Melrose Park High School

Archaeological Report

Final Report

Prepared for Department of Education

31 January 2025

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Document information

Report to:	Department of Education
Prepared by:	Bronte Baonza
Biosis project no.:	40105
File name:	40105.Melrose.Park.HS.AR.FIN01.20250131
Citation:	Biosis 2025. Melrose Park High School. Archaeological Report. Prepared for Department of Education. Author: Baonza. B, Biosis Pty Ltd, Sydney, NSW. Project no. 40105
LGA	City of Parramatta

Document control

Version	Internal reviewer	Date issued
Draft version 01	Anthea Vella	12/11/2024
Draft version 02	Anthea Vella	20/11/2024
Draft version 03	Samantha Keats	9/12/2024
Final version 01	Anthea Vella	31/01/2025

Acknowledgements

Biosis acknowledges the contribution of the following people and organisations in undertaking this study:

- Colliers International: Joshua DeAngelis and Nathan Martin
- Metropolitan Local Aboriginal Land Council: Jordan Mahi
- Registered Aboriginal Parties

Biosis staff involved in this project were:

- Ashley Bridge (assistance in the field)
- Azka Abid (mapping)

Biosis acknowledges the Aboriginal and Torres Strait Islander peoples as Traditional Custodians of the land on which we live and work.

We pay our respects to the Traditional Custodians and Elders past and present and honour their connection to Country and ongoing contribution to society.

Summary

Biosis Pty Ltd (Biosis) was commissioned by Department of Education (DoE) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) for the proposed Melrose Park High School at 37 Hope Street, Melrose Park, NSW (Lot 201 DP1265603) (the study area). This Archaeological Report (AR) documents the findings of the archaeological investigations conducted as part of the ACHA. As required under Section 2.3 of *The Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010b) (the Code), the AR provides evidence about the material traces of Aboriginal land use to support the conclusions and management recommendations in the ACHA.

The study area is located approximately 8 kilometres east of Parramatta and approximately 14.3 kilometres northwest of the Sydney Central Business District (CBD). The project is being assessed as a Review of Environmental Factors under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Biosis completed a Preliminary Indigenous Heritage Assessment and Impact Report (PIHAI) for the study area in June 2024. Further assessment was required in the form of an ACHA to undertake Aboriginal community consultation.

There are no Aboriginal cultural heritage sites registered with the Aboriginal Heritage Information Management System (AHIMS) register, (Client Service ID: 905888, search date 1 July 2024).

A survey for the PIHAI was conducted on 29 March 2024, with an updated survey for the ACHA conducted on 6 November 2024. The overall effectiveness of the survey for examining the ground for Aboriginal sites was deemed low. This was attributed to the high levels of disturbances combined with low levels of genuine exposures. Jordan Mahi from the Metropolitan Local Aboriginal Land Council (LALC) noted that there was no cultural importance in the study area.

No previously unrecorded Aboriginal cultural heritage sites were identified during the field investigation.

No areas of archaeological potential were identified.

Subject to implementing the recommendations set out in Section 7 and mitigation measures in Section 6.3 of this report, the conclusion is that the proposed activity is not likely to significantly affect the environment in relation to Aboriginal heritage.

Strategies have been developed based on the archaeological significance of cultural heritage relevant to the study area. The strategies also take into consideration:

- Predicted impacts to Aboriginal cultural heritage.
- The planning approvals framework.
- Current best conservation practice, widely considered to include:
  - The ethos of the Australia — International Council on Monuments and Sites (ICOMOS) Burra Charter.
  - the Code.

The recommendations that resulted from the consultation process are provided below.

Management recommendations

Prior to any development impacts occurring within the study area, the following is recommended.

Recommendation 1: No further assessment required; works may proceed with caution

No Aboriginal sites, objects or areas of archaeological potential were identified as part of this assessment. Therefore, the works may proceed with caution. This recommendation is conditional upon Recommendation 2 to 4.

Recommendation 2: Consultation with the registered Aboriginal stakeholders

As per the consultation requirements, a copy of the final ACHA should be provided to Registered Aboriginal Parties (RAPs) for their records. Should any sites be identified during the remainder of this assessment or during the proposed works, the proponent should continue to inform these groups about the management of Aboriginal cultural heritage sites within the study area throughout the life of the project.

Recommendation 3: Discovery of unanticipated Aboriginal objects

All Aboriginal objects and Places are protected under the *National Parks Wildlife Act 1974* (NPW Act). It is an offence to knowingly disturb an Aboriginal site without a consent permit issued by NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW), Heritage NSW (Heritage NSW). Should any Aboriginal objects be encountered during works associated with this proposal, works must cease in the vicinity and the find should not be moved until assessed by a qualified archaeologist. If the find is determined to be an Aboriginal object, the archaeologist will provide further recommendations. These may include notifying Heritage NSW and Aboriginal stakeholders.

Recommendation 4: Discovery of human remains

Human remains may be found in a variety of landscapes in NSW, including middens and sandy or soft sedimentary soils. If any suspected human remains are discovered during any activity, you must:

1. Immediately cease all work at that location and not further move or disturb the remains.
2. Notify the NSW Police and Heritage NSW' Environmental Line on 131 555 as soon as practicable and provide details of the remains and their location.
3. Not recommence work at that location unless authorised in writing by Heritage NSW.

Contents

Tables

Figures

Photographs

Glossary

ACHA	Aboriginal Cultural Heritage Assessment
ADDA	Aboriginal Due Diligence Assessment
AHCP	Aboriginal History and Connections Program
AHIMS	Aboriginal Heritage Information Management System
AR	Archaeological Report
BP	Before Present
Biosis	Biosis Pty Ltd
COLA	Covered outdoor learning area
Consultation requirements	*Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*
Cth DCCEEW	*Australian Commonwealth Department of Climate Change, Energy, the Environment and Water*
DoE	Department of Education
DP	Deposited Plan
DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water
EP&A Act	*Environmental Planning and Assessment Act 1979*
ESD	Ecologically Sustainable Development
GLS	General Learning Spaces
GPS	Global Positioning System
GSV	Ground Surface Visibility
Heritage NSW	Heritage NSW, NSW Department of Climate Change, Energy, the Environment and Water
ICOMOS	International Council on Monuments and Sites
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
JMCHM	Jo McDonald Cultural Heritage Management
LGA	Local Government Area
NPW Act	*National Parks and Wildlife Act 1974*
NPWS	National Parks and Wildlife Service
NSW	New South Wales
NTSCORP	Native Title Services Corporation
PAD	Potential Archaeological Deposit
PIHAI	Preliminary Indigenous Heritage Assessment and Impact Report
RAP	Registered Aboriginal Party
REF	Review of Environmental Factors
SEPP	State Environmental Planning Policy
SINSW	State Infrastructure NSW

Study area	Defined as the corner of Wharf Road and Hope Street, Melrose Park (Lot 201 DP 1265603)
the Code	*Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW*

1 Introduction and Declaration

1.1 Project background

This AR has been prepared by Biosis on behalf of the Department of Education (DoE) to assess the potential environmental impacts that could arise from the construction and use of the new Melrose Park High School project (the activity) at 37 Hope Street, Melrose Park (Lot 201 DP1265603 (study area) (Figure 1 and Figure 2). This AR documents the findings of the archaeological investigations conducted as part of the ACHA. The AR provides evidence about the material traces of Aboriginal land use to support the conclusions and management recommendations in the ACHA.

The future development of the site will involve ground disturbing works that will have the potential to impact known and unknown Aboriginal heritage constraints that may be present within the study area. The project is to be assessed as an REF under Part 5 of the EP&A Act.

This investigation has been carried out under Part 6 of the NPW Act and in accordance with the Code. The Code has been developed to support the process of investigating and assessing Aboriginal cultural heritage by specifying the minimum standards for archaeological investigation undertaken in NSW under the NPW Act.

1.2 Study area

The site is located at 37 Hope Street, Melrose Park within the Parramatta Local Government Area (LGA). The school covers an approximate area 9,500m^2 and is generally rectangular in shape. The site is currently clear and vacant. The study area is located approximately 8 kilometres east of Paramatta and approximately 14.3 kilometres northwest of the Sydney CBD (Figure 1). It encompasses 1.38 hectares of private land and the adjacent road reserves. The study area is located within Lot 201 DP 1265603, and is bounded by Hope Street to the south, Wharf Road to the east, Lot 11 DP 787611 to the north Lot 6 DP 232929 and Lot F DP 376231 to the west.

The study area is within the:

- City of Parramatta LGA.
- Parish of Field of Mars.
- County of Cumberland.

1.3 Planning approvals

The proposed development will be assessed against Part 5 of the EP&A Act. Other relevant legislation and planning instruments that will inform the assessment include:

- NPW Act.
- *National Parks and Wildlife Amendment Act 2010* (NSW).
- *State Environmental Planning Policy (Transport and Infrastructure) 2021*.
- *State Environmental Planning Policy (Industry and Employment) 2021*.
- *Parramatta Local Environmental Plan 2023*.

- *Parramatta Development Control Plan 2023*.

1.4 Objectives of the investigation

The objectives of the investigation can be summarised as follows:

- To identify and consult with any registered Aboriginal stakeholders and the Metropolitan Local Aboriginal Land Council (LALC).
- To conduct additional background research in order to recognise any identifiable trends in site distribution and location.
- To search statutory and non-statutory registers and planning instruments to identify listed Aboriginal cultural heritage sites within the study area.
- To highlight environmental information considered relevant to past Aboriginal occupation of the locality and associated land use and the identification and integrity/preservation of Aboriginal sites.
- To summarise past Aboriginal occupation in the locality of the study area using ethnohistory and the archaeological record.
- To formulate a model to broadly predict the type and character of Aboriginal sites likely to exist throughout the study area, their location, frequency and integrity.
- To conduct a field survey of the study area to locate unrecorded or previously recorded Aboriginal sites and to further assess the archaeological potential of the study area.
- To assess the significance of any known Aboriginal sites in consultation with the Aboriginal community.
- To identify the impacts of the proposed development on any known or potential Aboriginal sites within the study area.
- To recommend strategies for the management of Aboriginal cultural heritage within the context of the proposed development.

1.5 Investigators and contributors

The roles, previous experience and qualifications of the Biosis project team involved in the preparation of this archaeological report are described below in Table 1.

Table 1 Investigators and contributors

Name and qualifications	Experience summary	Project role
Anthea Vella **B.Arch** **M.AHM**	Anthea is one of the Team Leaders and is a Senior Heritage Consultant. She has over six years of experience in the consulting industry. Anthea has also managed and completed a range of Aboriginal cultural heritage and historical heritage projects across NSW. Anthea's key areas of expertise include project management, background research, Aboriginal community consultation, field survey, test excavations, salvage excavations, management plans, artefact analysis, archival recording, archaeological report writing, and providing heritage advice in the Sydney, Central Coast and Hunter, Illawarra regions, and regional NSW. Anthea is also accomplished in obtaining approvals under the NSW NPW Act.	• Quality Assurance
Molly Crissell **B.Arch**	Molly is a Heritage Consultant with five years of experience. She has experience in Aboriginal community consultation, artefact analysis, background research, field surveys, project management, technical report writing and test and salvage excavations throughout Sydney, Central Coast, Hunter, Illawarra regions and regional NSW. During her time with Biosis, Molly has project managed Aboriginal Due Diligence Assessments, Aboriginal Cultural Heritage Assessments, Heritage Inductions and assisted with Statement of Heritage Impact reports.	• Project Management
Ashley Bridge **BA** **MArchSci (Adv) (Hons)**	Ashley is a Senior Heritage Consultant with six years' experience. She has experience in conducting Aboriginal and historical heritage assessments, surveys and archaeological test excavations for a variety of projects throughout NSW, particularly in the Sydney region. Ashley possesses specialist skills in the identification of human remains, while also having experience in zooarcheological analysis. She also has experience in project management for a number of Aboriginal heritage projects, including text excavations, throughout Sydney and Western Sydney.	• Field investigation
Bronte Baonza **BA**	Bronte is a Heritage Consultant with two years of experience. Bronte has experience in project management, Aboriginal community consultation, background research, report writing, artefact analysis, field surveys, and test and salvage excavations throughout the Sydney, Newcastle, Albury and Illawarra regions.	• Background research • Report writing • Aboriginal consultation

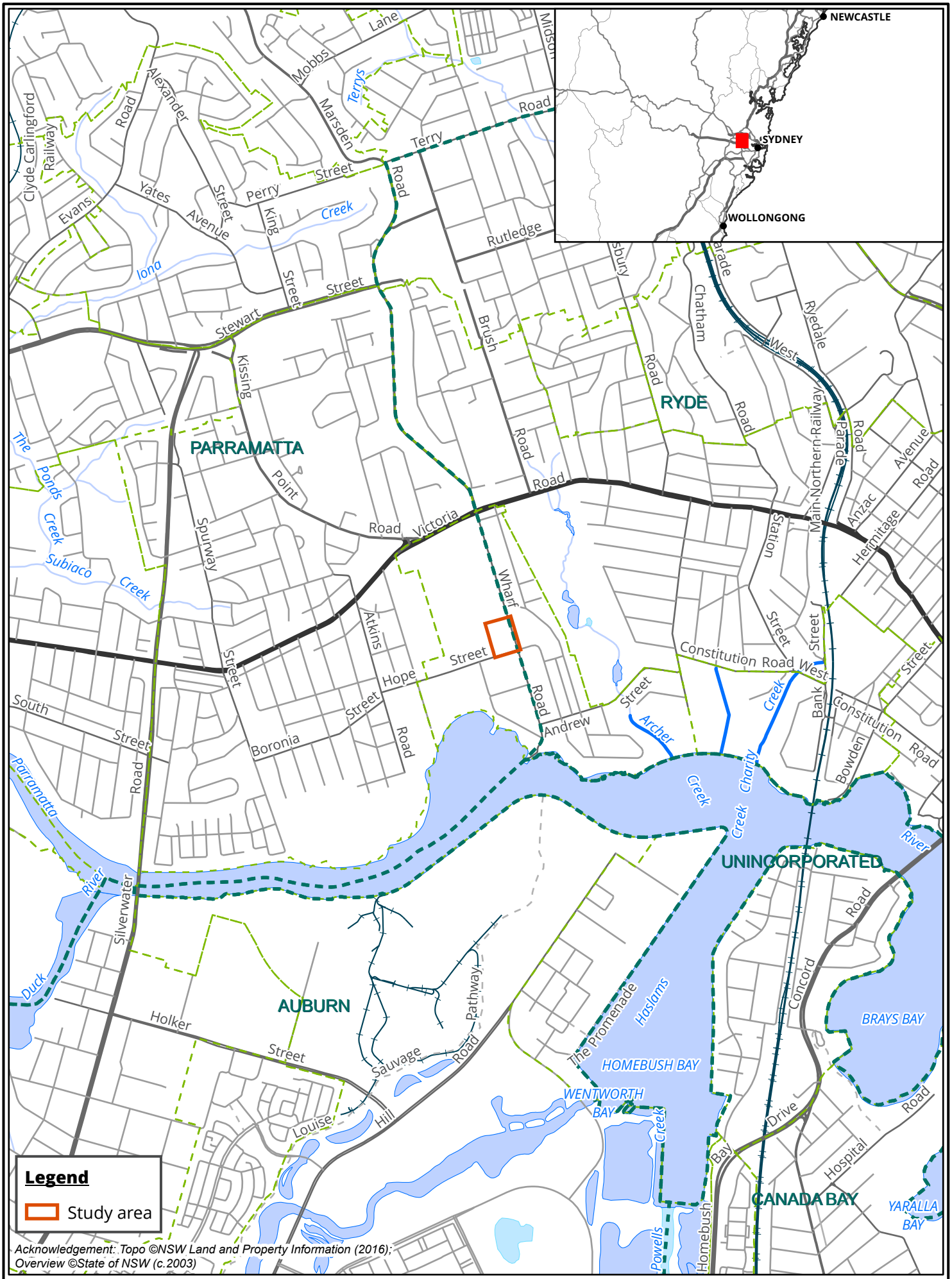

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Figure 1 Location of the study area

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Prepared for: DB, Prepared by: JB, Last edited by: aabid
Location: P:\40100s\40105\Mapping\
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0 200 400 600 800 1,000
Metres
Scale 1:25,000@ A4, GDA2020 MGA Zone 56

N

Legend

- Study area
- Lot

Figure 2 Study area detail

0 10 20 30 40

Metres

Scale: 1:1,000@ A3

Coordinate System: GDA2020 MGA Zone 56

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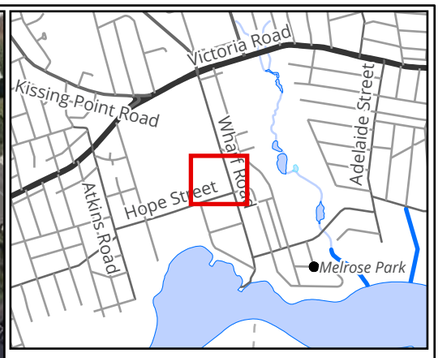
2 Proposed development

The proposed activity involves the construction and use of a new high school in two stages for approximately 1,000 students. Stage 1 of the proposed activity includes the following:

- Site preparation works.
- Construction of Block A – a six-storey (with additional roof/plant level) school building in the south-western portion of the site containing staff rooms and General Learning Spaces (GLS).
- Construction of Block B – a one storey (double height) hall, gymnasium, canteen and covered outdoor learning area (COLA) building in the south-eastern portion of the site.
- Construction of Block C – a single storey plant and storage building at the north-eastern portion of the site.
- Associated landscaping.
- Construction of on-site car parking.
- Provision and augmentation of services infrastructure.
- Associated public domain infrastructure works to support the school, including (but not limited to):
  - Provision of kiss and drop facilities along Wharf Road and widening of the Wharf Road footpath.
  - Raised pedestrian crossings on Wharf Road and Hope Street (Figure 3).

Stage 2 of the proposed activity includes the following:

- Construction of Building D – a five-storey (with additional roof/plant level) school building in the north-western portion of the site containing staff rooms and GLS:
  - Additional open play spaces within the terrace areas of Building D.
  - Minor layout amendments to Block A.



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Study area

Figure 3 Proposed works

0 10 20 30 40 50

Metres

Scale: 1:1,000 @ A3

Coordinate System: GDA2020 MGA Zone 56

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3 Desktop assessment

The desktop assessment involves researching and reviewing existing archaeological studies and reports relevant to the study area and surrounding region. This information is combined to develop an Aboriginal site prediction model for the study area, and to identify known Aboriginal sites and/or places recorded in the study area. This desktop assessment has been prepared in accordance with Requirements 1 to 4 of the Code.

3.1 Landscape context

It is important to consider the local environment of the study area any heritage assessment. The local environmental characteristics can influence human occupation and associated land use and consequently the distribution and character of cultural material. Environmental characteristics and geomorphological processes can affect the preservation of cultural heritage materials to varying degrees or even destroy them completely. Lastly, landscape features can contribute to the cultural significance that places can have for people.

3.1.1 Geology, topography and hydrology

The study area is in an urban environment that has been developed for industrial use within the Cumberland Plain, falling between the Hornsby Plateau to the north and the Woronora Plateau to the south. The Cumberland Plain consists of low lying, gently undulating plains and low hills comprised of Wianamatta Group shales and sandstones, with a dense drainage net of predominantly northward flowing channels (Bannerman & Hazelton 1990, p. 2). The study area is situated entirely within the Hawkesbury Sandstone formation (Figure 4). It consists of friable medium- to coarse-grained quartz sandstone with some shale and laminate lenses. It weathers cavernously to form overhangs, which occur in a range of topographic locations. It also occurs as flat topped outcrops (platforms of varying sizes) and boulders, mainly on ridge tops, and also along the sides of gullies and in valley bottoms (JMCHM 2008). This geological unit is commonly associated with grinding groove sites, rock shelters and rock art sites. The Hawkesbury Sandstone has a local relief of 40 to 200 metres, with slope gradients between 20 and 70% and rock outcrops appearing in up to 50% of the surface landscape (DPIE 2020). Due to the level of modification within the study area, such features associated with these site types are likely to have been destroyed, should they have been present.

Distance to water has been used extensively within archaeological investigations to predict potential sites of Aboriginal occupation for several decades. Strahler order is recognised as a factor which assists in the development of predictive modelling in Aboriginal archaeology. Predictive models which have been developed for the region tend to favour higher order streams as having a high potential for campsites. The higher the Strahler order of a stream the more likely it is to provide a stable source of water and by extension, other resources which would have been used by Aboriginal groups.

The stream order system used for this assessment was originally developed by Strahler (1952). It functions by adding two streams of equal order at their confluence to form a higher order stream, as shown in Photo 1. As stream order increases, so does the likelihood that the stream would be a perennial source of water.

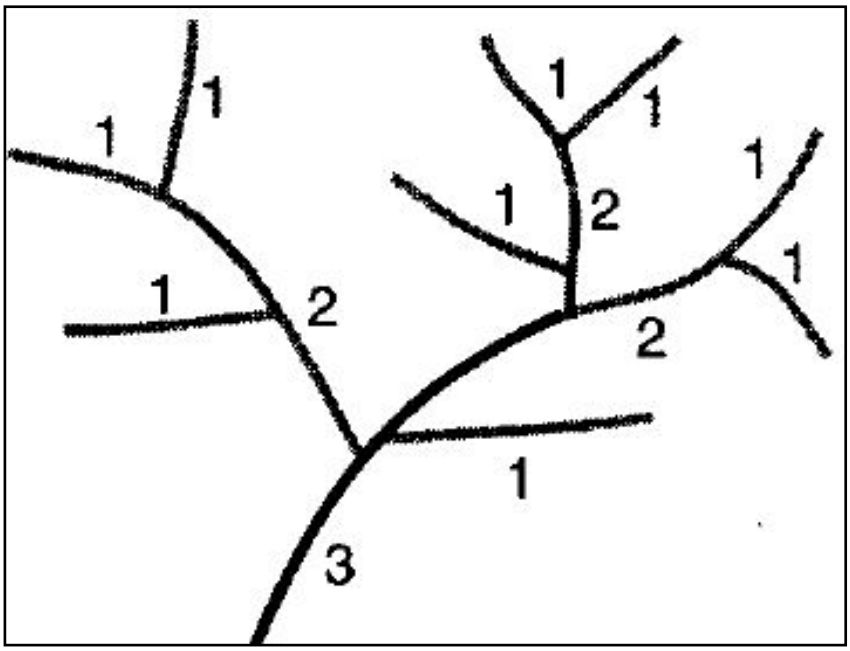
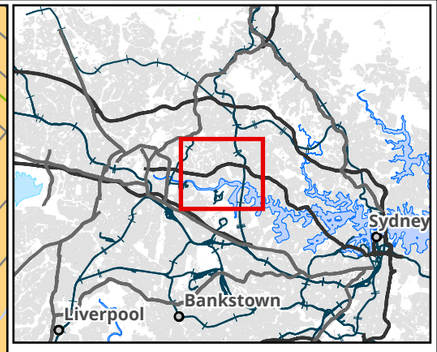


Photo 1 Diagram showing Strahler stream order (Ritter et al. 1995, p. 151)

There are no watercourses located within the study area (Figure 5). The closest water source is the main branch of the Paramatta River, located approximately 270 metres south of the study area and the Archer Creek, a second order, non-perennial stream that branches from the Paramatta River, located approximately 337 metres west of the study area. The closest perennial water course is Powells Creek, a second-order creek line located 1.9 kilometres east of the study area. These waterlines would have provided an abundant supply of food and material resources which would have been exploited by Aboriginal people, increasing the likelihood that the study area would have been utilised.



Legend

Study area

Geological units

- MZui__v,Ungrouped Mesozoic igneous units - breccia
- QH_ebw,Estuarine basin and bay (subaqueous)
- QH_ecw,Estuarine channel deposits (subaqueous)
- QH_es,Estuarine swamp
- QH_hfr,Anthropogenic deposits - fill on Quaternary deposits
- QH_hr,Anthropogenic deposits - reclaimed estuarine areas
- QP_at,Alluvial terrace deposits
- Q_av,Alluvial valley deposits
- Q_avf,Alluvial fan deposits
- Q_h,Anthropogenic deposits
- Q_hw,Anthropogenic stored water, pondage, reservoirs, canals
- Tuth,Hawkesbury Sandstone
- Twia,Ashfield Shale
- Twib,Bringelly Shale
- Twim,Minchinbury Sandstone

Figure 4 Geological units in the vicinity of the study area

0 200 400 600 800

Metres

Scale: 1:20,000@ A3

Coordinate System:
GDA2020 MGA Zone 56

N

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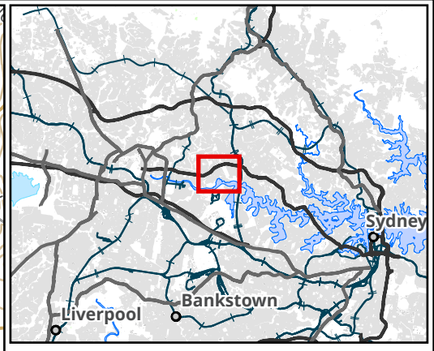

Legend

- Study area
- Contour (2m)

Strahler Order

- 1
- 2
- 4

Figure 5 Hydrology and topography in the vicinity of the study area

0 100 200 300 400 N

Metres

Scale: 1:10,000@ A3

Coordinate System: GDA2020 MGA Zone 56

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3.1.2 Soil landscapes

The study area is located within the Lucas Heights soil landscape (Chapman et al. 1989, p. 26) (Figure 6). The Lucas Heights soil landscape is characterised as a residual landscape situated on flat to gently sloping plateaus of greater than 10% and local relief of up to 30 metres. Soils are generally moderately deep, with depths ranging between 50 to 150 centimetres (Chapman et al. 1989, pp. 26–27). Residual soils form due to the *in-situ* weathering of parent material and will therefore preserve archaeological deposits provided soils remain undisturbed. However, soils in the Lucas Heights landscape can be susceptible to movement by erosion due to the low organic content and small particle size of soils, resulting in poor preservation of archaeological sites (Chapman et al. 1989, p. 27). Characteristics of soil materials within the Lucas Heights soil landscape are summarised in Table 2 and Photo 2.

Table 2 Lucas Heights soil landscape characteristics (Chapman et al. 1989, pp. 27–28)

Soil material	Description
lh1	Loose, yellowish-brown sandy loam, occurring as topsoil (A1 horizon). Texture is commonly sandy loam but may range from a loamy sand to a light sandy clay loam. The pH ranges from very strongly acid (pH 4.5) to slightly acid (pH 6.5). Common inclusions are iron coated, platy, fine sandstone rock fragments and charcoal fragments. Roots are also common.
lh2	A bleached, stony, sandy clay loam, which commonly occurs as an A2 horizon. Textures commonly range with depth from clayey sand to fine sandy clay loam. The pH ranges from strongly acid (pH 4.0) to slightly acid (pH 6.0). Fine sandstone fragments and rounded iron nodules are abundant and are often concentrated at depth. Traces of charcoal are commonly present, but roots are rare.
lh3	A yellowish-brown sandy clay loam with an earthy porous fabric, occurring as subsoil (B horizon) developed on coarse sandstone. Texture, which is commonly a sandy clay loam on the surface, may increase gradually with depth to a sandy clay. The pH ranges from strongly acid (pH 4.5) to slightly acid (pH 6.0). Iron coated sandstone fragments are common. They are usually stratified and reoriented. Charcoal fragments and roots are rare.
lh4	A yellowish-brown sandy clay to heavy clay occurring as subsoil (B and C horizons) developed on fine-grained sandstone. The pH ranges between strongly acid (pH 4.0) and moderately acid (pH 5.0). Undisturbed, stratified bands of platy, iron coated, fine sandstone rock fragments are common. Charcoal fragments and roots are rarely present.

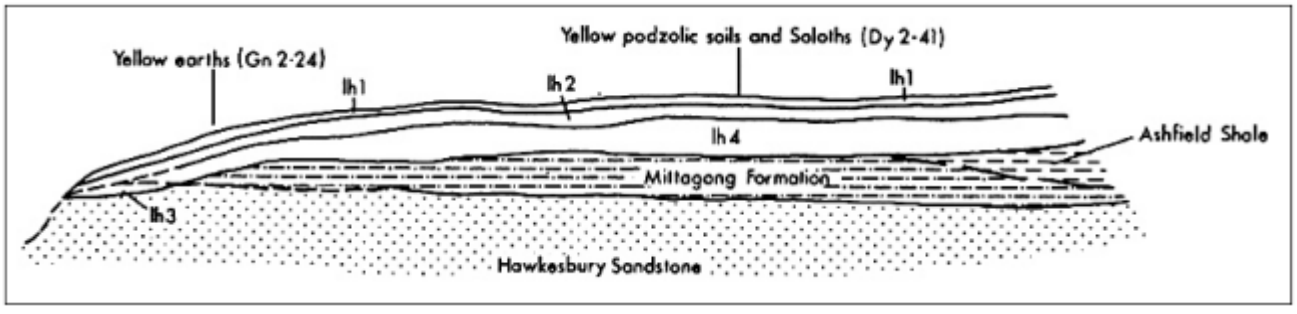
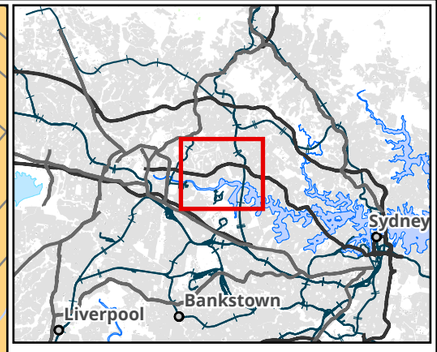


Photo 2 Schematic diagram of the Lucas Heights soil landscape (Chapman et al. 1989, pp. 27–28)



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Study area

Soil landscape units

- bg - BIRRONG
- bt - BLACKTOWN
- et - ETTALONG
- gn - GLENORIE
- gy - GYMEA
- ha - HAWKESBURY
- la - LAMBERT
- lh - LUCAS HEIGHTS
- of - OXFORD FALLS
- WATER - WATER
- wp - WEST PENNANT HILLS
- xx - DISTURBED TERRAIN

Figure 6 Soil landscapes in the vicinity of the study area

0 200 400 600 800

Metres

Scale: 1:20,000@ A3

Coordinate System: GDA2020 MGA Zone 56

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Acknowledgements: Basemap © Land and Property Information 2016; Soils: Matthei L.E., 1995, Soil Landscapes of the Newcastle 1:100,000 Sheet, NSW Department of Land and Water Conservation, Sydney; Bannerman S.M. and Hazelton P.A., 1990, Soil Landscapes of the Penrith 1:100,000 Sheet map and report, Soil Conservation Service of NSW, Sydney; Chapman G.A., Murphy, C.L., Tille P.J., Atkinson G. and Morse R.J., 2009 Ed. 4, Soil Landscapes of the Sydney 1:100,000 Sheet map, Department of Environment, Climate Change and Water, Sydney;

3.1.3 Landscape resources

The diverse natural environment would have provided vast and plentiful floral and faunal resources and the temperate climate would have made the area suitable for year-round occupation. Although extensively cleared today, the Lucas Heights soil landscape featured eucalypt open-forests and low eucalypt woodland with understories tolerant to dryness and heat. This landscape would have typically supported Turpentine *Syncarpia glomulifera*, Smooth-Barked Apple *Angophora costata*, Red Bloodwood *Eucalyptus gummifera*, Thinleaved Stringybark *E. eugenioides* and Scribbly Gum *E. haemastoma* (DPIE 2015).

Many of the plants found within the Sydney Basin were important to Aboriginal people and could be used for numerous purposes. These include using wood to make implements, berries, leaves and tubers for food and medicines as well as bark for shelters. One of the plants exploited may have been the eucalypt, whose leaves can be crushed and used for medicinal purposes, while the sap can be used as a sweet sugary food source and the bark could be used to make bowls and shelters (Rhodes & Dunnett 1985).

Given the proximity to the Iron Cove and Parramatta River, fish, eel, ducks, crayfish, shellfish, molluscs, and turtles would have formed an important part of people's diets. Middens in the area have confirmed that cockles, mud whelks, oysters, winks and horn shells were also eaten (Casey & Lowe Pty Ltd 2005, p. 55). Aquatic species such as freshwater crayfish, fish and eels would have been easily accessible in larger waterways, such as the Parramatta River (Rosen 1995).

In addition to marine resources, terrestrial and avian resources were not only used for food, but also provided a significant contribution to the social and ceremonial aspects of Aboriginal life through their use as ritual implements or even simply through fashioning as personal adornments (Attenbrow 2010, pp. 107–110). Mammals such as kangaroos and wallabies and arboreal mammals such as possums were used as a food source, and for tool making. Bones and teeth were also used as points or barbs for hunting spears and fishing spears. Tail sinews are known to have been used as a fastening cord, whilst 'bone points' can occur in rock shelters (Attenbrow 2010, p. 109). Animal skin, fur and sinews were also used for personal adornment and in making cloaks. Animals such as Brush-tailed Possums were highly prized for their fur, with possum skin cloaks recorded by the first settlers in the area. The cloaks were worn fastened over one shoulder and under the other. Kangaroo teeth were incorporated into decorative items such as head bands and beads were made from reeds and teeth (Rosen 1995).

3.1.4 Land use history

Historical aerial imagery allows for modern developments and land use to be identified within the study area. Aerial imagery dated to 1943 shows that the study area has been extensively cleared of vegetation (Photo 3). At this point in time the study area has been used for low grade agricultural purposed and the development of market gardens towards the northern extent of the study area. Some residential structures were present at the eastern boundary and towards the centre of the study area.

Photo 3 1943 aerial image with the study area outlined in red (Source: NSW Spatial Services 2023)

Little change occurred to the study area until 1965 when warehousing structures first appear (Photo 4). All vegetation within the study area has been removed at this stage, and the landscape has been modified to accommodate the new construction. The largest structures are in the eastern extent of the lot.

Photo 4 1965 aerial image with the study area outlined in red (Source: NSW Spatial Services 2023)

Further significant development does not occur in the study area until 1986 (Photo 5). Earlier development associated with the parking in the western portion of the school, which commenced prior to 1965, is seen to have been completed. Landscaping works are seen to have commenced on the eastern boundary of the lot and access roads were constructed to run parallel to Wharf Road.

Photo 5 1986 aerial image with the study area outlined in red (Source: NSW Spatial Services 2023)

The 1994 aerial reflect the extension of warehousing space to the western extent of the study area as the final construction activity to have taken place (Photo 6). Currently the study area has been levelled to the point where only remnant landscaping can be observed in the eastern boundary (Figure 2). Such significant and long-standing modification throughout the entirety of the study area is likely to have resulted in the destruction of any artefacts or sites within the study area.

Photo 6 1994 aerial image with the study area outlined in red (Source: NSW Spatial Services 2023)

3.2 Previous archaeological work

3.2.1 Regional overview

A number of Aboriginal cultural heritage investigations have been conducted for the Sydney Basin region. Models for predicting the location and type of Aboriginal sites with a general applicability to the Sydney Basin region and thus relevant to the study area have also been formulated, some as a part of these investigations and others from cultural heritage investigations for relatively large developments.

Aboriginal occupation of the region extends well back into the Pleistocene period (i.e prior to 10,000 years Before Present (BP). This is evidenced by radiocarbon dates retrieved from excavated sites at Shaw's Creek K2 (14,700 years BP) (Attenbrow 2010, p. 18) and a site in the immediate area of the current study, George and Charles Street, Parramatta (approximately 25,000-30,000 BP) (JMCHM 2005a).

Consequently, the archaeology of the Sydney Basin has been well documented through a large number of academic and heritage assessment investigations over the past three decades (e.g. Haglund, L. 1980, Kohen, J. 1986, Smith 1989, McDonald, J. & Rich, E. 1993). In the Cumberland Plain area of the Sydney Basin, rapid urban development during the past 30 years has resulted in a significant number of archaeological studies which inform the current study.

Kohen (1986) conducted a regional study of the Cumberland Plain's archaeology and made a number of observations regarding site location patterns in the broader Sydney Basin. The results of this assessment are summarised here:

- Proximity to water was a significant factor in both site pattern and location, with 65% of open artefact scatter sites being located within 100 metres of permanent fresh water. Open site artefact scatters are larger, more complex and more densely clustered around permanent water sources.
- The greatest proportion of sites were located on Wianamatta Shale substrates.
- Three site types were identified from observations of surface archaeology and classified according to function: camping sites, woodworking sites and hunting sites.
- Silcrete and chert were the most common materials used to manufacture stone artefacts. Silcrete comprised 51% of artefacts identified during Kohen's survey, and chert 34%. Other materials included quartz, basalt and quartzite.
- There was relationship between the amount of ground disturbance and the visibility of artefacts. The more disturbance which had occurred at a site, the more artefacts were visible.

Although Kohen's observations about the archaeology of the Cumberland Plain have been generally supported by subsequent investigations, the 1996 study relied heavily on surface evidence in formulating its conclusions. In the two decades since Kohen's study, a large number of archaeological excavations have been undertaken across the Cumberland Plain (JMCHM 2005a), which have demonstrated the existence of sub-surface deposits buried beneath current ground surfaces. This is a critical consideration in aggrading soil landscapes, such as those commonly found across the Cumberland Plain.

JMCHM (1997) expanded upon the work done by Kohen. Her investigation at St Marys (approximately 27 kilometres west of the current study area) presents a number of detailed conclusions about the broader archaeology of the Cumberland Plain, in particular, the potential for subsurface deposits in the absence of surface archaeology. McDonald's findings are summarised here:

- Sites cannot be adequately characterized on the basis of surface evidence alone, with 17 out of 61 excavated sites having no surface artefacts before excavation. The ratio of recorded surface to excavated material was 1:25.
- Open sites with subsurface archaeological deposits were the most commonly occurring sites.
- Open sites found in stable and aggrading landscapes may be intact and have the potential for internal structural integrity. Sites located in alluvium and other depositional environments contain the best potential for intact archaeological remains and stratification.
- Environmental factors can influence site patterning, with sites on permanent water being more complex than those situated on ephemeral or temporary water lines. However, there is not always a direct correlation between site location and the environment.
- Proximity to water, major water course confluences, and underlying geological units are key factors in site distribution.
- Stream order is an important factor in measuring the distribution of sites. Sites located in close proximity to established, permanent, and drainage channels (e.g., third and fourth order creeks) are more likely to have higher artefact densities and a greater diversity of tools than sites associated with lower order water courses. Temporary water sources and minor gullies tend to have single-use or occasionally repeated visits and hence lower density sites. Locations between creeks, such as ridge-tops and spurs, may possibly contain archaeological evidence, which may vary according to proximity to water sources.
- Sites in close proximity to an identified stone source will contain a range of size and cortex characteristics in their assemblages. As distance increases from the source, artefact size and percentage of cortex in the assemblage will decrease.

White and McDonald (2010) undertook a review of previous work in the Rouse Hill development area, located approximately 20 kilometres north-west of the study area, discussing lithic artefact distribution in previous excavations carried out by JMCHM. The study considered a number of factors including stream order, distance from water, landform, aspect, and distance to silcrete sources. As a result of the assessment, the following statements were made:

- Stream Order: water supply was a significant factor influencing Aboriginal land use and habitation in the area. There was a correlation between increasing stream order and larger numbers and higher densities of artefacts (from a comparison of first, second, and fourth order streams).
- Distance from water: the results showed that an assumption that sites would be clustered within 50 metres of water sources was not entirely correct from the data available. In first order stream landscapes, there was no significant correlation between artefact distribution and distance to water. In second order landscapes, artefact density was highest within 50 metres of water, and then declined with increasing distance. In fourth order landscapes, density was highest between 51 to 100 metres from water.
- Landform: Artefact density was considered to be lowest on upper slopes and ridgetops, with density increasing on mid and lower slopes. Density was highest in terrace landforms, and lower on creek flats, likely due to repeated flooding events and the erosion the caused.
- Distance to silcrete sources: the results of the study showed no significant difference between sites located closer to or further away from silcrete sources. However, 6 kilometres was the maximum tested distance from silcrete sources, so the sample is only representative of a limited area.

- Aspect: only appeared to have an influence on sites in the lower parts of valleys may have been sited to take advantage of steady factors such as the rising/setting sun and wind direction. Sites in higher parts of valleys may have been influenced by weather and other factors.

The study concluded that landform and distance from water had an impact on site distribution, with artefacts although artefacts are found on all landforms, landform type influences artefact distribution, with the preference being for slightly elevated, well-drained areas in the lower parts of valleys.

3.2.2 Local overview

Archaeological research has suggested long term occupation of the Parramatta area by Aboriginal people as far back as 15,000 to 22,000 years BP. This is evidenced by radiocarbon dates retrieved from excavated sites at Shaw's Creek K2 (14,700 years BP) (Attenbrow 2010, p. 18) and a site in the immediate area of the current study, George and Charles Street, Parramatta (approximately 25,000-30,000 BP) (JMCHM 2005a). Stone tools found in the larger Parramatta region provide insight into the time depth of occupation by Aboriginal people within the study area. Steele (2002, p. 22) notes that Aboriginal people were observed using ground edge artefacts at the time of colonisation, and that these artefacts occur within the archaeological record as far back as 4,000 years. The occurrence of backed artefacts at nearby Parramatta Park suggests that Aboriginal people have consistently used the area for between 5,000 and 1,500 years BP (Austral Archaeology 2007, p. 9).

A number of Aboriginal cultural heritage investigations have been conducted within the region (within approximately 10 kilometres of the study area). Most of these investigations were undertaken as part of development applications and included surface and sub-surface investigations. These investigations are summarised below.

Steele and Carney (1997)

Steele and Carney were commissioned by the Olympic Co-Ordination Authority to conduct an Aboriginal and historical heritage assessment of 2 Figtree Drive, Sydney Olympic Park, located approximately 3.89 kilometres to the south of the current study area. They surveyed the site which was at the time a vacant lot or truck parking area. Steele and Carny did not identify any Aboriginal sites or areas of Aboriginal archaeological sensitivity. Carney and Steele did however determine that there was the potential for historical heritage relics or archaeological deposits to be present within the study area. Archaeological excavations were conducted on the site prior to the construction of the current building in the site. They found the soils present within the study area consisted of reformed top soil which was introduced to the site after erosional processes as a result of European settlement striped the original soil deposits (Steele, D. and Carney M. 1997, Urbis 2016, p. 28).

Haglund and Associates (2004)

Haglund and Associates undertook a series of excavations at the Parramatta Children's court, George Street, Parramatta, as part of an overall heritage assessment of the site. The site is approximately 6.3 kilometres west of the current study area. During excavations, a total of 21 trenches were dug to a maximum of 60 centimetres. Despite extensive modification and disturbance of the upper layers, including the removal or fill of original soil profiles, a number of Aboriginal artefacts were recovered (unfortunately the report does not contain exact numbers), at depths ranging from 30 to 60 centimetres. A variety of materials were retrieved, including silcrete, chert, quartz, and basalt. The presence of a sand layer was also noted during excavations, which may comprise part of the Parramatta Sand Body.

Irish (2004)

In 2004, Paul Irish undertook a study of Aboriginal scarred trees at Sydney Olympic Park, located approximately 2.5 kilometres to the south of the current study area. The assessment was conducted as part of the Aboriginal History and Connections Program (AHCP), established by the Parklands Unit at Sydney Olympic Park. The purpose of the AHCP was to explore Aboriginal connections to the Homebush Bay area of Sydney from the earliest occupation until the present day. The AHCP found that the Sydney Olympic Park landscape had been heavily disturbed by historical land use practices such as land reclamation and industrial activities. The ACHP found that the only area within Sydney Olympic Park that had any potential to contain evidence of Aboriginal occupation and cultural activity was the relict Cumberland Woodland known as the Wanngal (Newington) Woodland, within the Newington Nature Reserve (Irish, P. 2004, p. 59) A survey of the Woodland was conducted as part of Irish's assessment in order to relocate a number of scarred trees recorded in the area. This assessment determined that none of the previously recorded scarred trees were Aboriginal in origin, as the characteristics associated with cultural scarring were not present and the trees were much too young to have been scarred by Aboriginal people. A number of previously unrecorded artefact scatters were however identified during the survey.

Jo McDonald Cultural Heritage Management Pty Ltd (2005b)

Jo McDonald Cultural Heritage Management Pty Ltd (JMCHM) was commissioned by Rouse Hill Infrastructure Pty Ltd and Landcom to execute salvage excavations of eight Archaeological landscapes in Second Ponds Creek Valley at Rouse Hill, approximately 25 kilometres south east. They drew on earlier stream models and the results of excavations in Parramatta in order to develop a predictive model that has informed many subsequent studies in the region. McDonald's model discussed the importance of the Parramatta Sand Body, higher order streams and alluvial deposits in retaining evidence of Aboriginal occupation of the Sydney Basin extending into the Pleistocene. The following predictions were made regarding both Aboriginal occupation and the potential for archaeological materials to be present in the landscape:

- The likelihood of archaeological material being found is determined by the soil profile, the landform and geomorphology of the area and the extent of previous land use disturbance.
- Archaeological evidence of Aboriginal occupation could be extensive in the near vicinity of permanent watercourses supporting a wide range of natural resources (i.e. plants, fish, game).
- Evidence of long-term Aboriginal occupation will be found on the Parramatta Sand Body, in close proximity to permanent freshwater sources, such as the Parramatta River. These areas are "likely to contain archaeological evidence for repeated use, of both short and long term duration, by small and large groups of people," (JMCHM 2005b, p. 37)
- The Parramatta Sand Body comprises a stratified deposit and has the potential to preserve long term Aboriginal occupation and changes in climatic and other environmental conditions.

KNC (2014)

KNC was commissioned by Sinclair Knight Merz Pty Ltd to undertake an Aboriginal archaeological assessment for the WestConnex M4 Widening from Pitt Street, Parramatta to Homebush Bay Drive, Homebush, located approximately 4.2 kilometres south of the current study area at its closest point. KNC found that artefact scatters were the most common Aboriginal site type identified within proximity to the proposed works. Potential archaeological deposits (PADs), scarred trees, and isolated artefacts had also been recorded, however at slightly lower levels. KNC determined that the absence of previously recorded Aboriginal sites within one kilometre of their study area boundary was a result of intensive modification to the current landscape. KNC noted that Aboriginal archaeological sites were however likely to be identified in residual areas of low modification. An archaeological survey was also undertaken. No Aboriginal sites or areas of

archaeological sensitivity were identified, and the entire site was found to be heavily disturbed by previous road construction works and residential and commercial development.

Artefact Heritage (2016)

Artefact Heritage was commissioned by Ecove Group to undertake an archaeological assessment of Site 9, Sydney Olympic Park located approximately 3.7 kilometres to the south of the current study area. The assessment found that the site has undergone a large amount of landform modification as a result of agricultural activities throughout the 19th and 20th centuries, late twentieth century contamination fills, and subsequent urban redevelopment for Sydney Olympic Park. Geotechnical testing conducted at the site indicated that the top three to seven metres of soils at the site were made contaminated fill, which overlayed clays and shale bedrock (Artefact Heritage 2016, p. 17). Background research identified that prior to the development of Sydney Olympic Park, extensive earthworks were conducted over an area of 60 hectares north of Boundary Creek in order to remediate the contaminated soils present in the Homebush area (Artefact Heritage 2016, p. 21). The assessment found that the site had low potential for containing Aboriginal archaeological site or deposits due to the extensive levels of previous ground disturbance and landform modification present throughout the site (Artefact Heritage 2016, p. 27).

Urbis (2016)

Urbis was engaged by Mirvac to conduct a historical and Aboriginal Archaeological Assessment for 2 Figtree Drive, Sydney Olympic Park, the same location as the Steele and Carney (1997) assessment, located approximately 3.89 kilometres to the south of the current study area. No Aboriginal sites or areas of archaeological sensitivity were identified by Urbis. The study area was found to be heavily disturbed by historical, and more recent development, as well as previous historical archaeological excavations conducted at the site prior to the current building in the study area being constructed.

Biosis (2019a)

Biosis was commissioned to undertake an Aboriginal archaeological assessment to support an Environmental Impact Statement for the proposed hotel, serviced apartments and commercial development with plaza at 2 Australia Avenue, Site 2 (Lot 71 DP 1134933), Olympic Park, located approximately 3.5 kilometres south of the current study area. A desktop assessment was conducted as part of this Aboriginal archaeological assessment in accordance with requirements 1 to 4 of the Code. No previously recorded Aboriginal sites, objects or areas of archaeological sensitivity were identified during the desktop assessment. Due to the high levels of previous ground disturbance present, the entire study area was determined to have low archaeological potential. Further archaeological works were not recommended.

Biosis (2019b)

Biosis was commissioned by Bloompark Consulting Services Pty Ltd on behalf of St Joseph's College to complete an ACHA at St Joseph's College Hunters Hill, approximately 6.4 kilometres east of the study area. The assessment included background research, Aboriginal community consultation, field investigation, and test excavations. The field investigation identified low archaeological potential due to the high levels of previous disturbance, and a lack of landscape features which would indicate Aboriginal people utilised the area for occupational purposes. Archaeological test excavations were undertaken within the north-western and the north-eastern portions of the site within areas of low potential to confirm whether any subsurface archaeological deposits were present. No subsurface archaeological deposits were identified within the study area. The study area was assessed to contain low archaeological potential. No further archaeological investigations were recommended.

Biosis (2019c)

Biosis was commissioned by Health Infrastructure to undertake an ACHA for the proposed Concord Hospital Redevelopment project located at Concord West, located approximately 3.1 kilometres south-east of the current study area. The assessment included a field investigation, which did not identify any previously unrecorded Aboriginal cultural heritage sites. The effectiveness of the survey for examining the ground for Aboriginal sites was deemed low, and this was attributed to buildings, paved roads and walkways cover restricting ground surface visibility combined with a low number of exposures. The study area had been extensively developed and consequently disturbed, and no areas of archaeological sensitivity were identified.

3.2.3 AHIMS site analysis

A search of the AHIMS database conducted on 1 July 2024 (Client Service ID: 905888) identified 102 Aboriginal archaeological sites within a 11 x 11 kilometre search area, centred on the study area (Figure 7). None of these registered sites are located *within* the study area. The nearest AHIMS sites are shell sites AHIMS 45-6-4078/Ermington SHL 01, AHIMS 45-6-4079/Ermington SHL 02, and AHIMS 45-5-1961/Ermington 1. AHIMS search results are provided in Appendix 1. Table 3 provides the frequencies of Aboriginal site types in the vicinity of the study. The mapping coordinates recorded for these sites were checked for consistency with their descriptions and location on maps from Aboriginal heritage reports where available.

It should be noted that the AHIMS database reflects Aboriginal sites that have been officially recorded and included on the list. Large areas of NSW have not been subject to systematic, archaeological survey; hence AHIMS listings may reflect previous survey patterns and should not be considered a complete list of Aboriginal sites within a given area. Some recorded sites consist of more than one element, for example artefacts and a modified tree, however for the purposes of this breakdown and the predictive modelling, all individual site types will be studied and compared. This explains why there are **136** results presented here, compared to the **102** sites identified in AHIMS.

Table 3 AHIMS site type frequency

Site type	Number of occurrences	Frequency (%)
Artefact	66	48.53
Shell	35	25.74
PAD	18	13.24
Art (Pigment or Engraved)	9	6.62
Grinding Groove	3	2.21
Aboriginal Resource and Gathering	2	1.47
Modified Tree (Carved or Scarred)	1	0.74
Burial	1	0.74
Earth Mound	1	0.74
Total	**136**	**100**

3.3 Discussion

A desktop review of the landscape context of the study area has determined that Aboriginal people may have used the landscape prior to European settlement. The study area is located within a gently sloping landscape within 270 metres of the Parramatta River and 340 metres of Archer Creek, a second-order tributary of the Parramatta River. The Parramatta River was a source for a range of terrestrial and marine resources that would have typically provided local populations inhabiting the Melrose Park locality. The Lucas Heights soil landscape is associated with moderately deep but loose soils that can be prone to mass movement. It is therefore typically not conducive to the retention and preservation of archaeological sites. The Hawksbury Sandstone unit which dominates the study area has been associated with art, shelter, and grinding groove sites in previous assessment. However, the lack of outcroppings and overhangs available within the study area indicates such site types will not be present.

A search of the AHIMS database identified 102 Aboriginal archaeological sites recorded within a 11 square kilometre search area, centred on the study area. None of these AHIMS sites are located within the study area or in the immediate vicinity. The nearest AHIMS sites are shell sites AHIMS 45-6-4078/Ermington SHL 01, AHIMS 45-6-4079/Ermington SHL 02, and AHIMS 45-5-1961/Ermington 1 detected within the foreshore of the Parramatta River approximately 600 metres south of the study area. These sites are located within a relatively undisturbed context, which are not present within the study area.

While the study area does possess some characteristics, such as proximity to a significant creek line, which could be indicators of previous Aboriginal use or occupation, a review of the aerial imagery for the study area indicates substantial development has occurred within it. This would have resulted in a high level of disturbance that would have displaced and/or destroyed any potential archaeological deposits within the study area. This aligns with other studies that have been conducted within the Parramatta region across similar landforms and areas of disturbance (Urbis 2016, Artefact Heritage 2016, Biosis 2019b, Biosis 2019c)

3.3.1 Predictive statements

A series of predictive statements has been formulated to broadly predict the type and character of Aboriginal cultural heritage sites likely to have existed throughout the study area and where they are more likely to be located.

These statements are based on:

- Site distribution in relation to landscape descriptions within the study area.
- Consideration of site type, raw material types and site densities likely to be present within the study area.
- Findings of the ethnohistorical research on the potential for material traces to present within the study area.
- Potential Aboriginal use of natural resources present or once present within the study area.
- Consideration of the temporal and spatial relationships of sites within the study area and surrounding region.

Table 4 indicates the site types most likely to be encountered across the present study area. The definition of each site type is described firstly, followed by the predicted likelihood of this site type occurring within the study area.

Table 4 Aboriginal site prediction statements

Site type	Site description	Potential
Flaked stone artefact scatters and isolated artefacts	Artefact scatter sites can range from high-density concentrations of flaked stone and ground stone artefacts to sparse, low-density 'background' scatters and isolated finds.	**Low:** Stone artefact sites have been previously recorded in the region across a wide range of landforms. Due to the high levels of previous ground disturbance within the study area it is unlikely that artefact sites are present in the study area.
Shell middens	Deposits of shells accumulated over either singular large resource gathering events or over longer periods of time.	**Low:** Shell midden sites have been previously recorded in the region in close proximity to reliable water sources. Due to the high levels of previous ground disturbance within the study area, and previous modifications to creek lines in the local area, it is unlikely that midden sites are present in the study area.
PADs	Potential sub surface deposits of cultural material.	**Low:** PADs have been previously recorded in the region across a wide range of landforms. Due to the high levels of previous ground disturbance within the study area it is unlikely that PAD sites are present in the study area.
Burials	Aboriginal burial sites.	**Low:** Aboriginal burial sites are generally situated within deep, soft sediments, caves or hollow trees. The soil profiles associated with the study area are not commonly associated with burials. The high levels of previous ground disturbance also indicate that the potential for Aboriginal burials in the study area is low.
Aboriginal Ceremony and Dreaming sites	Such sites are often intangible places and features and are identified through oral histories, ethnohistoric data, or Aboriginal informants.	**Low:** There are currently no recorded mythological stories for the study area.
Post-contact sites	These are sites relating to the shared history of Aboriginal and non-Aboriginal people of an area and may include places such as missions, massacre sites, post-contact camp sites and buildings associated with post-contact Aboriginal use.	**Low:** There are no post-contact sites previously recorded in the study area and historical sources do not identify one.
Aboriginal places	Aboriginal places may not contain any 'archaeological' indicators of a site but are nonetheless important to Aboriginal people. They may be places of cultural, spiritual or historic significance. Often, they are places tied to community history and may include natural features (such as swimming and fishing holes), places where Aboriginal political events commenced or particular	**Low:** There are currently no recorded Aboriginal historical associations for the study area.

Site type	Site description	Potential
	buildings.	
Quarries	Raw stone material procurement sites.	**Nil:** No appropriate outcroppings are available that could have been utilised for the procurement of raw materials and there is no record of any quarries being within or surrounding the study area.
Modified trees	Trees with cultural modifications	**Nil:** No old growth native trees exist within the study area. There is therefore no potential for modified trees to be present within the study area
Axe grinding grooves	Grooves created in stone platforms through ground stone tool manufacture.	**Nil:** The geology of the study area lacks suitable horizontal sandstone rock outcrops for axe-grinding grooves. Therefore, there is no potential for axe grinding grooves to occur in the study area.
Rock shelters with art and/or deposit	Rock shelter sites include rock overhangs, shelters or caves, and generally occur on, or next to, moderate to steeply sloping ground characterised by cliff lines and escarpments. These naturally formed features may contain rock art, stone artefacts or midden deposits and may also be associated with grinding grooves.	**Nil:** The sites will only occur where suitable sandstone exposures or overhangs possessing sufficient sheltered space exist, which are not present in the study area.

4 Archaeological survey

An archaeological survey of the study area was undertaken for the PIHAI on 29 March 2024 by Bronte Baonza (Biosis, Heritage Consultant). An updated survey was undertaken on 6 November 2024 by Ashley Bridge (Biosis, Senior Heritage Consultant) and Jordan Mahi (Metropolitan LALC, Cultural Sites Officer). The field survey sampling strategy, methodology and a discussion of results are provided below.

4.1 Archaeological survey objectives

The objectives of the survey were to:

- Provide RAPs an opportunity to view the study area and to discuss previously identified Aboriginal object(s) and/or place(s) in or within close proximity to the study area.
- Undertake a systematic survey of the study area targeting areas with the potential for Aboriginal heritage.
- Identify and record Aboriginal archaeological sites visible on the ground surface.
- Identify and record areas of PADs.

4.2 Archaeological survey methodology

The survey methods were intended to assess and understand the landforms and to determine whether any archaeological material from Aboriginal occupation or land use exists within the study area.

4.2.1 Survey methods

The archaeological survey was conducted on foot with a field team of two members. Recording during the survey followed the archaeological survey requirements of the Code and industry best practice methodology. Information that recorded during the survey included:

- Aboriginal objects or sites present in the study area during the survey.
- Survey coverage.
- Any resources that may have been exploited by Aboriginal people.
- Landform.
- Photographs of the site indicating landform.
- Evidence of disturbance.
- Aboriginal artefacts, culturally modified trees or any other Aboriginal sites.

Where possible, identification of natural soil deposits within the study area was undertaken. Photographs and recording techniques were incorporated into the survey including representative photographs of survey units, landform, vegetation coverage, ground surface visibility (GSV) and the recording of soil information for each survey unit were possible.

Any potential Aboriginal objects observed during the survey were documented and photographed. The location of Aboriginal cultural heritage and points marking the boundary of the landform elements were

recorded using a handheld Global Positioning System (GPS) and the Map Grid of Australia (94) coordinate system.

4.3 Constraints to the survey

With any archaeological survey there are several factors that influence the effectiveness (the likelihood of finding sites) of the survey. The factors that contributed most to the effectiveness of the survey within the study area were reduced visibility from ground disturbances. These include earth works and the previous use of the study area as a car park and other structural demolition.

4.4 Visibility

In most archaeological reports and guidelines visibility refers to GSV and is usually a percentage estimate of the ground surface that is visible and allowing for the detection of (usually stone) artefacts that may be present on the ground surface (DECCW 2010b). GSV in the study area during the previous survey was low (0-10%), which was due to extensive regrowth coverage or the remnant stone covering the surface (Photo 7 to Photo 9). The updated survey had high GSV (90-100%), due to ground levels across the study area flattened (Photo 10).

Photo 7 **GSV (0%) along eastern boundary of the study area displaying grass cover and undulating landform, facing east (PIHAI survey)**

Photo 8 **GSV (0%) in the southern portion of the study area, displaying the gravel covering the study area, facing south (PIHAI survey)**

Photo 9 **GSV (0%) within the northern portion of the study area, depicting regrowth and grass coverage, facing north (PIHAI survey)**

Photo 10 **GSV (90%) within the central portion of the study area, facing south (Updated survey)**

4.5 Exposure

Exposure refers to the geomorphic conditions of the local landform being surveyed and attempts to describe the relationship between those conditions and the likelihood the prevailing conditions provide for the exposure of (buried) archaeological materials. Whilst also usually expressed as a percentage estimate, exposure is different to visibility in that it is in part a summation of geomorphic processes, rather than a simple observation of the ground surface (Burke & Smith 2004, p. 79, DECCW 2010b).

During the previous survey, the study area displayed low areas of exposure, ranging between 0 to 10% in the study area. The highest areas of exposure were in the southern and western corner due to vehicle tracks. In the majority of the study area, exposure was minimal (0-10%) and was limited due to the extensive gravel and vegetation coverage (Photo 11 to Photo 13). The updated survey displayed similar levels of exposure, due to vehicle tracks and demolition clearance.

Photo 11 **Area of exposure (10%) around car tracks, located in the southern portion of the study area, facing south**

Photo 12 **Area of exposure (10%) near demolished area and car tracks, located in the northern portion of the study area, facing west**

Photo 13 **Area of exposure (10%) surrounded by regrowth and stone piles located within the central portion of the study area, facing north**

Photo 14 **Area of exposure (100%) due to vehicle tracks and land clearing in the northern portion of the study area, facing south**

4.6 Disturbances

Disturbance in the study area is associated with natural and human agents. Natural agents generally affect small areas and include the burrowing and scratching in soil by animals, such as wombats, foxes, rabbits and wallabies, and sometimes exposure from slumping or scouring. Disturbances associated with recent human action are prevalent in the study area and cover large sections of the land surface. The agents include civic development such as demolition and initial vegetation clearance for a previous car park and buildings.

Disturbance levels within the study area were assessed during the visual inspection. Levels of disturbance were categorised through an inspection of the ground surface, landforms and aerial imagery. Disturbance levels within the study area have been categorised according to the following criteria:

- High disturbance—the landform has been heavily disturbed and all natural soil horizons have been displaced or removed, these areas are unlikely to contain Aboriginal cultural material.
- Moderate disturbance—the landform has undergone disturbances to a certain degree, but the extent and nature of these disturbances cannot be fully quantified. Aboriginal cultural material may be present within these locations but is unlikely to be *in situ*.
- Low disturbance—the landform has not been significantly disturbed and is highly likely to contain intact soil horizons. Aboriginal cultural material if present is likely to be *in situ*.

The study area has experienced high levels of disturbance over time across the entire extent. These include the study area being used as a carpark as well as having buildings which would have had significant earthworks for these constructions. The demolition of these buildings would have caused further impacts, leaving evidence of rubble, previous drainage and modifications to landforms.

The study area has been subject to extensive native vegetation clearance, with no mature vegetation within the property. Disturbance due to extensive vegetation clearance was evident in historical aerial imagery, which showed that the ground surface had undergone multiple stages of clearance from 1943 (Photo 3). Low numbers of mature trees were located during the survey with no evidence of cultural modification present.

The extensive levels of disturbance throughout the study area would have impacted both surface and subsurface deposits. Soils disturbed from vegetation clearing experience higher levels of displacement and re-deposition in shallow layers. Civic infrastructure involves the removal and modification of soils for installation of fence lines, driveways, buildings and landscaped areas as well as the inclusion of utilities, sewer,

water and electricity (Photo 15 to Photo 17). Disturbance of this nature is characterised as high and is evident throughout the entirety of the study area altering present landforms through bulk excavation. Disturbances of this nature would likely result in limited preservation of intact archaeological deposits in subsurface layers.

Photo 15 **Previous drainage located in the eastern portion of the study area, facing east**

Photo 16 **Brick left from previous works in the southern portion of the study area, facing north**

Photo 17 **Remnants of previous works located in the north-eastern portion of the study area, facing south**

Photo 18 **Remnants of previous works located in the southern portion of the study area, facing south-east**

4.7 Archaeological survey results

A total of one meandering transect was walked across one landform with the two surveyors walking two metres apart (Figure 8). This follows the methodology set out in Burke & Smith (2004, p. 65), which states that a single person can only effectively visually survey an area of two linear metres. No Aboriginal sites or PADs were identified in the study area. The results from the field survey have been summarised in Table 5 below and full transect details are provided in Table 6.

Table 5 **Survey coverage**

Landform	Survey unit area (m2)	Visibility (0%)	Exposure (%)	Effective coverage area (m2)	Effective coverage (%)
Flat	1637.06	5	5	4.09	0.25

Table 6 **Landform summary**

Landform	Landform area (m2)	Area effectively surveyed (m2)	Landform effectively surveyed (m2)	No. of artefacts or features
Flat	9185.53	4.09	0.04	0

4.8 Discussion of archaeological survey results

The study area is in an urban environment previously developed for industrial use within the Cumberland Plain, The Cumberland Plain consists of low lying, gently undulating plains and low hills comprised of Wianamatta Group shales and sandstones, with a dense drainage net of predominantly northward flowing channels. The study area is situated within the Hawkesbury Sandstone formation. Due to the level of modification within the study area, such features associated with these site types are likely to have been destroyed, should they have been present. The closest water source is the Paramatta River, located approximately 270 metres south of the study area and the Archer Creek, a second order non-perennial stream that branches from the Paramatta River, located approximately 337 metres west of the study area. There is also Powells Creek, a second-order perennial creek line located 1.9 kilometres east of the study area.

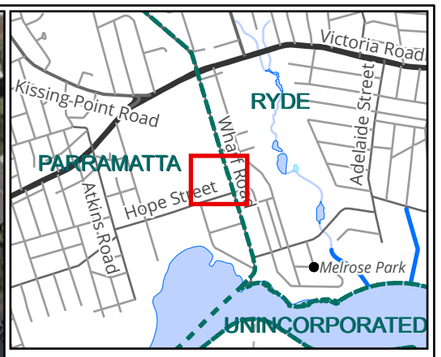
While the study area is in an area with resource potential based on the geology and the close vicinity to watercourses, the level of modification within the study area has created significant disturbance.

The study area is located within the Lucas Heights soil landscape. The soils are moderately deep (50-150 centimetre) and the landscape is characterised as a residual landscape situated on flat to gently sloping plateaus of greater than 10% and local relief of up to 30 metres. Residual soils form due to the *in-situ* weathering of parent material and will therefore preserve archaeological deposits provided soils remain undisturbed. However due to the deep impacts of the previous industrial development, including earth works and subsurface drainage systems, the gross disturbance of the study area has resulted in poor preservation of archaeological sites.

Previous archaeological investigations undertaken in the local region concluded that landform and distance from water had an impact on site distribution. Although artefacts are found on all landforms, the landform type influences artefact distribution. Within the local region, the areas likely to withhold Aboriginal sites would be slightly elevated, well-drained areas in the lower parts of valleys. The study area is within 270 metres of the Parramatta River and is situated on a flat landform which has been modified from construction works. It is unlikely that Aboriginal sites would remain *in situ*, therefore there would be low potential for archaeological sites.

A review of historical aerial photographs, paired with the archaeological investigation, identified that the study area has been extensively disturbed by previous earth works and developments. The field investigation was hampered by low visibility; however, clear evidence of disturbance was observed throughout the study area. While there were no remaining structures remaining in the study area, disturbance caused by earth movement was evident within all portions of the study area. The landforms present have been altered which have flattened the ground to develop the school. The activities associated with development, including land clearing and large-scale soil displacement would have likely resulted in poor preservation of archaeological material and would have destroyed any *in situ* archaeological deposits within the study area.

No evidence of shell was identified during the field investigation indicating that midden sites are not present within the study area. No trees with cultural modifications were identified within the study area, and no Aboriginal sites or objects were identified or are likely to be present due to the gross disturbance present. Site officers from elected RAPs participated in the field investigation and provided comment on the study area regarding the proposal. Jordan Mahi from the Metropolitan LALC noted that there was no cultural importance in the study area. Therefore, the background research coupled with the results of the field investigation has shown the study area is heavily disturbed and possesses low archaeological potential.



Legend

- Study area
- Survey tracks

Archaeological potential

- Low

Figure 8 Survey results and coverage

0 8 16 24 32 40

Metres

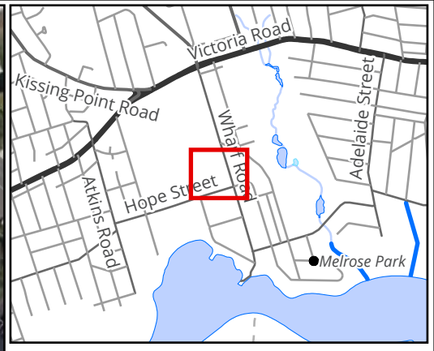
Scale: 1:1,000 @ A3

Coordinate System: GDA2020 MGA Zone 56

N

biosis
APEM Group

Matter: 40105, Date: 16 December 2024,
Prepared for: BB, Prepared by: AA, Last edited by: aabid
Location: P:\40100s\40105\Mapping\
40105_ACHA_AR_MelrosePrk,
Layout: 40105_ACHA_F8_SurveyResults



Legend

Study area

Landform

Flat

Figure 9 Landforms

0 8 16 24 32 40

Metres

Scale: 1:1,000 @ A3

Coordinate System: GDA2020 MGA Zone 56

N

biosis

APEM Group

Matter: 40105, Date: 16 December 2024,
Prepared for: BB, Prepared by: AA, Last edited by: aabid
Location: P:\40100s\40105\Mapping\
40105_ACHA_AR_MelrosePrk,
Layout: 40105_ACHA_F9_Landforms

5 Scientific values and significance assessment

The two main values addressed when assessing the significance of Aboriginal sites are cultural values to the Aboriginal community and archaeological (scientific) values. This report will assess scientific values while the ACHA report will detail the cultural values of Aboriginal sites in the study area.

5.1 Introduction to the assessment process

Heritage assessment criteria in NSW fall broadly within the significance values outlined in the Australia International Council on Monuments and Sites (ICOMOS) Burra Charter (Australia ICOMOS 2013). This approach to heritage has been adopted by cultural heritage managers and government agencies as the set of guidelines for best practice heritage management in Australia. These values are provided as background and include:

- **Historical significance** (evolution and association) refers to historic values and encompasses the history of aesthetics, science and society, and therefore to a large extent underlies all of the terms set out in this section. A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity. It may also have historic value as the site of an important event. For any given place the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment.
- **Aesthetic significance** (Scenic/architectural qualities, creative accomplishment) refers to the sensory, scenic, architectural and creative aspects of the place. It is often closely linked with social values and may include consideration of form, scale, colour, texture, and material of the fabric or landscape, and the smell and sounds associated with the place and its use.
- **Social significance** (contemporary community esteem) refers to the spiritual, traditional, historical or contemporary associations and attachment that the place or area has for the present-day community. Places of social significance 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 significance be damaged or destroyed. These aspects of heritage significance can only be determined through consultative processes with local communities.
- **Scientific significance** (Archaeological, industrial, educational, research potential and scientific significance values) refers to the importance of a landscape, area, place or object because of its archaeological and/or other technical aspects. Assessment of scientific value is often based on the likely research potential of the area, place or object and will consider the importance of the data involved, its rarity, quality or representativeness, and the degree to which it may contribute further substantial information.

The cultural and archaeological significance of Aboriginal and historic sites and places is assessed on the basis of the significance values outlined above. As well as the ICOMOS Burra Charter significance values guidelines, various government agencies have developed formal criteria and guidelines that have application when assessing the significance of heritage places within NSW. Of primary interest are guidelines prepared by the Australian Commonwealth Department of Climate Change, Environment, Energy, and Water (Cth DCCEEW) and Heritage NSW. The relevant sections of these guidelines are presented below.

These guidelines state that an area may contain evidence and associations which demonstrate one or any combination of the ICOMOS Burra Charter significance values outlined above in reference to Aboriginal heritage. Reference to each of the values should be made when evaluating archaeological and cultural significance for Aboriginal sites and places.

In addition to the previously outlined heritage values, the Heritage NSW Guidelines (OEH 2011) also specify the importance of considering cultural landscapes when determining and assessing Aboriginal heritage values. The principle behind a cultural landscape is that 'the significance of individual features is derived from their inter-relatedness within the cultural landscape'. This means that sites or places cannot be 'assessed in isolation' but must be considered as parts of the wider cultural landscape. Hence the site or place will possibly have values derived from its association with other sites and places. By investigating the associations between sites, places, and (for example) natural resources in the cultural landscape the stories behind the features can be told. The context of the cultural landscape can unlock 'better understanding of the cultural meaning and importance' of sites and places.

Although other values may be considered — such as educational or tourism values — the two principal values that are likely to be addressed in a consideration of Aboriginal sites and places are the cultural/social significance to Aboriginal people and their archaeological or scientific significance to archaeologists. The determinations of archaeological and cultural significance for sites and places should then be expressed as statements of significance that preface a concise discussion of the contributing factors to Aboriginal cultural heritage significance.

5.2 Archaeological (scientific significance) values

Archaeological significance (also called scientific significance, as per the ICOMOS Burra Charter) refers to the value of archaeological objects or sites as they relate to research questions that are of importance to the archaeological community, including indigenous communities, heritage managers and academic archaeologists. Generally the value of this type of significance is determined on the basis of the potential for sites and objects to provide information regarding the past life-ways of people (Burke & Smith 2004, p. 249, NPWS 1997, p. 26).

For this reason, the NPWS summarises the situation as 'while various criteria for archaeological significance assessment have been advanced over the years, most of them fall under the heading of archaeological research potential' (NPWS 1997, p. 26).

The NPWS criteria for archaeological significance assessment are based largely on the ICOMOS Burra Charter.

Research potential

Research potential is assessed by examining site content and site condition. Site content refers to all cultural materials and organic remains associated with human activity at a site. Site content also refers to the site structure – the size of the site, the patterning of cultural materials within the site, the presence of any stratified deposits and the rarity of particular artefact types. As the site contents criterion is not applicable to scarred trees, the assessment of scarred trees is outlined separately below. Site condition refers to the degree of disturbance to the contents of a site at the time it was recorded.

Table 7 and Table 8 outline the site content and site condition rating used for archaeological sites.

Table 7 Site contents ratings used for archaeological sites

Rating	Description
0	No cultural material remaining.
1	Site contains a small number (e.g. 0–10 artefacts) or limited range of cultural materials with no evident stratification.
2	Site contains a larger number, but limited range of cultural materials; and/or some intact stratified deposit remains; and/or are or unusual example(s) of a particular artefact type.
3	Site contains a large number and diverse range of cultural materials; and/or largely intact stratified deposit; and/or surface spatial patterning of cultural materials that still reflect the way in which the cultural materials were deposited.

Table 8 Site condition ratings used for archaeological sites

Rating	Description
0	Site destroyed.
1	Site in a deteriorated condition with a high degree of disturbance; lack of stratified deposits; some cultural materials remaining.
2	Site in a fair to good condition, but with some disturbance.
3	Site in an excellent condition with little or no disturbance. For surface artefact scatters this may mean that the spatial patterning of cultural materials still reflects the way in which the cultural materials were laid down.

Pearson & Sullivan (1995, p. 149) note that Aboriginal archaeological sites are generally of high research potential because 'they are the major source of information about Aboriginal prehistory'. Indeed, the often great time depth of Aboriginal archaeological sites gives them research value from a global perspective, as they are an important record of humanity's history. Research potential can also refer to specific local circumstances in space and time — a site may have particular characteristics (well preserved samples for absolute dating, or a series of refitting artefacts, for example) that mean it can provide information about certain aspects of Aboriginal life in the past that other less or alternatively valuable sites may not (Burke & Smith 2004, pp. 247–248). When determining research potential value particular emphasis has been placed on the potential for absolute dating of sites.

The following sections provide statements of significance for the Aboriginal archaeological sites recorded during the sub-surface testing for the assessment. The significance of each site follows the assessment process outlined above. This includes a statement of significance based on the categories defined in the Burra Charter. These categories include social, historic, scientific, aesthetic and cultural (in this case archaeological) landscape values. Nomination of the level of value — high, moderate, low or not applicable — for each relevant category is also proposed. Where suitable the determination of cultural (archaeological) landscape value is applied to both individual sites and places (to explore their associations) and also, to the Study Area as a whole. The nomination levels for the archaeological significance of each site are summarised below.

Representativeness

Representativeness refers to the regional distribution of a particular site type. Representativeness is assessed by whether the site is common, occasional, or rare in a given region. Assessments of representativeness are subjectively biased by current knowledge of the distribution and number of archaeological sites in a region. This varies from place to place depending on the extent of archaeological research. Consequently, a site that is assigned low significance values for contents and condition, but a high significance value for

representativeness, can only be regarded as significant in terms of knowledge of the regional archaeology. Any such site should be subject to re-assessment as more archaeological research is undertaken.

Assessment of representativeness also considers the contents and condition of a site. For example, in any region there may only be a limited number of sites of any type that have suffered minimal disturbance. Such sites would therefore be given a high significance rating for representativeness, although they may occur commonly within the region.

Table 9 outlines the site representativeness ratings used for archaeological sites.

Table 9 Site representativeness ratings used for archaeological sites

Rating	Description
1	Common occurrence
2	Occasional occurrence
3	Rare occurrence

Overall scientific significance ratings for sites, based on a cumulative score for site contents, site integrity and representativeness are provided in Table 10.

Table 10 Scientific significance ratings used for archaeological sites

Rating	Description
1–3	Low scientific significance
4–6	Moderate scientific significance
7–9	High scientific significance

Each site is given a score on the basis of these criteria. The overall scientific significance is determined by the cumulative score.

5.2.1 Statements of archaeological significance

No Aboriginal sites, objects or areas of archaeological potential were identified within the study area as part of this assessment. While the study area is in close proximity to Parramatta River, which would have been a significant source for resources and feature in the cultural landscape, there has been significant disturbance to and modification of the natural landform due to previous developments which have taken place since at least in the mid - to late 19th century. Given the distance to watercourses the study area may have been a transitory location, with activity and occupation likely more focused closer to these resource locations. Transitory activities can leave archaeological traces, albeit in low density quantities, as has been shown in several nearby sites. Data gathered through background research and observations from the archaeological survey suggest that A-horizon in the disturbed soil landscape are likely to have been removed from the study area. The study area therefore does not have any research potential, scientific significance or representativeness associated with it. This assessment has therefore determined that the study area does not contain any archaeological significance.

6 Impact assessment

Within the study area, there are no recorded Aboriginal sites that may be subject to harm. It is expected that the potential of harm to Aboriginal archaeological sites from development within the impact area ranges from negligible to low. Strategies to avoid or minimise harm to Aboriginal heritage in the study area are discussed below.

Subject to implementing the recommendations set out in Section 7 and mitigation measures in Section 6.3 of this report, the conclusion is that the proposed activity is not likely to significantly affect the environment in relation to Aboriginal heritage.

6.1 Predicted physical impacts

The proposed development involves a masterplan for a small high school with teaching spaces, staff facilities, hall, library and outdoor spaces (Section 2). These works have potential to impact on ground surfaces and sub surface soils.

6.2 Ecologically Sustainable Development

One of the primary aims of the NP&W Act is the 'conservation of objects places and features … of cultural value within the landscape, including … places, objects and features of significance to Aboriginal people …' ((s.2A(1)(b)(i)). The *Operational Policy: Protecting Aboriginal Cultural Heritage (Version 2)* (DECC NSW 2011) provides guidance to proponents in term of 1.1 Ecologically Sustainable Development (ESD).

ESD has been defined in Part 3, 6. (2) Objective of the Authority of the *Protection of the Environment Administration Act 1991* (NSW). This outlines that the ESD requires the integration of economic and environmental considerations (including cultural heritage) in the decision-making process. In regard to Aboriginal cultural heritage, ESD can be achieved by applying the principle of intergenerational equity and the precautionary principle.

> ***Intergenerational equity***
>
> *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.*
>
> *In terms of Aboriginal cultural heritage, intergenerational equity can be considered in terms of the 'cumulative impacts' of any proposal to Aboriginal objects and places. For example, if few Aboriginal objects and places remain in a region (because of harm authorised under previous AHIPs), fewer opportunities remain for future generations of Aboriginal people to enjoy the cultural benefits of those Aboriginal objects and places.*
>
> *Information about the significance of Aboriginal cultural heritage values associated with the Aboriginal objects and places proposed to be harmed will be relevant to the consideration of intergenerational equity and an understanding of the cumulative impacts of a proposal.*
>
> *Where there is uncertainty, the precautionary principle should also be followed (see below).*
>
> ***The precautionary principle***

The precautionary principle states that the lack of full scientific certainty about the threat of harm should not be used as a reason for not taking measures to prevent harm from occurring.

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

- *a careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment (which includes cultural heritage)*
- *an assessment of the risk-weighted consequences of various options. The precautionary principle is relevant to OEH consideration of potential harm to Aboriginal cultural heritage where:*
- *the proposal involves a risk of serious or irreversible harm to Aboriginal objects or places or to the value of those objects or places, and*
- *there is a lot of uncertainty about the significance of Aboriginal cultural heritage values of the Aboriginal objects or places proposed to be harmed.*

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

6.3 Management and mitigation measures

Ideally, heritage management involves conservation of sites through the preservation and conservation of fabric and context within a framework of 'doing as much as necessary, as little as possible' (Marquis-Kyle & Walker 1994, p. 13). In cases where conservation is not practical, several options for management are available. For sites, management often involves the salvage of features or artefacts, retrieval of information through excavation or collection (especially where impact cannot be avoided) and interpretation.

Avoidance of impact to archaeological and cultural heritage sites through design of the development is the primary mitigation and management strategy, and should be implemented where practicable.

As part of the management and mitigation measures for the proposed works, an ACHA including an archaeological survey and consultation with the Aboriginal community was undertaken. This was done to determine the presence and nature of any potential Aboriginal sites so that appropriate management could be undertaken. The survey did not identify the presence of any Aboriginal sites and the study area was assessed as holding low potential. This was based of its environmental context and the significant existing disturbances which have likely resulted in the removal of A horizon soils which have the capacity to accumulate cultural deposits.

The following mitigation measures should be implemented as part of these works:

6.3.1 No further archaeological work required; works may proceed with caution

No Aboriginal sites, objects or areas of archaeological potential were identified as part of this assessment. Therefore, the works may proceed with caution. This recommendation is conditional upon the recommendations outlined in this report.

6.3.2 Continued consultation with the registered Aboriginal stakeholders

As per the consultation requirements, a copy of the final ACHA should be provided to RAPs for their records. The proponent should continue to inform these groups about the management of Aboriginal cultural heritage sites within the study area throughout the life of the project, should any sites be identified during the remainder of this assessment or during the proposed works.

Acknowledgements: Basemap © Land and Property Information 2016; public/NSW_Imagery: © Department of Customer Service 2020, Site plan © NBRS October 2024

Figure 10 Impact assessment

7 Recommendations

Subject to implementing the recommendations and mitigation measures set out in Section 6.3 and Section 7 of this report, the conclusion of this assessment is that the proposed activity is not likely to significantly affect the environment in relation to Aboriginal heritage matters.

Strategies have been developed based on the archaeological (significance) of cultural heritage relevant to the study area and influenced by:

- Predicted impacts to Aboriginal cultural heritage.
- The planning approvals framework.
- Current best conservation practise, widely considered to include:
  - Ethos of the Australia ICOMOS Burra Charter.
  - The Code.

Prior to any impacts occurring within the study area, the following is recommended.

Recommendation 1: No further assessment required; works may proceed with caution

No Aboriginal sites, objects or areas of archaeological potential were identified as part of this assessment. Therefore, the works may proceed with caution. This recommendation is conditional upon Recommendation 2 to 4.

Recommendation 2: Consultation with the registered Aboriginal stakeholders

As per the consultation requirements, a copy of the final ACHA should be provided to RAPs for their records. Should any sites be identified during the remainder of this assessment or during the proposed works, the proponent should continue to inform these groups about the management of Aboriginal cultural heritage sites within the study area throughout the life of the project.

Recommendation 3: Discovery of unanticipated Aboriginal objects

All Aboriginal objects and Places are protected under the NPW Act. It is an offence to knowingly disturb an Aboriginal site without a consent permit issued by Heritage NSW. Should any Aboriginal objects be encountered during works associated with this proposal, works must cease in the vicinity and the find should not be moved until assessed by a qualified archaeologist. If the find is determined to be an Aboriginal object, the archaeologist will provide further recommendations. These may include notifying Heritage NSW and Aboriginal stakeholders.

Recommendation 4: Discovery of human remains

Human remains may be found in a variety of landscapes in NSW, including middens and sandy or soft sedimentary soils. If any suspected human remains are discovered during any activity, you must:

1. Immediately cease all work at that location and not further move or disturb the remains.
2. Notify the NSW Police and Heritage NSW' Environmental Line on 131 555 as soon as practicable and provide details of the remains and their location.
3. Not recommence work at that location unless authorised in writing by Heritage NSW.

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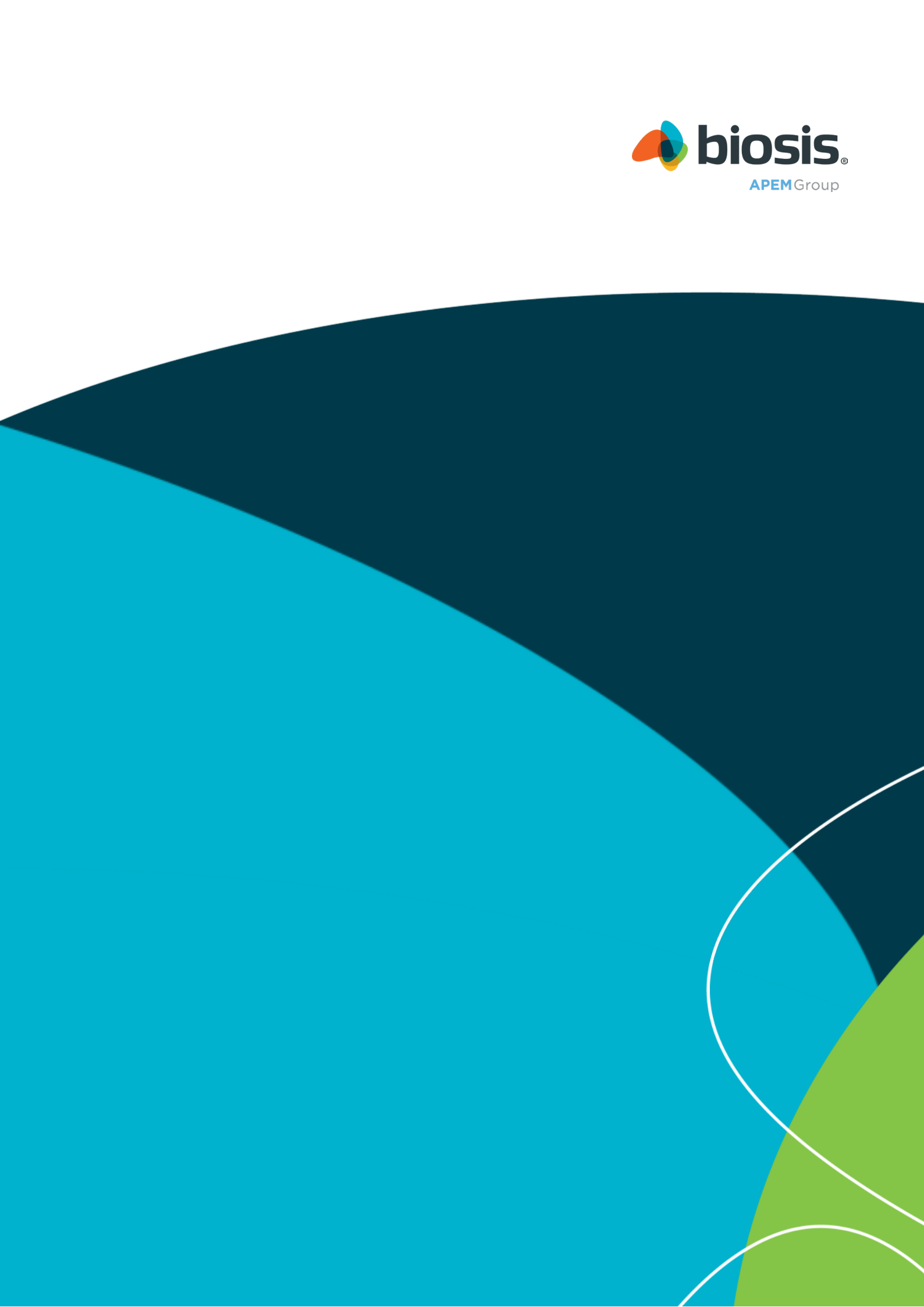
Appendices

Appendix 1 AHIMS results

THE FOLLOWING APPENDIX IS NOT TO BE MADE PUBLIC.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