



# Alex Avenue Public School, Schofields: Aboriginal cultural heritage assessment report

DRAFT REPORT

Prepared for Schools Infrastructure NSW

13 March 2019



## Biosis offices

### NEW SOUTH WALES

#### Newcastle

Phone: (02) 4911 4040  
Email: [newcastle@biosis.com.au](mailto:newcastle@biosis.com.au)

#### Sydney

Phone: (02) 9101 8700  
Email: [sydney@biosis.com.au](mailto:sydney@biosis.com.au)

#### Wollongong

Phone: (02) 4201 1090  
Email: [wollongong@biosis.com.au](mailto:wollongong@biosis.com.au)

#### Albury

Phone: (02) 6069 9200  
Email: [albury@biosis.com.au](mailto:albury@biosis.com.au)

### VICTORIA

#### Melbourne

Phone: (03) 8686 4800  
Email: [melbourne@biosis.com.au](mailto:melbourne@biosis.com.au)

#### Ballarat

Phone: (03) 5304 4250  
Email: [ballarat@biosis.com.au](mailto:ballarat@biosis.com.au)

#### Wangaratta

Phone: (03) 5718 6900  
Email: [wangaratta@biosis.com.au](mailto:wangaratta@biosis.com.au)

## Document information

**Report to:** Schools Infrastructure NSW

**Prepared by:** Charlotte Allen  
Anthea Vella  
Samantha Keats

**Biosis project no.:** 27715/29496

**File name:** 27715.AlexAve.ACHA.DFT02.20190313.

**Citation:** Biosis 2019. Alex Avenue Public School, Schofields: Aboriginal cultural heritage assessment report. Report for Schools Infrastructure NSW. Authors: C Allen, A Vella & S Keats, Biosis Pty Ltd, Sydney. Project no.27715/29496

## Document control

Version	Internal reviewer	Date issued
Draft version 01	Amanda Atkinson	21/12/2018
Draft version 02	James Cole	13/03/2019
Final version 01	To be confirmed	TBC

## Acknowledgements

Biosis gratefully acknowledges the contributions of the following people and organisations (listed alphabetically) in preparing this report:

- Hayball Pty Ltd: Natalia Krysiak and Rob Chan
- TSA Management: Craig Butler and Jacqueline Sellen

Biosis staff involved in this project were:

- Dave Kazemi and Anne Murray for mapping.

© Biosis Pty Ltd

This document is and shall remain the property of Biosis Pty Ltd. The document may only be used for the purposes for which it was commissioned and in accordance with the Terms of the Engagement for the commission. Unauthorised use of this document in any form whatsoever is prohibited.

Disclaimer:

Biosis Pty Ltd has completed this assessment in accordance with the relevant federal, state and local legislation and current industry best practice. The company accepts no liability for any damages or loss incurred as a result of reliance placed upon the report content or for any purpose other than that for which it was intended.



# Contents

<b>Glossary .....</b>	<b>v</b>
<b>Summary .....</b>	<b>vi</b>
<b>1 Introduction .....</b>	<b>10</b>
1.1 Project background .....	10
1.2 Study area .....	11
1.3 Proposed development.....	12
1.4 Planning approvals.....	1
1.5 Restricted and confidential information.....	1
1.6 Aboriginal cultural heritage.....	1
1.6.1 General description.....	1
1.6.2 Tangible Aboriginal cultural heritage.....	2
1.6.3 Intangible Aboriginal cultural heritage .....	2
1.6.4 Statutory .....	2
1.6.5 Values .....	2
<b>2 Study area context .....</b>	<b>5</b>
2.1 Topography and hydrology .....	5
2.2 Soil landscapes.....	7
2.3 Climate and rainfall .....	8
2.4 Landscape resources .....	8
2.5 European land use history .....	9
<b>3 Aboriginal cultural heritage context .....</b>	<b>17</b>
3.1 Ethnohistory .....	17
3.2 Aboriginal heritage located in the study area.....	18
3.3 Interpretation of past Aboriginal land use .....	22
<b>4 Aboriginal community consultation .....</b>	<b>24</b>
4.1 Stage 1: Notification of project proposal and registration of interest.....	24
4.1.1 Identification of relevant Aboriginal stakeholders .....	24
4.1.2 Public notice .....	25
4.1.3 Registration of Aboriginal parties.....	25
4.2 Stage 2: Presentation of information about the proposed project.....	26
4.3 Stage 3: Gathering information about cultural significance .....	26
4.3.1 Archaeological assessment methodology information pack.....	26
4.3.2 Test excavations .....	26
4.3.3 Information gathered during fieldwork .....	27
4.4 Stage 4: Review of draft Aboriginal cultural heritage assessment report .....	27
<b>5 Aboriginal cultural significance assessment .....</b>	<b>28</b>
5.1 Introduction to the assessment process.....	28



5.2	Cultural (social significance) values .....	29
5.3	Historic values .....	29
5.4	Archaeological (scientific significance) values.....	30
5.5	Aesthetic values .....	30
5.6	Statement of significance .....	30
5.6.1	Statement of significance for Alex Avenue PS 01 .....	30
5.6.2	Statement of significance for Alex Avenue PS 02 .....	31
<b>6</b>	<b>Development limitations and mitigation measures .....</b>	<b>32</b>
6.1	Potential risks to Aboriginal cultural heritage .....	32
6.2	Avoiding harm to Aboriginal heritage.....	32
6.3	Management and mitigation measures.....	32
6.4	Long term management of Alex Avenue PS 01 and Alex Avenue PS 02 .....	33
<b>7</b>	<b>Recommendations.....</b>	<b>34</b>
	<b>References.....</b>	<b>36</b>
	<b>Appendices .....</b>	<b>38</b>
<b>Appendix 1</b>	<b>Consultation log .....</b>	<b>39</b>
<b>Appendix 2</b>	<b>Stage 1: Notification of project proposal and registration of interest.....</b>	<b>46</b>
<b>Appendix 3</b>	<b>Stage 2 and 3: Presentation of information about the proposed project, and Gathering information about cultural significance .....</b>	<b>265</b>
<b>Appendix 4</b>	<b>Stage 4: Review of draft cultural heritage assessment report.....</b>	<b>507</b>
<b>Appendix 5</b>	<b>Archaeological report.....</b>	<b>508</b>

## Tables

Table 1	List of registered Aboriginal parties and group contact.....	vi
Table 2	Site details.....	viii
Table 3	SEARs and relevant references issued on the 22 June 2018, 2 October 2018 and 30 January 2019.....	11
Table 4	Blacktown soil landscape characteristics (Bannerman & Hazelton 1990, pp.29–30) .....	7
Table 5	Analysis of aerial photographs of the study area.....	10
Table 6	Significance assessment criteria .....	30
Table 7	Significance assessment criteria.....	31
Table 8	Summary of potential archaeological impact .....	32

## Figures

Figure 1	Location of the study area .....	3
Figure 2	Study area detail .....	4
Figure 3	Aboriginal archaeological sites within the study area (to be finalised) .....	21



Figure 4	AHIMS search results in the vicinity of the study area .....	23
----------	--------------------------------------------------------------	----

## Plates

Plate 1	Proposed development - landscape .....	13
Plate 2	Proposed development - ground floor .....	14
Plate 3	Proposed development - level one.....	15
Plate 4	Proposed development - roof.....	16
Plate 5	Diagram showing Strahler stream order (Ritter et al. 1995, p.151) .....	6
Plate 6	Flood risk extent areas in the vicinity of the study area (Source: Blacktown City Council).....	6
Plate 7	Extract from an 1833 Gidley Parish Map, with the study area highlighted (Source: NSW Land Registry Services).....	10
Plate 8	1956 aerial of the study area, with the study area highlighted in red (please note the pink outline is the area assessed in Environmental Investigation Services 2017) (Source: Environmental Investigation Services 2017) .....	11
Plate 9	1961 aerial of the study area, with the study area highlighted in red (please note the pink outline is the area assessed in Environmental Investigation Services 2017) (Source: Environmental Investigation Services 2017) .....	12
Plate 10	1965 aerial of the study area, with the study area highlighted in red (please note the pink outline is the area assessed in Environmental Investigation Services 2017) (Source: Environmental Investigation Services 2017) .....	12
Plate 11	1970 aerial of the study area, with the study area highlighted in red (please note the pink outline is the area assessed in Environmental Investigation Services 2017) (Source: Environmental Investigation Services 2017) .....	13
Plate 12	1978 aerial of the study area (Source: NSW Spatial Services 2018).....	13
Plate 13	1982 aerial of the study area, with the study area highlighted in red (please note the pink outline is the area assessed in Environmental Investigation Services 2017) (Source: Environmental Investigation Services 2017) .....	14
Plate 14	1991 aerial of the study area, with the study area highlighted in red (please note the pink outline is the area assessed in Environmental Investigation Services 2017) (Source: Environmental Investigation Services 2017) .....	14
Plate 15	2005 aerial of the study area, with the study area highlighted in red (please note the pink outline is the area assessed in Environmental Investigation Services 2017) (Source: Environmental Investigation Services 2017) .....	15
Plate 16	2009 aerial of the study area, with the study area highlighted in red (please note the pink outline is the area assessed in Environmental Investigation Services 2017) (Source: Environmental Investigation Services 2017) .....	15
Plate 17	2018 aerial of the study area, with the study area highlighted in red (Source: GoogleMaps 2018).....	16
Plate 18	Overview of TP11 in Alex Avenue PS 01 (AHIMS pending), facing north.....	18
Plate 19	Section of TP12 in Alex Avenue PS 01 (AHIMS pending), facing north .....	19
Plate 20	Overview of TP27 within Alex Avenue PS 02 (AHIMS pending), facing north .....	20



## Glossary

<b>ACHA</b>	Aboriginal Cultural Heritage Assessment
<b>AHIP</b>	Aboriginal Heritage Impact Permit
<b>AHIMS</b>	Aboriginal Heritage Information Management System
<b>AR</b>	Archaeological report
<b>CBD</b>	Central business district
<b>Consultation Requirements</b>	<i>Aboriginal cultural heritage consultation requirements for proponents</i> (DECCW 2010a)
<b>DECCW</b>	Department of Environment, Climate Change and Water (now OEH)
<b>DP</b>	Deposited Plan
<b>EP&amp;A Act</b>	<i>Environmental Planning and Assessment Act 1979</i>
<b>ICOMOS</b>	International Council on Monuments and Sites
<b>LALC</b>	Local Aboriginal Land Council
<b>NNTT</b>	National Native Title Tribunal
<b>NPW Act</b>	<i>National Parks and Wildlife Act 1974</i>
<b>NPWS</b>	National Parks and Wildlife Service
<b>NSW</b>	New South Wales
<b>OEH</b>	NSW Office of Environment and Heritage
<b>PAD</b>	Potential archaeological deposit
<b>RAPs</b>	Registered Aboriginal Parties
<b>SEARs</b>	Secretary's Environmental Assessment Requirements
<b>SEPP</b>	State Environmental Planning Policy
<b>SSD</b>	State Significant Development
<b>The Code</b>	<i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i> (DECCW 2010b)



## Summary

Biosis Pty Ltd was commissioned by to undertake an Aboriginal cultural heritage assessment (ACHA) of the proposed the Alex Avenue Public School development at 34-38 Schofields Road, Schofields New South Wales (NSW) (the study area). The study area encompasses part of Lot 4 DP 1208329 and part of Lot 121 DP 1203646 and is located approximately 4.3 kilometres west of Rouse Hill and approximately 35.6 kilometres north-west of the Sydney central business district (CBD).

There are 94 Aboriginal cultural heritage sites registered with the Aboriginal Heritage Information Management System (AHIMS) register within vicinity of the study area.

The proposed development will be assessed as a State Significant Development (SSD) under Section 89(c) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and Schedule 1 of the State Environmental Planning Policy (SEPP) (State and Regional Development) 2011(SSD 9368), under delegation from the Minister of Planning. In accordance with requirement 10 of the Secretary's Environmental Assessment Requirements (SEARs) issued for this development (22 June 2018); an assessment of Aboriginal cultural heritage is required in order to assess any potential impacts to Aboriginal cultural heritage the project may have.

The western portion of the study area has been subject to previous assessment and was included within Aboriginal Heritage Impact Permit (AHIP) C000550, issued to Landcom, trading as UrbanGrowth NSW, and commencing on 11 September 2014. The AHIP is for a period of five years, and is due to expire on 11 September 2019. There are no sites listed on the AHIP or in AHIMS which are located within the study area.

### Consultation

The Aboriginal community was consulted regarding the heritage management of the project throughout its lifespan. Consultation has been undertaken as per the process outlined in the DECCW document, *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010a) (consultation requirements). The appropriate government bodies were notified and advertisements placed in the *Rouse Hill Times* newspaper (10 October 2018 and 28 November 2018), which resulted in the following Aboriginal organisations registering their interest (Table 1):

**Table 1 List of registered Aboriginal parties and group contact**

Organisation	Contact person
Aboriginal Archaeology Service	Andrew Williams
Barking Owl Aboriginal Corporation	Jody Kulakowski
Butucarbin Aboriginal Corporation	Jennifer Beale
Darug Aboriginal Land Care	Des Dyer
Darug Boorooberongal Elders Aboriginal Corporation	Gordon Workman
Darug Land Observations	Jamie and Anna Workman
Darug Tribal Aboriginal Corporation	Dirk Schmitt
Deerubbin Local Aboriginal Land Council	Steven Randall



Organisation	Contact person
Didge Ngunawal Clan	Lillie Carroll and Paul Boyd
Kamilaroi Yankuntjatjara Working Group	Phil Khan
Merrigarn Indigenous Corporation	Shaun Carroll
Muragadi	Jessie
Murra Bidgee Mullangari Aboriginal Corporation	Darleen Johnson

A search conducted by the Office of the Registrar, *Aboriginal Land Rights Act 1983* listed no Aboriginal Owners with land within the study area. A search conducted by the National Native Title Tribunal (NNTT) listed no Registered Native Title Claims, Unregistered Claimant Applications or Registered Indigenous Land Use Agreements within the study area.

Upon registration, the Aboriginal parties were invited to provide their knowledge on the study area and on the proposal provided in the project information and methodology documents in the Stage 3 consultation documentation. The responses did not provide any information on the cultural significance of the study area. Responses from the Registered Aboriginal Parties (RAPs) are included in Appendix 3.

Site officers from elected RAPs participated in the field survey and did not provide comment on the study area with regard to the proposal.

The outcome of the consultation process was that the RAPs considered the study area to have a moderate level of cultural significance, although that significance was not clearly defined and specific examples were not provided. The results of the consultation process are included in this document.

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

## Results

The ACHA undertook background research for the proposed study area. Key considerations arising from the background research include:

- The registered AHIMS sites in the vicinity of the study area are either isolated artefacts or artefact scatters.
- Sites have been primarily focused adjacent to higher order creeks and slopes with sporadic sites occurring on elevated areas.

Biosis undertook a field survey which identified one Aboriginal heritage site within the study area, an area of potential archaeological deposit (PAD) (Table 2). Alex Avenue PS PAD 1 consists of a crest and ridgeline through the northern part of the study area, continuing south into the simple slope. The presence of third and first order streams to the south and north suggest that this portion of the study area could have been a suitable location for a temporary camp site associated with resource gathering. Test excavations were conducted within the area of moderate archaeological potential between 18 and 26 February 2019. A total of 31 test pits were excavated as part of the test excavations and a total of three artefacts were recovered. The test excavations resulted in the identification of two new Aboriginal sites, Alex Avenue PS 01 (AHIMS pending) and Alex Avenue PS 02 (AHIMS pending).



**Table 2 Site details**

Site name	Site type	Significance	Type of harm before mitigated	Consequence of unmitigated harm	Consequence of mitigated harm	Site specific recommendations
<b>Alex Avenue PS 01</b>	Artefact	Low	Direct	Total loss of value	Impact cannot be avoided	No further archaeological works required; establish Care and Control agreement
<b>Alex Avenue PS 02</b>	Isolated artefact	Low	Direct	Total loss of value	Impact cannot be avoided	No further archaeological works required; establish Care and Control agreement

### Management recommendations

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

#### Recommendation 1: Conditions of AHIP C000550

Although SSD projects are not required to comply with Part 6 of the *National Parks and Wildlife Act 1974* (NPW Act), the Office of Environment and Heritage (OEH) advises that conditions of valid AHIPs are followed by SSDs in order to reduce the risk of impacting Aboriginal heritage values.

OEH also advises that the holder of the AHIP should be contacted to confirm the works that are intended on the area covered by the AHIP.

#### Recommendation 2: No further archaeological works required for Alex Avenue PS 01 and Alex Avenue PS 02

It is recommended that no further archaeological works are required for Alex Avenue PS 01 and Alex Avenue PS 02 prior to development impacts.

#### Recommendation 3: Preparation and lodgement of AHIMS site cards for Alex Avenue PS 01 and Alex Avenue PS 02

It is recommended that AHIMS site cards are prepared and lodged with AHIMS for newly identified sites Alex Avenue PS 01 and Alex Avenue PS 02, and that the site numbers are included in the final version of this report.

Following development impacts it will be necessary to update these AHIMS records with AHIMS site impact recording forms for Aboriginal sites Alex Avenue PS 01 and Alex Avenue PS 02. This should occur within four months following completion of development impacts or as otherwise stated in SSD approval conditions.

#### Recommendation 4: Long term care and control of artefacts

In consultation with TSA Management on behalf of School Infrastructure NSW (SINSW), it has been determined that there are a number of areas within the study area which will not be subject to development or landscaping as part of the proposed works and will be maintained as a natural ground areas in the south-eastern portion of the study area. It is proposed that the artefacts will be reburied on site somewhere within this location.



## **Recommendation 5: Discovery of unanticipated heritage items**

### **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 the OEH. 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 the OEH and Aboriginal stakeholders.

### **Aboriginal ancestral remains**

Aboriginal ancestral 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 OEH's 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 OEH.

## **Recommendation 6: Continued consultation with registered Aboriginal stakeholders**

As per the consultation requirements, it is recommended that the proponent provides a copy of this draft report to the Aboriginal stakeholders and considers all comments received. 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 7: Lodgement of final report**

A copy of the final report will be sent to the RAPs, the client, OEH and the AHIMS register for their records.



# 1 Introduction

---

## 1.1 Project background

This ACHA has been prepared by Biosis on behalf of the Schools Infrastructure NSW (the Applicant). It accompanies an Environmental Impact Statement (EIS) in support of an SSD Application (SSD 18\_9368) for the new Alex Avenue Public School at the corner of Farmland Drive and future realignment of Pelican Road in Schofields (the study area) (Figure 1 and Figure 2). The study area is legally described as proposed Lots 1 and 2, being part of existing Lot 4 in DP1208329 and Lot 121 in DP1203646.

The new school will cater for approximately 1,000 primary school students and 70 full-time staff upon completion. The proposal seeks consent for:

- Construction of a 2-storey library, administration and staff building (Block A) comprising:
  - School administrative spaces including reception.
  - Library with reading nooks, makers space and research pods.
  - Staff rooms and offices.
  - Special programs rooms.
  - Amenities.
  - Canteen.
  - Interview rooms.
  - Presentation spaces.
- Construction of four 2-storey classroom buildings (Block B) containing 40 homebases comprising:
  - Collaborative learning spaces.
  - Learning studios.
  - Covered outdoor learning spaces.
  - Practical activity areas.
  - Amenities.
- Construction of a single storey assembly hall (Block C) with a performance stage and integrated covered outdoor learning area (COLA). The assembly hall will have OOSH facilities, store room areas and amenities.
- Associated site landscaping and open space including associated fences throughout and games courts.
- Pedestrian access points along both Farmland Drive and the future Pelican Road.
- Substation on the north-east corner of the site.
- School signage to the front entrance.

All proposed school buildings will be connected by a covered walkway providing integrated covered outdoor learning areas. School staff will use the Council car park for the adjacent sports fields pursuant to a Joint Use



agreement. The proposed School pick up and drop off zone will also be contained within the future shared car park and will be accessed via Farmland Drive.

The Aboriginal Cultural Heritage Assessment was required by the SEARs for SSD 18\_9368 issued on 22 June 2018 and updated on the 2 October 2018 and 30 January 2019. This table identifies the SEARs and relevant reference within this report.

**Table 3 SEARs and relevant references issued on the 22 June 2018, 2 October 2018 and 30 January 2019**

SEARs item	Report reference
Identify and describe the Aboriginal cultural heritage values that exist across the whole area that would be affected by the development and document these in an Aboriginal Cultural Heritage Assessment Report (ACHAR). This may include the need for surface survey and test excavation. The identification of cultural heritage values must be conducted in accordance with the Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH 2010), and guided by the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW 2011).	Section 4 and 5 of AR
Consultation with Aboriginal people must be undertaken and documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW 2010). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the ACHAR.	Section 4 and Appendix 1 of the ACHAR
Impacts on Aboriginal cultural heritage values are to be assessed and documented in the ACHAR. The ACHAR must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.	Section 7 of AR and section 6 of ACHAR

The western portion of the study area has been subject to previous assessment and was included within AHIP C000550, issued to Landcom, trading as UrbanGrowth NSW, and commencing on 11 September 2014. The AHIP is for a period of five years, and is due to expire on 11 September 2019. There are no sites listed on the AHIP or in AHIMS which are located within the study area.

## 1.2 Study area

The study area encompasses part of Lot 4 DP 1208329 and part of Lot 121 DP 1203646 and is located approximately 7.8 kilometres north-north-west of Blacktown and approximately 34.5 kilometres north-west of the Sydney central business district (CBD) (Figure 1). It encompasses two hectares of private land and the adjacent road reserves.

The study area is within the:

- Blacktown Local Government Area
- Parish of Gidley



- County of Cumberland (Figure 2).

The study area is currently bounded on its northern side by Farmland Drive and Lot 121, DP 1203646, on its western side by Lot 121, DP 1203646, by Lot 121, DP 1203646 and Lot 4, DP 1208329 on its southern side, and by Lot 2, DP 1209060 on its eastern side.

### **1.3 Proposed development**

School Infrastructure NSW are proposing to develop a new school on a Greenfields site with capacity for 1,000 students and 70 staff members. The study area will incorporate part of Lot 4, DP 1208329, and part of Lot 121, DP 1203646 (Plate 1, Plate 2, Plate 3, Plate 4). The project involves the following elements:

- Two two-storey Home Base buildings.
- A two-storey admin and staff building.
- A two-storey library.
- A hall and out of school hours care facilities.
- Three learning courtyards and sports court.
- Covered outdoor learning area and walkway.
- Interconnected external area.
- Two storey home base building.



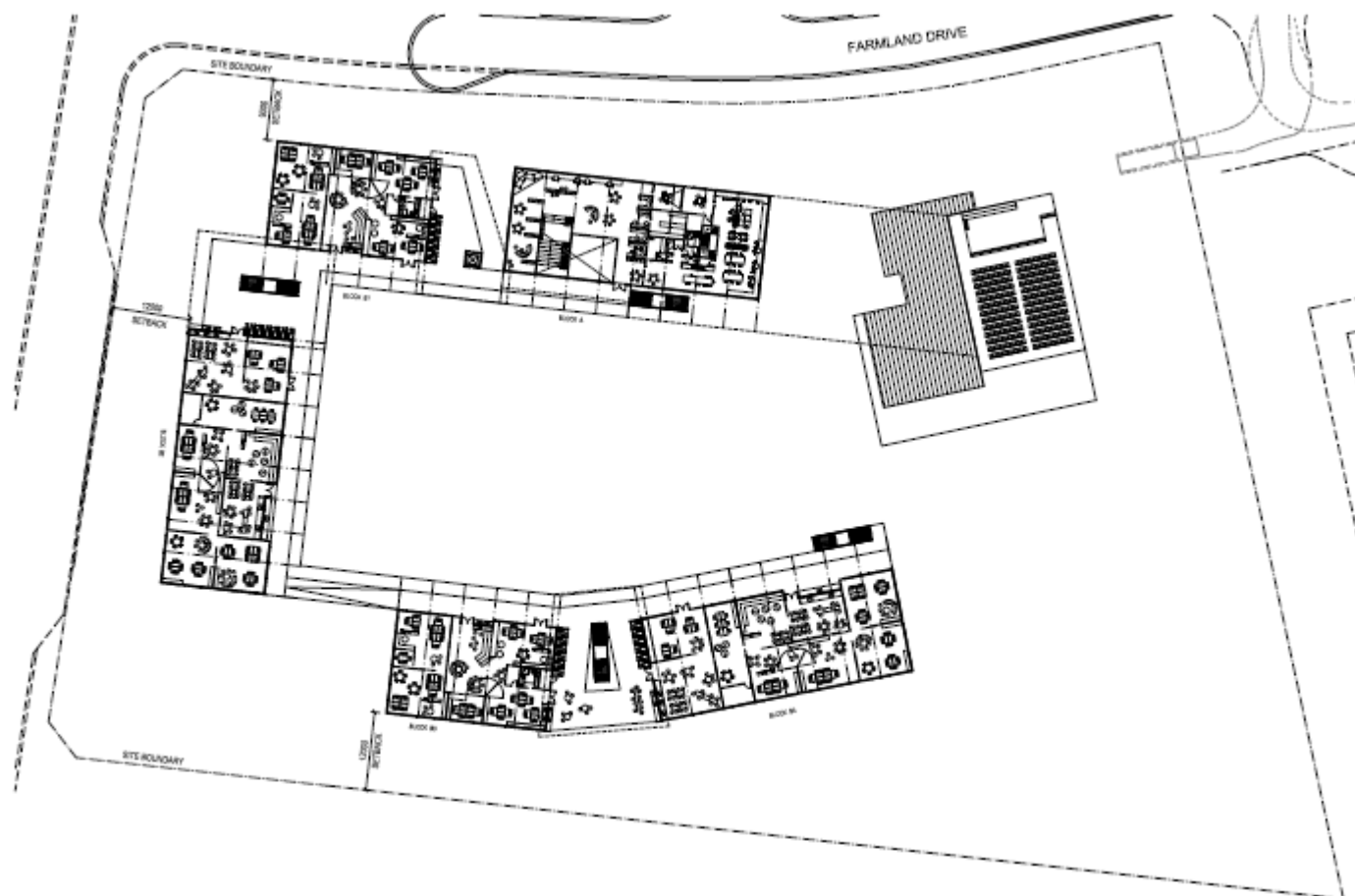


**Plate 1** Proposed development - landscape



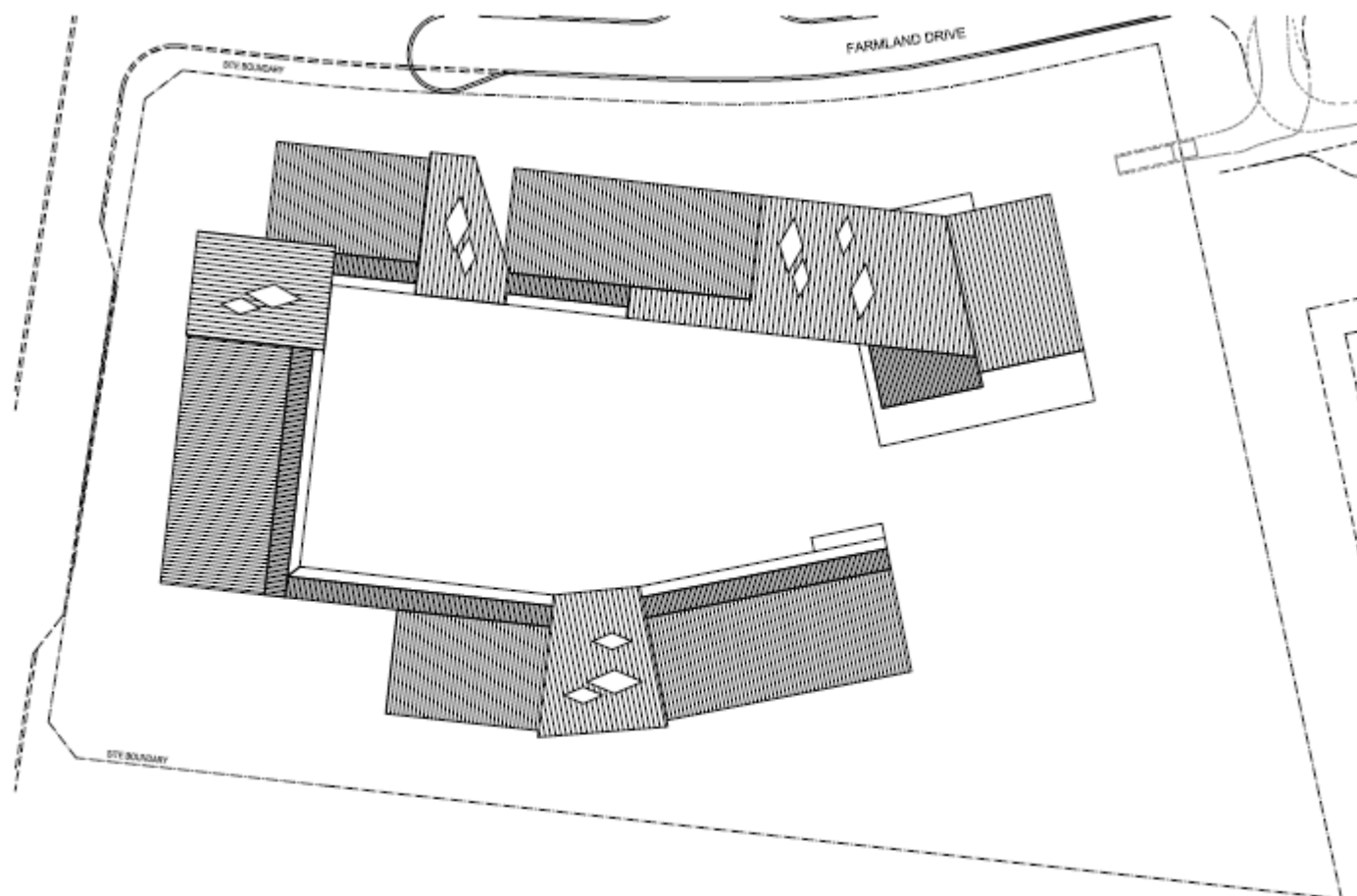






**Plate 3**    **Proposed development - level one**





**Plate 4     Proposed development - roof**



## 1.4 Planning approvals

The proposed development will be assessed as a SSD under Section 89(c) of the EP&A Act and Schedule 1 of the SEPP (State and Regional Development) 2011. Other relevant legislation and planning instruments that will inform the assessment include:

- Blacktown Development Control Plan 2015
- Blacktown Local Environmental Plan 2015
- *National Parks and Wildlife Amendment Act 2010*
- NPW Act

## 1.5 Restricted and confidential information

Appendix 1 in the Archaeological Report (AR) (Appendix 5) contains AHIMS information which is confidential and not to be made public. This is clearly marked on the title page for the Attachment.

## 1.6 Aboriginal cultural heritage

### 1.6.1 General description

It is generally accepted that people have inhabited the Australian landmass for the last 50,000 years (Allen & O'Connell 2003). Dates of the earliest occupation of the continent by Aboriginal people are subject to continued revision as more research is undertaken. In NSW, according to Bowler et al. (2003), Aboriginal people have occupied the land for over 42,000 years. However, preliminary evidence presented by Biosis (2016) from a subsurface testing program in south-western NSW suggests Aboriginal people may have occupied the semi-arid zone of the region for 50,000 years.

The timing for the human occupation of the Sydney Basin is still uncertain. While there is some possible evidence for occupation of the region around 40,000 years ago, the earliest known radiocarbon date for the Aboriginal occupation of the Sydney Basin is associated with a cultural / archaeological deposit at Parramatta, which was dated to  $30,735 \pm 407$  BP (Jo McDonald Cultural Heritage Management. 2005a, Jo McDonald Cultural Heritage Management. 2005b). Archaeological evidence of Aboriginal occupation of the Cumberland Plains indicates that the area was intensively occupied from approximately 4000 years BP. Such 'young' dates are probably more a reflection of the conditions associated with the preservation of this evidence and the areas that have been subject to surface and sub-surface archaeological investigations, rather than actual evidence of the Aboriginal people prior to this time.

Without being part of the Aboriginal culture and the productions of this culture, it is not possible for non-Aboriginal people to fully understand the meaning of site, objects and places to Aboriginal people – only to move closer towards understanding this meaning with the help of the Aboriginal community. Similarly, definitions of Aboriginal culture and cultural heritage without this involvement constitute outsider interpretations.

With this preface Aboriginal cultural heritage broadly refers to things that relate to Aboriginal culture and hold cultural meaning and significance to Aboriginal people (DECCW 2010a, p.3). There is an understanding in Aboriginal culture that everything is interconnected. In essence Aboriginal cultural heritage can be viewed as potentially encompassing any part of the physical and/or mental landscape, that is, 'Country' (DECCW 2010a, p.iii).



Aboriginal people's interpretation of cultural value is based on their 'traditions, observance, lore, customs, beliefs and history' (DECCW 2010a, p.3). The things associated with Aboriginal cultural heritage are continually and actively being defined by Aboriginal people (DECCW 2010a, p.3). These things can be associated with traditional, historical or contemporary Aboriginal culture (DECCW 2010a, p.3).

### **1.6.2 Tangible Aboriginal cultural heritage**

Three categories of tangible Aboriginal cultural heritage may be defined:

- Things that have been observably modified by Aboriginal people.
- Things that may have been modified by Aboriginal people but no discernible traces of that activity remain.
- Things never physically modified by Aboriginal people (but associated with Dreamtime Ancestors who shaped those things).

### **1.6.3 Intangible Aboriginal cultural heritage**

Examples of intangible Aboriginal cultural heritage would include memories of stories and 'ways of doing', which would include language and ceremonies (DECCW 2010a, p.3).

### **1.6.4 Statutory**

Currently Aboriginal cultural heritage, as statutorily defined by the NPW Act, consists of objects and places which are protected under Part 6 of the Act.

Aboriginal objects are defined as:

*any deposit, object or material evidence...relating to the Aboriginal habitation of the area that comprises NSW, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.*

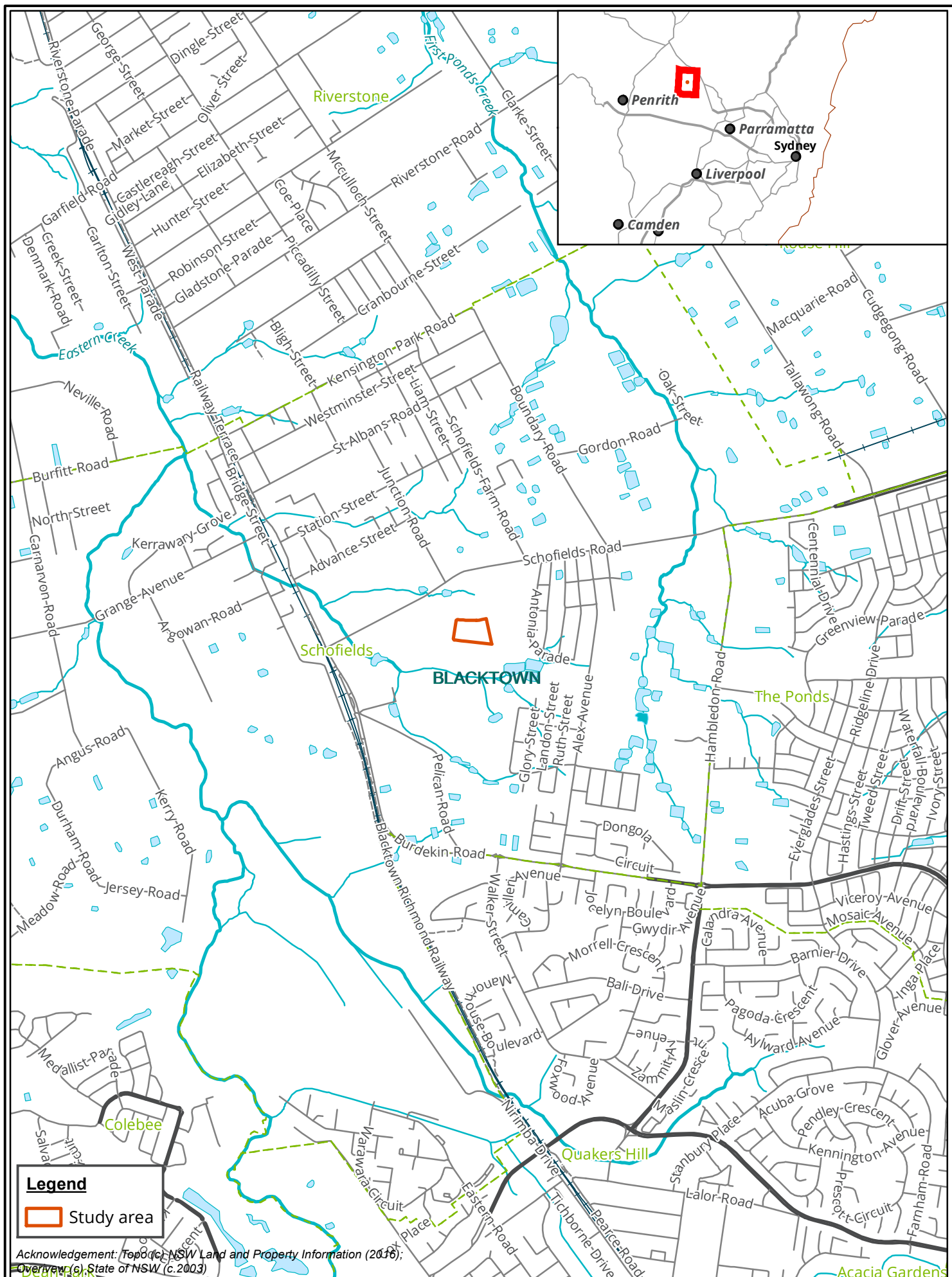
Aboriginal places are defined as a place that is or was of special Aboriginal cultural significance. Places are declared under section 84 of the NPW Act.

### **1.6.5 Values**

Aboriginal cultural heritage is valued by Aboriginal people as it is used to define their identity as both individuals and as part of a group (DECCW 2010a, p.iii). More specifically it is used:

- to provide a:
  - 'connection and sense of belonging to Country' (DECCW 2010a, p.iii)
  - link between the present and the past (DECCW 2010a, p.iii)
- as a learning tool to teach Aboriginal culture to younger Aboriginal generations and the general public (DECCW 2010a, p.3)
- as further evidence of Aboriginal occupation prior to European settlement for people who do not understand the magnitude to which Aboriginal people occupied the continent (DECCW 2010a, p.3).



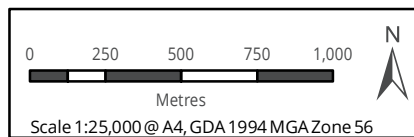


**Figure 1: Location of the study area**

Acknowledgement: Topographic NSW Land and Property Information (2016);  
Overview(s) State of NSW (c.2003)

Biosis Pty Ltd  
Albury, Ballarat, Melbourne,  
Newcastle, Sydney, Wangaratta & Wollongong


Matter: 27715  
Date: 23 August 2018,  
Checked by: AV, Drawn by: DK, Last edited by: skumar  
Location: P:\27700s\27715\Mapping\







**Legend**

 Study area

**Figure 2: Study area detail**



Metres  
Scale: 1:800 @ A3  
Coordinate System: GDA 1994 MGA Zone 55



Albury, Ballarat, Melbourne,  
Sydney, Newcastle, Wangaratta & Wollongong

Matter: 27715,  
Date: 14 September 2018,  
Checked by: AV, Drawn by: DK, Last edited by: skumar  
Location: P:\27700s\27715\Mapping\  
27715\_F2\_ProjectArea.mxd



## 2 Study area context

---

This section discusses the study area in regards to its landscape, environmental and Aboriginal cultural heritage context. This section should be read in conjunction with the archaeological report attached in Appendix 5. Background research has been undertaken in accordance with the code (DECCW 2010b).

### 2.1 Topography and hydrology

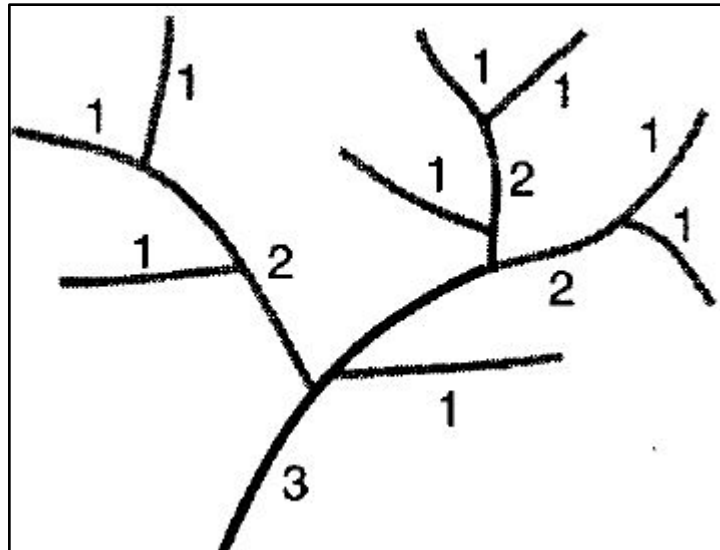
The study area lies within the Cumberland Plain, which is a broad and shallow basin that stretches westwards from Parramatta to the Hawkesbury-Nepean River and southwards from Windsor to Thirlmere. The study area is contained within the Wianamatta Group geological formation, specifically the Bringelly Shale geological unit. The Bringelly Shale formation is primarily composed of shale, with occasional calcareous claystone, laminate, and coal (Bannerman & Hazelton 1990, p.28). The formation also contains subsidiary sandstone bands, varying in thickness from one inch to five feet (Lovering 1954).

Common landform elements within these systems include hillslopes, crests, drainage depressions, valley flats, and stream channels. A review of topographic maps of the study area indicates that it is dominated by gentle slopes. Landform units present in the vicinity of the study area include crests, alluvial plains, hillslopes, and creek banks. The study area contains a crest which gradually descends to the west in the northern portion, and a simple slope descending south towards an open depression and a third order non-perennial stream, which is located outside of the study area.

Stream order is recognised as a factor which assists the development of predictive modelling in Sydney Basin Aboriginal archaeology, and has seen extensive use in the Sydney region, most notably by Jo McDonald Cultural Heritage Management (Jo McDonald Cultural Heritage Management 2000, Jo McDonald Cultural Heritage Management Pty Ltd 2005a, Jo McDonald Cultural Heritage Management Pty Ltd 2005b, Jo McDonald Cultural Heritage Management 2006, Jo McDonald Cultural Heritage Management 2008). Predictive models which have been developed for the region have a tendency to favour higher order streams as the locations of campsites as they would have been more likely to provide a stable source of water and by extension other resources which would have been used by Aboriginal groups.

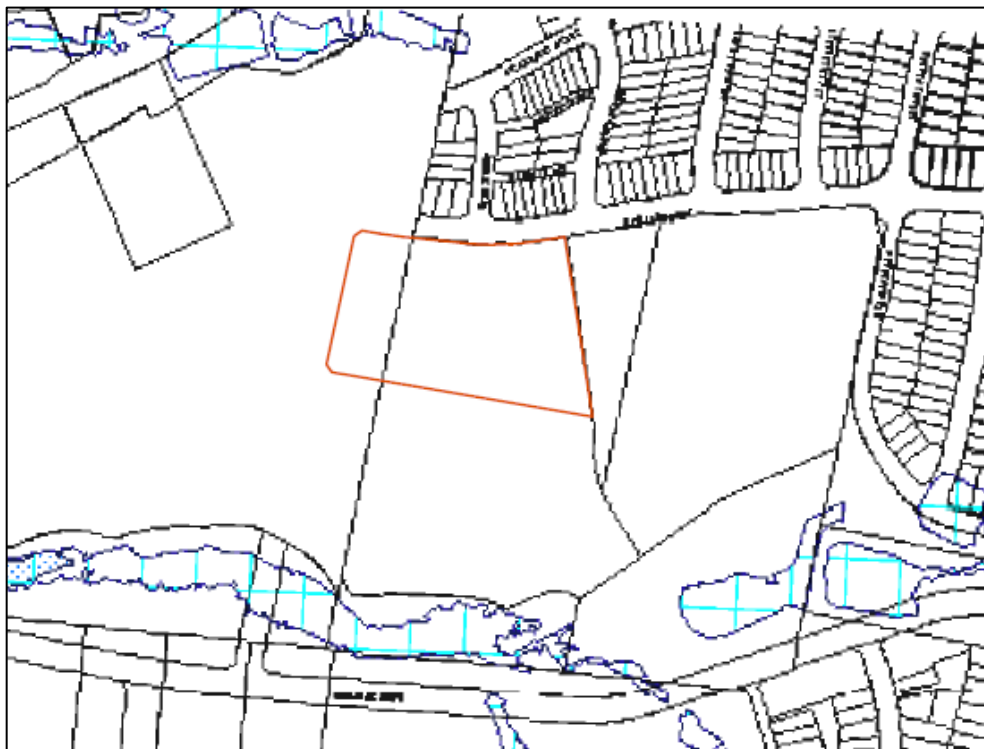
The stream order system used for this assessment was originally developed by Strahler (1952). It functions by adding two streams of equal order at their confluence to form a higher order stream, as shown in Plate 5. As stream order increases, so does the likelihood that the stream would be a perennial source of water.





**Plate 5** Diagram showing Strahler stream order (Ritter et al. 1995, p.151)

The nearest water course to the study area is a third order creek line approximately 50 metres to the south. Approximately 1.5 kilometres to the west is Eastern Creek, a fourth order creek line, which would have provided a more stable source of water. Flood mapping undertaken by Blacktown City Council indicates that the study area is outside of any flood risk extent areas (Plate 6).



**Plate 6** Flood risk extent areas in the vicinity of the study area (Source: Blacktown City Council)



## 2.2 Soil landscapes

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

The study area is contained within the Blacktown soil landscape. This landscape is characterised by its low reliefs and gentle slope, and is generally associated with a landform pattern of gently undulating rises. The local relief is around 30 metres, with slopes of 5 per cent. The soil characteristics of this landscape are described in Table 4 below.

**Table 4 Blacktown soil landscape characteristics (Bannerman & Hazelton 1990, pp.29–30)**

Soil material	Description
<b>bt1—Friable brownish black loam</b>	This is a friable brownish black loam to clay loam with moderately pedal subangular blocky (2 – 20 mm) structure and rough-faced porous ped fabric. This material occurs as topsoil (A horizon). Colour is brownish black (10YR 2/2) but can range from dark reddish brown (5YR 3/2) to dark yellowish brown (10YR 3/4). Rounded iron indurated fine gravel-sized shale fragments and charcoal fragments are sometimes present. Roots are common.
<b>bt2—Hardsetting brown clay loam</b>	This is a brown clay loam to silty clay loam which is hardsetting on exposure or when completely dried out. It occurs as an A2 horizon. This material is water repellent when extremely dry. Colour is dark brown (7.5YR 4/3) but can range from dark reddish brown (2.5YR 3/3) to dark brown (10YR 3/3). Platy, iron indurated gravel-sized shale fragments are common. Charcoal fragments and roots are rarely present.
<b>bt3—Strongly pedal, mottled brown light clay</b>	This is a brown light to medium clay with strongly pedal polyhedral or sub-angular to blocky structure and smooth-faced dense ped fabric. This material usually occurs as subsoil (B horizon). Colour is brown (7.5YR 4/6) but may range from reddish brown (2.5YR 4/6) to brown (10YR 4/6). Frequent red, yellow or grey mottles occur often becoming more numerous with depth. Fine to coarse gravel-sized shale fragments are common and often occur in stratified bands. Both roots and charcoal fragments are rare.
<b>bt4—Light grey plastic mottled clay</b>	This is a plastic light grey silty clay to heavy clay with moderately pedal polyhedral to subangular blocky structure and smoothfaced dense ped fabric. This material usually occurs as deep subsoil above shale bedrock (B3 or C horizon). Colour is usually light grey (10YR 7/1) or, less commonly, greyish yellow (2.5YR 6/2). Red, yellow or grey mottles are common. Strongly weathered ironstone concretions and rock fragments are common. Gravel-sized shale fragments and roots are occasionally present. Charcoal fragments are rare.

On crests and ridges there can be up to 30 centimetres of friable brownish black loam (bt1) overlying 10-20 centimetres of hardsetting brown clay loam (bt2) and up to 90 centimetres strongly pedal brown mottled light clay (bt3). Soil horizons are generally clear and total soil depth is <100 centimetres, though bt1 material is occasionally absent. On upper slopes and midslopes there can be up to 30 centimetres of bt1 overlying 10-20 centimetres of bt2 and 20-50 centimetres of bt3, under which lies up to 100 centimetres of a light grey plastic mottled clay (bt4). Soil depth is <200 centimetres, and similar to crests and ridges soil horizons are clear and bt1 may be absent. On lower side slopes there can be up to 30 centimetres of bt1 overlying 10-30 centimetres



of bt2 and 40-100 centimetres of bt3, under which usually lies <100 centimetres of bt4; soil horizons are clear and total depth is >200 centimetres (Bannerman & Hazelton 1990, p.30).

Subsurface artefacts in the Blacktown soil landscape are typically located in the A horizon topsoil. In the Blacktown soil landscape, it is likely that any subsurface artefacts would be identified in the upper two stratigraphic profiles (bt1 and bt2). The soils described in Table 4 align closely with profiles described in nearby excavations at the Rouse Hill Anglican College, on the northern side of Rouse Road (Stephanie Garling Archaeological Consulting 2000, p.45). The descriptions given by Stephanie Garling Archaeological Consulting (2000) suggest that the bt1 profile had largely eroded away from the study area, and that the majority of the artefacts identified came from the bt2 profile. Raw material sources in the vicinity of the study area include silcrete quarries at Riverstone and Plumpton Ridge, which are located approximately 1 kilometres west (Archaeological & Heritage Management Solutions 2015, p.18).

Geotechnical investigations were undertaken in 2017 and 2018. Areas of stockpiling were noted in the central portion. Three boreholes were established within the study area in the 2017 investigations, which displayed similar soils in varying colours throughout, namely clayey silt up to 20-50 centimetres, overlying a silty clay extending to a depth of 110-200 centimetres, underlain by sandstone. Borehole 3 in the north-eastern portion of the study area identified 20 centimetres of silty sand fill material containing organic material and traces of clay (JK Geotechnics 2017). Similar results were found in the 2018 investigation, with 24 boreholes established (Greencap 2018).

## 2.3 Climate and rainfall

The climate in the Schofields area is classified as warm and temperate where summers are long and mild, with relatively dry winters. The mean monthly temperatures during the day range from 28.4°C in December to 17.4°C in July (Bureau of Meteorology 2018). Annual rainfall throughout the year ranges from 113.2 millimetres in February to 42.6 millimetres in July. The consistent amount of annual rainfall combined with mild temperatures would have made this region a desirable place for Aboriginal occupation.

## 2.4 Landscape resources

While 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, the distance of the study area from permanent water sources would have detracted from its appeal as a long term occupation site. Although extensively cleared today, the Blacktown Soil Landscape typically supports dry sclerophyll forest; predominantly species of eucalypt, including Forest Red Gum, Narrow Leaved Ironbark, and Grey Box (Bannerman & Hazelton 1990, p.29). Broad Leaved Ironbark and White Stringy Bark are also occasionally present.

Within the Cumberland subregion of the Sydney Basin Bioregion there is a variety of vegetation types present, with Grey Box, Forest Red Gum, Narrow-leaved Ironbark woodland, and Spotted Gum are present on shale hills. Hard-leaved Scribbly Gum, Rough-barked Apple, and Old Man Banksia are identified on alluvial sands and gravels. Broad-leaved Apple, Cabbage Gum, Forest Red Gum, and Swamp Oak are present on river flats. Tall Spike Sush, and Juncus with Parramatta Red Gum is noted around lagoons and swamps (NSW National Parks and Wildlife Service 2003, p.193).

Native fauna that would have been present in the vicinity of the study area include: Australian Wood Duck, White-faced Heron, Eastern Long-necked Tortoise, Eastern Water Skink, Garden Skink, Welcome Swallow, Purple Swamphen, as well as arboreal fauna including owls, Ring- and Brush-tailed Possums, and gliders.



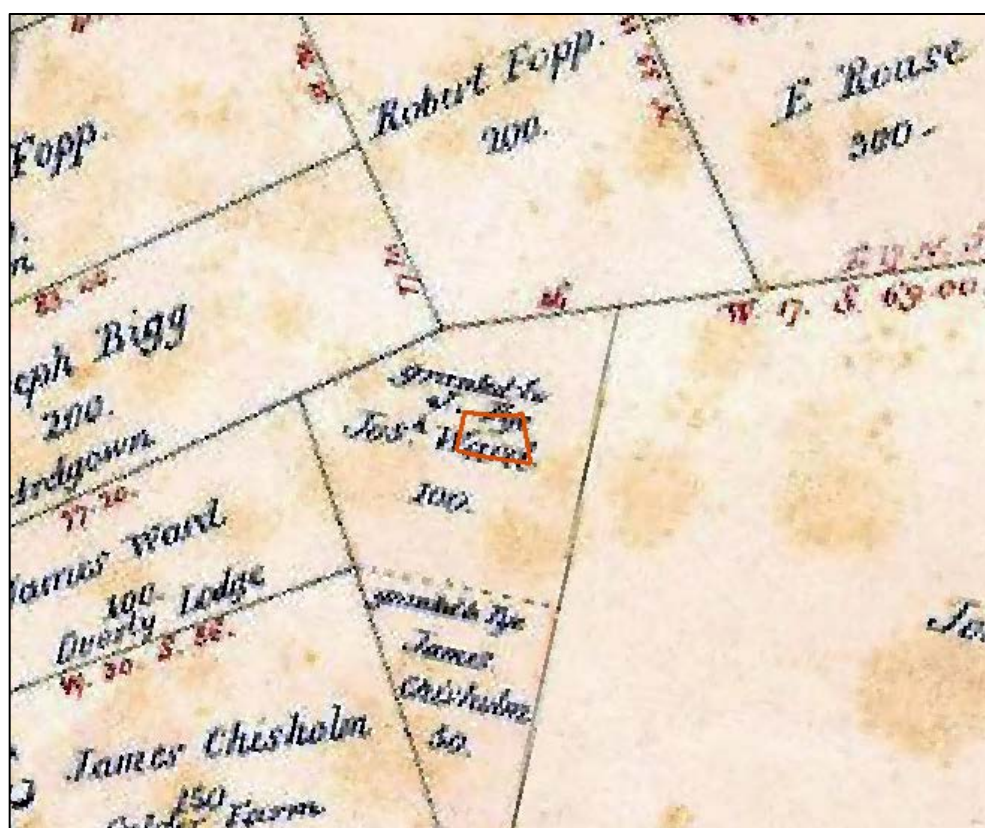
Plant resources were used in a variety of ways. Fibres were twisted into string which was used for many purposes including the weaving of nets, baskets and fishing lines. String was also used for personal adornment. Bark from eucalypts was used in the provision of shelter; a large sheet of bark being propped against a stick to form a gunyah (Attenbrow 2002). Swamp oak bark could be used for the making of canoes, and smooth-barked apple for the making of baskets and bowls.

As well as being important food sources, animal products were also used for tool making and fashioning a myriad of utilitarian and ceremonial items. For example, tail sinews are known to have been used to make fastening cord, while 'bone points', which would have functioned as awls or piercers, are often an abundant part of the archaeological record. Animals such as Brush-tailed Possums were highly prized for their fur, with possum skin cloaks worn fastened over one shoulder and under the other (Attenbrow 2002).

## **2.5 European land use history**

The study area is located within a land grant of 100 acres (40.4686 hectares) initially made to Josh Ward in 1815, and later made to Joseph Pye on 19 October 1831 by Crown grant (Plate 7) (NSW Department of Lands, Vol. 1101 Fol. 101, Colonial Secretary's Office 1831). The study area remained under the ownership of the Pye family until 1938. The Pye family were known as orchardists and also grazed cattle, so it is possible that orcharding and/or grazing activities may have taken place within the study area (Windsor and Richmond Gazette 1897, 8; AHMS 2015). In 1938, part of the Pye lands were sold to Joseph and Harold Langlade, who established 'Langlade's Dairy'; several dairy-related structures were constructed east of the study area (AHMS 2015). It is likely the study area continued to be used for grazing purposes under their ownership, and that of subsequent owners, including the Geddes from 1949-c.1960 (master butcher), Gordons from 1960-1973 (horse trainer) and Jones' from 1973 (farmer) (NSW Department of Lands, Vol. 1932 Fol. 207).





**Plate 7** Extract from an 1833 Gidley Parish Map, with the study area highlighted (Source: NSW Land Registry Services)

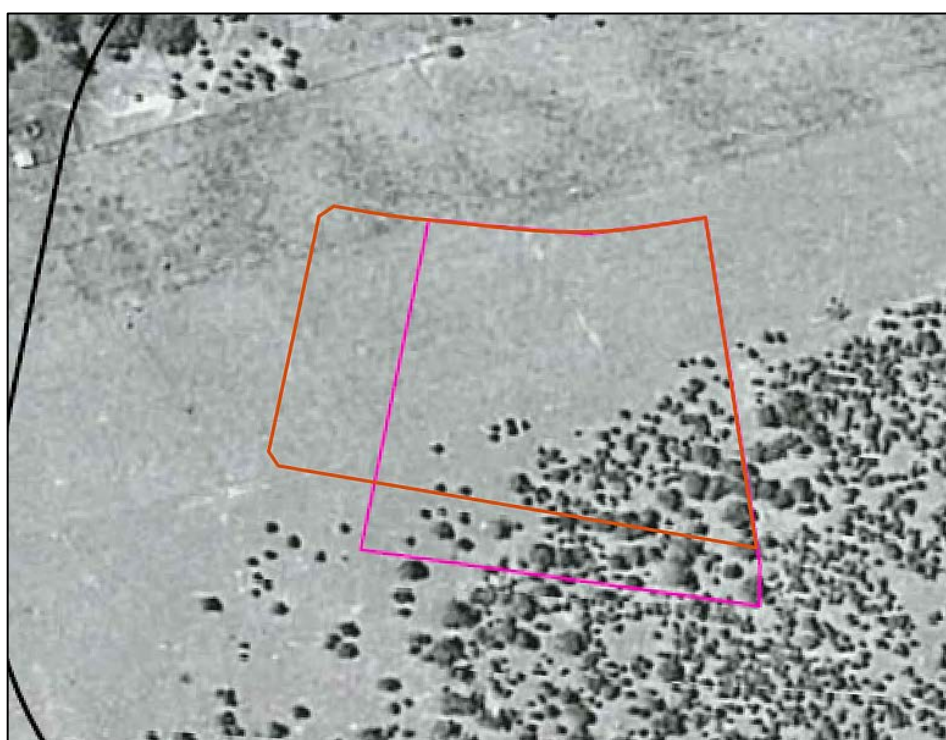
Aerial photographs from the mid-20th century onwards reveal detail of the use and disturbance of the study area (Plate 8, Plate 9, Plate 10, Plate 11, Plate 12, Plate 13, Plate 14, Plate 15, Plate 16, Plate 17). Table 5 provides a summary of the changes to the study area from 1956 to 2018.

**Table 5** Analysis of aerial photographs of the study area

Year	Comments
1956	A large proportion of the study area appears to have been ploughed, specifically in the northern sections. The southern areas retain some bushland but app has been partially cleared.
1961	Significant changes to the study area, with the installation of an unsealed oval track in the north-eastern portion of the study area; this may have been a horse track considering the ownership of the study area by a horse trainer at this time. Possibly some earthworks or terracing in the south and south-eastern portions of the study area. Some bushland has been retained in the south-eastern corner, and plough marks are also strongly evident.
1965	Similar to previous aerial, with the track less defined and sparser bushland in the south-eastern corner.
1970	The track appears to be out of use, having been grown over. Bushland in the south-eastern corner appears to be in similar condition to the previous aerial.
1978	Very little evidence of the track remains; possibly used for grazing animal stock.
1982	Several tracks run through the study area, and potentially an earthwork in the north-eastern corner.



Year	Comments
1991	Western portion of the study area has been developed for agricultural purposes, with grass cover appearing sparse in this area.
2005	An informal track appears to run across the south-eastern corner of the study area near the area of bush, while grass cover has increased in the western portion, with some earth scours remaining.
2009	The track running across the south-eastern corner is more defined, suggesting heavier use, with a further track running north-south in the central portion of the study area. There is an area of exposure in the south-western corner.
2018	Introduction of residential development north of the study area has resulted in some removal of topsoil along the northern boundary, and possible deposited materials just south of this exposure..



**Plate 8** 1956 aerial of the study area, with the study area highlighted in red (please note the pink outline is the area assessed in Environmental Investigation Services 2017) (Source: Environmental Investigation Services 2017)





**Plate 9** 1961 aerial of the study area, with the study area highlighted in red (please note the pink outline is the area assessed in Environmental Investigation Services 2017)  
(Source: Environmental Investigation Services 2017)



**Plate 10** 1965 aerial of the study area, with the study area highlighted in red (please note the pink outline is the area assessed in Environmental Investigation Services 2017)  
(Source: Environmental Investigation Services 2017)





**Plate 11** 1970 aerial of the study area, with the study area highlighted in red (please note the pink outline is the area assessed in Environmental Investigation Services 2017)  
(Source: Environmental Investigation Services 2017)



**Plate 12** 1978 aerial of the study area (Source: NSW Spatial Services 2018)





**Plate 13** 1982 aerial of the study area, with the study area highlighted in red (please note the pink outline is the area assessed in Environmental Investigation Services 2017)  
(Source: Environmental Investigation Services 2017)



**Plate 14** 1991 aerial of the study area, with the study area highlighted in red (please note the pink outline is the area assessed in Environmental Investigation Services 2017)  
(Source: Environmental Investigation Services 2017)





**Plate 15** 2005 aerial of the study area, with the study area highlighted in red (please note the pink outline is the area assessed in Environmental Investigation Services 2017)  
(Source: Environmental Investigation Services 2017)



**Plate 16** 2009 aerial of the study area, with the study area highlighted in red (please note the pink outline is the area assessed in Environmental Investigation Services 2017)  
(Source: Environmental Investigation Services 2017)





**Plate 17** 2018 aerial of the study area, with the study area highlighted in red (Source: GoogleMaps 2018)



## 3 Aboriginal cultural heritage context

---

### 3.1 Ethnohistory

Our knowledge of Aboriginal people and their land-use patterns and lifestyles prior to European contact is mainly reliant on documents written by non-Aboriginal people. These documents are affected by the inherent bias of the class and cultures of their authors, who were also often describing a culture that they did not fully understand - a culture that was in a heightened state of disruption given the arrival of settlers and disease. Early written records can however be used in conjunction with archaeological information and surviving oral histories from members of the Aboriginal community in order to gain a picture of Aboriginal life in the region.

Despite a proliferation of Aboriginal heritage sites there is considerable ongoing debate about the nature, territory and range of pre-contact Aboriginal language groups in the greater Sydney region. These debates have arisen largely because, by the time colonial diarists, missionaries and proto-anthropologists began making detailed records of Aboriginal people in the late 19th century, pre-European Aboriginal groups had been broken up and reconfigured by European settlement activity. The following information relating to Aboriginal people on the Cumberland Plains is based on such early records.

There is some confusion relating to group names, which can be explained by the use of differing terminologies in early historical references. Language groups were not the main political or social units in Aboriginal life. Instead, land custodianship and ownership centred on the smaller named groups that comprised the broader language grouping. There is some variation in the terminology used to categorise these smaller groups; the terms used by Attenbrow (2002) will be used here. Attenbrow (2002, p.34) suggests that a total of four dialects were spoken in the Sydney region:

- *Darug coastal dialect/s - the Sydney Peninsula (north of Botany Bay, south of Port Jackson, west to Parramatta), as well as the country to the north of Port Jackson, possibly as far as Broken Bay*
- *Darug hinterland dialect - on the Cumberland Plain from Appin in the south to the Hawkesbury River in the north; west of the Georges River, Parramatta, the Lane Cove River and Berowra Creek*
- *Dharawal - from south side of Botany Bay, extending south as far as the Shoalhaven River; from the coast to the Georges River and Appin, and possibly as far west as Camden,*
- *Gundungurra - southern rim of the Cumberland Plain west of the Georges River, as well as the southern Blue Mountains.*

Early interactions between local Aboriginal groups in the Sydney region and European settlers varied in nature between peaceful and hostile. It was not long before the effects of colonisation proved detrimental to local groups, with farming practices employed by the settlers removing land that had until that point been used for subsistence (Attenbrow 2002).

Early observers made no note of the language of the local groups, and it was not until the latter part of the nineteenth century that the name Darug was used. Matthews (1901, p. 155, cited by Attenbrow 2002, p.32) stated that "The Dharuk speaking people adjoined the Thurralwal on the north, extending along the coast to the Hawkesbury River, and inland to what are now Windsor, Penrith, Campbelltown, and intervening towns". Subsistence activities varied based on the local landscapes, with Darug groups closer to the coast employing different food sources and means of hunting in order to survive, compared to those further inland (Kelleher Nightingale Consulting 2010, p.10).

After the arrival of European settlers the movement of Aboriginal hunter-gatherers became increasingly restricted. European expansion along the Cumberland Plain was swift and soon there had been considerable



loss of land to agriculture. This led to violence and conflict between Europeans and Aboriginal people as both groups sought to compete for the same resources (Brookes & Associates et al. 2003, p.16). At the same time diseases such as small pox were having a devastating effect on the Aboriginal population. Death, starvation and disease were some of the disrupting factors that led to a reorganisation of the social practices of Aboriginal communities after European contact. The formation of new social groups and alliances were made as Aboriginal people sought to retain some semblance of their previous lifestyle.

### 3.2 Aboriginal heritage located in the study area

The archaeological assessment of the study area identified the following Aboriginal sites in the study area:

- Alex Avenue PS 01 (AHIMS pending).
- Alex Avenue PS 02 (AHIMS pending).

The archaeological report attached in Appendix 5 provides details for the Aboriginal site identified during the archaeological assessment and shown on Figure 3. A brief description of each site is provided below.

#### Alex Avenue PS 01 (AHIMS pending)

Alex Avenue PS 01 consists of two artefacts, a grey brown chert distal fragment, recovered from Spit 3, TP11 and silcrete medial fragment, recovered from Spit 2, TP12, located on a simple slope in the south-western portion of the study area (Plate 18, Plate 19). Soils at this location consisted of three stratigraphic layers. Topsoils ranged from a dark brown silty clay of low compaction to a dark yellowish brown silty sand of low compaction. These overlaid a moderately compacted dark brown silty clay to a moderately compacted red silty clay followed by a highly compacted red clay. The base of this deposit was reached at 350 millimetres.



**Plate 18 Overview of TP11 in Alex Avenue PS 01 (AHIMS pending), facing north**





**Plate 19 Section of TP12 in Alex Avenue PS 01 (AHIMS pending), facing north**

### **Alex Avenue PS 02 (AHIMS pending)**

Alex Avenue PS 02 consists of a single artefact, a complete silcrete flake, recovered from Spit 2, TP27, located on the edge of an open depression landform in the south-eastern portion of the study area (Plate 20). Soils at this location consisted of three stratigraphic layers, including a brown moderately compacted sandy silt, overlying a highly compacted brown silty sand, followed by a highly compacted red clay. The base of this deposit was reached at 380 millimetres.





**Plate 20** Overview of TP27 within Alex Avenue PS 02 (AHIMS pending), facing north



**Figure 3    Aboriginal archaeological sites within the study area (to be finalised)**



### 3.3 Interpretation of past Aboriginal land use

Previous archaeological surveys indicate that proximity to a permanent water supply is a primary factor in the determination of the location for past Aboriginal occupation (ENSR Australia Pty Ltd 2008, p.16). There appears to be a high correlation between the permanence of a water source and the complexity of sites. Lithic assemblages identified near permanent water sources suggest a greater range of activity (for example tool use, manufacture and maintenance, food processing and quarrying) while sites located near more ephemeral water sources indicate only transitory occupation (isolated knapping and discarded tools) (Kelleher Nightingale Consulting Pty Ltd 2008, p.7).

Based on the environmental context of the study area, it is likely that it would have supported Aboriginal occupation, being located on a crest, ridgeline and upper slope in the vicinity of a third order and first order stream. This location would have provided access to a range of animal and plant resources, as well as fresh water, making it an ideal location of occupation for Aboriginal people in the area. This statement is supported by the AHIMS data which has identified several Aboriginal sites located on the surrounding slopes in the vicinity of the current study area.

Two Aboriginal sites, Alex Avenue PS 01 and Alex Avenue PS 02, were identified within the study area as a result of test excavations. The presence of the artefacts on the slope and open depression landforms suggest the objects may have washed down the slope from higher ground, and as such may not be in their original context. It is not surprising that fewer artefacts were found here given the greater distance from Second Ponds Creek and is therefore consistent with the predictive statement that sites will be closer to permanent water sources, despite being within an elevated landform. The low density of artefacts identified within the study area indicate that Alex Avenue PS 01 and Alex Avenue PS 02 are 'background scatter'; it is considered unlikely that camping or knapping took place at these sites. It is likely that Aboriginal groups may have favoured the lower slope areas closer to the unnamed creek south of the study area, or Eastern Creek, west of the study area.



## 4 Aboriginal community consultation

Consultation with the Aboriginal community has been undertaken in compliance with the consultation requirements as detailed below. A consultation log of all communications with RAPs is provided in Appendix 1.

### 4.1 Stage 1: Notification of project proposal and registration of interest

#### 4.1.1 Identification of relevant Aboriginal stakeholders

In accordance with the consultation guidelines, Biosis Pty Ltd notified the following bodies regarding the proposal:

- Blacktown City Council
- Deerubbin Local Aboriginal Land Council (LALC)
- Greater Sydney Local Land Services
- National Native Title Tribunal (NNTT)
- NSW Native Title Services Corporation Limited (NTSCORP Limited)
- OEH
- Office of the Registrar, Aboriginal Land Rights Act 1983 of Aboriginal Owners

A list of known Aboriginal stakeholders in the Blacktown region was provided by OEH (a copy of this responses is provided in Appendix 2 and include:

- |                                                      |                                                       |
|------------------------------------------------------|-------------------------------------------------------|
| • Amanda Hickey Cultural Services                    | • Badu                                                |
| • Barking Owl Aboriginal Corporation                 | • Biamanga                                            |
| • Bidjawong Aboriginal Corporation                   | • Bilinga Cultural Heritage Technical Services        |
| • Bilinga                                            | • Butucarbin Aboriginal Corporation                   |
| • Cullendulla                                        | • Darug Aboriginal Cultural Heritage Assessments      |
| • Darug Boorooberongal Elders Aboriginal Corporation | • Darug Custodian Aboriginal Corporation              |
| • Darug Land Observations                            | • Darug Tribal Aboriginal Corporation                 |
| • Deerubbin Local Aboriginal Land Council            | • Des Dyer – Darug Aboriginal Land Care               |
| • Dharug                                             | • Dhinawan-Dhigaraa Culture & Heritage Pty Ltd        |
| • Didge Ngunawal Clan                                | • DJMD Consultancy                                    |
| • Ginninderra Aboriginal Corporation                 | • Goobah Developments                                 |
| • Gulaga                                             | • Gunjeewong Cultural Heritage Aboriginal Corporation |
| • Gunyuu                                             | • Gunyuu Cultural Heritage Technical Services         |



- HSB Consultants
- Kawul Cultural Services
- Minnamunnung
- Munyunga Cultural Heritage Technical Services
- Murramarang
- Murrumbul Cultural Heritage Technical Services
- Nundagurri
- Phil Khan - Kamilaroi Yankuntjatjara Working Group
- Thauaira
- Tocomwall
- Walbunja
- Warragil Cultural Services
- Wingikara
- Wullung
- Yerramurra
- Jerringong
- Merrigarn Indigenous Corporation
- Mununga
- Murra Bidgee Mullangari Aboriginal Corporation
- Murrumbul
- Nerrigundah
- Pemulwuy CHTS
- Rane Consulting
- Thoorga Nura
- Wailwan Aboriginal Digging Group
- Walgalu
- Widescope Indigenous Group
- Wingikara Cultural Heritage Technical Services
- Wurrumay Consultancy

A search conducted by the Office of the Registrar, *Aboriginal Land Rights Act 1983* (NSW) listed no Aboriginal Owners with land within the study area. A search conducted by the NNTT listed no Registered Native Title Claims, Unregistered Claimant Applications or Registered Indigenous Land Use Agreements within the study area.

#### 4.1.2 Public notice

In accordance with the consultation guidelines, a public notification was placed in the following newspaper:

- *Rouse Hill Times* (10 October 2018)
- *Rouse Hill Times* (28 November 2018)

The wrong version of the public notice was published on the 10 October 2018; therefore, an additional public notice was advertised on the 28 November 2018. No new Aboriginal parties registered for the project as a result of the republication. The advertisements invited Aboriginal people who hold cultural knowledge to register their interest in a process of community consultation to provide assistance in determining the significance of Aboriginal object(s) and/or places in the vicinity of the study area. A copy of the public notice is provided in Appendix 2.

#### 4.1.3 Registration of Aboriginal parties

Aboriginal groups identified in Section 4.1.1 were sent a letter inviting them to register their interest in a process of community consultation to provide assistance in determining the significance of Aboriginal object(s) and/or places in the vicinity of the study area. In response to the letters and public notice, a total of 13 groups registered their interest in the project. Responses to registration from Aboriginal parties are provided in Appendix 2. A full list of Aboriginal parties who registered for consultation is provided below:



- Aboriginal Archaeology Service
- Barking Owl Aboriginal Corporation
- Butucarbin Aboriginal Corporation
- Darug Boorooberongal Elders Aboriginal Corporation
- Darug Land Observations
- Darug Tribal Aboriginal Corporation
- Deerubbin LALC
- Des Dyer - Darug Aboriginal Land Care
- Didge Ngunawal Clan
- Merrigarn Indigenous Corporation
- Muragadi
- Murra Bidgee Mullangari Aboriginal Corporation
- Phil Khan - Kamilaroi Yankuntjatjara Working Group

## **4.2 Stage 2: Presentation of information about the proposed project**

On 5 November 2018 Biosis provided RAPs with details about the proposed development works (project information pack). A copy of the project information pack is provided in Appendix 3.

## **4.3 Stage 3: Gathering information about cultural significance**

### **4.3.1 Archaeological assessment methodology information pack**

On 5 November 2018, Biosis provided each RAP with a copy of the project methodology pack outlining the proposed Aboriginal cultural heritage assessment process and methodology for this project. RAPs were given 28 days to review and prepare feedback on the proposed methodology. A copy of the project methodology pack is provided in Appendix 3.

Murra Bidgee Mullangari Aboriginal Corporation, Darug Aboriginal Land Care, Darug Land Observations, Merrigarn, Butucarbin Aboriginal Corporation, and Aboriginal Archaeology Service all agreed with and supported the methodology. Darug Land Observations suggested that any artefacts recovered during test excavations should be reburied on site. Aboriginal Archaeology Service suggested that any artefacts collected could be displayed in a museum, local library or local government building or reburied in close proximity of the area.

### **4.3.2 Test excavations**

The following groups participated in test excavations within the study area from 18 to 25 February 2019:

- Barking Owl Aboriginal Corporation
- Darug Aboriginal Land Care
- Deerubbin Local Aboriginal Land Council
- Kamilaroi Yankuntjatjara Working Group



#### **4.3.3 Information gathered during fieldwork**

No comments or information was supplied either on-site or through correspondence during the fieldwork period.

#### **4.4 Stage 4: Review of draft Aboriginal cultural heritage assessment report**

To be completed following the review and comments from RAPs after the statutory 28 day period.



## 5 Aboriginal cultural 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 the cultural values of Aboriginal sites in the study area. Details of the scientific significance assessment of Aboriginal sites in the study area are provided in Appendix 5.

### 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: The Australia ICOMOS Charter for Places of Cultural Significance* (Australia ICOMOS 2013) (the Burra Charter). 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, a 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 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



Government, the NSW OEH and the Heritage Branch, and the NSW Department of Planning and Environment. 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 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 OEH *Guidelines to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (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 consideration of Aboriginal sites and places are the cultural/social significance to Aboriginal people and their archaeological or scientific significance to archaeologists and the Aboriginal community. 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 Cultural (social significance) values

Cultural or social significance refers to the spiritual, traditional, historical and/or contemporary associations and values attached to a place or objects by Aboriginal people. Aboriginal cultural heritage is broadly valued by Aboriginal people as it is used to define their identity as both individuals and as part of a group (DECCW 2010a, p.iii). More specifically it provides:

- a 'connection and sense of belonging to Country' (DECCW 2010a, p.iii)
- a link between the present and the past (DECCW 2010a, p.3)
- a learning tool to teach Aboriginal culture to younger Aboriginal generations and the general public (DECCW 2010 p.3)
- further evidence of Aboriginal occupation prior to European settlement for people who do not understand the magnitude to which Aboriginal people occupied the continent (DECCW 2010a, p.3).

It is acknowledged that Aboriginal people are the primary determiners of the cultural significance of Aboriginal cultural heritage.

## 5.3 Historic values

Historic significance refers to associations a place or object may have with a historically important person, event, phase or activity to the Aboriginal and other communities. The study area is not known to have any historic associations.



## 5.4 Archaeological (scientific significance) values

An archaeological scientific assessment was undertaken for the study area and is presented in detail as part of the attached Archaeological Report (Appendix 5).

## 5.5 Aesthetic values

Even though the study area demonstrates disturbances in some areas, it is a typical example of an undulating landform pattern with low reliefs and gentle slopes. The landscape of the study area is closely linked with Aboriginal cultural values and provides a context for Aboriginal sites that gives a strong sense of place. The local Aboriginal community strongly identifies with the landscape of the study area.

## 5.6 Statement of significance

The significance of sites was assessed in accordance with the following criteria:

- requirements of the code
- the Burra Charter
- *Guide to investigating and reporting on Aboriginal heritage.*

The combined use of these guidelines is widely considered to represent the best practice for assessments of Aboriginal cultural heritage. The identification and assessment of cultural heritage values includes the four values of the Burra Charter: social, historical, scientific and aesthetic values. The resultant statement of significance has been constructed for the study area based on the significance ranking criteria assessed in Table 6.

### 5.6.1 Statement of significance for Alex Avenue PS 01

Alex Avenue PS 01 consists of two sub-surface artefacts, a chert distal fragment with a hinge termination and retouch evidence, and a silcrete medial fragment, located on a slope landform approximately 180 m north of an unnamed third order creekline connected to Eastern Creek, approximately 1.5 km west of the site. The site contains moderate levels of disturbance from historical farming activities and represents a common site type within the area. Alex Avenue PS 01 is considered to be representative of opportunistic background scatter. The site has no direct historical or aesthetic associations, and has low scientific significance. The significance of Alex Avenue PS 01 has been assessed as low.

**Table 6 Significance assessment criteria**

Site name	Criteria	Ranking
<b>Alex Avenue PS 01</b> <b>AHIMS pending</b>	Cultural – discussions with the local Aboriginal communities reflect that the site is moderate in value.	Moderate
	Historical – the site is not connected to any historical event or personage.	Low
	Scientific – the site possesses low archaeological values.	Low
	Aesthetic – the site is a typical example of an undulating landform pattern with low reliefs and gentle slopes.	Moderate



### 5.6.2 Statement of significance for Alex Avenue PS 02

Alex Avenue PS 02 consists of a single isolated sub-surface artefact, a complete silcrete flake with a flaked platform and feather termination, located on a slope landform approximately 180 m north of an unnamed third order creekline connected to Eastern Creek, approximately 1.5 km west of the site. The site contains moderate levels of disturbance from historical farming activities and represents a common site type within the area. Alex Avenue PS 02 is considered to be representative of opportunistic background scatter. The site has no direct historical or aesthetic associations, and has low scientific significance. The significance of Alex Avenue PS 02 has been assessed as low.

**Table 7 Significance assessment criteria**

Site name	Criteria	Ranking
<b>Alex Avenue PS 02</b> <b>AHIMS pending</b>	Cultural – discussions with the local Aboriginal communities reflect that the site is moderate in value.	Moderate
	Historical – the site is not connected to any historical event or personage.	Low
	Scientific – the site possesses low archaeological values.	Low
	Aesthetic – the site is a typical example of an undulating landform pattern with low reliefs and gentle slopes.	Moderate



## 6 Development limitations and mitigation measures

Within the study area, there is one recorded Aboriginal sites that may be subject to harm. It is expected that the potential of harm to Aboriginal archaeological sites from the proposed development in the study area will be direct, with a total loss of value. Strategies to avoid or minimise harm to Aboriginal heritage in the study area are discussed below.

A summary of the potential impacts of the proposed works on known Aboriginal sites within the study area is provided in Table 8.

**Table 8 Summary of potential archaeological impact**

AHIMS site no.	Site name	Significance	Type of harm	Degree of harm	Consequence of harm
AHIMS # pending	Alex Avenue PS 01	Low	Direct	Complete	Total loss of value
AHIMS # pending	Alex Avenue PS 02	Low	Direct	Complete	Total loss of value

### 6.1 Potential risks to Aboriginal cultural heritage

The current proposed works within the study area include activities which will impact Alex Avenue PS 01 and Alex Avenue PS 02. The construction of the school buildings, facilities and associated infrastructure associated with the development will impact the majority of the area identified as holding archaeological potential within the study area. If not mitigated the impact may include:

- Vehicle movement within study area with potential compaction of surface soils.
- Earthworks, which will involve the removal of topsoil and subsoil.

Left unmitigated, these activities have potential to completely remove or disturb archaeological deposits and Aboriginal objects.

### 6.2 Avoiding harm to Aboriginal heritage

Harm cannot be avoided to the Aboriginal site within the study area as a part of the proposed works.

### 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' (Australia ICOMOS 2013). 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. It is not



possible for the proposed works to avoid impacts to the areas containing Alex Avenue PS 01 and Alex Avenue PS02 within the study area, and as such Alex Avenue PS 01 and Alex Avenue PS02 will be impacted by the proposed SSD project.

Alex Avenue PS 01 and Alex Avenue PS 02 have been assessed as holding low scientific significance. The two sites contained within the study area represent opportunistic background scatter and do not warrant further investigation. Accordingly, no further archaeological works are required within the study area prior to development impacts.

## **6.4 Long term management of Alex Avenue PS 01 and Alex Avenue PS 02**

As part of this assessment, the long term management of the three artefacts recovered during test excavations must be addressed. In consultation with the TSA Management on behalf of SINSW, it has been determined that there are a number of areas within the study area which will not be subject to development or landscaping as part of the proposed works and will be maintained as a natural ground areas in the south-eastern portion of the study area. It is proposed that the artefacts will be reburied on site somewhere within this location.



## 7 Recommendations

---

The recommendations below respond specifically to the wishes of the RAPs. Recommendations regarding the archaeological value of the site, and the subsequent management of Aboriginal cultural heritage is provided in the archaeological report (Appendix 5).

### **Recommendation 1: Conditions of AHIP C000550**

Although SSD projects are not required to comply with Part 6 of the *National Parks and Wildlife Act 1974* (NPW Act), the Office of Environment and Heritage (OEH) advises that conditions of valid AHIPs are followed by SSDs in order to reduce the risk of impacting Aboriginal heritage values.

OEH also advises that the holder of the AHIP should be contacted to confirm the works that are intended on the area covered by the AHIP.

### **Recommendation 2: No further archaeological works required for Alex Avenue PS 01 and Alex Avenue PS 02**

It is recommended that no further archaeological works are required for Alex Avenue PS 01 and Alex Avenue PS 02 prior to development impacts.

### **Recommendation 3: Preparation and lodgement of AHIMS site cards for Alex Avenue PS 01 and Alex Avenue PS 02**

It is recommended that AHIMS site cards are prepared and lodged with AHIMS for newly identified sites Alex Avenue PS 01 and Alex Avenue PS 02, and that the site numbers are included in the final version of this report.

Following development impacts it will be necessary to update these AHIMS records with AHIMS site impact recording forms for Aboriginal sites Alex Avenue PS 01 and Alex Avenue PS 02. This should occur within four months following completion of development impacts or as otherwise stated in SSD approval conditions.

### **Recommendation 4: Long term care and control of artefacts**

In consultation with TSA Management on behalf of SINSW, it has been determined that there are a number of areas within the study area which will not be subject to development or landscaping as part of the proposed works and will be maintained as a natural ground areas in the south-eastern portion of the study area. It is proposed that the artefacts will be reburied on site somewhere within this location.

### **Recommendation 5: Discovery of unanticipated heritage items**

#### **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 the OEH. 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 the OEH and Aboriginal stakeholders.



## **Aboriginal ancestral remains**

Aboriginal ancestral 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:

4. immediately cease all work at that location and not further move or disturb the remains
5. notify the NSW Police and OEH's Environmental Line on 131 555 as soon as practicable and provide details of the remains and their location
6. not recommence work at that location unless authorised in writing by OEH.

## **Recommendation 6: Continued consultation with registered Aboriginal stakeholders**

As per the consultation requirements, it is recommended that the proponent provides a copy of this draft report to the Aboriginal stakeholders and considers all comments received. 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 7: Lodgement of final report**

A copy of the final report will be sent to the RAPs, the client, OEH and the AHIMS register for their records.



## References

---

- AHMS 2015, *Former Schofields Aerodrome, Nirimba Drive, Quakers Hill: Heritage Impact Statement.*, Report for Defence Housing Australia.
- Allen, J & O'Connell, J 2003, 'The long and the short of it: archaeological approaches to determining when humans first colonised Australia and New Guinea.', *Australian Archaeology*, vol. 57, pp. 5–19.
- Archaeological & Heritage Management Solutions 2015, *Preliminary Aboriginal Heritage Assessment. 14 Schofields Road, Schofields [Draft].*, Prepared for Toplace Pty Ltd.
- Attenbrow, V 2002, *Sydney's Aboriginal Past: Investigating the archaeological and historical records*, University of New South Wales Press Ltd, Sydney.
- Australia ICOMOS 2013, *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance*, Australia ICOMOS, Burwood, VIC.
- Bannerman, SM & Hazelton, PA 1990, *Soil Landscapes of the Penrith 1:100,000 Map Sheet*, Soil Conservation Service of NSW, Sydney.
- Biosis Pty Ltd & Biosis 2016, *Darcoola west water efficiency scheme: Aboriginal cultural heritage assessment report*, Unpublished report to Department of Primary Industries – Water, Authors: Atkinson, A, Smith, S & Cole, J.
- Bowler, JM et al. 2003, 'New ages for human occupation and climatic change at Lake Mungo, Australia', *Nature*, vol. 421, no. 6925, pp. 837–840.
- Brookes & Associates, Taylor Barner Landscape Architects, & Mary Dallas Consulting Archaeologists 2003, *Mamre St Marys – Conservation Management Plan*.
- Bureau of Meteorology 2018, *Climate statistics for Australian locations - Seven Hills NSW*, viewed 19 December 2018, <[http://www.bom.gov.au/climate/averages/tables/cw\\_067026.shtml](http://www.bom.gov.au/climate/averages/tables/cw_067026.shtml)>.
- Colonial Secretary's Office 1831, 'Advertising', *Sydney Monitor (NSW: 1828 - 1838)*, p. 3.
- DECCW 2010a, *Aboriginal Cultural Heritage Consultation Requirements for Proponents*, Department of Environment and Climate Change, Sydney NSW.
- DECCW 2010b, *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*, Department of Environment and Climate Change, Sydney NSW.
- ENSR Australia Pty Ltd 2008, *Aboriginal Heritage Assessment: Integrated Oilseed Processing and Biodiesel Plant. Report to Riverina Oils and Bio Energy Pty Ltd*.
- Environmental Investigation Services 2017, *Report to Hayball on Preliminary Environmental Site Assessment for Proposed New Primary School Development at 34-38 Schofields Road, Schofields, NSW*.
- JK Geotechnics 2017, *Report to NSW Department of Education C/- Hayball on Geotechnical Investigations for Proposed Alex Avnue Public School at 34-38 Schofields Road, Schofields, NSW*.



- Jo McDonald Cultural Heritage Management 2000, *Archaeological Survey for Aboriginal Sites: Proposed Light Industrial Subdivision, 'Austral Site', Mamre Road, Erskine Park, NSW. Report to Gunningah Environmental Consultants for Austral Brick Company.*
- Jo McDonald Cultural Heritage Management. 2005a, *Archaeological Salvage Excavation of Site RTA-G1, 109-113 George Street, Parramatta, NSW. Unpublished Report for Landcom.*
- Jo McDonald Cultural Heritage Management. 2005b, *Archaeological Salvage Excavation of Site CG1 (NPWS #45-5-2648), at the corner of Charles and George Streets, Parramatta, NSW. Report prepared for Meriton Apartments Pty. Ltd.*
- Jo McDonald Cultural Heritage Management 2006, *Archaeological Subsurface Investigations at Sepp59 Wonderland Surplus, Old Wallgrove Road, Eastern Creek. Report to Australand Holdings Pty Ltd.*
- Jo McDonald Cultural Heritage Management 2008, *Austral Land, Mamre Road, Erskine Park: Archaeological Salvage Excavations. Report to Macquarie Goodman.*
- Jo McDonald Cultural Heritage Management Pty Ltd 2005a, *Archaeological Salvage Excavation of Site CG1 (NPWS #45-5-2648), at the corner of Charles and George Streets, Parramatta, NSW, Report to Meriton Apartments Pty Ltd.*
- Jo McDonald Cultural Heritage Management Pty Ltd 2005b, *Archaeological Salvage Excavation of Site RTA-G1 109-113 George Street Parramatta, NSW, Report to Landcom.*
- Kelleher Nightingale Consulting 2010, *Area 20 Precinct North West Growth Centre Aboriginal Heritage Assessment. Report to NSW Department of Planning.*
- Kelleher Nightingale Consulting Pty Ltd 2008, *Wagga Wagga Local Environmental Study Aboriginal Cultural Heritage Assessment.*
- Lovering, J 1954, 'The Stratigraphy of the Wianamatta Group Triassic System, Sydney Basin', *Records of the Australian Museum*, vol. 23, no. 4, pp. 169–210.
- NSW National Parks and Wildlife Service 2003, *The Bioregions of New South Wales: their biodiversity, conservation and history*, National Parks and Wildlife Service (NSW), Hurstville.
- OEH 2011, *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW*, Office of Environment and Heritage.
- Ritter, D, Kochel, R, & Miller, J 1995, *Process geomorphology*, W.C. Brown Publishers, Dubuque, Iowa.
- Stephanie Garling Archaeological Consulting 2000, *Archaeological survey for Aboriginal Sites. proposed Rouse Hill Anglican School, Rouse Road, Rouse Hill, NSW. Report to Noel Bell, Ridley Smith and Partners on behalf of the Anglican Schools Corporation.*
- Strahler, A 1952, 'Hypsometric (area-altitude) analysis of erosional topology', *Geological Society of America Bulletin*, vol. 63, no. 11, pp. 1117–1142.
- Windsor and Richmond Gazette 1897, 'Obituary.', *Windsor and Richmond Gazette (NSW: 1888 - 1954)*, p. 8.



## Appendices

---



## Appendix 1 Consultation log

### Stage 1 – Notification of project proposal and registration of interest

#### Step 1- Identification of Aboriginal people/parties with an interest in the proposed study area

Organisation contacted	Date and type of contact	Date and type of response	Response details
OEH	17/9/2018 – email	18/9/2018 – email	Provided a list of Aboriginal stakeholder groups in the Blacktown region
Native Title Services CORP Limited	17/9/2018 – email	N/A	N/A
Office of the Registrar, Department of Aboriginal Affairs	17/9/2018 – email	26/9/2018	The study area does not have any Registered Aboriginal Owners
Greater Sydney Local Land Services	17/9/2018 – email	24/9/2018 – email	Recommends contacting OEH for contact list of people and organisations who may have an interest in the project
NNTT	17/9/2018 – email	20/9/2018 – email	No native title registered in the study area
Blacktown City Council	17/9/2018 – email	18/10/2018 – email	Confirmed that stakeholder lists are confidential and recommended contacting OEH
Deerubbin Local Aboriginal Land Council	17/9/2018 – email	N/A	N/A

#### Step 2- Public advertisement

The public notice was published in the *Rouse Hill Times*. The wrong version of the public notice was published on the 10 October 2018; therefore, an additional public notice was advertised on the 28 November 2018. No new Aboriginal parties registered for the project as a result of the republication. A copy of the advertisements are provided in Appendix 2.

#### Step 3- Registration of interest

The registration period ran from the 3 October 2017 to 17 October 2018. Leeway was given to Aboriginal parties/groups who provided responses shortly after the close of this period and they have been registered as Aboriginal parties for consultation.

Organisation contacted	Date and type of contact	Date and type of response	Response details
Aboriginal Archaeology Service	N/A	10/10/2018 – email	Registered an interest
Amanda Hickey Cultural Services	3/10/2018 – letter	Date unknown – letter	Letter inviting registration of interest returned to sender; attempted to contact by phone but no response



Organisation contacted	Date and type of contact	Date and type of response	Response details
<b>Badu</b>	3/10/2018 – letter	N/A	N/A
<b>Barking Owl Aboriginal Corporation</b>	3/10/2018 – email	13/10/2018 – email	Registered an interest
<b>Biamanga</b>	3/10/2018 – email	N/A	N/A
<b>Bidjawong Aboriginal Corporation</b>	3/10/2018 – letter	N/A	N/A
<b>Bilinga Cultural Heritage Technical Services</b>	3/10/2018 – email	N/A	N/A
<b>Billinga</b>	3/10/2018 – email	N/A	N/A
<b>Butucarbin Aboriginal Corporation</b>	3/10/2018 – email	12/10/2018 – email	Registered an interest
<b>Cullendulla</b>	3/10/2018 – email	N/A	N/A
<b>Darug Aboriginal Cultural Heritage Assessments</b>	3/10/2018 – letter	N/A	N/A
<b>Darug Boorooberongal Elders Aboriginal Corporation</b>	3/10/2018 – email	N/A	N/A
<b>Darug Boorooberongal Elders Aboriginal Corporation</b>	3/10/2018 – email	4/10/2018 – email	Registered an interest
<b>Darug Custodian Aboriginal Corporation</b>	3/10/2018 – email	N/A	N/A
<b>Darug Land Observations</b>	3/10/2018 – email	15/10/2018 – email	Registered an interest
<b>Darug Tribal Aboriginal Corporation</b>	3/10/2018 – letter	10/10/2018 – email	Registered an interest
<b>Deerubbin Local Aboriginal Land Council</b>	3/10/2018 – letter	N/A	No response was received but Deerubbin LALC was registered for consultation
<b>Des Dyer – Darug Aboriginal Land Care</b>	3/10/2018 – letter	7/10/2018 – email	Registered an interest
<b>Dharug</b>	3/10/2018 – email	N/A	N/A
<b>Dhinawan-Dhigaraa Culture &amp; Heritage Pty Ltd</b>	3/10/2018 – email	N/A	N/A
<b>Dhinawan-Dhigaraa Culture &amp; Heritage Pty Ltd</b>	3/10/2018 – email	N/A	N/A
<b>Didge Ngunawal Clan</b>	3/10/2018 – email	3/10/2018 – email	Registered an interest
<b>DJMD Consultancy</b>	3/10/2018 – email	N/A	N/A



Organisation contacted	Date and type of contact	Date and type of response	Response details
<b>Ginninderra Aboriginal Corporation</b>	3/10/2018 – email	N/A	N/A
<b>Goobah Developments</b>	3/10/2018 – letter	N/A	N/A
<b>Gulaga</b>	3/10/2018 – email	N/A	N/A
<b>Gunjeewong Cultural Heritage Aboriginal Corporation</b>	3/10/2018 – email	N/A	N/A
<b>Gunyuu</b>	3/10/2018 – email	N/A	N/A
<b>Gunyuu Cultural Heritage Technical Services</b>	3/10/2018 – email	N/A	N/A
<b>HSB Consultants</b>	3/10/2018 – letter	N/A	N/A
<b>Jerringong</b>	3/10/2018 – email	N/A	N/A
<b>Kawul Cultural Services</b>	3/10/2018 – email	N/A	N/A
<b>Merrigarn Indigenous Corporation</b>	3/10/2018 – letter	13/10/2018 – email	Registered an interest
<b>Minnamunnung</b>	3/10/2018 – letter	N/A	N/A
<b>Mununga</b>	3/10/2018 – email	N/A	N/A
<b>Munyunga Cultural Heritage Technical Services</b>	3/10/2018 – email	N/A	N/A
<b>Muragadi</b>	N/A	13/10/2018 – email	Registered an interest
<b>Murra Bidgee Mullangari Aboriginal Corporation</b>	3/10/2018 – letter	13/10/2018 – email	Registered an interest
<b>Murramarang</b>	3/10/2018 – email	N/A	N/A
<b>Murrumbul</b>	3/10/2018 – email	N/A	N/A
<b>Murrumbul Cultural Heritage Technical Services</b>	3/10/2018 – email	N/A	N/A
<b>Nerrigundah</b>	3/10/2018 – email	N/A	N/A
<b>Nundagurri</b>	3/10/2018 – email	N/A	N/A
<b>Pemulwuy CHTS</b>	3/10/2018 – email	N/A	N/A
<b>Phil Khan - Kamilaroi Yankuntjatjara Working Group</b>	3/10/2018 – letter	3/10/2018 – phone	Registered an interest
<b>Rane Consulting</b>	3/10/2018 – email	N/A	N/A



Organisation contacted	Date and type of contact	Date and type of response	Response details
Thauaira	3/10/2018 – email	N/A	N/A
Thoorga Nura	3/10/2018 – email	N/A	N/A
Tocomwall	3/10/2018 – letter	N/A	N/A
Wailwan Aboriginal Digging Group	3/10/2018 – email	N/A	N/A
Walbunja	3/10/2018 – email	N/A	N/A
Walgalu	3/10/2018 – email	N/A	N/A
Warragil Cultural Services	3/10/2018 – email	N/A	N/A
Widescope Indigenous Group	3/10/2018 – letter	N/A	N/A
Wingikara	3/10/2018 – email	N/A	N/A
Wingikara Cultural Heritage Technical Services	3/10/2018 – email	N/A	N/A
Wullung	3/10/2018 – letter	N/A	N/A
Wurrimay Consultancy	3/10/2018 – email	N/A	N/A
Yerramurra	3/10/2018 – email	N/A	N/A

#### Step 4- Confirmation of RAPs

Organisation contacted	Date and type of contact	Date and type of response	Response details
OEH	20/12/2018 – email	N/A	N/A
Deerubbin Local Aboriginal Land Council	20/12/2018 – email	N/A	N/A

## Stage 2 – Presentation of information about the proposed project

### Step 1- Provision of project information pack

A copy of the information pack is provided in Appendix 3 and a copy of the covering email is provided following.

Organisation contacted	Date and type of contact	Date and type of response	Response details
Aboriginal Archaeology Service	5/11/2018 – email	N/A	N/A



Organisation contacted	Date and type of contact	Date and type of response	Response details
Barking Owl Aboriginal Corporation	5/11/2018 – email	N/A	N/A
Butucarbin Aboriginal Corporation	5/11/2018 – email	N/A	N/A
Des Dyer - Darug Aboriginal Land Care	5/11/2018 – email	N/A	N/A
Darug Boorooberongal Elders Aboriginal Corporation	5/11/2018 – email	N/A	N/A
Darug Land Observations	5/11/2018 – email	N/A	N/A
Darug Tribal Aboriginal Corporation	5/11/2018 – email	N/A	N/A
Deerubbin Local Aboriginal Land Council	5/11/2018 – email	N/A	N/A
Didge Ngunawal Clan	5/11/2018 – email	N/A	N/A
Merrigarn Indigenous Corporation	5/11/2018 – email	N/A	N/A
Muragadi	5/11/2018 – email	N/A	N/A
Murra Bidgee Mullangari Aboriginal Corporation	5/11/2018 – email	N/A	N/A
Phil Khan - Kamilaroi Yankuntjatjara Working Group	5/11/2018 – letter	N/A	N/A

## Stage 3 – Gathering information about cultural significance

### Step 1- Provision of project methodology pack and consultation meeting

A copy of the methodology pack is provided in Appendix 3 and a copy of the covering email is provided following.

Organisation contacted	Date and type of contact	Date and type of response	Response details
Aboriginal Archaeology Service	5/11/2018 – email	3/12/2018 – email	Supports the methodology and suggests that recovered artefacts be reburied within the study area
Barking Owl Aboriginal Corporation	5/11/2018 – email	N/A	N/A
Butucarbin Aboriginal Corporation	5/11/2018 – email	4/12/2018 – email	Supports the methodology



Organisation contacted	Date and type of contact	Date and type of response	Response details
<b>Des Dyer - Darug Aboriginal Land Care</b>	5/11/2018 – email	10/11/2018 – email	Supports the methodology
<b>Darug Boorooberongal Elders Aboriginal Corporation</b>	5/11/2018 – email	N/A	N/A
<b>Darug Land Observations</b>	5/11/2018 – email	14/11/2018 – email	Supports the methodology and suggests that recovered artefacts be displayed in a museum, local library or local government building, or reburied within the study area
<b>Darug Tribal Aboriginal Corporation</b>	5/11/2018 – email	N/A	N/A
<b>Deerubbin Local Aboriginal Land Council</b>	5/11/2018 – email	N/A	N/A
<b>Didge Ngunawal Clan</b>	5/11/2018 – email	N/A	N/A
<b>Merrigarn Indigenous Corporation</b>	5/11/2018 – email	8/11/2018 – email	Supports the methodology
<b>Muragadi</b>	5/11/2018 – email	N/A	N/A
<b>Murra Bidgee Mullangari Aboriginal Corporation</b>	5/11/2018 – email	21/11/2018 – email	Supports the methodology
<b>Phil Khan - Kamilaroi Yankuntjatjara Working Group</b>	5/11/2018 – email	9/11/2018 – letter	Supports the methodology

## Step 2- Field survey

Organisation contacted	Date and type of contact	Date and type of response	Response details
<b>Deerubbin Local Aboriginal Land Council</b>	15/11/2018 – phone	15/11/2018 – phone	Confirmed attendance for field survey

## Step 3- Test excavations

Organisation contacted	Date and type of contact	Date and type of response	Response details
<b>OEH</b>	25/01/2019 – letter	31/01/2019 – email	Confirmed receipt of letter notifying of test excavations; requested digital copy of letter
<b>Barking Owl Aboriginal Corporation</b>	07/02/2019 – email	07/02/2019 – email	Confirmed attendance at test excavations
<b>Deerubbin Local Aboriginal Land Council</b>	07/02/2019 – email	08/02/2019 – email	Confirmed attendance at test excavations



Organisation contacted	Date and type of contact	Date and type of response	Response details
<b>Des Dyer – Darug Aboriginal Land Care</b>	07/02/2019 – email	07/02/2019 – email	Confirmed attendance at test excavations
<b>Phil Khan - Kamilaroi Yankuntjatjara Working Group</b>	07/02/2019 – email	14/02/2019 – email	Confirmed attendance at test excavations

## Stage 4 – Review of draft report

To be completed following the review and comments from RAPs after the statutory 28 day period.