



CASTLEREAGH TOURISM DEVELOPMENT

39-65 Old Castlereagh Road, Castlereagh NSW

Aboriginal Cultural Heritage Assessment

Draft | July 2025

Prepared for Morson Group

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1	24 January 2025	Clare Anderson, Anya Graubard, Liam Clerke	Dr. Mary-Jean Sutton	–
2	23 July 2025	Liam Clerke	Dr. Mary-Jean Sutton	–

Acknowledgement of Country

Virtus Heritage acknowledges the Traditional Custodians of the land on which this project was undertaken and pays respect to Elders past, present and emerging.

Content Warning

Aboriginal and Torres Strait Islander people are warned that this publication may contain names and images of deceased people, descriptions of traumatic historic events and parts of Country that have been impacted by development.

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All queries related to the content, or to any use of this report must be addressed to Dr Mary-Jean Sutton.

Executive Summary

Virtus Heritage Pty Limited (hereafter 'Virtus Heritage') was engaged by Morson Group, on behalf Morson Group (the Proponent), to prepare an Aboriginal Cultural Heritage Assessment (ACHA), including an Archaeological Assessment (AA) for (proposed impact areas for these works shown in Figure 1 and referred to hereafter as 'the project area' or whatever the client wants). The ACHA was compiled to accompany an Aboriginal Heritage Impact Permit (AHIP) application and Research Design and Methodology (RD&M). The objectives of the ACHA are to investigate and assess the impact of Castlereagh Tourism Development on known and potential Aboriginal objects, Aboriginal places and cultural heritage values within the project area as well as to provide appropriate management and mitigation strategies. This report has been compiled to meet the requirements of the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011).

An Archaeological Assessment was also compiled to consider the scientific values of the project area, which is an Appendix (Appendix A), to the ACHA. The purpose of the Archaeological Assessment is to provide Morson Group, with archaeological advice on the potential impact of their proposal on Aboriginal archaeological sites and to meet the requirements of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010) for Archaeological Reports – Requirements 1 to 11).

CONSULTATION

Consultation with the Registered Aboriginal Parties, including Deerubbin LALC, has been undertaken for this assessment and conducted in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW 2010b) (hereafter referred to as the "ACHRs"). The ACHA documents the process of investigation, consultation and assessment undertaken. The approach to the ACHA and AHIP also involved consultation with Heritage NSW's regional archaeologists (if relevant).

IMPACTS

The proposed scope of works as provided by Morson Group seeks approval for a tourism-oriented development comprising three (3) buildings across separate lots, including a hotel, an indoor recreation facility with two (2) drive-through restaurants, and a registered club. The proposal also includes associated vehicle access, on-grade and above-ground parking, and site infrastructure.

- Lot 12:
 - A seven (7) storey hotel with 147 rooms, restaurant, gym, spa, pool, and associated facilities.
 - Multi-level above-ground car parking.
- Lot 14:
 - A 5,713m² indoor recreation facility.
 - Two (2) restaurants with capacity for a drive-through.
 - Associated on-grade car parking.
- Lot 16:
 - A 5,177m² registered club building.
 - Associated on-grade car parking.

The project design is proposed to be submitted as a concept Development Application with DPHI, however the expected ground impacting activities will include:

- Archaeological investigations
- Demolition of existing structures
- Earth works including cut and fill, pilings/footings and service trenches across the project area;
- Construction of the three buildings on site;

- Installation of vehicle and pedestrian access;
- Heavy vehicle movement across the project area
- Landscaping works across the project area;
- Ancillary infrastructure and works

It is likely that excavations across the site will be part of the overall redevelopment works with most excavations anticipated to be up to 0.15 – 1.74 m below ground level (BGL), though excavation of stormwater systems and footings will also likely be required. Excavations in these areas are anticipated to be to a maximum depth of ~2.3 m BGL.

The proposed development is intended to be delivered in stages as outlined below:

- Early Works Stage: Demolition of existing dwellings and structures on the site and the installation of stormwater infrastructure, including partial construction of the stormwater system and a flood relief pipe at the rear of the site. No bulk earthworks are proposed in this stage.
- Stage 2: The construction of the hotel building on Lot 12,
- Stage 3: The construction of the indoor recreation facility and restaurants on Lot 14,
- Stage 4: The construction of the club building on Lot 16.

SIGNIFICANCE ASSESSMENT

Based upon numerous prior studies within Cranebrook Terrace (refer to **Appendix A**), the project area is situated within a culturally significant landscape.

The project area contains deposits of the Penrith Unit of the Cranebrook Terrace and a recorded Penrith Lakes 2025 background scatter with Aboriginal objects in 8 locations. Aboriginal objects in this unit provide an opportunity to further understand the geomorphic and archaeological value of the Penrith Unit of the Cranebrook Terrace and past Dharug land use on elevated terrain. Development in the local region has impacted the survival of Aboriginal objects in the Penrith Unit.

The proposed activity has the potential to harm Aboriginal objects associated with the Penrith Unit. Given the extent of information available on the Penrith Unit, the previous land-use of the project area, the identification of artefacts within surface exposures inside of the project area, and the homogeneity of topography and landforms within the project area,

Archaeological and cultural salvage are required to mitigate the impacts on the proposed development on Penrith Lakes 2025, background scatter

MANAGEMENT RECOMMENDATIONS

Management options and recommendations are outlined for this proposal in Section 10 and Section 11 of this report. Based on the description of project impacts provided by Morson Group, the results of the survey, Aboriginal consultation to date, and previous archaeological research, the following recommendations are made:

- a) An AHIP with community collection and archaeological salvage will be required prior to the commencement of ground disturbance works as Aboriginal objects will be harmed by the proposal.
- b) It is recommended that all site workers and personnel involved in site impact works should be **inducted and briefed** on the possible identification of Aboriginal sites and objects during construction and their responsibilities according to the provisions of the NPW Act 1974 and NPW Regulation 2019.
This induction package should be developed in consultation with DLALC, prior to works proceeding. The induction must include:
 - ♦ An AHIP once issued as recommended by the results of this AA report.

- ♦ The contact phone numbers of the NSW Environment and Heritage regional archaeologist, EnviroLine 131 555, and DLALC.
 - ♦ The relevant contact phone number Environmental Officer responsible for this project in case unknown objects or items are uncovered during excavation.
 - ♦ The penalty for moving Aboriginal objects need to be made clear and given due consideration.
 - ♦ An outline types of unexpected heritage objects, items & relics, and their legal protection
 - ♦ The Unexpected Finds and Human Remains Procedures, as outlined in Recommendation 1 and 2.
- c) It is recommended that an **Unexpected Finds Procedure** be implemented for the duration of the project. In the event that a suspected Aboriginal object/s is identified the procedure should include the following:
- ♦ Works are to stop immediately.
 - ♦ The area of the suspected find/s is to be fenced off with an appropriate buffer and protected.
 - ♦ A qualified archaeologist and representative of DLALC are to be contacted to inspect the area and the nature of the find and to advise if it can be collected within the provisions of an AHIP (if determined by HNSW).
 - ♦ Representative of DLALC to determine the find's significance, in consultation with a qualified archaeologist or NSW Environment and Heritage,.
 - ♦ Works are not to proceed until written advice is provided from the archaeologist or NSW Environment and Heritage on the appropriate management of the find.
1. It is recommended that an **Unexpected Human Remains procedure** be implemented for the duration of the project. In the unlikely event that suspected Human Remains are identified the procedure should include the following:
- ♦ Works are to stop immediately.
 - ♦ The area of the suspected Human Remains find is to be secured and cordoned off.
 - ♦ NSW Police are to be notified. No further works can be undertaken until the NSW Police provide written advice.
 - ♦ If these remains are deemed to require archaeological investigation by the NSW Police or NSW Coroner, then:
 - ♦ NSW Environment and Heritage and the relevant Aboriginal parties must be notified; and
 - ♦ a plan of management for the preservation of any identified Aboriginal human remains or for the salvage must be put in place or conducted under an AHIP methodology and variation developed in consultation with all relevant Aboriginal parties and the NSW Environment and Heritage.
 - ♦ Works are not to proceed until written advice is provided from the archaeologist or NSW Environment and Heritage.

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Definitions

Abbreviations	Description
AA	Archaeological Assessment
ALR Act	<i>Aboriginal Land Rights Act 1983</i>
ACHA	Aboriginal Cultural Heritage Assessment
ACHCR	Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW 2010)
AHD	Australian Heritage Database
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
AIATSIS	Australian Institute of Aboriginal and Torres Strait Islander Studies
ALRA	Aboriginal Land Rights Act 1976
AR	Archaeological Report, Archaeological Assessment
ARDM	Archaeological Research Design and Methodology
BP	Before Present
CABAH	Australian Research Council Centre of Excellence for Australian Biodiversity and Heritage
CHMP	Cultural Heritage Management Plan
CoP	Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010)
DA	Development Application
DCCEEW/DCCEW	NSW Department of Climate Change, the Environment and Water/ Department of Environment, Climate Change and Water
DD	Due Diligence
DD Code, Due Diligence Code	Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (DECCW 2010)
DLALC	Deerubbin Local Aboriginal Land Council
DPC	NSW Department of Premier and Cabinet
DPIE	NSW Department of Primary Industry and Environment
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>

GIA	Guide to investigating, assessing and reporting on Aboriginal Cultural heritage in NSW (OEH 2011)
HNSW	Heritage NSW
ILUA	Indigenous Land Use Agreement
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
LGA	Local Government Area
NNTT	National Native Title Tribunal
NPW Act	<i>National Parks and Wildlife Act 1974</i>
NPW Reg	National Parks and Wildlife Regulation 2019
NPWS	NSW National Parks and Wildlife Service
NSW	New South Wales
NSWALC	NSW Aboriginal Land Council
NTA	<i>Native Title Act 1983</i>
OEH	NSW Office of Environment and Heritage (now Heritage NSW)
PAD	Potential Archaeological Deposit s an area where sub-surface stone artefacts and/or other cultural materials are likely to occur
PBC	Prescribed Bodies Corporate
PLDC	Penrith Lakes Development Corporation
RAP	Registered Aboriginal Party
RAPs	Registered Aboriginal Parties
RD&M	Research Design and Methodology
REF	Review of Environmental Factors
RNTBC	Registered Native Title Body Corporate
S.139	Section 139 of the <i>National Parks and Wildlife Act 1974</i>
S.140	Section 140 of the <i>National Parks and Wildlife Act 1974</i>
S.170	Section 170 of the <i>National Parks and Wildlife Act 1974</i>

Glossary

Aboriginal object – A term used in the NPW Act legislation, meaning: ‘... any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises NSW, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains’ (s.5 NPW Act).

Registered Aboriginal party – An individual or party who registers for Aboriginal consultation as part of the consultation and notification process following Aboriginal cultural heritage consultation requirements for proponents 2010 (NSW DECCW 2010b).

AHIP – An Aboriginal Heritage Impact Permit which is a document provided by Heritage NSW which provides a defence to the applicant to certain activities which constitute ‘harm’ to Aboriginal objects or Aboriginal places under Part 6 of the NPW Act. A proponent must prepare an application for an AHIP and other relevant documentation (including an ACHA) to obtain an AHIP from Heritage NSW in the Department of Premier and Cabinet.

Declared Aboriginal place – A term used in the NPW Act legislation, meaning any place declared to be an Aboriginal place (under s.84 of the NPW Act) by the Minister administering the NPW Act, by order published in the NSW Government Gazette, because the Minister is of the opinion that the place is or was of special significance with respect to Aboriginal culture. It may or may not contain Aboriginal objects.

Due Diligence assessment – Due diligence is taking reasonable and practical steps to determine whether a person’s actions will harm an Aboriginal object and, if so, what measures can be taken to avoid that harm. A due diligence assessment will assess the potential for harm and provide recommendations to mitigate harm, generally in the form of an Aboriginal Cultural Heritage Assessment (ACHA), if Aboriginal objects or places are likely to be harmed by proposed works.

Harm – A term used in the NPW Act Amendments meaning ‘... any act or omission that destroys, defaces, damages an object or place or, in relation to an object – moves the object from the land on which it had been situated’ (s.5 NPW Act).

Project area – Area proposed to be impacted as part of a specified activity or development proposal. These activities include indirect impact.

Place – An area of cultural value to Aboriginal people in the area (whether or not it is an Aboriginal place declared under s.84 of the Act).

Proponent – A person proposing an activity that may harm Aboriginal objects or declared Aboriginal places and who may apply for an AHIP under the NPW Act.

1. Introduction

Morson Group Consultants proposes to develop a tourism precinct at 39–65 Old Castlereagh Road, Castlereagh NSW (Lots 12, 14 and 16 DP793163, Figure 1). The project area is located within the Penrith Local Government Area (LGA), within the boundary of Deerubbin Local Aboriginal Land Council (DLALC).

The proposed scope of works as provided by Morson Group seeks approval for a tourism-oriented development comprising three (3) buildings across separate lots, including a hotel, an indoor recreation facility with two (2) drive-through restaurants, and a registered club. The proposal also includes associated vehicle access, on-grade and above-ground parking, and site infrastructure.

- Lot 12:
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- Lot 16:
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 - Associated on-grade car parking.

It is likely that excavations across the site will be part of the overall redevelopment works with most excavations anticipated to be up to 0.15 – 1.74 m depth, though excavation of stormwater system and footings will also likely be required. Excavations in these areas are anticipated to be between 0.63 – 2.3 m depth.

AHIP C0001415 (AHIMS 3891), now expired, was previously issued over the project area. Previous Aboriginal cultural heritage assessments have identified that the project area may contain in-situ stratigraphy and low densities of Aboriginal objects associated with the alluvial Penrith Unit of the Cranebrook Terrace (PLDC 2011, Virtus Heritage 2024). The proposed works therefore have the potential to harm Aboriginal objects and/or places.

Virtus Heritage Pty Limited (hereafter 'Virtus Heritage') was engaged by Morson Group to prepare an Aboriginal Cultural Heritage Assessment (ACHA), including an Archaeological Assessment (AA) for the proposed development. The ACHA was compiled to accompany an Aboriginal Heritage Impact Permit (AHIP) with Archaeological Research Design and Methodology (ARDM). The objectives of the ACHA are to investigate and assess the impact of Castlereagh Tourism Development on known and potential Aboriginal objects, Aboriginal places, and cultural heritage values within the project area as well as to provide appropriate management and mitigation strategies. This report has been compiled to meet the requirements of the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011).

An Archaeological Assessment was also compiled to consider the scientific values of the project area, which is an Appendix (Appendix A), to the ACHA. The purpose of the Archaeological Assessment is to provide Morson Group with archaeological advice on the potential impact of their proposal on Aboriginal archaeological sites and to meet the requirements of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010a) for Archaeological Reports – Requirements 1 to 11).

1.1 PROJECT TEAM AND QUALIFICATIONS

This report was originally compiled by Clare Anderson (Principal Archaeologist, Virtus Heritage, BA (Hons) Prehistoric and Historical Archaeology) with assistance from Anya Graubard (Anthropologist/Heritage Senior Consultant, Virtus Heritage, BA (Hons) Anthropology) and then updated Liam Clerke (Senior Geomorphologist/GIS Analyst, Virtus Heritage, MRes Paleohydrology, Macquarie University) and Dr Mary-Jean Sutton. GIS mapping was completed by Liam Clerke. Quality review was undertaken by Dr. Mary-Jean Sutton (Director, Virtus Heritage, PhD Archaeology, University of Queensland; B.Arts Hons, Archaeology, University of Sydney). Project information and description of works was provided by Peter Morson and Joshua West of the Morson Group.

1.2 ACKNOWLEDGEMENTS

We would like to acknowledge the assistance of the following individuals for the completion of this report:

- Steven Randall, Deerubbin Local Aboriginal Land Council
- Peter Morson, CEO, Morson Group
- Joshua West, Graduate Architect, Morson Group



Figure 1. Project area and locality

2. Description of the Area

The purpose of this section is to describe the geographic location of the project area, its environmental context, any known Aboriginal objects and places within the project area and surrounding locality and provide a summary of Aboriginal history within the locality. Much of this information is provided in detail in the attached AA (Appendix A) and only briefly summarised here.

2.1 LOCATION

The project area is located at 39–65 Old Castlereagh Road, Castlereagh NSW (Lots 12, 14 and 16 DP793163, Figure 1). The project area is situated within the Penrith Local Government Area (LGA), within the boundary of Deerubbin Local Aboriginal Land Council (DLALC).

2.2 ENVIRONMENTAL CONTEXT

A detailed description of the environmental context is provided in Section 3 of the AA (Appendix A).

The project area is situated within a modified landform on terrain elevated above the Nepean River and an unnamed tributary of Cranebrook Creek, now destroyed. The unnamed tributary of Cranebrook Creek, as well as a chains of ponds, were once present approximately 300m north-east of the project area, with the Nepean River approximately 650m south-east and Cranebrook Creek 1.7km west.



Figure 2. Modified floodplain landform within the project area (Morson Group 2024)

The temporary and permanent water sources in proximity to the project area would have provided suitable habitats for a vast range of plant and animal species with utility to Dharug-speaking people, with the availability of these resources changing over the last 40,000 years. Environmental shifts such as those indicated by Chalson and Martin (2008) can lead to changes in water channel and chain of ponds alignment, flooding regimes and resource availability. These in turn can lead to adaptation and changes in landscape use by Aboriginal people over time, resulting in patterns of land use and preservation of Aboriginal objects which may not be immediately apparent based on current environmental conditions.

The Penrith Lakes Scheme, inclusive of the project area, has previously been assessed as having a reasonable potential to contain Aboriginal objects. PLDC (2011) has previously stated that “flaked stone artefacts will be present within the soil across the Scheme in a consistently low-density distribution.”

The project area contains silty sand/sandy silt topsoils to a depth of 0.6m, followed by alluvial clayey sand/silty sand to depths between 3.3 and 6m, characteristic of the Richmond soil landscape within the Penrith Unit of the Cranebrook Terrace. It has been theorised that Aboriginal objects would most likely been discarded on the surface of this older alluvium unit, with downward migration of artefacts over time as a result of bioturbation, disturbance and other geomorphic agents such as erosion and aggradation (Kohen 1997, 2004 see **Section 4**).

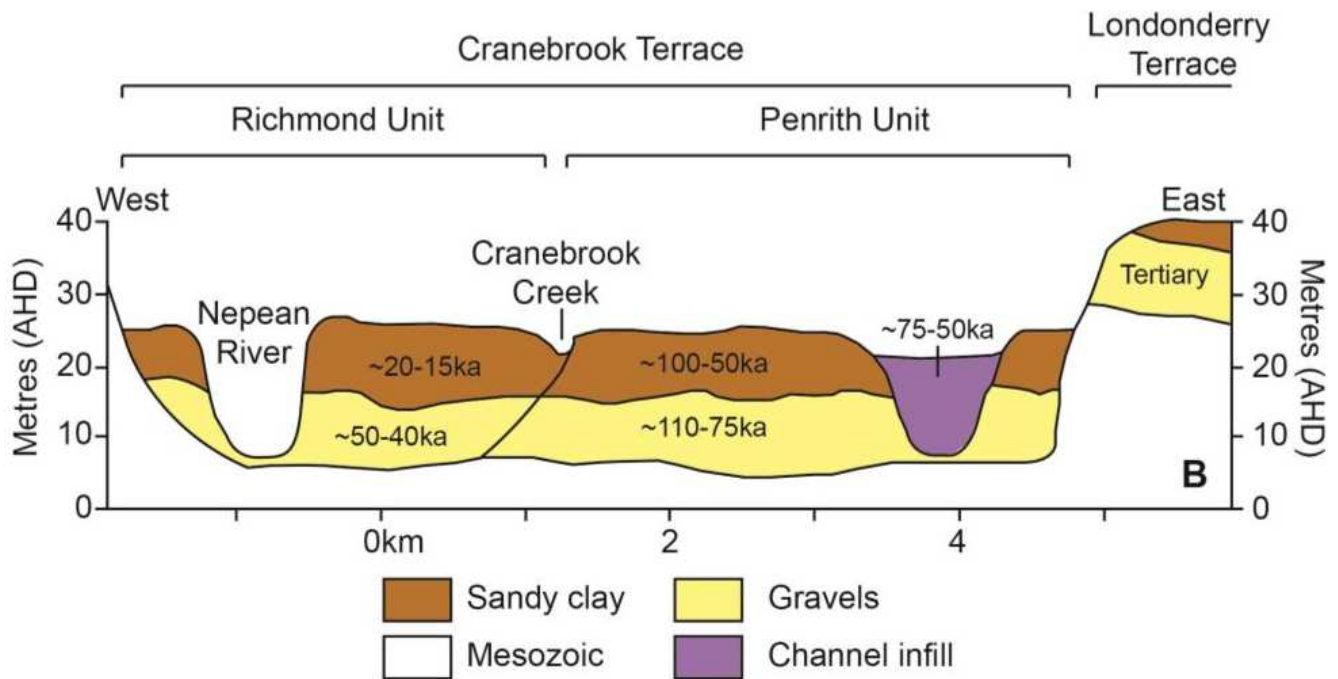


Figure 3. A cross section of the Cranebrook Terrace with date ranges from Williams et al. 2017.

Table 1: Soil profiles and depths from geotechnical investigations in Lot 14 (Morrow 2023: Table 2)

Unit	Material	Approx. Depth Range of Unit ¹ mBGL					
		BH1	BH2	BH3	BH4	BH5	BH6
1	Topsoil	0.0 to 0.5 (24.2 to 23.7)	0.0 to 0.6 (23.8 to 23.2)	0.0 to 0.6 (24.0 to 23.4)	0.0 to 0.3 (24.0 to 23.7)	0.0 to 0.6 (24.1 to 23.5)	0.0 to 0.3 (24.1 to 23.8)
2	Medium Dense Sand	0.5 to 6.0 (23.7 to 18.2)	0.6 to 5.5 (23.2 to 18.3)	0.6 to 4.2 (23.4 to 20.0)	0.3 to 3.3 (23.7 to 20.7)	0.6 to 3.8 (23.5 to 20.3)	0.3 to 3.8 (23.8 to 20.3)
3	Alluvial Cobbles	6.0 to 13.9 (18.2 to 10.3)	5.5 + (sub 18.3)	4.2 + (sub 19.8)	3.3 + (sub 20.7)	3.8 + (20.7 to 20.3)	3.8 + (sub 20.3)
4	Shale Bedrock	13.9 to 14.6 (10.3 to 9.6)	-	-	-	-	-

Notes:

1 Depths shown are based on material observed within test locations and will vary across the site.

This project area has been modified through agricultural activities, underground irrigation piping, the construction of residential structures, geotechnical investigations and ancillary infrastructure. The project area is also susceptible to flooding.

These activities may have removed Aboriginal objects in the topsoil but are more likely to have moved or displaced Aboriginal objects within the top 0.6m of soil, resulting in low archaeological integrity in the topsoil. It is possible that intact archaeology has survived within the project area, particularly below the level of agricultural activities however, as noted by Kohen (1997, 2004), it is also possible that artefacts have moved through the soil profile as a result of bioturbation.

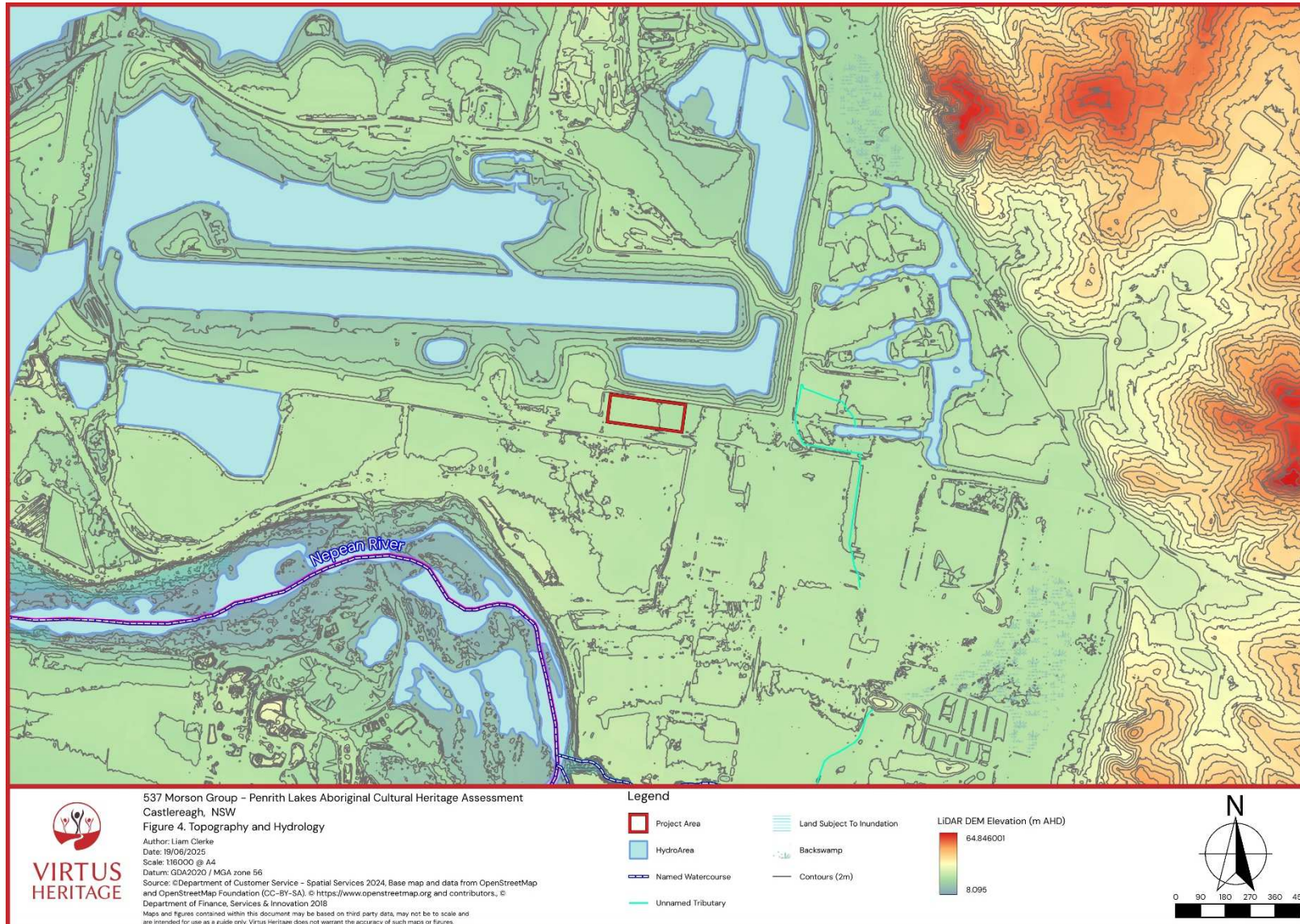


Figure 4. Topography and Hydrology

2.3 ABORIGINAL HERITAGE CONTEXT

This section is designed to provide a description of the Aboriginal heritage context as relevant to the proposed project. The Aboriginal heritage context includes a summary of Aboriginal history within the locality and material evidence of Aboriginal land use, which is a summary of information presented in much greater detail in the AA (refer to Appendix A, Sections 4, 5 and 6).

2.3.1. Ethnohistory

Historic information of Aboriginal people living on the land includes relevant archival, historic and ethnohistoric sources. This research will provide the historical narrative of the peoples who have and continue to live in the region.

Local histories often pay little attention to the Aboriginal history of the locality and can present Aboriginal people as invisible, unrelated to important local historical events, or passive victims of colonisation. So, while local historical information will provide important and valuable starting points, when investigating historic values involving Aboriginal people and obtaining oral history is important.

The project area is part of a broader Aboriginal cultural landscape of the Dharug-speaking peoples. The Penrith Lakes area is associated with the Boorooberongal and Mulgoa clans (PLDC 2011, Karskens 2007). The Blue Mountains, Cranebrook Escarpment and Nepean River connect with shared songlines between Dharug, Darkinjung and Gundungurra Nations (PLDC 2011, Blue Mountains City Council 2017).

The Penrith Lakes area was a traditional meeting place for Aboriginal people. Its river and rich soils provided abundant natural vegetation and wildlife which supported Aboriginal people for many generations (New South Wales State Heritage Register, Department of Planning & Environment. HO2009, 2024). Evidence of this history has been revealed through the many artefacts were collected during the 25 years of sand and gravel mining at Penrith Lakes, to the north, west and south of the project area (Kohen 1986, 1988–2004, 1997, EMGA 2001, Comber 2005, 2006, 2008, PLDC 2011, New South Wales State Heritage Register. Department of Planning & Environment. HO2009, 2024). In addition to the eight-five Aboriginal cultural heritage sites registered within a 4km radius of the project area, there are additional Aboriginal cultural heritage sites were not recorded in AHIMS (ERM 2001, Insite Heritage 2005).

Substantial stone artefact workshops have been identified along the banks and terraces of Cranebrook Creek and the Nepean River, with many suitable stones for the manufacture of stone tools being sourced from the river and its creeks (Doelman et al 2015). Cranebrook Creek CC/1 (AHIMS 45-5-O281), listed as an artefact and Aboriginal Ceremony and Dreaming site, was located approximately 1.4km to the north-west of the project area.

The first interactions recorded between Europeans and Aboriginal people along the Hawkesbury–Nepean (hereto referred to as 'Dyarubbin') Rivers was recorded by Governor Arthur Philips in 1791. The Aboriginal group identified themselves as 'Buruberongal' and spoke in a dialect of the Dharug language (Eco Logical 2021). These initial interactions were reportedly friendly (though recordings were undertaken by the colonists and therefore biased), but details of gift and food exchanging have been noted. Further colonisation, smallpox epidemics, bush warfare, over exploitation and destruction of natural resources led to the direct theft of Aboriginal children, the effects of which are still felt by the wider Aboriginal community now.

Main food sources in the project area would have included kangaroos, fruit bats, possums and small birds and freshwater mussels and yams growing along Dyarubbin River floodplains. However, by 1795 much of these yam beds had been destroyed and replaced with non-native crops (Eco Logical 2021). Nellie Nah

Doongh, or 'Black Nellie' was often referred to as the last of the 'Nepean tribe', living amongst colonists along the Yandhi. Karskens (2019) recounts how Nellie "was about 3 or 4 years old when white people appeared in her country, and the thing that she talked about was how the settlers shot all the game – the soundtrack of invasion was gunfire."

The colonisers' approach was extended beyond physical occupation to erasing the presence and identity of the Aboriginal people. In this context, the "unparalleled severities" (Karskens 2019) employed by colonisers can be seen as part of a deliberate strategy to annihilate the Aboriginal peoples' way of life, thereby facilitating the unchallenged appropriation of their land. The legacy of these actions is profound, having caused lasting trauma and disruption to Indigenous communities. Understanding this history is crucial for acknowledging the injustices faced by Aboriginal people and for addressing the ongoing impacts of colonisation (Karskens 2019).

However, it is also essential to recognise the resilience and agency of Aboriginal people (especially Western Sydney), where communities continue to assert their cultural identity. A prominent example of this resilience is embodied in the story of Colebee. The son of Chief Yarramundi, Colebee, acted as a guide to William Cox during his surveys and construction of a road across the Blue Mountains (Smith 2013). Mills (1997) notes that the remnants of the Aboriginal bands that had occupied the Cumberland Plain began to congregate on properties owned by sympathetic individuals, including William Cox. Colebee and Nurragingy were rewarded for their 'fidelity to Government and their recent good conduct' with a 30-acre land grant in 1819, two years after the establishment of the Parramatta Native Institution, a residential school in the area (Smith 2013). Governor Macquarie strategically settled Europeans known to Colebee and Nurragingy near Blacktown to assist with the assimilation process (GML 2018). The land was farmed by Nurragingy and his family until the closure of the Blacktown Native Institution in 1883. Colebee passed away in 1831, while Nurragingy was known to be living in the area by 1841, though his exact date of death is unknown (Brook and Kohen 1991:53). Despite extensive modifications and land use changes, the significance of the original Colebee and Nurragingy land grant endures.

To the north of the project area, near Hadley Park, the Nepean River was one of the many first contact places where local Aboriginal people were able to stay on their traditional lands by camping and working for the colonial settlers. It was a place of confrontation between Aboriginal people and colonial settlers before more peaceful relationships were established (New South Wales State Heritage Register. Department of Planning & Environment. HO2009, 2024).

These events highlight the resilience and agency of Aboriginal people with a connection to the project area, who navigated and utilised the colonial system to maintain a connection to their land and culture. Their efforts demonstrate the strength and adaptability of Aboriginal communities in the face of colonisation which continues today.

The Deerubbin Local Aboriginal Land Council (DLALC) continues to uphold its connections to and protect Country, with recent years marking several significant achievements for the council. A notable victory came after a three-year court battle, where the DLALC successfully won a land claim over the Parramatta Gaol and its surrounding areas. This site holds great cultural significance for the Dharug people, serving as an important area before the construction of the jail in 1841 (ABC News 2015).

Additionally, in 2021, the DLALC reached an agreement with the New South Wales (NSW) government to support the development and protection of land managed by the council. This agreement aims to safeguard 1,100 hectares of woodland on the Cumberland Plain, ensuring the preservation of this vital ecosystem (Mirage News 2021). Through these efforts, the DLALC demonstrates its ongoing commitment to preserving its cultural heritage and protecting the natural environment.

Aboriginal people, organisations and reference groups have continued to actively be involved in advocating for the protection of Aboriginal cultural heritage, archaeological assessment and care of Country across the local area, including the Penrith Lakes area (for example, Kohen 1988–2004, PLDC 2011, consultation for SEPP amendments 2023).

2.3.2. Archaeological Context

The detailed archaeological context including AHIMS and other heritage database searches, previous archaeological research, regional character, and predictive model, as well as mapping of previously recorded sites and landscape features, place, and natural resources of interest to Aboriginal people, are provided in Sections 4, 5 and 6 of the AA (Appendix A). A summary of this context is provided here.

An AHIMS search was completed on 10 July 2025 for search area (Client Service ID: 912988, GDA, Zone: 56, Eastings: 281848 – 289036, Northings: 6261482– 6270558, Appendix C). A total of eighty-seven Aboriginal cultural heritage sites were returned by the search (Table 2). No Aboriginal objects were recorded in the project area (Figure 6).

Table 2. Summary of AHIMS Features within the Search Area

Site Features	Frequency	Percentage (%) of Total
Art (Pigment or Engraved)	2	2.3%
Artefacts	74	85.1%
Artefact, Aboriginal Ceremony and Dreaming	1	1.1%
Artefact; Potential Archaeological Deposit (PAD)	7	8.0%
Potential Archaeological Deposit (PAD)	3	3.4%
Grand Total	87	100.0%

The nearest previously recorded Aboriginal cultural heritage site to the project area was “Andrews Road PAD 1” (AHIMS ID#45–5–5238), a PAD with stone artefacts associated. This site was destroyed in accordance with Aboriginal Heritage Impact Permit #4518 (Appendix B). This site is located approximately 1.1km southeast of the project area.

The project area has previously been assessed for Aboriginal archaeological and cultural heritage values as part of the Penrith Lakes Development Scheme (Kohen 1981, Penrith Lakes Development Corporation (PLDC) 2011). This report consolidated previous archaeological assessments and survey coverage data up to 2011 and included consultation in accordance with the *Aboriginal community consultation requirements for proponents* (DECCW 2010). Volumes 1, 2 and 3 and Map 14 were not available to review for this assessment. Morson Group has requested this information from Heritage NSW and Penrith Lakes Development Corporation.

A model of past Aboriginal land use was developed for the Penrith Lakes Scheme. PLDC (2011) concluded that the Dharug speaking Aboriginal people who lived on the Cranebrook Terrace and associated landforms (such as the Smith Road conservation area ridge) hunted and gathered across the landscape with selection of elevated landforms as favoured camping locations. The assessment concluded that “it is assumed that flaked stone artefacts will be present within the soil across the Scheme in a consistently low-density distribution.”

AHIP C0001415 (AHIMS 3891) was issued to PLDC over the project area between 15 November 2018 and 15 November 2023 to allow harm to known and unknown Aboriginal objects without mitigation of harm during vegetation works and erosion and sediment control works as described in Controlled Activity Approval 10 ERM 2011/0057 (Figure 6). This AHIP has expired.

An Aboriginal archaeological due diligence assessment was completed for the project (Virtus 2024) and included an archaeological survey with Virtus Heritage and Uncle Steven Randall (Deerubbin LALC). Survey coverage from this site inspection is presented in Section 6 of this report. No Aboriginal objects were identified in this initial survey. In a subsequent survey undertaken by 24 February 2025 with Dr Mary-Jean Sutton (Director) assisted by Anya Graubard (Virtus Heritage) and Tania Carroll (Murribidgee), Vicky Slater

(Wurrumay) and Anika Jalomaki (Yulay) Aboriginal objects were identified in eight exposures within the project area. These exposures were identified within the project area. in one consistent landform and constitute one identified Aboriginal artefactual scatter, Penrith Lakes 2025 (PL2025) in the February 2025 survey. A background scatter of low density artefacts associated with the alluvial terrace/floodplain landform. Table 3 provides as summary of these exposures and the artefacts identified in Penrith Lakes 2025, recorded by Dr Sutton with RAPs.

Table 33. Aboriginal Objects (stone tools) within Penrith Lakes 2025 Recorded within the Project Area.

Site and Object Recorded		/Description Including Landform
PL 2025 – Retouched Flake		The object is a retouched meta-mudstone flake located along the fence line of a residential property (refer to Figure 5). It is a location heavily disturbed by generational agricultural and residential use. The object is located on an alluvial terrace. The object is situated along an exposure associated with the southern fence line of the project area. The exposure is approximately 1 meter wide and 100 meters long. Visibility in the exposure was 70% and outside the exposure was 1%. The tool is a tertiary flake with evidence of retouch and some patina and is a yellow – orange meta-mudstone 4cm length x 2cm width x 0.5cm thick.
PL 2025 – Quartzite PF1		The object is a primary quartzite flake located along the fence line of a residential property (refer to Figure 5). It is a location heavily disturbed by generational agricultural and residential use. The object is located on an alluvial terrace. The object is situated along an exposure associated with the western fence line of the project area. The exposure is approximately 1 meter wide and 90 meters long. Visibility in the exposure was 70% and outside the exposure was 1%. It is a primary flake with evidence of pitting and some patina and is a yellow – tan quartzite 6cm length x 2.5cm width x 1.5cm thick.
PL 2025 – Meta-Mudstone SF1		The object is a secondary meta-mudstone flake located along the fence line of a residential property (refer to Figure 5). It is a location heavily disturbed by generational agricultural and residential use. The object is located on an alluvial terrace. The object is situated along an exposure associated with the southern fence line of the project area. The exposure is approximately 1 meter wide and 60 meters long. Visibility in the exposure was 70% and outside the exposure was 1%. The object is a secondary flake with evidence of pitting and some patina and is a yellow – orange meta-mudstone 2cm length x 1.5cm width x 0.5cm thick.

Site and Object Recorded		/Description Including Landform
PL 2025 – Quartzite SF1		The object is a secondary quartzite flake located along the fence line of a residential property (refer to Figure 5). It is a location heavily disturbed by generational agricultural and residential use. The object is located on an alluvial terrace. The site is situated along an exposure associated with the southern fence line of the project area. The exposure is approximately 1 meter wide and 60 meters long. Visibility in the exposure was 70% and outside the exposure was 1%. The object is a secondary flake with evidence of pitting and some patina and is a reddish orange quartzite 2.5cm length x 2cm width x 1.5cm thick.
PL 2025 – ASI		The objects are part of a small scatter of at least one pink quartzite broken flake and three grey silcrete broken flakes and a red silcrete broken flake located along the fence line of a residential property (refer to Figure 5). Visibility in the exposure was 70% and outside the exposure was 1%. It is a location heavily disturbed by generational agricultural and residential use and erosion from heavy rain falls in February 2025. The site is located on an alluvial terrace. The site is situated along an exposure associated with the southern fence line of the project area. The exposure is approximately 1 meter wide and 60 meters long.
PL 2025 – Basalt Hand Axe		The object recorded is a basalt hand axe located along the fence line of a residential property (refer to Figure 5). It is a location heavily disturbed by generational agricultural and residential use. The object is located on an alluvial terrace. The site is situated along an exposure associated with the southern fence line of the project area. The exposure is approximately 1 meter wide and 100 meters long. Visibility in the exposure was 70% and outside the exposure was 1%. The object is a hand axe with evidence of flaking, pitting and some patina and is a greyish black basalt 7cm length x 5cm width x 2.5cm thick. There is also evidence of blood as shown in the photograph on the tool or some kind of residue.

Site and Object Recorded		/Description Including Landform
PL 2025 - Basalt PF1		The object is a primary basalt flake located along the fence line of a residential property (refer to Figure 5). It is a location heavily disturbed by generational agricultural and residential use. The object is located on an alluvial terrace. The object is situated along an exposure associated with the northwestern fence line of the project area. The exposure is approximately 4 meter wide and 10 meters long. Visibility in the exposure was 70% and outside the exposure was 1%. The artefact is a tertiary flake with evidence of pitting and some patina and is a greyish black basalt 4.5cm length x 3cm width x 1cm thick.
PL 2025 - Basalt SF2		The object is a secondary basalt flake located along the fence line of a residential property (refer to Figure 5). It is a location heavily disturbed by generational agricultural and residential use. The object is located on an alluvial terrace. The site is situated along an exposure associated with the northwestern fence line of the project area. The exposure is approximately 4 meter wide and 10 meters long. Visibility in the exposure was 70% and outside the exposure was 1%. The isolated object is a secondary flake with evidence of pitting and some patina and is a dark greyish black basalt 2.5cm length x 2cm width x 1cm thick.



Figure 5. Identified Aboriginal Objects part of the Penrith Lakes 2025 Background Scatter within the Project Area

Ground surface visibility in the project area was extremely limited (<1%) due to the high level of non-native grass. All mature trees within the project area were identified as non-native species. The inspection confirmed that the project area had undergone ground disturbance associated with the construction of the existing houses, and landscaping works. Underground irrigation piping had been installed across the project area. On the basis of the previous assessment (PLDC 2011) and the presence of the Penrith Unit of the Cranebrook Terrace, the due diligence assessment considered that archaeological potential was present and community consultation and further impact assessment was required.

It is anticipated that the project area, as elevated terrain in proximity to water, was utilised by Aboriginal people in the past but not as intensively as other parts of the Penrith Lakes area as it is 300m or greater from water. Stone artefacts are predicted to occur within the project area "in a consistently low-density distribution" to depths of 1.3m (but often to 0.9m). Artefacts may be manufactured of predominately silcrete and occasionally quartz, chert, quartzite, hornfels and basalt. Other site types and features are possible but unlikely to occur in the project area as they have not previously been identified within the project area during previous assessments and due to the degree of past land use and disturbance and a lack of suitable geology and vegetation.

Though Aboriginal objects were only identified within surface exposures over the project area, there exist numerous studies which appropriately characterise the distribution of Aboriginal objects within the Penrith Unit of the Cranebrook Terrace (see **Appendix A**).

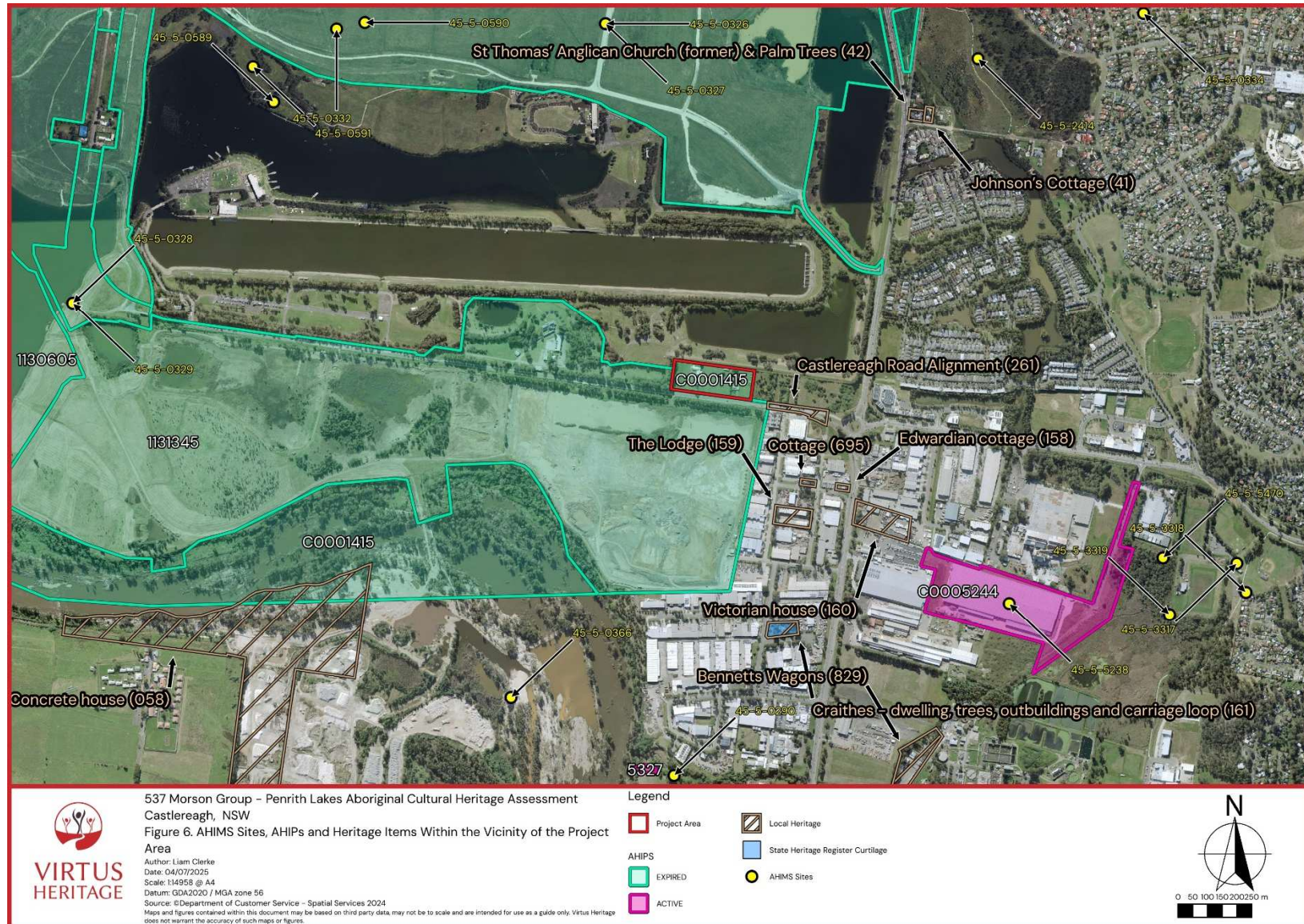


Figure 6. AHIMS Sites, AHIPs, and Heritage Items within the Vicinity of the Project Area

3. Consultation Process

3.1 OVERVIEW OF THE CONSULTATION PROCESS

We acknowledge that Aboriginal people are the primary determinants of the cultural significance of their heritage. Aboriginal consultation for the ACHA was undertaken in compliance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW 2010b) (hereafter referred to as the “ACHRs”). These consultation requirements are legal requirements that proponents must comply with during the ACHA process which are set out in Clause 60 of the National Parks and Wildlife Regulation (2019). Aboriginal consultation is crucial in the compilation of the ACHA in order to adequately assess and investigate Aboriginal cultural heritage.

Consultation is important with registered Aboriginal parties in this process in order to:

- determine the cultural significance of a project area;
- identify Aboriginal objects of cultural value within a project area; and
- identify places of Aboriginal cultural value (whether or not they are Aboriginal places declared under Section 84 of the *NPW Act*).

Twenty-two Aboriginal Parties/individuals registered interest for this project during the notification process (responded to the advertisements in the local newspapers or to an invitation to register in the project after their contact details were provided by notified organisations). The groups/individuals registered for consultation are listed in **Table 4**.

Table 4: Aboriginal Parties/Individuals Registered Interest for this Project

Name of Contact	Registered Aboriginal Party
Steven Randall	Deerubbin Local Aboriginal Land Council
Philip Boney	Wailwan Aboriginal Group
Tiarna Bird	Mura Gadi Aboriginal Corporation
Ethan Trewlynn	Long Gully Cultural Services
Nigel Millgate	Gadhungal Marring
Darleen Johnson and Ryan Johnson	Murra Bidgee Mullangari Aboriginal Corporation
Justine Coplin	Dharug Custodian Aboriginal Corporation
Kelvin Boney	Wallanbah Aboriginal Site Conveyancing
Amanda Hickey	Amanda Hickey Cultural Services
Carolyn Hickey	A1 Indigenous Services
Jennifer Beale	Butucarbin Aboriginal Corporation
Phil Khan	Kamilaroi Yankuntjatjara Working Group
Kerrie Slater; Vicky Slater	Wurrumay Culture Heritage Consultants

Steven Hickey	Widescope Indigenous Group
Wendy Morgan	Guntawang Aboriginal Resources Incorporated
Pearl Depoma	Pearl Depoma (Individual)
Arika Jalomaki	Yulay Cultural Services
Thomas Dahlstrom	
Ginninderra Aboriginal Corporation	Steven Johnson & Krystle Carroll
Paul Webb	Paul Webb
Konanggo Aboriginal Cultural Heritage Services	Robert Young
<i>Undisclosed Registered Aboriginal Party</i>	<i>Undisclosed Registered Aboriginal Party</i>

All consultation with Registered Aboriginal Parties undertaken by Morson Group and Virtus Heritage is documented in greater detail in **Appendix B**. Morson Group carried out the commercial engagement and selection of interested registered Aboriginal parties for fieldwork for this project. Commercial engagement is stipulated in the ACHRs as separate to consultation and discussions between registered Aboriginal parties and Morson Group which are commercial in confidence will not be reiterated in the Aboriginal consultation log.

Table 5 provides a summary of compliance by this project with the ACHRs. It should be noted that consultation was undertaken through multiple forms of contact with registered Aboriginal parties for all correspondence including registered post via delivery confirmation, email (wherever possible), phone calls and SMS (where all other forms of contact were exhausted).

Table 5: Compliance with the ACHRs

Step #	Description of Step in the ACHRs	How this step of the ACHRS was complied with
1: Notification of project proposal and registration of interest		
1a	Proponents must compile a list of Aboriginal people who have an interest in the proposed project area and hold knowledge relevant to determining the cultural significance of Aboriginal objects and/or places from reasonable sources of information which include writing to: • The relevant Heritage NSW regional office; • The relevant Local Aboriginal Land Council; • The National Native Title Tribunal; • Native Title Services Corporation; • Relevant local council (s); and • Relevant Local Land Services.	Letters were sent by Virtus Heritage to all of these relevant organisations (via email) requesting their input on the names and contact details of Aboriginal people who have an interest in the proposed project area and hold knowledge relevant to determining the cultural significance of Aboriginal objects and/or places within the locality of the project area on 24 September 2024.
1b	Proponent prepares a notification via newspaper which must include: • The name and contact details of the proponent; • A brief overview of the proposed project that may be the subject of an application for an AHIP, including the location of the proposed project; • A statement that the purpose of community consultation with Aboriginal people is to assist the proposed applicant in preparing an application for an AHIP and to assist Heritage NSW in their consideration and determination of the application; • An invitation for Aboriginal people who hold knowledge relevant to determining the cultural significance of Aboriginal object(s) and/or place(s) in the area of the proposed project to register an interest in a process of community consultation with the proposed applicant regarding the proposed activity; and • A closing date for the registration of interests.	A notification was placed in The Daily Telegraph in the Public Notices section on 27 September 2024 which complied with these requirements and is provided in Appendix B. A closing date of Wednesday 16 October 2024 was provided for registrations of interest.
1c	Proponent writes to the Aboriginal people whose names were provided by organisations in Step 1a to notify them of the proposed project and opportunity to be involved in	Letters were sent to all Aboriginal people provided by organisations (unless they had registered interest already) via registered post with delivery confirmation and emailed

	consultation and places notification in the local newspaper.	(wherever possible) on 2 nd October to comply with this step to invite them to be involved in consultation. Closing date for registrations was 21 st October 2024. Emails were made (wherever possible) to those who had not responded on 16 th October to remind people of closing date for registration.
1d	Proponent records names of Aboriginal people who have registered an interest in being involved in consultation – the 'Registered Aboriginal Parties'	Table 4 provides a list of the registered Aboriginal parties, who provided written registration of interest for this project.
1e	Proponent provides a copy of the notification and record of the Registered Aboriginal Parties to Heritage NSW and relevant LALC within 28 days of the closing date for registering an interest.	An email was sent to Heritage NSW and Deerubbin Local Aboriginal Land Council LALC to comply with this requirement on 4 th November 2024.

2 Presentation of the information about the proposed project

2a	Proponent presents and/or provides project information to registered Aboriginal parties.	Project information package was presented via letter registered post with delivery confirmation and sent via email to all registered Aboriginal parties on 4 th December 2024. This information included information from Virtus Heritage on the project proposal and the draft project methodology, requiring written responses/comments from registered Aboriginal parties by 20 th January 2025. Virtus Heritage also included a separate letter requiring written response from registered Aboriginal parties for commercial engagement to be provided directly to Proponent. The invitation to discuss the project information with Virtus Heritage and Proponent was reiterated through phone calls and emails to the Registered Aboriginal Parties up to 20 th January 2025.
2b	Proponent may create an opportunity for registered Aboriginal parties to visit the proposed project site.	22 registered Aboriginal parties were invited by Proponent to be involved in proposed fieldwork and to maintain an open dialogue on cultural knowledge and values. This invitation was sent out by Virtus Heritage by formal letter via email on 10 th February 2025, with a date of 20 th February 2025 scheduled for fieldwork.
2c	Proponent records or documents that information on the proposed project has been presented. The record or documentation should include any agreed outcomes and/or contentious issues that may require further discussion (where applicable). Proponent should provide a copy of this record or	Documentation of the information package is attached in the Aboriginal consultation log to this assessment. Copies of this correspondence were provided to Heritage NSW and RAPs with the draft ACHA.

	documentation to registered Aboriginal parties.	
3 Gathering information about cultural significance		
3a	Proponent presents and/or provides the proposed methodology (s) for the cultural heritage assessment to the registered Aboriginal parties for comment. registered Aboriginal parties have a minimum of 28 days after the proponent provides the methodology (s) to provide written or oral comment.	Project information package was presented via letter registered post with delivery confirmation and sent via email to all Registered Aboriginal Parties on 4 th December 2024 with a closing date for comments set for 20 th January 2025. Follow up phone calls were made on 7 th January 2025.
3b	Proponent considers input provided by registered Aboriginal parties and finalises methodology for implementation. Proponent documents how the input has been considered.	Project methodology was finalised and any comments from registered Aboriginal parties were taken into consideration where appropriate (refer to Section 3.1 for further discussion on implementation).
3c	Proponent seeks information from registered Aboriginal parties to identify: Whether there are any Aboriginal objects of cultural value; and Whether there are places of cultural value (whether or not they are Aboriginal places declared under Section 84 of the <i>NPW Act</i>).	The presentation of project information and the draft proposed project methodology were provided to all registered Aboriginal parties via email and registered post on 4th December 2024 with a closing date of 20th January requesting information from registered Aboriginal parties in relation to this requirement. An invitation to discuss the proposed methodology and cultural information on potential Aboriginal objects and places of cultural value with Virtus Heritage and the proponent was reiterated through phone calls and emails to the registered Aboriginal parties. On 24 June 2024 by Steve Randall (DLALC), and Garth Thompson (Virtus Heritage), assisted by Anya Graubard (Virtus Heritage) carried out an initial survey for due diligence to discuss the project design and impacts as part of this project's Connecting with Country consultation process. A second survey was undertaken by 24 February 2025 with Dr Mary-Jean Sutton (Director) assisted by Anya Graubard (Virtus Heritage) and Tania Carroll (Murribigee), Vicky Slater (Wurrumay) and Anika Jalomaki (Yulay) and during both surveys these two questions were met in this requirement, as well as discussion of management inputs for the project for cultural values and Aboriginal cultural heritage to meet not only requirement 3a) but 3d) of the consultation process...

3d	Proponent seeks input from registered Aboriginal parties on potential management options	RAPs were provided with the presentation of project information and the draft proposed project methodology, which included the opportunity to provide input on potential management options within the project area via email and registered post on 4 th December 2024 with a closing date of 20 th January requesting information from registered Aboriginal parties in relation to this requirement. This request is reiterated again in the covering letter sent with this draft report for registered Aboriginal parties' comment and review
4 Review of draft cultural heritage assessment report		
4a	Proponent prepares draft cultural heritage assessment report and provides it to the registered Aboriginal parties for review and comment.	To be undertaken
4b	Registered Aboriginal parties have a minimum of 28 days after the proponent provides the draft report to review and provide written or oral comment.	To be undertaken
4c	Proponent finalises cultural heritage assessment report. The final report is submitted to Heritage NSW for consideration with the proponent's AHIP application.	To be undertaken
4d	Proponent provides/makes available the final cultural heritage assessment report and AHIP application to the registered Aboriginal parties and relevant LALCs within 14 days of an AHIP application being made to Heritage NSW.	To be undertaken

3.2 SUBMISSIONS/COMMENTS ON METHODOLOGY

The purpose of this section of the report is to provide information on the submissions/comments raised about the proposed project methodology by registered Aboriginal parties and how these issues were addressed by the Proponent in order to comply with the ACHA guide (OEH 2011) and ACHRs (DECCW 2010b).

All registered Aboriginal parties were provided with the opportunity to provide comment on the methodology for this assessment, and to be involved in fieldwork. All submissions provided by the registered Aboriginal parties are provided in full in Appendix B and summarised in **Table 6** below. The finalised methodology is supplied in Appendix C.

3.3 COMMENTS MADE DURING FIELDWORK

Comments made by representatives from registered parties during fieldwork are summarised in **Table 6**.

Table 6: Comments Made During Fieldwork

Registered Party	Comments	Response
Vicky Slater (Wurrumay Culture Heritage Consultants)	Values - Importance of maintaining existing sightlines to the Blue Mountains from ground level (Blue Mountains visible). - Emphasised significance of the area in all areas under Burra Charter, including contemporary ongoing connection to waterways near to the project area (the Penrith Lakes and Nepean River). - Spoke of institutional homes such as Fern Hill Estate (12.5 km southwest of the project area). - Spoke of matriarchal generational lines.	Cultural values of sightlines and significance of waterways included in the significance assessment for this report.
Arika Jalomaki (Yulay Cultural Services)		
Tania Carroll (Murra Bidgee Mullungari Aboriginal Corporation)		
	Landscaping	Grass trees may be suitable for landscape inclusion are they are locally occurring. Kangaroo

• Suggested planting of grey gums, grass trees and Kangaroo Paw trees. • Northern terrace to meandering curves to the landscaped edge. • Interested in use of macadamia and pecan nut trees by Aboriginal people, as various nut trees are currently within the project area (but are to be removed prior to construction).	Paws are native to Western Australia and therefore not an appropriate plan species for discussion.
Design • Use of etched glass. • Use of rooftop gardens. • Tree canopy. • Shadow play with perforated X. • Supportive of potential access track connecting project area to Penrith Lakes and nearby manmade waterways • Usage of meandering curves rather than straight lines in design, including footpaths through the project area. • Hesitant to limit use of solely Dharug language on any signage, as project area would have been utilised by various different Aboriginal groups, instead suggested signage refers to a "Shared Country" to be more inclusive, further to the fact that Penrith is a place for many different tribes that live together. • Suggested colour palette be inspired by geological layers in project area.	Comments have been considered by Morson Group in the project co-design reporting for Connecting with Country and consultation. Cultural comment on Penrith being a place that many different tribes live together is included in the ACHA.

3.4 SUBMISSIONS/COMMENTS ON DRAFT ACHA AND AA REPORTS, AHIP APPLICATION AND RD&M, AND COMMENTS ON CARE AND CONTROL

A summary of submissions and comments on the draft project methodology, ACHA, AR and Research Design and Methodology are provided in **Table 7** once received.

Table 7: Summary of Comments on Project Methodology, Draft ACHA and AA reports and Proposed RD&M

Registered Aboriginal Stakeholder Group	Project Methodology	Draft ACHA and AA	Proposed RD&M	Care and Control	Additional Comments
Deerubbin Local Aboriginal Land Council	No comments.	(to be undertaken)	(to be undertaken)	(to be undertaken)	Stated that project area was very close to Aboriginal Lore grounds.
Wailwan Aboriginal Group	No comment returned.	(to be undertaken)	(to be undertaken)	(to be undertaken)	
Mura Gadi Aboriginal Corporation	No comment returned.	(to be undertaken)	(to be undertaken)	(to be undertaken)	
Long Gully Cultural Services	Supports draft project methodology.	(to be undertaken)	(to be undertaken)	(to be undertaken)	
Gadhungal Marring	No comment returned.	(to be undertaken)	(to be undertaken)	(to be undertaken)	
Murra Bidgee Mullangari Aboriginal Corporation	Endorsed recommendations.	(to be undertaken)	(to be undertaken)	(to be undertaken)	
Dharug Custodian Aboriginal Corporation	Agrees with project methodology and recommendation for test excavations	(to be undertaken)	(to be undertaken)	(to be undertaken)	

Wallanbah Aboriginal Site Conveyancing	No comment returned.	(to be undertaken)	(to be undertaken)	(to be undertaken)	
Amanda Hickey Cultural Services	Supports draft methodology.	(to be undertaken)	(to be undertaken)	(to be undertaken)	
A1 Indigenous Services	Supports draft methodology.	(to be undertaken)	(to be undertaken)	(to be undertaken)	
Butucarbin Aboriginal Corporation	No comment returned.	(to be undertaken)	(to be undertaken)	(to be undertaken)	
Kamilaroi Yankuntjatjara Working Group	<i>The study area is highly significant and sensitive to our people. Nepean River, which runs near Castlereagh, was an important water source & would have provided food such as fish and eels. It would have been used for hunting and gathering with river providing food sources & materials for tools and weapons. We agree and support your methodology and recommend further investigation in the way of test excavations before</i>	(to be undertaken)	(to be undertaken)	(to be undertaken)	

	<i>our culture is lost through development.</i>				
Wurrumay Culture Heritage Consultants	Agrees with draft methodology.	(to be undertaken)	(to be undertaken)	(to be undertaken)	
Widescope Indigenous Group	No comment returned.	(to be undertaken)	(to be undertaken)	(to be undertaken)	
Guntawang Aboriginal Resources Incorporated	Supports draft methodology.	(to be undertaken)	(to be undertaken)	<i>We would like to recommend that any artefacts recovered from the excavation be displayed in the construction/ footpaths with a memorial of the first people of the land and information of what some of the artefacts were used for by our ancestors.</i>	Morson Group has no objection to this comment should artefacts be uncovered. This comment is included for RAP consultation in the Care strategy for the project in the Research Design and Methodology as well as this report for consideration.
Pearl Depoma	No comment returned.	(to be undertaken)	(to be undertaken)	(to be undertaken)	
Yulay Cultural Services	Agrees with draft methodology.	(to be undertaken)	(to be undertaken)	(to be undertaken)	
Thomas Dahlstrom	No comment returned.	(to be undertaken)	(to be undertaken)	(to be undertaken)	

Ginninderra Aboriginal Corporation	No comment returned.	(to be undertaken)	(to be undertaken)	(to be undertaken)	
Paul Webb	No comment returned.	(to be undertaken)	(to be undertaken)	(to be undertaken)	
Konanggo Aboriginal Cultural Heritage Services	<i>KACHS has reviewed the draft presentation project information and the draft project methodology and acknowledged all processes in the project.</i> <i>KACHS always suggests having an Elder and a Female or Male for their cultural knowledge through their cultural lens.</i>	(to be undertaken)	(to be undertaken)	(to be undertaken)	Virtus Heritage emailed details of voluntary site inspection on 10 February 2025, set for 20th February and asked for RSVPs to be in by 18th Feb. On 10 February 2025, Robert rang Virtus Heritage and expressed concerns about lack of paid engagement, and declined to attend.
Undisclosed Registered Aboriginal Party	No comment returned.	(to be undertaken)	(to be undertaken)	(to be undertaken)	

4. Summary and Background Information

As noted in **Section 4 of the AA**, the project area is part of a broader Aboriginal cultural landscape of the Dharug-speaking peoples and associated with the Boorooberongal and Mulgoa clans (PLDC 2011, Karskens 2007).

The Penrith Lakes area was a traditional meeting place for Aboriginal people (refer to Section 3 and RAP comments from Vicky Slater). Its river and rich soils provided abundant natural vegetation and wildlife which supported Aboriginal people for many generations (New South Wales State Heritage Register. Department of Planning & Environment. H02009, 2024). Evidence of this history has been revealed through the many artefacts were collected during the 25 years of sand and gravel mining at Penrith Lakes, to the north, west and south of the project area (Kohen 1986, 1988–2004, 1997, EMGA 2001, Comber 2005, 2006, 2008, PLDC 2011, New South Wales State Heritage Register. Department of Planning & Environment. H02009, 2024).

The survey results presented in **Section 6 of the AA**, indicate low surface visibility across the project area, with estimated effective coverage <1% and do not counteract the predictions of Aboriginal land use made in Section 5 of the AA which hypothesised that:

It is anticipated that the project area, as elevated terrain in proximity to water, will have been utilised by Aboriginal people in the past but not as intensively as other parts of the Penrith Lakes area as it is 300m or greater from water. Stone artefacts are predicted to occur within the project area “in a consistently low-density distribution” to depths of 1.3m (but often to 0.9m). Artefacts may be manufactured of predominately silcrete and occasionally quartz, chert, quartzite, hornfels and basalt. Other site types and features are possible but unlikely to occur in the project area as they have not previously been identified within the project area during previous assessments and due to the degree of past land use and disturbance and a lack of suitable geology and vegetation.

As the project area may contain in-situ geomorphology (PLDC 2011), relative to the surrounding Penrith Lakes area which has been significantly impacted from quarrying and past land use, the project area is considered to have moderate archaeological potential, particularly below the level of past agricultural activities to contain low densities of stone artefacts.

The project area contains deposits of the Penrith Unit of the Cranebrook Terrace which has experienced relatively less disturbance than other parts of the Penrith Lakes Scheme. This resource and opportunities to understand it are increasingly diminished by the amount of development in the region. Where Aboriginal objects survive in this profile, they have archaeological and geomorphic value due to their ability to support models of Aboriginal land use and archaeological preservation in the local area, particularly where excavations can be undertaken in a controlled manner to the current regulatory standards.

This assessment notes that across the Cranebrook Terrace and Penrith Lakes Scheme there has been a management trend towards area-wide AHIPs across the Penrith Lakes Scheme to manage the residual risk of Aboriginal objects irrespective of the identification of sites, particularly in those areas not historically impacted by sand quarrying (Kohen 1986–2004, AHIP C0001415, AHIP 1131345, Comber 2017).

Survey coverage and archaeological excavation coverage of the Penrith Unit of the Cranebrook Terrace across the project area (prior to 2018), was deemed to have been sufficient to allow for the issue of an AHIP C0001415 (AHIMS 3891), in order to harm known and unknown Aboriginal objects within the project area without mitigation.

We recommend that archaeological testing is not required. This is due to the volume of literature already available on the Penrith Unit of the Cranebrook Terrace, the previous land-use of the project area diminishing any research potential which could come from the distribution of in-situ Aboriginal objects, a lack of any topographic variability within the project area, and that a background scatter of artefacts have already been identified within limited surface exposures on-site, confirming that the project area is

archaeologically sensitive and likely consistent with previous site investigations close-by from within the Penrith Unit and can therefore expect a similar vertical distribution of Aboriginal objects.

With the classification of the project area as a site with background scatter, and the presence of Aboriginal objects in all identified exposures in 2025's survey, an AHIP with community collection and salvage for subsurface disturbances associated with site development works will be required.

5. Cultural Heritage Values and Statements of Significance

5.1 ASSESSMENT OF SIGNIFICANCE

The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance, 2013 (Australia ICOMOS 2013, hereafter referred to as the 'Burra Charter') provides guidance for the conservation and management of places of cultural significance (cultural heritage places) and is based on the knowledge and experience of Australia ICOMOS members. Conservation is an integral part of the management of places of cultural significance and is an ongoing responsibility. The Burra Charter sets a standard of practice for those who provide advice, make decisions about, or undertake works to places of cultural significance, including owners, managers, and custodians. The Burra Charter defines cultural significance as the "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" (Australia ICOMOS 2013:2).

Aboriginal cultural heritage sites are therefore assessed following the categories of significance developed under the Burra Charter (Table 8). See Section 8 of the AA (Appendix A) for detailed description of the categories of significance.

Table 8: Assessment of the Burra Charter Values within the Project Area

Categories of Significance	Statement of Values
Aesthetic	Although the natural aesthetics of the project area have been severely impacted by extensive urbanisation from past land use, views to the Blue Mountains are visible from within the project area and the Penrith Lakes will be viewable from a height of 27 m (or the third story in the proposed buildings onsite). We note that the views to Blue Mountains and also the Nepean River and nearby waterways are important to RAPs Vicky Slater (Wurrumay Culture Heritage Consultants), Arika Jalomaki (Yulay Cultural Services) and Tania Carroll (Murra Bidgee Mullungari Aboriginal Corporation).
Historic	The project area is situated within a broader cultural landscape with historic significance to the Aboriginal community. To date, there is no documented historical significance specific to the project area site, Aboriginal people of the region remain actively involved in continuing their culture and history, demonstrated within the project area through their advocacy to protect and manage Aboriginal cultural heritage affected by the Penrith Lakes Scheme and their involvement in this Aboriginal Cultural Heritage Assessment process. We note that RAPs have raised that the locality is an area where tribes come together (Vicky Slater, Wurrumay Cultural Heritage Consultants) and near areas of historical and cultural significance to DLALC.
Scientific/archaeological	There are no registered sites on AHIMS within the project area, though a new site with eight exposures containing artefacts were identified during a survey visit on 20 February 2025. The project area is situated on a portion of the Penrith Unit of the Cranebrook Terrace which has experienced relatively less disturbance than other parts of the Penrith Lakes Scheme.

This resource and opportunities to understand it are increasingly diminished by development.

The presence of Aboriginal objects demonstrate local Aboriginal land use and cultural history within the project area and surrounds. As more of the Cumberland Plain and Penrith Lakes area become urbanised there is less opportunity for conservation of Aboriginal occupation deposits. However, the artefacts of broken flakes and flakes within the project area are not unusual scientifically but have high cultural value. The hand axe and retouched flake are less common tool types in local assemblages.

The exposures of artefacts in Penrith Lakes 2025 background scatter are connected to the broader cultural landscape of Aboriginal land use of the Cumberland Plain. The site does have different tool types including a retouched flake, a broken hand axe, flakes and broken flakes. These tool types are **not rare in the locality** of the Cumberland Plain (and not in the State) surrounding the project area where there is not much variability in assemblages discussed in previous archaeological research.

Broken flakes and flakes are **not rare** in similar landscape contexts in the locality and the region and not rare.

The project area contains **moderate research potential** as it may provide an opportunity to further understand the geomorphic and archaeological value of the Penrith Unit of the Cranebrook Terrace and past Dharug land use on elevated terrain at a distance from an unnamed tributary of Cranebrook Creek, through analysis and salvage of the artefacts currently exposed and likely to be salvaged through further archaeological salvage.

The dating potential has been diminished by the degree of past land use disturbance in the minimum top 0.3 to 0.6m of deposit, making potential for chronology or dating in cultural history locally and at the State level unlikely and of low research potential.

The hand axe, retouched flake as well as the different artefact types and raw materials identified to date in Penrith Lakes 2025 have **moderate educational potential for teaching**. Residue analysis in particular and more detailed stone tool analysis could provide additional information about the hand axe to determine if there is blood or some other residue on the tool or starch or other residues on the retouched surface of the retouched flake. Residue analysis could provide some education and teaching potential for these two stone tools to contribute to the cultural story of the project area.

Social value – Cultural values

The project area contains moderate research potential as it may provide an opportunity to further understand the geomorphic and archaeological value of the Penrith Unit of the Cranebrook Terrace and past Dharug land use on elevated terrain at a distance from an unnamed tributary of Cranebrook Creek, through analysis and salvage of the artefacts currently exposed and likely to be salvaged through further archaeological salvage. The dating potential has been diminished by the degree of past land use disturbance in the minimum top 0.3 to 0.6 m of deposit, making potential for chronology or dating in cultural history locally and at the State level unlikely and of low research potential.

Spiritual value

The hand axe, retouched flake as well as the different artefact types and raw materials identified to date in Penrith Lakes 2025 have moderate educational potential for teaching. Residue analysis in particular and more

detailed stone tool analysis could provide additional information about the hand axe to determine if there is blood or some other residue on the tool or starch or other residues on the retouched surface of the retouched flake. Residue analysis could provide some education and teaching potential for these two stone tools to contribute to the cultural story of the project area.

5.2 SUMMARY AND STATEMENT OF SIGNIFICANCE

The project area holds cultural and archaeological value within a broader historic landscape of importance to the Aboriginal community, despite the impacts of urbanisation and land use that have altered its natural aesthetics. While no registered Aboriginal sites exist within the area, the proximity to the Nepean River near Castlereagh underscores its historical role as a vital resource for food, tools, and community sustenance. Subsurface deposits, particularly those associated with the Penrith Unit of the Cranebrook Terrace, retain moderate archaeological potential, offering opportunities for further research into Dharug land use and geomorphology. Although the topsoil exhibits low archaeological integrity due to past disturbances in the top 0.3 to 0.6 m, deeper deposits could remain relatively undisturbed, enhancing the area's research significance with **moderate research potential**. The study's findings will be refined following consultation with Registered Aboriginal Parties to ensure a comprehensive understanding of its cultural heritage.

The project area, identified as a site with background scatter, will require an AHIP with community collection and salvage. Currently, the archaeological significance of the project area specifically is unknown, however, the aesthetic and historic significance of the project area are low.

6. The Proposed Activity

Table 9 provides a summary of the history of previous impacts to the project area, the proposed impacts to the project area from the proposal, and a statement regarding potential harm of the proposal on Aboriginal objects within the project area. A full description category is provided in the relevant sections of the AA (Appendix A), as indicated in **Table 9**.

Table 9: Summary of Project Proposal.

Project Description	Summary
Previous Impacts to the Project Area (AA – Section 3)	This project area has been modified through agricultural activities, underground irrigation piping, the construction of residential structures, geotechnical investigations and ancillary infrastructure. The project area is also susceptible to flooding. These activities may have removed Aboriginal objects in the topsoil but are more likely to have moved or displaced Aboriginal objects within the top 0.3 to 0.6 m of soil, resulting in low archaeological integrity in the topsoil. It is possible that intact archaeology has survived within the project area, particularly below the level of agricultural activities however, as noted by Kohen (1997, 2004), it is also possible that artefacts have moved through the soil profile as a result of bioturbation. AHIP C0001415 (AHIMS 3891), now expired, was previously issued over the project area.
Proposed Impacts to the Project Area (AA – Section 2)	The proposed scope of works as provided by Morson Group includes a tourism development comprising of a 7-storey serviced apartment building with 65 dual key units, a 6 storey 4500sqm indoor recreation facility, 3 single-story fast-food outlets, a 5000sqm club, multiple shops, cafes and restaurants and a central community space. 1000 car parking spaces will be provided as multi-level above ground and on grade parking. The project design is still being undertaken; however, ground impacting activities include: • Archaeological surface collection and salvage investigations • Demolition of existing structures • Earth works including cut and fill, pilings/footings and service trenches across the project area; • Construction of the three buildings on site; • Installation of vehicle and pedestrian access; • Heavy vehicle movement across the project area • Landscaping works across the project area; • Ancillary infrastructure and works It is likely that excavations across the site will be part of the overall redevelopment works with most excavations anticipated to be up to 0.5 m depth, though excavation of stormwater system and footings will also likely be required. Excavations in these areas are anticipated to be ~1.5 m depth.

	The following are the intended key program milestones for delivering this project: • Concept DA Submission (mid-2025). • Concept DA Approval (late-2025). • Detailed DA submission (late-2026). • Detailed DA Approval (mid-2027). • Construction Certificate Phase (mid-2027 – 2028). • Construction commences mid- to late-2028.
Potential Harm of Proposed Activity (AA – Sections 9 and 10)	Eight Aboriginal objects have been identified in the project area. No areas are currently proposed for conservation. The proposed activity will however directly impact on land predicted to have moderate archaeological sensitivity. Aboriginal objects are considered likely in low densities in this area. Archaeological test excavations are not required to determine the presence or absence of Aboriginal objects, due to the volume of archaeological information available on the Penrith Unit, past land-use of the project area, a lack of any variability in topography or geomorphology within the project area, and a pre-existing background scatter of Aboriginal objects, confirming that the project area is archaeologically sensitive and likely consistent with previous site investigations within the Penrith Unit. Many of the proposed impacts have been proposed to areas which are considered to have low archaeological integrity in the top 30 cm of the topsoil, with impacts proposed at depths exceeding 0.6m limited to piling/footings and service trenches. Morson Group are committed to cultural and archaeological salvage in areas of proposed impact and harm to Aboriginal objects. The RAPs have communicated to date that surviving archaeological deposits and Aboriginal objects may retain cultural value to the Registered Aboriginal Parties irrespective of their archaeological integrity. <i>The RAPs will be provided this draft report for review for comment on if they supports the development of management and mitigation measures for harm to Aboriginal heritage.</i>

6.1 AREAS WHERE OBJECTS WILL BE PROTECTED OR HARMED

All Aboriginal objects are protected under the *National Parks and Wildlife Act 1974* and conservation is the preferred option for all objects. Consideration should be given to avoidance of and conservation of sites where possible. **Error! Reference source not found.**, required under the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010), below lists all sites, places and PADs identified within the project area and summarises the type, level, and consequence of harm to these places.

All Aboriginal objects are protected under the *National Parks and Wildlife Act 1974* and conservation is the preferred option for all objects. Consideration should be given to avoidance of and conservation of sites where possible. **Error! Reference source not found.**1, required under the *Code of Practice for Archaeological*

Investigation of Aboriginal Objects in NSW (DECCW 2010), lists all sites, places and PADs identified within the project area and summarises the type, level, and consequence of harm to these places.

No areas are currently proposed for conservation. The proposed activity will however impact on land with recorded Aboriginal objects within background scatter Penrith Lakes 2025.

Table 10: Summary of Likely Harm

Site/Place/PAD		Type of Harm (direct/indirect/ none)	Level of Harm (total/partial/none)	Consequence of Harm (total loss of value/partial loss of value/no loss of value)
Penrith 2025	Lakes	Direct	Partial – based on project impacts	Partial loss of value based on mitigation of project impacts

7. Avoiding or Mitigating Harm

7.1.1. Pre-lodgement consultation

A meeting with Heritage NSW was held on 22 November 2024 to discuss the assessment requirements for this project. Correspondence on the results of the survey in February 2025 were emailed to Heritage NSW on 18 March 2025 and update on changes of approach to salvage instead of testing and update on RAP comments from the survey, with an offer to meet to discuss with Heritage NSW, if required. Additional correspondence was emailed by Peter Morson to Heritage NSW regarding how to approach site definition with justifications for site definition were emailed to Kym McNamara, Heritage NSW on 20 June 2025 as well as an offer to discuss in a meeting before pre-lodgement. Sam Allen responded from Heritage NSW via email on 1 July 2025 stating that "Heritage NSW is supportive of the revised approach in registering the project area as a site with background scatter". This email to Ms McNamara by Peter Morson included this input from Virtus Heritage below (as emailed on 20 June 2025 to Heritage NSW)

2. *The project area is situated on the Penrith Unit of the Cranebrook Terrace which has been demonstrated over numerous scientific studies and geotechnical investigations to be an archaeologically significant unit (e.g., Kohen, 1986; Nanson et al., 1987; Insite Heritage 2000; Williams et al., 2017; Comber Consultants, 2006, 2006).*
 1. *Given the age of the uppermost strata of the Penrith Unit (50,000 – 100,000 years old), these studies have reported that the vast majority of artefacts have been constrained within the top 0.6 m of soils (A horizon – noted as deep as 1.3 m in some studies in topographic depressions) and exist at depth due to bioturbation and/or soil turnover from previous land-use (agriculture).*
 2. *Proposed excavations will be to a maximum of 2 m below ground level (BGL), with the majority between 0.6 and 1.2 m BGL. As such, proposed site works will impact the archaeologically significant portion of the Penrith Unit.*
3. *Based upon the high volume of studies within the Penrith Unit (a list with summaries will be provided along with a draft AA and ACHA within the next few weeks) and the identification of artefacts within fence line surface exposures during a site visit in February 2025, we expect to encounter Aboriginal objects within the A horizon of our project area (0.3 – 0.6 m deep based upon geotechnical surveys).*
 1. *The project area exhibits no distinct changes in topography and as such, there are no distinct landform units which can be mapped to provide insight over the possible distribution of artefacts. Due to the previous land-use of the project area (and broader landscape), any macro changes in topography were likely destroyed.*
 2. *The stratigraphy of the uppermost 0.6 m has also been disturbed as a result of past agricultural land-use. Therefore, any in-tact stratigraphy which could be used to inform us on the distribution of artefacts within the Penrith Unit (e.g., flood couplets) have been destroyed.*
4. *The project area is situated ~90–100 m away from the highly archaeologically sensitive Richmond Unit of the Penrith Terrace.*

The project area previously had an AHIP granted in 2018 (#C0001415) which expired in 2023 and a future AHIP application will cover the same Lots as before (12, 14, and 16). With the topographic uniformity of the Penrith Unit, we could possibly link the project area to pre-existing site cards for works completed east of our site. Alternatively,... we can register the artefacts as a new site but given that there are no significant

landforms to constrain the project area to, the boundaries will not have any robust data to support their geographic placement.

HNSW have acknowledged emails and provided input which is included in this assessment.

7.1.2. Consideration of Alternatives

Morson Group between February 2025 to date have attempted to minimise and redesign project impacts and depths of development. Some redesign was possible to avoid Aboriginal occupation deposits if extant was considered with their design team. The opportunity to reuse existing service trenches for new services and to minimise all ground disturbance works is not possible for this project.

7.2 AREAS WHERE OBJECTS WILL BE PROTECTED OR HARMED

All Aboriginal objects are protected under the *National Parks and Wildlife Act 1974* and conservation is the preferred option for all objects. Consideration should be given to avoidance of and conservation of sites where possible. **Error! Reference source not found.**1, required under the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010), lists all sites, places and PADs identified within the project area and summarises the type, level, and consequence of harm to these places.

No areas are currently proposed for conservation. The proposed activity will however impact on land with recorded Aboriginal objects within background scatter Penrith Lakes 2025.

Table 11: Summary of Likely Harm

Site/Place/PAD		Type of Harm (direct/indirect/ none)	Level of Harm (total/partial/none)	Consequence of Harm (total loss of value/partial loss of value/no loss of value)
Penrith 2025	Lakes	Direct	Partial – based on project impacts	Partial loss of value based on mitigation of project impacts

7.3 JUSTIFICATION OF THE OBJECTIVES OF THE PROPOSED ACTIVITY

The project area is situated within an area zoned for the development of a tourism precinct within the Penrith Development Control Plans and State Environmental Planning Policy (SEPP). The design of this project has been undertaken with respect to Design Principles and in consideration of a framework (Government Architect NSW 2023).

Many of the proposed impacts have been proposed to areas which are considered to have low archaeological integrity in the top 30 cm of the topsoil, with impacts proposed at depths exceeding 0.6m limited to piling/footings and service trenches. Morson Group are committed to cultural and archaeological salvage in areas of proposed impact and harm to Aboriginal objects.

The RAPs have communicated to date that surviving archaeological deposits and Aboriginal objects may retain cultural value to the Registered Aboriginal Parties irrespective of their archaeological integrity. ***The RAPs will be provided this draft report for review for comment on if they supports the development of management and mitigation measures for harm to Aboriginal heritage.***

9.4 ECOLOGICALLY SUSTAINABLE DEVELOPMENT (ESD)

Australia's National Strategy for Ecologically Sustainable Development (1992) defines ecologically sustainable development (ESD) as: 'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased' (Department of Agriculture Water and the Environment Website Ecologically Sustainable Development Webpage). These environmental considerations include cultural heritage. ESD can be applied to Aboriginal cultural heritage by considering intergenerational equity and the precautionary principle.

The **Principle of Intergenerational Equity** states that 'the present generation should make every effort to ensure the health, diversity and productivity of the environment – which includes cultural heritage – for the benefit of future generations' (OEH 2011). That is, by considering how will future generations be able to visit, see, experience and/or research Aboriginal objects. The Operational Policy: Protecting Aboriginal Cultural Heritage (DECCW 2009) states in terms of Aboriginal heritage, intergenerational equity can be considered in terms of the cumulative impacts to Aboriginal objects and places in a region.

A way of gauging what level of impact from development has occurred within a region, is to review how many Aboriginal Heritage Impact Permits (AHIPs) have been issued for that region. A review of the public register of AHIP issued between 2010 and 2021, for Penrith LGA indicates that over 60 AHIPs were issued. The current AHIP Public Register for the Penrith LGA shows that five AHIPs has been issued, for the region. Though AHIMS tracking of AHIPs to sites is highly inaccurate, at least 32 of the 85 Aboriginal cultural heritage sites recorded in the AHIMS search (Section 4), have had AHIMS issued. Over 300 SSD projects and modifications have been initiated in the Penrith LGA.

Overall, there has been a relatively high cumulative impact to the Penrith region that includes the project area based on recent AHIPs and SSD projects. The project area has been subject to relatively less development with impacts from historical land use and natural processes discussed in Section 3. As noted in the significance assessment in Section 8, one Aboriginal background scatter, Penrith Lakes 2025 has been identified to date and much of the project area has low archaeological integrity in the top minimum 0.3m to maximum 0.6 m of topsoil, however where intact archaeological deposits survive, they are of moderate research value.

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 measures to prevent environmental degradation.

Inductions, cultural awareness training and further investigation through archaeological and cultural salvage are precautionary steps. Conservation is not possible in the project area and the proponent has attempted at least for now six months to redesign project impacts and attempt to avoid cultural deposits, if still extant associated with Penrith Lakes 2025.

Archaeological salvage and community collection, in addition to inductions and cultural awareness training will be required to mitigate the impacts of these works.

8. Recommendations

Management recommendations of this assessment consider all values as set out in The Burra Charter and the requirements of Heritage NSW. This assessment includes the recommendations for the Archaeological Survey Report (Archaeological Assessment). The ACHA includes management recommendations which consider the social (cultural), spiritual, aesthetic and historic values of The Burra Charter.

Based on the description of project impacts provided by Morson Group, the results of the survey, Aboriginal consultation to date, the limitations of this assessment and previous archaeological research, the following recommendations are made:

1. An AHIP with community collection and archaeological salvage will be required prior to the commencement of ground disturbance works as Aboriginal objects will be harmed by the proposal.
2. It is recommended that all site workers and personnel involved in site impact works should be **inducted and briefed** on the possible identification of Aboriginal sites and objects during construction and their responsibilities according to the provisions of the NPW Act 1974 and NPW Regulation 2019.
This induction package should be developed in consultation with DLALC, prior to works proceeding. The induction must include:
 - ♦ An AHIP once issued as recommended by the results of this AA report.
 - ♦ The contact phone numbers of the NSW Environment and Heritage regional archaeologist, EnviroLine 131 555, and DLALC.
 - ♦ The relevant contact phone number Environmental Officer responsible for this project in case unknown objects or items are uncovered during excavation.
 - ♦ The penalty for moving Aboriginal objects need to be made clear and given due consideration.
 - ♦ An outline types of unexpected heritage objects, items & relics, and their legal protection
 - ♦ The Unexpected Finds and Human Remains Procedures, as outlined in Recommendation 1 and 2.
3. It is recommended that an **Unexpected Finds Procedure** be implemented for the duration of the project. In the event that a suspected Aboriginal object/s is identified the procedure should include the following:
 - ♦ Works are to stop immediately.
 - ♦ The area of the suspected find/s is to be fenced off with an appropriate buffer and protected.
 - ♦ A qualified archaeologist and representative of DLALC are to be contacted to inspect the area and the nature of the find and to advise if it can be collected within the provisions of an AHIP (if determined by HNSW).
 - ♦ Representative of DLALC to determine the find's significance, in consultation with a qualified archaeologist or NSW Environment and Heritage,.
 - ♦ Works are not to proceed until written advice is provided from the archaeologist or NSW Environment and Heritage on the appropriate management of the find.
5. It is recommended that an **Unexpected Human Remains procedure** be implemented for the duration of the project. In the unlikely event that suspected Human Remains are identified the procedure should include the following:
 - ♦ Works are to stop immediately.
 - ♦ The area of the suspected Human Remains find is to be secured and cordoned off.
 - ♦ NSW Police are to be notified. No further works can be undertaken until the NSW Police provide written advice.
 - ♦ If these remains are deemed to require archaeological investigation by the NSW Police or NSW Coroner, then:
 - ♦ NSW Environment and Heritage and the relevant Aboriginal parties must be notified; and

- ♦ a plan of management for the preservation of any identified Aboriginal human remains of for the salvage must be put in place or conducted under an AHIP methodology and variation developed in consultation with all relevant Aboriginal parties and the NSW Environment and Heritage.
- ♦ Works are not to proceed until written advice is provided from the archaeologist or NSW Environment and Heritage.

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Appendix A Archaeological Assessment Report



VIRTUS HERITAGE



CASTLEREAGH TOURISM DEVELOPMENT
39-65 Old Castlereagh Road, Castlereagh NSW
Archaeological Assessment

Draft | July 2025

Prepared for Morson Group

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Cover image: Drone photography provided by Morson Group (2024)

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1a	10 December 2024	Clare Anderson	Alice Buhrich	
1e	3 July 2025	Liam Clerke and Anya Graubard	Dr. Mary-Jean Sutton	
2a	23 July 2025	Liam Clerke	Dr. Mary-Jean Sutton	

Acknowledgement of Country

Virtus Heritage acknowledges the Traditional Custodians of the land on which this project was undertaken and pays respect to Elders past, present and emerging.

Content Warning

Aboriginal and Torres Strait Islander people are warned that this publication may contain names and images of deceased people, descriptions of traumatic historic events and parts of Country that have been impacted by development.

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Executive Summary

Morson Group Consultants proposes to develop a tourism precinct at 39–65 Old Castlereagh Road, Castlereagh NSW (Lots 12, 14 and 16 DP793163, Figure 1). The project area is located within the Penrith Local Government Area (LGA), within the boundary of Deerubbin Local Aboriginal Land Council (DLALC).

The proposed scope of works as provided by Morson Group seeks approval for a tourism-oriented development comprising three (3) buildings across separate lots, including a hotel, an indoor recreation facility with two (2) drive-through restaurants, and a registered club. The proposal also includes associated vehicle access, on-grade and above-ground parking, and site infrastructure.

- Lot 12:
 - A seven (7) storey hotel with 147 rooms, restaurant, gym, spa, pool, and associated facilities.
 - Multi-level above-ground car parking.
- Lot 14:
 - A 5,713m² indoor recreation facility.
 - Two (2) restaurants with capacity for a drive-through.
 - Associated on-grade car parking.
- Lot 16:
 - A 5,177m² registered club building.
 - Associated on-grade car parking.

It is likely that excavations across the site will be part of the overall redevelopment works with most excavations anticipated to be up to 0.15 – 1.74 m below ground level (BGL), though excavation of stormwater system and footings will also likely be required. Excavations in these areas are anticipated to be to a maximum depth of ~2.3 m BGL.

Aboriginal Heritage Impact Permit (AHIP) COO01415 (AHIMS 3891), now expired, was previously issued over the project area. Previous Aboriginal cultural heritage assessments have identified that the project area may contain in-situ stratigraphy and low densities of Aboriginal objects associated with the alluvial Penrith Unit of the Cranebrook Terrace (PLDC 2011, Virtus Heritage 2024). The proposed works therefore have the potential to harm Aboriginal objects.

Virtus Heritage Pty Limited (hereafter 'Virtus Heritage') was engaged by Morson Group to prepare an Aboriginal Cultural Heritage Assessment (ACHA), including an Archaeological Assessment (AA) for the proposed development.

This report is the Archaeological Assessment, which is an Appendix (**Appendix A**) to the ACHA. The purpose of this report is to provide Morson Group with archaeological advice on the potential impact of their proposal to Aboriginal archaeological sites and to meet the requirements of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010) for Archaeological Reports – (Requirements 1 to 11).

ENVIRONMENTAL CONTEXT

The project area is located in the floodplains associated with the Nepean River, within the Penrith Unit of the Cranebrook Terrace formation. The soils of the project area are consistent with the Richmond soil landscape. Aboriginal objects are known to occur within this soil landscape and in the Penrith Unit to depths of 1–2m and generally in the top 0.9m of deposit. Archaeological models across the Cumberland Plain indicate that Aboriginal objects can be found in any landform.

Stone artefacts tend to be found more frequently in proximity to key resources such as water and drainage lines, shelter and stone sources and decrease in frequency as distance from those resources increases. The

Nepean River is located a little over 650m from the project area. The historic path of Cranebrook Creek is mapped approximately 1.7km west of the project area. An unnamed tributary was located 300m north-east of the project area. Previous potential chain of ponds and paleochannels were also identified by Groundtruth Consulting in proximity to the project area (Mitchell 2010). The proximity to the Nepean River, an unnamed tributary and potential ponds and paleochannels means there is the potential for stone artefacts in the project area.

The project area's alluvium topsoils have been disturbed by vegetation clearance, previous farming activity and the construction of the residential housing and irrigation infrastructure but does not appear to have been subject to sand mining. This past land use has impacted the A-horizon soils to at least 0.3 m to 0.6 m in depth.

ARCHAEOLOGICAL CONTEXT

An AHIMS extensive search (Client Service ID 912988) was undertaken on 10 July 2025. No Aboriginal cultural heritage sites were registered in, or close to the project area.

Previous archaeological assessments of the project area concluded that there was a reasonable potential for Aboriginal objects to occur within the project area. Aboriginal objects were predicted to be found at low frequencies and with low archaeological integrity to depths of a minimum of 0.3 m, with greater archaeological integrity possible below this depth given its below the typical depth of plough zones (except for in areas of existing services trenches) (PLDC 2011, Virtus Heritage 2024).

SIGNIFICANCE AND IMPACT ASSESSMENT

The project area contains deposits of the Penrith Unit of the Cranebrook Terrace and a recorded Penrith Lakes 2025 background scatter with Aboriginal objects in 8 locations. Aboriginal objects in this unit provide an opportunity to further understand the geomorphic and archaeological value of the Penrith Unit of the Cranebrook Terrace and past Dharug land use on elevated terrain. Development in the local region has impacted the survival of Aboriginal objects in the Penrith Unit.

The proposed activity has the potential to harm Aboriginal objects associated with the Penrith Unit. Given the extent of information available on the Penrith Unit, the previous land-use of the project area, the identification of artefacts within surface exposures inside of the project area, and the homogeneity of topography and landforms within the project area,

Archaeological and cultural salvage are required to mitigate the impacts on the proposed development on Penrith Lakes 2025, background scatter

MANAGEMENT RECOMMENDATIONS

Management options and recommendations are outlined for this proposal in Section 10 and Section 11 of this report. Based on the description of project impacts provided by Morson Group, the results of the survey, Aboriginal consultation to date, and previous archaeological research, the following recommendations are made:

1. An AHIP with community collection and archaeological salvage will be required prior to the commencement of ground disturbance works as Aboriginal objects will be harmed by the proposal.
2. It is recommended that all site workers and personnel involved in site impact works should be **inducted and briefed** on the possible identification of Aboriginal sites and objects during construction and their responsibilities according to the provisions of the NPW Act 1974 and NPW Regulation 2019.
This induction package should be developed in consultation with DLALC, prior to works proceeding. The induction must include:
 - ♦ An AHIP once issued as recommended by the results of this AA report.

- ♦ The contact phone numbers of the NSW Environment and Heritage regional archaeologist, EnviroLine 131 555, and DLALC.
 - ♦ The relevant contact phone number Environmental Officer responsible for this project in case unknown objects or items are uncovered during excavation.
 - ♦ The penalty for moving Aboriginal objects need to be made clear and given due consideration.
 - ♦ An outline types of unexpected heritage objects, items & relics, and their legal protection
 - ♦ The Unexpected Finds and Human Remains Procedures, as outlined in Recommendation 1 and 2.
3. It is recommended that an **Unexpected Finds Procedure** be implemented for the duration of the project. In the event that a suspected Aboriginal object/s is identified the procedure should include the following:
- ♦ Works are to stop immediately.
 - ♦ The area of the suspected find/s is to be fenced off with an appropriate buffer and protected.
 - ♦ A qualified archaeologist and representative of DLALC are to be contacted to inspect the area and the nature of the find and to advise if it can be collected within the provisions of an AHIP (if determined by HNSW).
 - ♦ Representative of DLALC to determine the find's significance, in consultation with a qualified archaeologist or NSW Environment and Heritage,.
 - ♦ Works are not to proceed until written advice is provided from the archaeologist or NSW Environment and Heritage on the appropriate management of the find.
5. It is recommended that an **Unexpected Human Remains procedure** be implemented for the duration of the project. In the unlikely event that suspected Human Remains are identified the procedure should include the following:
- ♦ Works are to stop immediately.
 - ♦ The area of the suspected Human Remains find is to be secured and cordoned off.
 - ♦ NSW Police are to be notified. No further works can be undertaken until the NSW Police provide written advice.
 - ♦ If these remains are deemed to require archaeological investigation by the NSW Police or NSW Coroner, then:
 - ♦ NSW Environment and Heritage and the relevant Aboriginal parties must be notified; and
 - ♦ a plan of management for the preservation of any identified Aboriginal human remains or for the salvage must be put in place or conducted under an AHIP methodology and variation developed in consultation with all relevant Aboriginal parties and the NSW Environment and Heritage.
 - ♦ Works are not to proceed until written advice is provided from the archaeologist or NSW Environment and Heritage.

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Definitions

Abbreviations	Description
AA	Archaeological Assessment
ALR Act	<i>Aboriginal Land Rights Act 1983</i>
ACHA	Aboriginal Cultural Heritage Assessment
ACHCR	Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW 2010)
AHD	Australian Heritage Database
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
AIATSIS	Australian Institute of Aboriginal and Torres Strait Islander Studies
ALRA	Aboriginal Land Rights Act 1976
AR	Archaeological Report, Archaeological Assessment
ARDM	Archaeological Research Design and Methodology
BP	Before Present
CABAH	Australian Research Council Centre of Excellence for Australian Biodiversity and Heritage
CHMP	Cultural Heritage Management Plan
CoP	Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010)
DA	Development Application
DCCEEW/DCCEW	NSW Department of Climate Change, the Environment and Water/ Department of Environment, Climate Change and Water
DD	Due Diligence
DD Code, Due Diligence Code	Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (DECCW 2010)
DLALC	Deerubbin Local Aboriginal Land Council
DPC	NSW Department of Premier and Cabinet
DPIE	NSW Department of Primary Industry and Environment
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>

GIA	Guide to investigating, assessing and reporting on Aboriginal Cultural heritage in NSW (OEH 2011)
HNSW	Heritage NSW
ILUA	Indigenous Land Use Agreement
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
LGA	Local Government Area
NNTT	National Native Title Tribunal
NPW Act	<i>National Parks and Wildlife Act 1974</i>
NPW Reg	National Parks and Wildlife Regulation 2019
NPWS	NSW National Parks and Wildlife Service
NSW	New South Wales
NSWALC	NSW Aboriginal Land Council
NTA	<i>Native Title Act 1983</i>
OEH	NSW Office of Environment and Heritage (now Heritage NSW)
PAD	Potential Archaeological Deposit s an area where sub-surface stone artefacts and/or other cultural materials are likely to occur
PBC	Prescribed Bodies Corporate
PLDC	Penrith Lakes Development Corporation
RAP	Registered Aboriginal Party
RAPs	Registered Aboriginal Parties
RD&M	Research Design and Methodology
REF	Review of Environmental Factors
RNTBC	Registered Native Title Body Corporate
S.139	Section 139 of the <i>National Parks and Wildlife Act 1974</i>
S.140	Section 140 of the <i>National Parks and Wildlife Act 1974</i>
S.170	Section 170 of the <i>National Parks and Wildlife Act 1974</i>
SHI	State Heritage Inventory
SHR	State Heritage Register
SoHI	Statement of Heritage Impact
SSD	State Significant Development

SSI	State Significant Infrastructure
The Burra Charter	The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance, 2013 (Australia ICOMOS 2013)
UNESCO	United Nations Educational, Scientific and Cultural Organization

1. Introduction

Virtus Heritage was engaged by Morson Group, to prepare an Aboriginal Cultural Heritage Assessment (ACHA), including an Archaeological Assessment (AA) for a proposed tourism development located at 39–65 Old Castlereagh Road, Castlereagh, NSW (**Figure 1**, hereafter as ‘the project area’).

An ACHA was triggered due to the issue of Aboriginal Heritage Impact Permit (AHIP) C0001415 (Aboriginal Heritage Information Management System (AHIMS) 3891), now expired, over the project area, identified Aboriginal objects that may be harmed by the proposal in a survey in 2025 and the results of an Aboriginal Archaeological Due Diligence Assessment (Virtus Heritage 2024) of the proposal which identified archaeological potential associated with the underlying alluvial Penrith Unit of the Cranbrook Terrace. The proposed tourism development would impact these deposits and identified Aboriginal objects.

This report constitutes the AA component required for the ACHA process. The ACHA was compiled to accompany an AHIP. The objectives of the ACHA are to:

1. Investigate and assess the impacts of the proposed activity on Aboriginal objects, places and cultural heritage values within the project area.
2. Provide appropriate management and mitigation strategies.

This report has been compiled to meet Requirements 1 to 11 of the *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW* (hereafter referred to as CoP) (DECCW 2010) for Archaeological reports.

In general, the aims of this Archaeological Assessment are to:

- present an analysis of background data to assist in forming a predictive model and context to allow for the assessment of archaeological potential and archaeological significance of the project area;
- document the field investigations undertaken within the project area to best practice standards;
- describe the archaeological heritage values of the project area including a description and significance assessment of Aboriginal objects recorded;
- determine how the significance of the values of the project area would be affected by the proposal;
- consider potential harm from the proposal to Aboriginal objects and identified cultural heritage values within the project area;
- document measures to avoid, mitigate and/or manage harm to Aboriginal objects and identified cultural heritage values, where necessary; and
- detail any requirements for an AHIP or further archaeological investigation.



Figure 1. Locality Map and Project Area

1.1 REPORT STRUCTURE

Table 1 provides a summary of the reporting requirements outlined in the CoP and where these requirements are addressed in the structure of this report.

Table 1. CoP Report Requirement and this Report's Relevant Report Section

CoP Report Requirement	Where this Requirement is addressed in the Report
Requirement 1: Review previous archaeological research	Section 4.2
Requirement 2: Review the landscape context	Section 3.0
Requirement 3: Summarise and discuss the local and regional character of Aboriginal land use and its material traces	Section 4.2 and Section 4.3
Requirement 4: Predict the nature and distribution of evidence	Section 5.0
Requirement 5: Archaeological survey	Section 6.0
Requirement 6: Site definition	Section 5.0
Requirement 7: Site recording	Section 6.4
Requirement 8: Location information and geographic reporting	Section 3.0
Requirement 9: Record survey coverage data	Section 6.3
Requirement 10: Analyse survey coverage	Section 6.3
Requirement 11: Archaeological Report content and format	Entire report

1.2 PROJECT TEAM AND ACKNOWLEDGEMENTS

This report was originally compiled by Clare Anderson (Principal Archaeologist, Bachelor of Arts (Prehistory and Historic Archaeology, University of Sydney) and reviewed by Dr Alice Buhrich (Principal Archaeologist, PhD Archaeology, James Cook University) and Dr Mary Jean Sutton (Director, PhD Archaeology, University of Queensland). The report was subsequently edited after the 2025 survey identifying Aboriginal objects by Dr Sutton and Liam Clerke (Senior Geomorphologist, MRes Paleohydrology, Macquarie University). GIS mapping was undertaken by Liam Clerke and Shaun Sewell (Senior GIS analyst; B.A. IT, Queensland University of Technology). Project information and description of works detailed in Section 2.0 was provided by Peter Morson (Morson Group).

The representatives of Registered Aboriginal Parties (RAPs) who were involved in fieldwork and consultation, which forms the basis of this assessment, are presented in **Table 2**.

Table 2. Representatives of Registered Aboriginal Parties Involved in Fieldwork and Consultation

Name of Contact	Registered Aboriginal Party
Uncle Steven Randall	Deerubbin Local Aboriginal Land Council
Philip Boney	Wailwan Aboriginal Group
Tiarna Bird	Mura Gadi Aboriginal Corporation

Ethan Trewlynn	Long Gully Cultural Services
Nigel Millgate	Gadhungal Marring
Darleen Johnson and Ryan Johnson	Murra Bidgee Mullangari Aboriginal Corporation
Justine Coplin	Dharug Custodian Aboriginal Corporation
Kelvin Boney	Wallanbah Aboriginal Site Conveyancing
Amanda Hickey	Amanda Hickey Cultural Services
Carolyn Hickey	AI Indigenous Services
Jennifer Beale	Butucarbin Aboriginal Corporation
Phil Khan	Kamilaroi Yankuntjatjara Working Group
Kerrie Slater; Vicky Slater	Wurrumay Culture Heritage Consultants
Steven Hickey	Widescope Indigenous Group
Wendy Morgan	Guntawang Aboriginal Resources Incorporated
Pearl Depoma	Pearl Depoma (Individual)
Arika Jalomaki	Yulay Cultural Services
Thomas Dahlstrom	
Ginninderra Aboriginal Corporation	Steven Johnson & Krystle Carroll
Paul Webb	Paul Webb
Konanggo Aboriginal Cultural Heritage Services	Robert Young
<i>Undisclosed Registered Aboriginal Party</i>	

We would like to acknowledge the assistance of the following individuals for the completion of this report:

- Peter Morson, Morson Group.
- Uncle Steven Randall, Deerubbin Local Aboriginal Land Council

1.3 PROJECT LIMITATIONS

This report is limited to the assessment of project impacts described in information provided by Morson Group and mapped in this report. Virtus Heritage takes no responsibility for errors within Department of Premier and Cabinet's (DPC) Aboriginal Heritage Information Management Systems (AHIMS) data, Australian Heritage Database (AHD), Land and Property Information (LPI) Heritage data (State Heritage Register [SHR], curtilages and Heritage Conservation layers for relevant Local Government Areas (LGAs) and has assumed information provided by these agencies and government departments is accurate, however, we have made best efforts to ensure this information is verified and cross checked wherever possible. Requests have previously been made to Heritage NSW and PLDC for complete copies of reports associated with the Penrith Lakes Scheme and previous AHIPs, however not all components of reports were available for this assessment.

2. Description of the Project

Section 2 provides a description of proposed works based on information recorded during the survey and provided by Morson Group.

2.1 PROPOSED DEVELOPMENT

The proposed scope of works as provided by Morson Group seeks approval for a tourism-oriented development comprising three (3) buildings across separate lots, including a hotel, an indoor recreation facility with two (2) drive-through restaurants, and a registered club. The proposal also includes associated vehicle access, on-grade and above-ground parking, and site infrastructure.

- Lot 12:
 - A seven (7) storey hotel with 147 rooms, restaurant, gym, spa, pool, and associated facilities.
 - Multi-level above-ground car parking.
- Lot 14:
 - A 5,713m² indoor recreation facility.
 - Two (2) restaurants with capacity for a drive-through.
 - Associated on-grade car parking.
- Lot 16:
 - A 5,177m² registered club building.
 - Associated on-grade car parking.

The project design is proposed to be submitted as a concept Development Application with DPHI, however the expected ground impacting activities will include:

- Demolition of existing structures.
- Earth works including cut and fill, pilings/footings and service trenches across the project area.
- Construction of the three buildings on site.
- Installation of vehicle and pedestrian access.
- Heavy vehicle movement across the project area.
- Landscaping works across the project area.
- Ancillary infrastructure and works.

Excavations across the site will be required as part of the overall redevelopment works. Most excavations are anticipated to be between 0.15 and 1.75 m below ground level (BGL). Deeper excavations to a maximum of 2.3 m BGL will be needed for stormwater infrastructure and footings.

The construction methodology with depths and dimensions of proposed works as represented in the Development Application for the proposal is provided below by Morson Group:

2.2 PROJECT DESCRIPTION

The proposed development is located on 39-65 Old Castlereagh Road, Castlereagh and includes the construction and operation of three (3) buildings comprising a hotel (Lot 12), an indoor recreation facility with two restaurants with capacity for drive-throughs (Lot 14) and a club (Lot 16) and associated infrastructure across all three lots.

The proposed development seeks consent for the following aspects of development:

- Site preparation and establishment works including bulk earthworks to create proposed site levels and in-ground building services and utility work;
- Removal and relocation of trees within the proposed development extent, where necessary;
- Construction and operation 3 of three (3) buildings comprising a hotel (Lot 12), an indoor recreation facility with two restaurants with capacity for drive-through (Lot 14), a club (Lot 14) and associated infrastructure across all three lots;
- A total gross floor area (GFA) of 21898 m² (Lot 12 – 9711 m², Lot 14 – 7010 m² and Lot 16 – 5177 m²);
- A maximum building height of 27 m;
- Three (3) vehicle crossovers to Old Castlereagh Road and internal access driveways;
- 491 off-street car parking spaces on grade and in multi-level above-ground carpark structures;
- Landscaping across the subject site;
- The proposed development is intended to be delivered in stages as outlined below:
 - Early Works Stage: Demolition of existing dwellings and structures on the site and the installation of stormwater infrastructure, including partial construction of the stormwater system and a flood relief pipe at the rear of the site. No bulk earthworks are proposed in this stage.
 - Stage 2: The construction of the hotel building on Lot 12,
 - Stage 3: The construction of the indoor recreation facility and restaurants on Lot 14,
 - Stage 4: The construction of the club building on Lot 16.

2.3 PROJECT OVERVIEW

2.3.1. *Geotechnical Investigations*

Further geotechnical investigations may occur to supplement further works as part of this project and would involve ground disturbance.

2.3.2. *Trenching for Services and Utilities*

Trenching and ground disturbance works will be required within the project area for the installation of services and utilities. The design and placement of these items have been allowed for and are further elaborated upon in **Section 9** of this report.

2.3.3. *Underground Tanks for Flood and Water Management*

Earthworks involving cut, fill and trenching will be required within the building footprint for the placement of underground onsite detention tanks, stormwater/sewer drains, services and utilities. The design and placement of these items have been allowed for and are further elaborated upon in **Section 9** of this report. All materials excavated onsite will be utilised elsewhere onsite in the landscaped area and underneath the pavement and ground level slabs where fill is required. Soils recovered to a depth of 1.3 m will be prioritised for use onsite to create the proposed swales, landscape berms, and provide the fill needed underneath the proposed floor level slabs, which are at a higher relative level than the existing ground surface. Any excess materials will be disposed of.

2.3.4. *Pilings, Footings, Concrete Pavement Slabs and Concrete Floor Slabs*

Piles

The design and placement of the concrete piles assumed to be required for this project have been allowed for and are further elaborated upon in **Section 9** of this report. However, the design and placement of these items is yet to be finalised and is yet to be confirmed by structural engineering at a construction certificate

phase of the project. The estimated depth of the piles is 12 – 13 m, and the pile diameter is estimated to be 600 mm.

Footings, Concrete Pavement Slabs and Concrete Floor Slabs

The proposed concrete floor slabs related to the parking area and internal areas on ground level are set at levels above natural ground level. The thickness of the concrete slabs and footings will not cause ground disturbance as they are located above the level of the natural ground level. However, there is likely to be a requirement to strip the existing grass and surficial topsoil below the areas of the car park and internal areas on ground level. The stripping depth will be about 150 mm below the natural surface level. These soils will be stockpiled and reused on site in the landscaped area to create swales and earth berms as indicated on the landscape architecture plans.

2.3.5. *Landscaping and Fencing*

The landscaped areas within the project area will be cultivated to a depth of 300 mm. These cultivated soils will not be removed from site and will be cultivated in place. Some trees in areas of the proposed construction have been shown to be removed and some existing trees have been shown to be transplanted and relocated on site. For further information, refer to **Section 9** of this report.

The sites rear and side boundaries already comprise existing fences, which will be retained or upgraded. The rear and western side boundary fences will be retained whereas the eastern side boundary fence will require an upgrade. Some new footings may be necessary to support the new fence; however, the design and placement of these footings are yet to be finalised.

2.3.6. *Earthworks*

For the purposes of this assessment, it has been assumed that earthworks will occur across the project area. The maximum depth and indicative areas of earthworks, including machinery used, are summarised below:

- A nominal 150 mm depth allowance to strip grass and topsoil under the pavement and building footprints;
- The cultivation of soils in the landscaped areas to a depth of 300 mm and the planting of landscaping;
- Trenches for reticulation of building services and drainage as detailed in **Section 9** of this report;
- Excavation for OSD tanks as detailed in **Section 9** of this report; and
- Drilling of foundation piles.

Machinery to be used to carry out the earthworks will include:

- Excavator;
- Backhoe;
- Bulldozer;
- Grader;
- Wheel tractor scraper;
- Trencher;
- Continuous Flight Auger – Drilling Rig;
- Loader;
- B double tipper; and

- Haulage truck.

2.4 PROJECT STAGING

The following are the intended key program milestones for delivering this project:

- Concept DA Submission (mid-2025).
- Concept DA Approval (late-2025).
- Detailed DA submission (late-2026).
- Detailed DA Approval (mid-2027).
- Construction Certificate Phase (mid-2027 – 2028).
- Construction commences mid- to late-2028.

2.5 SUMMARY

The proposed activity has the potential to harm Aboriginal objects. Further discussion of potential project impacts to Aboriginal archaeological heritage and mapping of proposed impacts are presented in **Section 9** and **Section 10** of this report.

3. Environmental and Landscape Context

Section 3 provides a summary of the environmental and landscape context of the project area and the surrounding locality including soils, geology, landforms and hydrology, previous land use history and fauna and flora. Understanding the environmental and landscape context is important for understanding of the survival of any Aboriginal objects in the archaeological record and to predict landforms that were favourable for Aboriginal occupation.

3.1 TOPOGRAPHY, LANDFORMS AND HYDROLOGY

The project area is located on a modified, flat floodplain associated with the Quaternary terraces of the Nepean River. The slope of the project area has been modified as a result of past land use, but is on terrain elevated above nearby water courses and drainage lines.

Proximity to water is a key indicator for the presence of Aboriginal objects in the landscape. Many models of Aboriginal land use indicate a correlation between the frequency and diversity of Aboriginal objects present as proximity to water increases (see also **Section 4**).

The Nepean River is approximately 650m southeast of the project area. An unnamed man-made lake is approximately 25m north of the project area. The Sydney international Regatta Waterway is approximately 250m north of the project area and is also man-made.

Prior to extensive modifications to the landscape from the Penrith Lakes Scheme, the primary channel of Cranebrook Creek was 1.7km west of the project area and an unnamed tributary to Cranebrook Creek was originally located approximately 300m north-east. These watercourses and drainage lines are known to be associated with past Aboriginal land use and the presence of Aboriginal objects. Mitchell (2010) further mapped a number of potential paleochannels and chains-of-ponds to the north of the project area, indicating the project area could have had closer water resources available.

The project area is also likely to have been impacted by flooding over the years. Floods and rainfall can move, bury, and uncover Aboriginal objects.



Figure 2. Modified floodplain landform within the project area (Morson Group 2024).



Figure 3. 1942 Royal Australian Survey Corps topographic map of Windsor including the project area and unnamed creek.

3.2 GEOLOGY AND SOILS

The project area is within the Penrith Unit of the Cranebrook Terrace, a Quaternary alluvium geological landscape dominated by sand, silt and gravels derived from sandstone and shale. Sediment east of Cranebrook Creek's channel is modelled in the Penrith Unit and dated to a minimum of 40,000 years before present (Nanson et al 1987, Mitchell 2010, William et al 2017). Aboriginal objects have been identified within this unit through previous archaeological investigations (for example, Kohen 1997, 2004, PLDC 2011, Insite Heritage 2000). It has been theorised that Aboriginal objects would most likely been discarded on the surface of this older alluvium unit, with downward migration of artefacts over time as a result of bioturbation, disturbance and other geomorphic agents such as erosion and aggradation (Kohen 1997, 2004 see **Section 4**).

To the west of the project area, is the Richmond Unit of the Cranebrook Terrace. Sediment in the Richmond Unit to the west of Cranebrook Creek's channel has been dated to a minimum of 15,000 years before present (Williams et al 2017).

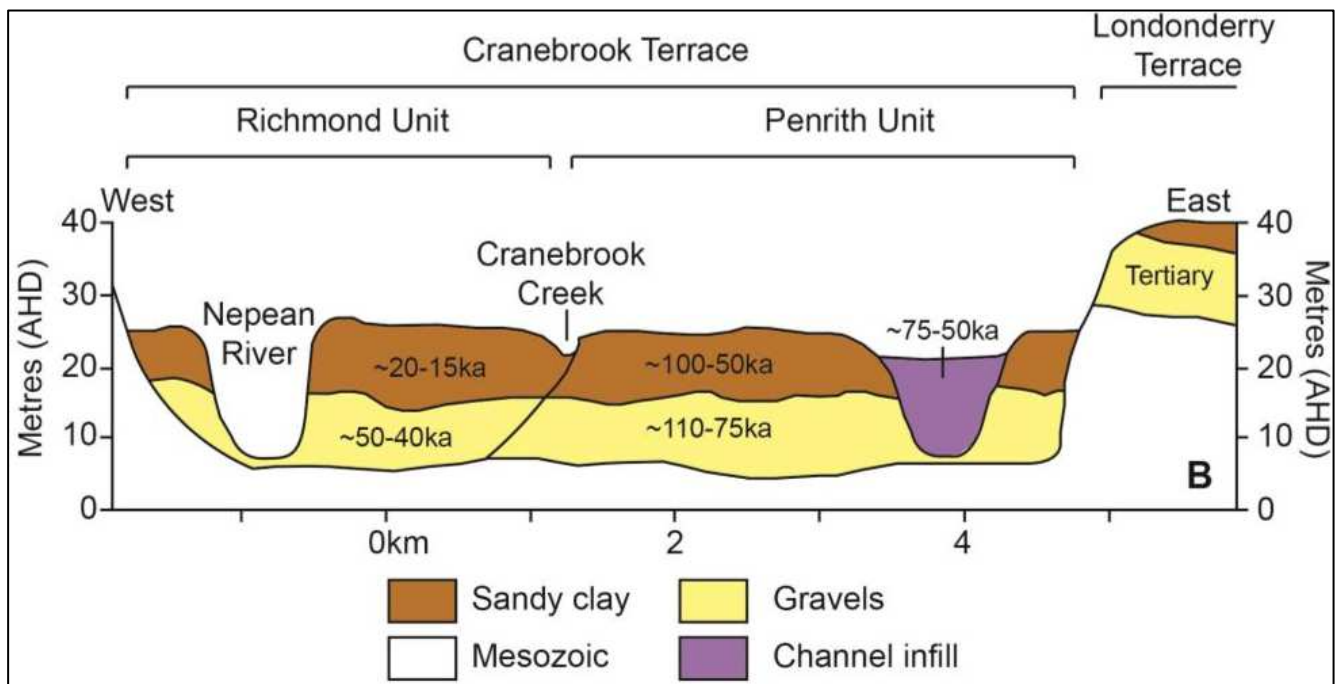


Figure 4. A cross section of the Cranebrook Terrace with date ranges from Williams et al. 2017.

The project area is within the Richmond soil landscape. A geotechnical assessment was conducted for this project, within the project area (Morrow 2023). This report found the project area to contain a topsoil of silty sand/sandy silt to a depth of 0.6 m, followed by alluvial clay sand/silty sand to depths between 3.3 and 6m, suggesting variation in the topography and land formation within the project area. Alluvial cobbles are below this to a depth of 13.9m after which a shale bedrock was identified. The soil profile is consistent with those previously observed in the Cranebrook Terrace (see **Section 4**).

Table 3: Soil profiles and depths from geotechnical investigations in Lot 14 (Morrow 2023: Table 2)

Unit	Material	Approx. Depth Range of Unit ¹ mBGL					
		BH1	BH2	BH3	BH4	BH5	BH6
1	Topsoil	0.0 to 0.5 (24.2 to 23.7)	0.0 to 0.6 (23.8 to 23.2)	0.0 to 0.6 (24.0 to 23.4)	0.0 to 0.3 (24.0 to 23.7)	0.0 to 0.6 (24.1 to 23.5)	0.0 to 0.3 (24.1 to 23.8)
2	Medium Dense Sand	0.5 to 6.0 (23.7 to 18.2)	0.6 to 5.5 (23.2 to 18.3)	0.6 to 4.2 (23.4 to 20.0)	0.3 to 3.3 (23.7 to 20.7)	0.6 to 3.8 (23.5 to 20.3)	0.3 to 3.8 (23.8 to 20.3)
3	Alluvial Cobbles	6.0 to 13.9 (18.2 to 10.3)	5.5 + (sub 18.3)	4.2 + (sub 19.8)	3.3 + (sub 20.7)	3.8 + (20.7 to 20.3)	3.8 + (sub 20.3)
4	Shale Bedrock	13.9 to 14.6 (10.3 to 9.6)	-	-	-	-	-

Notes:

- 1 Depths shown are based on material observed within test locations and will vary across the site.

3.3 CLIMATE, FLORA AND FAUNA

The local area has experienced shifts in climate and the availability of water and flora and fauna resources.

Karskens (2007) identifies that the Penrith Lakes Scheme once contained black clay freshwater wetlands, remnant riverflat forest and Castlereagh Woodland. Studies of cores taken from the Nepean River indicate that during the 38,000–36,000 years BP, the vegetation of the Penrith Lakes area was likely an open sclerophyll forest with *Eucalyptus viminalis* and *Leptospermum polygalifolium* prominent (Chalson and Martin 2008). A ‘spineless Asteraceae’, thought to be *Cassinia Ercuate* was prominent in the understory. During the 27–16 k cal. Yr BP period, a shrubland of *Cassinia Ercuate* with some grasses was present. The lack of eucalypts during the height of the last glacial period suggests a cold, arid climate with less rainfall than today. In the period 6,000 years BP to present, a *Eucalyptus tereticornis* and *Leptospermum juniperinum* woodland with a grassy understorey occupied the site. When compared with other records in the Sydney Basin, the vegetation through the last glacial maximum at Penrith Lakes is the only one with a shrubland/grassland community (Chalson and Martin 2008).

Environmental shifts such as those indicated by Chalson and Martin (2008) and Karskens (2007) can lead to changes in water channel and chain of pond alignment, flooding regimes and resource availability. These in turn can lead to adaptation and changes in landscape use by Aboriginal people over time, resulting in patterns of land use and preservation of Aboriginal objects which may not be immediately apparent based on current environmental conditions.

The native vegetation within the project area has since been extensively cleared of open forest (as shown in **Figure 2**). Regrowth vegetation in the local area is dominated by Acacia species and Eucalypt species. During the site inspection no native vegetation was identified within the project area.

3.4 PREVIOUS LAND USE HISTORY

Understanding the previous land use history can help predict how the archaeological record has survived.

An unnamed tributary of Cranebrook Creek is visible in the 1942 survey of Windsor (Royal Australian Survey Corps 1942, **Figure 3**).

Historically, the area was used predominantly for farming due to the rich soils associated with the Nepean River. This is illustrated in historical imagery, particularly the 1947–1955 photographs, which show the project area as part of a larger context of fields (Figure 6, Figure 7). In the 1955 photographs one dwelling is present within the project area, with two other residential houses appearing by 1965 (Figure 8, Figure 9, Figure 12).

Sand quarrying took place near the project area from the 1960s until the 1990s but does not appear to have impacted on the project area directly (Figure 10). This is reflected in the PLDC (2011) mapping of soil disturbance which indicated the project area may have in-situ stratigraphy.

The region would be further developed in the 1990s, with the Sydney International Regatta Centre being developed 250m north of the project area (see **Figure 9, Figure 10**). This development removed the previous unnamed tributary of Cranebrook Creek and small dams once visible northeast of the project area in the 1955–1978 aerial photographs (Figure 11). Underground irrigation piping was likely installed in the project area in 1998 (**Figure 12**).

The Nepean Business Park was developed just south of the project area across Old Castlereagh Road (Ecological Australia 2020). Geotechnical investigations and contamination investigations were undertaken in the project area in 2023 and 2024 (Morrow 2023, Banskia Envirosciences 2024).



Figure 5: 1835 Castlereagh Parish Map



Figure 6: 1947 Historic Aerial image



Figure 7. 1955 Aerial Photograph.



Figure 8. 1965 Aerial Photograph



Figure 9. 1978 Aerial Photograph.



Figure 10. 1986 Aerial Photograph. (Banksia EnviroSciences 2023)

While extensive ground works have been undertaken surrounding the project area, the project area itself appears to have only been disturbed by agricultural activities, underground irrigation piping, the construction of residential structures, geotechnical investigations and ancillary infrastructure. These activities may have removed Aboriginal objects in the topsoil but are more likely to have moved or displaced Aboriginal objects within a minimum depth of 0.3 m to 0.6 m of soil. It is possible that intact archaeology has survived within the project area, particularly below the level of agricultural activities.



Figure 11: 1991 Historic Aerial Image



Figure 12: 1998 Aerial Photograph.



Figure 13: 2013 Historic Aerial Image

3.5 SUMMARY

The project area is situated within a modified landform on terrain elevated above the Nepean River and an unnamed tributary of Cranebrook Creek, now destroyed. The unnamed tributary of Cranebrook Creek, as well as a chains of ponds, were once present approximately 300m north-east of the project area, with the Nepean River approximately 650m south-east and Cranebrook Creek 1.7km west.

The temporary and permanent water sources near the project area would have provided suitable habitats for important plant and animal resources. The availability of these resources would have changed over the last 40,000 years since people have been using the local environment. Environmental shifts such as those indicated by Chalson and Martin (2008) can lead to changes in water channel and chain of pond alignment, flooding regimes and resource availability. These in turn can lead to adaptation in landscape use by Aboriginal people over time, resulting in patterns of land use and preservation of Aboriginal objects which may not be immediately apparent based on current environmental conditions.

The Penrith Lakes Scheme, inclusive of the project area, has previously been assessed as having a reasonable potential to contain Aboriginal objects. PLDC (2011) has previously stated that “flaked stone artefacts will be present within the soil across the Scheme in a consistently low-density distribution.”

The project area contains silty sand/sandy silt topsoils to a depth of 0.6 m, followed by alluvial clayey sand/silty sand to depths between 3.3 and 6m, characteristic of the Richmond soil landscape within the Penrith Unit of the Cranebrook Terrace. It has been theorised that Aboriginal objects would most likely be discarded on the surface of this older alluvium unit, with downward migration of artefacts over time as a result of bioturbation, disturbance and other geomorphic agents such as erosion and aggradation (Kohen 1997, 2004 see **Section 4**).

Although the project area has been modified it is possible that intact archaeology has survived within the project area, particularly below the level of agricultural activities, underground irrigation piping, the construction of residential structures, geotechnical investigations and ancillary infrastructure. The project area is also susceptible to flooding.

Previous land use may have moved or displaced Aboriginal objects within a minimum of 0.3 m to 0.6 m of soil, resulting in low archaeological integrity in a minimum of 0.3 m of the topsoil. It is possible that intact archaeology has survived within the project area, particularly below the level of agricultural activities (which would be at minimum 0.3 m based on ploughing impacts to topsoil). However, as noted by Kohen (1997, 2004), it is also possible that artefacts have moved through the soil profile as a result of bioturbation.

4. Archaeological Context

Section 4 presents the archaeological context of the project area and broader region. It provides a summary of known archaeological sites identified by previous archaeological investigations, and the understanding of Aboriginal heritage developed by analysis of previous work.

4.1 STATUTORY HERITAGE REGISTER SEARCHES

4.1.1. *Aboriginal Heritage Information Management System (AHIMS).*

The AHIMS is a database of registered Aboriginal sites within NSW, administered by the NSW Department of Climate Change, Environment, Energy and Water (DCCEEW). The limitation of the AHIMS cultural heritage database is that it contains only information that has been registered with the State and does not reflect all Aboriginal cultural sites that may exist. For example, additional stone artefacts not registered in AHIMS have been identified north and east of the project area (ERM 2011, Insite Heritage 2005). The AHIMS database is being continually updated and can contain errors.

The AHIMS search was completed on 10 July 2025 for the search area bounded by Eastings: 281848 – 289036, Northings: 6261482– 6270558 (GDA, Zone: 56), (Client Service ID: 912988, A2). A total of eighty-seven Aboriginal cultural heritage sites were returned by the search (Table 4). No Aboriginal objects were recorded in the search area (Figure 14).

The nearest previously recorded Aboriginal cultural heritage site to the project area was “Andrews Road PAD 1” (AHIMS ID#45–5–5238), a Potential Archaeological Deposit (PAD) with stone artefacts associated. This site was destroyed under AHIP #4518. This site is located approximately 1.1km southeast of the project area.

Over 96% of the Aboriginal cultural heritage sites within the search area comprised of stone artefacts, including isolated finds and open artefact scatters with associated archaeological deposit (Table 4). The distribution of identified sites in AHIMS reflects the history of development and environmental impact assessment across the Penrith area. Many of the sites have been identified close to water sources.

Table 4. Summary of AHIMS Features within the Search Area

Site Features	Frequency	Percentage (%) of Total
Art (Pigment or Engraved)	2	2.3%
Artefacts	74	85.1%
Artefact, Aboriginal Ceremony and Dreaming	1	1.1%
Artefact; Potential Archaeological Deposit (PAD)	7	8.0%
Potential Archaeological Deposit (PAD)	3	3.4%
Grand Total	87	100.0%

AHIMS also contains reports from previous archaeological assessments in the search area. These are considered further in **Section 4.2**.

4.1.2. *Aboriginal Heritage Impact Permit (AHIP) Register.*

Heritage NSW maintains a list of current and previous Aboriginal Heritage Impact Permits and is in the process of digitising this list. The Aboriginal Heritage Impact Permit Boundaries dataset (State Government of NSW and NSW Department of Climate Change, Energy, the Environment and Water 2023) was searched on 20 May 2025.

AHIP C0001415 (AHIMS 3891) was issued to PLDC over the project area between 15 November 2018 and 15 November 2023 to allow harm to known and unknown Aboriginal objects without mitigation of harm during vegetation works and erosion and sediment control works as described in Controlled Activity Approval 10 ERM 2011/0057 (**Figure 14**). This AHIP has expired. It is not clear whether these works were undertaken in the project area.

4.1.3. *Other Searches of Heritage Database*

The following registers were searched:

- **Australian Heritage Database:** The Australian Heritage Database (AHD) is a Commonwealth administered heritage database that includes entries from the former Register for the National Estate and the current Commonwealth and National Heritage Lists and was searched on 17 July 2025:
 - **National Native Title Tribunal:** The search found no Native Title claims or agreements to be in place within or near the project area.
 - **Indigenous Land Use Agreements (ILUAs):** There are no ILUAs within or near the project area
 - **World Heritage List:** the search found no heritage items located within or near the project area.
 - **National Heritage List:** the search found no heritage items located within or near the project area.
 - **Commonwealth Heritage list:** the search found no heritage places located within or near the project area.
 - **Register of the National Estate:** the search found no heritage places located within near the project area.
- **State Heritage Inventory and State Heritage Register:** The State Heritage Inventory (SHI) is a heritage database administered by the NSW Environment and Heritage (Department of Planning and Environment) and was searched 17 July 2025. This database includes heritage listings from local and regional planning instruments and heritage studies and State significant heritage items. Information and items listed in the State Heritage Inventory come from a number of sources. This means that there may be several entries for the same heritage item in the database. Search results are divided into three sections.
 - Section 1 – No Aboriginal Places were listed within the City of Penrith LGA.
 - Section 2 – 29 items listed under the Heritage Act are located within the City of Penrith LGA. None of these are within the project area.
 - Section 3 – 204 items were listed within the City of Penrith LGA. One heritage item, the Castlereagh Road Alignment, runs alongside the project area. The listing does not identify any Aboriginal history or cultural heritage values.
- **The Penrith LEP 2010:** The City of Penrith utilises the Penrith Local Environmental Plan (2010) to regulate land use and development within the City of Penrith LGA. Local Environmental Plans are planning instruments which contain provisions and listings of items of environmental heritage including heritage, conservation areas and archaeological sites within Schedule 5.
 - One heritage item, #261 Castlereagh Road Alignment, borders the project area to the south, but is not within the project area (Figure 14). No other heritage items, conservation areas or archaeological sites are within the project area.

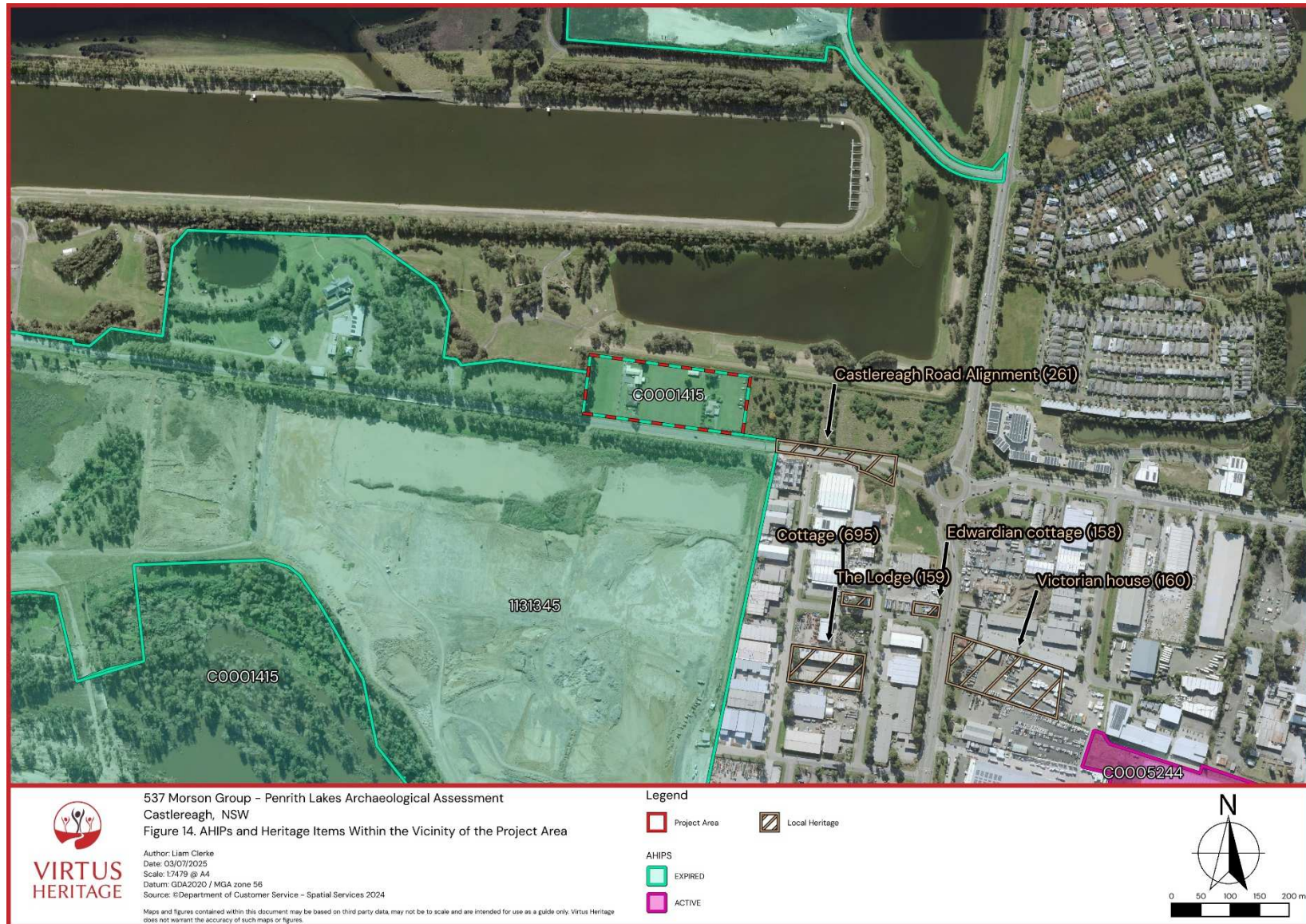


Figure 14. AHIPS and Heritage Items Within the Vicinity of the Project Area.

4.1.4. *Native Title Tribunal*

A Native Title search was conducted of the National Native Title Tribunal (NNTT) webmap on 17 July 2025 of the project area to identify if any Native Title claims or Indigenous Land Use Agreements exist over the project area.

No claims or agreements were registered over the project area at the time of the search.

4.2 PREVIOUS ARCHAEOLOGICAL RESEARCH

A review of the AHIMS library and online searches was undertaken to obtain copies of previous Aboriginal heritage studies and archaeological investigations. **Section 4.2.1** summarises previous archaeological assessments of the project area while **Section 4.2.2** provides a summary of other relevant assessments in the region.

4.2.1. *Previous Assessments of the Project Area*

The project area has previously been assessed for Aboriginal archaeological and cultural heritage values as part of the Penrith Lakes Development Scheme (Kohen 1981, Penrith Lakes Development Corporation (PLDC) 2011). The PLDC report consolidated previous archaeological assessments and survey coverage data up to 2011 and included consultation in accordance with the *Aboriginal community consultation requirements for proponents* (DECCW 2010). Volumes 1.2 and 3 and Map 14 were not available to review for this assessment. Morson Group has requested this information from Heritage NSW and Penrith Lakes Development Corporation.

PLDC (2011) identifies that Kohen (1981) undertook archaeological survey of the Penrith Lakes Scheme to inform a Regional Environmental Study. According to the survey coverage in Kohen (1981a), the project area was surveyed, however no specific detail regarding land access, sampling or visibility. At this time, the project area does not appear to be part of any of the development applications associated with the Penrith Lakes Scheme. A supplementary report by Kohen (1981b) suggests that as a private property outside the scheme, the project area may not have been surveyed. No Aboriginal objects were identified (Kohen 1981).

The PLDC (2011) assessment noted archaeological monitoring and excavation has occurred in both the Penrith Unit and Richmond Unit of the Cranebrook Terrace within the Penrith Lakes Scheme, but there has been no archaeological monitoring or excavation within the current project area for the proposed Castlereagh Tourism Development. The project area was identified in the historic soil disturbance mapping as having agricultural disturbances with in-situ stratigraphy (PLDC 2011). No sand mining appears to have occurred in the project area. The predictive model mapping from that assessment was unavailable for this methodology. Efforts have been made to acquire this mapping from PLDC and Heritage NSW.

A model of past Aboriginal land use was developed for the Penrith Lakes Scheme. PLDC (2011) concluded that the Dharug speaking Aboriginal people who lived on the Cranebrook Terrace and associated landforms (such as the Smith Road conservation area ridge) hunted and gathered across the landscape with selection of elevated landforms as favoured camping locations. The assessment concluded that "it is assumed that flaked stone artefacts will be present within the soil across the Scheme in a consistently low-density distribution (PLDC 2011).

Based on this assessment, AHIP C0001415 (AHIMS 3891) was issued to PLDC over the project area between 15 November 2018 and 15 November 2023 to allow harm to known and unknown Aboriginal objects without mitigation of harm during vegetation works and erosion and sediment control works as described in Controlled Activity Approval 10 ERM 2011/0057. It is not clear whether these works were undertaken in the project area.

An Aboriginal archaeological due diligence assessment was completed for the project (Virtus 2024) and included an archaeological survey with Virtus Heritage and Uncle Steven Randall (Deerubbin LALC). Survey coverage from this site inspection is presented in Section 6 of this report. No Aboriginal objects were identified.

Ground surface visibility in the project area was extremely limited (<1%) due to the high level of non-native grass. All mature trees within the project area were identified as non-native species. The inspection confirmed that the project area had undergone ground disturbance associated with the construction of the existing houses, and landscaping works. Underground irrigation piping had been installed across the project area. On the basis of the previous assessment (PLDC 2011) and the presence of the Penrith Unit of the Cranebrook Terrace, the due diligence assessment considered that archaeological potential was present and community consultation and further impact assessment was required.

4.2.2. *Other relevant assessments in the region*

A large number of heritage assessments have occurred in the local region, particularly in association with the Penrith Lakes Scheme. A timeline and annotated bibliography of relevant reports reviewed for this assessment is provided in **Table 5** and synthesised in **Section 4.3**, **Section 4.4** and **Section 5**.

Table 5: Previous Archaeological Investigations within the Locality

Author and Year	AHIMS report number	Report Title and Relevance to Project Area
Kohen 1986b	1063	An additional archaeological survey of the Penrith Lakes Scheme: The DA2 area, at Total Survey Cranebrook and Upper Castlereagh [report prepared for Penrith Lakes Development Corporation] An archaeological survey of the DA 2 area that achieved 80-100% survey coverage. This did not include the project area and did not include assessment of the project area.
Kohen 1986c	1064	An archaeological survey of the Penrith Lakes scheme: The DA2 area, development area Selective survey of the DA2 area. This assessment and survey did not include the project area
Nanson, Young and Stockton 1987	–	Chronology and palaeoenvironment of the Cranebrook Terrace (near Sydney) containing artefacts more than 40,000 years old A study of artefacts and the geological units associated with the Cranebrook Terrace in 1987 found natural sediment within the locality to have been deposited within three stages: a reworked overburden found between Cranebrook Creek and the Nepean River dating to 10–13,000 years BP, an original overburden dating to 40–45,000 years BP (Penrith Unit), and channel infill deposits dating to approximately 36,000 years BP (see Figure 4). The reworked overburden deposit (Richmond Unit) was identified as being deposited within the known habitation of Aboriginal populations in the Sydney area, and also as having an increased potential for archaeological deposits to its maximum depth of approximately 4m. Within Nanson et al.'s mapping, the project area appears to be ~90m of the border between the reworked overburden deposit associated with deeper archaeological potential (Richmond unit), and the original overfill burden deposit (Penrith Unit) (Nanson et al 1987, Figure 5). This model has subsequently been revised in Mitchell 2010 and Williams et al 2017.
Kohen 1988	–	The Penrith Lakes scheme: Routine inspection of quarrying operation The project area was not part of this assessment.
Kohen 1988–2004	1433 4093	Inspections were initially conducted every six months. Monitoring of gravels within the quarrying continued until at least 1996 resulting in at least 13 reports without finding Aboriginal stone tools within the gravels. The regular inspections of gravels however observed artefacts exposed in the overburden sections around Cranebrook Creek.

		Monitoring was expanded to stripping of overburden. Monitoring of overburden stripping continued to around 2004. Artefacts from the monitoring were listed in each monitoring report by Kohen. Based on the mapping provided in PLDC (2011), the project area was not part of this monitoring. However provides additional information regarding the distribution of Aboriginal objects across the Penrith Lakes Scheme in both the Richmond and Penrith Unit.
Koettig and Hughes 1995	–	Excavations at RS1 Regentville (Koettig and Hughes 1995) found occasional artefacts to depths of 0.8m, providing an indication of depth of stone artefacts in similar soil profiles to the project area.
Valerie Smith and Associates 1996	97515, 97527	Review of the Geomorphology of the Penrith Lakes Scheme Area and Context for Aboriginal Literature Survey Occupation by Valerie Smith & Associates This work was superseded by Mitchell 2010 and Williams et al 2017.
Kohen 1997	97700	Archaeological investigations in the DA4 area, Penrith Lakes Scheme [report prepared for Investigation Penrith Lakes Development Corporation] by Dr James Kohen Archaeological Assessments were completed by Kohen in 1997 for DA 4. This assessment did not include the project area. The first major subsurface investigation of the overburden took place in 1997 with the mechanical excavation by Kohen of two very large trenches within the Penrith Unit soil. Each trench was 7m wide and 100m long dug by mechanical scraper. One major trench was dug by Cranebrook Creek to a depth of 4.6m. A second trench was dug to a depth of 1.9m by the paleochannel feature – a depressed band of clayey soil swamps near the base of the escarpment in the northeastern area of the Scheme. Kohen reports that 99% of artefacts were recovered within the top 1.3m and European artefacts were recovered from the upper 90cm at Cranebrook Creek and upper 60cm at the paleochannel. The top 2m of the soil were heavily bioturbated. The results suggested that artefacts had been mixed through the soil by bioturbation. The results suggested a low density of artefacts, although the recovery via 10mm mechanical gravel screen would not have captured artefacts less than 10mm wide. This assessment provides an indication of the likely depth and archaeological integrity of the Penrith Unit which is of relevance to the project area.
Insite Heritage 2000	–	In 2000, Insite Heritage undertook archaeological test pitting to the east of the project area near the boundary of the Penrith unit and Londonderry Terrace for a proposed development between Cranebrook Road and Andrew Road, A total of 75 artefacts were identified. Artefacts located in the sand terrace averaged around 1–3 artefacts per m ³ , with the majority located in the top 0.5m. The report recommended the proponent apply for a consent to destroy with monitoring. This assessment contributes to an understanding of the archaeological potential of the Penrith Unit.
ERM 2001	–	ERM undertook a consolidation of information across the Penrith Lakes Scheme, including mapping the approximate distribution of Aboriginal objects recorded by Kohen prior to 2000 across the Penrith Lakes Scheme in both surface and subsurface contexts (ERM 2001: 2.15). The distribution of these sites notes the broader distribution of Aboriginal stone artefacts than indicated by the AHIMS data.
Comber Consultant 2005, 2006	105447	In 2005 nine Aboriginal stone artefacts had been identified eroding from the edges of a farm dam on a parcel of land previously owned by Camenzuli, located in the north of the scheme. An archaeological assessment was conducted by Comber resulting in the recording of 17 stone artefacts. Comber recommended archaeological salvage and consequently excavated a total of sixteen trenches, each 2m by 3m in area to a depth of 60cm with all spoil dry sieved through 2.5mm aperture screen. One artefact was recovered from the excavation. Comber's 2007 excavation of the PL9 area, located 1km to the west of SB83, was conducted within the younger Richmond Unit and adopted total recovery wet-sieving approach. A series of 4m by 1m trenches were dug by backhoe along three slightly elevated levees. Some of the trenches were expanded and a small number of additional 1m x 1m test pits were dug by hand. A total of 5,078 artefacts were recovered, with 52 backed artefacts extending to deeper spits within the undifferentiated alluvial deposits. These results indicate the presence of Holocene age technology bioturbated through a mixed alluvial deposit at least to the depth of excavation in many pits. In 2006,

		Comber prepared additional information This report recommends that the Section 90 permit with salvage be issued. One artefact was identified as a result of this work (Comber 2006).
Comber 2006	100211	Archaeological and Cultural Heritage Assessment Aboriginal Cultural Heritage Region in the area surrounding PL 9 Penrith Lakes Scheme This assessment did not include the project area.
Karskens 2007	-	Water Dreams, Earthen Histories: Exploring Urban Environmental History at the Penrith Lakes Scheme and Castlereagh, Sydney. Karskens (2007) provided a history of the Penrith Lakes Scheme and Castlereagh, noting historic sources relevant to Dharug life in the Penrith Lakes area.
Comber and Stening 2008	101748	Aboriginal Archaeological & Cultural Heritage Assessment: Cranebrook Escarpment. Report prepared for Penrith Lakes Development Corporation This assessment did not include the project area and recommended further subsurface excavation to determine the nature and extent of two sites identified.
AHMS 2010	103762	Emu Plains Rail Stabling Yards – Section 87 #118047 Excavation Report This assessment identified stone artefacts within a levee landform adjacent a drainage line to the south of the Nepean River within the A Horizon soils, further demonstrating the potential for levee and terrace landforms to contain evidence of stone artefacts in proximity to water in the local area.
Mitchell 2010	-	Geomorphology and soils in relation in relation to archaeological investigations on the Cranebrook Terrace, Penrith Lakes. Report prepared by Groundtruth Consulting for Comber Consultants This report provides a summary of geomorphological investigations relevant to the project area, including additional interpretation on potential location of paleochannels and past drainage lines of Cranebrook Creek and its chains of ponds, indicating that water sources may have been around 300m from the project area.
2010	-	The project area appears to have been incorporated into the Penrith Lakes Scheme
November 2011	-	An area wide Penrith Lakes Scheme AHIP was lodged with the then Office of Environment and Heritage on 7 November 2011. This AHIP did not include the project area.
EMGA 2011	-	<i>Aboriginal Heritage Assessment Report I Old Castlereagh Road and Quarantine Lake AHIP including results of test excavation of site PLSB83 (45-5-3991) under the Code of Practice for Archaeological Investigation of Aboriginal Object in NSW (DECCW 2010). Penrith Local Government Area. Prepared for Penrith Lakes Development Corporation</i> The assessment states that “The Scheme land holds areas of high cultural significance with scientific value as representative landform with Aboriginal sites. The areas protected from quarrying contain Aboriginal stone artefacts in surface exposures and deep deposits. The deposits have research potential capacity to address questions of past Aboriginal land-use, certainly within the last 10,000 years, and possibly the late Pleistocene. The areas have Aboriginal socio-cultural values relating to their capacity to demonstrate past and current Aboriginal connection to the land.” Baker hypothesised that “Based on the circumstances of initial discovery of PLSB83 and suggested land use model of Aboriginal behaviour it was initially assumed that flaked stone artefacts may be present within the upper 50 cm of soil in the AHIP area in an irregular very low-density distribution more than 300 m from Cranebrook Creek within the Penrith Unit soils. Within 300 m of Cranebrook Creek a higher concentration of Aboriginal flaked stone artefacts is anticipated. A very low-density artefact distribution may be present south of Cranebrook Creek within the Richmond Unit soils at an unknown depth”. An archaeological test excavation of PLSB83 within the Penrith Lakes Scheme conducted in accordance with the <i>Code of Practice for Archaeological Investigations and Aboriginal Objects in NSW</i> (DECCW 2010) identified a low density of stone artefacts within the Richmond geomorphological unit, mainly on the eastern slightly higher ground close to the old Castlereagh Road. An AHIP was issued over part of the Penrith Lakes Scheme to support DA4, to the east of the project area with specific requirements to undertake salvage excavations across a number of geomorphic units including the Richmond Unit, the Penrith Unit and the boundaries of a tributary creek

		identified by Smith (1996). The applied for period was 2011–2018. DCAC noted a concern around the depth of excavation, and the lack of consideration of how the chains of ponds of Cranebrook Creek may have changed over 20,000 years.
EMGA 2011	105453	Aboriginal Heritage Assessment Report I 5B83, 5B73, 5B66 including results of test excavation of site PLSB83 (45–5–3991) under the Code of Practice for Archaeological Investigation of Aboriginal Object in NSW (DECCW 2010). Penrith Local Government Area. Prepared for Penrith Lakes Development Corporation I 21 June 2011 This report does not appear to contain any additional information to that presented in the report above.
PDLC 2015	–	In July 2015, an application was made for an Aboriginal Heritage Impact Permit across part of the Penrith Lakes Scheme. This was subsequently amended in 2018 to include erosion works.
Artefact 2016		In more recent times, Artefact (2016) conducted an Aboriginal Archaeological Survey Report as part of a Review of Environmental Factors for infrastructure works on Jane Street and Mulgoa Road, Penrith, approximately 2.3km south of the project area. Artefact (2016) identified that artefact deposits have been found within the Cranebrook Terrace to a depth of 3.7m, or 20.55 AHD, providing additional detail regarding of the archaeological potential in the region.
Williams et al 2017	–	In 2017 Williams et al. conducted excavations on the banks of Peach Tree Creek and created the most recent dating model for the Cranebrook Terrace (see Figure 7). This modelling identifies that the sandy clay sediment in areas west of the historic alignment of Cranebrook Creek, within the Richmond Unit, were deposited between 20–15,000 years ago to a depth of 3.5–3.9m or 20.73–21.13m AHD. This sedimentary layer is particularly sensitive for Aboriginal archaeological deposits, with flakes being identified by Williams et al. at the base of this layer. Sediment below this deposit are also sandy clays and date to approximately 50–40,000 years ago. Sediment east of the historic alignment of Cranebrook Creek dated to at least 50,000 years. Aboriginal objects are less likely to occur at depth to the east of Cranebrook Creek, with any Aboriginal objects most likely occurring in the reworked topsoils. Around 3km east of Cranebrook Creek is a channel infill dating to between 50–75,000 years ago
Comber 2018	103872	Toga Penrith Aboriginal Archaeological Assessment An assessment of land within the Penrith Unit recommended further investigation, indicating a consistent interpretation that archaeological potential may exist in this unit.
Biosis Research 2018	–	In 2018 Biosis conducted an Aboriginal Cultural Heritage Due Diligence Assessment for the construction of a new maintenance shed at the Penrith Regatta Centre, 1.7km west of the project area. Biosis noted that a high level of disturbance from sand mining and landscaping had been undertaken within the locality, which has impacted the potential for sites to be identified within its Richmond soils. No artefacts were identified in Biosis' site inspection.
Heritage NSW and PDLC	AHIP 1131345	AHIP 1131345 does not include the project area.
Karskens et al 2019	–	Traces in a Lost Landscape: Aboriginal archaeological sites, Dyarubbin/Nepean River and contiguous areas, NSW, Australia (Data Paper) This dataset provides a compilation of sites and reports relevant to the Dyarubbin and Penrith Lakes Scheme. Individual report where relevant are considered in this table.
Eco Logical Australia 2020	–	Nepean Business Park, Penrith, NSW Aboriginal Cultural Heritage Assessment Great River NSW Pty Ltd Eco Logical Australia (2020) conducted an Aboriginal Cultural Heritage Assessment in 2020 for the construction of the Nepean Business Park located 20m south of the project area, on the other side of Old Castlereagh Road. This assessment identified stone artefacts to be the most common sites within the locality, though none were identified within their assessment area ERM (2001) indicates that Kohen possibly identified stone artefacts in or near this lot. Consultation with Aboriginal Parties in this report noted that burials had been identified in the broader Penrith Lakes region. However, the level of

		disturbance that has been undertaken in the locality due to sand mining indicated all Aboriginal objects to have a low potential within their assessment area. No Aboriginal artefacts or sites were identified in Eco Logical Australia's assessment.
Ecological Australia 2020b	-	<i>Regatta Park and River Road Reserve Test Excavation. Prepared for Penrith City Council</i> ELA was engaged by Penrith City Council to conduct a test excavation program and supporting Archaeological Technical Report (ATR) for the proposed upgrades in Regatta Park and River Road Reserve. In Regatta Park, there was low artefact density across the entirety of the site, with a majority of the artefacts found between 60 cm and 90 cm depth, 2.29 km south of the project area. This assessment provides additional supporting information regarding the archaeological potential of landscapes in the region.

4.3 REGIONAL CHARACTER

This section synthesises and discusses the previous archaeological research summarised in Section 4.2 and the environmental context of the region (presented in **Section 3**), in order to build a picture of the regional character of Aboriginal land use and potential archaeology, assist in predicting the types of sites that may be expected to be present in the project area (presented in **Section 5**), and help inform an analysis (presented in **Section 7**) of the survey results (**Section 6**).

The project area is part of a broader Aboriginal cultural landscape of the Dharug-speaking peoples. The Penrith Lakes area is associated with the Boorooberongal and Mulgoa clans (PLDC 2011, Karskens 2007). The Blue Mountains, Cranebrook Escarpment and Nepean River connect with shared songlines between Dharug, Darkinjung and Gundungurra Nations (PLDC 2011, Blue Mountains City Council 2017).

The Penrith Lakes area was a traditional meeting place for Aboriginal people. Its river and rich soils provided abundant natural vegetation and wildlife which supported Aboriginal people for many generations (New South Wales State Heritage Register. Department of Planning & Environment. HO2009, 2024). Evidence of this history has been revealed through the many artefacts were collected during the 25 years of sand and gravel mining at Penrith Lakes, to the north, west and south of the project area (Kohen 1986a, 1988–2004, 1997, EMGA 2001, Comber 2005, 2006, 2008, PLDC 2011, New South Wales State Heritage Register. Department of Planning & Environment. HO2009, 2024). In addition to the eight-five Aboriginal cultural heritage sites registered within a 4km radius of the project area, there are additional Aboriginal cultural heritage sites were not recorded in AHIMS (ERM 2001, Insite Heritage 2005).

To the north of the project area, near Hadley Park, the Nepean River was one of the many first contact places where local Aboriginal people were able to stay on their traditional lands by camping and working for the colonial settlers. It was a place of confrontation between Aboriginal people and colonial settlers before more peaceful relationships were established (New South Wales State Heritage Register. Department of Planning & Environment. HO2009, 2024).

Substantial stone artefact workshops have been identified along the banks and terraces of Cranebrook Creek and the Nepean River, with many suitable stones for the manufacture of stone tools being sourced from the river and its creeks (Doelman et al 2015). Cranebrook Creek CC/1 (AHIMS 45-5-0281), listed as an artefact and Aboriginal Ceremony and Dreaming site, was located approximately 1.4km to the north-west of the project area.

Aboriginal people, organisations and reference groups have continued to actively be involved in advocating for the protection of Aboriginal cultural heritage, archaeological assessment and care of Country across the local area, including the Penrith Lakes area (for example, Kohen 1988–2004, PLDC 2011, consultation for SEPP amendments 2023).

Kohen had previously hypothesised that a continuous scatter of artefacts at varying densities probably occur along all creeks in the Cumberland Plain (Kohen 1988) with the Nepean River and adjacent flood plain acted as focus of activity (Kohen 1988). Kohen thought that the Eastern bank and terraces of Nepean River

were likely to contain significant sites and possibly provided a focus of activity along bank of Cranebrook Creek (Kohen 1986a). Fauna and vegetation associated with Cranebrook Creek and its tributary streams would have played a major part in the selection of prehistoric sites (Kohen 1986a). Parts of the project area falls are approximately 300m from an unnamed tributary of Cranebrook Creek. EMGA (2011) hypothesises that artefact densities will decrease at this distance and fall within the category of low-density artefact distribution

As noted in Section 4.2.1, a model of past Aboriginal land use was developed for the Penrith Lakes Scheme, synthesising Kohen's work. It hypothesised Dharug speaking Aboriginal people who lived on the Cranebrook Terrace and associated landforms (such as the Smith Road conservation area ridge) hunted and gathered across the landscape with selection of elevated landforms as favoured camping locations. The assessment concluded that "it is assumed that flaked stone artefacts will be present within the soil across the Scheme in a consistently low-density distribution."

The age of artefacts and the age of archaeological deposits with the Cranebrook Terrace has been a source of debate over the years. A study of artefacts and the geological units associated with the Cranebrook Terrace in 1987 found natural sediment within the locality to have been deposited within three stages: a reworked overburden found between Cranebrook Creek and the Nepean River dating to 10–13,000 years BP (Richmond Unit), an original overburden dating to 40–45,000 years BP (Penrith Unit), and channel infill deposits dating to approximately 36,000 years BP (see Figure 15). The reworked overburden deposit was identified as being deposited within the known periods of habitation of Aboriginal populations in the Sydney area at the time of the study (1987), and also as having an increased potential for archaeological deposits to its maximum depth of approximately 4m. This model has subsequently been revised in Mitchell 2010 and Williams et al 2017.

Within Nanson et al.'s mapping, the project area appears to be within 90m of the border of these two units. This boundary was based on Walker's 1956 geological mapping at a 1-mile scale (Mitchell 2010) and localised variations may occur.

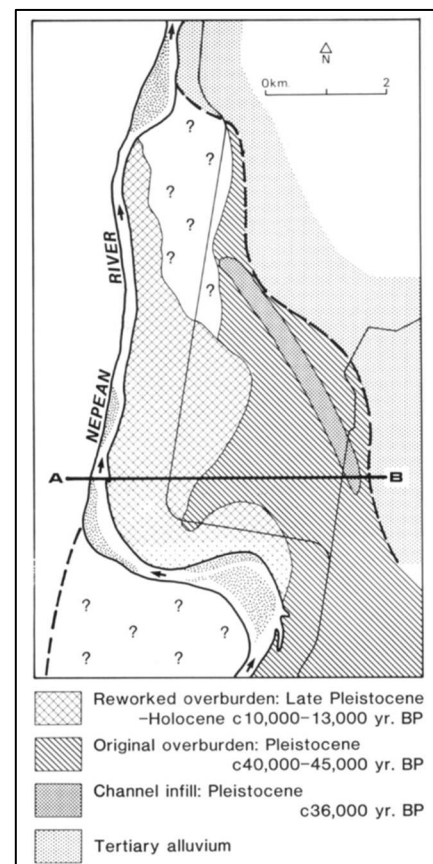


Figure 15. Cranebrook Terrace mapping from Nansen et al. 1987.

As noted in Section 4.2.2, the first major subsurface investigation of the alluvium overburden took place in 1997 with the mechanical excavation by Kohen of two trenches within the Penrith Unit soil. The excavation suggests that the Penrith Unit contained within the project area may retain Aboriginal objects to depths of 1.3m and that these objects may have experienced bioturbation. It is important to note that the methods of sieving for this excavation used a larger size sieving mesh than is standard under the current Code of Practice for Archaeological Investigation in NSW, so artefact numbers in these deposits may have been higher than identified. The age of Aboriginal land use was not determined, though theorised to represent more recent occupation reworked into deposits laid down in the Pleistocene.

Additional excavations across Penrith Lakes Scheme, Castlereagh and the Nepean floodplain have identified stone artefacts buried within the topsoils and top 1.3m of deposit within the Penrith Unit of the Cranebrook

Terrace (for example Insite Heritage 2005, Ecological Australia 2020), providing an indication of the potential depth of stone artefacts in the project area, and to greater depths in the Richmond unit (Comber 2006, 2008, Williams et al 2017). These assessments have further noted variation in the distribution of the Richmond and Penrith Unit to those originally hypothesised by Nanson et al (1987).

In 2017, Williams et al. conducted excavations on the banks of Peach Tree Creek and created the most recent dating model for the Cranebrook Terrace (see **Figure 7**). This modelling identifies that the sandy clay sediment in areas west of Cranebrook Creek, within the Richmond Unit were deposited between 20–15,000 years ago to a depth of 3.5–3.9m or 20.73–21.13m AHD. This sedimentary layer is particularly sensitive for Aboriginal archaeological deposits, with flakes being identified by Williams et al. at the base of this layer. Sediment below this deposit are also sandy clays and date to approximately 50–40,000 years ago. Sediment east of the historic alignment of Cranebrook Creek dates to at least 50,000 years. Aboriginal objects are less likely to occur at depth to the east of Cranebrook Creek, in areas such as the project area, with any Aboriginal objects most likely relating to a more recent time period and migrating through the topsoil, either through bioturbation, disturbance or other geomorphic agents.

With respect to the management of Aboriginal objects across the Penrith Lakes Scheme and local area, there appears to be a trend towards area-wide AHIPs to manage the residual risk of Aboriginal objects across both the Richmond and Penrith units of the Cranebrook Terrace irrespective of the identification of sites, particularly in those areas not historically impacted by sand quarrying (Kohen 1988–2004, Insite Heritage 2005, AHIP C0001415, AHIP 1131345, 2018, Ecological Australia 2020).

4.4 SUMMARY

The project area is situated within a modified landform on terrain elevated above the Nepean River, approximately 650m south-east, and is approximately 300m from an unnamed tributary of Cranebrook Creek, now destroyed.

The temporary and permanent water sources in proximity to the project area would have provided suitable habitats for a vast range of plant and animal species with utility to Dharug-speaking people, with the availability of these resources changing over the last 40,000 years. Environmental shifts such as those indicated by Chalson and Martin (2008) and Karskens (2007) can lead to changes in water channel and chain of pond alignment, flooding regimes and resource availability. These in turn can lead to adaptation and changes in landscape use by Aboriginal people over time, resulting in patterns of land use and preservation of Aboriginal objects which may not be immediately apparent based on current environmental conditions.

Based on the environmental context and archaeological context of the project area, Aboriginal objects (stone artefacts) are likely to occur within the project area “in a consistently low-density distribution” to depths of 1.3m (but often to 0.6 – 0.9 m) based on archaeological excavations undertaken by Kohen (1997). Insite Heritage (2005), Comber Consultants (2006, 2008), Ecological Australia (2020) and synthesis undertaken by Williams et al (2017).

These Aboriginal objects are likely to have moved or displaced Aboriginal objects within the top 0.3 m to 0.6 m of soil as a result of past land use and disturbance, resulting in low archaeological integrity in the topsoil to a minimum of 0.3 m. It is possible that intact archaeology has survived within the project area, particularly below the level of agricultural activities. However, as noted by Kohen (1997, 2004), it is also possible that artefacts have moved through the soil profile as a result of bioturbation and other geomorphic agents.

5. Predictive Model

Based on the known archaeological, environmental and landscape context of the locality, a predictive model for evidence of Aboriginal occupation for the project area is presented below.

Table 6 describes the types of sites that may be encountered and their predicted relevance to the project area. The types of sites are not exhaustive but indicative of the main types of sites that could reasonably be expected to be found.

Table 7 provides the definitions of archaeological potential.

Table 6. Predictive Model for Aboriginal Occupation within the Project Area.

Description	Relevance to the Project Area
Artefacts (Isolated artefacts and artefact scatters)	
Isolated artefacts and artefact scatters (open camp sites) are the locations of discarded stone artefacts, often material that has been discarded as part of making stone tools or over frequent episodes of occupation/visitation of an area. These sites are most likely to be found within 200m of a watercourse in well drained alluvial flats, alluvial terraces, lower slopes, and confluences where the landscape has not been heavily modified and on spurs, ridge lines and crests. All of Australia has potential for discarded Aboriginal stone tools unless areas are heavily modified, and soils have been removed. Stone tools have been found in highly disturbed contexts and may retain value to community members.	Stone artefacts are likely to occur within the project area "in a consistently low-density distribution" to depths of 0.6 m, consistent with the maximum recorded depth of the A horizon. Artefacts may be manufactured of predominately silcrete and occasionally quartz, chert, quartzite, hornfels and basalt.
Middens	
Middens and shell mounds can be the accumulation of debris from fresh and saltwater fish, crustaceans, molluscs, and other shellfish (shells, fish bones) consumed as part of Aboriginal people's diet and may also contain charcoal, stone artefacts, bone and other types of material used by Aboriginal people. They are also known to contain cremated human remains or human burials, particularly in coastal environments. These places can have spiritual or ceremonial use and contain evidence of the early domestic practices. Middens are identified within sand dunes, beaches, terraces above watercourses, and inland, near lagoons and water holes.	Shell middens are rare but do occasionally occur along the Hawkesbury-Nepean Rivers (GML 2021). The soils in the project area are generally acidic and not conducive to the preservation of shell. It is possible, but unlikely, that shell midden may be present in the project area.
Burial Sites	
Burial sites or Aboriginal ancestral remains may be found in a variety of landscapes throughout NSW, although most frequently they are found in middens, sand dunes, lunettes, bordering dunes, river terraces and other sandy or soft sedimentary soils, as well as defined cemeteries or burial grounds, mounds, rock shelters and caves. They may be marked with stones, carved trees, or found in association with other sites such as middens. These sites are rare and have a very special importance to Aboriginal people. There are numerous examples in Australian and NSW of burials being found in highly modified contexts such as Narrabeen carpark and foreshore for Narrabeen man and underneath houses at Nambucca.	Consultation for previous archaeological reports has noted a general potential for burial sites to occur within the Penrith Lakes area. No specific burial sites have been identified in the project area based on Aboriginal consultation to date and previous archaeological and historical research for this assessment.
Ceremonial/bora grounds, earthworks, and stone arrangements	
Ceremonial or Bora grounds, earthworks and stone arrangements are rare site types and sometimes difficult to identify as they are generally low constructions, usually less than a metre high, and may range from being	There are no known bora grounds or stone arrangements within the project area based on Aboriginal consultation

very simple to more elaborate. They are made by the movement and mounding of earth or the arrangement of stones in circular, linear or figurative patterns, cairns and as paths. Bora grounds and stone arrangements are generally found on flat or gently sloping landforms but are known to exist in other contexts (e.g. cairns on hilltops and crests, or stone structures within rock shelters).

to date and previous archaeological and historical research for this assessment.

Story places, post-contact sites, songlines

These site types may or may not have tangible evidence of Aboriginal land use.

To be determined through consultation.

Other site types

Culturally modified trees Scarred trees and carved trees contain evidence of scars and carved patterns which can be attributed as having Aboriginal cultural origin. Scarred trees include the removal of bark from the trunk of the tree (usually with a stone axe) to make shields, canoes, implements and other types of items which leave a wound on the tree trunk. Carved trees are often found in association with ceremonial grounds, burials, or cultural sites. Carved trees are a very rare site type.

Petroglyphs (also referred to as Rock Engravings) are art sites where marks have been made in stone by Aboriginal people (for example, spirit figures, animals, implements and footprints).

Rock shelter sites with art rock overhangs used for shelter by Aboriginal people and where smooth surfaces on the walls of the shelter (sandstone surfaces) are painted with ochres and pigments. Rock shelters with floor deposits are closed sites perfect for Aboriginal occupation and evidence of burials, stone tools and midden material maybe subsurface or extant.

Aboriginal axe grinding grooves are grooves most often found in sandstone where Aboriginal people have sharpened or manufactured stone axes and other implements and, in some cases, ground seed and grains in the sandstone forming 'bowls'. This site type can occur where suitable geology is present.

Stone quarries Stone quarries for artefact manufacture, are most likely found in areas of exposed bedrock or gravel beds.

While these site types occur within the wider region, they are unlikely to occur within the project area due to an absence of mature native vegetation and an absence of suitable geology

Potential Archaeological Deposits

Soil profiles within landforms which are predicted to contain buried evidence of Aboriginal occupation. This buried evidence is most often stone artefact scatters which survive frequently in the archaeological record and may occur in both primary and secondary depositional environments. Nearly all soil landscapes and landform types in Australia are connected to Aboriginal occupation and have potential to contain evidence of such.

Artefacts are most commonly recorded in A unit soils (topsoils) and at great depth in B unit alluvial deposits. They occur also in other types of B unit subsoils and deposited between the cracks of C unit cracking clays, where artefacts have moved down the soil profile. Evidence of Aboriginal occupation occurs commonly in both natural secondary deposits as well as in many types of disturbed contexts. Due to the large number of environments and soils where artefacts can occur, deposits are considered to have archaeological potential unless the absence of artefacts is anticipated as a result of post-depositional factors.

Table 7. Definitions of Archaeological Potential

Archaeological Potential	Definition
Low to Zero	Landforms that have been totally modified and have low to zero potential for any remaining original soil profile or intact archaeological deposits. This category includes existing roads, quarry areas or any area where the original soil profile (topsoil – A horizon) has been stripped and the landform completely modified. This landform may also include areas where there is no intact A horizon soils due to high levels of erosion.
Low	Landforms that may have been utilised by Aboriginal people in the past, but at a lower intensity relative to all surrounding landforms, resulting in a lower artefact density than all surrounding landforms. This category also includes landscape areas of low terrain integrity, where geomorphic processes or human action may have redistributed artefacts from their deposited locations, such as stripping of soil to create levees or excavation to create culverts, dams or bridges, resulting in site disturbance or destruction.
Moderate	Landforms that are predicted to have been utilised by Aboriginal people in the past, but not intensively or repeatedly. There is therefore potential for artefactual deposition, but at a lower frequency and density than in areas of high archaeological potential. This category may also refer to landforms known to be sensitive for higher levels of Aboriginal occupation but where prior ground surface disturbances has decreased the archaeological integrity and potential of finding evidence of Aboriginal occupation (for example, creek confluences, alluvial terraces where stratigraphic integrity may have decreased due to previous land use).
High	Landscape areas predicted to have been intensively or repeatedly utilised by Aboriginal people in the past, such as creek confluences, Pleistocene terraces, floodplains or elevated landforms above major watercourses or floodplains. In these areas, site and artefact density are expected to be higher than the surrounding landscape, and sites in these areas may possibly be more complex. Terrain integrity in these areas may be variable although prior ground surface disturbance should be low or non-existent. An important characteristic of areas of high archaeological potential is the research potential or the capacity of sites to provide valuable information on past Aboriginal land use.

The project area is considered to have **moderate archaeological potential**, particularly below the level of past agricultural activities. This is because:

- As an elevated terrain in proximity to water, it is anticipated that the project area will have been utilised by Aboriginal people in the past.
- The project area is predicted to contain low densities of stone artefacts with low stratigraphic integrity in the top 0.6 m of soil and greater integrity below 0.6 m.
- The project area may contain in-situ stratigraphy, relative to the surrounding Penrith Lakes area which has been significantly impacted from quarrying and past land use.

Based on previous work in the area, stone artefacts are the most likely archaeological site type to be encountered.

5.1 SUMMARY

It is anticipated that the project area, as elevated terrain in proximity to water, will have been utilised by Aboriginal people in the past but not as intensively as other parts of the Penrith Lakes area as it is 300m or greater from water. Stone artefacts are predicted to occur within the project area “in a consistently low-density distribution” to depths of 0.6 m, consistent with the maximum recorded depth of the A horizon. Artefacts may be manufactured of predominately silcrete and occasionally quartz, chert, quartzite, hornfels

and basalt. Other site types and features are possible but unlikely to occur in the project area. This is due to the degree of past land use and disturbance and a lack of suitable geology and vegetation.

6. Survey and Results

Section 6 provides a summary of the survey strategy for fieldwork, methods employed during fieldwork, the survey team and the results of the survey including sites and predictions for archaeological potential.

6.1 SITE STRATEGY

Two archaeological surveys were undertaken for this assessment. The first was a total pedestrian survey as part of a due diligence assessment report (Virtus Heritage 2024) and the second was a survey with RAPs.

A summary of the site survey undertaken for the due diligence assessment and survey coverage is represented here to meet the reporting requirements of the *Code of Practice for Archaeological Investigation of Aboriginal objects in NSW* (DECCW 2010). Additional information from the second survey conducted on 24 February 2025 is also summarised below.

Overall, the archaeological inspection aimed to:

- Confirm the desktop environment context (e.g. soils, geology, and vegetation, see above).
- Identify landscape features within the project area and record landscape elements that may have potential for cultural heritage.
- Confirm the past land use and disturbance history within the project area.
- Test the archaeological predictive model.
- Identify and assess any potential Aboriginal archaeological sites and/or cultural heritage constraints within the project area.

As the project area comprised one landform, the project area was surveyed as a single archaeological survey area, targeting areas of exposure (i.e. areas with adequate ground visibility).

Within the archaeological survey area, the different types of surface exposures (e.g. vehicle track, erosion scour), previous land use history and disturbance, natural features (e.g. presence of sandstone), soils, erosion, ground surface visibility, and geomorphic activity were recorded following the requirements of the *Code of Practice for Archaeological Investigation of Aboriginal objects in NSW* (DECCW 2010) and information or comments provided by Aboriginal parties involved in the survey.

The archaeological survey area was mapped and recorded using a handheld phone GPS and digital camera.

6.2 SITE SURVEY

Fieldwork was conducted as per the project methodology and survey strategy as outlined in **Section 6.1**.

A pedestrian survey of the project area was undertaken on 24 June 2024 by Steve Randall (DLALC), and Garth Thompson (Virtus Heritage), assisted by Anya Graubard (Virtus Heritage). The team were also met by Morson Group representatives Peter Morson, Joshua West, Joyce Ting to discuss the project design and impacts as part of this project's Connecting with Country consultation process. All survey areas and photographs were recorded using standardised recording forms based on the CoP requirements.

A second survey was undertaken by 24 February 2025 with Dr Mary-Jean Sutton (Director) assisted by Anya Graubard (Virtus Heritage) and Tania Carroll (Murribigee), Vicky Slater (Wurrumay) and Anika Jalomaki (Yulay). The survey included:

- Coverage of all environmental contexts within the project area.
- Focusing, where possible, on ground surfaces with higher archaeological visibility.
- Inspection of any mature trees for evidence of Aboriginal scarring (none present).

- Inspection of any stone outcrops for evidence of quarrying (none present).
- Inspection of any sandstone bedrock for evidence of grinding grooves (none present).
- Inspection of any places specifically requested by the Aboriginal parties within the project area.

6.3 SURVEY RESULTS

Eight Aboriginal objects were identified within the project area, which constitute one identified Aboriginal artefactual scatter, Penrith Lakes 2025 (PL2025) in the February 2025 survey.

Soil exposures found around the proximity of the project area confirmed the soils to be a yellowish-brown clayey sand (see **Figure 8**). Exposures were particularly common along the fence line surrounding each of the properties and was consequently where all of the eight artefacts were identified (see **Figure 22** and **Table 8**). All mature trees within the project area were identified as non-native species (see **Figure 9**). The inspection confirmed that the project area had undergone extensive ground disturbance associated with the construction of the existing houses, and landscaping works that had levelled the project area in association with previous site developments (see **Figures 10–13**). Further impacts were identified in water piping associated with a protruding irrigation tap on the western lawn, and a water tank identified in the middle lawn (see **Figures 12–13**). These impacts also suggest underlying piping is present within the project area and impacts associated with their construction have previously taken place.

During the first survey, Steve Randall commented that the project area had been extensively disturbed by previous activities evident during the survey. Mr Randall also commented on sites being identified west, north and south of the project area, in association with sand lenses in close proximity to the Nepean River.

The impacts associated with the housing development, underlying infrastructure and landscaping works visible during the site inspection indicate a high level of disturbance has taken place within the A-horizon of soils throughout the project area. Deeper soils remain largely undisturbed. The likelihood of Aboriginal objects decreases with distance from water, with the nearest watercourses greater than 300m away.



Figure 16. Soil exposure within the project area.



Figure 17. Exotic trees within the project area (right) compared to native trees outside project area (left).



Figure 18. Buildings present and levelled landscape from north-west corner of project area.



Figure 19. Building present and levelled landscape from north-east corner of project area.



Figure 20. Irrigation tap identified in western project area.



Figure 21. View to roofed-water tank in central project area.

One site was recorded within the project area, defined as a low density background scatter of eight visible Aboriginal objects eroding out of exposures recorded in February 2025 as Penrith Lakes 2025. The site definition as the entire project area and justifications for site definition were emailed to Kym McNamara, Heritage NSW on 20 June 2025 and Sam Allen responded from Heritage NSW via email on 1 July 2025 stating that "Heritage NSW is supportive of the revised approach in registering the project area as a site with background scatter". The site is defined by the following (as emailed on 20 June 2025 to Heritage NSW)

- *The project area is situated on the Penrith Unit of the Cranebrook Terrace which has been demonstrated over numerous scientific studies and geotechnical investigations to be an archaeologically significant unit (e.g., Kohen, 1986; Nanson et al., 1987; Insite Heritage 2000; Williams et al., 2017; Comber Consultants, 2006, 2006).*
 - *Given the age of the uppermost strata of the Penrith Unit (50,000 – 100,000 years old), these studies have reported that the vast majority of artefacts have been constrained within the top 0.6 m of soils (A horizon – noted as deep as 1.3 m in some studies in topographic depressions) and exist at depth due to bioturbation and/or soil turnover from previous land-use (agriculture).*

- *Proposed excavations will be to a maximum of 2.0 m below ground level (BGL), with the majority between 0.6 and 1.2 m BGL. As such, proposed site works will impact the archaeologically significant portion of the Penrith Unit.*
- *Based upon the high volume of studies within the Penrith Unit (a list with summaries will be provided along with a draft AA and ACHA within the next few weeks) and the identification of artefacts within fence line surface exposures during a site visit in February 2025, we expect to encounter Aboriginal objects within the A horizon of our project area (0.3 – 0.6 m deep based upon geotechnical surveys).*
 - *The project area exhibits no distinct changes in topography and as such, there are no distinct landform units which can be mapped to provide insight over the possible distribution of artefacts. Due to the previous land-use of the project area (and broader landscape), any macro changes in topography were likely destroyed.*
 - *The stratigraphy of the uppermost 0.6 m has also been disturbed as a result of past agricultural land-use. Therefore, any in-tact stratigraphy which could be used to inform us on the distribution of artefacts within the Penrith Unit (e.g., flood couplets) have been destroyed.*
- *The project area is situated ~90-100 m away from the highly archaeologically sensitive Richmond Unit of the Penrith Terrace.*

The project area previously had an AHIP granted in 2018 (#C0001415) which expired in 2023 and a future AHIP application will cover the same Lots as before (12, 14, and 16). With the topographic uniformity of the Penrith Unit, we could possibly link the project area to pre-existing site cards for works completed east of our site. Alternatively,... we can register the artefacts as a new site but given that there are no significant landforms to constrain the project area to, the boundaries will not have any robust data to support their geographic placement.

It is worth noting that minor revisions of the proposed excavation depths were received on 17 July 2025 (see **Section 2**). Table 8 provides a summary of recorded exposures of Aboriginal objects in the February 2025 survey for the site, Penrith Lakes 2025 recorded by Dr Sutton with RAPs.

Table 88. Aboriginal Objects (stone tools) within Penrith Lakes 2025 Recorded within the Project Area.

Site and Object Recorded		Object Description Including Landform
PL 2025 – Retouched Flake		The object is a retouched meta-mudstone flake located along the fence line of a residential property (refer to Figure 22). It is a location heavily disturbed by generational agricultural and residential use. The object is located on an alluvial terrace. The object is situated along an exposure associated with the southern fence line of the project area. The exposure is approximately 1 meter wide and 100 meters long. Visibility in the exposure was 70% and outside the exposure was 1%. The tool is a tertiary flake with evidence of retouch and some patina and is a yellow – orange meta-mudstone 4cm length x 2cm width x 0.5cm thick.

Site and Object Recorded		Object Description Including Landform
PL 2025 – Quartzite PF1		The object is a primary quartzite flake located along the fence line of a residential property (refer to Figure 22). It is a location heavily disturbed by generational agricultural and residential use. The object is located on an alluvial terrace. The object is situated along an exposure associated with the western fence line of the project area. The exposure is approximately 1 meter wide and 90 meters long. Visibility in the exposure was 70% and outside the exposure was 1%. It is a primary flake with evidence of pitting and some patina and is a yellow – tan quartzite 6cm length x 2.5cm width x1.5cm thick.
PL 2025 – Meta-Mudstone SF1		The object is a secondary meta-mudstone flake located along the fence line of a residential property (refer to Figure 22). It is a location heavily disturbed by generational agricultural and residential use. The object is located on an alluvial terrace. The object is situated along an exposure associated with the southern fence line of the project area. The exposure is approximately 1 meter wide and 60 meters long. Visibility in the exposure was 70% and outside the exposure was 1%. The object is a secondary flake with evidence of pitting and some patina and is a yellow – orange meta-mudstone 2cm length x 1.5cm width x0.5cm thick.
PL 2025 – Quartzite SF1		The object is a secondary quartzite flake located along the fence line of a residential property (refer to Figure 22). It is a location heavily disturbed by generational agricultural and residential use. The object is located on an alluvial terrace. The site is situated along an exposure associated with the southern fence line of the project area. The exposure is approximately 1 meter wide and 60 meters long. Visibility in the exposure was 70% and outside the exposure was 1%. The object is a secondary flake with evidence of pitting and some patina and is a reddish orange quartzite 2.5cm length x 2cm width x1.5cm thick.

Site and Object Recorded		Object Description Including Landform
PL 2025 – AS1		The objects are part of a small scatter of at least one pink quartzite broken flake and three grey silcrete broken flakes and a red silcrete broken flake located along the fence line of a residential property (refer to Figure 22). Visibility in the exposure was 70% and outside the exposure was 1%. It is a location heavily disturbed by generational agricultural and residential use and erosion from heavy rain falls in February 2025. The site is located on an alluvial terrace. The site is situated along an exposure associated with the southern fence line of the project area. The exposure is approximately 1 meter wide and 60 meters long.
PL 2025 – Basalt Hand Axe		The object recorded is a basalt hand axe located along the fence line of a residential property (refer to Figure 22). It is a location heavily disturbed by generational agricultural and residential use. The object is located on an alluvial terrace. The site is situated along an exposure associated with the southern fence line of the project area. The exposure is approximately 1 meter wide and 100 meters long. Visibility in the exposure was 70% and outside the exposure was 1%. The object is a hand axe with evidence of flaking, pitting and some patina and is a greyish black basalt 7cm length x 5cm width x 2.5cm thick. There is also evidence of blood as shown in the photograph on the tool or some kind of residue.
PL 2025 – Basalt PF1		The object is a primary basalt flake located along the fence line of a residential property (refer to Figure 22). It is a location heavily disturbed by generational agricultural and residential use. The object is located on an alluvial terrace. The object is situated along an exposure associated with the northwestern fence line of the project area. The exposure is approximately 4 meter wide and 10 meters long. Visibility in the exposure was 70% and outside the exposure was 1%. The artefact is a tertiary flake with evidence of pitting and some patina and is a greyish black basalt 4.5cm length x 3cm width x 1cm thick.

Site and Object Recorded		Object Description Including Landform
PL 2025 - Basalt SF2		The object is a secondary basalt flake located along the fence line of a residential property (refer to Figure 22). It is a location heavily disturbed by generational agricultural and residential use. The object is located on an alluvial terrace. The site is situated along an exposure associated with the northwestern fence line of the project area. The exposure is approximately 4 meter wide and 10 meters long. Visibility in the exposure was 70% and outside the exposure was 1%. The isolated object is a secondary flake with evidence of pitting and some patina and is a dark greyish black basalt 2.5cm length x 2cm width x1cm thick.



Figure 22. Identified Aboriginal Objects part of Penrith Lakes 2025 Background Scatter within the Project Area.

6.4 LANDFORMS, VISIBILITY AND EFFECTIVE COVERAGE

Section 6.4 presents and discusses the landforms within the project area and the visibility and effective coverage of the survey. This information is important to demonstrate that the survey data provides sufficient evidence for an evaluation of the distribution of objects across the landscape, taking into account archaeological potential and recorded Aboriginal objects/site.

The general ground surface visibility and any exposures were recorded to enable survey coverage and effective visibility to be calculated. **Table 9** below details the survey coverage and effective visibility for each of the survey area and **Table 10** provides a landform summary.

Survey coverage was 100% of the project area, excluding cement driveways and built structures. Ground surface visibility and exposures in the project area were extremely limited (<1%) due to terrain modification and the high level of grass cover (see **Figures 9–10**). As result, effective survey coverage was low.

This assessment has therefore relied on the geotechnical borehole data, assumptions of disturbance based on documented and observed past land use disturbance and archaeological assessments in the local area to assess the archaeological potential within the project area.

Table 9. Survey Coverage and Effective Visibility

Survey Unit	Landform	Survey Area (m ²)	Unit	Visibility (%)	Visibility (m ²)	Exposure (%)	Effective Coverage Area [†] (m ²)	Effective Coverage ^{††} (%)
1	Modified alluvial terrace	34,000 m ²		1%	340 m ²	70%	266 m ²	<1%

[†] (= survey unit area x visibility % x exposure %)

^{††} (= effective coverage area/survey unit area x 100)

In **Table 9**, exposures where artefacts are recorded are detailed with archaeological visibility and exposure and also recorded on **Figure 22**.

Table 10. Landform Summary – Sampled Areas

Landform	Landform area (m ²)	Effective Coverage m ²	% Landform Effectively Covered	Number of sites	Site Description
Modified alluvial terrace	34,000 m ²	266 m ²	<1%	8	Low density background scatter, Penrith Lakes 2025 identified.

6.5 SUMMARY

100% of the project area was surveyed on foot. The survey indicated low surface visibility, with estimated effective coverage <1% across the project area and documented previous land use and disturbance, previously identified in **Section 3** of this report.

The literature review did not identify Aboriginal objects within the project area but found low visibility and a reasonable potential for Aboriginal objects to occur within the project area at low frequencies and with low

archaeological integrity to depths of around 0.6 m. This was supported by the survey inspection, which identified eight surface exposures with Aboriginal objects limited to fence lines recorded as background scatter, Penrith Lakes 2025 (refer to Table 8). Exposures surveyed as mapped in **Figure 22** were found to contain stone tools evidence of previous Aboriginal occupation. There is the potential for intact archaeological deposits below the depth of agricultural activities and additional Aboriginal stone artefacts within the modified layers of topsoil in a disturbed context. The proposed activity therefore has the potential to harm recorded Aboriginal objects.

7. Analysis and Discussion

As noted in **Section 4**, the project area is part of a broader Aboriginal cultural landscape of the Dharug-speaking peoples and associated with the Boorooberongal and Mulgoa clans (PLDC 2011, Karskens 2007).

The Penrith Lakes area was a traditional meeting place for Aboriginal people. Its river and rich soils provided abundant natural vegetation and wildlife which supported Aboriginal people for many generations (New South Wales State Heritage Register. Department of Planning & Environment. HO2009, 2024). Evidence of this history has been revealed through the many artefacts were collected during the 25 years of sand and gravel mining at Penrith Lakes, to the north, west and south of the project area (Kohen 1986a, 1988–2004, 1997, EMGA 2001, Comber 2005, 2006, 2008, PLDC 2011, New South Wales State Heritage Register. Department of Planning & Environment. HO2009, 2024).

The survey results presented in **Section 6** indicate low surface visibility across the project area, with estimated effective coverage <1%. This is consistent with the predictions of Aboriginal land use made in Section 5.

It is anticipated that the project area, as elevated terrain in proximity to water, will have been utilised by Aboriginal people in the past but not as intensively as other parts of the Penrith Lakes area as it is 300m or greater from water. Stone artefacts are predicted to occur within the project area “in a consistently low-density distribution” to depths of 1.3m (but often to 0.9m). Artefacts may be manufactured of predominately silcrete and occasionally quartz, chert, quartzite, hornfels and basalt. Other site types and features are possible but unlikely to occur in the project area as they have not previously been identified within the project area during previous assessments and due to the degree of past land use and disturbance and a lack of suitable geology and vegetation.

As the project area may contain in-situ geomorphology (PLDC 2011), relative to the surrounding Penrith Lakes area which has been significantly impacted from quarrying and past land use, the project area is considered to have moderate archaeological potential, particularly below the level of past agricultural activities to contain low densities of stone artefacts.

The project area contains deposits of the Penrith Unit of the Cranebrook Terrace which has experienced relatively less disturbance than other parts of the Penrith Lakes Scheme. This resource and opportunities to understand it are increasingly diminished by the amount of development in the region. Where Aboriginal objects survive in this profile, they have archaeological and geomorphic value due to their ability to support models of Aboriginal land use and archaeological preservation in the local area, particularly where excavations can be undertaken in a controlled manner to the current regulatory standards.

This assessment notes that across the Cranebrook Terrace and Penrith Lakes Scheme there has been a management trend towards area-wide AHIPs. These area-wide AHIPS aim to manage the residual risk of Aboriginal objects irrespective of the identification of sites, particularly in those areas not historically impacted by sand quarrying (Kohen 1988–2004, AHIP C0001415, AHIP 1131345, Comber 2017).

In 2018, previous survey and archaeological excavation coverage of the Penrith Unit of the Cranebrook Terrace was deemed to have been sufficient allow for the issue of an AHIP C0001415 (AHIMS 3891) to harm known and unknown Aboriginal objects within the project area without mitigation.

We recommend that archaeological testing is not required. This is due to the volume of literature already available on the Penrith Unit of the Cranebrook Terrace, the previous land-use of the project area diminishing any research potential which could come from the distribution of in-situ Aboriginal objects, a lack of any topographic variability within the project area, and that a background scatter of artefacts have already been identified within limited surface exposures on-site, confirming that the project area is archaeologically sensitive and likely consistent with previous site investigations close-by from within the Penrith Unit and can therefore expect a similar vertical distribution of Aboriginal objects.

With the classification of the project area as a site with background scatter, and the presence of Aboriginal objects in all identified exposures in 2025's survey, an AHIP with community collection and salvage for subsurface disturbances associated with site development works will be required.

8. Scientific Values and Significance Assessment

Section 8 assesses the scientific/archaeological values of Aboriginal archaeological sites and objects within the project area and references the other values identified by the Burra Charter, including the cultural values provided by RAPs.

Aboriginal cultural heritage sites are therefore assessed following these categories of significance developed under the Burra Charter:

- **Aesthetic value** – refers to “the sensory, scenic, architectural and creative aspects of the place” and is often linked with social values (OEH 2011:9). This value may refer to the visual nature of the landscape and “smells and sounds associated with the place and its use” (OEH 2011:9).
- **Historic value** – refers to “the associations of a place with a historically important person, event, phase or activity in an Aboriginal community”, for example, post-contact places such as missions or reserves or massacre sites (OEH 2011:9).
- **Scientific/archaeological value** – The Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH, 2011) defines scientific values as:

This refers to the importance of a landscape, area, place or object because of its rarity, representativeness and the extent to which it may contribute to further understanding and information (Australian ICOMOS 1988).

This is further defined to the assessment of three criteria which Heritage NSW (2011) states “must be graded in terms that allow the significance to be described and compared; for example, as high, moderate or low” to

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

- **Spiritual value** (can only be assessed by Aboriginal people) – refers to the “the intangible values and meanings embodied in or evoked by a place which give it importance in the spiritual identity, or the traditional knowledge, art and practices of a cultural group. Spiritual value may also be reflected in the intensity of aesthetic and emotional responses or community associations and be expressed through cultural practices and related places” (ICOMOS 2013:4).
- **Social value** (can only be assessed by Aboriginal people) – refers to the contemporary associations and attachments Aboriginal people have to an area or place. The guide to investigating, assessing, and reporting on Aboriginal cultural heritage in NSW notes that “Social or cultural value is how people express their connection with a place and the meaning that place has for them. Places of social or cultural value have associations with contemporary community identity. These places can have associations with tragic or warmly remembered experiences, periods, or events. Communities can experience a sense of

loss should a place of social or cultural value be damaged or destroyed. There is not always a consensus about a place's social or cultural value" (OEH 2011:8).

Table 11 provides an assessment of these values within the project area.

Table 11. Assessment of the Burra Charter Values within the Project Area

Category of Significance	Statement of Values
Rarity: is the subject area important in demonstrating a distinctive way of life, custom, process, land-use, function or design no longer practised? Is it in danger of being lost or of exceptional interest? Representativeness: how much variability (outside and/or inside the subject area) exists, what is already conserved, how much connectivity is there?	There are no registered sites on AHIMS within the project area, though eight exposures with artefacts were identified during a survey visit on 20 February 2025. The project area is situated on a portion of the Penrith Unit of the Cranebrook Terrace which has experienced relatively less disturbance than other parts of the Penrith Lakes Scheme. This resource and opportunities to understand it are increasingly diminished by development. The presence of Aboriginal objects demonstrate local Aboriginal land use and cultural history within the project area and surrounds. As more of the Cumberland Plain and Penrith Lakes area become urbanised there is less opportunity for conservation of Aboriginal occupation deposits. However, the artefacts of broken flakes and flakes within the project area are not unusual scientifically but have high cultural value. The hand axe and retouched flake are less common tool types in local assemblages. The exposures of artefacts in Penrith Lakes 2025 background scatter are connected to the broader cultural landscape of Aboriginal land use of the Cumberland Plain. The site does have different tool types including a retouched flake, a broken hand axe, flakes and broken flakes. These tool types are not rare in the locality of the Cumberland Plain (and not in the State) surrounding the project area where there is not much variability in assemblages discussed in previous archaeological research. Broken flakes and flakes are not unusual in similar landscape contexts in the locality and the region and not rare.
Research potential: does the evidence suggest any potential to contribute to an understanding of the area and/or region and/or state's natural and cultural history?	The project area contains moderate research potential as it may provide an opportunity to further understand the geomorphic and archaeological value of the Penrith Unit of the Cranebrook Terrace and past Dharug land use on elevated terrain at a distance from an unnamed tributary of Cranebrook Creek, through analysis and salvage of the artefacts currently exposed and likely to be salvaged through further archaeological salvage. The dating potential has been diminished by the degree of past land use disturbance in the minimum top 0.3 to 0.6m of deposit, making potential for chronology or dating in cultural history locally and at the State level unlikely and of low research potential.
Education potential: does the subject area contain teaching sites or sites that might have teaching potential?	The hand axe, retouched flake as well as the different artefact types and raw materials identified to date in Penrith Lakes 2025 have moderate educational potential for teaching. Residue analysis in particular and more detailed stone tool analysis could provide additional information about the hand axe to determine if there is blood or some other residue on the tool or starch or other residues on the retouched surface of the retouched flake. Residue analysis could

provide some education and teaching potential for these two stone tools to contribute to the cultural story of the project area.

8.1 SUMMARY AND STATEMENT OF ARCHAEOLOGICAL (SCIENTIFIC) VALUES WITHIN THE PROJECT AREA

The project area has moderate archaeological values for research and educational and teaching potential as demonstrated by the assemblage of Penrith Lakes 2025. This scatter has no rarity and representativeness at the State level and low rarity and representativeness in the local level. The project area's soils are highly altered and impacted by agriculture and infrastructure to the minimum 0.3 m to 0.6 m in depth. Integrity is considered low at these depths but may have moderate potential below the disturbance zone.

The project area has moderate scientific values in its potential to yield information that will contribute to an understanding of the locality's natural and cultural history. Key areas of research include the Aboriginal settlement pattern and history and impacts of the last 237 years of European invasion and earlier evidence of Aboriginal cultural history relating to the use of stone tool types such as the broken axe and retouched flake and an understanding of potential residues as well as tool types use and manufacture.

Table 12 provides a summary of these criteria for scientific value against the recorded sites in the project area.

Table 12. Summary of Archaeological Value in the Project Area

Site	rarity (Local – L)	representativeness (Local – L)	research potential (Local – L)	educational and teaching (Local – L)
<i>Penrith Lakes 2025 – Background Scatter</i>	Local Low	Local Low	Local Moderate	Local Moderate

9. Impact Assessment

All Aboriginal objects are protected under the *National Parks and Wildlife Act 1974*, irrespective of their context or past disturbance and displacement.

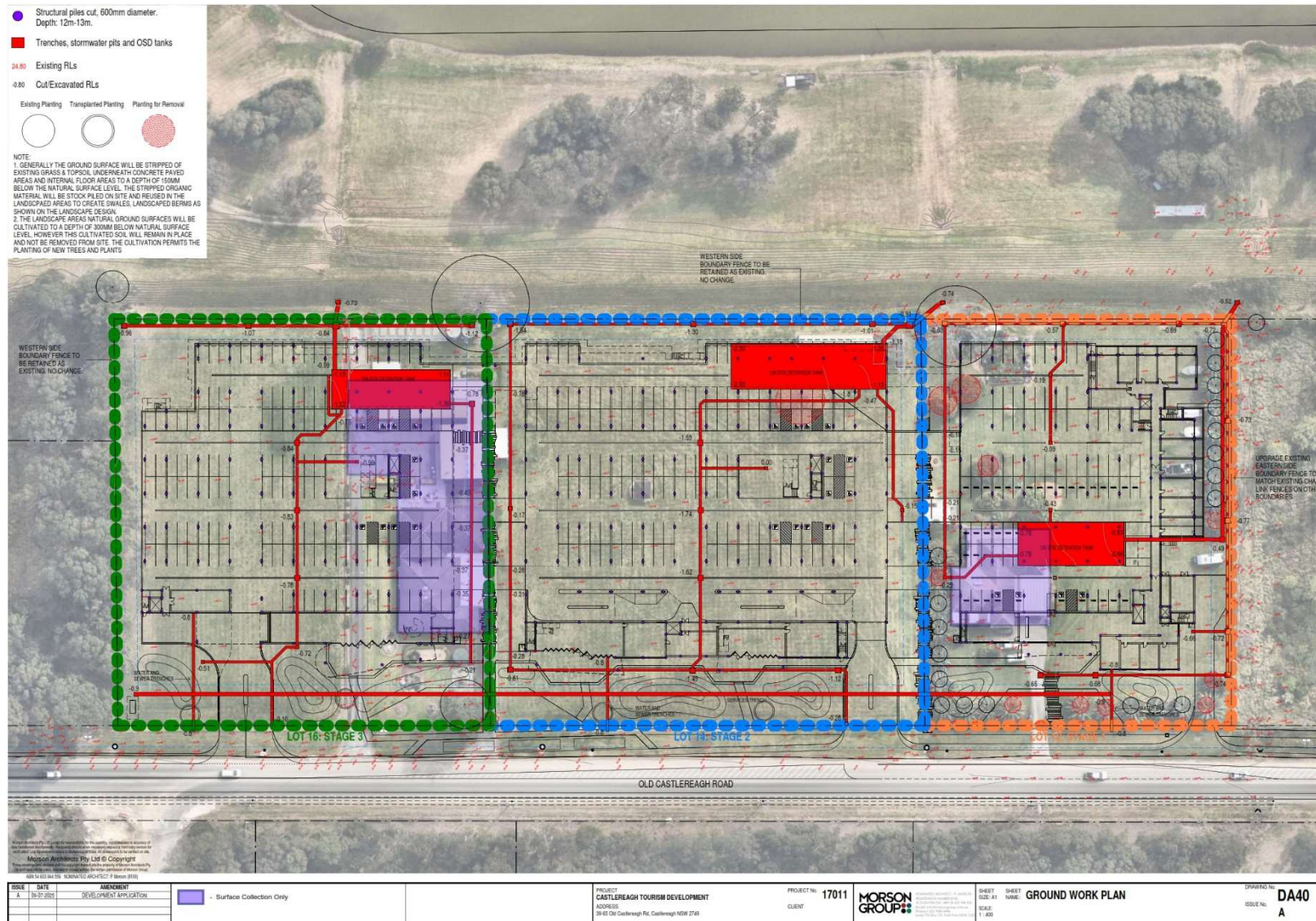
A summary of the proposed development with impacts that may cause harm to Aboriginal objects and likely Aboriginal objects was provided in **Section 2**. The following definitions of harm are reproduced from OEH (2011).

Direct harm/impact	Direct harm/impact may occur as the result of any activity which disturbs the ground including, but not limited to, site preparation activities, stripping of soils, clearing of shrubs, grass and contaminants, installation of services and infrastructure, roadworks, excavating detention ponds and other drainage or flood mitigation measures, and changes in water flows affecting the value of a cultural site.
Indirect harm/impact	Indirect harm/impact may affect sites or features located immediately beyond, or within, the area of the proposed activity. Examples of indirect impacts include, but are not limited to, cumulative impact on art in a rock shelter site from increased visitation, vibration impacts to sites from construction equipment, destruction from increased erosion and changes in access to wild food resources (OEH 2011).

For the purposes of this assessment three levels of impact were considered:

- **Significant impact** – including topsoil stripping, cut and fill of areas. This would likely damage or remove all Aboriginal objects that might be located in the area of impact.
- **Moderate impact** – minor topsoil stripping, no cut and fill majority of vegetation maintained. This would likely damage or disturb some Aboriginal objects that might be located in the specific areas of impact. Management measures could be put in place to protect individual known sites.
- **Low impact** – no topsoil stripping, existing vegetation maintained. Sites in these areas could be subject to indirect impacts and would be managed via a management plan.

The proposal will involve significant impact in the project area to Penrith Lakes 2025, background scatter. Morson Group will be undertaking up to 2.3 metres of maximum depth of disturbance for excavation (refer to **Figure 23**) for services and the proposed development and Section 2 for description of construction activities.



BACKGROUND

9.1.1. Pre-lodgement consultation

A meeting with Heritage NSW was held on 22 November 2024 to discuss the assessment requirements for this project. Correspondence on the results of the survey in February 2025 were emailed to Heritage NSW on 18 March 2025 and update on changes of approach to salvage instead of testing and update on RAP comments from the survey, with an offer to meet to discuss with Heritage NSW, if required. Additional correspondence was emailed by Peter Morson to Heritage NSW regarding how to approach site definition with justifications for site definition were emailed to Kym McNamara, Heritage NSW on 20 June 2025 as well as an offer to discuss in a meeting before pre-lodgement. Sam Allen responded from Heritage NSW via email on 1 July 2025 stating that "Heritage NSW is supportive of the revised approach in registering the project area as a site with background scatter". This email to Ms McNamara by Peter Morson included this input from Virtus Heritage below (as emailed on 20 June 2025 to Heritage NSW)

- *The project area is situated on the Penrith Unit of the Cranebrook Terrace which has been demonstrated over numerous scientific studies and geotechnical investigations to be an archaeologically significant unit (e.g., Kohen, 1986; Nanson et al., 1987; Insite Heritage 2000; Williams et al., 2017; Comber Consultants, 2006, 2006).*
 - *Given the age of the uppermost strata of the Penrith Unit (50,000 – 100,000 years old), these studies have reported that the vast majority of artefacts have been constrained within the top 0.6 m of soils (A horizon – noted as deep as 1.3 m in some studies in topographic depressions) and exist at depth due to bioturbation and/or soil turnover from previous land-use (agriculture).*
 - *Proposed excavations will be to a maximum of 2 m below ground level (BGL), with the majority between 0.6 and 1.2 m BGL. As such, proposed site works will impact the archaeologically significant portion of the Penrith Unit.*
- *Based upon the high volume of studies within the Penrith Unit (a list with summaries will be provided along with a draft AA and ACHA within the next few weeks) and the identification of artefacts within fence line surface exposures during a site visit in February 2025, we expect to encounter Aboriginal objects within the A horizon of our project area (0.3 – 0.6 m deep based upon geotechnical surveys).*
 - *The project area exhibits no distinct changes in topography and as such, there are no distinct landform units which can be mapped to provide insight over the possible distribution of artefacts. Due to the previous land-use of the project area (and broader landscape), any macro changes in topography were likely destroyed.*
 - *The stratigraphy of the uppermost 0.6 m has also been disturbed as a result of past agricultural land-use. Therefore, any in-tact stratigraphy which could be used to inform us on the distribution of artefacts within the Penrith Unit (e.g., flood couplets) have been destroyed.*
- *The project area is situated ~90-100 m away from the highly archaeologically sensitive Richmond Unit of the Penrith Terrace.*

The project area previously had an AHIP granted in 2018 (#C0001415) which expired in 2023 and a future AHIP application will cover the same Lots as before (12, 14, and 16). With the topographic uniformity of the Penrith Unit, we could possibly link the project area to pre-existing site cards for works completed east of our site. Alternatively,... we can register the artefacts as a new site but given that there are no significant

landforms to constrain the project area to, the boundaries will not have any robust data to support their geographic placement.

HNSW have acknowledged emails and provided input which is included in this assessment.

9.1.2. Consideration of alternatives

Morson Group between February 2025 to date have attempted to minimise and redesign project impacts and depths of development. Some redesign was possible to avoid Aboriginal occupation deposits if extant was considered with their design team. The opportunity to reuse existing service trenches for new services and to minimise all ground disturbance works is not possible for this project.

9.2 AREAS WHERE OBJECTS WILL BE PROTECTED OR HARMED

All Aboriginal objects are protected under the *National Parks and Wildlife Act 1974* and conservation is the preferred option for all objects. Consideration should be given to avoidance of and conservation of sites where possible. Table 131, required under the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010), lists all sites, places and PADs identified within the project area and summarises the type, level, and consequence of harm to these places.

No areas are currently proposed for conservation. The proposed activity will however impact on land with recorded Aboriginal objects within background scatter Penrith Lakes 2025.

Table 13: Summary of Likely Harm

Site/Place/PAD		Type of Harm (direct/indirect/ none)	Level of Harm (total/partial/none)	Consequence of Harm (total loss of value/partial loss of value/no loss of value)
Penrith 2025	Lakes	Direct	Partial – based on project impacts	Partial loss of value based on mitigation of project impacts

9.3 JUSTIFICATION OF THE OBJECTIVES OF THE PROPOSED ACTIVITY

The project area is situated within an area zoned for the development of a tourism precinct within the Penrith Development Control Plans and State Environmental Planning Policy (SEPP). The design of this project has been undertaken with respect to Design Principles and in consideration of a framework (Government Architect NSW 2023).

Many of the proposed impacts have been proposed to areas which are considered to have low archaeological integrity in the top 30 cm of the topsoil, with impacts proposed at depths exceeding 0.6m limited to piling/footings and service trenches. Morson Group are committed to cultural and archaeological salvage in areas of proposed impact and harm to Aboriginal objects.

The RAPs have communicated to date that surviving archaeological deposits and Aboriginal objects may retain cultural value to the Registered Aboriginal Parties irrespective of their archaeological integrity. ***The RAPs will be provided this draft report for review for comment on if they supports the development of management and mitigation measures for harm to Aboriginal heritage.***

9.4 ECOLOGICALLY SUSTAINABLE DEVELOPMENT (ESD)

Australia's National Strategy for Ecologically Sustainable Development (1992) defines ecologically sustainable development (ESD) as: 'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased' (Department of Agriculture Water and the Environment Website Ecologically Sustainable Development Webpage). These environmental considerations include cultural heritage. ESD can be applied to Aboriginal cultural heritage by considering intergenerational equity and the precautionary principle.

The **Principle of Intergenerational Equity** states that 'the present generation should make every effort to ensure the health, diversity and productivity of the environment – which includes cultural heritage – for the benefit of future generations' (OEH 2011). That is, by considering how will future generations be able to visit, see, experience and/or research Aboriginal objects. The Operational Policy: Protecting Aboriginal Cultural Heritage (DECCW 2009) states in terms of Aboriginal heritage, intergenerational equity can be considered in terms of the cumulative impacts to Aboriginal objects and places in a region.

A way of gauging what level of impact from development has occurred within a region, is to review how many Aboriginal Heritage Impact Permits (AHIPs) have been issued for that region. A review of the public register of AHIP issued between 2010 and 2021, for Penrith LGA indicates that over 60 AHIPs were issued. The current AHIP Public Register for the Penrith LGA shows that five AHIPs has been issued, for the region. Though AHIMS tracking of AHIPs to sites is highly inaccurate, at least 32 of the 85 Aboriginal cultural heritage sites recorded in the AHIMS search (Section 4), have had AHIMS issued. Over 300 SSD projects and modifications have been initiated in the Penrith LGA.

Overall, there has been a relatively high cumulative impact to the Penrith region that includes the project area based on recent AHIPs and SSD projects. The project area has been subject to relatively less development with impacts from historical land use and natural processes discussed in Section 3. As noted in the significance assessment in Section 8, one Aboriginal background scatter, Penrith Lakes 2025 has been identified to date and much of the project area has low archaeological integrity in the top minimum 0.3m to maximum 0.6 m of topsoil, however where intact archaeological deposits survive, they are of moderate research value.

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 measures to prevent environmental degradation.

Inductions, cultural awareness training and further investigation through archaeological and cultural salvage are precautionary steps. Conservation is not possible in the project area and the proponent has attempted at least for now six months to redesign project impacts and attempt to avoid cultural deposits, if still extant associated with Penrith Lakes 2025.

Archaeological salvage and community collection, in addition to inductions and cultural awareness training will be required to mitigate the impacts of these works.

10. Management and Mitigation Measures

Potential management and mitigation measures for the project area are discussed in this section within the broader context of state and federal legislation.

10.1 LEGISLATIVE CONTEXT AND STATUTORY REQUIREMENTS

The *National Parks and Wildlife Act 1974* (NPW Act), the *Environmental Planning and Assessment Act 1979* (EP&A Act) and the *Heritage Act, 1977* are the relevant statutory controls protecting Aboriginal heritage within New South Wales. These acts and other relevant State and Commonwealth legislation are discussed below.

10.1.1. *National Parks and Wildlife Act 1974*

Under the provisions of the NPW Act, all Aboriginal objects are protected regardless of their significance or land tenure. Aboriginal objects are defined as *'any deposit, object or material evidence (not being a handicraft made for sale) relating to Aboriginal habitation of the area that comprises NSW, being habitation before or concurrent with the occupation of that area by persons of non-Aboriginal extraction and includes Aboriginal remains'*.

Aboriginal objects are therefore limited to physical evidence and may also be referred to as 'Aboriginal sites', 'relics' or 'cultural material'. Aboriginal objects can include pre-contact features such as scarred trees, middens and artefact scatters, as well as physical evidence of post-contact use of the area such as Aboriginal built fencing or stockyards and missions.

The NPW Act also protects Aboriginal Places, which are defined as *'a place that is or was of special significance to Aboriginal culture. It may or may not contain Aboriginal objects'*. Aboriginal Places can only be declared by the Minister administering the NPW Act. The NPW Act protects Aboriginal objects and Aboriginal places in NSW. Under the NPW Act, including the 2010 amendments, it is an offence to harm an Aboriginal object:

- Which the person knows is an Aboriginal object (a 'knowing offence').
- Whether or not a person knows it is an Aboriginal object (a 'strict liability offence').

The maximum penalty for a knowing offence is \$550,000 for an individual or \$1.1 million for a corporation and a 2-year gaol term. The maximum penalty for a strict liability offence is \$110,000 for an individual or \$220,000 for a corporation (DECCW 2010:5). A person or organisation who exercises due diligence in determining that their actions would not harm Aboriginal objects has a defence against prosecution for the strict liability offence if they later unknowingly harm an object without an AHIP (DECCW 2010:5). The due diligence defence is not available for activities which harm Aboriginal places. The *Due Diligence Code of Practice for the Protection of Aboriginal objects in NSW* (DECC 2010) sets out a procedure which, when followed, will satisfy the due diligence requirement. If a person or company can demonstrate that they exercised due diligence and determined that it was unlikely that Aboriginal objects would be harmed, then they have a defence to prosecution under the strict liability offence under Section 86(2) of the NPW Act (DECCW 2010:5).

Harm includes activities that destroy, deface or damage of Aboriginal object or Aboriginal Place, and in relation to an object, moving the object from the land on which it has been situated.

Under 89A (formerly Section 91) of the Act, the Chief Executive of the Office of Environment and Heritage (now regulated by Heritage NSW in the Department of Climate Change, Energy, the Environment and Water)

must be informed upon the identification of all Aboriginal objects. Failure to do this within a reasonable time is an offence under the Act.

Under Section 90 of the Act, it is an offence for a person to destroy, deface, damage, or desecrate an Aboriginal object or Aboriginal Place without the prior issue of an AHIP. AHIPs may only be obtained from Heritage NSW. If harm to Aboriginal objects and places is anticipated an AHIP is required.

The NPW Act also provides for stop-work orders under Part 6A Division 1 if an action is likely to significantly affect an Aboriginal object or Aboriginal Place. The order may require that an action is to cease or that no action is carried out in the vicinity of the Aboriginal object or Aboriginal Place for a period of up to 40 days.

The Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage, the Aboriginal community consultation requirements for proponents and Code of Practice for Archaeological Investigation of Aboriginal objects in NSW set out processes to demonstrate adequate assessment of the significance of and impacts to Aboriginal objects.

As the project area contains Aboriginal objects as part of Penrith Lakes 2025, further salvage is required to mitigate the proposed activities will impact Aboriginal objects.

10.1.2 Environmental Planning and Assessment Act (NSW) 1979

The project area is governed by the Chapter 5 Penrith Lakes Scheme of the State Environmental Planning Policy (Precincts – Western Parkland City) 2021 (the SEPP), version 28 June 2024.

The SEPP suspends covenants, agreements and instruments under certain conditions, such as conservation agreements under the NPW Act and heritage agreement or interim heritage orders within the meaning of the *Heritage Act 1977*.

Part 5.2 Development control requires that the consent authority shall take into consideration:

- (a) the Penrith Lakes Scheme Regional Environmental Study,
- (b) the recommendations, if any, of such technical working parties as may be established from time to time by the consent authority,
- (c) the statement of environmental effects accompanying the application,
 - (i) any item of the environmental heritage listed in Schedule 6,
 - (j) the effect upon a locality, place or building not listed in Schedule 6 having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations

This ACHA considers a and c of the above with respect to Aboriginal cultural heritage.

The project area is zoned for Tourism under the SEPP.

The miscellaneous provisions under Regulation 5.33 of the SEPP notes

(1) The objectives are:

- (a) to conserve the environmental heritage of Penrith,
- (b) to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,

- (c) to conserve archaeological sites,
- (d) to conserve Aboriginal objects and Aboriginal places of heritage significance.

The Heritage Conservation provisions (2) and (3) note requirement for consent and conditions where development consent is not required.

Aboriginal objects are present, development consent will be required.

(8) Aboriginal places of heritage significance. The consent authority must, before granting consent under this section to the carrying out of development in an Aboriginal place of heritage significance—

- (a) consider the effect of the proposed development on the heritage significance of the place and any Aboriginal object known or reasonably likely to be located at the place by means of an adequate investigation and assessment (which may involve consideration of a heritage impact statement), and
- (b) notify the local Aboriginal communities, in writing or in such other manner as may be appropriate, about the application and take into consideration any response received within 28 days after the notice is sent.

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This DCP applies to land zoned Employment and Tourism under Chapter 5 of the SEPP.

3.8 Aboriginal cultural heritage Objectives

- a) Preserve and enhance items and sites of Aboriginal cultural and archaeological significance located within Penrith Lakes.
- b) Ensure all development considers and addresses the potential impacts on Aboriginal cultural heritage significance and potential archaeological sites.

NSW Department of Planning and Environment | 17 Penrith Lakes Development Control Plan Controls:

- 1) All development is to be informed by an understanding of Country, through consultation with traditional owners.
- 2) All development is to be in accordance with the relevant provisions of the National Parks and Wildlife Act 1974 and the (former) Department of Environment, Climate Change and Water's Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales.

This assessment has been prepared in consultation with Registered Aboriginal Parties and in accordance with the National Parks and Wildlife Act 1974 and the (former) Department of Environment, Climate Change and Water's Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales.

10.1.3 Heritage Act (NSW) 1977

The *Heritage Act 1977* (as amended in 2009) protects and aims to conserve the environmental heritage of New South Wales. Environmental heritage is broadly defined under Section 4 of the Heritage Act as consisting of "those places, buildings, works, relics, moveable objects, and precincts, of State or local heritage significance" (Heritage Branch DoP 2009: 1). Aboriginal places or objects that are recognised as having high cultural value (potentially of local and State significance) can be listed on the State Heritage Register and protected under the provisions of the *Heritage Act (NSW) 1977* (http://www.heritage.nsw.gov.au/O6_subnav_O1.htm).

Amendments to the *Heritage Act (NSW) 1977* made in 2009 changed the definition of an archaeological 'relic', so that it is no longer based on age. A relic is now an archaeological deposit, resource or feature that has heritage significance at a local or State level. This significance-based approach to identifying 'relics' is consistent with the way other heritage items such as buildings, works, precincts or landscapes are identified and managed in NSW (Heritage Branch, DoP 2009:1). Section 4(1) of the *Heritage Act (NSW) 1977* (as amended 2009) defines 'relic' as follows:

Relic means any deposit, artefact, object or material evidence that:

- relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and
- is of State or local heritage significance (Heritage Branch, DoP, 2009:6).

10.1.4 Aboriginal Land Rights Act 1983

The NSW *Aboriginal Land Rights Act 1983* (ALR Act), administered by the NSW Minister for the Public Service and Employee Relations, Aboriginal Affairs, and the Arts, establishes the NSW Aboriginal Land Council (NSWALC) and Local Aboriginal Land Councils (LALCs). The Act requires these bodies to:

- take action to protect the culture and heritage of Aboriginal persons in the council's area, subject to any other law
- promote awareness in the community of the culture and heritage of Aboriginal persons in the council's area.

These requirements recognise and acknowledge the statutory role and responsibilities of NSWALC and LALCs. The ALR Act also establishes the registrar whose functions include, but are not limited to, maintaining the Register of Aboriginal Land Claims and the Register of Aboriginal Owners.

Under the ALR Act, the registrar is to give priority to the entry in the register of the names of Aboriginal persons who have a cultural association with:

- lands listed in Schedule 14 to the NPW Act
- lands to which section 36A of the ALR Act applies.

10.1.5 Native Title Legislation

The (Commonwealth) *Native Title Act 1993* (NTA) provides the legislative framework to:

- Recognise and protect native title.
- Establish ways in which future dealings affecting native title may proceed and to set standards for those dealings, including providing certain procedural rights for registered native title claimants and native title holders in relation to acts which affect native title.
- Establish a mechanism for determining claims to native title.
- Provide for, or permit, the validation of past acts invalidated because of the existence of native title.

The NSW *Native Title Act 1994* was introduced to make sure the laws of NSW are consistent with the Commonwealth's NTA on future dealings. It validates past and intermediate acts that may have been invalidated because of the existence of native title.

The National Native Title Tribunal has a number of functions under the NTA, including maintaining the Register of Native Title Claims, the National Native Title Register and the Register of Indigenous Land Use Agreements and mediating native title claims.

10.1.6 *Other Acts*

The (Commonwealth) *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* may be relevant if any item of Aboriginal heritage significance to an Aboriginal community is under threat of injury or desecration and state-based processes are unable to protect it. The *Environment Protection and Biodiversity Conservation Act 1999* is relevant to projects where there are heritage values of national significance present.

10.2 MANAGEMENT OPTIONS

This section of the report provides a summary of available management and mitigation options for the proposal and the justification for the final recommendations provided in Section 11.

10.2.1 *Conservation*

Conservation is the best heritage outcome for preservation of threatened cultural sites and objects with cultural and scientific significance. Conservation through protection or further management should always be explored first before any other option for the management of threatened Aboriginal sites and objects.

Previous planning and Aboriginal Cultural Heritage Assessments have considered the project area when zoning the project area to tourism development, noting that other parts of the Penrith Lakes area hold greater conservation value.

Conservation is not possible in the project area and the proponent has attempted at least for now six months to redesign project impacts and attempt to avoid cultural deposits, if still extant associated with Penrith Lakes 2025.

Conservation may be relevant if Aboriginal heritage is found during test pit excavations, as discussed in Section 9 and below.

10.2.2 *Further Investigation – Testing Under the Code of Practice*

The *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010) (CoP) sets out a procedure for further archaeological investigations in areas assessed as having potential archaeological deposits. These investigations are regulated to be specific kinds of archaeological test excavation to a methodology specified in the CoP (DECCW 2010:24–28). The purpose of the test excavations are to assess the cultural heritage significance of the area, interpret the Aboriginal history of the area being investigated and inform future planning decisions (DECCW 2010:27).

Archaeological testing is not required as Aboriginal objects are recorded within the project area as a recorded background scatter, Penrith Lakes 2025.

Consultation has been undertaken with Heritage NSW regarding expectations for assessment and site definition.

10.2.3 *Destruction Without Mitigation*

Destruction without any form of mitigation could be a feasible management strategy if no Aboriginal sites or objects were identified; an area had low archaeological significance and cultural significance; and the strategy was agreed to by the Registered Aboriginal Parties/or approved native title claimants.

Previous AHIP have been issued over the project area without mitigation. This however is not considered appropriate given the indication that the project area contains Aboriginal objects with low archaeological integrity in the top 0.3 to 0.6 m of topsoil, as well as to areas with more potential past the agricultural disturbance zone. Consultation feedback with Registered Aboriginal Parties and Heritage NSW to date has indicated that Aboriginal objects within the project area have value and warrant further salvage.

10.2.4 Destruction With Mitigation

Destruction with mitigation refers to some form of archaeological or cultural salvage or investigation to mitigate the destruction of an Aboriginal object/s or sites. Destruction with mitigation would be recommended in areas where Aboriginal object/s and sites were identified, and/or in areas with moderate to high archaeological values with research potential that can contribute to a greater understanding of the cultural history of the project area and where conservation is not a viable management option. This may also be appropriate, if a project area has high cultural value to registered Aboriginal parties/or approved native title claimants for a project area.

Further salvage culturally and archaeologically is required as Aboriginal objects recorded within Penrith Lakes 2025 site are identified within the project area. Consultation feedback with Registered Aboriginal Parties and Heritage NSW to date has indicated that Aboriginal objects present within the project area they have value and warrant further salvage and mitigation.

Destruction with mitigation refers to some form of action taken to mitigate harm to Aboriginal objects and loss of heritage values. Examples of mitigation might include archival recording, archaeological excavations or cultural collection, designs and landscaping that enhance heritage values, interpretation, education and creating opportunities for Aboriginal people to continue to care for Country and Aboriginal cultural heritage. The focus for mitigation in the Archaeological Assessment is archaeological values and consideration of additional values is in the ACHA for other values under the Burra Charter (ICOMOS 2013) for Aboriginal cultural heritage.

Detailed site recording

Detailed site recording is recommended for all recorded Aboriginal cultural heritage sites. The information should be documented a report and in AHIMS site cards and Aboriginal Site Impact Recording Forms. This recording will include artefact analysis and consider use-wear and residue analysis of the retouched flake and broken hand axe.

Archaeological Surface Collection and Salvage Excavation

The following was considered for the project area:

- Archaeological salvage excavation considering a combination of mechanical methods for disturbed soil profiles and manual salvage for non-disturbed layers.
- Surface collection of Aboriginal objects in the eight exposures on site.

An Archaeological Research Design and Methodology will be developed in consultation with the RAPs.

Development of a Care and Control Strategy

For all collected and salvaged Aboriginal objects, consultation will be undertaken to develop a Care and Control Strategy i in consultation with RAPs to manage any artefacts in a manner acceptable to RAPs (for example, options that may be considered may include reburial, relocation on Country, Keeping Place, interpretation etc) and enable the cultural value of the artefacts to be documented and partially conserved.

11. Recommendations

Management recommendations of this assessment consider the archaeological (scientific values) as set out in The Burra Charter and the requirements of Heritage NSW for the Archaeological Survey Report (Archaeological Assessment). The ACHA to which this report is appended includes management recommendations which consider the social (cultural), spiritual, aesthetic and historic values. The proponent must consider the ACHA recommendations in conjunction with the recommendations of this Archaeological Assessment.

Based on the description of project impacts, the results of the survey, Aboriginal consultation to date, the limitations of this assessment and previous archaeological research, the following recommendations are made:

1. An AHIP with community collection and salvage will be required prior to the commencement of ground disturbance works to adequately mitigate the project impacts and salvage Penrith Lakes 2025

2. Induction

It is recommended that all site workers and personnel involved in site impact works should be inducted and briefed on the possible identification of Aboriginal sites and objects during construction and their responsibilities according to the provisions of the NPW Act 1974 and NPW Regulation 2019.

This induction package should be developed in consultation with DLALC, prior to works proceeding. The induction must include:

- ♦ An AHIP once issued as recommended by the results of this AA report.
- ♦ The contact phone numbers of the NSW Environment and Heritage regional archaeologist, EnviroLine 131 555, and DLALC.
- ♦ The relevant contact phone number Environmental Officer responsible for this project in case unknown objects or items are uncovered during excavation.
- ♦ The penalty for moving Aboriginal objects need to be made clear and given due consideration.
- ♦ An outline types of unexpected heritage objects, items & relics, and their legal protection
- ♦ The Unexpected Finds and Human Remains Procedures, as outlined in Recommendation 1 and 2.

3. Unexpected Find Procedure

It is recommended that an Unexpected Finds Procedure be implemented for the duration of the project. In the event that a suspected Aboriginal object/s is identified the procedure should include the following:

- ♦ Works are to stop immediately.
- ♦ The area of the suspected find/s is to be fenced off with an appropriate buffer and protected.
- ♦ A qualified archaeologist and representative of DLALC are to be contacted to inspect the area and the nature of the find.
- ♦ Representative of DLALC to determine the find's significance, in consultation with a qualified archaeologist or NSW Environment and Heritage, and the requirement for an Aboriginal Heritage Impact Permit (AHIP).
- ♦ Works are not to proceed until written advice is provided from the archaeologist or NSW Environment and Heritage on the appropriate management of the find.

4. Unexpected Human Remains Procedure

It is recommended that an Unexpected Human Remains procedure be implemented for the duration of the project. In the unlikely event that suspected Human Remains are identified the procedure should include the following:

- ♦ Works are to stop immediately.
- ♦ The area of the suspected Human Remains find is to be secured and cordoned off.
- ♦ NSW Police are to be notified. No further works can be undertaken until the NSW Police provide written advice.
- ♦ If these remains are deemed to require archaeological investigation by the NSW Police or NSW Coroner, then:
- ♦ NSW Environment and Heritage and the relevant Aboriginal parties must be notified; and
- ♦ a plan of management for the preservation of any identified Aboriginal human remains of for the salvage must be put in place or conducted under an AHIP methodology and variation developed in consultation with all relevant Aboriginal parties and the NSW Environment and Heritage.
- ♦ Works are not to proceed until written advice is provided from the archaeologist or NSW Environment and Heritage.

Legislation

Aboriginal Land Rights Act 1983

Aboriginal and Torres Strait Islander Heritage Protection Act 1984

Environmental Planning and Assessment Act 1979

Environment Protection and Biodiversity Conservation Act 1999

Heritage Act 1977

National Parks and Wildlife Act 1974

National Parks and Wildlife Regulation 2019.

Native Title Act 1993

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Appendix B Aboriginal Consultation Log



VIRTUS HERITAGE CONSULTATION REGISTER

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CONSULTATION LOG ENTRIES

CONTACT DETAILS									MAIL REGISTER			Phone/Email/SMS/Face to Face Meeting Notes	
NO	DATE REGISTERED - METHOD	ORGANISATION/INDIVIDUAL	CONTACT NAME	DEAR ...	PHONE NO.	EMAIL ADDRESS	POSTAL ADDRESS LINE 1	POSTAL ADDRESS LINE 2	DATE	POST RECEIPT # COMMUNICATION TYPE	DELIVERY CONFIRMED/RTS	DATE	NOTES
1		Deerubbin Local Aboriginal Land Council	Steven Randall	Steven		srandall@deerubbin.org.au reception@deerubbin.org.au	PO Box 2341	North Parramatta NSW 1750	05.12.2024	Registered post: RPP44 83800 09400 54952 52602	17.12.24		04.12.24 PPI and SS sent via email with closing date for comments as 20 January 2025. 05.12.24 - PPI & SS letters sent via registered post. 15.01.25 - VH emailed reminder for comments to be in by 5pm on 20th January 17.01.25 - AG emailed and SMSed reminders that comments are due 20th January at 5pm 20.01.25 - AG emailed and SMSed reminder that comments are due by 5pm 20.01.25 - Kayne emailed "No comments from Deerubbin LALC, but this area is really close to an Aboriginal Lore grounds. Deerubbin LALC would like to be apart of all aspects of this project." 10.02.25 - AG emailed details of voluntary site inspection set for 20th February and asked for RSVPs to be in by 18th
2	02.10.24	Undisclosed Registered Aboriginal Party	Undisclosed Registered Aboriginal Party	-	-	-	-	-	-	-	-	-	-
3	2.10.24	Wailwan Aboriginal Group	Philip Boney	Philip	0436 483 210	waanien12@outlook.com						02.10.24	registered via email - AG replied with confirmation 04.12.24 PPI and SS sent via email with closing date for comments as 20 January 2025. 09.12.24 Philip emailed "Please register our groups interest in participating in the test excavation phase of this project we understand that a brief survey was conducted and the potential of the site is low but our groups proximity to the penrith area and having worked on many jobs in the area gives us a high level of familiarity with the artefacts that the area will have." Copies of insurances attached. 08.01.25 - CE phoned no message was able to be left 15.01.25 - VH emailed reminder for comments to be in by 5pm on 20th January 17.01.25 - AG emailed and SMSed reminders that comments are due 20th January at 5pm 20.01.25 - AG emailed and SMSed reminder that comments are due by 5pm 10.02.25 - AG emailed details of voluntary site inspection set for 20th February and asked for RSVPs to be in by 18th
4	2.10.24	Mura Gadi Aboriginal Corporation	Tiama Bird	Tiama	439678518	gathwaysforsearching@gmail.com						02.10.24	registered via email - AG replied with confirmation 04.12.24 PPI and SS sent via email with closing date for comments as 20 January 2025. 08.01.25 - CE phoned left message requesting comments for PPI & SS by due date. 15.01.25 - VH emailed reminder for comments to be in by 5pm on 20th January 10.02.25 - AG emailed details of voluntary site inspection set for 20th February and asked for RSVPs to be in by 18th 11.02.25 - Tiama emailed thanking us for the invite but declined.
5	2.10.24	Long Gutty Cultural Services	Ethan Trewlynn	Ethan	401424853	Ethan3trewlynn@gmail.com	57 Brooker Street	Colyton NSW 2760	5.12.2024	Registered post: RPP44 63800 09400 56853 85608	6.1.25	02.10.24	registered via email - AG replied with confirmation 04.12.24 PPI and SS sent via email with closing date for comments as 20 January 2025. 05.12.24 - PPI & SS letters sent via registered post. 08.01.25 - CE phoned left message requesting comments for PPI & SS by due date. 15.01.25 - VH emailed reminder for comments to be in by 5pm on 20th January 17.01.25 - AG emailed and SMSed reminders that comments are due 20th January at 5pm 20.01.25 - AG emailed and SMSed reminder that comments are due by 5pm 21.01.25 - Ethan emailed supporting methodology for the project 10.02.25 - AG emailed details of voluntary site inspection set for 20th February and asked for RSVPs to be in by 18th
6	2.10.24	Gadhungal Marring	Nigel Millgate	Nigel	435616352	admin@gadhungalmarring.com.au						02.10.24	registered via email - AG replied with confirmation 04.12.24 PPI and SS sent via email with closing date for comments as 20 January 2025. 08.01.25 - CE phoned requesting comments for PPI & SS by due date. Nigel looking at email documents today. 15.01.25 - VH emailed reminder for comments to be in by 5pm on 20th January 17.01.25 - AG emailed and SMSed reminders that comments are due 20th January at 5pm 20.01.25 - AG emailed and SMSed reminder that comments are due by 5pm 10.02.25 - AG emailed details of voluntary site inspection set for 20th February and asked for RSVPs to be in by 18th Nigel emailed to express concerns at lack of payment for RAPs.
7	4.10.24	Murra Bidgee Mullangari Aboriginal Corporation	Darleen Johnson and Ryan Johnson	Darleen and Ryan	0490 051 102 0475 565 517 0497 983 332	darleenjohnson@murra.bidgee.com.au	PO Box 3035	Rouse Hill NSW 2155	5.12.2024	Registered post: RPP44 63800 09400 57149 96607	12.12.24	04.10.24	registered via email - AG replied with confirmation 04.12.24 PPI and SS sent via email with closing date for comments as 20 January 2025. 05.12.24 - PPI & SS letters sent via registered post. 09.12.24 Darleen read through and agrees with recommendations 10.02.25 - AG emailed details of voluntary site inspection set for 20th February and asked for RSVPs to be in by 18th Darleen rang to express concerns at lack of payment for RAPs. 12.02.25 Darleen emailed requesting a callback from project archaeologist, AG stated that she had been on leave prior day and would be in touch 14.02.25 - AG emailed updating that Morson Group would offer WCHC paid engagement for the site visit and request hourly rates to be returned 17.02.25 - AG rang Darleen, confirmed attendance at site inspection 18.02.25 - AG emailed following up Darleen's confirmed attendance 19.02.25 - AG emailed Safety Work Method Statement (SWMS) 20.02.25 - Tania Carroll attended site visit on behalf of Murra Bidgee and sent invoice via email. AG forwarded email client as requested. AG emailed follow up and to send invoices to client.
8	07.10.24	Dharug Custodian Aboriginal Corporation	Justine Coplin	Justine	0414 962 766	justinecoplin@optusnet.com.au	10 Waterloo Ave	Woy woy NSW 2256	5.12.2024	Registered post: RPP44 63800 09400 54952 51605	16.12.24	07.10.24	registered via email - AG replied with confirmation 04.12.24 PPI and SS sent via email with closing date for comments as 20 January 2025. - email bounced back, AG sent email on 05.12.24 05.12.24 - PPI & SS letters sent via registered post. 07.01.25 - CE phoned, Justine has changed addresses. No longer at Windsor. Not requesting a hard copy, will check emails and send comments in. 15.01.25 - VH emailed reminder for comments to be in by 5pm on 20th January 17.01.25 - AG emailed and SMSed reminders that comments are due 20th January at 5pm 18.01.25 - Justine emailed back "We have worked on other sites in this area, for many years and still have connect in the area. This site is surrounded by sites, we recommend testing on this site." 10.02.25 - AG emailed details of voluntary site inspection set for 20th February and asked for RSVPs to be in by 18th Justine emailed to express frustration at lack of payment for RAPs. 14.02.25 - AG emailed updating that Morson Group would offer WCHC paid engagement for the site visit and request hourly rates to be returned 17.02.25 - AG emailed to follow up if DCAC was interested in attending paid site visit

9	05.10.24	Wallanbah Aboriginal Site Conveyancing	Kelvin Boney	Kelvin	0432 143 205	kelvingoogieboney@gmail.com					05.10.24	registered via email - AG replied with confirmation 04.12.24 PPI and SS sent via email with closing date for comments as 20 January 2025. 07.01.25 - CE phoned no message was able to be left 15.01.25 - VH emailed reminder for comments to be in by 5pm on 20th January 17.01.25 - AG emailed and SMSed reminders that comments are due 20th January at 5pm 20.01.25 - AG emailed and SMSed reminder that comments are due by 5pm 10.02.25 - AG emailed details of voluntary site inspection set for 20th February and asked for RSVPs to be in by 18th
10	08.10.24	Amanda Hickey Cultural Services	Amanda Hickey	Amanda	0434 480 558	amandahickey@live.com.au	57 Gough Street	Emu Plains, NSW, 2750	5.12.2024	Registered post: RPP44 63800 09400 54952 24609	08.10.24	04.12.24 PPI and SS sent via email with closing date for comments as 20 January 2025. 05.12.2024 - PPI & SS letters sent via registered post. 12.12.24 Amanda emailed that she supports the draft methodology
11	08.10.24	A1 Indigenous Services	Carolyn Hickey	Carolyn	0411 650 057	cazadirect@live.com	10 Marie Pitt Place 2745	Glenmore Park, NSW, 2745	5.12.2024	Registered post: RPP44 63800 09400 54952 25606 unclaimed 6.11.24 tracking number 4463800094005518 841608 PPI & SS PPI & SS letter RTS 12.12.24	08.10.24	registered via email - AG replied with confirmation 04.12.24 PPI and SS sent via email with closing date for comments as 20 January 2025. 05.12.2024 - PPI & SS letters sent via registered post. 07.01.2025 - CE phoned, left message requesting comments for PPI & SS by due date. 07.01.2025 - Carolyn responded agreeing to the methodology and survey strategy. 16.02.25 - AG emailed details of voluntary site inspection set for 20th February and asked for RSVPs to be in by 18th
12	08.10.24	Butucarbin Aboriginal Corporation	Jennifer Beale	Jennifer	(02) 9832 7167	butuheritage@gmail.com	PO Box E18,	Emerton, NSW 2770	5.12.2024	Registered post: RPP44 63800 09400 54952 39603	18.12.24	08.10.24 registered via email - AG replied with confirmation 04.12.24 PPI and SS sent via email with closing date for comments as 20 January 2025. 05.12.24 - PPI & SS letters sent via registered post. 07.01.25 - CE phoned no message was able to be left 15.01.25 - VH emailed reminder for comments to be in by 5pm on 20th January 17.01.25 - AG emailed and SMSed reminders that comments are due 20th January at 5pm 20.01.25 - AG emailed and SMSed reminder that comments are due by 5pm 10.02.25 - AG emailed details of voluntary site inspection set for 20th February and asked for RSVPs to be in by 18th
13	10.10.24	Kamilaroi Yankuntjatjara Working Group	Phil Khan	Phil	0434 545 982	philpkhan.acn@live.com.au	78 Forbes Street	Emu Plains, NSW 2750	5.12.2024	Registered post: RPP44 63800 09400 56853 89606	10.10.24	registered via email - AG replied with confirmation 04.12.24 PPI and SS sent via email with closing date for comments as 20 January 2025. 05.12.24 - PPI & SS letters sent via registered post. 07.01.25 - CE phoned no message was able to be left 15.01.25 - VH emailed reminder for comments to be in by 5pm on 20th January 06.01.25 - Phil Khan emailed back "The study area is highly significant and sensitive to our people. Nepean River, runs near Castlereagh, was an important water source & would have provided food such as fish and eels. We agree support your methodology and recommend further investigation in the way of test excavations before our culture is through development. We look forward to working alongside you on this project." 10.02.25 - AG emailed details of voluntary site inspection set for 20th February and asked for RSVPs to be in by 18th
14	14.10.24	Wurrumay Culture Heritage Consultants	Kerrie Slater & Vicky Slater		0421 077 521	ecumenal@outnet.com	89 Pyramid Street	Emu Plains NSW 2750	5.12.2024	Registered post: RPP44 63800 09400 56850 02604	14.10.24	04.12.24 PPI and SS sent via email with closing date for comments as 20 January 2025. 05.12.24 - PPI & SS letters sent via registered post. 07.01.25 - CE phoned left message requesting comments for PPI & SS by due date. 15.01.25 - VH emailed reminder for comments to be in by 5pm on 20th January 17.01.25 - AG emailed and SMSed reminders that comments are due 20th January at 5pm 20.01.25 - AG emailed and SMSed reminder that comments are due by 5pm 21.01.25 - Vicky emailed agreeing with project methodology and emphasised project area significance to Aboriginal people on Darug country + waterways with culture values holding spiritual connections 10.02.25 - AG emailed details of voluntary site inspection set for 20th February and asked for RSVPs to be in by 18th 10.02.25 - Vicky confirmed attendance at the site inspection. AG emailed double checking she understood it was unpaid, Vicky confirmed. 14.02.25 - AG emailed updating that Morson Group would offer WCHC paid engagement for the site visit and request hourly rates to be returned. Vicky responded confirming and her hourly rates. 19.02.25 - Vicky rang VH office to inquire if other parties were invited, AG rang Vicky, who asked if her niece Arika Jatomaki could be included. AG confirmed with client that paid site visit invitation could extend to Arika. AG emailed Safety Work Method Statement (SWMS). 20.02.25 - Vicky attended site visit. AG emailed follow up and to send invoices to client. Vicky sent invoice and AG forwarded it to client.
15	14.10.24	Widescope Indigenous Group	Steven Hickey	Steven	SH: 0425 230 693	Widescope.group@live.com	73 Russell Street	Emu Plains, NSW 2750	5.12.2024	Registered post: RPP44 63800 09400 56854 45609	13.12.24 RTS unclaimed	15.10.24 registered via email - AG replied with confirmation 21.10.24 registered again via email, AG confirmed 04.12.24 PPI and SS sent via email with closing date for comments as January 20, 2025 05.12.24 - PPI & SS letters sent via registered post. 07.01.25 - CE phoned left message requesting comments for PPI & SS by due date. 15.01.25 - VH emailed reminder for comments to be in by 5pm on 20th January 17.01.25 - AG emailed and SMSed reminders that comments are due 20th January at 5pm 20.01.25 - AG emailed and SMSed reminder that comments are due by 5pm 10.02.25 - AG emailed details of voluntary site inspection set for 20th February and asked for RSVPs to be in by 18th
16	16.10.24	Guntawang Aboriginal Resources Incorporated	Wendy Morgan	Wendy		wenlissa01@hotmail.com	113 Reservoir Road	Mt Pritchard NSW 2170	5.12.2024	Registered post: RPP44 63800 09400 56853 82607	13.12.24 RTS	16.10.24 registered via email - AG replied with confirmation 04.12.24 PPI and SS sent via email with closing date for comments as 20 January 2025. 05.12.24 - PPI & SS letters sent via registered post. 15.01.25 - VH emailed reminder for comments to be in by 5pm on 20th January 17.01.25 - AG emailed and SMSed reminders that comments are due 20th January at 5pm 20.01.25 - AG emailed and SMSed reminder that comments are due by 5pm 20.01.25 - Wendy emailed "Guntawang supports the draft Project Methodology for an ACHA for the proposed Castlereagh Tourism Development 39-65 Old Castlereagh Road Castlereagh NSW. We would like to recommend an artefacts recovered from the excavation be displayed in the construction/ footpaths with a memorial of the first people of the land and information of what some of the artefacts were used for by our ancestors." 10.02.25 - AG emailed details of voluntary site inspection set for 20th February and asked for RSVPs to be in by 18th
17	16.10.24	Pearl Depoma	Pearl Depoma	Pearl	0404 158 006	pearl-depoma@hotmail.com	5 Toohey Avenue	Westmead NSW 2145	5.12.2024	Registered post: RPP44 63800 09400 57149 93606	16.10.24	registered via email - AG replied with confirmation 04.12.24 PPI and SS sent via email with closing date for comments as 20 January 2025. 05.12.24 - PPI & SS letters sent via registered post. 07.01.25 - CE phoned - recorded message "Could not be connected, check the number before calling again." 15.01.25 - VH emailed reminder for comments to be in by 5pm on 20th January 17.01.25 - AG emailed and SMSed reminders that comments are due 20th January at 5pm 20.01.25 - AG emailed and SMSed reminder that comments are due by 5pm 10.02.25 - AG emailed details of voluntary site inspection set for 20th February and asked for RSVPs to be in by 18th

18	16.10.24	Yulay Cultural Services	Arika Jalomaki (Manager)	Arika Jalomaki	0481 251 385 0411 048 794	yulaycultural@gmail.com	28 Poplar Street North	St Mary's NSW 2760	5.12.2024	Registered post: RPP44 63800 09400 56854 43605	16.12.24	16.10.24	registered via email - AG replied with confirmation 04.12.24 PPI and SS sent via email with closing date for comments as 20 January 2025. 05.12.24 - PPI & SS letters sent via registered post. 07.01.25 - CE phoned no message left on both mobile #'s, no message could be left on top ph number, second #- administration forbidden call message given. 09.01.25 - Arika emailed agreeing with project methodology and asked to be considered for fieldwork 10.02.25 - AG emailed details of voluntary site inspection set for 20th Febuary and asked for RSVPs to be in by 18th 19.02.25 - Arika was nominated by Vicky Slater to attend site inspection, client OK'd, Arika emailed confirming her attendance and AG followed up. AG emailed Safety Work Method Statement (SWMS) 20.02.25 - Arika attended site visit. AG emailed follow up and to send invoices to client. 24.02.25 - Arika sent invoice to AG who forwarded it to client
19	16.10.24	Thomas Dahlstrom Offers ACH value by using 3D Laser and Drone technology	Thomas Dahlstrom	Thomas	0403 529 119	gamilia_rou@yahoo.com.au	1-122 Glebe Point Road	Glebe NSW 2037	5.12.2024	Registered post: RPP44 63800 09400 56854 50603	13.12.24	16.10.24	registered via email - AG replied with confirmation 04.12.24 PPI and SS sent via email with closing date for comments as 20 January 2025. 05.12.24 - PPI & SS letters sent via registered post. 07.01.25 - CE phoned, left message requesting comments for PPI & SS by due date. 15.01.25 - VH emailed reminder for comments to be in by 5pm on 20th January 17.01.25 - AG emailed and SMSed reminders that comments are due 20th January at 5pm 20.01.25 - AG emailed and SMSed reminder that comments are due by 5pm 10.02.25 - AG emailed details of voluntary site inspection set for 20th Febuary and asked for RSVPs to be in by 18th
20	17.10.24	Ginninderra Aboriginal Corporation	Steven Johnson & Krystle Carroll	Steven and Krystle	0406 991 221	Ginninderra.corp@gmail.com	PO BOX 3143	Grose Vale NSW 2754	5.12.2024	Registered post: RPP44 63800 09400 54952 47608		17.10.24	registered via email - AG replied with confirmation 04.12.24 PPI and SS sent via email with closing date for comments as 20 January 2025. 05.12.2024 - PPI & SS letters sent via registered post. 07.01.2025 - CE phoned message requesting comments for PPI & SS by due date. 17.01.25 - AG emailed and SMSed reminders that comments are due 20th January at 5pm 20.01.25 - AG emailed and SMSed reminder that comments are due by 5pm 10.02.25 - AG emailed details of voluntary site inspection set for 20th Febuary and asked for RSVPs to be in by 18th
21	21.10.24	Paul Webb	Paul Webb	Paul	432528944	aussieblacktracker@gmail.com						21.10.24	registered via email - AG replied with confirmation 04.12.24 PPI and SS sent via email with closing date for comments as 20 January 2025. 07.01.25 - CE phoned message requesting comments for PPI & SS by due date. Paul returned call, looking at docu this afternoon. 15.01.25 - VH emailed reminder for comments to be in by 5pm on 20th January 17.01.25 - AG emailed and SMSed reminders that comments are due 20th January at 5pm 20.01.25 - AG emailed and SMSed reminder that comments are due by 5pm 10.02.25 - AG emailed details of voluntary site inspection set for 20th Febuary and asked for RSVPs to be in by 18th
22	21.10.24	Konanggo Aboriginal Cultural Heritage Services	Robert Young	Robert	0450 497 270	konanggo_consultancy@hotmail.com	2/42 Crawford Road	Brighton Le Sands NSW 2216	5.12.2024	Registered post: RPP44 63800 09400 56853 86605	13.12.24	21.10.24	Robert rang VH office line and left message, AG rang back and left message, Robert rang and confirmed interest, requested follow up email which AG sent 04.12.24 PPI and SS sent via email with closing date for comments as 20 January 2025. 05.12.24 - PPI & SS letters sent via registered post. 07.01.25 - CE phoned requesting comments for PPI & SS by due date. Robert looking at documents today. 15.01.25 - VH emailed reminder for comments to be in by 5pm on 20th January 16.01.25 - Robert emailed "KACHS has reviewed the draft presentation project information and the draft project methodology and acknowledge all processes in the project KACHS always suggests to have an Elder and a Female or Male for their cultural knowledge through their cultural l 10.02.25 - AG emailed details of voluntary site inspection set for 20th Febuary and asked for RSVPs to be in by 18th 10.02.25 - Robert rang AG and expressed concerns about lack of paid engagement, and declined to attend.

Appendix C Research Design and Methodology



VIRTUS HERITAGE



CASTLEREAGH TOURISM DEVELOPMENT

*39-65 Old Castlereagh Road
Castlereagh, NSW*

Archaeological Research Design and Methodology

Draft | July 2025

Prepared for Morson Group

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1a - c	12 December 2024	Clare Anderson	Alice Buhrich Dr. Mary-Jean Sutton	Minor edits
1d	3 July 2025	Dr. Mary-Jean Sutton and Liam Clerke	Dr. Mary-Jean Sutton	-
1e	23 July 2025	Dr. Mary-Jean Sutton and Liam Clerke	Dr. Mary-Jean Sutton	-

Acknowledgement of Country

Virtus Heritage acknowledges the Traditional Custodians of the land on which this project was undertaken and pays respect to Elders past, present and emerging.

Content Warning

Aboriginal and Torres Strait Islander people are warned that this publication may contain names and images of deceased people, descriptions of traumatic historic events and parts of Country that have been impacted by development.

Disclaimer and cultural restrictions

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All queries related to the content, or to any use of this report must be addressed to Dr Mary-Jean Sutton.

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Definitions

Abbreviations	Description
AA	Archaeological Assessment
ACHA	Aboriginal Cultural Heritage Assessment
ACHCR	Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW 2010a)
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
ARDM	Archaeology Research Design Methodology
Code of Practice, COP	Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010b)
DLALC	Deerubbin Local Aboriginal Land Council
LALC	Local Aboriginal Land Council
NPW ACT	National Parks and Wildlife Act 1974
NPW Reg	National Parks and Wildlife Regulation 2019
OEH	NSW Office of Environment and Heritage (now Heritage NSW)
OSL	Optically stimulated luminescence
PAD	Potential Archaeological Deposit
RAP	Registered Aboriginal Party

Glossary

Aboriginal object – A term used in the NPW Act legislation, meaning: ‘... any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises NSW, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains’ (s.5 NPW Act).

Registered Aboriginal party – An individual or party who registers for Aboriginal consultation as part of the consultation and notification process following Aboriginal cultural heritage consultation requirements for proponents 2010 (NSW DECCW 2010a).

AHIP – An Aboriginal Heritage Impact Permit which is a document provided by Heritage NSW which provides a defence to the applicant to certain activities which constitute ‘harm’ to Aboriginal objects or Aboriginal places under Part 6 of the NPW Act. A proponent must prepare an application for an AHIP and other relevant documentation (including an ACHA) to obtain an AHIP from Heritage NSW in the Department of Premier and Cabinet.

Declared Aboriginal place – A term used in the NPW Act legislation, meaning any place declared to be an Aboriginal place (under s.84 of the NPW Act) by the Minister administering the NPW Act, by order published in the NSW Government Gazette, because the Minister is of the opinion that the place is or was of special significance with respect to Aboriginal culture. It may or may not contain Aboriginal objects.

Due Diligence assessment – Due diligence is taking reasonable and practical steps to determine whether a person’s actions will harm an Aboriginal object and, if so, what measures can be taken to avoid that harm. A due diligence assessment will assess the potential for harm and provide recommendations to mitigate harm, generally in the form of an Aboriginal Cultural Heritage Assessment (ACHA), if Aboriginal objects or places are likely to be harmed by proposed works.

Harm – A term used in the NPW Act Amendments meaning ‘... any act or omission that destroys, defaces, damages an object or place or, in relation to an object – moves the object from the land on which it had been situated’ (s.5 NPW Act).

Project area – Area proposed to be impacted as part of a specified activity or development proposal. These activities include indirect impact.

Place – An area of cultural value to Aboriginal people in the area (whether or not it is an Aboriginal place declared under s.84 of the Act).

Proponent – A person proposing an activity that may harm Aboriginal objects or declared Aboriginal places and who may apply for an AHIP under the NPW Act.

1. Introduction

Morson Group Consultants proposes to develop a tourism precinct at 39–65 Old Castlereagh Road, Castlereagh NSW (Lots 12, 14 and 16 DP793163, Figure 1). The project area is located within the Penrith Local Government Area (LGA), within the boundary of Deerubbin Local Aboriginal Land Council (DLALC).

The proposed scope of works as provided by Morson Group seeks approval for a tourism-oriented development comprising three (3) buildings across separate lots, including a hotel, an indoor recreation facility with two (2) drive-through restaurants, and a registered club. The proposal also includes associated vehicle access, on-grade and above-ground parking, and site infrastructure.

- Lot 12:
 - A seven (7) storey hotel with 147 rooms, restaurant, gym, spa, pool, and associated facilities.
 - Multi-level above-ground car parking.
- Lot 14:
 - A 5,713m² indoor recreation facility.
 - Two (2) restaurants with capacity for a drive-through.
 - Associated on-grade car parking.
- Lot 16:
 - A 5,177m² registered club building.
 - Associated on-grade car parking.

Virtus Heritage Pty Limited (hereafter ‘Virtus Heritage’) was engaged by Morson Group to prepare an Aboriginal Cultural Heritage Assessment (ACHA), including an Archaeological Assessment (AA) for the proposed development.

The proposed tourism development includes excavations anticipated to be up to 0.15 – 1.74 m depth, though excavation of stormwater system and footings will also likely be required. Excavations in these areas are anticipated to a maximum of 2.3 m depth.

AHIP C0001415 (AHIMS 3891), now expired, was previously issued over the project area. Previous Aboriginal cultural heritage assessments have identified that the project area may contain in-situ stratigraphy and low densities of Aboriginal objects associated with the alluvial Penrith Unit of the Cranebrook Terrace (PLDC 2011, Virtus Heritage 2024).

Where Aboriginal objects survive in this unit, they have research value as it may provide an opportunity to further understand the stratigraphy and archaeological value of the Penrith Unit of the Cranebrook Terrace and past Dharug land use on elevated terrain overlooking an unnamed tributary of Cranebrook Creek. This resource and opportunities to understand it are increasingly diminished by development in the local region.

The proposed activity has the potential to harm Aboriginal objects associated with this deposit. Given the extent of information available on the Penrith Unit, the previous land-use of the project area, the identification of artefacts within surface exposures inside of the project area, and the homogeneity of topography and landforms within the project area, archaeological testing is not necessary to determine the presence or absence of Aboriginal objects and archaeological deposits.

This document constitutes the Archaeological Research Design and Methodology (ARDM) to accompany an AHIP application to enable ground disturbance works associated with project development and salvage of an area of moderate archaeological potential within the project area.

1.1 PROPOSED PROJECT IMPACTS

Figure 1 shows the project impact area boundary which constitutes the application area for this AHIP application.

Table 1 outlines the proposed works and impacts to known sites and potential archaeological deposits (PAD) and indicates the level and type of harm.

Table 1 Aboriginal Site located within the AHIP Application Area

AHIMS # / PADs within Proposed Work Sites	Site Name	Site Type	Proposed Activity
	Penrith Lakes 2025, background scatter	Artefact scatter/Artefact (feature)	Salvage excavation Archaeological Surface Collection Community Collection



Figure 1: AHIP Application Area

1.2 ABORIGINAL CONSULTATION

As recognised by Heritage NSW, we acknowledge that Aboriginal people are the primary determinants of the cultural significance of their heritage. Aboriginal consultation for the ACHA was undertaken in compliance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (NSW DECCW 2010a) (hereafter referred to as the “ACHCRs”). These consultation requirements are legal requirements that proponents must comply with during the ACHA process which are set out in Clause 80c of the NPW Regulation. Aboriginal consultation is crucial in the compilation of the ACHA in order to adequately assess and investigate Aboriginal cultural heritage.

Sixteen Aboriginal groups/individuals registered interest for this project during the notification process. Each interested party responded to advertisements in various newspapers or to an invitation to register in the project after their contact details were provided by notified organisations. The groups/individuals registered for consultation are listed in Table 2.

Table 2 Aboriginal Site located within the AHIP Application Area

Name of Contact	Registered Aboriginal Party
Steven Randall	Deerubbin Local Aboriginal Land Council
Philip Boney	Wailwan Aboriginal Group
Tiarna Bird	Mura Gadi Aboriginal Corporation
Ethan Trewlynn	Long Gully Cultural Services
Nigel Millgate	Gadhungal Marring
Darleen Johnson and Ryan Johnson	Murra Bidgee Mullangari Aboriginal Corporation
Justine Coplin	Dharug Custodian Aboriginal Corporation
Kelvin Boney	Wallanbah Aboriginal Site Conveyancing
Amanda Hickey	Amanda Hickey Cultural Services
Carolyn Hickey	A1 Indigenous Services
Jennifer Beale	Butucarbin Aboriginal Corporation
Phil Khan	Kamilaroi Yankuntjatjara Working Group
Kerrie Slater; Vicky Slater	Wurrumay Culture Heritage Consultants
Steven Hickey	Widescope Indigenous Group
Wendy Morgan	Guntawang Aboriginal Resources Incorporated
<i>Undisclosed Registered Aboriginal Party</i>	<i>Undisclosed Registered Aboriginal Party</i>

All registered Aboriginal parties will be provided with the opportunity to review, discuss and develop the ARDM presented in this document.

1.3 REPORT STRUCTURE

Section 1 provides an introduction and context to the project.

Section 2 of this research design and methodology summarises previous archaeological research which is relevant to the AHIP application for the site within the project area.

Section 3 details the research design that has been proposed for the project area.

Section 4 provides the methodology proposed for salvage for sites and areas within the project area.

Section 5 presents the attributes to be recorded during the analysis of artefacts recovered during salvage and collections.

Section 6 discusses the care of artefacts recovered during salvage and collections.

Section 7 lists the references cited within this document.

2. Summary of previous archaeological research

A review of the Heritage NSW Aboriginal Heritage Information Management System (AHIMS) library and online searches were undertaken to obtain copies of previous Aboriginal heritage studies and archaeological investigations within the locality of the project area, which relate to the AHIP application. Detailed summaries of all reports pertinent to the locality are provided in Section 4 of the Archaeological Assessment (Virtus Heritage 2024).

The project area is located on a floodplain terrace associated with the Nepean River, within the Penrith Unit of the Cranebrook Terrace formation. The soils of the project area are consistent with the Richmond soil landscape. Aboriginal objects are known to occur within this soil landscape and in the Penrith Unit to depths of 1–2m and generally in the top 0.9m of deposit. Archaeological models across the Cumberland Plain indicate that Aboriginal objects can be found in any landform, with stone artefacts tending to be found more frequently in proximity to key resources such as water and drainage lines, shelter and stone sources and decreasing in frequency as distance from those resources increases. The Nepean River is located a little over 650m from the project area. The historic path of Cranebrook Creek is mapped approximately 1.7km west of the project area. An unnamed tributary was located 300m north-east of the project area. Previous potential chain of ponds and paleochannels were also identified by Groundtruthing Consulting in proximity to the project area (Mitchell 2010).

The project area's alluvium topsoils have been disturbed by vegetation clearance, previous farming activity and the construction of the residential housing and irrigation infrastructure but does not appear to have been subject to sand mining. This past land use has impacted the A-horizon soils to at least 0.6m in depth.

An AHIMS extensive search (Client Service ID 912988) was undertaken on 10 July 2025. No Aboriginal cultural heritage sites were registered in or in close proximity to the project area.

In 2017, Williams et al. conducted excavations on the banks of Peach Tree Creek and created the most recent dating model for the Cranebrook Terrace (Williams et al 2017). This modelling identifies that the sandy clay sediment in areas west of the historic alignment of Cranebrook Creek, within the Richmond Unit, were deposited between 20–15,000 years ago to a depth of 3.5–3.9 m or 20.73–21.13 m AHD. This sedimentary layer is particularly sensitive for Aboriginal archaeological deposits, with flakes being identified by Williams et al. at the base of this layer. Sediment below this deposit are also sandy clays and date to approximately 50–40,000 years ago. Sediment east of the historic alignment of Cranebrook Creek dated to at least 50,000 years. Aboriginal objects are less likely to occur at depth to the east of Cranebrook Creek, with any Aboriginal objects most likely occurring in the reworked topsoils, which is of particular relevance to the project area. Around 3km east of Cranebrook Creek is a channel infill dating to between 50–75,000 years ago.

Previous archaeological assessments of the project area concluded that there was a reasonable potential for Aboriginal objects to occur within the project area at low frequencies and with low archaeological integrity to depths of 0.3m minimum to 0.6m, with greater archaeological integrity below this depth within the Penrith Unit of the Cranebrook Terrace (PLDC 2011, Virtus Heritage 2024). Where Aboriginal objects survive in this unit, they have research value as it may provide an opportunity to further understand the stratigraphic and archaeological value of the Penrith Unit of the Cranebrook Terrace and past Dharug land use on elevated terrain overlooking an unnamed tributary of Cranebrook Creek. This resource and opportunities to understand it are increasingly diminished by development in the local region.

The proposed activity has the potential to harm Aboriginal objects identified in 8 exposures within the project area in the same landform defined in the Archaeological Assessment, as background scatter, Penrith Lakes 2025. An AHIP for salvage and collection is required as Aboriginal objects will be harmed by this proposal and require further mitigation and management.

3. Research Design

The research design has been developed in line with requirements of DECCW 2010a. Aboriginal heritage consultation requirements for proponents (DECCW 2010a), the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DCEEW 2010b) and Archaeological Investigation of Aboriginal Objects Code of Practice (DCEEW 2010c).

The past archaeological research within the vicinity of the project area and surrounds (refer to Section 2 of this document and Section 4.2 of the AA, Appendix 1 of the ACHA) indicates that there is potential for evidence of Aboriginal occupation to have survived impacts of previous land use.

The broad objective of this research design is to assist in further understanding how Aboriginal people utilised the project area in the past through archaeological investigation to determine the significance, extent, and integrity of any potential archaeological deposits and to analyse any artefacts recovered to document values.

Other research questions that will be investigated under the AHIP will be (and not limited to):

- Does the project area retain any evidence of natural land surfaces or intact archaeological deposits?
- Does the project area retain any evidence of Aboriginal land use?
- What type of artefacts are present?
- What material evidence is there of former uses of the site?
- For Aboriginal objects and archaeological deposits in the project area,
 - What raw materials and technologies were in use at the site?
 - Do any of the artefacts retain evidence of use?
 - For the retouched flake and broken hand axe in the project area, is there any evidence of residue and for what types of usewear?
 - Is it possible to date the archaeological deposits?
 - If hearths/fire pits/heat treatment pits are located within the project area:
 - ◆ What can be inferred about technology choices for these features?
 - ◆ What can the features tell us about the chronology of land use in the project area?
- Should faunal and/or shell material be located, which species present were utilised by Aboriginal people?
 - ◆ Can an inference be made as to a preference for marine or terrestrial resources?
 - ◆ Is there evidence of any change over time in these preferences or species utilised?
 - ◆ Is there evidence for the transport of resources within the environment?
- What does the artefact assemblages indicate about how Aboriginal people were utilising the local landscape?
- How does the results of the collection and artefact analysis compare to other analyses carried out in the locality and the region?
- Are Aboriginal people utilising the area less intensely than other parts of the Penrith Lakes area as predicted in ACHA in the predictive model, due to the distance of the project area from chain of ponds (in proximity to a water course). How does this pattern of landscape use compare to previous archaeological research in the locality and the region of Western Sydney?
- Are certain types of artefact types and artefact materials more prevalent within the project area than others as predicted in the ACHA in the predictive model? How do these results compare to previous archaeological research in the locality and the region?
- Is there any evidence of a change in occupation strategy over time?

- How have the descendants of the Traditional Aboriginal people and the broader Aboriginal community utilised this landscape through generations to the present day? Are there any dateable features (charcoal or hearths) that can provide information on the chronology of the midden or occupation deposit, if identified? What is the age of such features (e.g. Holocene or Pleistocene)? What is their significance within the broader cultural landscape?*

*We note that the AA has assessed that the identification of dateable features in the impact areas is at present considered unlikely.

4. Methodology

4.1 IMPACT AND MITIGATION AREAS

Table 3 sets out the proposed impacts and investigation in each works area.

Table 3. Proposed Impacts and Recommended Mitigation

Works Area	Proposed Impacts	Recommended Mitigation	Area proposed for excavation and collection	Estimated # of Days	
				<i>Archaeologists/Geomorphologist Representative Parties on Site</i>	<i>Aboriginal</i>
Clearing grass/levelling site	Depth - removal of grass less than <0.1 m	Archaeological Surface Collection during Works by at least two RAPs for topsoil disturbance during initial ground disturbing works	All of the impact area.	3 days Archaeologist (depending on machine size). 3 days inclusion of at least one RAP representative.	
Car parks	Excavations to depths <0.1 m	-	-	-	
Stormwater Tanks	Excavation to depth of 2.3 m	Mechanical excavation to 0.6 m and if Aboriginal objects are identified and soil profiles with integrity and Aboriginal objects are identified with input from a geomorphologist on site, manual hand excavation will be required to depth of impact.	Mechanical excavation in controlled 5 cm spits and pits spaced every 5 m in 50 cm by 50 cm pits.	2 - 5 days with 1 excavation director and a supporting Archaeologist/Geomorphologist (depending on machine size). 2 - 5 days inclusion of at least two RAP representative.	
Stormwater pipes (100 - 450 mm diameter) Sumps	Excavation to depth of 0.15 - 1.74 m	Mechanical excavation to 0.6 m for stormwater pipers over a	For pipes over 300 mm diameters, mechanical excavation in	5 - 10 days with 1 excavation director and a supporting Archaeologist/Geomorphologist (not including expansion areas).	

		diameter of 300 mm and if Aboriginal objects are identified and soil profiles with integrity and Aboriginal objects are identified with input from a geomorphologist on site, manual hand excavation will be required to depth of impact.	controlled 10 cm spits and pits spaced every 5 m.	5 – 10 days inclusion of at least two RAP representative.
Piles	Excavations to depths ~1.5 m	Manual excavation, mechanical auger excavation	6 geotechnical trench/auger pits and if triggered expansion by manual investigations placed every 10m in 1m by 1m pits	2 days with 1 Archaeologist and 1 Geomorphologist. 2 days inclusion of at least two RAP representative.

Due to the cultural significance of the area and potential for out of context Aboriginal objects to occur despite past land use disturbance, the following methodologies have been prepared for a surface collection, community collection and triggers for manual salvage in the even that it is required.

4.2 SITE SET UP

The excavation will be staged within the project area to manage spoil, water and sieving progressively within the project area.

Where removal of concrete slabs/asphalt is required, an excavator would be used. This work would be monitored by a geomorphologist or archaeologist, and RAP representative(s).

4.3 SURFACE COLLECTION

A surface collection will be undertaken of any impact footprint, including machinery access and sample locations, including proposed carparks, sumps and water storage areas.

The proposed surface collection methodology is as follows:

- surface collection will be undertaken by one archaeologist and at least one representative from registered Aboriginal parties;
- surface artefacts will be flagged prior to collection. The flagged site will be photographed to record the spatial distribution of artefacts within the site;

- the location of each surface artefact will be recorded using a handheld GPS to record the spatial distribution of artefacts within the site; and
- artefacts will be individually bagged and labelled (including site name, date, and MGA co-ordinate).

4.4 GEOTECHNICAL AUGER HOLE AND TRENCH

Six initial auger pits will be drilled across the project area for proposed areas of piling to characterise the stratigraphic profile and may be expanded mechanically into accessible trenches to enable the safe access to collect soil samples, OSL dating samples and penetrometer readings.

The use of auger pits for the subsurface investigation salvage for piling of in the impact areas for the proposed works is designed to determine the extent and integrity of any PADs that are associated with the sensitive landform and provide a safe method of excavation in sandy profiles at depth.

We propose:

1. Six initial auger pits will be excavated to characterise the soil profile.
2. Initially auger pits in the impact areas will be excavated to determine confirm the extent and integrity of natural and cultural deposits, if extant and disturbance in the agricultural activity areas. The location of the auger pits will be guided by the proposed impact footprint.
 1. 20cm by 20cm mechanical or manual auger pits will be excavated in the impact areas.
 1. Fill (including concrete, bitumen, road base and imported fill) will be removed in bulk and not sieved (where concrete and bitumen is present a hole will be sawed for auger access).
 2. Excavation of deposits under fill will be undertaken by auger in 20cm spits.
 3. Excavation will be undertaken to the maximum depth of impact from the proposed works.
 4. All excavated soil from the primary sample (excluding fill) will be sieved (dry sieving preferably with wet sieving adopted if the deposit cannot be sieved effectively) through 5mm sieves.
 5. Soil excavated to enable trench access will have a representative sample sieved.
 6. Munsell and pH analysis will be undertaken for each stratigraphic unit within each pit.
 7. Photographic records will be taken for each auger pit.
 8. The location of each auger pit will be recorded using a handheld GPS to record the spatial distribution of artefacts within the areas.
 9. Artefacts will be individually bagged and labelled (including site name, date, and MGA co-ordinate).
 10. Excavations will cease if suspected human remains are encountered. If suspected human remains are uncovered during salvage excavations, the area of these suspected remains must be secured, and the NSW Police notified. If these remains are deemed to required archaeological investigation by the NSW Police or NSW Coroner, then Heritage NSW, and all Registered Aboriginal Parties must be notified.

During auger investigations, if intact deposits, or features such as artefact scatters, midden deposits, intact heat treatment pits, intact hearths, evidence of knapping events, and/or formal tool types in intact deposits (i.e., backed artefacts, retouched artefacts, scrapers, axes, or other tool types considered rarer in a local and/or regional context) are in intact deposits, manual test salvage excavation will be triggered.

4.5 MANUAL (HAND) SALVAGE EXCAVATION

Aboriginal archaeological salvage pits would be positioned approximately 5 m apart along each transect associated with proposed impacts.

The location of salvage pits would be dependent on-site conditions (proposed impacts, services, footings, existing structures):

- Excavation would be undertaken by hand.
- Excavation would be undertaken in 1m x 1m pits.
- The first pit will be excavated and documented in 5 cm spits.
- Based on the evidence of the first excavation unit, 10 cm spits or sediment profile/stratigraphic excavation (whichever is smaller) may then be implemented.
- Salvage excavation units will be excavated to the depth of the proposed impact or the depth of the artefact bearing layers, or the B horizon is reached, or at least two spits of culturally sterile deposit are reached, or groundwater is present, whichever is shallowest.
- If hearths are identified, these will be cross sectioned and a dating sample obtained if possible.

4.6 METHODOLOGY FOR CONTROLLED SUBSURFACE SALVAGE – MECHANICAL PITS

It may be necessary to use mechanical excavation to safely excavate salvage pits, notably in the stormwater tank areas or areas for proposed stormwater drainage and sumps.

The use of mechanical pits for salvage of the impact areas for the proposed works is designed to determine the extent and integrity of potential archaeological deposits.

3. Initially mechanical excavation pits in the impact areas will be excavated to determine the extent and integrity of natural and cultural deposits, if extant.
 1. 1m by 1m investigation pits (dimensions may be dictated by the size of excavator bucket) will be excavated in the impact areas.
 1. Fill (including concrete, bitumen, road base and imported fill) will be removed in bulk and not sieved.
 2. Excavation of deposits under fill will be undertaken by machine in 10-centimetre spits.
 3. Excavation will be undertaken to the maximum depth of impact from the proposed works. Stepping, benching, or shoring of pits may be required to maintain integrity of the pit to depth.
 4. All excavated soil from the primary sample unit (excluding fill) will be sieved (dry sieving preferably with wet sieving adopted if the deposit cannot be sieved effectively) through 5mm sieves.
 5. Soil excavated as a result of stepping, benching, or shoring will be sample sieved.
 6. Munsell and pH analysis will be undertaken for each stratigraphic unit within each investigation pit.
 7. A section drawing of at least one wall of the investigation pit will be completed for each investigation pit. Stepping, benching, or shoring of pits may be required to safely access the mechanical pits for section drawing.
 8. Photographic records will be taken for each investigation pit.
 9. The location of each investigation pit will be recorded using a handheld GPS to record the spatial distribution of artefacts within the areas.
 10. Artefacts will be individually bagged and labelled (including site name, date, and MGA co-ordinate).
 11. Excavations will cease if suspected human remains are encountered. If suspected human remains are uncovered during salvage excavations, the area of these suspected remains must be secured, and the NSW Police notified. If these remains are deemed to required

archaeological investigation by the NSW Police or NSW Coroner, then Heritage NSW, and all Registered Aboriginal Parties must be notified.

During the excavation of pits, if features such as intact midden deposits, intact heat treatment pits, intact hearths, evidence of knapping events, and/or more than five formal tool types in intact deposits (i.e., backed artefacts, scrapers, axes, or other tool types considered rare in a local and/or regional context) are located in a 1m x 1m area in intact deposits, manual salvage will be triggered.

4.7 EXPANSION OR PLACEMENT OF ADDITIONAL EXCAVATION AREAS

Where certain triggers are met, additional excavation areas may be undertaken to salvage the extent of archaeological feature and artefacts and to understand the archaeological significance of the project area within the impact area.

During excavation works, certain features may trigger expansion of existing salvage areas, such as:

- If 10 or more artefacts (including conjoins) are located within a 50cm square excavation pit.
- The presence of an intact midden deposit.
- The presence of an intact heat treatment pit or intact hearth.
- Evidence of stone artefacts in intact stratified deposit or clear feature.
- Evidence of early interaction between settlers and Aboriginal people such as knapped glass or ceramics (the presence of clear manual percussion including a dorsal scar or bulb of percussion would be required and glass/ceramic that dates to the early to mid-nineteenth century).
- The presence of rare or formal intact deposit, i.e. backed artefacts, scrapers, axes, elouera, grounded edge tools or other tool types considered rarer in a local and/or regional context.
- The expansion of the pit should continue until the full extent of the feature or deposit has been identified and recorded.

Excavation would cease once sufficient information was collected to salvage the extent, nature and significance of the archaeological deposits to mitigate the impact of development.

4.8 RECORDING DURING EXCAVATION AND SIEVING

The recording process will include:

- RTK, GPS or manual plotting of all excavation pits, in situ artefacts and cultural layers.
- Bagging any archaeological material identified during the excavation or sieving (such as stone artefacts, animal bone, shell, charcoal) and labelling with a unique number based on the relevant square and stratigraphic layer or unit.
- Where possible, collecting suitable samples for scientific dating and submitting to an appropriate facility for dating.
- Context numbers will be applied to features, deposit, cuts in the deposit, architecture, post-holes, and other archaeological features.
- Soil samples will be collected for each artefact-bearing stratigraphic unit.
- The location of the trenches/pits will be surveyed and photographed photogrammetrically for post-field planning. The exact location of the trenches/pits will be demarcated by the excavation director/s and recorded by a qualified archaeological surveyor. A full site plan showing the location of all trenches and excavated features (if any) will be created.
- The salvage excavation process will be recorded using digital photograph, and the final cross sections of each pit/trench will be illustrated, noting stratigraphy.

4.9 COMMUNITY COLLECTION

Community collection or opportunity to inspect areas for cultural salvage to RAPs would include ground disturbing works to the depth of topsoil removal, including proposed carparks, sumps and water storage areas, where safe to so and organised by Morson Group or the delegated Construction Manager and the RAPs.

The proposed community collection methodology is as follows:

- surface collection will be undertaken by at least two representatives from registered Aboriginal parties;
- surface artefacts will be flagged prior to collection. The flagged site will be photographed to record the spatial distribution of artefacts within the site;
- the location of each surface artefact will be recorded using a handheld GPS to record the spatial distribution of artefacts within the site; and
- artefacts will be individually bagged and labelled (including site name, date, and MGA co-ordinate).
- Repository on site would be with Morson Group in a secure locked container, unless nominated separately as part of RAP consultation for the AHIP.
- If archaeological assistance is required, it can be made on call.

4.10 REPORTING

Recording of artefacts will be undertaken in accordance with Requirement 26 of the *Code of Practice for Archaeological Investigation of Aboriginal objects in NSW*. Following completion of excavations, an Aboriginal Site Impact Recording form will be completed and submitted to the AHIMS Registrar as soon as practicable, for each AHIMS site that has been the subject of salvage in accordance with the requirements of the Code. The results of the excavations will be incorporated into an archaeological excavation report.

4.10.1. Attributes to be recorded for Stone Artefacts

The table below provides an indication of the attributes to be recorded for stone artefacts.

Table 4: Attributes to be recorded

General Attributes (All Artefacts)	Additional Attributes (Flakes)	Additional Attributes (Cores)
Artefact Type	Platforms (width, thickness, surface, overhang removal)	Rotated
Raw Material	Termination	Platform Preparation
Artefact Weight (g)	Retouch (Location and Type)	Scar Type
Artefact Measurements (Length, Width, Thickness)	Breakage	Exhausted
Cortex (Amount and Type)		
Heat Affect		

4.11 SHORT AND LONG TERM CARE OF ABORIGINAL OBJECTS

Options for Short Term Care of Aboriginal Objects

It is proposed that artefacts recovered through the salvage excavation program will be temporarily held by Virtus Heritage at their offices at Kingscliff or Sydney unless an alternative care arrangement is sought by Registered Aboriginal Parties. Where requested, Virtus Heritage will provide access to artefacts to the Registered Aboriginal Parties.

For community collection, without archaeological supervision, repository on site would be with Morson Group in a secure locked container, unless nominated separately as part of RAP consultation for the AHIP.

Opportunities for Registered Aboriginal Parties to participate in the cleaning and analysis of artefacts will be considered.

Options for Long Term Care of Aboriginal Objects

Options being considered for the long-term care of Aboriginal objects recovered from the archaeological test excavation under the AHIP application include:

- Lodgement of Aboriginal objects with Deerubbin Local Aboriginal Land Council or other Aboriginal organisation under a Care Agreement, for example at the Parramatta Gaol Keeping Place.
- Lodgement of the Aboriginal objects at the Parramatta Square/Phive Keeping Place
- On site display under a Care Agreement.
- On display for interpretation in the development or in another area publicly for a selection of objects as suggested a RAP.
- Other options identified by Registered Aboriginal Parties

4.12 SAFETY AND ENVIRONMENTAL MANAGEMENT

The following logistics will need to be arranged by the proponent for the excavation:

- A small to medium (5 – 14 tonne) excavator with a flat bucket of 1m width or less for mechanical excavation.
- Auger and black case for auger for OSL sampling
- Removal of overburden and fill
- Toilet facilities (Men's and Women's).
- Where wet sieving is required:
 - A water source for the wet sieving of excavated soil (e.g. on-site water source or a water truck).
 - Water tight skip bins to capture sieve water and spoil with forklift capabilities.
 - Emptying of bins of water and sieved spoil 2–3 times a day, in accordance with EPA environmental management requirements.
 - Use of a forklift or Manitou to empty bins and a location to handle the volume of water runoff and spoil.
- Secure lockable storage for equipment and retrieved artefacts.
- Contamination control if necessary.
- Backfilling of excavated pits with clean fill.

5. References

DECCW (2010a) Aboriginal heritage consultation requirements for proponents 2010.

DECCW (2010b) Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW.

DECCW (2010c) Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW and Archaeological Investigation of Aboriginal Objects Code of Practice.

Mitchell, P. (2010) Geomorphology and soils in relation to archaeological investigations on the Cranebrook Terrace, Penrith Lakes, NSW. Report to Comber Consultants for PLDC.

PLDC (2011) Penrith Lakes Scheme Area Aboriginal Heritage Assessment Report. Published by Penrith Lakes Development Corporation.

Virtus Heritage (2024) Archaeological Assessment Castlereagh Tourism Development 39–65 Old Castlereagh Road, Castlereagh NSW. Report to Morson Group.

Williams A, A. Burrow, P. Toms, O. Brown, M. Richards and T. Bryant (2017) 'The Cranebrook terrace revisited: recent excavations of an early Holocene alluvial deposit on the banks of the Nepean River, NSW, and their implications for the future work in the region, *Australian Archaeology*, 83(3) pp. 100–109

Appendix D AHIMS Site Search and other Search Results

Virtus Heritage Pty Ltd - Pottsville

Date: 10 July 2025

38 Border Crescent

Pottsville New South Wales 2489

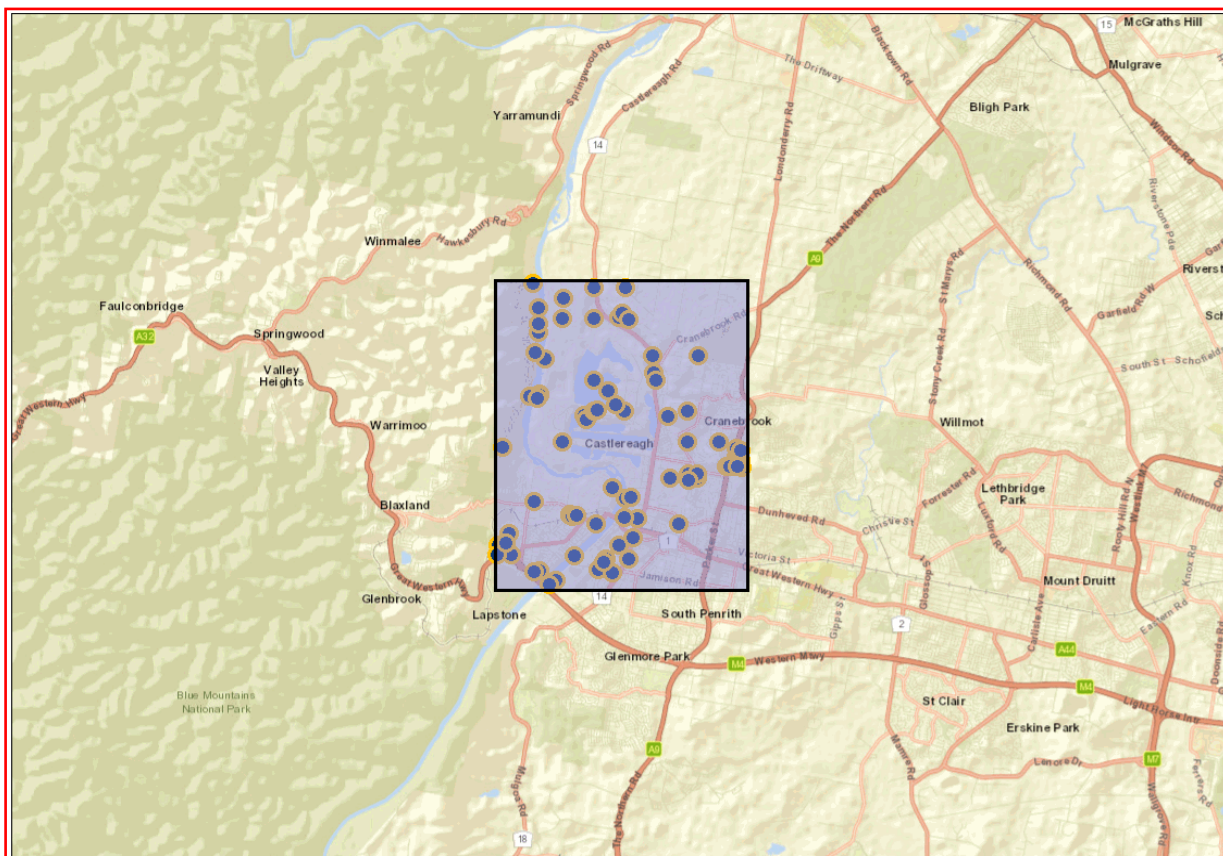
Attention: Kate Morris

Email: k.morris@virtusheritage.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 56, Eastings : 281848.0 - 289036.0, Northings : 6261482.0 - 6270558.0 with a Buffer of 0 meters, conducted by Kate Morris on 10 July 2025.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

87	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the [NSW Government Gazette \(https://www.legislation.nsw.gov.au/gazette\)](https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not to be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-5-0541	RP5 Penrith Leagues Club	AGD	56	285350	6262560	Open site	Valid	Artefact : -	Open Camp Site	102450,103155,103360
	Contact	Recorders	Elizabeth Rich					Permits		
45-5-0790	Jamison_and Blaikie Roads;	AGD	56	284750	6261800	Open site	Valid	Artefact : -	Open Camp Site	1633,103155,103360
	Contact	Recorders	Pam Dean-Jones					Permits		
45-5-0493	Emu Plains (EP/1 P/3)	AGD	56	281830	6262460	Open site	Valid	Artefact : -	Open Camp Site	1018
	Contact	Recorders	Jim Kohen					Permits		
45-5-0222	Jamisons Creek Emu Plains	AGD	56	282220	6262184	Open site	Valid	Artefact : -	Open Camp Site	822
	Contact	Recorders	Jim Kohen					Permits		
45-5-5379	SMDS Basin I Area 06 PAD	GDA	56	288770	6265160	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	GML Heritage Pty Ltd - Surry Hills,Ms.Sophie Jennings					Permits	5411	
45-5-0333	Penrith Lakes 23	AGD	56	285375	6269289	Open site	Valid	Artefact : -	Open Camp Site	260,526,1018
	Contact	Recorders	Jim Kohen					Permits	872	
45-5-0070	Lapstone Creek (Emu Plains)	AGD	56	282116	6262822	Open site	Valid	Artefact : -	Open Camp Site	527
	Contact	Recorders	Jim Kohen					Permits		
45-5-3598	ADI: FF/30 (Springwood)	GDA	56	288835	6265442	Open site	Valid	Artefact : 1		102155,102450
	Contact	Recorders	Jo McDonald Cultural Heritage Management see GML					Permits		
45-5-3599	ADI: FF/31 (Springwood)	GDA	56	288950	6265366	Open site	Valid	Artefact : 19		102450
	Contact	Recorders	Jo McDonald Cultural Heritage Management see GML					Permits		
45-5-5019	Union Street Penrith	GDA	56	285850	6262985	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		103872
	Contact	Recorders	Comber Consultants Pty Limited,Comber Consultants Pty Limited,Ms.Alandra Tasir					Permits	4477	
45-5-5191	Museum Drive Penrith AFT 1	GDA	56	285973	6263538	Open site	Valid	Artefact : -		
	Contact	Recorders	Kelleher Nightingale Consulting Pty Ltd,Mr.Benjamin Anderson					Permits		
45-5-4568	Escarpment 01 AS	GDA	56	285284	6269516	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	GML Heritage Pty Ltd - Surry Hills,Doctor.Tim Owen					Permits		
45-5-0591	Penrith Lakes 30	AGD	56	284230	6266400	Open site	Valid	Artefact : -	Open Camp Site	1064,102450
	Contact	Recorders	Jim Kohen					Permits	28	
45-5-0522	Penrith P/1 (duplicate of 45-5-0290)	AGD	56	285520	6263940	Open site	Valid	Artefact : -	Open Camp Site	1018,102450,103155,103360
	Contact	Recorders	Jim Kohen					Permits	5327	
45-5-3797	Cranebrook Escarpment 2 (CE2)	GDA	56	285400	6269650	Open site	Valid	Artefact : 100		101748
	Contact	Recorders	Comber Consultants Pty Limited					Permits		

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-5-5238	Andrews Road PAD 1	GDA	56	286905	6264763	Open site	Destroyed	Artefact : -		104180
	Contact	Recorders						Permits	4518	
45-5-2414	L1 (Penrith Lakeside Village)	GDA	56	286799	6266617	Open site	Valid	Artefact : -	Open Camp Site	102450,104180
	Contact	Recorders						Permits	939,1694,1803	
45-5-0317	Penrith Lakes 3	AGD	56	284461	6269271	Open site	Valid	Artefact : -	Open Camp Site	256,260,526,1018,105447
	Contact	Recorders						Permits		
45-5-0318	Penrith Lakes 4	GDA	56	283031	6267186	Open site	Valid	Artefact : -	Open Camp Site	256,260,526,1018,105447
	Contact	Recorders						Permits	3891	
45-5-3816	Emu Plains Rail Stabling Yards	GDA	56	284015	6263583	Open site	Destroyed	Artefact : 1		
	Contact	Recorders						Permits	3485,4823	
45-5-3817	Emu Plains Rail Stabling Yards1	GDA	56	284138	6263601	Open site	Destroyed	Artefact : 1		
	Contact	Recorders						Permits	3282,4823	
45-5-4302	TNR-3	GDA	56	288545	6265150	Open site	Valid	Artefact : 1		
	Contact	Recorders						Permits	3619	
45-5-5730	Nepean River Trail 05	GDA	56	282938	6269016	Open site	Valid	Artefact : -		
	Contact	Recorders						Permits		
45-5-5732	Nepean River Trail 07	GDA	56	282948	6269276	Open site	Valid	Artefact : -		
	Contact	Recorders						Permits		
45-5-0052	Emu Plains F4-1	AGD	56	281800	6262200	Open site	Valid	Artefact : -	Open Camp Site	100450
	Contact	Recorders						Permits		
45-5-0592	Penrith Lakes 33	AGD	56	286200	6268200	Open site	Valid	Artefact : -	Open Camp Site	1064
	Contact	Recorders						Permits	847,872,2174	
45-5-0593	Penrith Lakes 32	AGD	56	286250	6267700	Open site	Valid	Artefact : -	Open Camp Site	11,526,1063
	Contact	Recorders						Permits	1067	
45-5-1026	ADI-25;	AGD	56	288880	6264930	Open site	Valid	Artefact : -	Isolated Find	102155,102450,102573
	Contact	Recorders						Permits	5411	
45-5-0323	Penrith Lakes 10	AGD	56	284461	6269271	Open site	Valid	Artefact : -	Open Camp Site	260,526,1018,105447
	Contact	Recorders						Permits	872	
45-5-0324	Penrith Lakes 11	AGD	56	285357	6270203	Open site	Valid	Artefact : -	Open Camp Site	260,526,1018,105447
	Contact	Recorders						Permits		
45-5-0325	Penrith Lakes 12	AGD	56	283546	6269253	Open site	Valid	Artefact : -	Open Camp Site	260,526,1018,105447
	Contact	Recorders						Permits		

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-5-0328	Penrith Lakes 17	AGD	56	283617	6265596	Open site	Valid	Artefact : -	Open Camp Site	260,526,1018
	<u>Contact</u>	<u>Recorders</u>	Jim Kohen					<u>Permits</u>	28	
45-5-0330	Penrith Lakes 19	AGD	56	284496	6267442	Open site	Valid	Artefact : -	Open Camp Site	260,526,1018,102450
	<u>Contact</u>	<u>Recorders</u>	Jim Kohen					<u>Permits</u>	28	
45-5-0334	Penrith Lakes 24	AGD	56	287257	6266581	Open site	Valid	Artefact : -	Open Camp Site	260,526,1018,102450
	<u>Contact</u>	<u>Recorders</u>	Jim Kohen					<u>Permits</u>		
45-5-0336	Penrith Lakes 27	AGD	56	288189	6265685	Open site	Valid	Artefact : -	Open Camp Site	260,526,1018,102450
	<u>Contact</u>	<u>Recorders</u>	Jim Kohen					<u>Permits</u>		
45-5-1024	ADI-23	AGD	56	288700	6265510	Open site	Valid	Artefact : -	Isolated Find	102155,102450,102573,105476
	<u>Contact</u>	<u>Recorders</u>	Doctor.Jo McDonald,Ms.Jenni Bate					<u>Permits</u>		
45-5-5020	Tench Reserve AFT 1	GDA	56	283626	6261646	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Kelleher Nightingale Consulting Pty Ltd, Miss.Kristen Taylor					<u>Permits</u>		
45-5-5685	170 Russell Street	GDA	56	282934	6263991	Open site	Valid	Artefact : -		104390
	<u>Contact</u>	<u>Recorders</u>	Comber Consultants Pty Limited, Ms.Agata Calabrese					<u>Permits</u>		
45-5-5731	Nepean River Trail 06	GDA	56	282951	6269734	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Mr.Michael Jackson,Jackson Ward Archaeology Pty Ltd					<u>Permits</u>		
45-5-0540	RP4 Peach Tree Creek	AGD	56	284960	6262120	Open site	Valid	Artefact : -	Open Camp Site	103155,103360
	<u>Contact</u>	<u>Recorders</u>	Elizabeth Rich					<u>Permits</u>		
45-5-0287	Emu Plains (Jamisons Creek)	AGD	56	283052	6261743	Open site	Partially Destroyed	Artefact : -	Open Camp Site	260,1018,103155,103360
	<u>Contact</u>	<u>Recorders</u>	Jim Kohen					<u>Permits</u>	1423,1842	
45-5-0290	The Island (duplicate of 45-5-0522)	AGD	56	285661	6263989	Open site	Valid	Artefact : -	Open Camp Site	260,526,1018,102450,103155,103360
	<u>Contact</u>	<u>Recorders</u>	Jim Kohen					<u>Permits</u>	5327	
45-5-3796	Cranebrook Escarpment 1 (CE1)	GDA	56	285600	6269450	Open site	Valid	Artefact : 10		101748
	<u>Contact</u>	<u>Recorders</u>	Comber Consultants Pty Limited					<u>Permits</u>		
45-5-5389	SMDS Basin I AFT 16	GDA	56	288674	6265173	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	GML Heritage Pty Ltd - Surry Hills, Ms.Sophie Jennings					<u>Permits</u>	5411	
45-5-0327	Penrith Lakes 16	AGD	56	285428	6266546	Open site	Valid	Artefact : -	Open Camp Site	260,526,1018,102450,105447
	<u>Contact</u>	<u>Recorders</u>	Jim Kohen					<u>Permits</u>		
45-5-0366	Emu Plains Emu Plains 4	AGD	56	285107	6264253	Open site	Valid	Artefact : -	Open Camp Site	1018,102450,103155,103360

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	<u>Contact</u>	<u>Recorders</u>	Jim Kohen					<u>Permits</u>		
45-5-3904	EPRSY 3(PAD)	GDA	56	284000	6263615	Open site	Destroyed	Artefact : -, Potential Archaeological Deposit (PAD) : -		103762
	<u>Contact</u>	<u>Recorders</u>	Doctor.Alan Williams,Doctor.Alan Williams,Ms.Georgia Burnett					<u>Permits</u>	3485,4823	
45-5-5021	Tench Reserve IF 1	GDA	56	283452	6261519	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Kelleher Nightingale Consulting Pty Ltd,Miss.Kristen Taylor					<u>Permits</u>	4528	
45-5-1025	ADI-24;	AGD	56	288540	6264980	Open site	Valid	Artefact : -	Isolated Find	102155,102450
	<u>Contact</u>	<u>Recorders</u>	Doctor.Jo McDonald					<u>Permits</u>	5411	
45-5-5484	Emu Plains Railway AFT	GDA	56	284068	6263560	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Mr.Matthew Barber,NGH Heritage - Fyshwick					<u>Permits</u>		
45-5-5728	Nepean River Trail 03	GDA	56	282727	6267103	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Mr.Michael Jackson,Jackson Ward Archaeology Pty Ltd					<u>Permits</u>		
45-5-5908	SummitCare Penrith PAD	GDA	56	285290	6261928	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	<u>Contact</u>	<u>Recorders</u>	GML Heritage Pty Ltd - Surry Hills,Mr.Jacob (GML) Kiefel					<u>Permits</u>		
45-5-5390	SMDS Basin I AFT 15	GDA	56	288860	6265155	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	GML Heritage Pty Ltd - Surry Hills,Ms.Sophie Jennings					<u>Permits</u>		
45-5-0319	Penrith Lakes 5	GDA	56	283157	6268242	Open site	Valid	Artefact : -	Open Camp Site	260,526,1018,105447
	<u>Contact</u>	<u>Recorders</u>	Jim Kohen					<u>Permits</u>	3891	
45-5-0326	Penrith Lakes 15	AGD	56	285428	6266546	Open site	Valid	Artefact : -	Open Camp Site	260,526,1018,102450,105447
	<u>Contact</u>	<u>Recorders</u>	Jim Kohen					<u>Permits</u>	28	
45-5-0331	Penrith Lakes 20	AGD	56	286325	6267478	Open site	Valid	Artefact : -	Open Camp Site	260,526,1018,102450
	<u>Contact</u>	<u>Recorders</u>	Jim Kohen					<u>Permits</u>	28,1067	
45-5-5740	EPRSY 1	GDA	56	284199	6263600	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Corrine Quinlan					<u>Permits</u>		
45-5-2491	Coreeen Ave 1	GDA	56	287199	6263429	Open site	Valid	Artefact : -	Open Camp Site	98259,102450,103155,103360
	<u>Contact</u>	<u>Recorders</u>	Helen Brayshaw,Tony Kondek,Mr.Matthew Barber,NGH Heritage - Fyshwick					<u>Permits</u>	1367	
45-5-0281	Cranebrook Creek, CC/1	AGD	56	285150	6266723	Open site	Valid	Artefact : -, Aboriginal Ceremony and Dreaming : -		260,526,1018,102450
	<u>Contact</u>	<u>Recorders</u>	Jim Kohen					<u>Permits</u>	28	

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
45-5-3331	ADI/FF-30	AGD	56	288835	6265442	Open site	Valid	Artefact : 1		99635,102155,102450,102573,103618
	Contact T Russell	Recorders Jo McDonald Cultural Heritage Management see GML						Permits	3057	
45-5-3318	Western Sydney 6	GDA	56	287710	6264801	Open site	Valid	Artefact : 5		100554,102450
	Contact Searle	Recorders Navin Officer Heritage Consultants Pty Ltd						Permits		
45-5-0314	Penrith Lakes 28	AGD	56	286325	6267478	Open site	Valid	Artefact : -	Open Camp Site	256,260,526,1018,102450
	Contact	Recorders Jim Kohen						Permits		
45-5-0340	Penrith Regional Art Gallery	AGD	56	284048	6262220	Open site	Valid	Art (Pigment or Engraved) : -	Rock Engraving	260,1018,103155,103360
	Contact	Recorders Charles.D Power						Permits		
45-1-0219	Penrith Lakes 39	AGD	56	284930	6267150	Open site	Valid	Artefact : -	Open Camp Site	2446,102450
	Contact	Recorders Jim Kohen						Permits		
45-5-3941	PL53	GDA	56	283676	6270056	Open site	Partially Destroyed	Artefact : -, Potential Archaeological Deposit (PAD) : -		105454,105729
	Contact	Recorders Comber Consultants Pty Limited,Mr.Shaun Hooper,Heritage Now - Belmont,Heritag						Permits	5297	
45-5-5470	Andrews Road PAD 1 Reburial	GDA	56	287428	6264919	Open site	Valid	Artefact : -		
	Contact	Recorders Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats						Permits		
45-5-0051	Emu Plains	AGD	56	281883	6265379	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
	Contact	Recorders Fred McCarthy						Permits		
45-5-0589	Penrith Lakes 29	AGD	56	284300	6266280	Open site	Valid	Artefact : -	Open Camp Site	1064
	Contact	Recorders Jim Kohen						Permits	28	
45-5-0530	Upper Castlereagh, UC/1	GDA	56	283035	6267149	Open site	Valid	Artefact : -	Open Camp Site	1018
	Contact	Recorders Jim Kohen						Permits	3891	
45-5-2850	Vincent Road 1	AGD	56	287550	6268250	Open site	Valid	Artefact : -		
	Contact	Recorders Doctor.Susan (left ahms) McIntyre-Tamwoy						Permits	1599	
45-5-0329	Penrith Lakes 18	AGD	56	283617	6265596	Open site	Valid	Artefact : -	Open Camp Site	260,526,1018
	Contact	Recorders Jim Kohen						Permits	28	
45-5-0332	Penrith Lakes 21	AGD	56	284514	6266528	Open site	Valid	Artefact : -	Open Camp Site	260,526,1018,102450
	Contact	Recorders Jim Kohen						Permits	28	
45-5-0288	Emu Plains	AGD	56	282030	6262546	Open site	Valid	Artefact : -	Open Camp Site	260,1018
	Contact	Recorders Jim Kohen						Permits		
45-5-5311	River Road AS1	GDA	56	284756	6263365	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	<u>Contact</u>	<u>Recorders</u>	Biosis Pty Ltd - Wollongong,Eco Logical Australia Pty Ltd - Sydney - Individual user							
45-5-5902	Penrith Stadium PAD	GDA	56	285738	6262322	Open site	Valid	Potential Archaeological Deposit (PAD) : -	4634,4731	
	<u>Contact</u>	<u>Recorders</u>	Curio Projects Pty Ltd,Miss.Rebecca Agius							
45-5-5729	Nepean River Trail 04	GDA	56	282884	6268421	Open site	Valid	Artefact : -	5314	
	<u>Contact</u>	<u>Recorders</u>	Mr.Michael Jackson,Jackson Ward Archaeology Pty Ltd							
45-5-0539	RP3 Peach Tree Creek	AGD	56	284920	6262050	Open site	Valid	Artefact : -	Open Camp Site	1018,103155,1 03360
	<u>Contact</u>	<u>Recorders</u>	Elizabeth Rich							
45-5-0282	Upper Castlereagh	GDA	56	282979	6267050	Open site	Valid	Artefact : -	Open Camp Site	260,1018
	<u>Contact</u>	<u>Recorders</u>	Jim Kohen							
45-5-0590	Penrith Lakes 31	AGD	56	284610	6266550	Open site	Valid	Artefact : -	Open Camp Site	1064,102450
	<u>Contact</u>	<u>Recorders</u>	Jim Kohen							
45-5-0495	Jamisons Creek JC/2 Penrith	AGD	56	282890	6261700	Open site	Valid	Artefact : -	Open Camp Site	1018,103155,1 03360
	<u>Contact</u>	<u>Recorders</u>	Jim Kohen							
45-5-3317	Western Sydney 5	GDA	56	287679	6264900	Open site	Valid	Artefact : 1		100554,10245 0
	<u>Contact</u> Searle	<u>Recorders</u>	Navin Officer Heritage Consultants Pty Ltd							
45-5-3319	Western Sydney 7 and PAD	GDA	56	287450	6264725	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : -		100554,10245 0
	<u>Contact</u> Searle	<u>Recorders</u>	Navin Officer Heritage Consultants Pty Ltd,Biosis Pty Ltd - Wollongong,Mrs.Samant							
45-5-4361	Peachtree Creek PAD	GDA	56	285590	6263560	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		103360
	<u>Contact</u>	<u>Recorders</u>	Mr.Oliver Brown							
45-5-0316	Penrith Lakes 2	AGD	56	284443	6270186	Open site	Valid	Artefact : -	Open Camp Site	256,260,526,10 18,103395,105 447
	<u>Contact</u>	<u>Recorders</u>	Jim Kohen							
45-5-0335	Penrith Lakes 26	AGD	56	287274	6265667	Open site	Valid	Artefact : -	Open Camp Site	260,526,1018,1 02450
	<u>Contact</u>	<u>Recorders</u>	Jim Kohen							
45-5-2416	L-1;Penrith Lakeside Village;	GDA	56	286799	6266617	Open site	Valid	Artefact : -	Open Camp Site	102450
	<u>Contact</u>	<u>Recorders</u>	Mary Dallas Consulting Archaeologists (MDCA),Biosis Pty Ltd - Wollongong,Mrs.Sai							
45-5-5727	Nepean River Trail 02	GDA	56	282748	6270469	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Mr.Michael Jackson,Jackson Ward Archaeology Pty Ltd							



AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 537
Client Service ID : 1022221

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	<u>Easting</u>	<u>Northing</u>	<u>Context</u>	<u>Site Status **</u>	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
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**** Site Status**
Valid - The site has been recorded and accepted onto the system as valid
Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.
Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground
Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 10/07/2025 for Kate Morris for the following area at Datum :GDA, Zone : 56, Eastings : 281848.0 - 289036.0, Northings : 6261482.0 - 6270558.0
with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 87

This information is not guaranteed to be free from error omission. Heritage NSW and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Appendix E Proposal Plans



Parking Schedule	
LOT 12_G HOTEL	50
LOT 12_G SHARED	47
LOT 12_L1 HOTEL	64
LOT 14_G	168
LOT 16_G	162
Grand total	491

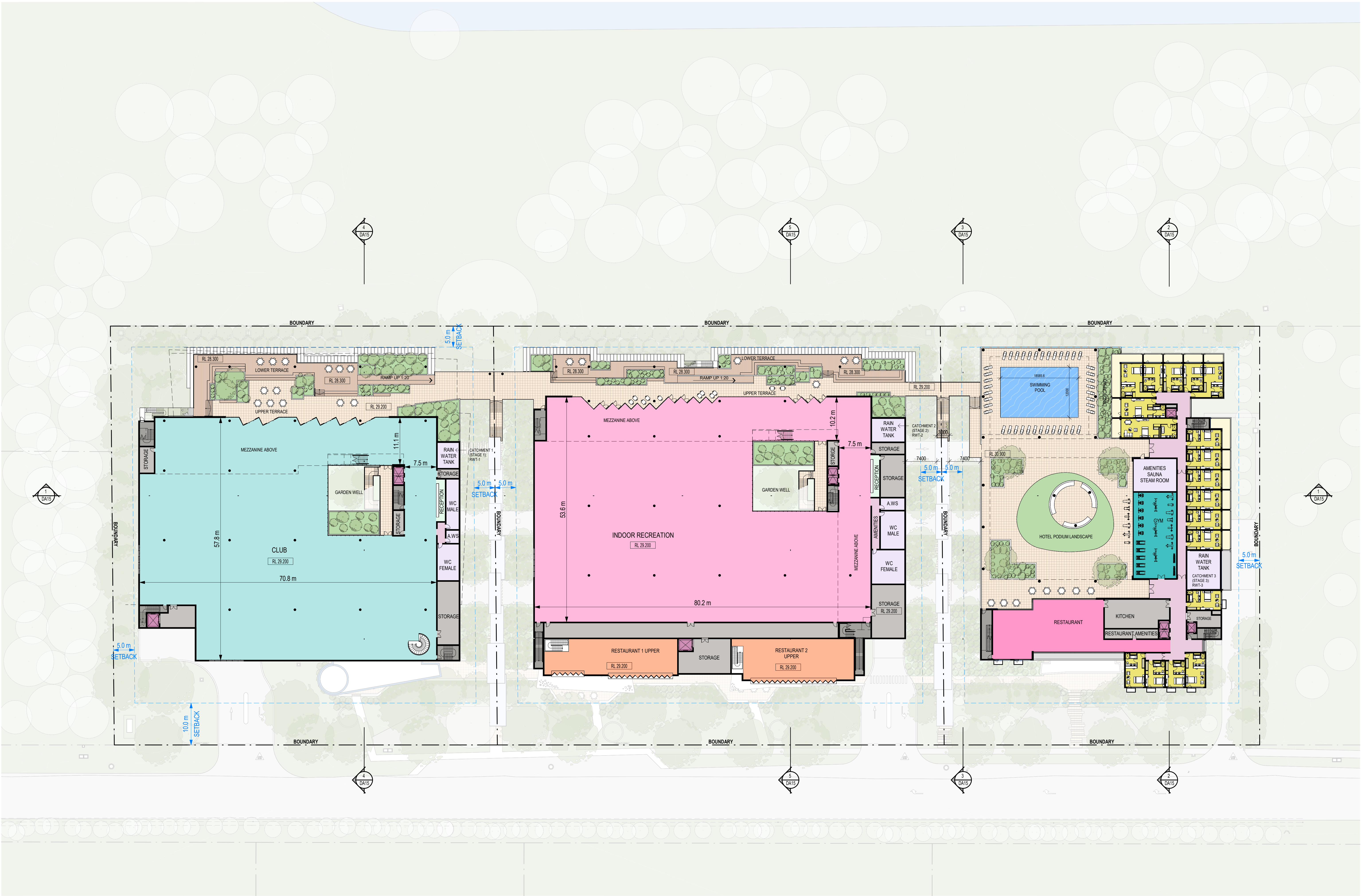
<table><tr><th>ISSUE</th><th>DATE</th><th>AMENDMENT</th></tr><tr><td>A</td><td>30-06-2025</td><td>DA SUBMISSION</td></tr></table>	ISSUE	DATE	AMENDMENT	A	30-06-2025	DA SUBMISSION	GENERAL LEGEND: <table><tr><td>RL 12.340</td><td>Proposed Levels</td></tr><tr><td>RL 12.340</td><td>Existing Surveyed Levels</td></tr></table> FHB Fire Hydrant Booster GD Grated Drain RL Relative Level RWT Rainwater Tank TOH Top of Hob TOW Top of Wall Existing Planting Transplanted Planting Proposed Planting	RL 12.340	Proposed Levels	RL 12.340	Existing Surveyed Levels	PROJECT CASTLEREAGH TOURISM DEVELOPMENT ADDRESS 39-65 Old Castlereagh Rd, Castlereagh NSW 2749	PROJECT No. 17011 CLIENT	MORSON GROUP NOMINATED ARCHITECT - P. MORSON REGISTRATION NUMBER 8100 ACN 403 944 556 ABN 54 403 944 556 Email: info@morsongroup.com.au Phone: (02) 9380 4946 MORSON PTY LTD, Trade Point NSW 1315	SHEET SIZE: A1 SHEET NAME: GROUND LEVEL PLAN SCALE: 1:400	DRAWING No. DA07 ISSUE No. A
ISSUE	DATE	AMENDMENT														
A	30-06-2025	DA SUBMISSION														
RL 12.340	Proposed Levels															
RL 12.340	Existing Surveyed Levels															

Parking Schedule

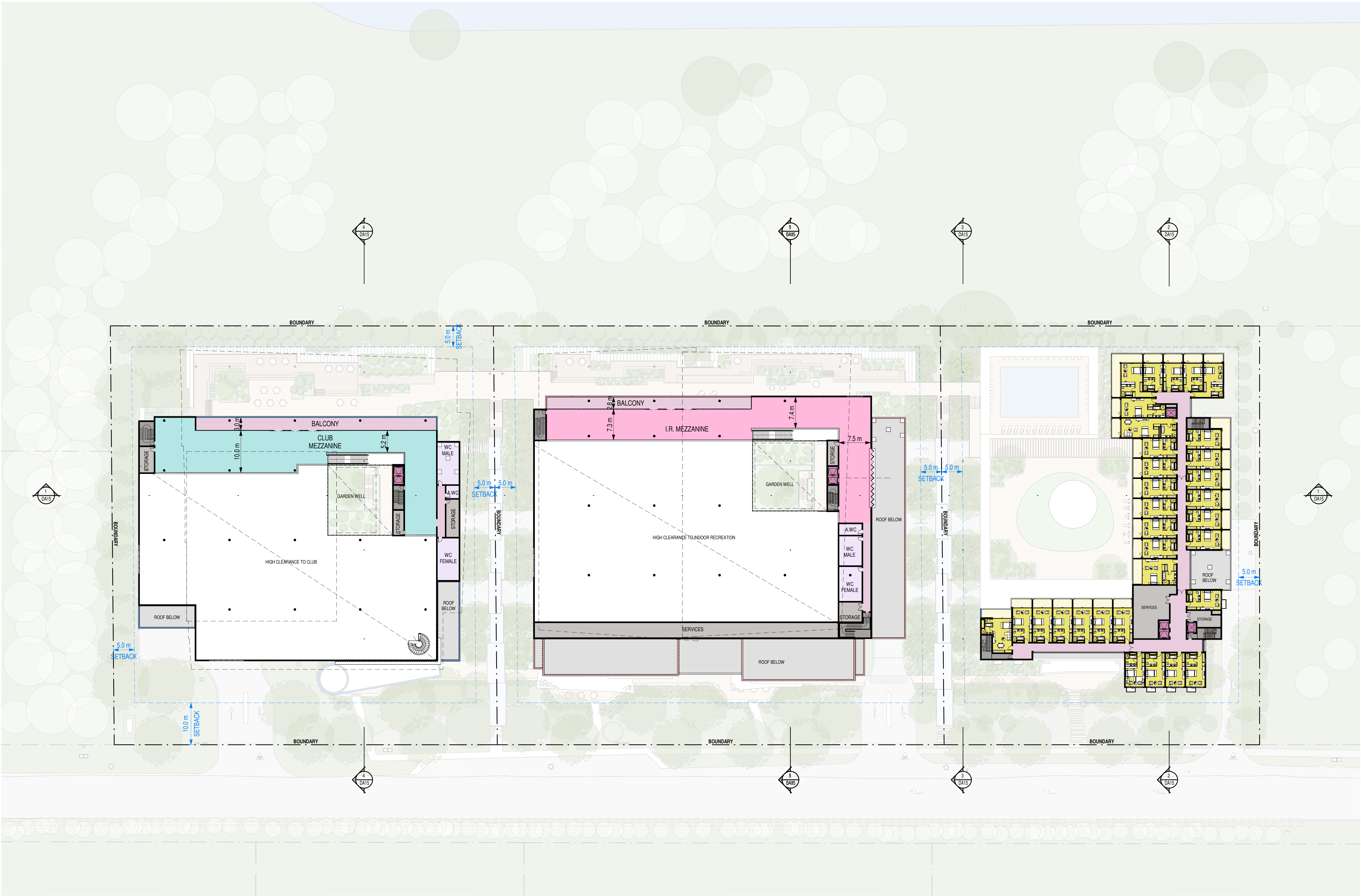
LOT 12, G HOTEL	50
LOT 12, G SHARED	47
LOT 12, L1 HOTEL	64
LOT 14, G	168
LOT 16, G	162
Grand total	491

The site plan illustrates a large-scale development with a central parking area and several key buildings. The buildings include a Club Ground Level, two Restaurants with Kitchens, a Hotel Level 1 Parking area, a Pool to Podium Above, a Plant room, Laundry, and Storage. The plan also shows a Garden Well and various setbacks (5.0m, 10.0m) and boundaries. The site is surrounded by a boundary line, and there are several trees and landscaping elements. The plan is oriented with North at the top, indicated by a compass rose. The site is divided into several sections by a central vertical corridor and a horizontal corridor. The central vertical corridor contains a series of buildings, including the Club Ground Level, the two Restaurants with Kitchens, and the Hotel Level 1 Parking area. The horizontal corridor contains the Pool to Podium Above, the Plant room, Laundry, and Storage. The site is surrounded by a boundary line, and there are several trees and landscaping elements. The plan is oriented with North at the top, indicated by a compass rose. The site is divided into several sections by a central vertical corridor and a horizontal corridor. The central vertical corridor contains a series of buildings, including the Club Ground Level, the two Restaurants with Kitchens, and the Hotel Level 1 Parking area. The horizontal corridor contains the Pool to Podium Above, the Plant room, Laundry, and Storage. The site is surrounded by a boundary line, and there are several trees and landscaping elements. The plan is oriented with North at the top, indicated by a compass rose.

7/1/2025 1:26:07 PM S:\MG Dropbox\MGPP\PROJECTS\CASTLEREAGH\17011-OCR TD\Architecture\CAD\17011-Castlereagh_DA-MASTERFILE_20250630_pm.rvt



ISSUE	DATE	AMENDMENT	GENERAL LEGEND:	PROJECT	PROJECT No.	MORSON GROUP	NOMINATED ARCHITECT - P. MORSON	SHEET SIZE: A1	SHEET NAME:	DRAWING No.
A	30-06-2025	DA SUBMISSION	RL 12.340 Proposed Levels RL 12.340 Existing Surveyed Levels FHB Fire Hydrant Booster GD Grated Drain RL Relative Level RWT Rainwater Tank TOH Top of Hob TOW Top of Wall Existing Planting Transplanted Planting Proposed Planting	CASTLEREAGH TOURISM DEVELOPMENT	17011		REGISTRATION NUMBER 8100 ACN 453 144 556 ABN 54 453 144 556 Email: info@morsongroup.com.au Phone: (02) 9380 4944 MORSON PTY LTD PO Box 1315	1: 400	CLUB & INDOOR RECREATION ENTRY LEVEL AND HOTEL LEVEL 2 (PODIUM)	DA09
				ADDRESS 39-65 Old Castlereagh Rd, Castlereagh NSW 2749	CLIENT					ISSUE No. A



ISSUE	DATE	AMENDMENT	GENERAL LEGEND:	PROJECT	PROJECT No.	MORSON GROUP	NOMINATED ARCHITECT - P. MORSON	SHEET	SHEET	DRAWING No.
A	30-06-2025	DA SUBMISSION	RL 12.340 Proposed Levels RL 12.340 Existing Surveyed Levels	CASTLEREAGH TOURISM DEVELOPMENT ADDRESS 39-65 Old Castlereagh Rd, Castlereagh NSW 2749	17011		REGISTRATION NUMBER 8100 ACN 603 944 556 ABN 54 603 944 556 Email: info@morsongroup.com.au Phone: (02) 9380 4948 MORSON PT Box 170, PO Box NEW 1315	SIZE: A1	NAME: CLUB & INDOOR RECREATION MEZZANINE LEVELS & HOTEL 3	DA10
			FHB Fire Hydrant Booster GD Grated Drain RL Relative Level RWT Rainwater Tank TOH Top of Hob TOW Top of Wall		CLIENT			SCALE: 1:400		ISSUE No. A

Appendix F AHIMS Site Cards

AHIMS site ID:

Date recorded:

23-07-2025

Site Location Information

Site name:

Penrith Lakes 2025 - AS1

Easting:

285811

Northing:

6265488

Coordinates must be in GDA94 (MGA)

Horizontal Accuracy (m):

10

Zone:

56

Phone GPS

Recorder Information

(The person responsible for the completion and submission of this form)

Title

Surname

First name

Ms.

Morris

Kate

Organisation:

Virtus Heritage

Address:

Suite 17/11-13 Pearl St, Kingscliff NSW

Phone:

0266764354

E-mail:

k.morris@virtusheritage.com.au

Site Context Information

Land Form
Pattern:

Floodplain

Land Use:

Residential

Land Form
Unit:

Terrace

Vegetation:

Cleared

Distance to
Water (m):

650

Primary
Report:

Virtus Heritage ACHA 2025

How to get
to the site:

Artefacts identified along the boundary of 65 Old Castlereagh Road, Castlereagh, along the northern side of the road on exposures associated with the southern fence line, and in the north-west corner

Other site
information:

The artefacts were identified in exposures associated with fencing and any extent subsurface artefacts may have moved within the top 0.3-0.6m of soil as a result of past land use and disturbance. Residential buildings and other structures are present near the scatter and PAD. Site recorded by Dr Mary-Jean Sutton and Anya Graubard on 24 Feb 2025, entered into AHIMS by Kate Morris.

Site location map



Site plan



Site contents information

open/closed site:

Site condition:

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees			
					Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
1.	Artefact	12	150	100				

Feature condition:

Description:

Artefact scatter comprising 12 artefacts at 8 loci: Two orange mudstone flakes (4x2x0.5 cm and 2x1.5x0.5 cm) Two tan quartzite flakes (6x2.5x1.5 cm and 2.5x2x1.5 cm) One pink quartzite broken flake One red silcrete broken flake Three grey silcrete broken flakes One greyish black basalt hand axe (7x5x2.5 cm) Two greyish black basalt flakes (4.5x3x1 cm and 2.5x2x1 cm)

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees			
					Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
2.	Potential Archaeological Deposit		280	100				

Feature condition:

Description:

Entire lots of 39-65 Old Castlereagh Road, Castlereagh, NSW (Lots 12, 14 and 16 DP793163). Based on the environmental and archaeological context, stone artefacts are likely to occur in a consistently low-density distribution to depths of 0.6m. Integrity is considered low at these depths but may have moderate potential below the disturbance zone from previous agricultural activity.

Features:

		Number of features	Length of feature(s) extent (m)	Width of feature (s) extent (m)	Scarred Trees			
					Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species
3.								

Feature condition:

Description:

Features:

4.

Feature condition:

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Features:

5.

Feature condition:

Description:

Scarred Trees

Scar Depth (cm)	Regrowth (cm)	Scar shape	Tree Species

Site photographs



Description: Artefact detail, ventral surface of mudstone flake



Description: Artefact detail, basalt hand axe



Description:



Description:

Site restrictions

Do you want to
Restrict this site?:

Restriction type:

Why is this site restricted?:

Further information contact

Title	Surname	First name
Ms.	Morris	Kate
Organisation: Virtus Heritage		
Address: Suite 17/11-13 Pearl St, Kingscliff 2487 NSW		
Phone: 0266764354	E-mail: k.morris@virtusheritage.com.au	

Site interpretation and community statement