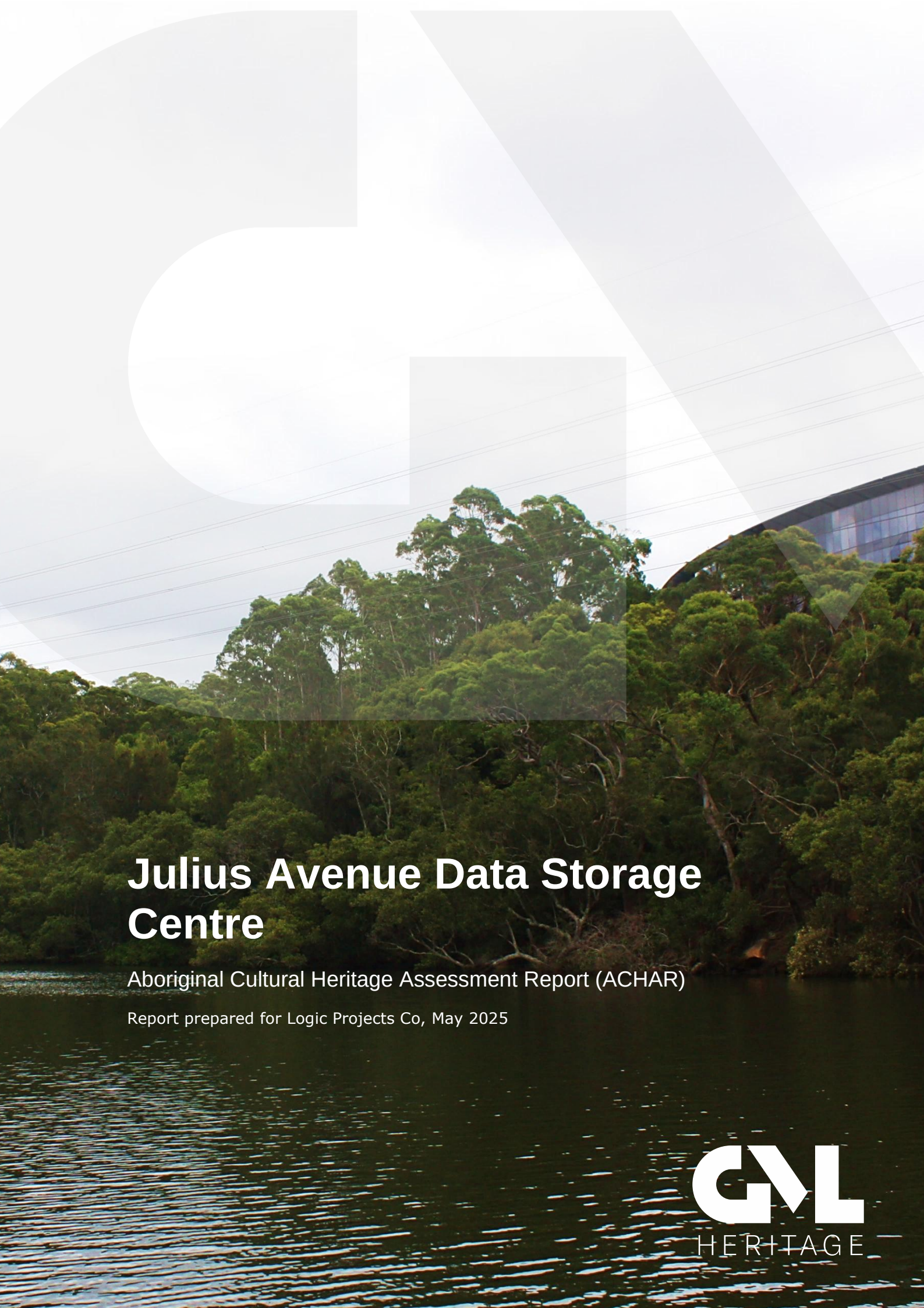

Julius Avenue Data Storage Centre

Aboriginal Cultural Heritage Assessment Report (ACHAR)

Report prepared for Logic Projects Co, May 2025

GML HERITAGE

Acknowledgement of Country

We respect and acknowledge the First Nations people of the lands and waterways on which we live and work, their rich cultural heritage and their deep connection to Country, and we acknowledge their Elders past and present. We are committed to truth-telling and to engaging with First Nations people to support the protection of their culture and heritage. We strongly advocate social, cultural and political justice and support the Uluru Statement from the Heart.

Cultural warning

Aboriginal and Torres Strait Islander readers are advised that this report may contain images or names of First Nations people who have passed away.

GML HERITAGE

Report register

The following report register documents the development of this report, in accordance with the GML Heritage Pty Ltd (GML) Quality Management System.

Job No.	Issue No.	Notes/description	Issue date
24-0484	1	Draft Report for Client Review	13 March 2025
24-0484	2	Draft Report for RAP review	17 March 2025
24-0484	3	Final Report	22 April 2025
24-0484	4	Updated Final Report	20 May 2025

Quality assurance

The report has been reviewed and approved for issue in accordance with the GML quality assurance policy and procedures.

It aligns with best-practice heritage conservation and management, *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance, 2013* and heritage and environmental legislation and guidelines relevant to the subject place.

Indigenous cultural and intellectual property

We acknowledge and respect the inherent rights and interests of the First Nations peoples in Indigenous Cultural and Intellectual Property. We recognise that Aboriginal and Torres Strait Islander people have the right to be acknowledged and attributed for their contribution to knowledge but also respect their rights to confidentiality. We recognise our ongoing obligations to respect, protect and uphold the continuation of First Nations peoples' rights in the materials contributed as part of this project.

Cover image

Looking northwest across the Lane Cove River towards 6–8 Julius Avenue. (Source: © GML Heritage 2025)

SYDNEY Level 17, 323 Castlereagh Street, Haymarket NSW 2000 Australia T +61 2 9319 4811
CANBERRA 2A Mugga Way, Red Hill ACT 2603 Australia T +61 2 6273 7540
MELBOURNE 17 Drummond Street, Carlton VIC 3053 Australia T +61 3 9380 6933
www.gml.com.au | @GMLheritage

Executive summary

Logic Projects Co engaged GML Heritage Pty Ltd (GML) to prepare an Aboriginal cultural heritage assessment report (ACHAR) for the Julius Avenue Data Storage Centre project. This report forms part of the environmental assessment for the study area prepared under Part 4 of the NSW *Environmental Planning and Assessment Act 1979*.

This report aims to:

- involve the Aboriginal community in decisions with respect to their heritage;
- identify, assess and report on Aboriginal heritage values within the study area;
- determine how the project may harm these values; and
- establish the mechanism for conserving and mitigating harm to these values.

The cultural heritage assessment has been prepared through a combination of landform change analysis, coupled with a formal archaeological survey. This work identified that the northern part of the study area (which is subject to the development application) has been substantially modified over the last few decades with deep excavations and cuts into bedrock. No Aboriginal objects or areas with potential for Aboriginal objects were identified. Aboriginal sites, objects and values are located in proximity to the study area, but should not be impacted by the proposal.

The assessment has confirmed the nature of Aboriginal values associated with the study area. No further Aboriginal heritage investigation (ie test or salvage excavation) is recommended. We recommend that the below Aboriginal heritage management strategies be implemented for the proposed development.

Table ES.1 Summary of Aboriginal cultural heritage policies for the proposed development.

Strategy #	Theme	Details	Suggested timing
1	Aboriginal cultural heritage impact avoidance	No Aboriginal sites or objects have been identified within the study area. A native vegetation buffer should be maintained around Aboriginal Heritage Information Management System (AHIMS) site 45-6-1854. Care should be taken to avoid vibration or other impacts to AHIMS site 45-6-1854 20m south of the study area.	During planning for the new development and throughout the development phase.

Strategy #	Theme	Details	Suggested timing
2	Heritage induction	Induction for all staff, contractors and workers that would detail the management of First Nations cultural heritage and archaeology within the study area.	Prior to the proposed development commencing, and implemented throughout the development phase.
3	Unexpected finds procedure (UFP)	Procedure stipulating the process for managing any actual or suspected Aboriginal cultural heritage identified during the proposed works.	Prior to the proposed development commencing, and implemented throughout the development phase.

Contents

Abbreviations

Abbreviation	Definition
ACHAR	Aboriginal Cultural Heritage Assessment Report
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
BP	Before present
CBD	Central business district
CSIRO	Commonwealth Scientific and Industrial Research Organisation
Cth	Commonwealth
DP	Deposited plan
EIS	Environmental Impact Statement
EPA Act	*Environmental Planning and Assessment Act 1979*
ERS	Eastern Regional Sequence
ESD	Ecologically Sustainable Development
GFA	Ground floor area
GML	GML Heritage Pty Ltd
HNSW	Heritage NSW
ICOMOS	International Council on Monuments and Sites
IMSTC	Indurated mudstone, silicified tuff and chert
kL	Kilolitre
KV	Kilovolt
LEP / RLEP	Local Environmental Plan/Ryde Local Environmental Plan
LGA	Local Government Area
LGM	Last Glacial Maximum
MLALC	Metropolitan Local Aboriginal Land Council
MW	Megawatt
NPW Act	*National Parks and Wildlife Act 1974*
NSW	New South Wales

Abbreviation	Definition
OEH	Office of Environment and Heritage
PAD	Potential Archaeological Deposit
PCT	Plant Community Type
RAP	Registered Aboriginal Party
REP	Regional Environmental Plan
SEARs	Planning Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SSD	State Significant Development
STSS	Subtransmission switching station
SU	Survey unit
Sqm	Square metre
UFP	Unexpected finds procedure

1 Introduction to the project

1 Introduction to the project

Logic Projects Co engaged GML Heritage Pty Ltd (GML) to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) for the Julius Avenue Data Storage Centre centre project (Figure 1.1 and Figure 1.2). This report forms part of the Environmental Impact Statement (EIS) for the study area prepared under Part 4 of the *Environmental Planning and Assessment Act 1979* (NSW) to support a State Significant Development Application (SSDA) for the development of a new data storage centre at 6–8 Julius Avenue, North Ryde.

The purpose of this report is to identify whether the study area possesses or has the potential to possess Aboriginal heritage archaeological sites, places, objects, landscapes and/or values, in accordance with the Heritage NSW (HNSW) guidelines for Aboriginal heritage assessment.

This report provides a significance assessment of the identified Aboriginal cultural heritage (ACH), which may include archaeological Aboriginal sites, places, landscapes and/or other values. An impact assessment and management recommendations are provided to assist Logic Projects Co with its future responsibilities for the management of ACH within the study area.

1.1 The project and study area

1.1.1 The study area

The study area is identified as 6–8 Julius Avenue, North Ryde, legally described as Lot 89 in Deposited Plan 1082131 (the study area or the Site) (Figure 1.1). The study area (the Site) is irregular in shape and is located on the southeastern side of Julius Avenue, North Ryde (Figure 1.2).

The study area has a primary frontage of approximately 100m to Julius Avenue and has a partial rear frontage to Richardson Place (cul-de-sac) at the northeastern corner. The study area has an area of approximately 2.863ha.

Lot 89 is currently vacant. The northwestern part of the study area was excavated and cleared of vegetation in 2009 as part of Modified Determination No. 1395/1999 previously approved on the site. The study area is zoned E3 Productivity Support pursuant to the *Ryde Local Environmental Plan 2014* (RLEP 2014) and is located within the City of Ryde Local Government Area (LGA), which is approximately 15km northwest of the Sydney CBD.

Existing attributes of the study area and surrounding context are noted as follows:

- The study area is generally surrounded to the northeast, northwest, and southwest by commercial uses and E3 Productivity Support zoned land.
- Approximately 150m to the west of the study area is MU1 mixed use zoned land which contemplates residential development to a height of 95m.
- The study area directly adjoins the Lane Cove National Park to the east and southeast which contains a walking track known as the Great North Walk and a fire trail.
- The Lane Cove River is located approximately 100m to the east of the study area.
- The study area directly adjoins the Ryde City Council Administrative Centre to the east.
- Approximately 500m to the west of the study area is the North Ryde Metro Station.
- The nearest residential development is located approximately 300m to the southeast of the study area on the eastern side of Lane Cove River in Lane Cove North, and 300m to the southwest of the study area on the southern side of Epping Road in North Ryde.

An aerial view of the study area is provided in Figure 1.2 below.

The study area is located within the Metropolitan Local Aboriginal Council (MLALC) area.

1.1.2 Proposed development

The proposal involves the construction and operation of a data centre and associated infrastructure and amenities, identified as the Julius Avenue Data Centre, comprising the following scope of works:

- site preparation works, including tree removal;
- earthworks and additional site retaining;
- infrastructure comprising civil works and utilities servicing;
- construction of a data centre, with the following:
  - basement car parking for 53 cars, including 2 accessible;
  - 12 data halls across six (6) storeys with an IT load of 115.2 MW and a maximum power consumption of 170 MW, with upper-level mechanical equipment and rooftop plant;
  - six (6) storey office/front of house building; and
  - six (6) storey enclosed generator gantry to rear of data centre.
- new Ausgrid precinct-wide 132 kilovolt (KV) Subtransmission Switching Station (STSS);
- one (1) new street along the southern part of the study area;
- a new pedestrian through-site link from Julius Avenue to Richardson Place; and
- complementary landscaping and offset planting.

The proposal includes works as identified in Table 1.1 below. More details of the proposal are provided in Section 6.

Table 1.1 Development particulars.

Component	Documentation
Study area	28,630sqm
Primary land use	Data centre (25,204sqm GFA)
Ancillary land uses	Office premises (1,278sqm GFA)
Gross floor area	26,185sqm
Floor space ratio	0.91:1
IT load	115.2 MW
Maximum power consumption	169 MW
Building height	Approximately 48m
New streets	One (1) new street
Car parking	54 car parking spaces (including 2 accessible)
Landscaping/trees	Total landscaping and tree removal to be confirmed
Back-up generators	72 x 3MW + 1MW back-up generators
Dangerous goods	1,277kL diesel storage capacity (12 x 100kL tanks + 72 x 1kL day tanks + 5kL tank for office/FOH)
Estimated jobs	Refer to EIS

1.2 Planning framework

Zoning and permissibility

The study area is zoned E3 Productivity Support under the provisions of RLEP 2014. The proposed use as a data centre is permitted with consent in the E3 Productivity Support zone pursuant to RLEP 2014. The proposal is also permitted with consent by virtue of being in a prescribed zone pursuant to Chapter 2, Part 2.3, Division 3 of State Environmental Planning Policy (Transport and Infrastructure) 2021 (the Transport and Infrastructure SEPP).

Approval pathway

The proposal is classified as State Significant Development (SSD) on the basis that it falls within the requirements of Section 25 of Schedule 1 of the of State Environmental Planning Policy (Planning Systems) 2021 (the Planning Systems SEPP), being:

25 Data centres

(1) Development for the purpose of data centres that has a total power consumption of more than the relevant amount.

(2) In this section—

relevant amount means—

(a) for any other development—15 megawatts.

The proposed data centre has a maximum power consumption of 170 megawatts and therefore the consent authority is NSW Department of Planning, Housing and Infrastructure.

1.3 Industry-specific Planning Secretary's Environmental Assessment Requirements

This report has been prepared in response to the relevant requirements outlined within the industry-specific data storage centre Planning Secretary's Environmental Assessment Requirements (SEARs) issued on 20 February 2025 for application SSD-80010208. Table 1.2 addresses the relevant SEARs requirements and provides a project response.

Table 1.2 Secretary's Environmental Assessment Requirements.

Item	SEARs	Relevant report section(s)
Item 19	**Aboriginal Cultural Heritage** Provide an Aboriginal Cultural Heritage Assessment Report (ACHAR) prepared in accordance with relevant guidelines, identifying, describing, and assessing any impacts on any Aboriginal cultural heritage sites or values associated with the study area.	This report forms the project ACHAR. This report has been developed in accordance with the HNSW guidelines specified in the project SEARs.

1.4 Objectives of this Aboriginal cultural heritage assessment

Our objectives for the assessment were to:

- identify and consult with local Aboriginal community members who can speak for Country;
- understand and record Aboriginal heritage places and values, and determine whether these are part of a larger Aboriginal cultural landscape and/or Aboriginal traditions;

- involve the local Aboriginal community in the cultural heritage values assessment process and determine best practice options for the future management of the identified Aboriginal cultural heritage;
- determine how the proposed project may impact the identified Aboriginal cultural heritage values, aiming to minimise impacts through sensible and pragmatic site and land management; and
- provide clear recommendations for the conservation of Aboriginal heritage values and relevant impact mitigation strategies that benefit both Aboriginal cultural heritage and the proponent.

1.5 Statutory context

In NSW, Aboriginal heritage is principally protected under two Acts:

- the *National Parks and Wildlife Act 1974* (NSW) (NPW Act); and
- the *Environmental Planning and Assessment Act 1979* (NSW) (EPA Act).

The Julius Avenue Data Storage Centre project is to be delivered as an SSD, and as such, will be governed by project SEARs (Section 1.3).

1.5.1 National Parks and Wildlife Act 1974

The NPW Act provides statutory protection for all Aboriginal 'objects' (consisting of any material evidence of the Indigenous occupation of NSW) under Section 90 of the NPW Act, and for 'Aboriginal Places' (areas of cultural significance to the Aboriginal community) under Section 84 of the NPW Act. Aboriginal objects and places are afforded automatic statutory protection in NSW whereby it is an offence (without the Minister's consent) to harm an Aboriginal object or declared Aboriginal Place.

The NPW Act defines an Aboriginal object as:

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

The protection provided to Aboriginal objects and places applies irrespective of the level of their significance or issues of land tenure. Sites of traditional significance that do not necessarily contain material remains may be gazetted as 'Aboriginal Places' and thereby be protected under the NPW Act. However, areas are only gazetted if the Minister is satisfied that sufficient evidence exists to demonstrate that the location was and/or is of special significance to Aboriginal culture.

A strict liability offence applies for harm to or desecration of an Aboriginal object or declared Aboriginal Place.[1] The definition of 'harm' includes destroying, defacing, damaging or moving an Aboriginal object or declared Aboriginal Place.

Under the Act, applicants much seek approval prior to disturbance of sites that contain or hold the potential to contain Aboriginal objects or cultural material.

The potential for Aboriginal objects, sites, places and/or values within the study area, and for the proposed development to impact such objects, has been assessed and the results are presented in this report.

1.5.2 Environmental Planning and Assessment Act 1979

Projects declared SSD under Part 4 of the EPA Act require heritage and archaeology to be managed in accordance with the project approval documents, including conditions of the Development Consent. Section 4.41(d) of the EPA Act provides an Aboriginal Heritage Impact Permit (AHIP) under Section 90 of the NPW Act is not required for an SSD project that is authorised by an SSD development consent. As the Julius Avenue Data Storage Centre project has been declared SSD, any requirement to obtain an AHIP is not applicable.

The EPA Act provides a statutory framework for the determination of development proposals. It provides for the identification, protection and management of heritage items through inclusion in schedules to planning instruments such as local environmental plans (LEPs) or regional environmental plans (REPs). Heritage items in planning instruments are usually historic sites but can include Aboriginal objects and places. The EPA Act requires that appropriate measures be taken for the management of the potential archaeological resource by means consistent with practices and standards adopted in meeting the requirements of the NPW Act.

The study area is in the City of Ryde Council area and comes under the RLEP 2014. There are no heritage items listed within the study area.

1.5.3 Approach to Aboriginal heritage management

In NSW Aboriginal heritage assessment and management is underpinned by several guidelines and policies. Our approach is based on the following guidelines:

- *Guide to Determining and Issuing Aboriginal Heritage Impact Permits* (2009);[2]
- *Operational Policy: Protecting Aboriginal Cultural Heritage* (2009);[3]
- *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (2010);[4]
- *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (2010) (the Due Diligence Code);[5]

- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (2010) (the Code of Practice);[6]
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (2011);[7] and
- *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013* (the Burra Charter).[8]

1.5.4 The Burra Charter process

The Burra Charter process (Article 6) outlines a three-stage process for the assessment and management of heritage. The three stages are:

1 develop an understanding of heritage significance;

2 develop policy that is appropriate to the significance; and

3 undertake management in accordance with the policy.

The Burra Charter's explanations for heritage provide the basis for definitions used in this report. The Burra Charter's Indigenous Practice Note provides further guidance for application of the Burra Charter to Aboriginal heritage. We have used the following definitions:

Article 1.1—Place

> Place means a geographically defined area. It may include elements, objects, spaces and views. Place may have tangible and intangible dimensions.[9]
>
> 'Place' includes locations that embody spiritual value (such as Dreaming places, sacred landscapes, and stone arrangements), social and historical value (such as massacre sites), as well as scientific value (such as archaeological sites). In fact, one place may be all of these things or may embody all of these values at the same time.[10]

Article 1.2—Cultural Significance

> Cultural significance means 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.[11]

Article 1.10—Use

> Use means the functions of a place, including the activities and traditional and customary practices that may occur at the place or are dependent on the place.[12]

Article 1.11—Compatible Use

> Compatible use means a use which respects the cultural significance of a place. Such a use involves no, or minimal, impact on cultural significance.

Article 8—Setting

> Conservation requires the retention of an appropriate setting. This includes retention of the visual and sensory setting, as well as the retention of spiritual and other cultural relationships that contribute to the cultural significance of the place.[13]
>
> Places of significance to Indigenous people require a holistic approach to 'setting'. 'Setting' may encompass the broadest of experiential factors including a sense of 'intrusion' occasioned when people of the 'wrong' gender, age or level of initiation trespass on defined areas, as well as auditory and visual intrusion.
>
> For some Indigenous peoples, nature and culture are indivisible. The social significance and spiritual significance of a place for Indigenous people may be wholly or partly dependent on the natural environment that the place forms a part of, including aspects such as biodiversity, and totemic and resource species.[14]

Application to the current assessment

To implement the Burra Charter process, we have undertaken the following steps:

Step 1—Understand the place

This involved investigation into the environment, archaeology, history and literature. Field survey was undertaken in collaboration with the Aboriginal community. The outcome of the Step 1 investigations was the development of archaeological and landscape maps and plans that show the known sites, places and values connected to the study area. The approach followed the notion that the study area is part of an Aboriginal cultural landscape, and the study area represents a small zone within this landscape.

Step 2—Assess cultural significance

A preliminary indication of cultural significance considered aesthetic, historic, scientific and social aspects to the study area. This preliminary assessment of value should be used for future assessments, noting both that 'cultural significance may change'[15] and 'tangible heritage should not be emphasised at the expense of intangible heritage'.[16]

Step 3—Identify factors and issues

The results from Steps 1 and 2 were used to identify key future management factors and/or issues. The issues and factors define future needs, opportunities and constraints connected with possible future compatible use.

Step 4—Develop policy

The outcome from Step 3 was applied to develop appropriate management policy, in consultation with the Aboriginal community and in accordance with relevant NSW statutory processes.

1.6 Who undertook the project

This project has been undertaken by the following people. Each person's role and affiliations are detailed. GML would also like to acknowledge Dan D'Ambrosio and Egan Bradbury (Logic Projects Co) for their assistance during the project.

Table 1.3 Investigators and contributors.

Person	Affiliation	Role
Dr Tim Owen	GML	Project Director and report review
Andie Coulson	GML	Project Manager and author
[redacted]	[redacted]	RAP survey participant
[redacted]	[redacted]	RAP survey participant
[redacted]	[redacted]	RAP survey participant
[redacted]	[redacted]	RAP survey participant

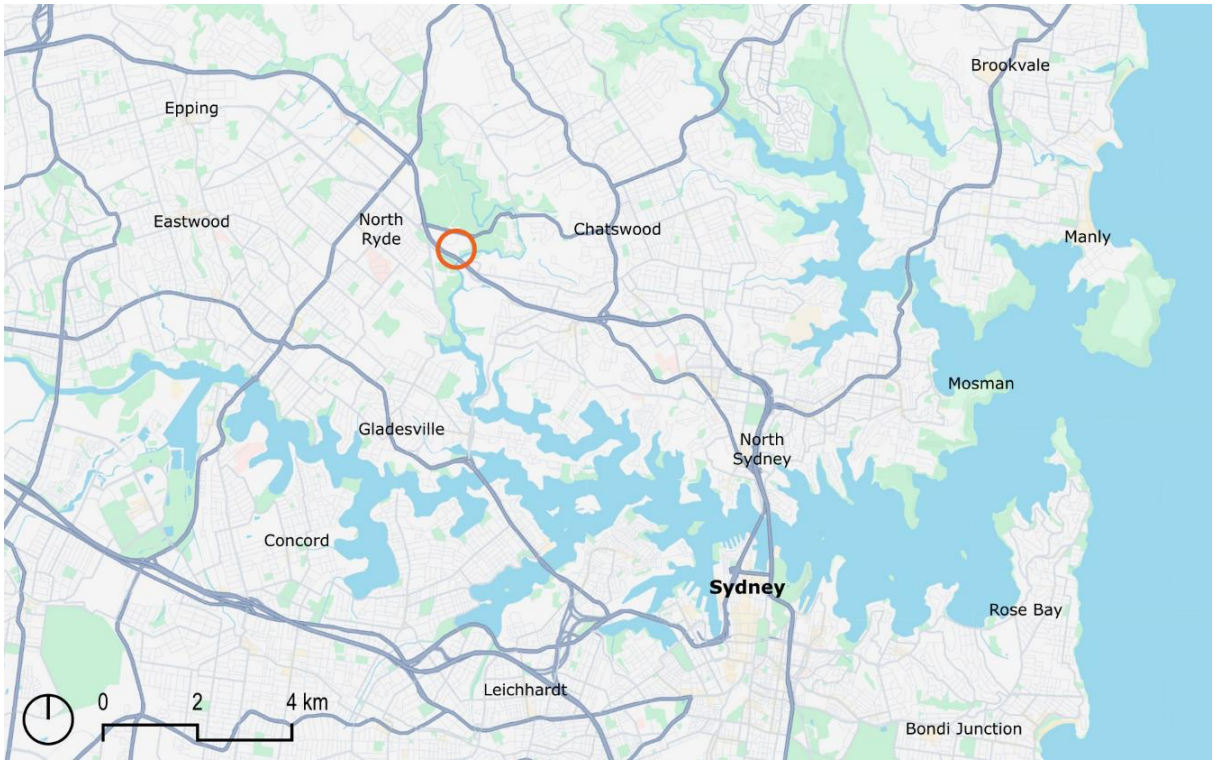

Figure 1.1 Location of the study area (circled in orange) in Sydney. (Source: Google Maps with GML overlay, 2024)

Figure 1.2 The study area. (Source: Nearmap with GML overlay, 2024)

1.7 Endnotes

[1] Department of Environment, Climate Change and Water 2010, National Parks and Wildlife Act 1974 (NSW), 'Fact sheet 1', September 2010.

[2] Department of Environment and Climate Change, *Guide to Determining and Issuing Aboriginal Heritage Impact Permits 2009*.

[3] Department of Environment and Climate Change, *Operational Policy: Protecting Aboriginal Cultural Heritage 2009*, Department of Environment and Climate Change (NSW).

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

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

[6] Department of Environment Climate Change and Water NSW, *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*, 2010.

[7] Office of Environment and Heritage NSW, *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW 2011*, Office of Environment and Heritage, Department of Premier and Cabinet, Sydney South.

[8] Australia ICOMOS Inc, *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013*, Australia ICOMOS Inc, Burwood, VIC.

[9] Australia ICOMOS Inc, *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013*, Australia ICOMOS Inc, Burwood, VIC, Article 1.1.

[10] Australia ICOMOS Inc, *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013*, Australia ICOMOS Inc, Burwood, VIC, p 2.

[11] Australia ICOMOS Inc, *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013*, Australia ICOMOS Inc, Burwood, VIC, Article 1.2.

[12] Australia ICOMOS Inc, *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013*, Australia ICOMOS Inc, Burwood, VIC, Article 1.10.

[13] Australia ICOMOS Inc, *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013*, Australia ICOMOS Inc, Burwood, VIC, Article 8.

[14] Australia ICOMOS Inc, *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013*, Australia ICOMOS Inc, Burwood, VIC, p 5.

[15] Australia ICOMOS Inc, *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013*, Australia ICOMOS Inc, Burwood, VIC, p 4.

[16] Australia ICOMOS Inc, *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013*, Australia ICOMOS Inc, Burwood, VIC, pp 2 and 4.

2 Understanding the study area

2 Understanding the study area

The purpose of this chapter is to provide contextual information to inform our understanding of Aboriginal occupation, use and connections within the study area. This section is separated into the following parts:

- Section 2.1 identifies the traditional Aboriginal connections with the study area;
- Section 2.2 provides an overview of the existing environmental setting;
- Section 2.3 presents the outcomes of relevant prior Aboriginal heritage work;
- Section 2.4 details the recent history of land use; and
- Section 2.5 outlines a predictive model of the archaeological potential for the study area that synthesises the information from Sections 2.1 to 2.4.

2.1 The Wallumedegal people

At the time of colonial invasion (1788) the Wallumedegal were identified as the traditional owners of the area now called North Ryde.[1] Wallumedegal Country is bounded by the Lane Cove River to the north and east, the Parramatta River to the south, and Parramatta to the west.[2] An early description of the Wallumedegal may indicate that Wallumedegal Country may have extended as far west as the north shore opposite Syndey Cove, though this is usually understood as Cammeraygal Country:

> The tribe of Wallumede inhabit the north shore opposite to Warrane, or Sydney Cove, and are called Wallumetta.[3]

Wallumedegal, and Wallumetta Country, likely derived from wallumai (snapper), and matta, used to denote to a place, usually with reference to water.[4]

2.1.1 Deep time First Nations connections

First Nations people today describe their traditions and origins as commencing in 'deep time'. Humans evolved from their early hominid predecessors around 250,000 years ago and we understand that the first physical evidence of First Nations presence in Australia dates to 65,000 BP (Figure 2.1). Archaeological evidence of the long history of First Nations connections with the Sydney Basin dates back approximately 38,000 years in the Pleistocene epoch. Our understanding of Pleistocene First Nations cultures and traditions is limited; there are very few confirmed Pleistocene First Nations 'sites' in Sydney. During the Holocene (the past 11,700 years), First Nations society appears to have become increasingly complex with intertwined social, spiritual and economic relationships. These relationships were directly associated with the physical geography of Country.

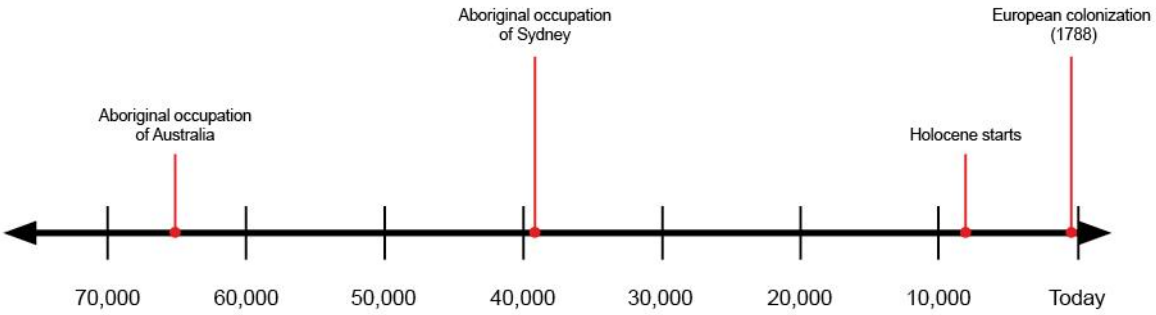

Figure 2.1 Timeline showing indicative dates for First Nations occupation in Australia overall and Sydney specifically. The Holocene start date reflects a technological shift observed within First Nations stone artefact technology; the conventional date for the start of the Holocene is 11,700 years ago. (Source: GML 2021)

Throughout the last 38,000 years the environment has changed dramatically. Sydney's landscape, watercourses and woodlands have not been static elements. They varied considerably over time and were influenced by changing climatic conditions, including long-term temperature and sea-level fluctuations. If we are to understand these changes, and the effects they may have had on First Nations culture and society, we need to examine the deep time archaeological and paleoenvironmental record of the region. This could provide an understanding of how First Nations connections to the study area have changed through time.

Pleistocene

The Pleistocene is a geological epoch lasting from 2.58 million years BP until 11,700 BP. Across the Pleistocene, there were at least 20 glacial and interglacial cycles; these refer to changes from an ice age, with large and extensive polar ice caps (ie glacial), to warmer conditions when polar ice melted rapidly (ie interglacial), and then back to colder (glacial) conditions again. Of particular importance is the Last Glacial Maximum (LGM; approximately 27,000 to 17,000 BP). Sea levels were around 120 metres lower than today, exposing the now-submerged continental shelf of Australia. The world's climate was considerably colder (temperatures were 5–10 degrees Celsius colder than today's averages[5]) and drier.

Sydney Harbour would have been a deep river valley (up to 85 metres deep) through which the proto-Parramatta River flowed eastwards. North Ryde was located on the plateau north of this river valley, approximately 25–30km west of what was Australia's eastern shoreline.[6] The proto-Lane Cove River would have been an entirely freshwater tributary to the proto-Parramatta River during this period. Throughout the Pleistocene, significant areas of Sydney Harbour were dry land.

The proto-Lane Cove River may have been a focus for First Nations activities as a landscape providing freshwater and terrestrial resources, with the base of the river valley allowing for easy movement between inland and coastal areas, similarly to the proto-Hawkesbury-Nepean and Parramatta Rivers.[7]

Terminal Pleistocene

The terminal Pleistocene consists of the stretch of time following the LGM until the beginning of the Holocene (approximately 17,000–11,700 BP). Following the LGM, the climate warmed, melting icesheets across the planet and causing a rapid rise in sea levels. Sea-level rise resulted in the loss of the inner-continental shelf, inundating approximately 11,000sqkm of terrestrial resources. Coastal First Nations people were forced far inland as the range of habitable landforms was reduced to formerly raised plains and upper ridgelines. This caused a major reorganisation of social and spatial boundaries.[8] The terminal Pleistocene therefore represents a time of rapid climatic change that First Nations people were forced to adapt to.

The relatively rapid drowning of coastal plains and river valleys meant that a substantial amount of time was required for environments to stabilise and be useful for resource exploitation. The estuaries and wetlands of Sydney Harbour's embayments were likely not established until the early Holocene. It has been argued that it took First Nations societies a significant length of time to recover from these rapid climatic changes.[9] The Hawkesbury-Nepean River could have been a refuge with the associated stable and elevated terraces favoured for occupation, and with much of the surrounding marginal land unused. Archaeological excavations in Parramatta have found that ephemeral visits may have been made to that area during the terminal Pleistocene, but systematic use and occupation of the area did not occur until after climatic conditions stabilised.[10] This may indicate that intensive occupation and land use in North Ryde may not have occurred, or resumed, until the early Holocene. It should be noted that these models are based on the current knowledge and understanding of the archaeological record within Sydney, which largely lacks soil or sedimentary deposits from this age.

It is likely that future archaeological research will increase our understanding of First Nations occupation during this time.

Holocene

The Holocene began around 11,700 BP and has been characterised by a wetter and warmer climate. Post-LGM sea-level rise continued during the early Holocene. Current sea levels were reached around 7700 BP and continued to rise to a high point of around 1–2m above today's sea levels in at least 7400 BP, only receding to current levels around 1500 BP.[11]

Significantly, for the first time in thousands of years, estuaries and wetlands could be established along a more constant coastline. Around 240–250km of resource-rich estuarine shorelines were created within Port Jackson,[12] likely including those at the mouth of the Lane Cove River. The newly formed marine, estuarine and woodland ecosystems of the area would have provided abundant food, water and timber resources. Small fluctuations in temperatures and water levels occurred throughout the Holocene causing small and frequent changes in sea levels (1–1.5m), with each change happening within five generations.[13] These changes would have repeatedly altered Sydney's foreshores and may have changed the point at which freshwater and saltwater met in Sydney Harbour. The slightly higher sea levels of the middle Holocene meant brackish water could have reached further up the estuary, including potentially further upstream in the Lane Cove River, than at present, amongst other watercourses in the region. It is possible that the use of cultural landscapes associated with the tidal point of Sydney Harbour changed and that this place became a prominent part of Country and living traditions. Indeed, the distinction between saltwater and freshwater people was an inherent characteristic of First Nations people's lives:

> Water holds deeps spiritual and cultural significance for Aboriginal [people] … the vast network of rivers, creeks, billabongs, lakes and coastal regions found across the country represent a rich source of food and culture for Indigenous Australians … water is central to Dreaming stories and different forms of marine life are often used as family or clan totems.[14]

The Holocene also signalled the beginning of a more continuous archaeological record of First Nations occupation within the Sydney Basin. A stabilised climate allowed for more consistent ecological communities to develop for resource exploitation across much of the Sydney Basin. This, in turn, allowed for systematic landform use that is reflected in the archaeological record. This also coincided with an increase in social and religious complexity.[15]

Sydney's archaeological record provides an enduring and extensive assemblage of First Nations cultural materials that are primarily in the form of art sites (engraved and pigmented), shell middens, stone artefacts and other tools. Shell midden sites are associated with the Holocene coastline, and raised shelter sites on the sandstone shelves that reach away from the harbour. Art sites are found both painted into shelters and engraved on flat bedrock outcrops, frequently with views to the harbour, or on ridgelines ascending from the harbour. Lithic sites have been identified on elevated land adjacent to watercourses, which potentially suggests that these areas were used as campsites.

Stone tools were often multipurpose, portable and were principally made from three rock material types: silcrete, quartz and IMSTC—although other rarer materials may also have been used.

Significant sources of raw stone materials are found in the Sydney Basin: silcrete, IMSTC and quartz. These were materials used by First Nations people to manufacture stone tools. The presence of these materials is linked to their source and changing frequency and preferences for use over the Pleistocene and Holocene.[16] The sequence of stone use is referred to as the Eastern Regional Sequence (ERS), with demonstrated changes over the last 10,000-plus years.[17] Artefact variation across Sydney likely reflects changing clan and language boundaries and changes to trade networks across Sydney.[18] Following colonisation in 1788, imported flint was used as a raw material and there are also examples of glass and ceramic being knapped in the same fashion as stone tools.[19]

2.1.2 Post-1788 First Nations connections

Colonisation by the British in 1788 significantly disrupted the lives of First Nations people and their Country. Impacts for First Nations people included the loss of access to land, food and resources, exacerbated by the introduction of new diseases and colonial violence. Despite holistic changes to traditional First Nations lifeways, First Nations people maintain their connections to Country, continuing to practise and hand down cultural knowledge. In many instances First Nations people relocated to other areas of Country and formed viable living communities. Such communities were often located on the periphery of colonial settlement. Where they could, First Nations people formed relationships with settler colonists. Such relationships often included First Nations people exchanging labour or other resources from Country for the opportunity to remain on their unceded land.

As many as 1500 First Nations people were likely living in coastal Sydney when the First Fleet arrived in Sydney Cove (Warrane).[20] Sydney's First Nations people, including the Wallumedegal, were among the earliest First Nations people to experience the effects of physical displacement and social dislocation because of the arrival of the First Fleet and their settlement of Sydney Cove. First Nations people lost their lives to colonial violence and resistance, and lost access to traditional lands and resources; Barangaroo estimated to Governor Phillip in 1790 that over half of Sydney's First Nations population was killed in 1789 by smallpox (referred to as galla galla).[21]

The first Europeans to permanently settle in the Ryde area were granted land in 1792.[22] The area quickly became an important farming area, supplying fruit, vegetables and poultry to the Sydney colony.[23] The Field of Mars common was subsequently established by Governor King in 1804, and was an area of land approximately 2.2km wide that extended along the Lane Cove River from Boronia Park to North Epping, covering more than 2500 hectares, utilised by settlers to run stock animals and collect timber.[24] The expanding settlements in the Ryde area displaced First Nations people, denying them access to their traditional land, and associated resources.

In response, First Nations people mounted raids in the Lane Cove area, including at the Field of Mars and Kissing Point in the 1800s and 1810s, with resulting conflicts and reprisals.[25]

Excavations of a rock shelter on Balls Head shows First Nations people continued to live in the North Shore area in the early years following invasion, as indicated by the presence of potentially flaked glass in the upper 10cm of a midden deposit.[26] The Wallumedegal Country in the Ryde area, and specifically James Squire's estate at Kissing Point, became a focus for post-1788 First Nations life, with survivors of early colonial violence and disease gathering in the area north of the harbour to form a group known as the 'Kissing Point Tribe'.[27] The tribe is associated with key First Nations leaders and figures including Bennelong, who was a leader within the tribe after his return from England, and died and was buried at Kissing Point with his wife Boorong and Cadigal man Nanbarree.[28]

Increasing pressure from government and religious intervention over subsequent decades saw further displacement of First Nations people in Sydney, including from First Nations camps on the North Shore, pushing First Nations people further to the periphery of Sydney into La Perouse and further afield into missions across NSW.[29]

Despite the impacts of colonialism, First Nations people across Sydney maintain their connections with Country, continuing to practise and hand down cultural knowledge.

2.2 Environmental setting of the study area

The study area forms a component of the Wallumedegal traditional lands and Country. Understanding the environment through the geology, soils, landforms, water and ecology is important to understand the context of long-term First Nations connections to the land. Combining basic environmental information with the history and contemporary connections starts to provide an understanding of the local and regional cultural landscape. Describing and mapping the landscape contextualises the physical data, and underpins intangible connections inherent in most First Nations cultural landscapes. An overview of the baseline datasets for geology, soil, landforms, water, the climate and ecology is provided in this section.

2.2.1 Landforms

The study area is situated on a midslope landform, with a south-eastwards slope towards the Lane Cove River. The underlying sandstone geology tends to result in stepped slopes with frequent sandstone outcrops, with the potential to form rock shelters.

The study area has a low local relief of approximately 30m (48 to 18m AHD) and a moderately inclined (~10 to 15 per cent) modal terrain slope. This has resulted in a rolling low hills erosional landform pattern (Figure 2.2).[30]

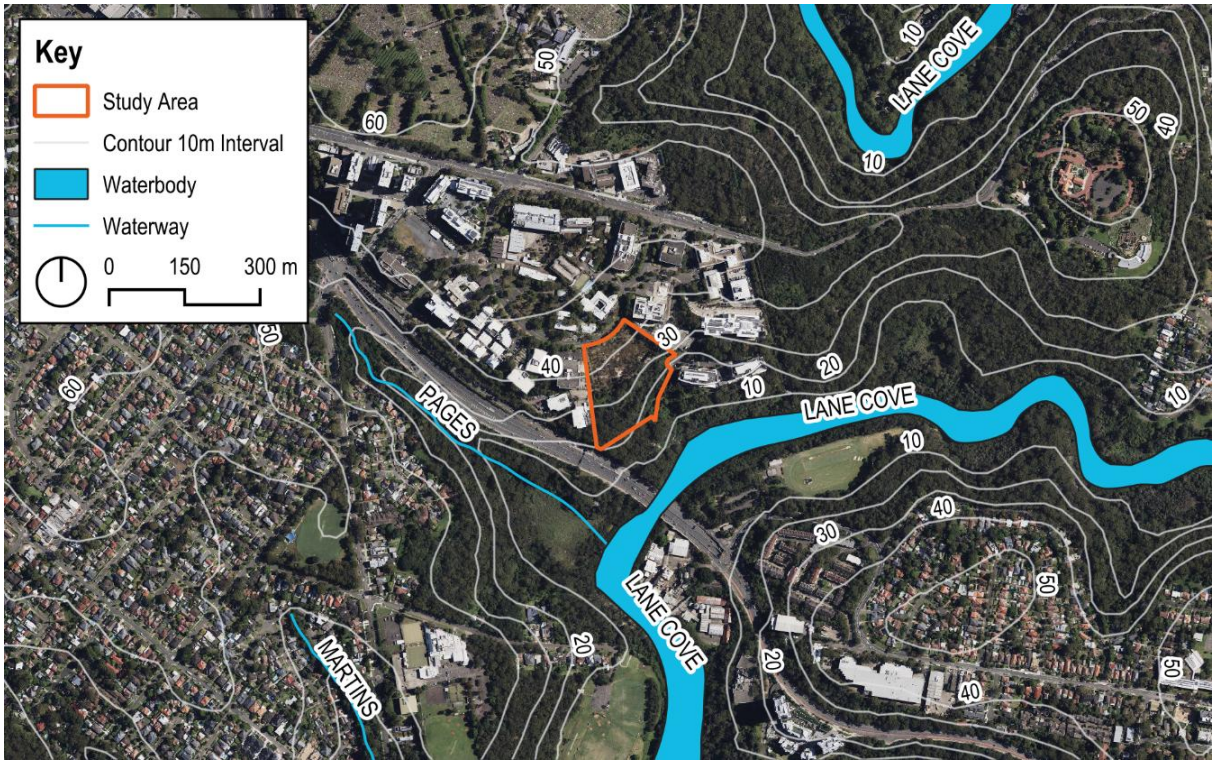

Figure 2.2 Topography of the study area, showing associations with creeks and the Lane Cove River. (Source: SIX Maps and NSW Department of Climate Change, Energy, the Environment and Water with GML overlay, 2024)

2.2.2 Geology and soil landscapes

The study area is located on Hawkesbury Sandstone geology, a medium- to coarse-grained quartz sandstone with minor shale and laminite lenses (Figure 2.3).[31] The bedrock transitions to Ashfield Shale approximately 20 to 50m northwest of the study area.

The sandstone bedrock of the study area is overlain by two soil landscapes; the Hawkesbury soil landscape in the south of the study area, and the Lucas Heights soil landscape in the north (Figure 2.4).

The Hawkesbury soil landscape is a colluvial soil landscape, characterised by shallow (>50cm) discontinuous soils on hilly landforms with underlying Hawkesbury Sandstone bedrock.[32] Colluvial soils, or colluvium, refers to unconsolidated sediment that has moved downslope via gravity (eg mass movement), erosion or water movement and been deposited on a lower slope or base of a hillslope.

On crests and ridges, soils tend to comprise up to 20cm of brownish black to dull yellow orange loose coarse quartz sand (A_1/ha1) either directly overlying bedrock, or overlying less than 30cm of earthy yellowish-brown sandy clay loam (A_2/ha2) over bedrock. On sideslopes and benches, soils are discontinuous, and may vary in composition. Outsides of benches may have 10–30cm of brownish black to dull yellow orange loose coarse quartz sand (A_1/ha1) overlying bedrock; while inside benches generally have 5–15cm of brownish black to dull yellow orange loose coarse quartz sand (A_1/ha1) overlying up to 50cm of earthy yellowish-brown sandy clay loam (A_2/ha2), over bedrock.

The Lucas Heights soil landscape is a residual soil landscape, characterised by moderately deep (50–150cm) soils on gently undulating crest and ridges overlying shale and fine-grained sandstones.[33] Residual soil landscapes are formed via in-situ weathering of bedrock. The soil profile typically comprises up to 30cm of loose yellowish brown sandy loam with common sandstone rock fragments (A_1/lh1) over 10–30cm of lh2 over the B horizon, which consists of lh4. Near the boundaries with sandstone landscapes, the soil profile may instead comprise up to 15cm f lh1 over up to 30cm of lh2 over up to 30cm of lh3.

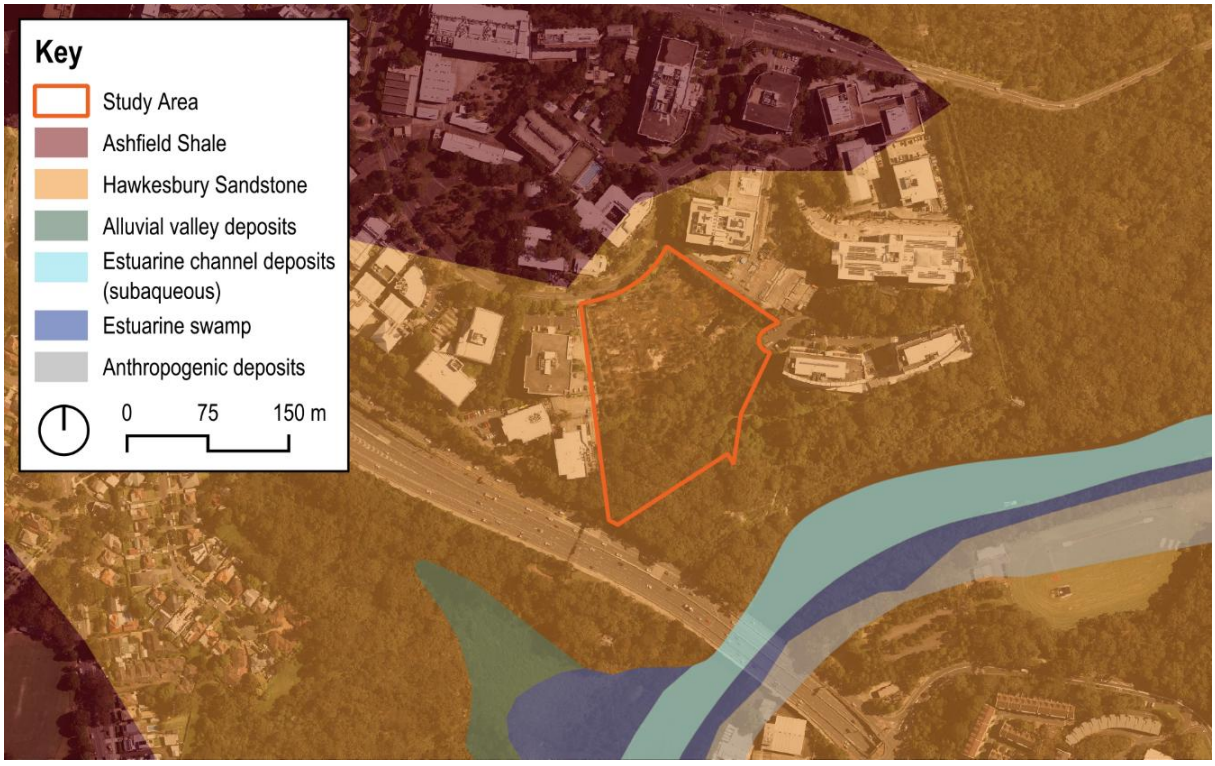

Figure 2.3 Geology of the study area and surrounds. (Source: SIX Maps and NSW Department of Primary Industries and Regional Development with GML overlay, 2024)

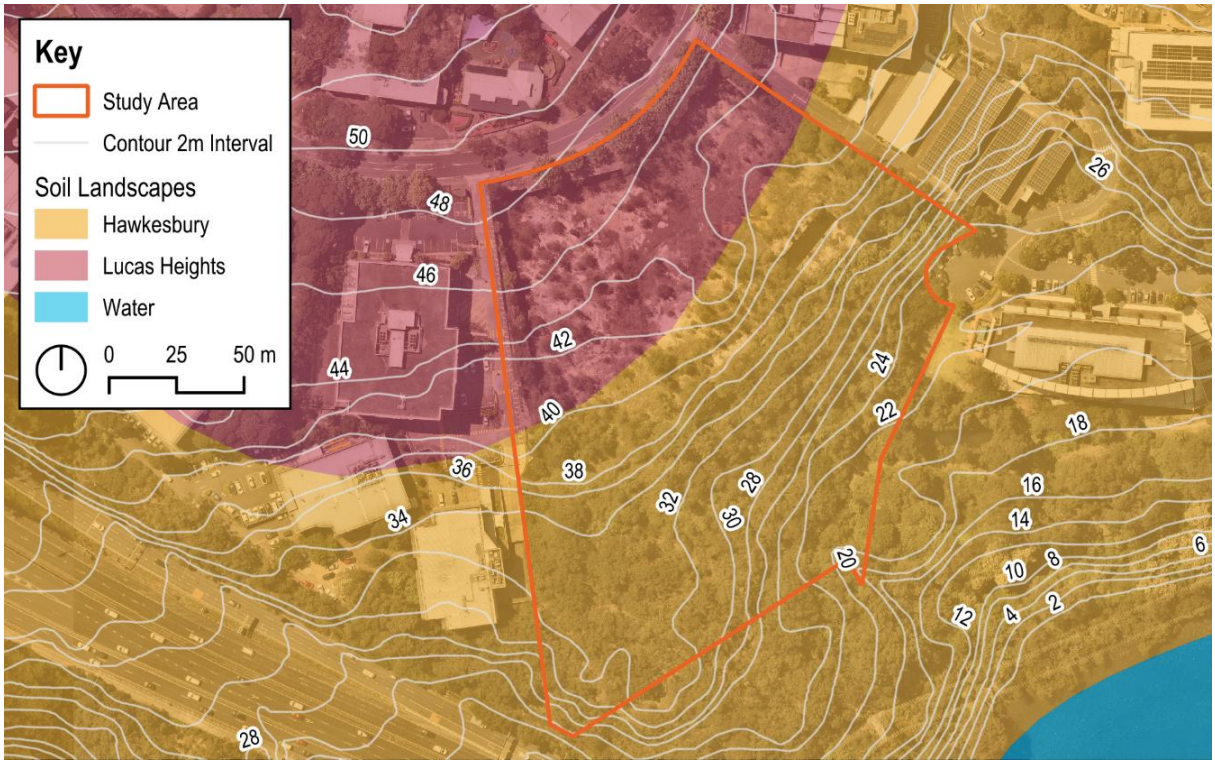

Figure 2.4 Soil landscapes of the study area. (Source: Nearmap and NSW Department of Climate Change, Energy, the Environment and Water with GML overlay, 2024)

2.2.3 Water resources

The availability of water has significant implications for the range of resources available and the suitability of an area for human occupation.

The study area has landforms associated with both freshwater and estuarine resources. The closest waterway to the study area is the Lane Cove River (Turranburra[34]), situated approximately 80m southeast of the study area (Figure 2.2). Where it passes the study area, the Lane Cove River is a fifth order watercourse, before it flows south to meet the Parramatta River and flow into Sydney Harbour. The water is brackish and tidal where it passes the study area, up to roughly Fullers Bridge, Chatswood.

The closest freshwater source to the study area is Pages Creek, a first order watercourse approximately 130m southwest of the study area. Based on examination of intact contour lines, it is possible that an ephemeral first order watercourse may have run immediately east of the study area during times of high rainfall.

2.2.4 The climate

As outlined in Section 2.1.1 above, the environment and climate has changed dramatically through the Pleistocene to the present day. While the LGM period of the Pleistocene would have been considerably colder than present conditions, the climate has generally warmed since the Terminal Pleistocene.

Recent climate data may be used as a rough proxy for Holocene conditions. Climate data observed between 1970 and 2023 at Macquarie Park,[35] approximately 4km north of the study area, indicates that the hottest month of the year tends to be January, with a mean maximum temperature of 27.5°C. The coldest month tends to be July, with a mean maximum temperature of 17°C. The wettest month tends to be March with mean rainfall of 152.3mm, while the driest is September with mean rainfall of 57.9mm.

The study area has a southeastern aspect, overlooking the Lane Cove River, and as such, would get most daylight in the morning, becoming cooler and darker in the afternoon. This may be important in reference to use of rock shelters in the vicinity of the study area, on the hillslope above the Lane Cove River.

The Dharawal people and Dharug people, neighbours to the Sydney First Nations people to the south and west respectively, both consider the year to have six seasons, marked by changes in environmental conditions including weather and ecological phenomena. For the Dharawal, these seasons are known as:[36]

- Burran, hot and dry conditions around January to March;
- Marrai'gang, wet becoming cool conditions around April to June;
- Burrugin, cold and frosty conditions around June and July;
- Wiritjiribin, cold and windy conditions around July and August;
- Ngoonungi, cool but warming conditions around September and October; and
- Parra'dowee, warm and wet conditions around November and December.

It is likely that Sydney's Aboriginal people, including the Wallumedegal, would similarly have had an understanding of climate based on seasonal indicators. This understanding would have informed how best to care for and utilise Country, and affected the timing of travel, food choices, and cultural practices.

2.2.5 Ecology

Pre-clearing, the study area would have hosted or been situated within the vicinity of several Plant Community Types (PCTs), providing a variety of plant resources.[37]

It is likely the study area would have been vegetated with the Northern Sydney Scribbly Gum Woodland and Sydney Coastal Enriched Sandstone Forest PCTs of the Dry Sclerophyll Forests formation. The Northern Sydney Scribbly Gum Woodland PCT is a mid-high to tall sclerophyll woodland found on Hawkesbury Sandstone ridgetops.

Vegetation tends to comprise scribbly gum (*Eucalyptus haemastoma*), red bloodwood (*Corymbia gummifera*), dwarf apple (*Angophora hispida*) and old man banksia (*Banksia serrata*). The PCT has a sparse grass ground cover and dense shrub layer; typically including various *Banksia* species, flaky-barked tea tree (*Leptospermum trinervium*), grey spider flower (*Grevillea buxifolia*) and conesticks (*Petrophile pulchella*).

The Sydney Coastal Enriched Sandstone Forest PCT is a tall to very tall shrubby sclerophyll open forest on Hawkesbury Sandstone soils on sheltered slopes, occurring downslope of shale soils (ie the Ashfield Shale-derived Lucas Heights soils north of the study area). Vegetation usually comprises Sydney red gum (*Angophora costata*), red bloodwood (*Corymbia gummifera*), Sydney peppermint (*Eucalyptus piperita*), native daphne (*Pittosporum undulatum*), black she-oak (*Allocasuarina littoralis*) and forest oak (*Allocasuarina torulosa*). The PCT has a mid-dense lower shrub layer, typically comprised of flaky-barked tea tree (*Leptospermum trinervium*), broad-leaved geebung (*Persoonia levis*), crinkle bush (*Lomatia silaifolia*), prickly Moses (*Acacia ulicifolia*) and hop bush (*Dodonaea triquetra*).

Drainage lines adjacent to the study area may have been vegetated with the Sydney Enriched Sandstone Moist Forest PCT of the Wet Sclerophyll Forests formation; a very tall moist shrubby and ferny sclerophyll open forest found in sandstone gullies. The PCT typically comprises of Sydney red gum (*Angophora costata*), turpentine tree (*Syncarpia glomulifera*) and blackbutt (*Eucalyptus pilularis*), with Sydney blue gum (*Eucalyptus saligna*) abundant on creek lines downslope of shale soils. The ground layer is ferny.

The Grey Mangrove Forest PCT of the Saline Wetlands formation would have made up the foreshore of the Lane Cove River, to the immediate south of the study area. This PCT comprises mangrove open forest or woodland of varying heights occurring on tidal flats, dominated by grey mangrove (*Avicennia marina subsp. Australasica*) with common river mangrove (*Aegiceras corniculatum*).

Over 250 plants in the region have been identified as having edible components, or provided timber, resins or fibres that were used to produce tools or weapons.[38] Fauna in the Sydney area included kangaroos, wallabies, possums, quolls, wombats, bandicoots, gliders, echidnas, emus, and ducks, among others,[39] and would have formed part of the diet of Sydney's First Nations people. The proximity of the site to the Lane Cove River would have provided access to marine fauna. The numerous shell-based site types in the Sydney region are indicative of the consumption of marine shellfish. Fish species eaten, as indicated by faunal remains in middens around Sydney Harbour and the Lane Cove River, include snapper, bream, leatherjacket and wrasse, among others.[40]

2.2.6 Summary of the local environment

The study area is located on the traditional lands of the Wallumedegal people. The study area is situated on a moderately inclined mid slope landform, with a southeast aspect over the Lane Cove River. This is a Holocene period landscape; during much of the Pleistocene the Lane Cove River would have been freshwater, with different PCTs.

The study area overlies Hawkesbury Sandstone, which, in light of the sloping nature of the landform, has the potential to feature overhangs which may be used as shelters. The soil landscapes of the study area are the colluvial Hawkesbury soil landscape to the south, where the slope of the study area is steeper, and the residual Lucas Heights soil landscape to the north, where the slope is gentler. Due to the proximity to the Lane Cove River, Pages Creek, and unnamed ephemeral watercourses which would have descended the hillslope, the study area would have had access to both estuarine and freshwater resources. Prior to land clearance, the study area would have supported sclerophyll woodland and open forest, with access to mangrove wetlands along the Lane Cove River below.

2.3 Previously identified First Nations heritage

2.3.1 Aboriginal Heritage Information Management System register

An extensive search of the HNSW Aboriginal Heritage Information Management System (AHIMS) database was undertaken on 18 December 2024 (Search ID 961830), covering a zone between eastings 325626 and 330626 and northings 6256127 and 6261127 with no buffer. A total of 107 Aboriginal sites and no Aboriginal places were identified. An overview of the AHIMS results is shown in Table 2.1, Figure 2.5 and Figure 2.6.

There are no registered Aboriginal sites within the study area.

Table 2.1 Results of the AHIMS search.

Site feature	Frequency	Percentage
Art (closed context)	6	5.6%
Art (open context)	7	6.5%
Art, Artefact and Shell (closed context)	5	4.7%
Artefact	13	12.2%
Artefact and Potential Archaeological Deposit (PAD)	1	0.9%
Artefact and Shell	35	32.7%

Site feature	Frequency	Percentage
Artefact, PAD and Shell	1	0.9%
Grinding Groove	8	7.5%
Habitation Structure	2	1.9%
PAD	22	20.6%
Shell	3	2.8%
Not a Site	4	3.7%
TOTAL	**107**	**100%**

Sites classed as 'not a site' are excluded from the following analysis.

The general patterning of Aboriginal sites in the local area shows a strong association with waterways, with most sites clustered within 200m of the Lane Cove River or along the banks of tributary creeks of the river.

Sites may be split into either closed context sites or open context sites, with closed context sites being those situated within rock shelters, and open context sites being those situated on open landforms. Of the 103 valid sites, 57 (55%) are in closed contexts, and 46 (45%) are in open contexts. While artefact and shell sites are the most common single site type within the search results, artefacts are the most common site component within the search area, forming all or part of 55 sites (38 closed context sites, and 17 open context sites).

Shell is the next most common site component, comprising all or part of 44 sites. Shell sites should be understood as being midden sites, and may be located in either closed or open context sites (28 closed context sites and 16 open context). Midden sites are particularly closely associated with waterways, and are predominantly located on the banks of the Lane Cove River.

Art forms all or part of 18 sites (11 closed context sites and 7 open context). Open context should be considered a proxy for engraved rock art sites, while closed context art sites are typically pigmented art (ie ochre or charcoal), however may still contain or comprise engraved art. Open art sites in the search area are situated on local high points (crests and ridgelines) and on slopes overlooking the Lane Cove River. Closed art sites are associated with lower slopes along the Lane Cove River and creek lines.

PAD locations, accounting for all or part of 24 sites, show a 50-50 split (12 sites each) between open and closed contexts. These sites are recorded with a noticeable concentration around Stringybark Creek.

There are five registered sites within 250m of the study area (Figure 2.6), comprising:

- One open context artefact site (45-6-2598);
- One closed context artefact site (45-6-2599);
- One closed context art, artefact and shell site (45-6-1854);
- One closed context artefact and shell site (45-6-1855); and
- One site classified as not a site (45-6-2681, originally recorded as open context PAD).

The closest site to the study area is closed art, artefact and shell site 45-6-1854 (LC/2 Lane Cove 2 Epping Road Bridge Ryde 012), approximately 20m southeast of the south boundary of the study area. The AHIMS card describes the site as comprising a shallow overhang (shelter) with a south to southeast aspect, measuring 10m long by 5m high by 1m deep. The shelter is located at the foot of a vertical cliff face, above a steep slope down towards Lane Cove River. The floor of the shelter comprises a sandy deposit containing whelks and oyster shells. A diffuse, roughly oval-shaped patch of orange pigment on the back wall of the shelter may be remnants of stencilled art.

The two artefact sites (45-6-2598 and 45-6-2599) are approximately 100 to 150m east of the study area, on the same mid-slope landform as the study area. The AHIMS site card for 45-6-2598 (CSIRO 3 (CSIRO North Ryde) Ryde 010) describes the site as comprising four silcrete artefacts found by a member of CSIRO staff working at the location. The exact location where the original artefacts were found is unknown; however, the general location has been extensively disturbed via development. The artefacts comprised one red silcrete flake, two beige silcrete flakes, and a beige silcrete broken flake (proximal). The site was initially recorded by Tessa Corkhill in 1997, who determined that the approximate area of the original location of the artefacts was unlikely to retain any additional in-situ artefacts.

Site 45-6-2599 (CSIRO 2 (CSIRO North Ryde) Ryde 011) is described on its site card as comprising a shelter with dimensions of 7m long by 2m height by 2m depth. The site was subject to archaeological test excavation by Tessa Corkhill in 1997. The outcomes of the test excavation are detailed in Section 2.3.2 below. The shelter has since been modified by construction of 3 Richardson Place.

Based on the results of the AHIMS search results, Aboriginal sites, if present in the study area, would most likely comprise artefact sites, shell midden in a shelter, and/or art sites. Artefact sites, if present, are likely to comprise low density concentrations or isolated finds in open contexts, and/or low density concentrations in closed contexts if suitable rock shelters are present within the study area. The study area could contain either open or closed context art, provided suitable sandstone outcrops or shelters are present within the study area. Shell (midden) sites are also possible within the study area based on the regional record, however are less likely. Most shell sites within the local area are found at elevations of less than 20m AHD. As the majority of the study area is above 20m AHD, the likelihood of shell sites within the study area is low.

REDACTED

Figure 2.5 AHIMS results for the landscape surrounding the study area. (Source: AHIMS and SIX Maps with GML overlay, 2024)

REDACTED

Figure 2.6 Detail of AHIMS results within the immediate vicinity of the study area. (Source: AHIMS and SIX Maps with GML overlay, 2024)

2.3.2 Previous heritage investigations

The study area is located in a region that has been subject to frequent prior First Nations heritage assessment. A review of key local First Nations archaeological and heritage reports has been undertaken and is provided below.

Test Excavation of Rockshelter CSIRO PAD 1/Site 2 Riverside Corporate Park North Ryde—Corkhill, 1997

Archaeological test excavation of AHIMS site 45-6-2599 (CSIRO 2 (CSIRO North Ryde) Ryde 011), located approximately 115m east of the study area, was conducted in 1997. The shelter was initially recorded during 1991 survey by Tessa Corkhill. While no surface artefacts were identified during survey, Corkhill assigned PAD to the shelter on the basis that the general configuration (size and outlook) of the shelter, its landscape position, and the presence of level floor with evidence of a deposit of more than 30cm depth suggested that the shelter was likely to have been used by, and retain evidence of use by, First Nations people.

The shelter is located on a midslope landform at the base of a small sandstone scarp, at an elevation of approximately 25m AHD. The shelter measures approximately 7m long by 2m deep, with a maximum height of 2m. A low sandstone wall dating to the nineteenth or twentieth century was present in front of the shelter, and was preventing sediment from eroding downslope.

Ten test pits were excavated to bedrock or weathered bedrock, reached at between 18 to 47cm below the surface. Nine of the test pits were 50cm by 50cm in size, while the tenth was constrained by the back wall, and measured 12cm by 50cm. All excavated material was wet sieved. A total of 14 stone artefacts were identified. Artefacts comprised flakes (n=11), broken flakes (n=2) and flaked pieces (n=1). No bone or shell was recovered. Eleven of the artefacts were silcrete, two were chert, and one was indurated mudstone. All artefacts were interpreted as debitage, and no formal tool types were found. Only one of the artefacts was found within the overhang of the shelter, while the remainder were located outside dripline. Three of the artefacts were found in stratigraphic levels that also contained nineteenth and twentieth century historical material, mostly glass, suggesting some disturbance had occurred to the deposit. Corkhill posited that disturbance in the stratigraphic profile suggested there may have been a surface stripping event in the location of the shelter in past, in combination with disturbance associated with construction of the stone retaining wall in front of the shelter.

Corkhill suggested that the low artefact density within the shelter suggested that either the shelter had been subject to disturbance, resulting in removal of archaeological material, or that the shelter had been infrequently used for short term occupation only, potentially due to proximity to more desirable shelters nearer the river.

The shelter has been retained; however, the surrounding landscape has been extensively impacted during construction of 3 Richardson Place during the Riverside Corporate Park redevelopment.

MLALC provided a letter regarding the then-proposed development of Riverside Corporate Park North Ryde (which includes the study area), which forms an appendix to Corkhill's report. MLALC recommended landscaping works adjacent to the shelter to discourage vandalism of the site, and requested to monitor all works that would impact the site. MLALC stated that they had no objection to development of the adjacent land; however, they requested a buffer zone be installed around the shelter to ensure the site was protected from harm during works.

M2 Upgrade Project—Preliminary Aboriginal Heritage Assessment—AECOM, 2010

AECOM undertook archaeological assessment along the length of proposed upgrade works along the M2 Motorway, between Lane Cove Road, approximately 2km northwest of the study area; to Windsor Road in Baulkham Hills, approximately 14km northeast of the study area. Desktop assessment and archaeological survey were undertaken, with an emphasis on inspecting 15 previously recorded sites located within 100m of the motorway upgrade area, and re-inspection of areas of potential archaeological constraint identified during initial assessment for construction of the M2. The 15 registered sites within the vicinity of works comprised one isolated artefact find site, and 14 shelters with ACH (ie middens, art, artefacts, grinding grooves and/or PAD). The majority of these sites were situated on steep and/or heavily vegetated terrain that was comparatively undeveloped. Survey of areas of potential constraint targeted landforms with high archaeological potential, including ridgelines, creek banks, rock shelters, sandstone outcrops. One previously unrecorded site was identified during survey, an open grinding groove site located on a sandstone bedrock platform within the Terrys Creek channel, approximately 5.5km northwest of the Julius Avenue Data Storage Centre study area.

The majority of the investigation area was found to have been subject to disturbance from past agricultural use and urban development, including construction of the M2 motorway. Steeper areas adjacent to the M2 were less likely to have undergone urbanisation and were more likely to have retained native vegetation.

The following predictive statements were developed with regard to the investigation area:

- site distribution in the region is dominated by the presence of waterways, which likely formed areas of focused First Nations occupation;
- rock shelters commonly occurred within the investigation, and had been indicated by prior studies to often have been used by First Nations people for shelter, resulting in an artefactual deposit. This deposit may be retained where sufficient soil deposits occur;

- open camp sites (visible in the landscape as artefact concentrations on open landforms) were considered less likely to occur in areas where there are abundant rock shelters; and
- areas adjacent to the M2 Motorway that had been significantly disturbed by urban development had a reduced likelihood of retaining First Nations sites in situ.

North Ryde Station Precinct Rezoning Study—Aboriginal Heritage Assessment—Artefact Heritage, 2012

Archaeological assessment was undertaken for rezoning within the North Ryde Station Precinct, approximately 500m northwest of the study area. The investigation area was approximately 14 hectares in size, located predominantly on Ashfield Shale geology, with areas of Hawkesbury Sandstone geology in the north of the investigation area.

No previously recorded Aboriginal sites or objects within the study area were identified during desktop assessment. A site inspection was undertaken, and the study area was found to have low Aboriginal archaeological potential due to the extent of historical and recent disturbance associated with past agricultural use, site levelling, and construction of extant structures, including of the M2 Motorway and Ryde station. No site specific cultural heritage values were identified.

2.4 History of the recent land use

The study area has been subject to extensive recent land use. Prior land uses may affect the ability of the landscape to inform and relate its history of Aboriginal connections. Vegetation clearance, movement of creeks and waterways, cut and fill, some farming activities, and construction etc all change how the landscape appears. These activities can also affect and alter original soil profiles, which may have implications for the intactness of Aboriginal archaeological sites.

Understanding the range and extent of prior recent land use, allows a model of Aboriginal heritage sensitivity to be developed. To assess changes to the study area we have undertaken investigations of historical parish maps and historical aerial imagery.

The north side of Sydney Harbour, including the Ryde area, was an early focus for colonial expansion following the arrival of the First Fleet. The first land grants in the vicinity of the study area comprised grants given to eight former marines by Governor Phillip in 1792.[41] The area was named the Field of Mars. In 1804, Governor King established the Field of Mars Common, an area 2.2km wide, extending from Boronia Park to North Epping along the Lane Cove River. The study area is situated within the lands that formed part of the Commons (Figure 2.7). The common was for the local community to utilise as a shared resource for grazing livestock; however the common was also used for illegal squatting and timber-getting.[42]

Following the *Field of Mars Common Resumption Act 1874*, the Common, including the study area, was subdivided. By the 1880s, most of the land had been sold.

A 1907 parish map indicates that the study area comprised parts of three parcels of land, Portions 380, 381 and 382, owned by Ernest and James Boyd, W C Adams and D H Macmillan, and M E Glynn respectively (Figure 2.8). Despite the parish map depicting a series of well-established roads, including Woronzoff Road, intersecting the north of the study area, and Lucknow Road (now the M2 Motorway/Epping Road), from examination of the 1930 and 1943 historical aerials it does not appear that major roads were formally established until development intensified in the area in the 1940s and 1950s.

The 1930 and 1943 aerial photographs show the study area as undeveloped vegetated land, accessible via an informal track that intersects the northwest corner of the study area (Figure 2.9 and Figure 2.10). Tracks extend through the study area by 1943, and may be linked with access to the Fairyland Pleasure Grounds approximately 500m east of the study area. Establishment of the Epping Road bridge by 1943 likely facilitated the rapid development in the area in the following decades.

A 1961 charting map indicates that the land of the study area had been resumed for Commonwealth purposes in 1944 (Figure 2.12). By this time, Woronzoff Road had been removed from charting and parish maps, replaced with an easement for access and easement for a water main (Figure 2.12).

By 1951, the first buildings within the study area had been constructed within the northwest of the study area, with associated tracks and paths extending through the surrounding vegetated component of the area (Figure 2.11). During this period, study area and surrounds formed part of lands utilised by the CSIRO. It is possible that structures on the study area in this period are a component of the wider CSIRO research and development facilities in the area.

Development within the north of the study area continued throughout the following decades, including construction of additional buildings, additional vegetation clearing, and construction of hardstand roads and parking areas (Figure 2.13, Figure 2.14). Development of three new buildings to the east of the study area in the 1960s resulted in impacts along the southeastern boundary of the site, via vegetation clearing and construction of hardstand (Figure 2.13, Figure 2.14).

By 1998, widescale changes to the area were underway associated with the creation of Riverside Corporate Park, which included the study area. Existing CSIRO structures were demolished and/or redeveloped, with substandard buildings rationalised to facilitate development by compatible private industry.[43] All existing structures within the study area were demolished, and the north of the study area converted to a hardstand (bitumen or tarmac) parking lot (Figure 2.15). The current road network within the business park, including Julius Avenue, was also constructed in this period.

Development of adjacent sites to the east and west in the early 2000s resulted in disturbance along the west and southeast boundaries of the study area (Figure 2.16).

By 2009, the entire northern portion of the study area had been levelled via deep excavation into the underlying bedrock, and portions of the southern area of the study area cleared for establishment of dirt vehicle tracks (Figure 2.17). Minimal works appear to have occurred since this period (Figure 2.18).

The analysis of historical land use, notably over the past 50 years, provides evidence that approximately 60 per cent of the study area has been subject to actions that have cut into bedrock. Mapping of this disturbance has been undertaken (Figure 2.19) and will underpin the assessment of Aboriginal archaeological sensitivity for the study area.

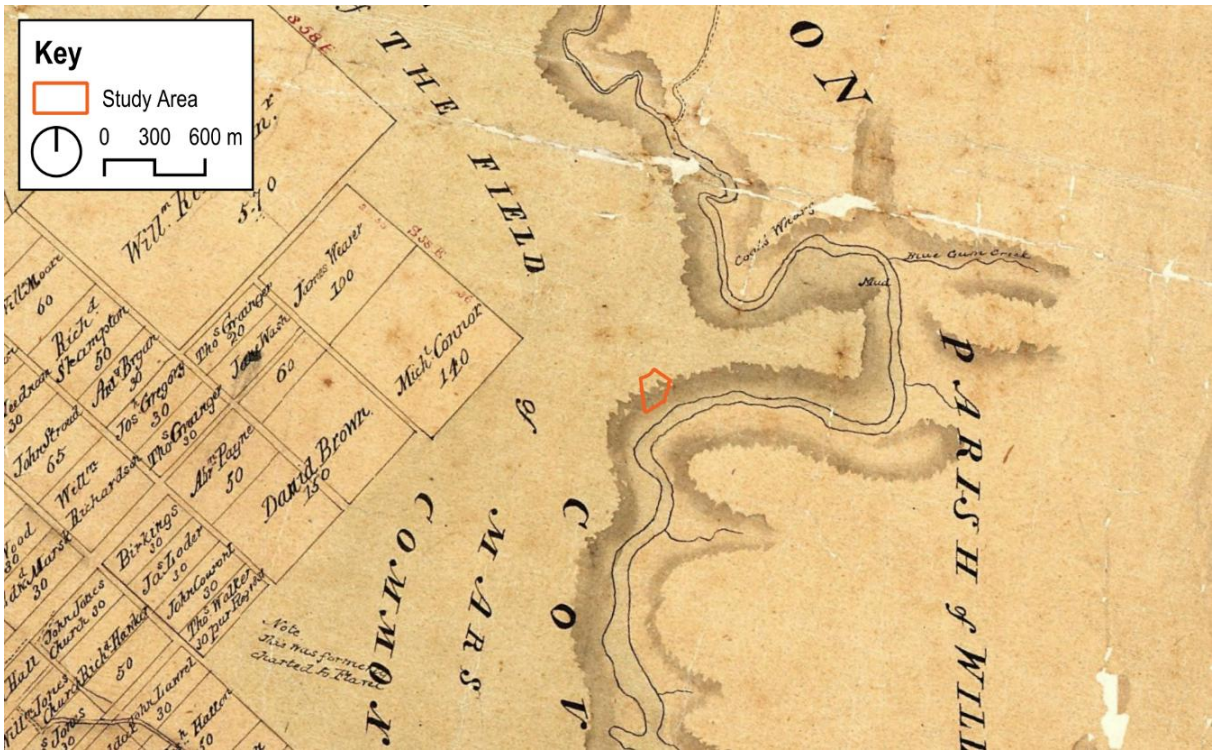

Figure 2.7 Undated map, showing a portion of the Field of Mars Common. (Source: NSW Land Registry Services with GML overlay, 2025)

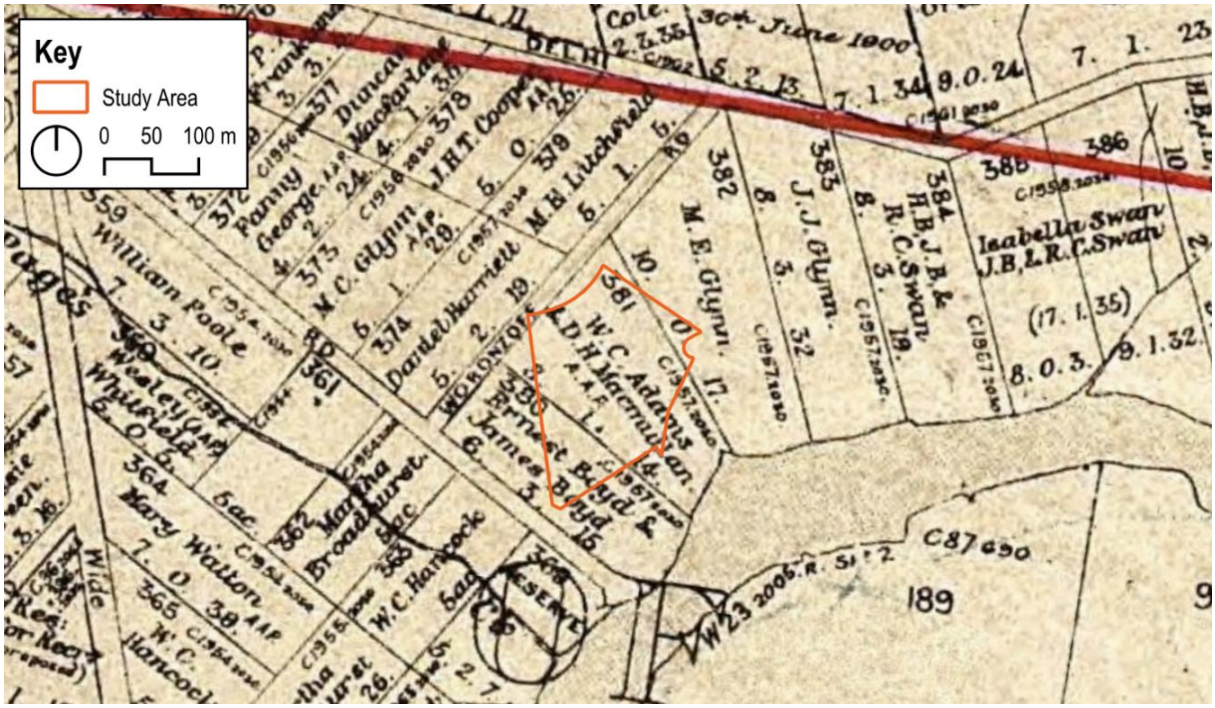

Figure 2.8 1907 parish map, showing the study area as situated across three parcels of land owned by Ernest and James Boyd, W C Adams and D H Macmillan, and M E Glynn. (Source: NSW Land Registry Services with GML overlay, 2025)

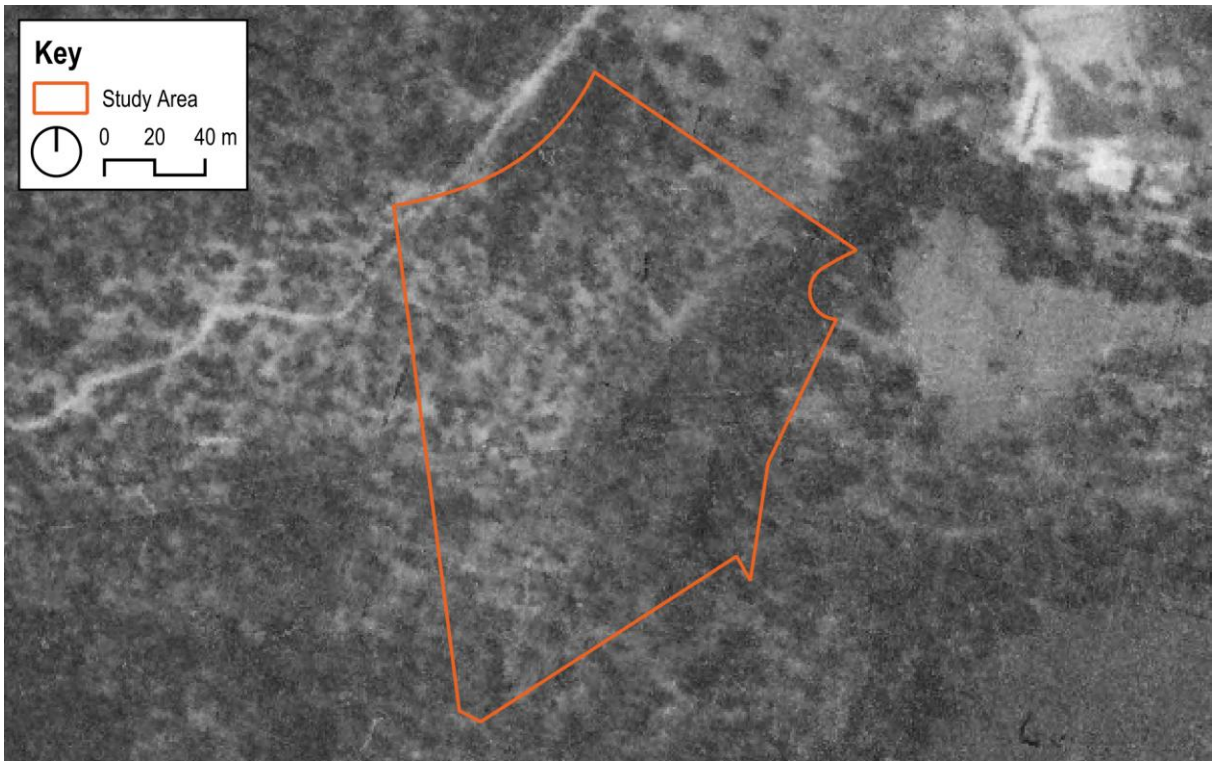

Figure 2.9 1930 historical aerial showing the study area. (Source: NSW Historical Imagery Viewer with GML overlay, 2025)

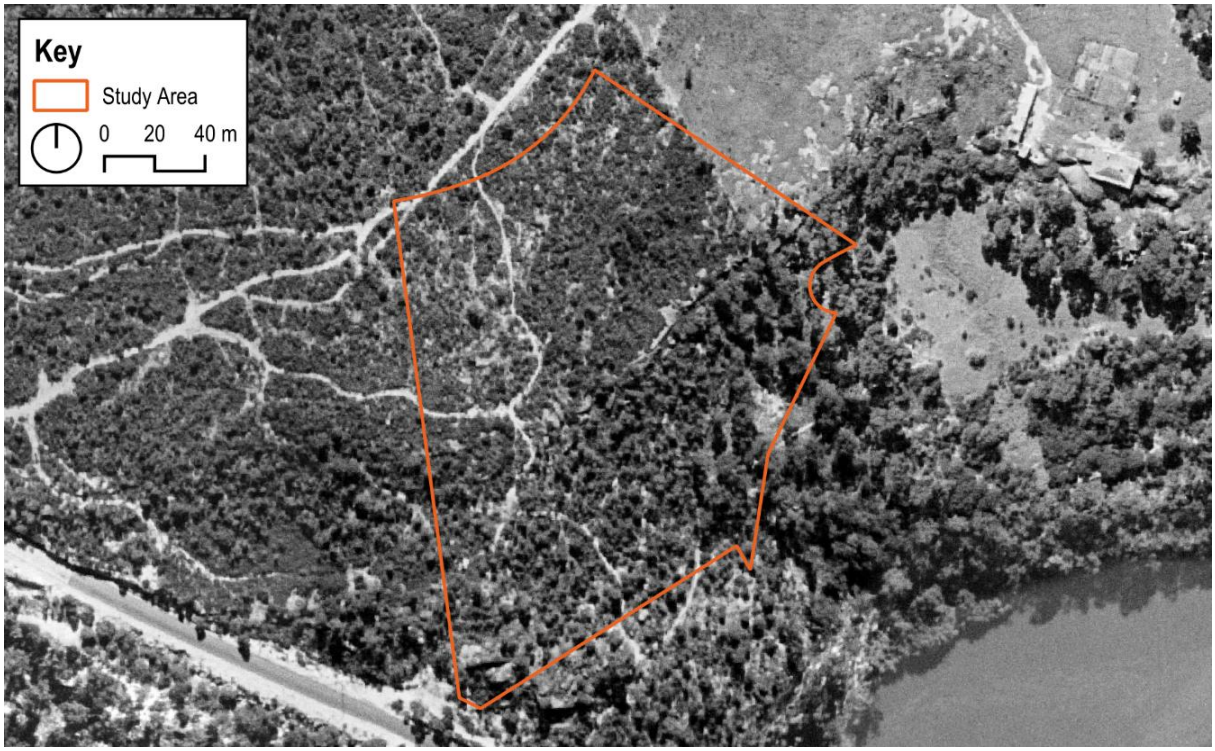

Figure 2.10 1943 historical aerial showing the study area. (Source: NSW Historical Imagery Viewer with GML overlay, 2025)

Figure 2.11 1951 historical aerial showing the study area. (Source: NSW Historical Imagery Viewer with GML overlay, 2025)

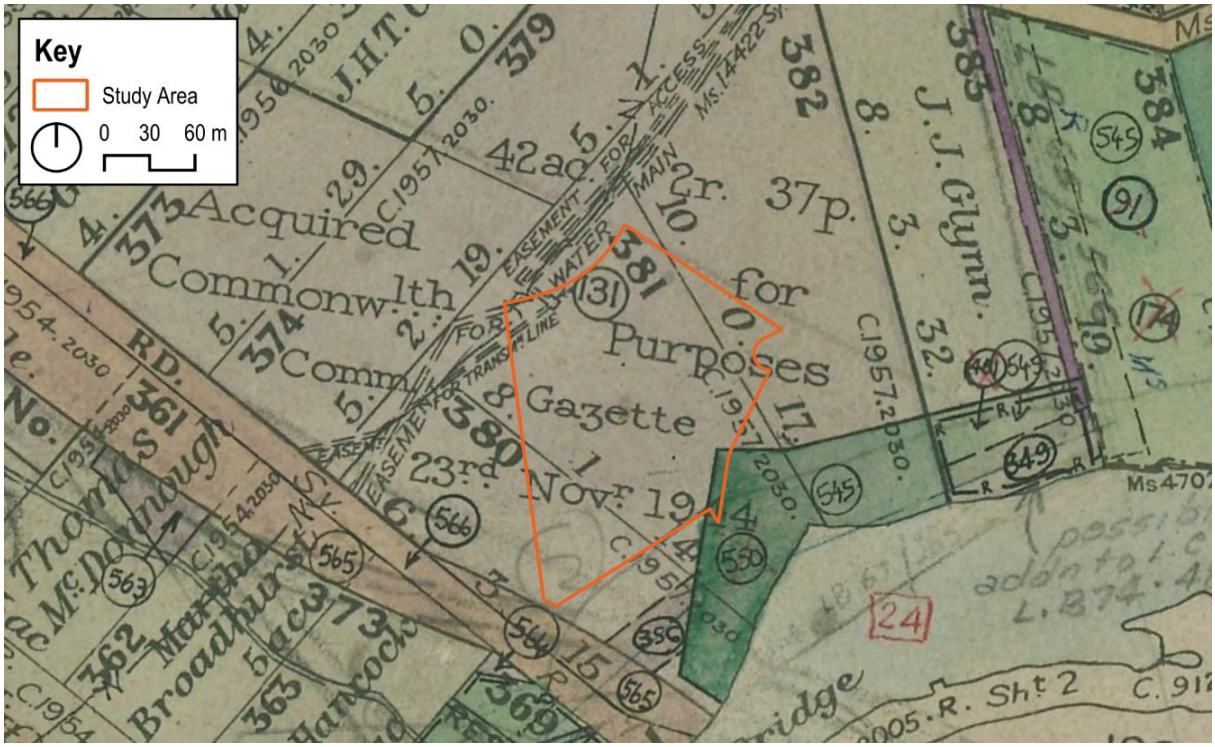

Figure 2.12 1961 charting map, showing the study area as situated on Commonwealth land. (Source: NSW Land Registry Services with GML overlay, 2025)

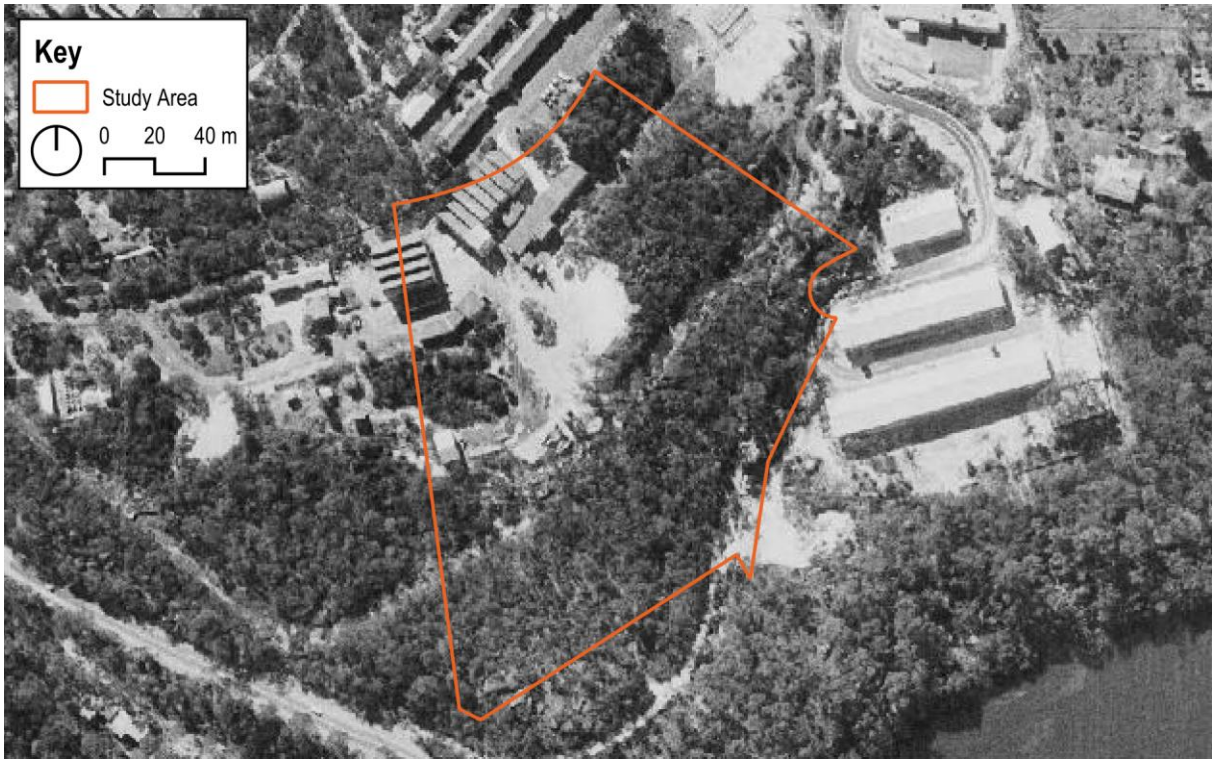

Figure 2.13 1965 historical aerial showing the study area. (Source: NSW Historical Imagery Viewer with GML overlay, 2025)

Figure 2.14 1986 historical aerial showing the study area. (Source: NSW Historical Imagery Viewer with GML overlay, 2025)

Figure 2.15 1998 historical aerial showing the study area. (Source: NSW Historical Imagery Viewer with GML overlay, 2025)

Figure 2.16 2002 historical aerial showing the study area. (Source: NSW Historical Imagery Viewer with GML overlay, 2025)

Figure 2.17 2009 historical aerial showing the study area. (Source: NSW Historical Imagery Viewer with GML overlay, 2025)

Figure 2.18 2024 historical aerial showing the study area. (Source: NSW Historical Imagery Viewer with GML overlay, 2025)

Figure 2.19 Map of areas of significant disturbance, ie deep excavation, construction of buildings, driveways or substantial land clearing for vehicle tracks. Note that minor areas of land clearing for pedestrian tracks have not been mapped as disturbance, as these impacts are likely to have been more minimal. (Source: Nearmap with GML overlay, 2025)

2.5 Archaeological predictive models

Aboriginal heritage predictive modelling provides an understanding of Aboriginal sites, places and object distribution within a wider landscape.[44] Through a process of landscape characterisation Aboriginal people and archaeologists are able to infer those locations most frequently visited and used in the past. Such assessment may be used to interpret long-term subsistence and habitation patterns. Based upon the landscape context, land use history, regional and local archaeological patterns it is possible to provide a predictive statement for the likely occurrence of Aboriginal archaeological sites/places connected with the study area (Table 2.2).

Table 2.2 Types of Aboriginal archaeological sites that may be located within the study area.

Archaeological site type	Description and potential location
Stone artefacts	Stone artefact concentrations are collections of stone, frequently brought from other areas, which demonstrate evidence for Aboriginal working, use and/or discard of the stone at a single location. Stone artefact concentrations may be associated with any of the below site types. Where such sites are buried by sediment they may not be noticeable unless exposed by erosion or disturbed by modern activities. These sites may be found in open or closed contexts. Stone artefacts in closed contexts are situated where suitable sandstone outcrops forming shelters are located. Stone artefacts in open contexts tend to occur on flat or gently sloping landforms with a favourable outlook and good access to freshwater. Stone artefacts are common in the AHIMS record for the North Ryde area, forming all or a component of 53 per cent of the recorded sites.
Isolated finds	Sites consisting of a single stone artefact, isolated from any other artefacts or archaeological evidence. They are generally indicative of sporadic past Aboriginal use of a location. A distinction should be drawn between isolated finds which are a component of the background distribution of objects and specialised objects such as axes, hammer stones, grinding dishes, etc which would have been used repeatedly and may have been carried from place to place. These sites may be found throughout the landscape.
Shelter sites	Sandstone shelters and overhangs were used by Aboriginal people to provide habitation areas sheltered from the rain and sun. The deposits in such sites are commonly very important because they often contain clearly stratified material in a good state of preservation. These sites may be found where suitable outcrops of sandstone are present, forming overhangs which may be used as shelters.

Archaeological site type	Description and potential location
	Shelter sites are prevalent in the North Sydney area, with 55 per cent of sites returned in the AHIMS search located in closed contexts. The sandstone bedrock and sloping nature of the study area may allow for shelter formation.
Shell middens	Middens predominantly consist of accumulations of shell that represent the exploitation and consumption of shellfish by Aboriginal people. Shell species may be marine, estuarine or freshwater depending on the environmental context. Middens frequently also include faunal remains, stone artefacts, hearths and charcoal. These sites tend to be situated adjacent the shoreline; however, they may also extend inland along creeks. Shell middens are common in the North Ryde area, with shell forming all or a component of 43 per cent of sites returned in the AHIMS search. However, most shell sites within the local area are found at elevations of less than 20m AHD. As the majority of the study area is above 20m AHD, there is a low likelihood of shell (midden) sites.
Grinding grooves	Grooves resulting from the grinding of stone axes or other implements are found on flat areas of suitable sandstone. They are often located near waterholes or creek beds as water is necessary in the sharpening process. In areas where suitable outcrops of rock were not available, transportable pieces of sandstone were used. These sites may be found on suitable sandstone bedrock outcrops adjacent to or within waterways. They may be in open or closed contexts. There are eight grinding groove sites recorded in the AHIMS record for the North Ryde area; all are located in open contexts. As there are no waterways within the study area, grinding grooves are unlikely to be present.
Quarries	These are areas where stone was obtained for flaked artefacts or ground-edge artefacts, or where ochre was obtained for rock paintings, body decoration or decorating wooden artefacts. Quarry sites are unlikely to be located within the site. None have been recorded in the North Ryde area and the geology of the area does not provide suitable raw materials for artefact production.
Art sites	Aboriginal paintings, drawings and stencils are commonly to be found where suitable surfaces occur in sandstone shelters and overhangs. These sites are often referred to as rock shelters with painted art. Rock engravings, carvings or peckings are also to be found on sandstone surfaces both in the open and in shelters. These are referred to as rock engraving sites. Both rock engravings (open context) and pigmented art (closed context) sites are present within the North Ryde area. Art forms all or part of 17 per cent of the AHIMS record for the area. Sites in closed contexts (rock shelters) may be found where suitable outcrops of sandstone are present, forming overhangs which may be used as shelters.

Archaeological site type	Description and potential location
	Sites in open contexts may be found where suitable exposures of flat sandstone bedrock are present, often in association with ridgelines or other elevated landforms. The sandstone bedrock of the study area may lend itself to both engraved art and pigmented art should suitable outcrops and/or shelters be present.
Scarred trees	Scarred trees bear the marks of bark and wood removal for utilisation as canoes, shields, boomerangs or containers. It is commonly very difficult to confidently distinguish between Aboriginal scars and natural scars or those made by Europeans. Scars may also originate as 'foot-marks', small pockets cut into the bark of a tree enabling the tree to be climbed. These sites may be found in areas of remnant mature vegetation. No instances have been recorded in the North Ryde area, likely due to the extensive early timber-getting and subsequent vegetation clearing and urbanisation of the suburb.
Burial sites	Burials may be of isolated individuals, or they may form complex burial grounds. Burials are often associated with other site types such as middens, or mounds. There are no burial sites recorded on AHIMS within the North Ryde area. Burial sites are highly unlikely to be identified within the study area.
Mound sites	Commonly found on lower lying alluvial flood plains, mound sites are formed by the long-term build-up of soil, organic material, and/or shell to form a small mound. Mounds may contain stratified deposits and can contain burials. These sites are unlikely to be present within the site because it does not comprise an alluvial floodplain landform.
Stone arrangements, carved trees and ceremonial grounds	These site types are often interrelated. Stone arrangements vary from simple cairns or piles of rocks to more elaborate arrangements; patterns of stone laid out to form circles and other designs, or standing slabs of rock held upright by stones around the base. Carved trees may have intricate geometric or linear patterns or representations of animals carved into their trunks. Ceremonial grounds and graves were often marked by such trees. Bora grounds are a common type of ceremonial site and they are generally associated with initiation ceremonies. They comprise two circles, generally edged with low banks of earth but sometimes of stone, a short distance apart and connected by a path. These sites are not recorded in the AHIMS records for North Ryde and are unlikely to be present within the site.
Resource area	Resource gathering areas represent landforms that contain a high number of fauna and flora species, which were known Aboriginal resources.

Archaeological site type	Description and potential location
	Resource areas are frequently associated with permanent water resources, often swamps or marshes, and frequently have recorded sites such as middens nearby. Landforms associated with these sites are often flats with a favourable outlook. Such areas are often connected with remnant intact woodland, waterways, or locations with extensive vegetation that was known to be utilised by Aboriginal people. While flora and fauna resources were likely extracted from the study area and surrounds by the Wallumedegal people, there are no distinct landscape features (eg creeks, marshes, etc) within the study area that would suggest it formed a concentrated resource-rich zone.

Based on examination of the environmental context and local AHIMS record, it is likely that if Aboriginal objects are or were present within the study area, they would most likely take the form of open artefact sites (isolated finds or low density scatters) or shelters with Aboriginal cultural heritage, ie artefacts and/or art.

Engraved art sites are also possible should the study area contain suitable sandstone bedrock outcrops. There are three instances of engraved art in an open context within 1km of the study area, all located on the east-west oriented ridgeline above the study area. All six instances (not including a duplicate recording) of engraved art returned within the AHIMS search for the study area are situated on local high points or on slopes overlooking the Lane Cove River.

Based on the local AHIMS record, most previously recorded shell sites are located at elevations of less than 20m AHD. As the majority of the study area is above 20m AHD, there is a low likelihood of shell (midden) sites.

Contrasting the outcomes of the predictive modelling against the history of recent land use provides an indication of locations and landforms that could be connected with physical (tangible) aspects of Aboriginal heritage. Previous vegetation clearing, construction and development work, subsequent demolitions and deep excavation have significantly compromised the condition and integrity of natural soil horizons across the study area. Deep excavation into the bedrock within the north of the study area has completely stripped the natural soil profile in this location, while repeated vegetation clearing and establishment of pedestrian and vehicle tracks within the south of the study area is likely to have resulted in truncation of and/or mixing of the naturally shallow natural soil profiles in this area. Mapping of known disturbance is provided in Figure 2.19.

The study area can be described as a small mid-slope component of the far wider sloping landform below a broad ridgeline. Modelling developed on the nearby Cumberland Plain indicates that upper to mid-slopes tend to have lower artefact densities compared to lower slopes and flats.[45]

Therefore, dense artefact deposits within the site are unlikely within the site. Discontinuous low-density background artefact scatters could be present within areas of remnant Gymea soils, or within rock shelters, if present within the study area.

However, the extent of the disturbance to the site as a result of post-1788 land use may have reduced the capacity for the soil profile to retain in situ Aboriginal stone objects. It is possible that any remaining exposed sandstone platforms could present evidence for engraved art. However, given the small size of the site, coupled with the extent of development, statistically it is unlikely that such art would be present.

The study area should be considered to have nil archaeological sensitivity in areas of deep excavation in the north of the study area, low to nil sensitivity on previously developed areas outside of the deep excavation zone, and low archaeological sensitivity within the south of the study area, where impacts have predominantly been limited to vegetation clearance. A map of archaeological sensitivity is provided in Figure 2.20.

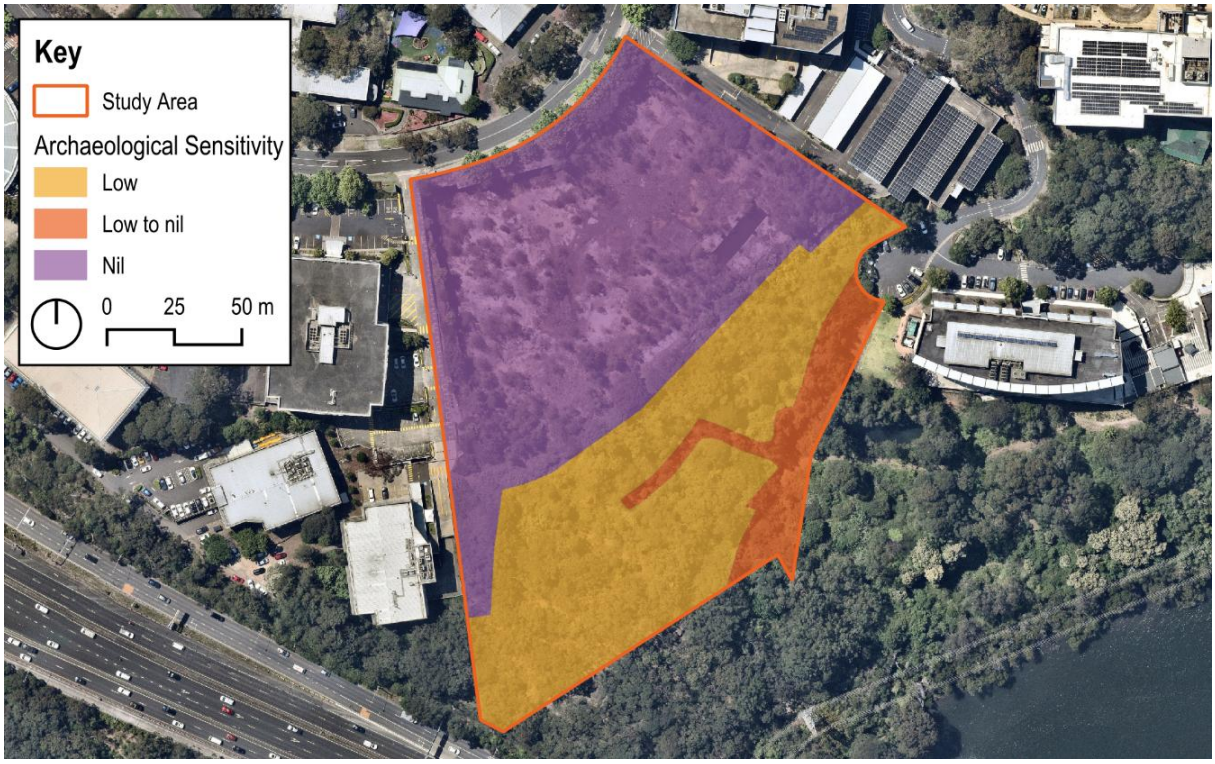

Figure 2.20 Aboriginal archaeological sensitivity within the site. (Source: Nearmap with GML overlay, 2025)

2.6 Endnotes

[1] Attenbrow, V 2010, *Sydney's Aboriginal Past: Investigating the Archaeological and Historical Records*, University of New South Wales Press, Kensington, NSW, p 26;

City of Ryde Council, Aboriginal History, accessed 10 January 2025, <https://www.ryde.nsw.gov.au/Library/Local-and-Family-History/Historic-Ryde/Aboriginal-History>.

[2] City of Ryde Council, Aboriginal History, accessed 10 January 2025, <https://www.ryde.nsw.gov.au/Library/Local-and-Family-History/Historic-Ryde/Aboriginal-History>.

[3] King in Hunter, 1793 [1968 print edition], p 412.

[4] City of Ryde Council, Aboriginal History, accessed 10 January 2025, <https://www.ryde.nsw.gov.au/Library/Local-and-Family-History/Historic-Ryde/Aboriginal-History>.

[5] Claude, L, Jouzel, J and Raynaud, D 1993, 'The ice core record: past archive of the climate and signpost to the future', in Drewery, D, Laws, R, and Pyle, J (eds), *Antarctic and Environmental Change*, Oxford University Press, New York.

[6] Albani, A D, Rickwood, P C & Tayton, J W 2015, 'The morphology and late Quaternary paleogeomorphology of the continental shelf off Sydney, NSW', *Australian Journal of Earth Sciences*, vol 62, no 6, pp 1–14.

[7] Williams, A et al. 2012, 'A Terminal Pleistocene Open Site on the Hawkesbury River, Pitt Town, New South Wales', *Australian Archaeology*, vol 74, pp 85–97.

Owen, T et al. 2024, 'First Nations pre-LGM ochre processing in Parramatta, NSW, Australia', *Archaeology in Oceania*, vol 59, no 1, pp 125–137.

[8] Attenbrow, V 2010, *Sydney's Aboriginal Past: Investigating the Archaeological and Historical Records*, University of New South Wales Press, Kensington, NSW, p 152.

Karskens, G 2020, *People of the River. Lost worlds of early Australia*, Allen & Unwin, Crows Nest NSW, p 17.

[9] Barry, L, Graham, IT, Mooney, SD, Toms, PS, Wood, C and Williams, AN 2021, 'Tracking an exotic raw material: Aboriginal movement through the Blue Mountains, Sydney, NSW during the Terminal Pleistocene', *Australian Archaeology*, vol 87 (1), pp 63–74.

Williams, AN, McDonald, J, Atkinson, F, Toms, PS, Hobbs, A, Barry, T, Sapienza, JC, Wood, JC and Doelman, T 2021, 'Was Aboriginal population delayed after the Last Glacial Maximum? A synthesis of a terminal Pleistocene deposit from the Sydney Basin, New South Wales, Australia', *Journal of Archaeological Science*: Reports, vol 40, pp 1–12.

[10] GML Heritage, Parramatta Light Rail. Aboriginal Archaeology Post-Excavation Report. Unpublished report to Parramatta Connect, 2022.

[11] Switzer, AD, Sloss, CR, Jones, BG, Bristow, CS 2009, 'Geomorphic evidence for mid–late Holocene higher sea level from southeastern Australia', *Quaternary International*.

[12] Attenbrow, V 2002, *Sydney's Aboriginal Past: Investigating the archaeological and historical records*, UNSW Press, Sydney.

[13] Lewis, S E et al. 2008, 'Mid–late Holocene sea-level variability in eastern Australia', *Terra Nova*, vol 20, no 1.

[14] Sharp, N 2002, *Saltwater People: The Waves of Memory*, Allen & Unwin, Sydney, p 105.

[15] Williams, A et al. 2015, 'Holocene Demographic Changes and the Emergence of Complex Societies in Prehistoric Australia', *PLoS ONE 10*(6): e0128661, vol doi:10.1371/journal.pone.0128661.

[16] White, B 2017 'Analysis with Confidence: Distinguishing Pre-Bondaian and Bondaian IMSTC Artefact Assemblages from the Cumberland Plain of Western Sydney', New South Wales. *Australian Archaeology 83*(3), pp 143–161.

White, E 2018, 'Time Matters on Shallow Open Sites: An Example from Western Sydney, Australia', unpublished PhD thesis, Faculty of Arts and Social Sciences, University of Sydney.

[17] White, E 2018, 'Time Matters on Shallow Open Sites: An Example from Western Sydney, Australia', Doctor of Philosophy, University of Sydney, Sydney.

Hiscock, P a A, V 2005a, 'Australia's Eastern Regional Sequence revisited: Technology and change at Capertree 3. BAR International Series 1397', *Oxford: Archaeopress*.

[18] Attenbrow, V 2010, *Sydney's Aboriginal Past: Investigating the archaeological and historical records*, UNSW Press, Sydney, NSW, p 153.

[19] Munt, S and Owen T 2021, 'Aboriginal uses for introduced glass, ceramic and flint from the former Schofields Aerodrome, Western Sydney (Darug Country), New South Wales', *Australian Archaeology*, DOI: 10.1080/03122417.2021.1955597.

GML Heritage, 2017, 'Cockle Bay Park Aboriginal Due Diligence Report', report prepared for DPT and DPPT.

[20] Irish, P 2017, *Hidden in Plain View: The Aboriginal people of coastal Sydney*, NewSouth Publishing, Sydney, p 19.

[21] Attenbrow, V 2002, *Sydney's Aboriginal Past: Investigating the archaeological and historical records*, second edition (2010), UNSW Press, Sydney.

[22] Phippen, A 2008, *Ryde*, Dictionary of Sydney, accessed 10 January 2025, available at <https://dictionaryofsydney.org/entry/ryde>.

[23] Farlow, M 2008, *North Ryde*, Dictionary of Sydney, accessed 10 January 2025, available at <https://dictionaryofsydney.org/entry/north_ryde>.

[24] Dictionary of Sydney, *Field of Mars*, accessed 10 January 2025, < https://dictionaryofsydney.org/place/field_of_mars_common>.

NSW Department of Education, *Field of Mars Reserve*, accessed 10 January 2025, <https://fieldofmar-e.schools.nsw.gov.au/about-us/excursion-sites/field-of-mars-reserve.html#:~:text=Field%20of%20Mars%20Common&text=It%20was%20more%20than%202500,Strangers%20Creek%20and%20Buffalo%20Creek.>.

[25] Hoskins, I, *Aboriginal North Sydney*, accessed 4 January 2024, <https://aurorashore.com.au/NSHOR/STANTON/DOCUMENTS/JPEG/ABORIGINAL_NORTH_SYDSYD/1100018672.PDF>, p 18.

Smith, K V 2005, *Wallumedegal, An Aboriginal History of Ryde*, City of Ryde Council, pp 15–17.

[26] Bowdler, S, 1971, *Balls Head: The Excavation of a Port Jackson Rock Shelter*, prepared for the Australian Museum, Sydney.

[27] Barani, Sydney's Aboriginal History, *Aboriginal People and Place*, City of Sydney, accessed 10 January 2025, <https://www.sydneybarani.com.au/sites/aboriginal-people-and-place/>.

[28] Phippen, A 2008, *Ryde*, Dictionary of Sydney, accessed 10 January 2025, available at <https://dictionaryofsydney.org/entry/ryde>.

[29] Irish, P 2017, *Hidden in Plain View: The Aboriginal people of coastal Sydney*, NewSouth Publishing, Sydney, pp 106, 107.

[30] National Committee on Soil and Terrain et al. 2009, *Australian Soil and Land Survey: Field Handbook,* Third, CSIRO, Clayton, South Victoria, p 26.

[31] Australian Government Geoscience Australia, *Australian Units Database Stratigraphic Unit Details Hawkesbury Sandstone*, accessed 16 December 2024, <https://asud.ga.gov.au/search-stratigraphic-units/results/8165/hawkesbury-sandstone>.

[32] Chapman, GA and Murphy, CL 1989, *Soil Landscapes of the Sydney 1:100,000 Sheet*, Soil Conservation Service of NSW, pp 49–54.

[33] Chapman, GA and Murphy, CL 1989, *Soil Landscapes of the Sydney 1:100,000 Sheet*, Soil Conservation Service of NSW.

[34] Attenbrow, V 2010, *Sydney's Aboriginal Past*, UNSW Press, p 10.

[35] Australian Government Bureau of Meteorology, Climate Statistics for Australian locations summary statistics Macquarie Park (Willandra Village), accessed 10 January 2025, <http://www.bom.gov.au/climate/averages/tables/cw_066156.shtml>.

[36] Bureau of Meteorology, *Indigenous Weather Knowledge D'harawal calendar*, accessed 10 January 2025, <http://www.bom.gov.au/iwk/calendars/dharawal.shtml>.

[37] NSW Government, *Trees Near Me NSW*, accessed 12 December 2024, <https://treesnearme.app/explore>.

[38] Attenbrow, V 2010, *Sydney's Aboriginal Past: Investigating the Archaeological and Historical Records*, University of New South Wales Press, Kensington, NSW, p 40.

[39] Attenbrow, V 2010, *Sydney's Aboriginal Past: Investigating the Archaeological and Historical Records*, University of New South Wales Press, Kensington, NSW, p 42.

[40] Attenbrow, V 2010, 'Aboriginal Fishing in Port Jackson, and the Introduction of Shell Fish-Hooks to Coastal NSW', in P Hutching, D Lunney and D Hochuli (eds), *The Natural History of Sydney*, Australian Museum.

[41] NSW Department of Education Field of Mars Environmental Education Centre, *Field of Mars Reserve*, accessed 15 January 2025, <https://fieldofmar-e.schools.nsw.gov.au/fact-sheets/field-of-mars-reserve.html>.

[42] Dictionary of Sydney, *Field of Mars*, accessed 15 January 2025, <https://dictionaryofsydney.org/place/field_of_mars_common>.

Phippen, A 2008, *Marsfield*, Dictionary of Sydney, accessed 15 January 2025, <https://dictionaryofsydney.org/entry/marsfield>.

[43] Commonwealth of Australia, Parliamentary Standing Committee on Public Works, *Report relating to the proposed CSIRO Riverside Corporate Park, North Ryde NSW—Joint Research Complex for CSIRO Molecular Science and Food Science Australia*, Eighth Report of 1999, 23 September 1999, Canberra.

[44] Owen, T and Cowie, D 2017, 'Four Predictive Models to Describe Aboriginal Lithic Artefact Site Patterning on the Cumberland Plain', *Journal of the Australian Association of Consulting Archaeologists,* vol 5, no 2.

[45] Owen, T and Cowie, D 2017, 'Four Predictive Models to Describe Aboriginal Lithic Artefact Site Patterning on the Cumberland Plain', *Journal of the Australian Association of Consulting Archaeologists*, vol 5, p 3.

3 Aboriginal community consultation

3 Aboriginal community consultation

3.1 Introduction

Aboriginal community consultation is required for any assessment of Aboriginal heritage in order to make a valid assessment of Aboriginal (heritage) 'values'; especially those Aboriginal memories, stories and associations between the Aboriginal people and their traditional lands or Country. Aboriginal people frequently express an enduring connection to their Country, a connection that transcends generations, both past and present. The connection is frequently expressed as a sense of belonging, which may manifest through physical objects or place; alternatively, it may be presented as an intangible idea, where an appreciation of an unseen quality or non-materialistic value connects a place in the landscape, tradition, observance, custom, lore belief and/or history to the person or group describing the item, event or value. The notion of intangible, social, or community values is essential to Aboriginal people as 'the effective protection and conservation of this heritage is important in maintaining the identity, health and wellbeing of Aboriginal people'.[1]

In order to gather social and community views and opinions with respect to Aboriginal heritage and identify and address Aboriginal heritage values, HNSW requires proponents to adhere to the guideline document *Aboriginal cultural heritage consultation requirements for proponents 2010* (the *Consultation Requirements*).[2] In addition to providing a mechanism for engaging the Aboriginal community, the directives in the guidelines must be followed to comply with the project SEARs.

GML recognises and acknowledges the continuing Indigenous ownership of the traditional knowledge, traditional cultural expressions, practices, innovations and intellectual property rights in the materials provided by Aboriginal and Indigenous people, on which research and assessments in our reports may be based, and endeavour to protect the privacy, integrity and wellbeing of participants in this research.

3.2 The process of consultation

These consultation guidelines set out a process involving identification, registration, engagement and consultation with Aboriginal peoples who may hold cultural knowledge relevant to determining the significance of an Aboriginal object and/or place.

Adherence with guidelines involves following a number of stages, which includes:

1 Informing Aboriginal people about the nature and scope of the proposal.

2 Understanding what might be present in the landscape and its cultural significance.

3 Determining the potential impacts and the proposed strategies to deal with them.

4 Reviewing the report.[3]

Aboriginal groups are invited to register interest as a party to consultation. This includes placing local press advertisement(s), responses are sought from the Registered Aboriginal Parties (RAPs) on the proposed assessment methodology, and an opportunity to comment on the assessment reports and recommendations is provided to the RAPs. The guidelines specify timeframes for each stage of the consultation process. Further details pertaining to these stages are described below.

The Aboriginal community consultation for this project has been carried out in accordance with the HNSW guideline. This chapter contains specific details of Aboriginal community consultation with regard to the heritage assessment of the study area.

The complete log of all communications between GML and RAPs and all letters, responses and details pertaining to this consultation are provided in Appendix B.

3.2.1 Stage 1: Notification of project

The aim of Stage 1 is to 'identify, notify and register Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places in the area of the proposed project'.[4] The identification process involves:

- sending letters to select government agencies to determine relevant Aboriginal stakeholder groups to contact; and
- placing notices in local press, inviting Aboriginal people who hold relevant cultural knowledge to register in the process of community consultation.

A letter notifying all Aboriginal people and the MLALC about the proposed project must be sent to each individual and group identified through the above stages. Aboriginal people have a minimum of 14 days after the letter is sent or the notice published in the newspaper to register an interest in the project.

The outcome of Stage 1 is a list of Aboriginal people who have registered to be involved in consultation. These are the project's RAPs. The RAPs are to be involved for the remainder of the project; Aboriginal consultation with groups or persons outside of RAPs is not required.

Letters requesting contact details for Aboriginal people or organisations who may hold cultural knowledge and may identify heritage issues relevant to the study area were sent via email on 9 December 2024 to:

- HNSW;
- MLALC;
- Office of The Registrar, Aboriginal Lands Right Act 1983;
- National Native Title Tribunal;

- Native Titles Service Corporation;
- City of Ryde Council; and
- the Greater Sydney Catchment Management Authority (Greater Sydney Local Land Service).

Responses were received from the following groups:

- HNSW;
- Office of The Registrar, Aboriginal Lands Right Act 1983;
- National Native Title Tribunal;
- City of Ryde Council; and
- the Greater Sydney Catchment Management Authority (Greater Sydney Local Land Services).

Subsequently, those Aboriginal people who were identified during the Step 1 notifications were contacted via email or letter on 19 December 2024, providing information regarding the project and inviting them to register an interest (Step 2 notifications). A notification was also placed in *The Daily Telegraph* and online via News Corp Australia's Buy Search Sell on 20 December 2024, inviting registrations of interest by Aboriginal people with cultural knowledge relevant to the study area.

The registration period deadline was extended to Friday 17 January 2025 in light of the end of year holiday period.

The project's registered Aboriginal parties

In line with the outcomes of Stage 1 following the *Consultation Requirements* 2010: Appendix B[5] the project's RAPs are:

[redacted]

A copy of the notification and the details of registered Aboriginal parties were provided to HNSW and MLALC on 21 January 2025.

3.2.2 Stage 2: Presentation of information

A letter has been sent to all RAPs informing them of the project outline, project impacts, timeline and milestones of the project.

Included was a methodology for undertaking the project's assessment and a request for any information on culturally sensitive areas of local traditional knowledge relating to the study area. Stage 2 allowed 28 days for the RAPs to respond.

Each RAP group was provided with written details of the proposed project and a survey sampling strategy by email on 21 January 2025. Responses to the methodology and project information are summarised in Table 3.1 below.

Table 3.1 RAP responses to the project methodology.

#	RAP	Date Sent/Date Reply	Comment
1	[redacted]	Sent 21/1/2025	[redacted]
2	[redacted]	Sent 21/1/2025	[redacted]
3	[redacted]	Sent 21/1/2025 Reply 7/2/2025	[redacted]
4	[redacted]	Sent 21/1/2025 Reply 22/1/2025	[redacted]
5	[redacted]	Sent 21/1/2025 Reply 18/2/2025	[redacted]
6	[redacted]	Sent 21/1/2025	[redacted]
7	[redacted]	Sent 21/1/2025	[redacted]
8	[redacted]	Sent 21/1/2025 Reply 9/2/2025	[redacted]

Archaeological survey

Archaeological survey for the assessment was undertaken on 3 March 2025. The four groups who had provided a response to the project methodology were invited to attend. Representatives [redacted] attended the survey.

The survey aimed to identify any Aboriginal objects or sites within the study area, inspect current site conditions, and assess the archaeological potential of the study area.

3.2.3 Stage 3: Gathering information

Community representatives provided information on local Aboriginal heritage values, places and sites during the assessment process. This contributed to an understanding of the local perspective on Aboriginal habitation and subsistence patterns, as well as the local intangible values and connections associated with the cultural landscape.

All survey participants were involved in determining the archaeological potential of the study area. Further information on heritage values has been provided via written correspondence during the consultation process. The outcomes of this consultation underwrite this heritage assessment.

3.2.4 Stage 4: Review of draft report

Following preparation of the draft ACHAR, the RAPs were provided a 28-day period to read and comment on the report. The review period commenced on 17 March 2025, and concluded on 14 April 2025. All community comments received have been summarised in Table 3.2, and written responses are included in Appendix B.

Table 3.2 RAP comments on the draft ACHAR.

#	RAP	Comment	GML's response
1	[redacted]	[redacted]	Acknowledged
2	[redacted]	[redacted]	Acknowledged
3	[redacted]	[redacted]	Acknowledged

3.3 Requirements for future Aboriginal consultation

The stages of the Aboriginal consultation process are prescribed by HNSW. Table 3.3 provides a synopsis of the process to date.

Table 3.3 Cultural heritage assessment program synopsis—progress to date.

Stage	Status
Write to statutory bodies to obtain contact details for Aboriginal people who may have an interest in the project.	Complete
Write to identified Aboriginal people, inviting them to register an interest in the project.	Complete
Place an advertisement in local print media, inviting Aboriginal people with cultural knowledge of the area to register an interest in the project.	Complete
Proponent records names of Aboriginal people who have registered an interest in the project.	Complete
Proponent advises Local Aboriginal Land Council (MLALC) and HNSW of RAPs' details (subject to privacy requests).	Complete
Proponent presents information regarding proposed project to RAPs.	Complete
Proponent provides methodology for the cultural heritage and archaeological assessment to RAPs.	Complete
RAPs invited to provide input for the assessment methodology.	Complete
RAPs invited to identify: • whether any Aboriginal objects of cultural value are present within the study area; and • whether any places of cultural value are present within the study area.	Ongoing
RAPs invited to comment on potential management outcomes.	This report
Proponent prepares draft ACHAR and provides to RAPs for comment.	This report
Incorporate RAP comments into final ACHAR.	Complete
Final ACHAR provided to RAPs, MLALC and HNSW.	This report

Future consultation with the RAPs should include the following:

- Copies of the final report will be sent to all RAPs.
- Any future work relating to the Aboriginal archaeological mitigation, or any significant changes to the development, should include consultation with the relevant Aboriginal stakeholders.

3.4 Endnotes

[1] Department of Environment, Climate Change and Water 2010, Aboriginal cultural heritage consultation requirements for proponents 2010, Sydney.

[2] Department of Environment, Climate Change and Water 2010, Aboriginal cultural heritage consultation requirements for proponents 2010, Sydney.

[3] List taken from Department of Environment, Climate Change and Water 2010, Aboriginal cultural heritage consultation requirements for proponents 2010, Sydney, p 10.

[4] Department of Environment, Climate Change and Water 2010, Aboriginal cultural heritage consultation requirements for proponents 2010, Sydney, p 10.

[5] Department of Environment, Climate Change and Water 2010, Aboriginal cultural heritage consultation requirements for proponents 2010, Sydney.

4 Investigations into Aboriginal heritage

4 Investigations into Aboriginal heritage

The background investigations have established the nature of the local environment, the extent of prior heritage works, and known Aboriginal connections into the study area. This section presents the results of our investigations into the Aboriginal heritage of the study area. The outcomes combine to describe the overarching cultural landscape and provide the basis for the Aboriginal heritage values assessment.

4.1 Archaeological survey

Archaeological survey was conducted on 3 March 2025, and was attended by the following people:

Person	Role	Affiliation
Andie Coulson	GML project manager	GML
[redacted]	Site officer, RAP	[redacted]
[redacted]	Site officer, RAP	[redacted]
[redacted]	Site officer, RAP	[redacted]
[redacted]	Site officer, RAP	[redacted]
Dan D'Ambrosio	Logic Co project director	Logic Co
Egan Bradbury	Logic Co assistant project manager	Logic Co

Survey was conducted on foot, with the aim of observing current site conditions and identifying any Aboriginal sites, places, or zones of potential for subsurface deposits. The route of survey is shown in Figure 4.1.

The northern portion of the study area (survey unit [SU] 1) comprised an artificially levelled landform, cut approximately 15 to 20m into the sandstone bedrock below the level of Julius Avenue along the north boundary of the study area (Figure 4.2 to Figure 4.5). The depth of cut reduced moving south as the natural landform slopes down towards the Lane Cove River. Visibility was variable in this zone, but broadly high, with the ground cover mostly consisting of sparse immature trees growing within a pale sandy anthroposol soil derived from degraded sandstone from both the debris from the excavation and weathering of the exposed bedrock in the approximately 15 years since excavation, during which time the site had been vacant.

Areas which were slightly lower lying were boggy, with deeper soil and dense reeds and bullrushes reducing visibility. Exposures of the sandstone bedrock were frequent, with deep gouge marks from mechanical excavation. Survey participants agreed that deep excavation in the north of the study area had removed Aboriginal archaeological potential in this zone.

The south portion of the study area (survey unit [SU] 2) was heavily vegetated, predominantly with native regrowth vegetation interspersed with some older native trees and frequent invasive weeds, most notably lantana (Figure 4.6 to Figure 4.10). As a result, visibility was low and passage through this area was difficult. The natural slope of the landform appears to have been mostly preserved, taking the form of a stepped slope with frequent exposures of the sandstone bedrock. The sandstone exposures and outcrops observed were inspected for evidence of engraved art, but none were noted. Similarly, none of the sandstone outcrops observed within the study area had a suitable overhang for occupation. Where visible, soils in this area of the site were sandy, and a pale greyish-brown in colour. Disturbance was noted in the form of invasive plants, some earthworks (low earth mounds, likely from works in the 2000s), and frequent crushed sandstone, interpreted as debris from land clearance works within this area in the mid-2000s and debris from upslope works washed or rolled downslope. Semi-formal walking tracks were observed in this portion of the study area, comprising cleared and flattened dirt walking paths and steps cut into sandstone bedrock in areas of steeper slope. These paths were mostly present along the south boundary of the study area.

No view lines to the Lane Cove River were observed across the entirety of the site, likely due to the extent of vegetation and the stepped nature of the sloping landform. No Aboriginal sites or areas of Aboriginal archaeological potential were observed within the study area.

During survey, inspection was made of two nearby Aboriginal sites outside the study area: AHIMS IDs 45-6-1854 (Figure 4.12, Figure 4.13), and 45-6-2599 (Figure 4.11). Shelter site AHIMS ID 45-6-1854 is the closest site to the study area and is discussed in detail in Section 2.3.1. The shelter was relocated along a semi-formal walking track. No shell was observed within the deposit; however, the amorphous red ochre motif detailed on the site card was observed. The shelter is located on a zone of steeper slope when compared to the study area. The steeper stepped sandstone drop-off within this area of lower slope lends itself to shelter formation, which the comparatively gentler slope of the southern study area does not appear to.

Shelter site 45-6-2599 was excavated in 1997 by Tessa Corkhill and is detailed in Section 2.3.2. The shelter has been significantly impacted by the development of 3 Richardson Place, and is no longer located within its natural landscape context.

The survey coverage and landform summary tables are presented below.

Table 4.1 Survey coverage. After Code of Practice requirements 9 and 10.

Survey unit	Landform	Survey unit area	Visibility	Exposure	Effective coverage	Effective coverage
SU1 (north)	Artificially levelled flat	7,411m^2	80%	100%	5,928.8m^2	80%
SU2 (south)	Stepped midslope	3,927m^2	20%	100%	785.4m^2	20%

Table 4.2 Landform summary—sampled areas. After Code of Practice requirements 9 and 10.

Landform	Landform area	Area effectively surveyed	% Landform effectively surveyed	Number of sites	Number of artefacts or features
Artificially levelled flat	14,453m^2	5,928.8m^2	41%	0	0
Stepped midslope	14,192m^2	785.4m^2	5.5%	0	0

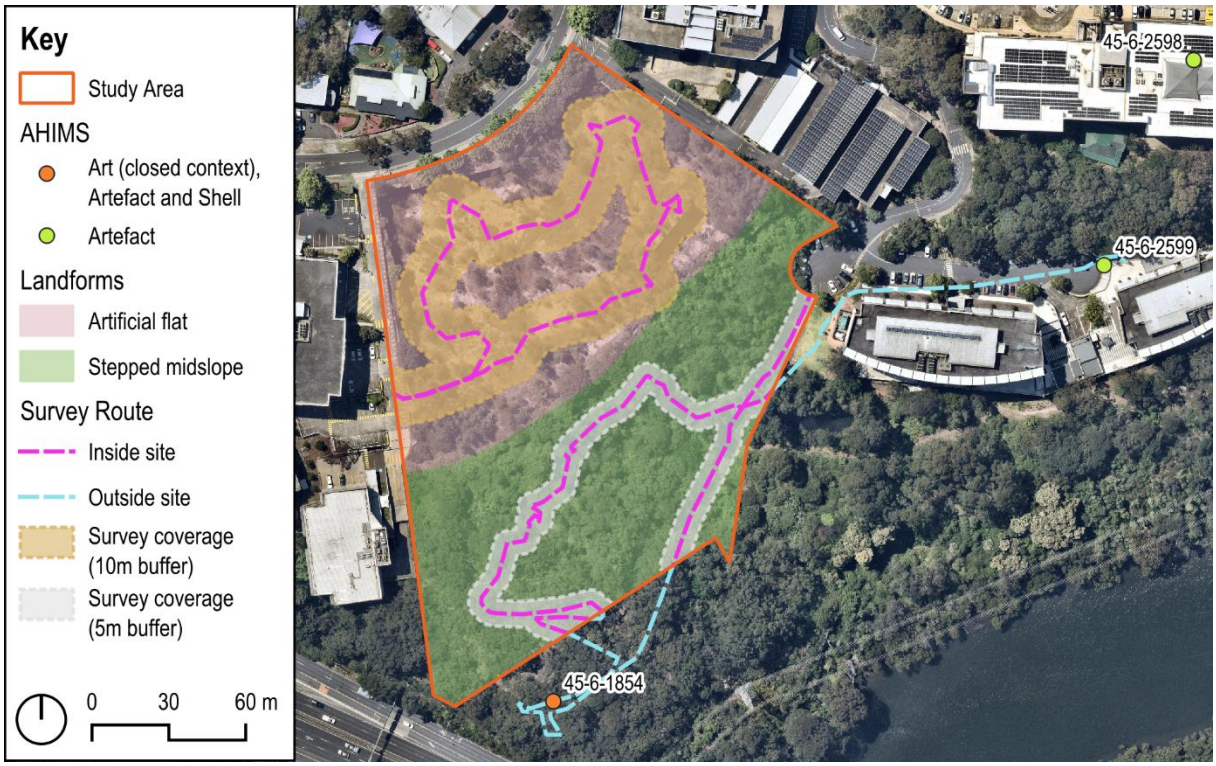

Figure 4.1 Route and coverage for the Julius Avenue Data Storage Centre survey. (Source: Nearmap with GML overlay, 2025)

Figure 4.2 The study area, taken from Julius Avenue facing southeast over the north portion of the study area.

Figure 4.3 The north portion of the study area, facing northeast. Sandstone bedrock shows deep gouges from machine excavation.

Figure 4.4 The north portion of the study area, facing northwest, showing the depth of excavation into the bedrock.

Figure 4.5 Deep excavation within the north of the study area, facing east towards the heritage cottage at 2 Richardson Place.

Figure 4.6 Semi-formal dirt walking track and sewer manhole cover within the south of the study area.

Figure 4.7 Semi-formal dirt walking track with steps cut into the bedrock within the south of the study area.

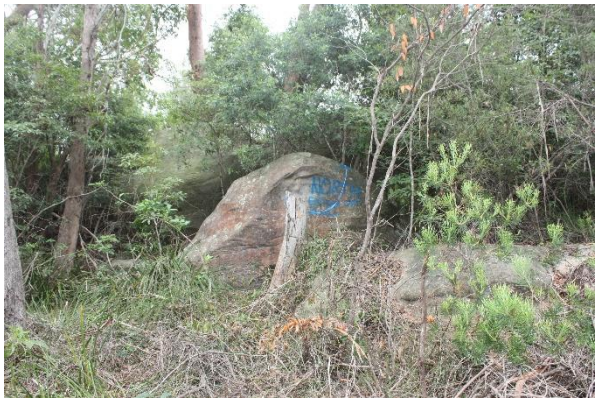

Figure 4.8 Nature of the bushland within the south of the study area, showing the dense vegetation and sandstone bedrock outcrops.

Figure 4.9 Evidence of disturbance in the form of low earth mounds within the south of the study area.

Figure 4.10 Example of exposed sandstone platform within the study area, partially obscured by thin grey-brown sandy soil.

REDACTED

Figure 4.11 [redacted]

REDACTED

Figure 4.12 [redacted]

REDACTED

Figure 4.13 [redacted]

4.2 Aesthetic aspects

The north portion of the study area has been highly modified via deep excavation into the bedrock, artificially levelling the natural landform. The south of the study area has been affected by past land clearing and minor earthworks; however, the natural slope of the landform has been better preserved. The south of the study area is densely vegetated, primarily with regrowth native vegetation; however, introduced / invasive species such as lantana are also present. Due to the angle of the slope and density of the vegetation, there are no views to the Lane Cove River from the study area.

Overall, the north of the study area holds low to no aesthetic value due to the extent of disturbance. The south of the study area, which remains more intact, has aesthetic value associated with native vegetation and the natural midslope landform; however, these values are presently impinged upon by invasive weeds and occasional rubbish.

4.3 Traditional connections

Sydney's First Nations people continue to live and thrive on Country, and maintain custodianship over the land. The study area forms part of the wider cultural landscape of the North Ryde area, part of the traditional lands of the Wallumedegal. The presence of registered Aboriginal sites in the vicinity (eg AHIMS sites 45-6-1854, 45-6-2599, 45-6-2598 and 45-6-1855, all within 200m of the study area) attest to the use of the wider sloping landform by First Nations people. [redacted] Retaining the native vegetation upslope of the site within the study area and within eyeline of the shelter would assist in maintaining the natural setting of the shelter, contributing to the aesthetic and cultural value of the site.

4.4 Synopsis of Aboriginal heritage investigations

The assessment of prior archaeological and heritage studies (Section 2), consultation with the Aboriginal community (Section 3) and new investigations into the study area (this section) have identified key aspects of Aboriginal cultural heritage associated with the study area. These are outlined in Table 4.3.

Table 4.3 Aboriginal heritage connected with the study area.

#	Aspect of Aboriginal heritage	Tangible/Intangible	Description
1	Study area as a component of Wallumedegal Country	Intangible	The study area forms a part of the traditional lands of the Wallumedegal people, who maintain custodianship over Country.
2	Aesthetic value of native bushland	Intangible	The native vegetation and natural midslope landform within the south of the study area hold some aesthetic value, as part of the broader vegetated landform overlooking the Lane Cove River.
3	Proximity to AHIMS site 45-6-1854	Tangible and intangible	[redacted] Maintaining a natural setting for the shelter via maintenance of native vegetation within the southwest of the study area would contribute to the value of 45-6-1854.

5 Aboriginal heritage significance assessment

5 Aboriginal heritage significance assessment

The best practice guide to managing heritage places is the Burra Charter. It defines cultural significance as:

> Cultural significance means 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.

An assessment of aesthetic and social/spiritual values of Aboriginal cultural significance can only be made by the relevant Aboriginal community because Aboriginal people are the primary source of information about their cultural heritage values. Consulting with Aboriginal people at an early stage of the assessment process ensures they have opportunities to fulfil their heritage obligations. Aboriginal people must have control of their cultural knowledge and how it is used and shared. Restriction of cultural knowledge may be an important part of the value of the cultural knowledge. Management of impacts to Aboriginal cultural heritage values must involve the relevant Aboriginal people to ensure appropriate management is undertaken in accordance with the cultural heritage values.[1]

In line with the Burra Charter's four principal values (social, historical, scientific and aesthetic) and the NSW Heritage Office's publication *Assessing Heritage Significance*,[2] four assessment criteria can be used to assess the Aboriginal heritage values of a study area.[3] The four criteria are:

- Social value:[4] 'an item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons';
- Historic value:[5] 'an item is important in the course, or patterning, of NSW's cultural or natural history (or cultural or natural history of the local area)';
- Aesthetic value:[6] 'an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area)'; and
- Scientific value:[7] 'an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area)'.

Consultation with the RAPs, investigation into the background history of the study area and local region, and the survey have facilitated the development of an understanding of the key social, historic and scientific values associated with the sites and objects within the study area.

Following OEH 2011,[8] values are graded in accordance with a basic ranking of high, moderate or low. The ranking is based upon the research potential, representativeness, rarity and educational potential of each value. The grading is stated at the end of each value assessment below.

5.1 Significance assessment

5.1.1 Social value

The study area holds social value to the Wallumedegal people and broader First Nations community as a small component of the wider cultural landscape. This cultural landscape is associated with the Holocene Lane Cove River, its tidal waters and slopes. While no Aboriginal sites were identified within the study area, the presence of multiple registered Aboriginal sites within 200m of the study area attests to the use of the sloping landforms by First Nations people. The lower vegetated portions of the study area meets this criterion at the moderate level.

5.1.2 Historical value

There are no known post-contact historical associations with the study area that have been identified through historical research or through consultation with First Nations communities to date.

The study area does not meet this criterion.

5.1.3 Scientific value

No Aboriginal sites have been identified within the study area to date, and the study area is assessed as holding nil Aboriginal archaeological potential within the highly impacted north of the study area, and broadly low potential in the less impacted south of the study area. As such, the study area has low to no research value.

The study area does not meet this criterion.

5.1.4 Aesthetic value

The impacted north of the study area holds low to no aesthetic value due to the extent of past impacts. The south of the study area holds aesthetic values associated with the natural sloping landform and native vegetation.

The study area meets this criterion at the moderate level.

5.2 Statement of significance

Parts of the study area have been assessed as holding moderate social and aesthetic values for the First Nations community. The proximity to registered Aboriginal sites, most notably shelter site 45-6-1854, demonstrates the use of the broader sloping landform by First Nations people. The social values manifest through the connections held by the local First Nations community to the study area, which remains unceded Wallumedegal land.

The study area has aesthetic values connected to the southern vegetated portion of the study area, associated with the natural sloping landform and native vegetation, including as the backdrop to AHIMS shelter site 45-6-1854.

An overview of how these cultural values are manifest within the study area is presented in Table 5.1.

Table 5.1 Summary of Aboriginal cultural heritage values.

Value	Manifest Through	Grade of Significance
Social	The study area as a component of Wallumedegal Country, and connections to nearby registered Aboriginal sites.	Moderate
Historic	No historical associations identified.	None
Scientific	No scientific values identified. No Aboriginal sites have been identified to date within the study area, and the study area holds nil archaeological potential in the north, and low archaeological potential in the south for Aboriginal objects.	None
Aesthetic	Native bushland and natural sloping landform in the south of the study area.	Moderate

5.3 Endnotes

[1] Department of Environment, Climate Change and Water 2010, Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010, Department of Environment, Climate Change and Water, p 2.

[2] NSW Heritage Office 2001, Assessing Heritage Significance, NSW Heritage Office, Sydney.

[3] Office of Environment and Heritage 2011, Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW, Office of Environment and Heritage, Sydney; this guide provides a background for undertaking an Aboriginal cultural heritage values assessment in accordance with the Burra Charter and NSW Heritage Office's Assessing Heritage Significance 2001. The approach recommended by the OEH has been adhered to for this report.

[4] NSW Heritage Office 2001, 'Criteria D' in Assessing Heritage Significance, NSW Heritage Office, Sydney.

[5] NSW Heritage Office 2001, 'Criteria A' in Assessing Heritage Significance, NSW Heritage Office, Sydney.

[6] NSW Heritage Office 2001, 'Criteria C' in Assessing Heritage Significance, NSW Heritage Office, Sydney.

[7] NSW Heritage Office 2001, 'Criteria E' in Assessing Heritage Significance, NSW Heritage Office, Sydney.

[8] Office of Environment and Heritage 2011, Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW, Office of Environment and Heritage, Sydney.

6 The proposed project activity

6 The proposed project activity

This section provides a description of the proposed project activity, timing for the activity, Aboriginal values that may be harmed (directly or indirectly by the activity) and the objectives of the proposed activity. Aboriginal heritage management policy has been developed to guide and minimise impacts to Aboriginal heritage values.

6.1 Proposed activity

The proposal involves the construction and operation of a data centre and associated infrastructure and amenities, identified as the Julius Avenue Data Centre, comprising the following scope of works (Figure 6.1–Figure 6.4):

- site preparation works, including tree removal;
- earthworks and additional site retaining;
- infrastructure comprising civil works and utilities servicing;
- construction of a data centre, with the following:
  - basement car parking for 53 cars, including 2 accessible;
  - 12 data halls across six (6) storeys with an IT load of 115.2 MW and a maximum power consumption of 170 MW, with upper-level mechanical equipment and rooftop plant;
  - six (6) storey office/front of house building; and
  - six (6) storey enclosed generator gantry to rear of data centre.
- new Ausgrid precinct-wide 132 kilovolt (KV) Subtransmission Switching Station (STSS);
- one (1) new street along the southern part of the study area;
- a new pedestrian through-site link from Julius Avenue to Richardson Place; and
- complementary landscaping and offset planting.

The proposal includes works as identified in Table 6.1 below.

Table 6.1 Development particulars.

Component	Documentation
Study area	28,630sqm
Primary land use	Data centre (25,204sqm GFA)
Ancillary land uses	Office premises (1,278sqm GFA)
Gross floor area	26,185sqm
Floor space ratio	0.91:1

Component	Documentation
IT load	115.2 MW
Maximum power consumption	169 MW
Building height	Approximately 48m
New streets	One (1) new street
Car parking	54 car parking spaces (including 2 accessible)
Landscaping/trees	Total landscaping and tree removal to be confirmed
Back-up generators	72 x 3MW + 1MW back-up generators
Dangerous goods	1,277kL diesel storage capacity (12 x 100kL tanks + 72 x 1kL day tanks + 5kL tank for office/FOH)
Estimated jobs	Total estimated jobs (construction and operation) to be confirmed

The proposed works will require ground surface impacts including additional earthworks and excavation into the bedrock within the northern part of the study area, the location of the proposed SSTS building, access road, and the location of the fuel tanks/ generators. The works will also require removal of soils and native vegetation in some locations within the south of the study area. Logic Co have indicated vegetation will be retained within the southwest portion of the study area, which has proximity to AHIMS registered site 45-6-1854.

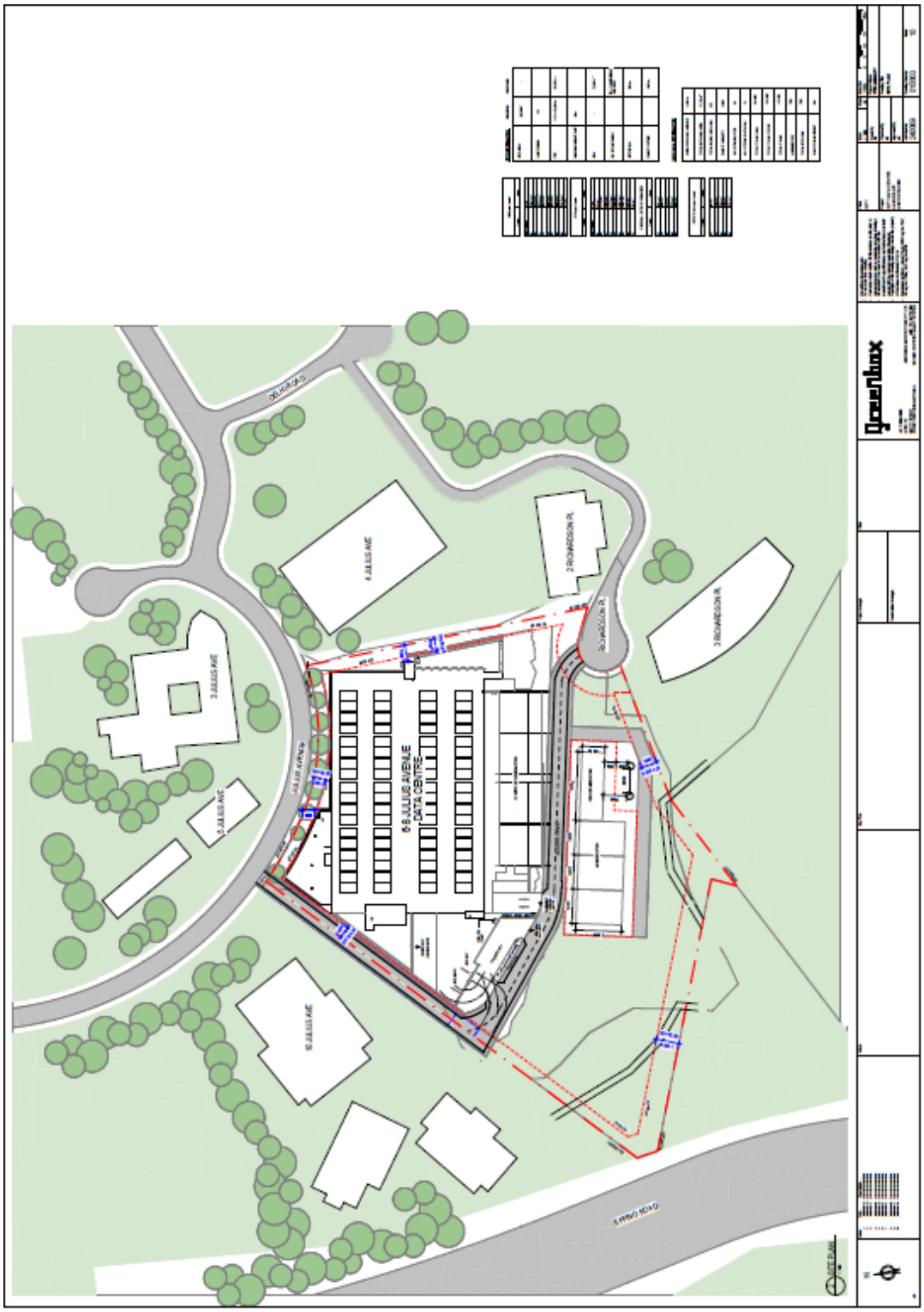

Figure 6.1 Plan of the proposed works. (Source: Greenbox Architecture, 2025)

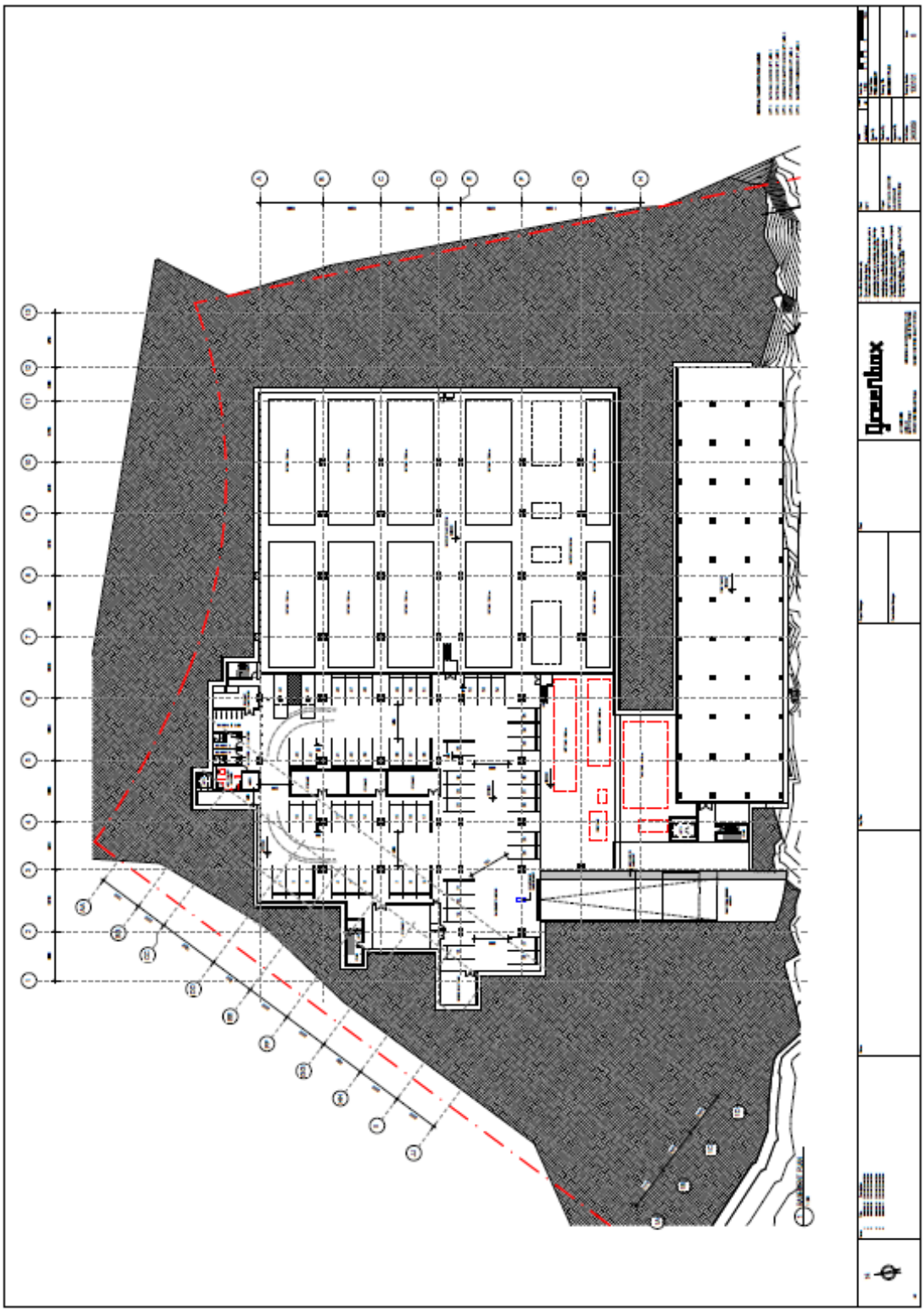

Figure 6.2 Basement level plan, showing areas of deep excavation into bedrock. (Source: Greenbox Architecture, 2025)

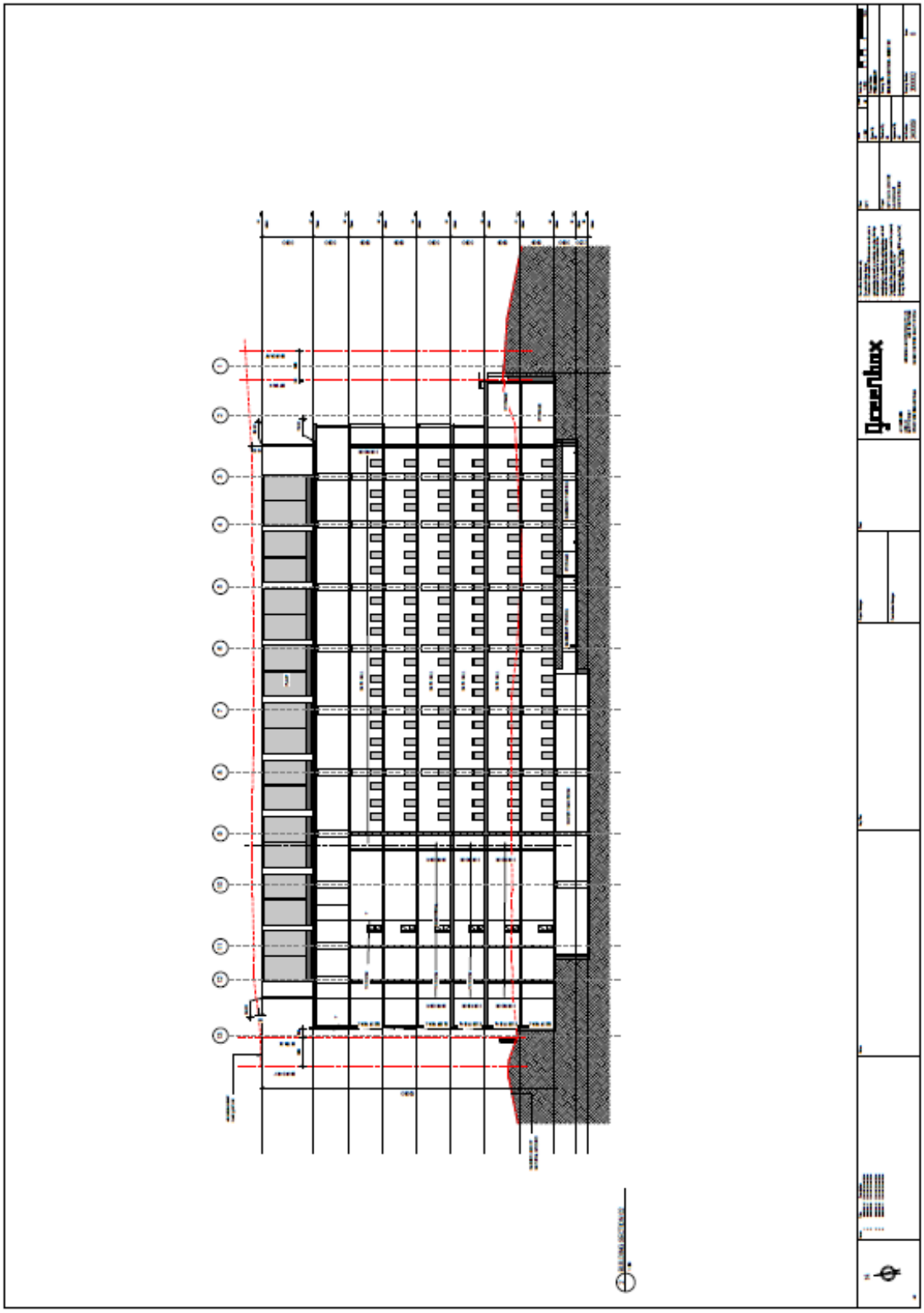

Figure 6.3 Northeast-southwest section of the proposed works. (Source: Greenbox Architecture, 2025)

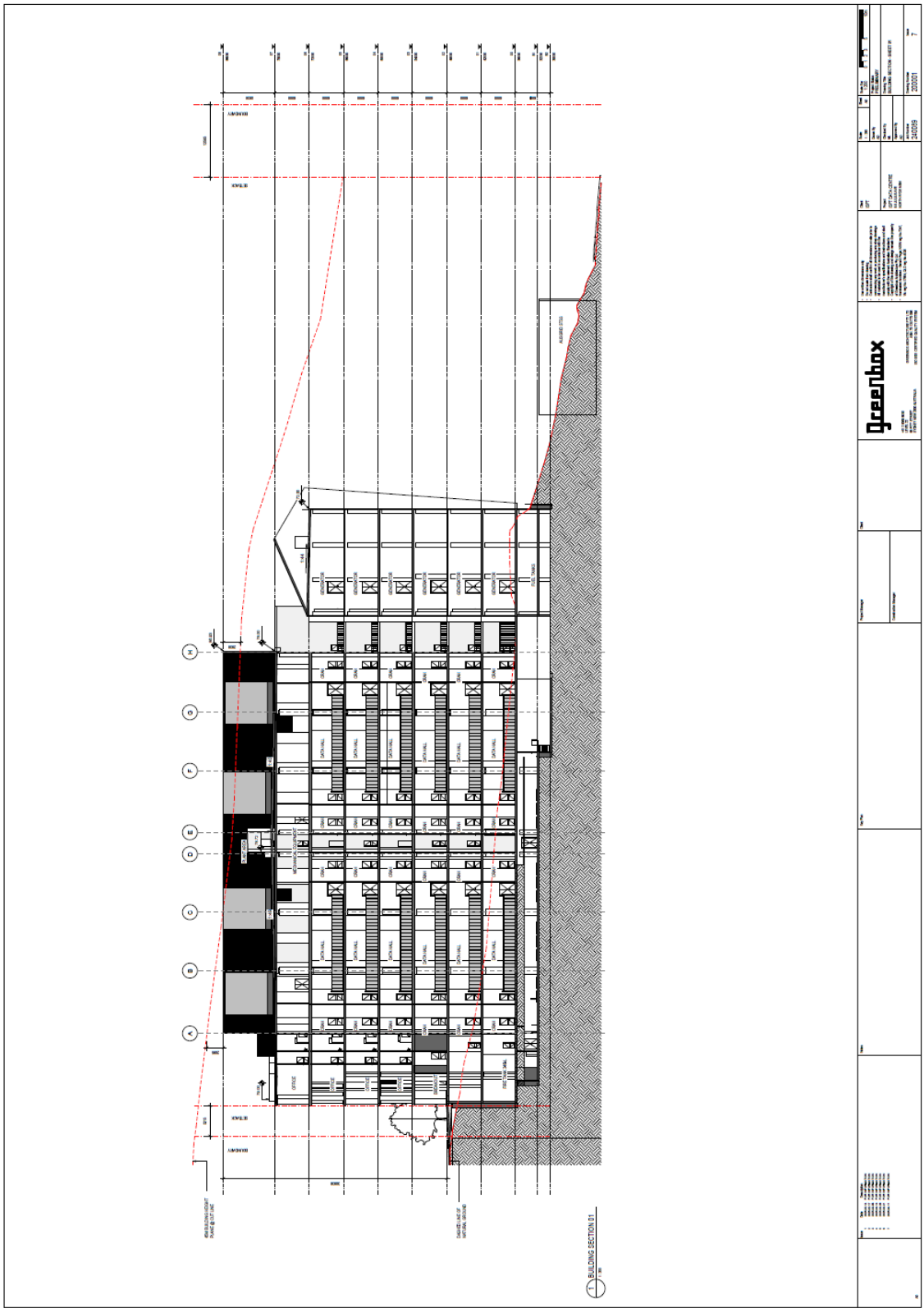

Figure 6.4 Northwest-southeast section of the proposed works. (Source: Greenbox Architecture, 2025)

6.2 Ecologically sustainable development

6.2.1 Preamble

An objective of the NPW Act is the 'conservation of objects places and features … of cultural value within the landscape, including … places, objects and features of significance to Aboriginal people …' (s.2A(1(b)(i)).

The publication *Operational Policy: Protecting Aboriginal Cultural Heritage* provides guidance to proponents in terms of Ecologically Sustainable Development (ESD).[1] The following discussion provides an overview of ESD and its application to the current project.

> Avoiding or Reducing Impact to Aboriginal Sites.
>
> DECCW [now HNSW] needs to balance the sometimes competing tensions between development activities and environment protection when we make decisions. Although the NPW Act gives a high level of protection to known Aboriginal objects [and since the NPW Amendment Regulation 2010 all unknown Aboriginal sites], recent court decisions have reinforced that Part 6 gives the Director General (DG) express powers to consent to the damage, destruction or defacement of Aboriginal objects by development activities. The powers in Part 6 are not inconsistent with the objects of the Act or a requirement to give effect to ESD.[2]

HNSW has three policies that provide guidance with respect to avoiding or reducing impact to Aboriginal sites. We note that as the project is SSD, the project is not subject to the NPW Act Section 90 Aboriginal Heritage Impact Permit (AHIP) approvals pathway:

> Policy 20
>
> Impacts to significant Aboriginal objects and places should always be avoided wherever possible. We [HNSW] will promote the development (or amendment) of proposals to avoid impacts and therefore avoid the need for s.90 AHIPs.
>
> Policy 21
>
> Where impacts to Aboriginal objects and places cannot be avoided, we will require the proponent or AHIP applicant to develop (or amend) proposals so as to reduce the extent and severity of impacts to significant Aboriginal objects and places through the use of reasonable and feasible measures. Any measures proposed should be negotiated between the proponent or AHIP applicant and the Aboriginal community.
>
> Policy 22
>
> Once all avoidance, minimisation and mitigation options have been adequately explored, we may also consider the appropriateness of any proposed actions having potential Aboriginal cultural heritage benefit. Any actions proposed should be negotiated between the proponent or AHIP applicant and the Aboriginal community.

6.2.2 Principles of ecologically sustainable development (ESD)

ESD has been defined in Section 6 of the *Protection of the Environment Administration Act 1991* (NSW). This requires the integration of economic and environmental considerations (including cultural heritage) in the decision-making process. In regard to Aboriginal cultural heritage, ESD can be achieved by applying the principle of intergenerational equity and the precautionary principle.[3]

Intergenerational equity

Intergenerational equity is the principle whereby the present generation should ensure the health, diversity and productivity of the environment for the benefit of future generations.

In terms of Aboriginal 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.

Information about the integrity, rarity or representativeness of the Aboriginal objects and places proposed to be impacted, and how they illustrate the occupation and use of land by Aboriginal people across the region, will be relevant to the consideration of intergenerational equity and the understanding of the cumulative impacts of a proposal.

Where there is uncertainty, the precautionary principle should also be followed.[4]

The precautionary principle

The precautionary principle states that 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.

In applying the precautionary principle, decisions should be guided by:

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

The precautionary principle is relevant to HNSW's consideration of potential impacts to Aboriginal cultural heritage where:

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

Where this is the case, a precautionary approach should be taken and all cost-effective measures implemented to prevent or reduce damage to the objects/place.[5]

With respect to the above HNSW policies (Policy 20–22) and ESD, the following sections detail specifications for conservation, potential impact, and possible reductions to impact on the identified Aboriginal sites and values connected with the study area.

6.3 Harm to Aboriginal objects and values

The assessment of Aboriginal heritage has identified Aboriginal heritage values in connection with the study area. An assessment of the proposed activity is able to determine whether these aspects will be 'harmed' either directly or indirectly. This assessment is presented in Table 6.2.

Table 6.2 Aspects of Aboriginal heritage and the identified potential harm to Aboriginal heritage.

Aspect of Aboriginal Heritage	Type of harm	Degree of harm	Consequence of harm
Study area as a component of Wallumedegal Country	None	None. While the proposal represents a change in land use, the majority of the study area has been previously developed, cut and/or stripped of vegetation.	None
Aesthetic value of native bushland	Direct	Partial to total depending on final design.	Partial to total loss of value
Proximity to AHIMS site 45-6-1854	Indirect	Partial, if the vegetation in proximity to this site cannot be retained.	Partial loss of value

The various aspects of Aboriginal heritage hold a variety of heritage values (Table 5.1). These values may be impacted by the proposed activity. An assessment of how the values may be directly or indirectly affected by the proposal is provided in Table 6.3.

Table 6.3 Overview of impacts to values and identified potential harm.

Value	Manifest through	Degree of harm	Consequence of harm
Social	The study area as a component of Wallumedegal Country.	None	N/A
Historic	N/A. No historical associations identified.	N/A	N/A
Scientific	N/A. No scientific values identified.	N/A	N/A

Value	Manifest through	Degree of harm	Consequence of harm
Aesthetic	Native bushland and natural sloping landform in the south of the study area.	Partial to total, depending on final design	Partial to total loss of value

This assessment has applied the precautionary principle through an investigation into ACH, including inspecting AHIMS sites registered outside, but in proximity to the study area. Analysis has identified the level of archaeological potential for the study area, and community consultation has sought input and descriptions of values from local Aboriginal people.

The proposed development is unlikely to affect intergenerational equity, as the study area itself does not hold Aboriginal sites, and the designation of value to the bushland areas is connected with a wider (local) cultural landscape. The study area is a small part of that landscape, and while this landscape will change inside the site, the known Aboriginal sites should not be affected—provided suitable management is put in place.

6.4 Aboriginal heritage management policy

Unmanaged and unmitigated the impacts resulting from the proposal on ACH could result in a loss of some values, and thus impact to the local Aboriginal community. The following management and mitigation statements are based on consideration of:

- legal requirements under the terms of the NPW Act, as amended—which states that it is illegal to harm or desecrate an Aboriginal object without first obtaining heritage approval;
- abiding by the Code of Practice for archaeological works connected with heritage mitigation;
- the requirements for considering ESD principles, and applying a cautious approach under the Burra Charter;
- consideration of intergenerational equity and its application to the study area;
- consideration of cumulative impacts to Aboriginal heritage and the consequences of continued loss of Aboriginal heritage values;
- the assessment of the ACH values;
- the interests of the local Aboriginal community members who participated in this project; and
- the size of the study area, the extent of Aboriginal heritage values and likely impacts posed by the project proposal.

No further archaeological assessment, including archaeological test excavation, is recommended for the study area based on the assessment of archaeological potential within this assessment and as no Aboriginal sites or objects have been identified within the study area. Works may proceed with caution, with regard to the proposed management strategies below.

6.4.1 Strategy 1—Impact avoidance

Avoidance of heritage sites represents the best heritage outcome as it means no impact to the identified heritage features. No Aboriginal sites or objects have been identified within the study area, and the study area is considered to have nil Aboriginal archaeological potential in the north of the study area, and broadly low potential in the south of the study area. As the study area does not contain an identified Aboriginal heritage item or zone of high archaeological potential, the general strategy of avoidance is not applicable within the study area.

However, care should be taken to avoid indirect impacts to AHIMS ID 45-6-1854, a shelter site located approximately 20m south of the study area. This site holds cultural value to the First Nations community. Works upslope within the study area should be mindful of the shelter site. Ideally a suitable vegetation buffer, upslope of the shelter within the southernmost portion of the study area, should be retained to maintain the natural setting of the shelter. Significant excavation works which could impact the sandstone bedrock through vibrations are not proposed in proximity to this shelter. Should the proposal change, a management strategy should be implemented to limit and monitor vibration impacts—as this would be a direct impact to this AHIMS site.

6.4.2 Strategy 2—Heritage induction

A heritage induction should be presented to all contractors, consultants and NSW Government staff involved in works within the study area. The induction should be provided prior to the commencement of works as part of the general site induction for all workers. This heritage induction would be prepared by a suitably qualified archaeologist. The induction would detail the management of First Nations cultural heritage and archaeology within the study area, through:

- detailing the actual and potential Aboriginal heritage resource within the study area;
- summarising the heritage legislation applicable to the project;
- outlining any consent conditions related to Aboriginal cultural heritage applicable to the development works;
- detailing the approach to Aboriginal heritage management in place for the project, including the unexpected finds procedure (UFP) in place for the site and procedure in case of a heritage breach; and

- providing contact details for key project staff responsible for management of unexpected finds and heritage within the site.

6.4.3 Strategy 3—Unexpected finds procedure (UFP)

A UFP should be developed for the project which would stipulate the process for managing actual or suspected Aboriginal objects (ie stone artefacts, cultural features, etc) identified during the proposed works. The procedure should be provided to all staff and contractors who are working on the project. The UFP should include the following measures:

- In the instance of an unexpected find(s), works must cease immediately in the area, and no further disturbance can occur until the area has been assessed by a suitably qualified archaeologist.
- The project archaeologist must be contacted to inspect the item(s).
- Should the item(s) be Aboriginal in origin, the project archaeologist will advise on how to proceed. Works cannot recommence in the area of the unexpected find(s) until sign-off has been given by the archaeologist. This may involve consultation with project RAPs and HNSW to discuss the management of the Aboriginal object(s).
- In the unlikely event that human remains are discovered at any time during the works, works must cease immediately in the surrounding area. The findings would need to be immediately reported to the NSW Police and/or the NSW Coroner's Office. MLALC and all project RAPs should also be contacted in the event that human remains of actual or suspected Aboriginal origin are identified.

6.5 Aboriginal heritage—Recommendations and conclusions

Based upon the finding of this report the following heritage management recommendations are made:

- No further archaeological investigation, including test excavations, are recommended.
- A buffer of native vegetation should be maintained within the southernmost extent of the study area, north of shelter 45-6-1854. This should be retained to maintain the natural setting of the shelter site.
- Vibration impacts should avoid disturbance to the bedrock which comprises site 45-6-1854.
- A heritage induction should be prepared to inform all workers involved in the proposed development of the potential heritage resource, the procedure to follow in the case of an unexpected find, and the key contact details for heritage management for the project.

- An unexpected Aboriginal heritage finds procedure should be prepared for the project and provided to all staff and contactors working on the project.

6.6 Endnotes

[1] Department of Environment and Climate Change NSW, *Operational Policy: Protecting Aboriginal Cultural Heritage*, Sydney, 2009 <http://www.environment.nsw.gov.au/resources/cultureheritage/09122ACHOpPolicy.pdf>.

[2] Department of Environment and Climate Change NSW, Guide to Determining and Issuing Aboriginal Heritage Impact Permits, 2009 <http://www.environment.nsw.gov.au/resources/cultureheritage/09121AHIPGuide.pdf>, Section 3.8.

[3] Department of Environment and Climate Change NSW, Guide to Determining and Issuing Aboriginal Heritage Impact Permits, 2009 <http://www.environment.nsw.gov.au/resources/cultureheritage/09121AHIPGuide.pdf>, p 26.

[4] Department of Environment and Climate Change NSW, Guide to Determining and Issuing Aboriginal Heritage Impact Permits, 2009 <http://www.environment.nsw.gov.au/resources/cultureheritage/09121AHIPGuide.pdf>, p 26.

[5] Department of Environment and Climate Change NSW, Guide to Determining and Issuing Aboriginal Heritage Impact Permits, 2009 <http://www.environment.nsw.gov.au/resources/cultureheritage/09121AHIPGuide.pdf>, p 26.

7 Appendices

7 Appendices

Appendix A

AHIMS Search Results

Appendix B

Community Consultation Log

Appendix A

AHIMS Search Results

Appendix B

Community Consultation Log