EVERICK HERITAGE

Liverpool Boys and Girls High School Upgrade Project

Aboriginal Cultural Heritage Assessment Report

Prepared for NSW Department of Education

February 2025

Liverpool Local Government Area

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Executive summary

NSW Department of Education (DoE; the Applicant) is proposing to undertake redevelopment at both the Liverpool Boys High School and Liverpool Girls High School located at 18 Forbes Street, Liverpool, New South Wales (NSW) (the site; Figure 1-1). This report accompanies a Review of Environment Factors that seeks approval for redeveloping the Liverpool Boys and Liverpool Girls High Schools into a single co-educational school.

During a previous archaeological assessment and survey for the construction of a new primary school (Gulyangarri Public School) on the Liverpool Boys High School site, Comber Consultants (Comber) (2018; 2019; 2021) identified two surface artefacts, Liverpool Boys and Girls High School Artefacts (45-5-5507) and three areas of Potential Archaeological Deposit (PAD) located within the current Liverpool Boys High School and Liverpool Girls High School. Two of the PADs, PAD 1 and PAD 2, were subject to test excavation by Comber (2021) with six artefacts found, and were not subject to test excavation for this Project, although part of the current site is located within PAD 2 within the Gulyangarri Public School. PAD 3, which is located within the current site, was not subject to test excavation (Figure 5-3). Therefore, DoE has engaged Everick Heritage Pty Ltd (Everick Heritage) to undertake further survey of the site and test excavation of PAD 3 to ascertain if Aboriginal cultural heritage will be impacted by Stage 1 and Stage 2. During the course of the project, PAD 3, as identified in Comber's reporting, was renamed to Liverpool BHS GHS PAD1 (45-5-5883).

Consultation

Everick Heritage has conducted the community consultation process in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (Department of Environment, Climate Change and Water [DECCW]), the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (Code of Practice (DECCW 2010) and the Burra Charter 2013 (Australia ICOMOS 2013). Aboriginal consultation has been completed to the stage described in Section 60 (5c) of the *National Parks & Wildlife Regulation 2019 (NSW)*.

Notification was provided to Heritage NSW on 12 January 2024 as to Everick's intent to undertake archaeological test excavations under Requirement 15c of Code of Practice starting from 22 January 2024.

The draft ACHAR was sent for RAP review on the 7 November 2024 and responses were due by 5 December 2024. No responses were received.

Survey

A previous pedestrian survey was undertaken by Comber Consultants (Comber) (2019) for the Liverpool Boys' High School and Liverpool Girls' High School site which included the current Project Area. As a result of the survey, two silcrete artefacts were recorded within the school oval. The entire oval and grounds of Gulyangarri Public School was recorded as a new site; New Liverpool Public School (Aboriginal Heritage Information Management System [AHIMS] ID 45-5-5507), an artefact site with potential for subsurface deposits. The portion of the site within Gulyangarri Public School was subsequently impacted and destroyed however the portion of New Liverpool Public School (45-5-5507), within the oval, known as PAD 3, was not impacted and no testing of PAD 3 took place. Comber (2019) recommended that archaeological testing be undertaken to determine if subsurface Aboriginal objects are located within PAD 3.

Immediately prior to the test excavation undertaken on 22 January 2024, a pedestrian survey of the school oval was also undertaken by Everick Heritage. During this survey PAD 3 was found to be substantially intact with no evidence of impacts, inconsistent with the AHIMS record for New Liverpool Public School (45-5-5507), which is listed the whole site as 'destroyed' as a result of the construction of the neighbouring Gulyangarri Public School development. One new artefact was identified at the base of a tree in the southeastern corner of the oval, which has been registered on AHIMS as Liverpool BHS GHS_IA02 (45-5-5790).

Test Excavation

Previous test excavations (Comber 2021) and salvage excavations (Comber 2022) of the new Gulyangarri Public School confirmed the presence of a further 16 Aboriginal artefacts within the northeastern portion of the oval, adjacent to the current Project Area. Therefore, a new ACHAR with test excavation was required to recommence the consultation process and adequately address whether Aboriginal objects will be harmed as a result of the current scope of works and future works within Lot 1 DP1137425.

Table 3-1 provides a summary of personnel involved in the current test excavation program. The program was undertaken from 22 January 2024 to 23 January 2024 encompassing two days of fieldwork.

Twenty-four test pits (TPs) were excavated during the test excavation program totalling six square metres of excavation. Six subsurface artefacts were identified as a result of test excavation in two site locations recorded on AHIMS as Liverpool BHS GHS_AS01 (45-5-5789) and Liverpool BHS GHS_IA01 (45-5-5791). No other Aboriginal objects were identified within the test excavation area, which found to have

low potential for further Aboriginal objects, therefore Liverpool BHS_GHS PAD1 was found not to be a site.

Recommendations

Based on the results of the background research and test excavation, it was identified that Liverpool BHS GHS_AS01(45-5-5789), Liverpool BHS GHS_IA01 (45-5-5791) and Liverpool BHS GHS IA02 (45-5-5790) will suffer a total loss of value due to the project. Therefore the following recommendations are made:

Liverpool BHS GHS_AS01 (45-5-5789)

- Formal management through AHIP
- Recovered during test excavation

Liverpool BHS GHS_IA01 (45-5-5791)

- Formal management through AHIP
- Recovered during test excavation

Liverpool BHS GHS_IA02 (45-5-5790)

- AHIP to harm
- Surface artefact recovery through community collection

All other areas

- AHIP to Harm

Summary of mitigation measures for the temporary school

Project Stage *Design (D)* *Construction (C)* *Operation (O)*	Mitigation Measures	Relevant Section of Report
D	*Apply for an AHIP for harm to* Liverpool BHS GHS_AS01 (45-5-5789), Liverpool BHS GHS IA01 (45-5-5791) and Liverpool BHS GHS_IA02 (45-5-5790) and all other areas of low archaeological potential	*Section 11.2.1*
C	*In accordance with granted AHIP, conduct community collection for* BHS GHS_IA02 (45-5-5790)	*Section 11.2.2*

O	*Undertake reburial following the completion of site works following the construction of the Liverpool Boys and Girls High School Upgrade Project*	*Section 11.2.3*
D, C	*Ongoing Aboriginal community consultation through design and construction*	*Section 11.2.6*

Summary of mitigation measures for the construction of the new Liverpool Boys and Girls High School

Project Stage *Design (D)* *Construction (C)* *Operation (O)*	Mitigation Measures	Relevant Section of Report
D	*Prepare an Aboriginal Heritage Interpretation Strategy for incorporation into the final School design*	*Section 11.2.4*
O	*Implement the Aboriginal Heritage Interpretation Strategy for incorporation into the final School design*	*Section 11.2.4*
D	*Incorporate native plants into the landscaping plan for the site*	*Section 11.2.5*
D, C	*Ongoing Aboriginal community consultation through design and construction*	*Section 11.2.6*
C	*Aboriginal heritage induction must be provided to all contractors prior to commencement of construction*	*Section* 11.2.7
C	*Enact an unexpected finds procedure for further Aboriginal cultural material inconsistent with the existing assemblage and Aboriginal ancestral remains identified within the AHIP boundary*	*Section* 11.2.8; 11.2.9

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Definitions and abbreviations

ACHAR	means Aboriginal Cultural Heritage Assessment Report
AHC	means Australian Heritage Council
Australian Heritage Council Act	means *Australian Heritage Council Act 2003 (Cth)*
AHIMS	means Aboriginal Heritage Information Management System
AHIP	means Aboriginal Heritage Impact Permit
ALR Act	means *Aboriginal Land Rights Act 1983*
ASR	means Aboriginal Archaeological Survey Report
ASRF	means Aboriginal Site Recording Form
ATSIHP Act	means *Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cth)A*
BP	means Before Present (that is 1950)
CHL	means Commonwealth Heritage List
Code of Practice	means Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales
Consultation Requirements	means Aboriginal cultural heritage consultation requirements for proponents 2010
DCP	means Development Control Plan
DECCW	means (former) Department of Environment, Climate Change and Water
DCCEEW	means Department of Climate Change Energy, Environment and Water
EIS	means Environmental Impact Statement
EP&A Act	means *Environmental Planning and Assessment Act 1979 (NSW)*
EPBC Act	means *Environment Protection and Diversity Conservation Act 1999 (Cth)*

ESD	means Ecologically Sustainable Development
Everick Heritage	means Everick Heritage Pty Ltd
the Guide	means Guide to Investigating, Assessing and Reporting on Aboriginal cultural heritage in NSW
GPS	means Global Positioning System
ha	means hectares
ISEPP	*State Environmental Planning Policy (Infrastructure) 2007 (NSW)*
km	means kilometres
LALC	means Local Aboriginal Land Council
LBHS	means Liverpool Boys' High School
LEP	means Local Environmental Plan
LGA	means Local Government Area
LGHS	means Liverpool Girls' High School
m	means metres
mm	means millimetres
NHL	means National Heritage List
NPW Act	means *National Parks and Wildlife Act 1974 (NSW)*
OEH	means (former) New South Wales Office of Environment and Heritage
PAD	means Potential Archaeological Deposit
Project Area	means 18 Forbes Street, Liverpool, the Liverpool Boys High School and Liverpool Girls High School
RAP	means Registered Aboriginal Party

RNE	means Register of the National Estate
s	means section
SEARs	means Secretary's Environmental Assessment Requirements
SEPP	means State Environmental Planning Policy
SINSW	means School Infrastructure NSW
SSD	means State Significant Development
SSI	means State Significant Infrastructure

1. Introduction

1.1. Project background

This Archaeological Technical Report (ATR) has been prepared by Everick Heritage Pty Ltd (Everick Heritage) on behalf the NSW Department of Education (the Applicant) to assess the potential environmental impacts that could arise from the redevelopment of the Liverpool Boys High School and Liverpool Girls High School, at 18 Forbes Street, Liverpool NSW, 2170 (the site).

The report has been prepared to document the strategy, methodology and results of the survey and test excavation for the site and will form an appendix to an Aboriginal Cultural Heritage Assessment Report (ACHAR). A Preliminary Indigenous Heritage Impact Assessments (PIHAI) and an ACHAR for the Primary School development (now known as Gulyuangarri Public School) was undertaken by Comber Consultants in 2019. The results of the initial site inspection (Comber 2019) recorded an Aboriginal site comprising of two surface silcrete flakes within the school oval which is shared by both High Schools New Liverpool Public School (45-5-5507) comprising three areas of PAD (Figure 5-3). Two of the PADs, PAD 1 and PAD 2, were subject to test excavation by Comber (2021) with six artefacts found. PAD 1 and PAD 2 were subsequently destroyed in accordance with the Ministers Conditions of Consent for SSD10391. The current project will result in works within PAD 2 and PAD 3, DoE has engaged Everick Heritage Pty Ltd (Everick Heritage) to undertake further survey of the site and test excavation of PAD 3 to ascertain if Aboriginal cultural heritage will be impacted by the Liverpool Boys and Girls High School Project. As PAD 2 was destroyed prior to the commencement of assessment, no Aboriginal archaeological values remain within this portion of the site and therefore no further investigation is warranted.

This report accompanies a Review of Environment Factors that seeks approval for redeveloping the Liverpool Boys and Liverpool Girls High Schools into a single co-educational school, including:

- [redacted]
- Construction and operation of a six-storey school building, including school hall and gymnasium;
- Associated parking and building services;
- Tree removal;
- Associated landscaping and play spaces;
- Augmentation of service infrastructure; and

- Associated off-site infrastructure works to support the school, including (but not limited to) services, kiss and drop point and pedestrian crossings.

Refer to the Review of Environmental Factors prepared by Ethos Urban for a full description of works.

1.2. The site description

The site is located at 18 Forbes Street, Liverpool, within the Liverpool Local Government Area (LGA). The site is legally described as Lot 1 DP1137425 and has a total area of approximately 74,973m^2.

The site comprises a broadly rectangular portion of land which currently contains the existing Liverpool Boys High School, Liverpool Girls High School, and the Gulyangarri Public School, which commenced operations in January 2024 and is located to the east of the wider site.

The site's western portion contains Liverpool Boys High School and Liverpool Girls High School. Liverpool Girls High School in the site's southwest comprises three, two-storey buildings. Liverpool Boys High School in the site's northwest, comprises approximately four, two-storey buildings, with adjacent at-grade carparking and various sports courts (Figure 1-2). The project will involve the construction a temporary boys school in the south of the site, [redacted] and the construction of a new multistorey coeducational school building in place of the old boys school (Figure 1-3, Figure 1-4).

An aerial image of the site is shown at Figure 1-1 below.

1.3. Study objectives

The objectives of this ACHAR are to summarise the results of archaeological survey and test excavations undertaken for the Project, identify what Aboriginal objects and sites are present within the site and to identify whether Aboriginal cultural values will be impacted through via consultation with the registered Aboriginal parties (RAPs) for the site. This ACHAR has been undertaken in accordance with the following guidelines:

- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales 2010 (Code of Practice, Department of Environment, Climate Change & Water [DECCW] 2010a).
- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (Guide, Office of Environment & Heritage [OEH] 2011).

- Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Consultation Requirements, DECCW 2010b).
- The Burra Charter 2013 (Australia ICOMOS 2013).

1.4. Authors and contributors

Gareth Holes (Senior Archaeologist, Everick Heritage) contributed to the production of this Aboriginal Technical Report (ATR). Gareth has a Bachelor of Arts (Honours) in Archaeological Practice, a Master of Arts in Neolithic Europe, and 17 years' experience in the heritage consulting industry in Australia and Internationally.

Isabel Parnell (Archaeologist, Everick Heritage) undertook and wrote the background sections providing a review of the relevant literature and relevant previous assessments. Isabel has two years' experience as a consultant and holds a Bachelor of Arts (Hons) in Archaeology.

Grace Eldon (Archaeologist, Everick Heritage) assisted with the background sections and write up of the report. Grace has a Bachelor of Arts (Honours) and two years' experience as a consultant archaeologist.

Mapping and spatial data analysis for this project has been undertaken by Gokce Yurdakul and Ian Teh.

1.5. Report structure

The purpose of this report is to document the results of an investigation of Aboriginal heritage at the site. As such, the structure of this report is provided

Table 1-1: Report structure

Section	Description
Section 1 – Introduction	Information on the project background
Section 2 – Legislative context	Outlines relevant legislation for this assessment.
Section 3 – Consultation	Provides information on the Aboriginal consultation process.
Section 4 – Environmental context	Provides an overview of the environmental conditions to provide context for the predictive model

Section	Description
Section 5 – Ethnohistoric and Archaeological context	The results of the background ethnohistoric and literature research, summary of relevant previous assessments, and database searches. This section also presents a predictive model as background to the survey sampling strategy.
Section 6 – Archaeological survey	Discusses the aims, timing and personnel, constraints, survey sampling strategy, methodology and coverage.
Section 7 – Results and Discussion	Presents the detailed results of the Aboriginal archaeological survey.
Section 8 – Cultural heritage assessment	Presents the results of the cultural heritage assessment identifying Aboriginal cultural values and landscapes.
Section 9 – Significance assessment	Provides a scientific significance assessment and a cultural significance assessment for the site.
Section 10 - Impact assessment	Assesses potential impacts to Aboriginal objects and places as well discussion of ecologically sustainable principles.
Section 11 – Management and mitigation measures	Outlines recommended management and mitigation measures for the Project
References	References

1.6. NSW Department of Education REF Review Checklist

Aboriginal cultural heritage	Y	N	N/A	Comments
Does the REF either include: • confirmation that the activity does not include ground disturbing works or removal of mature vegetation; or • an Aboriginal Cultural Heritage Due Diligence (DD), a Preliminary Indigenous Heritage Assessment Impact (PIHAI) and/or an Archaeological Survey Report (ASR) which identifies no harm to Aboriginal objects or places would occur; or • an Aboriginal Cultural Heritage Assessment Report (ACHAR)? Note: where a DD / PIHAI / ASR has been prepared and it identifies that Aboriginal objects or places are likely to be impacted, an ACHAR must be prepared.	☒	☐	☐	This assessment will be included within the REF
Where an ASR has been prepared, has it assessed the archaeological nature and significance of Aboriginal sites within the study area (through survey / test excavation)?	☐	☐	☒	ASR included within ATR

Aboriginal cultural heritage	Y	N	N/A	Comments
Where an ACHAR has been prepared, has it been undertaken in accordance with the OEH consultation guidelines?	☒	☐	☐	See Section 3
Where an ACHAR has been prepared, has it completed the mandatory steps, including: • agencies contacted to identify relevant parties; • an advert placed in local paper to invite registrations of interest; • invitations to register issued to potential stakeholder groups; • methodology issued to RAPs and invited to comment; and • draft ACHAR sent to RAPs and invited to comment?	☒	☐	☐	See Section 3
Where an ACHAR has been prepared: • have all comments provided by RAPs been addressed and actioned (where possible) in the ACHAR?	☒	☐	☐	See Section 3
• did the ASR or ACHAR assess the archaeological nature and significance of Aboriginal sites within the study area (through survey / test excavation)?	☒	☐	☐	See Section 9
• assess impacts of the proposed works?	☒	☐	☐	See Section 10
• indicate that an Aboriginal Heritage Impact Permit (AHIP) is required?	☒	☐	☐	See Section 11.2.1
Has the REF and/or supporting documents: • included a list of measures to mitigate the impacts of the activity?	☒	☐	☐	See Section 11 and Table 11-2 and Table 11-3
• concluded that the proposal would not be likely to result in significant environmental effects?	☒	☐	☐	See Section 10.6

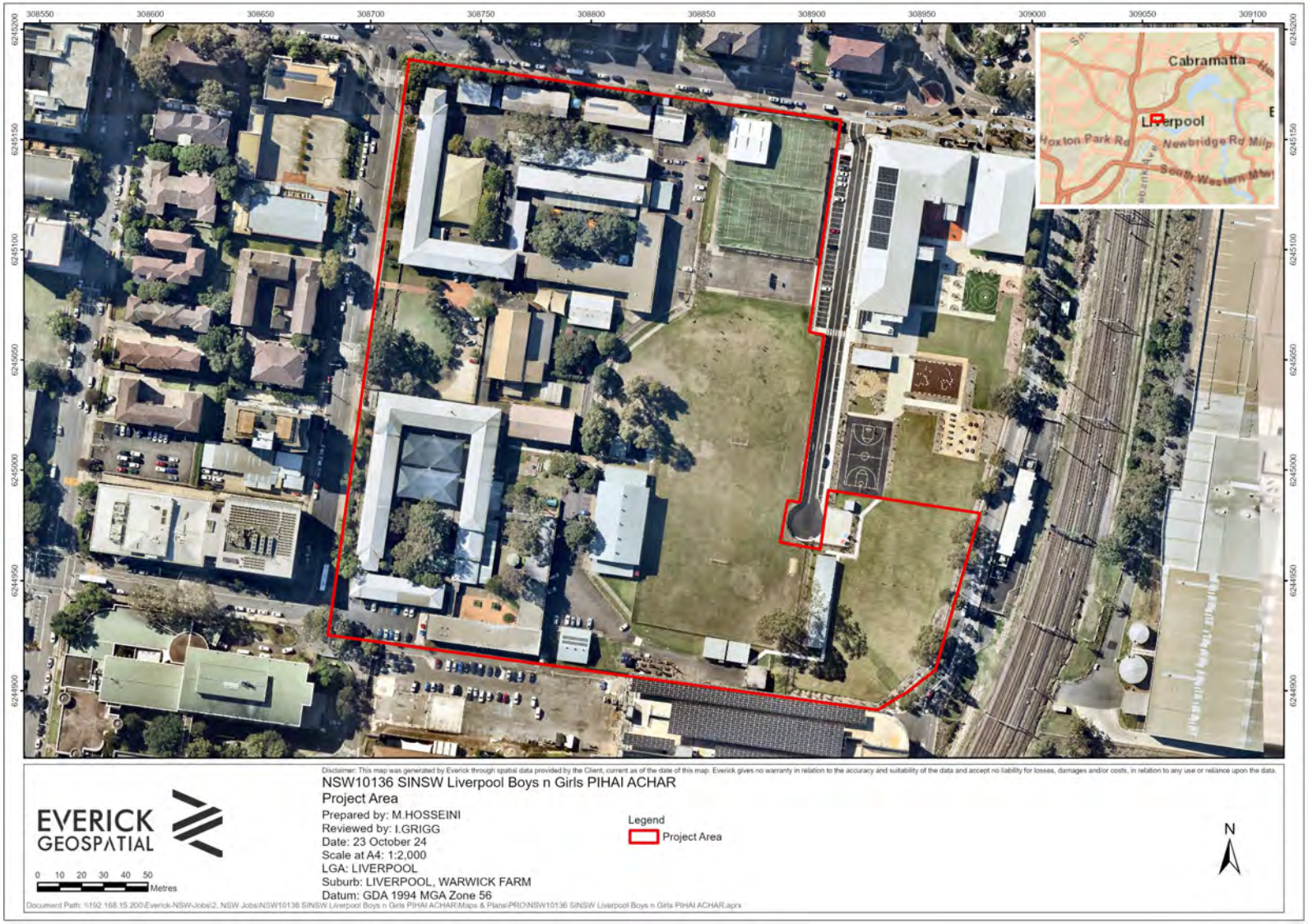


Figure 1-1: Location of the site.

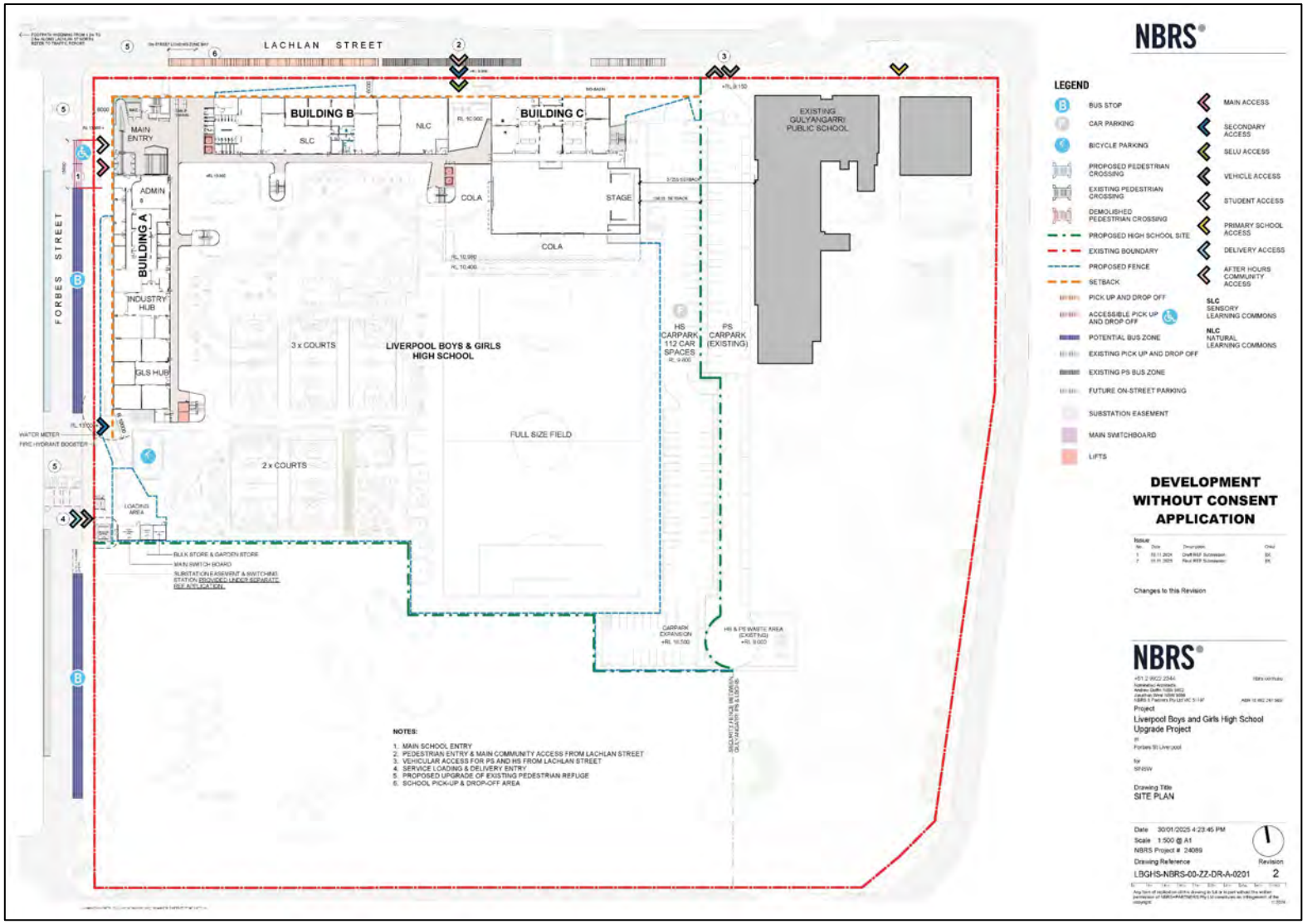


Figure 1-2: Main school location (Source: NBRS, provided February 2025)

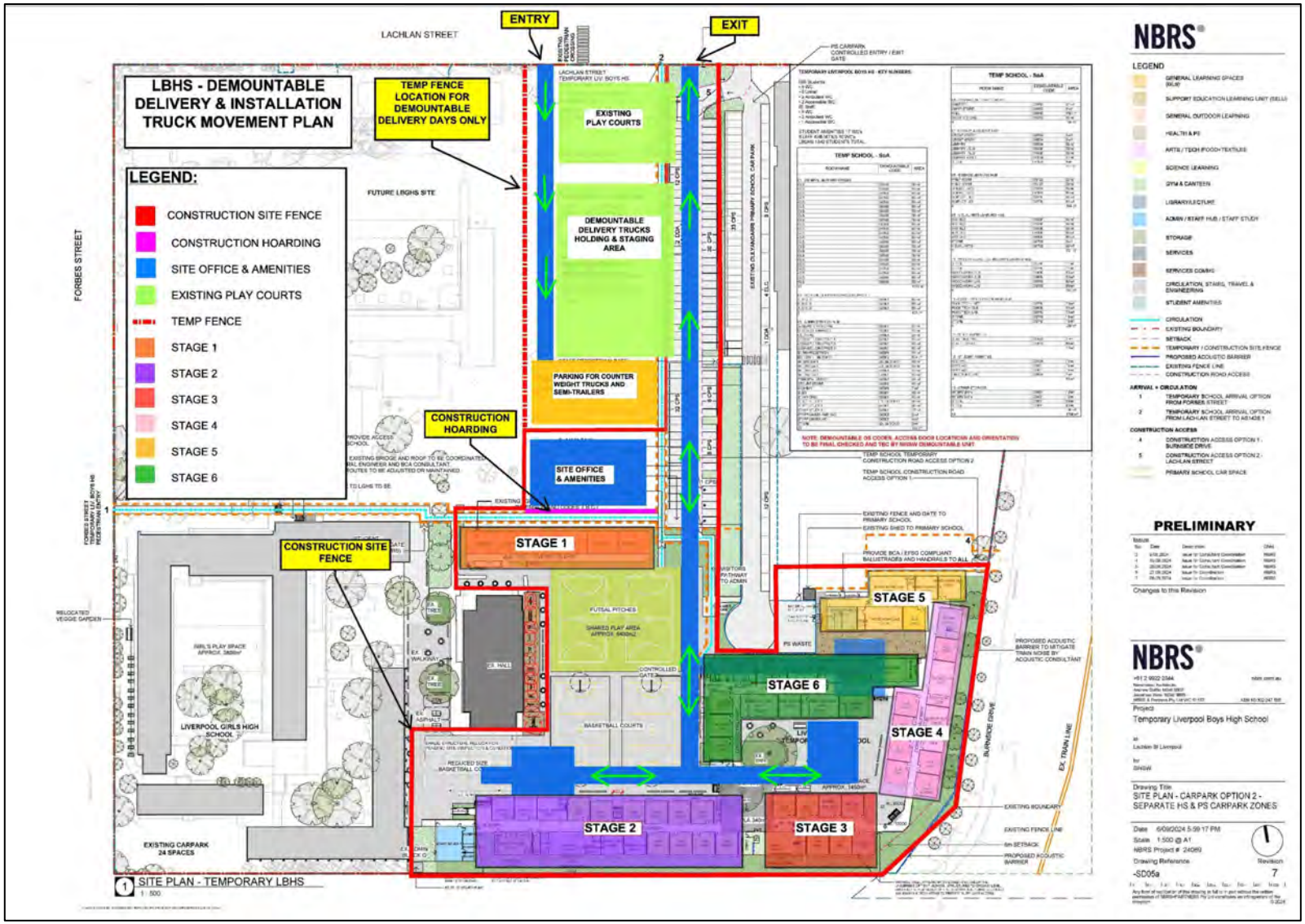


Figure 1-3: Temporary School demountable delivery and vehicle circulation plan (Source: NBRS, provided September 2024)

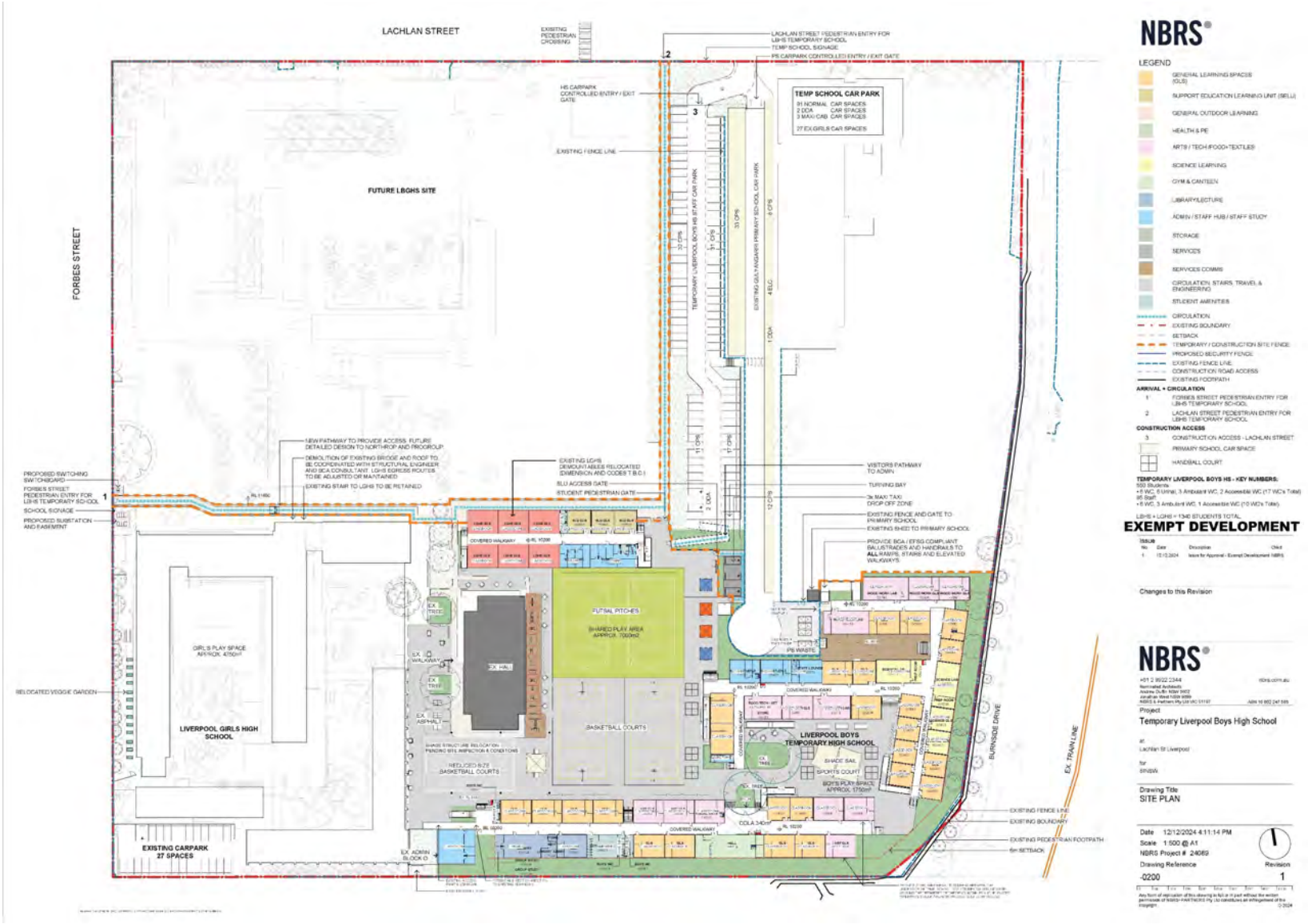


Figure 1-4: Temporary site plan (Source: NBRS February 2025).

2. Legislative context

2.1. State legislation

2.1.1. National Parks and Wildlife Act 1974 (NSW)

The *National Parks and Wildlife Act 1974 (NSW) (NPW Act)* provides statutory protection to all Aboriginal places and objects. An Aboriginal object is defined as:

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

An Aboriginal Place is declared by the Minister under section (s) 86 of the *NPW Act*. Aboriginal Places are recognised for their special significance to Aboriginal culture. Aboriginal Places gazetted under the *NPW Act* are listed on the State Heritage Register established under the *Heritage Act 1977 (NSW)*.

Part 6 of the *NPW Act* provides specific protection for Aboriginal objects and declared Aboriginal places by establishing offences of harm. Harm is defined to mean:

> *destroying, defacing, damaging or moving an object from the land.*

The protection provided to Aboriginal objects applies regardless of the level of their significance or issues of land tenure. Aboriginal objects and places are afforded statutory protection in that it is an offence to knowingly or unknowingly desecrate and Aboriginal object or place under section (s) 86 of the *NPW Act*.

In accordance with s 89A any person who is aware of the location of an Aboriginal object must notify the Chief executive in the prescribed manner within a reasonable time of becoming aware of that object. The prescribed manner is through preparation and submission of an Aboriginal Site Recording Form (ASRF) to the Aboriginal Heritage Information Management System (AHIMS) (DECCW 2010a: 14).

In order to undertake a proposed activity which is likely to involve harm to an Aboriginal object or Aboriginal Place it is necessary to apply to Heritage NSW (Department of Climate Change, Energy, the Environment and Water) for an Aboriginal Heritage Impact Permit (AHIP). AHIPs are issued by the

Aboriginal Heritage Regulation Team (Heritage NSW) under section 90 of the *NPW Act* and permit harm to certain Aboriginal objects and Aboriginal Places.

Pre-approval works which may occur as exempt or complying development will require the approval of an AHIP if works are to impact Aboriginal objects, or areas where they are likely to be located.

2.1.2. Environmental Planning & Assessment Act 1979 (NSW)

The *Environmental Planning and Assessment Act 1979 (NSW) (EP&A Act)* requires that environmental impacts are considered in land-use planning, including impacts on Aboriginal and non-Aboriginal heritage. Part 5 of the *EP&A Act* is designed to ensure public authorities fully consider environmental issues before they undertake or approve activities that do not require development consent.

2.1.2.1. Liverpool Local Environmental Plan 2008

The *EP&A Act* requires councils to consider environmental effects when assessing new developments. Heritage is one of the matters for consideration. Sites of environmental heritage (including historic heritage sites and sometimes Aboriginal heritage sites) are protected by gazetted Local Environment Plans (LEP) and Development Control Plans (DCP) which specify the constraints on development in the vicinity of these sites unless being assessed under Part 5 of the *EP&A Act* (see below). The Liverpool LEP 2008 has provided a Schedule (Schedule 5) of Environmental Heritage which provides statutory protection for those items listed. There are no Aboriginal sites listed on Schedule 5 of the Liverpool LEP 2008.

2.1.3. Environmental Planning & Assessment Act 1979 (NSW)

Under Part 5, Division 5.1 (environmental impact assessment) the determining authority cannot carry out an activity or grant approval for an activity that is likely to significantly affect the environment unless an environmental impact statement (EIS) is prepared.

Planning decisions within LGAs are guided by Local Environmental Plans (LEPs). Each LGA is required to develop and maintain and LEP that includes Aboriginal and historical heritage items which are protected under the *EP&A Act* and the *Heritage Act 1977 (NSW)*. The site is subject to the Liverpool LEP 2008.

2.1.4. Native Title Act 1994 (NSW)

The *Native Title Act 1994 (NSW)* was introduced to work in conjunction with the *Native Title Act 1993 (Cth)*. Native Title claims, registers and Indigenous Land Use Agreements are administered under the Act. A search of National Native Title Tribunal was undertaken on 18 October 2023. The search showed that Native Title does not exist across the site.

2.1.5. Aboriginal Lands Right Act 1983 (NSW)

Aboriginal Land Councils (at the State and local level were established by the *Aboriginal Land Rights Act 1983 (NSW) (ALR Act)*. Aboriginal Land Councils have a statutory obligation under the *ALR Act* to:

a) take action to protect the culture and heritage of Aboriginal persons in the council's area, subject to any other law, and

b) promote awareness in the community of the culture and heritage of Aboriginal persons in the council's area.

The site is within the boundary of the Gandangara LALC who have been consulted for this ACHAR.

3. Consultation

Everick Heritage has conducted the community consultation process in accordance with the Consultation Requirements (DECCW 2010a), Code of Practice (DECCW 2010b) and the Burra Charter 2013 (Australia ICOMOS 2013).

In accordance with Step 4.1.2 of the Consultation Requirements, the following organisations were contacted to request names of Aboriginal people or organisations who may hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places within the site or nearby:

- Gandangara LALC
- The Registrar, *Aboriginal Land Rights Act 1983 (NSW)*
- National Native Title Tribunal
- NTSCORP
- Liverpool Council
- Greater Sydney Local Land Services
- Aboriginal Heritage Regulation Team, Heritage NSW, Department of Climate Change, Energy, the Environment and Water (DCCEEW)

In accordance with Step 4.1.3 of the Consultation Requirements, an advertisement was placed in Buy Search Sell on 29 September 2023 seeking to consult with Aboriginal persons regarding the project and who hold cultural knowledge of the region to register their interest by 13 October 2023 (Appendix C).

In accordance with Step 4.1.3 of the Consultation Requirements, letters and emails were sent to all Aboriginal people and organisations identified through the response by the agencies contacted as part of Step 4.1.2, on 29 September 2024. These letters and emails provided details about the location and nature of the of the project and invited those with an interest to register.

Table 3-1 provides a list of those Aboriginal parties who registered. In accordance with Step 4.1.6 of the Consultation Requirements a list of the registered Aboriginal parties (RAPs) and a copy of the advertisement (Step 4.1.3) were forwarded to Heritage NSW and Gandangara LALC.

Table 3-1: Registered Aboriginal parties

Organisation	First name	Surname
Mundawari Heritage Consultants	[redacted]	
Butucarbin Aboriginal Corporation		
Didge Ngunawal Clan		
Didge Ngunawal Clan		
Wailan Aboriginal Group		
Ngambaa Cultural Connections		
Wallanbah Aboriginal Site Conveyancing		
Yulay Cultural Services		
Barraby Cultural Services		
Kamilaroi Yankuntjatjara Working Group		
Guntawang Aboriginal Resources Incorporated		
Cubbitch Barta		
AHCS		
A1 Indigenous Services		
Woka Aboriginal Corporation		

In accordance with Step 4.3 of the Consultation Requirements a copy of the ASR and an ACHAR methodology was sent to the RAPs by email on 6 December 2023 requesting a response and availability for fieldwork by 17 January 2024. Ten responses were received to the methodology and call for site officers for fieldwork, with availability confirmed with six confirmed respondents who were involved in the test excavation. Table 3-1 provides a list of those Aboriginal parties who were involved with the test excavation.

Test excavation was undertaken over two days from 22-23 January 2024. Six RAPs were present for the two days of test excavation, the organisation and field officer present are outlined in Table 3-2.

Table 3-2: Registered Aboriginal parties (RAP) for the test excavation

Organisation	First name	Surname
Gandangara LALC	[redacted]	
Guntawang Aboriginal Resources In (GARI)		
Cubbitch Barta		
Mundawari Heritage Consultants (MHC)		
A1 Indigenous Services		
AHCS		

A project update letter was sent to all RAPs on 17 June 2024.

The draft ACHAR was sent for RAP review on the 7 November 2024 and responses were due by 5 December 2024. No responses were received.

Full detail of the consultation log, and consultation documentation is included in Appendix A – Consultation log and Appendix C – Consultation documentation of this ACHAR.

4. Environmental context

4.1. Geology and soils

The site is located within the Blacktown soil landscape according to the Soil Landscapes of the Penrith 1:100,000 Sheet report as mapped by Bannerman and Hazelton (2011) (Figure 4-1). The geology of the area is described as consisting of laminate and dark grey siltstone, Bringelly Shale, which consists of shale with occasional calcareous claystone, laminate, and infrequent coal, and Minchinbury sandstone consisting of fine to medium grained quartz lithic sandstone (Bannerman and Hazelton 2011: 39). Bringelly Shale is formed from alluvial sediments. Given the location of the site to the Georges River, Bringelly Shale dominates the site. Shales are brittle and not suitable for stone tool manufacture whilst the Minchinbury Sandstone does not weather to provide rock shelters or overhangs (Comber 2021a:7). Comber (2021a) describes the school site as consisting of shale, carbonaceous claystone, laminate, fine to medium-grained lithic sandstone, rare coal and tuff in the western portion. The eastern portion, which includes the current site, includes clayey, quartzose sand and clay.

Two swelling soil surveys taken as part of a soil profile report for the Blacktown area (Parker 1983) were taken from the nearby Liverpool Hospital, located adjacent to the site. Due to the proximity of this report, the soil profile is assumed to similarly mirror the soil profile of the site.

According to these soil reports, soils within the site are expected to reach a B clay horizon at 350 mm, and thus, any subsurface archaeological deposits are predicted to be within the top 0-350 mm of the topsoil and A horizon. No outcroppings of raw materials which would be conducive to artefact manufacture are expected within the site. However, several locations on the Cumberland Plain contain raw material suitable for stone tool manufacturing, such as basalt and silcrete. At Wetherall Park, approximately 9 km Norwest of the site, volcanic breccia, including basalt, is present in outcroppings (Comber 2021:16). Silcrete boulders and extensive artefact scatters are present at Moorebank, approximately 3 km southeast of the site (GHD 2015). Other material used in the manufacture of stone tools present across the Cumberland Plain, includes chert, tuff, quartz and quartzite, which are found within the Rickabys Creek Formation, about 37kms northwest of the site (Comber 2021: 16).

Test excavation for Gulyangarri Public School revealed a consistent soil profile comprising a highly disturbed landscape with fill encountered across the landscape with bioturbation visible throughout. The stratigraphy comprises 0-100mm of topsoil mixed with fill overlying a 500mm clay capping layer with

building rubble, overlying silty loam varying from dark brown to grey with depth and the increase in clay to a depth of 350mm. The excavation halted at 450mm with dense medium clay B horizon (Comber 2021).

4.2. Topography and hydrology

The site is situated within the Cumberland Plain, in an area characterised by gently undulating slopes with broad, rounded ridges and gently inclined slopes (Figure 4-2). The Cumberland Plain is bordered by the Blue Mountains to the west, the Hornsby Plateau to the north, and the Georges River and Paramatta headwaters to the east.

The site is additionally located on the undulating rises on Wianamatta Shale. Crests and ridges are broad and rounded with convex upper slopes grading into concave lower slopes. Outcrops of shale do not occur naturally on the surface. They may occur, however, where soils have been removed.

The hydrology of the site primarily revolves around the Georges River, located 310 m south. The Georges River flows through Lake Moore, approximately 850 m southeast, and Chipping Norton Lake, and artificial lake and the adjacent wetlands, about 1.7 km northeast. Brickmakers Creek is approximately 2 km west of the site. Prior to European occupation the area surrounding the natural part of the Georges River and Lake Moore would have been a resource rich wetland. As well as providing fresh water for cooking and drinking, the Georges River and its tributaries would have supported a diverse range of plant, riverine and animal resources. The presence of these major and minor waterways, being potential water and resource gathering sources for Aboriginal people in the past, indicates that Aboriginal sites may be present throughout the site.

A historic aerial from 1943 (Figure 4-3) shows that the northern portion of the site consisted of a small wetland, and a small possible creek line or drainage line in the southern portion of the site (Comber 2021a:14).

4.3. Vegetation

Woodlands and open forest of Grey Box (*Eucalyptus moluccana*), Forest Red Gum (*E. tereticornis*), Narrow-leaved Ironbark (*E. crebra*), Thin-leaved Stringybark (*E. eugenioides*), Cabbage Gum (*E. amplifolia*) and Broad-leaved Apple (*Angophora subvelutina*). Grassy to shrubby understorey often

dominated by Australian Boxthorn (*Bursaria spinosa*), poorly drained valley floors, often salt affected with Swamp Oak (*Casuarina glauca*) and Paperbark (*Melaleuca sp*.).

Such a vegetation community would have provided a variety of edible plant species and plants suitable for resource subsistence. For example, the tall Grey Box and Red Gum's would have provided bark to make coolamons, shields or canoes, whilst the long Lomandra leaves would have been used for basket weaving (Baker et al 1986:136 cited in Comber 2021: 7). Acacia gum was a sweet nutritious food source, and the acacia seeds were a valuable source of protein. The dried seeds were ground between stones and baked as a bread/damper and the green seeds eaten like peas (Low 1992:86 cited in Comber 2021: 7). In addition, Cumberland Plain vegetation provided habitat for a variety of marsupials and birds whilst the Creek would have provided fish, yabbies and eels.

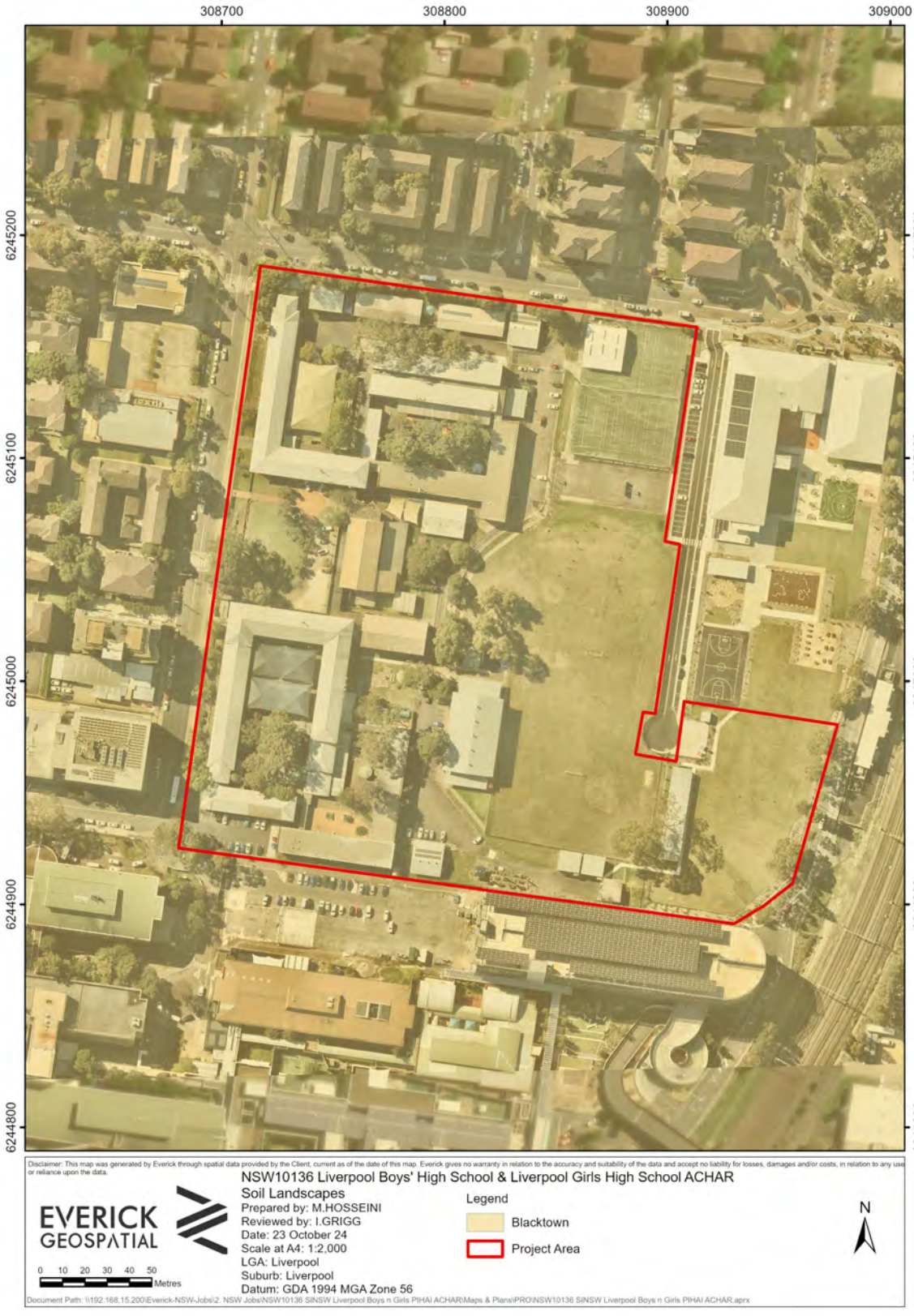


Figure 4-1: Soil landscapes of the site

Figure 4-2: Topography and hydrology of the site

4.4. Land use history

4.4.1. Regional history

The township of Liverpool was founded in November 1810 by Governor Lachlan Macquarie and named it in honour of the Earl of Liverpool, the then Secretary of State for the Colonies. It is the fourth oldest town in Australia after Sydney, Paramatta, and Hobart, but was the first free planned settlement of Australia unlike these earlier towns (Liverpool City Council n.d.). Thomas Moore was commissioned as builder of Liverpool and supervised public works for the next decade. Moorebank is named in his honour. The railway was opened in 1856 and the electric telegraph in 1858, which provided safe transport and communication into the city (Liverpool City Council n.d.). The history of the Local Government dates to 1848 when a district Council was formed. In 1872 the Liverpool Municipality was proclaimed, and Richard Sadlier became the first mayor. The first World War brought change to Liverpool. There were extensive military training activities in the area and German prisoners of war were held at Holsworthy. The Holsworthy-Moorebank area was used again during the second World War to train and house troops (Liverpool City Council n.d.).

4.4.2. The site

Numerous reports by Comber (2019, 2021a, 2021b, 2022, 2023) confirmed the previous land uses and disturbances to have occurred within the Liverpool Boys' and Girls' School complex between 1827 and 1955. A review of Parish Maps and Land Title documents as well as historical aerial photographs produced the following historical interpretation of the school site:

> *Occupation within the school site first commenced in 1827 with three small dwellings constructed on the western side of the site and the remainder of the site used for agricultural purposes. In 1884 the eastern portion of the site was subdivided into small allotments with Hart Road extended across the site linking Lachlan Street in the north and Campbell Street in the south. Whilst the allotments sold, only two dwellings appear to have been constructed within the eastern portion of the site. The land was resumed by the Government in 1946 for the school and construction began in 1947 and was completed in 1954 (Comber 2019).*

While most of the allotments were never built on, a 1943 historic aerial photograph illustrates that a few allotments had dwellings. A single dwelling with associated outbuildings and a fenced area is visible in the southwestern corner of the site (Figure 4-3). The site originally contained a mixture of low scrub and

cleared land. A dam or water hole can be seen to the northeast of the dwelling. An unformed track known as Drummond Street, which was a street that was never formed, divides the site from north to south. While the surrounding lots appear to be undergoing urbanisation, the site remained largely undeveloped. There appears to be a small creek or drainage line to the south of the site, running west to east.

By 1947, the western half of the site is occupied by a range of incomplete school buildings, associated infrastructure and services in what is to become the foundations of the new Liverpool Boys' and Girls' High Schools (Figure 4-4) The eastern section remains largely undeveloped with a dense shrub visible on the far east boundary.

By 1955, the Liverpool Boys' and Girls' High Schools have been constructed. The current site is now occupied primarily by the Liverpool Boys' High School facilities, playing fields and part of a former running track (Comber 2021:7-8). No observable areas of vegetation can be seen in the 1955 aerial photo. Therefore, any vegetation present today is most likely revegetated.

The current configuration of the site has hardly changed since both schools' original construction in 1954. The eastern half of the site has been completely cleared of any remnant vegetation to make way for paved and bitumen sports courts, a car park and a grassed oval while the western half has been landscaped and is currently the Liverpool Boys' High School.

In 2020 development of the Gulyangarri Public School was begun on the eastern boundary and in the south east of site, this development resulted in significant ground disturbance (Figure 4-6). Due to this development no potential for Aboriginal objects remains in this portion of the site.

Figure 4-3: 1943 historic aerial. Approximate location of site outlined in red (Source: NSW Imagery)

Figure 4-4: 1947 historic aerial. Approximate location of site outlined in red (Source: NSW Imagery)

Figure 4-5: 1955 historic aerial. Approximate location of site outlined in red (Source: NSW Imagery)

Figure 4-6: 2022 historic aerial. Approximate location of site outlined in red, showing construction of Gulyangarri Public School (Source: Google Earth).

4.5. Summary

The environmental background indicates the presence of a moderate depth of A horizon (approx. 350mm), demonstrating potential for Aboriginal objects to be present despite surface disturbance, however due shallow depth moderate subsurface disturbance will likely remove potential. Analysis of the Topography and hydrology of the site has demonstrated the presence of historical wetlands and a small creek, water sources such as these are known to indicate sensitivity for Aboriginal objects and sites. A range of flora and fauna would be present in the area, providing a wide range of resources for the Aboriginal community. Construction of the school complex is likely to have resulted in removal of the A horizon across much of the project area, removing potential for Aboriginal sites. Areas occupied by playing fields, nature strips and away school buildings are likely to reattain higher potential.

5. Ethnohistoric and archaeological context

5.1. Ethnohistoric context

Clear identification of language boundaries in the Liverpool area is difficult, as most information about early clans comes from colonists, explorers, and ethnographers trying to interpret Aboriginal languages (Keating 1996:1-2). The Darug, Tharawal, and Gandangara people are recorded as the original tribes occupying the area at the time of Bass and Flinders explorations of the Georges River Region in 1795 (Comber 2019: 5). The suffixes 'gal' and 'galleon' were added for men and women respectively to the place name for men and women of the clan. In the Liverpool area, the Cabro (gal) or (galleon) was the clan in the region, who were named after the Cohbra grubs they harvested at the banks of the Georges River, especially near Cabramatta Creek. According to Attenbrow (2010), the Tharawal language was spoken South of Botany Bay to the east of the Georges River to as far south as Jervis Bay. The Darug language is recorded as spoken on the Western side of the Georges River to Appin and Picton and as far west as the Blue Mountains. The Tharawal language group were divided into three groups: the fresh water, bitter water, and saltwater groups, based on the region they occupied (Unearthed Archaeology and Heritage n.d.). The site is located within the freshwater region. Contact between these groups was largely restricted to ceremonial gatherings. A complicated kinship and totem system prevented certain types of contact (Keating 1996: 1-2).

The Aboriginal economy was dependent on harvesting resources with minor modification to the environment, with much activity centred around the Georges River. Fishing from the bank or from canoes and digging for yams and collecting Cohbra grubs on the banks of the river, are all recorded as part of the economy (Kohen 1993:4-7). Within the freshwater region, numerous food sources including fresh water fish, yabbies, fresh water shellfish, edible plants, and reptiles were abundant (Unearthed Archaeology n.d.).

5.2. Archaeological context

5.2.1. Regional context

5.2.1.1. SIMTA Moorebank Intermodal Terminal Facility (Archaeological and Heritage Management Solutions 2012)

Archaeological and Heritage Management Solutions were engaged by Hyder Consulting on behalf of Sydney Intermodal Terminal Alliance to prepare an Aboriginal Cultural Heritage Assessment for an Intermodal Terminal Facility at Moorebank Avenue, Moorebank, 3.79 km south of the current Project Area. The study area was located beside the Georges River, historically this landform would have resembled a series of sloping river terraces, but modern cut and levelling works have altered the natural slope of the landscape. The study area contains soils from the Berkshire Park Soil Group, characterised as shallow clayey sand soils with frequent ironstone pisoliths, found on low rises and terraces. The general area contains Mesozoic and Cainozoic geology, of Hawkesbury Sandstone, Mittagong Formation, and Ashfield Shale. The assessment suggests that more recent Quaternary deposits, specifically those of Pleistocene and Holocene age, have high potential for both natural and anthropogenic information. The Georges River, Williams Creek and Harris Creek all contain evidence of Quaternary deposits. A site inspection of the study area identified significant fill across the landscape. The A horizon where archaeological material typically occurs, was assessed as having been removed. No evidence of natural landforms or soil profiles were identified within the site, and the likelihood of archaeological material being present was low. Areas of higher archaeological sensitivity were assessed as areas close to fresh water on river and creek flats, and river terraces, all of which are landforms considered to have Aboriginal archaeological potential. Areas that have been impacted by historical footings, foundation, and recent development works, including quarrying and the construction of the rail line, were significantly disturbed and unlikely to retain any in situ Aboriginal Archaeological deposits.

5.2.2. Moorebank Intermodal Terminal (Navin Officer Heritage Consultants 2014)

Navin Officer Heritage Consultants Pty Ltd (NOHC) was commissioned in 2010 by Parsons Brinckerhoff to undertake a cultural heritage assessment for the Moorebank Defence precinct on behalf of the Department of Finance and Deregulation as part of the EIS for the Project. The study area for this assessment was located approximately 2.5km south of the Project Area. The predictive model identified three areas of archaeological potential within the Moorebank Intermodal Terminal study area:

- 100 m either side of the Georges River
- 100 m either sides of tributary drainage lines
- Elevated slopes and riverside margins on Tertiary alluvial terraces adjacent to the Georges River.

Archaeological field survey on the east of the Georges River was undertaken in February 2013 in conjunction with invited representatives of Aboriginal groups.

Subsurface testing was undertaken in September 2012 which utilised a combination of mechanical test pits and hand excavated test pits totalling 59 test pits in accordance with a pre-agreed methodology. The results of the testing program found 264 artefacts in 26 of the pits. Further excavation in 2013 consisted of 45 test pits (37 hand excavated pits and 8 mechanical pits). 14 artefacts were recovered from three site areas within a larger area of PAD. MA 11: artefacts associated with the Unit 3 fill that has been reworked and deposited as the result of mechanical earth works at the southern end of MAPAD2 (Pits 1 and 5). MA12: artefacts associated with Unit 2 fluvial sands across the central southern portion of MAPAD2 (Pits 9, 10, 12, 13, 14 and 42). MA13: a single artefact associated with the Unit 1 silts at the northern end of the test area (Pit 34, Spit 9). It was noted that where surface occurrences of artefacts were recorded during the survey the excavation results have shown that subsurface archaeological deposits are more widely distributed than surface evidence suggests. The densest and most diverse archaeological deposits were located within well drained aggrading landforms located in proximity to permanent water sources. Test pits excavated further away from the river bank had noticeably less dense subsurface artefact distributions, if sites were present at all. Artefact raw material type was dominated by silcrete, followed by quartz, quartzite and basalt and smaller amounts of siltstone, indurated mudstone tuff (IMCT).

5.2.2.1. Skipton Lane, Prestons (Artefact 2017)

Artefact Heritage were engaged by Firstyle Homes to prepare a due diligence assessment for a proposed subdivision and residential development at 30 Skipton Lane, Prestons, 5.87 km southwest of the current Project Area. The study area is located within the Cumberland Plains, on a landscape of rolling hills and prominent rises. Soils within the study area consist of the residual Blacktown soil landscape, which is characterised by a hard setting red podzolic soil within upper slopes. The Blacktown Soil Landscape is typically texture contrast soils, with an upper loam horizon of up to 300 mm overlying clay loam. The predictive model developed as part of this assessment determined that artefact densities were most likely to be identified on terraces and lower slopes within 100 m of fresh water sources. Ridgelines and crests located between drainage lines were also determined as likely to contain archaeological evidence,

though typically in the form of background scatter. Sites were suggested as likely associated with sloping landforms, although to a lesser extent than water sources. Sites were determined as generally not present within land that has been disturbed despite the presence of sensitive land formations. A site inspection of the study area did not identify any Aboriginal objects and no further archaeological investigation was recommended.

5.2.2.2. Liverpool Health and Academic Precinct – Multi Storey Carpark (RPS 2020)

RPS was engaged by Johnstaff Pty Ltd to prepare an Aboriginal Cultural Assessment Report for Health Infrastructure for the proposed Liverpool Health and Academic Precinct redevelopment, directly adjacent to the current Project Area. The geology, hydrology, topography, and landscape of the study area is shared by the current Project Area due to the proximity of the assessments. The predictive model developed for the Liverpool Health study area determined that low density artefact scatters and isolated artefacts were the most likely type of Aboriginal sites to be identified within the study area. Due to land disturbance, the potential for scarred trees and burials to be located within the study area was assessed as low. The results of a survey identified no archaeological objects or areas of archaeological potential. Due to extensive ground disturbance across the site, the Aboriginal archaeological potential of the study area was assessed as low.

5.2.2.3. Moorebank Avenue Realignment (EMM 2021)

EMM was engaged to prepare a preliminary Aboriginal heritage assessment for realignment works at Moorebank Avenue, approximately 1.4 km south of the current Project Area. The landscape is defined as undulating hills and flats of the Cumberland Plains, and river terraces and floodplains along the Georges River. The study area is part of a transitional zone between two geological features of the Sydney Basin: the Hawkesbury Sandstone and Wianamatta Shale zones, and the study area is part of the catchment of the Georges River. The predictive model developed as part of the assessment determined that cultural material in the area is commonly located beside larger, higher order creek lines, rather than beside smaller tributaries. Cultural material in the area would thus likely be identified on the edges of the Georges River rather than the lesser waterbodies within the study area. Cultural material within these tributaries is additionally usually within elevated terraces, rather than on flats and swampy areas, or the floodplains associated with creek lines. The distribution of AHIMS sites supported this assertion with most sites occurring along the Georges River and few away from major water courses. Archaeological deposits, if present within the study area, were considered most likely to be varied density surface and subsurface stone artefacts. The potential for culturally modified trees was considered unlikely. The findings of the

assessment were that the area would be characterised by low densities of stone artefacts, reflective of ephemeral or transitory use by Aboriginal people. Any present artefacts would be in disturbed contexts. No further archaeological investigation was recommended.

5.2.3. Project Area Context

5.2.3.1. Liverpool Boys' and Girls' High Schools Aboriginal Archaeological Assessment (Comber 2019)

Comber Consultants (Comber) were engaged in 2019 to provide an Aboriginal Archaeological Assessment as part of the Schools Infrastructure NSW's investigation into the development potential of Liverpool Boys' and Girls' Schools. The predictive model developed as part of the assessment determined that the most likely site types to be identified in the study area would be open artefact scatters, scarred trees, and isolated finds, due to proximity to water and prolific natural resources such as bark for manufacturing containers, shields and canoes and plants for manufacturing twine. However, extensive land clearance and land modification for the construction of the school greatly reduces the likelihood of these sites being present within the study area.

The results of the assessment were that the Project Area is predicted to contain the potential for medium to high density sites. The Project Area was determined as a possible site for seasonal camping as it is located within a low-lying area close to the river and former wetlands area. As such, there is potential for subsurface evidence of occupation across the site. Further archaeological investigation was recommended by Comber in the form of an Aboriginal Cultural Heritage Assessment and archaeological testing under the Code of Practice.

5.2.3.2. New Liverpool Primary School Aboriginal Cultural Heritage Assessment Report (Comber 2021)

Comber were engaged in 2021 to undertake an ACHAR as part of School Infrastructure NSW's proposal to construct a new Liverpool Primary School (Gulyangarri Public School), on the grounds of the existing Liverpool Boys' and Girls' High School. The project was assessed as a State Significant Development.

A test excavation program was undertaken from Monday 13th to Friday 17th and Monday the 25th to Friday the 25th of October 2021. A summary of the test excavation results is provided in Section 7.2.

The conclusions of the excavations were that the area was likely to have had Aboriginal occupation, associated with proximity to water sources. Ground disturbance was determined to impact on surface

evidence, but subsurface evidence may still be present in areas of high disturbance. Subsequently the ACHAR recommended archaeological salvage prior to harm.

5.2.3.3. New Liverpool Public School Aboriginal Archaeological Salvage Excavation Report (Comber 2022)

Comber was engaged in 2022 to provide additional investigation in the form of Aboriginal archaeological salvage excavations of New Liverpool Public School (45-5-5507) as part of the DoE's investigation into the development potential of Liverpool Boys' and Girls' Schools. In accordance with recommendations from Comber (2019; 2021), salvage excavation was undertaken from 23 March and 4 April 2022.

The purpose of salvage excavation was to recover evidence that will compliment and extend the information obtained during the testing program. Ten Aboriginal objects were uncovered from 24 excavation units during the salvage excavations. The artefacts were mainly manufactured from silcrete, an indication that material for stone stool manufacture was most likely traded for with other clans. Following salvage excavation New Liverpool Public School (45-5-5507), was updated as destroyed despite this PAD3 had not been investigated and remained undisturbed.

5.2.3.4. Proposed New Liverpool Primary School Geotechnical Assessment (Douglas Partners 2019)

A Geotechnical report at the site of the Liverpool Boys' and Liverpool Girls' schools was developed by Douglas Partners for DoE in 2019. Investigation consisted of eleven boreholes followed by logging, core photography, laboratory testing, and engineering evaluation. The investigation was carried out in conjunction with investigation for the proposed redevelopment of the existing Liverpool Boys' and Girls' High Schools site. The current site are likely underlain by Bringelly Shale, a shale comprising of siltstone, fine grained sandstone, and laminate with shale bands of Triassic age. The results of the boreholes in the western sections of the Project Area determined that the site is underlain by a shallow depth of filling and silty clay, with weathered siltstone. Boreholes in the eastern portion of the Project Area demonstrated alluvial deposits over Bringelly Shale. The results of the investigation were that the site was relatively uniform, with topsoil and fill up to 800 mm overlying residual silty clay, shale, and laminate.

5.3. Database searches

5.3.1. Aboriginal Heritage Information Management System

Caution should be taken when using the AHIMS database to reach conclusions about site prevalence or distribution. For example, a lack of sites in a given area should not be seen as evidence that the area was not occupied by Aboriginal people. It may simply be an indication that it has not been surveyed for cultural heritage, or that the surveys were undertaken in areas of poor surface visibility. Further to this, care needs to be taken when looking at the classification of sites. For example, the decision to classify a site an artefact scatter containing shell, rather than a midden can be a highly subjective exercise, the threshold for which may vary between archaeologists. It is also important to note that the nature and location of Aboriginal sites can be considered culturally sensitive information and should only be made publicly available with the consent of the Aboriginal community.

An extensive search of the Heritage NSW AHIMS was conducted on 19 September 2023 for the project area and its surrounds (ID: 821053), using the following search area:

Lat, Long From: **-33.9583, 150.8797**

Lat, Long To: **-33.8871, 151.0035.**

The AHIMS search returned 83 Aboriginal site listings, updated search results were retrieved on 28 August 2024 (Figure 5-1), the updated search results included four sites registered as part of this project, no additional sites had been listed for a total of 87 listed sites (Table 5-1). Prior to the commencement of this assessment there was one registered site located within the Project Area; New Liverpool Public School (45-5-5507), an artefact site consisting of two silcrete flakes which has since been destroyed as a result of an SSD approval for the Gulyangarri Public School which adjoins the Project Area (Figure 5-2; ATER Appendix B). Of the 87 sites returned in the search, there are nine sites which have been destroyed and a further 16 were determined not to be a site on investigation.

Heritage NSW lists 20 standard site features that can be used to describe a site registration with AHIMS, and more than one feature can be used for each site. For the 87 sites within the search area, a total of six different site features is recorded. Details of the occurrence of site features is provided in Table 5-1.

'Artefact' is the most frequently represented site type within the search area, accounting for 36 of the entries. The predominance of this type of evidence is likely to be related to several factors: the production

of a large number of items (both tools and waste) in the production, maintenance and use of flaked stone artefacts; the permanent nature of the material; and the destruction of other types of evidence, through natural processes such as decomposition and post colonisation land-use practices such as vegetation clearance.

The distribution of registered sites is shown in Figure 5-1. Many of the registered sites are close to the Georges River and its tributaries. This is likely to be at least partly the result of Aboriginal land use, indicating a preference for repeated and/or long-term occupation of areas close to water and associated resources.

Table 5-1: Frequency of site features within the search area.

Site feature	Number	Percentage	Number destroyed	Number Not a Sites
Artefact	36	41.38	7	0
Aboriginal Resource and Gathering, Potential Archaeological Deposit (PAD)	1	1.15	0	0
Artefact, Potential Archaeological Deposit (PAD)	13	14.94	2	0
Modified Tree (Carved or Scarred)	24	27.59	0	15
Potential Archaeological Deposit (PAD)	12	13.79	0	1
Shell	1	1.15	0	0
Total	**87**	**100**	**9**	**16**

5.4. Other database searches

The following heritage registers were accessed on 15 September 2023:

- The National Heritage List - Contains no heritage listings within or within close proximity to the Project Area.

- Commonwealth Heritage List - Contains no heritage listings within or within close proximity to the Project Area.
- Register of the National Estate - Contains no heritage listings within or within close proximity to the Project Area.
    - Liverpool Hospital (former) (3294)
- The State Heritage Register - Contains no heritage listings under Section 1 or 2 - Aboriginal Places listed under the *NPW Act* and Items listed under the *Heritage Act 1977 (NSW)* within the boundaries of the Project Area, one gazetted SHR listed property is located in the vicinity of the Project Area:
    - Liverpool TAFE College (01809)
- The Register of the National Trust of Australia - Contains no listings within or within close proximity to the Project Area.
- Liverpool LEP 2008–
    - The Project Area is located adjacent to the Plan of Liverpool (early town centre street layout' Hoddle 1827) (ID89) locally listed item.
    - Bigge Park Conservation Area (Co1)
    - Liverpool TAFE College (01809)
- AHIP public register – One AHIP was applied for the area adjoining the Project Area was applied for, but then withdrawn on 3 February 2022 (The New Liverpool Primary School (18 Forbes Street, Liverpool) for early works for the new Gulyangarri Public School.

5.5. Summary and predictive model

Predictive models of site distribution and density on the Cumberland Plain highlight the relationship between proximity to freshwater and landscape with patterns of Aboriginal occupation. Additionally, Heritage NSW advises that Aboriginal objects are likely to be present within 200 m of water, where historical ground disturbance has not impacted their survival (DECCW 2010a: 12).

The general predictive model for the Cumberland Plain indicates that stream order, and proximity to water sources is the primary determinant of complexity of archaeological sites. The number of sites within an area, and their relative density is determined by their proximity to higher order streams. Artefact sites with high densities (>100 artefacts per site) are more likely to be associated with large

permanent watercourses, such as the Georges River. Lower density scatters, or artefacts redeposited by erosion and water discharge may be reburied in fluvial sediments.

Given the above, the archaeological sensitivity of the area is considered to be moderate based on the proximity to permanent water sources such as the Georges River. However, the degree of ground disturbance will be a key factor in determining the site's archaeological potential. Previous archaeological investigations for the Liverpool Boys' and Girls' Schools (Comber 2019, 2021a, 2021b, 2022, 2023) indicate the Project Area has undergone moderate to high landscape modification, mainly through the construction of the current Liverpool Boys' and Girls' Schools. This will have likely resulted in the disturbance of the upper parts of the soil profile (A horizon). Blacktown soils are typically shallow, and therefore only the upper A horizon has the potential to contain Aboriginal objects.

An analysis of past land use indicates that the majority of the former running track within the Project Areas southeast portion, has been subject to limited historical disturbance. Previous archaeological studies for the Cumberland Plain have confirmed the possibility of sub-surface archaeological deposits to remain in situ despite disturbances by non-Aboriginal activities, namely areas that have been disturbed by agricultural activities only. The archaeological survey (Comber 2021a), archaeological testing (Comber 2021b) and salvage excavation (Comber 2022) has confirmed the model of occupation for the Cumberland Plan with reliable water being a factor in the location of occupation.

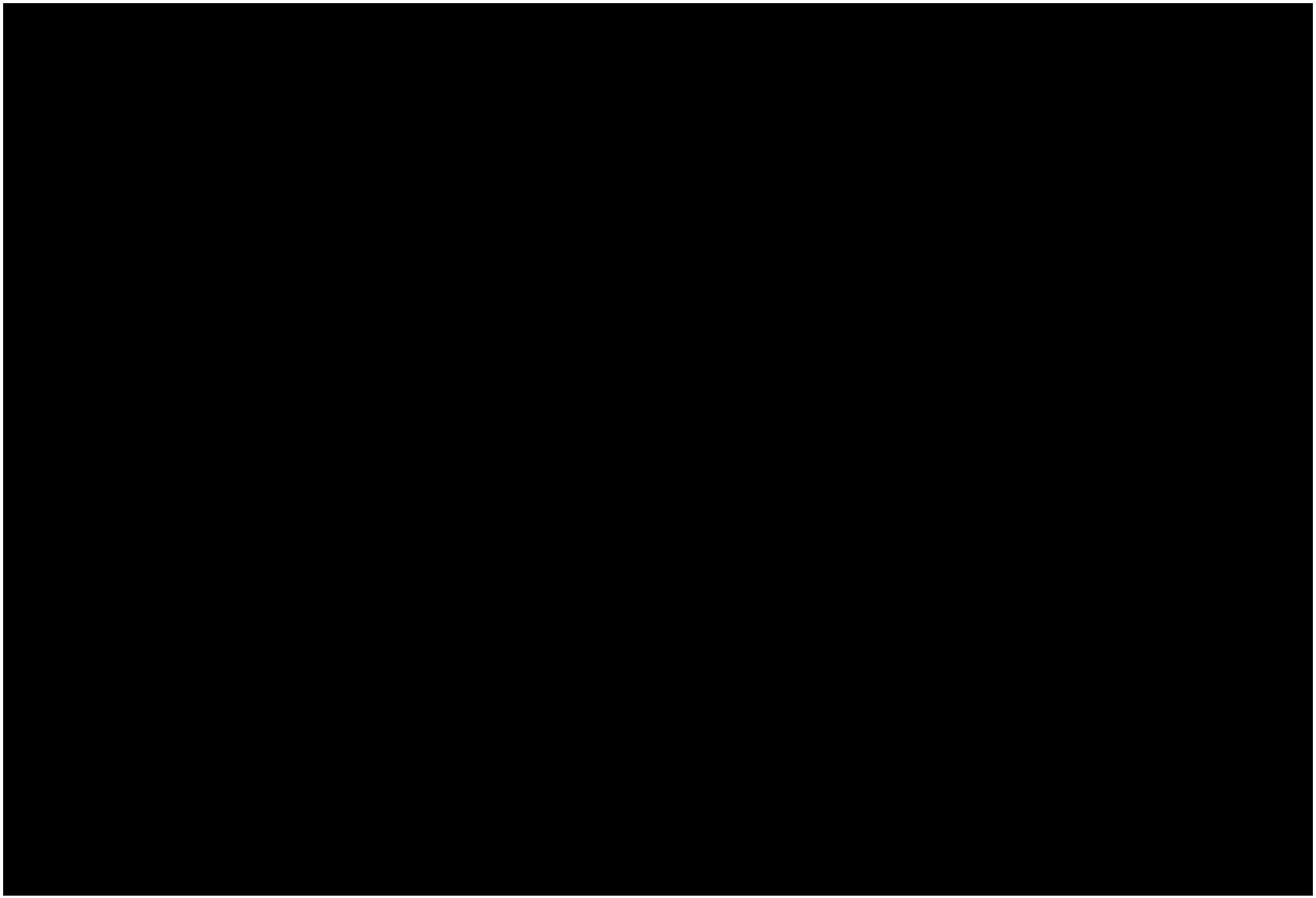


Figure 5-1: AHIMS search results

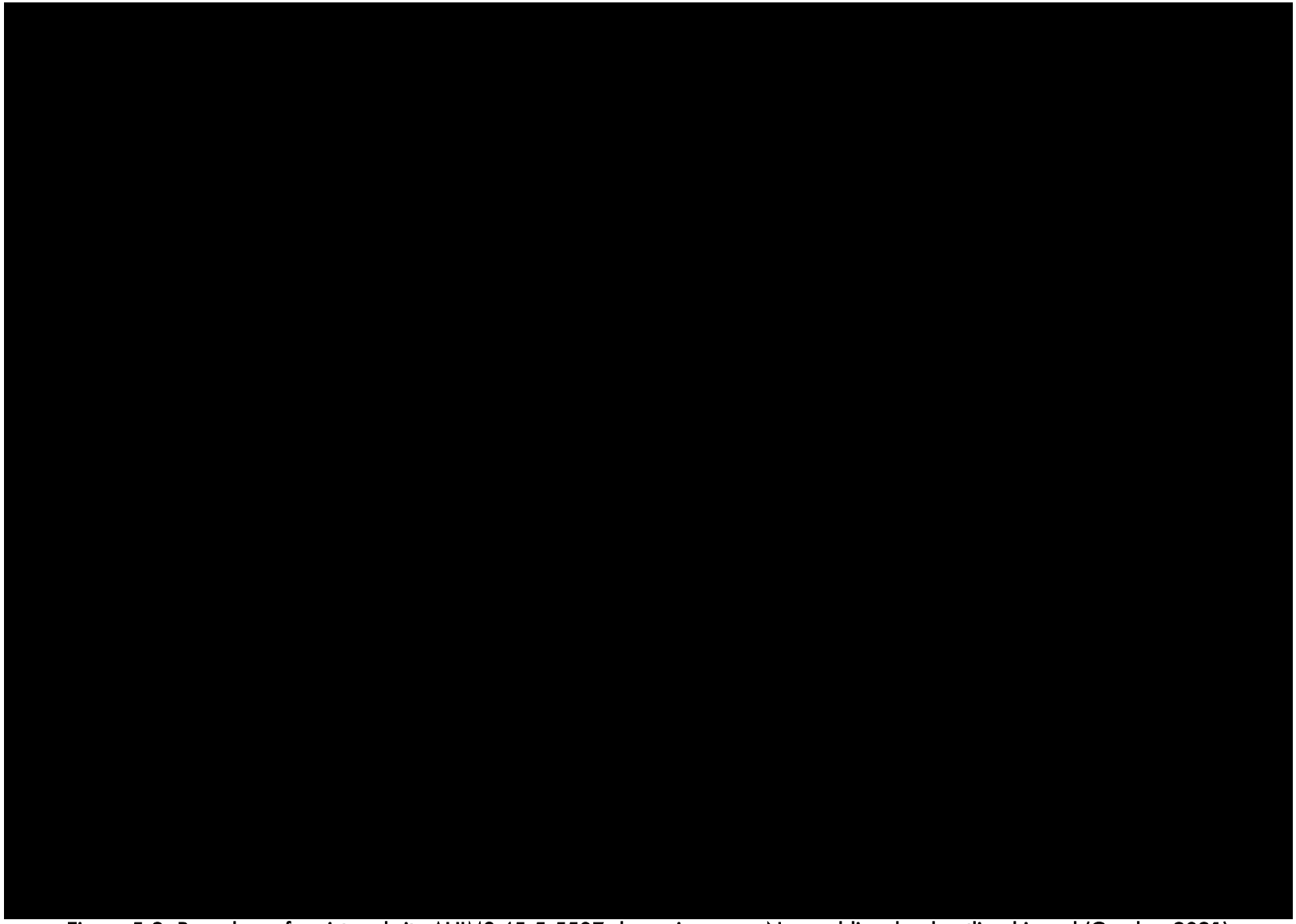


Figure 5-2: Boundary of registered site AHIMS 45-5-5507 shown in green. New public school outlined in red (Comber 2021)

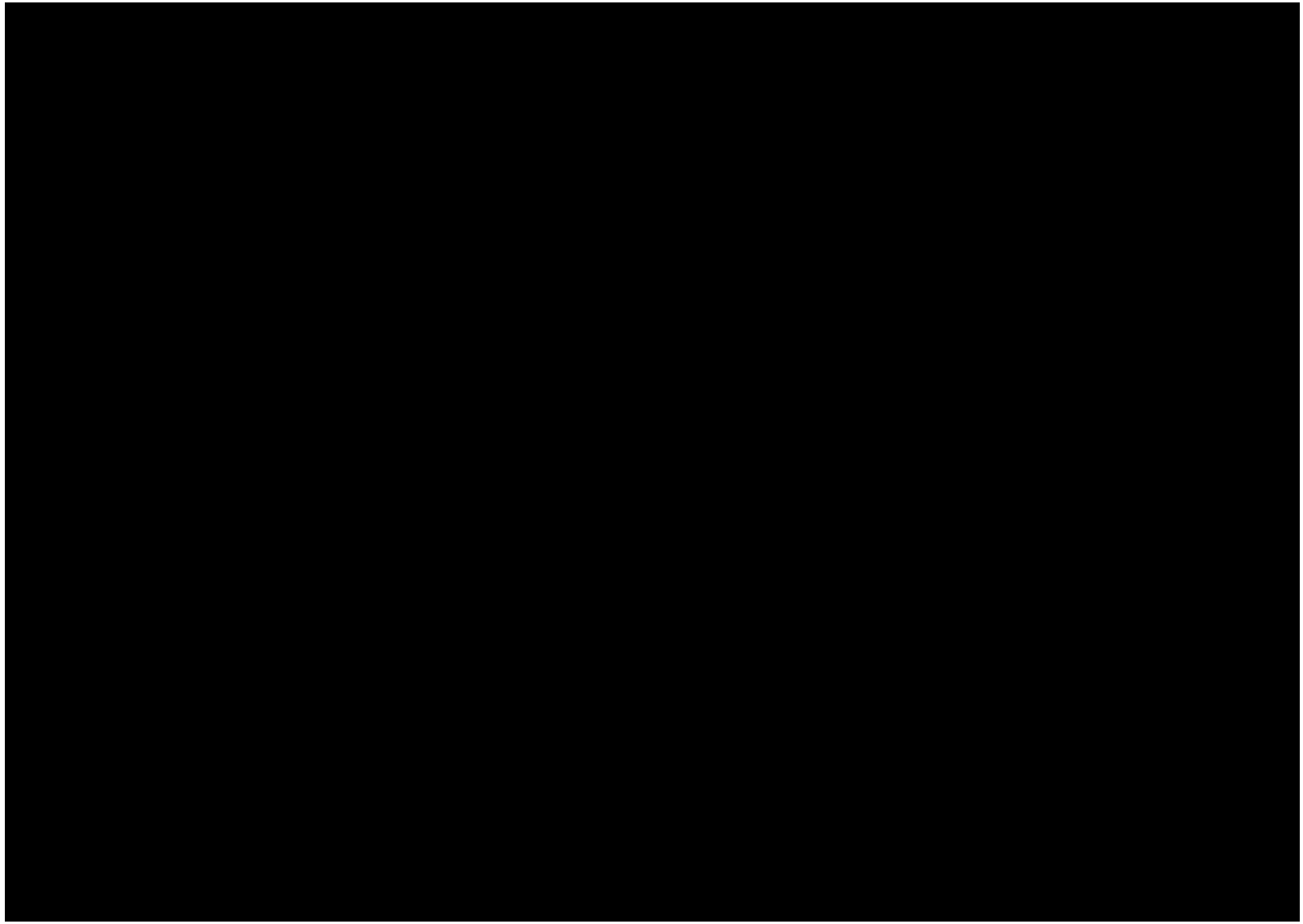


Figure 5-3: Locations of PADs identified by Comber Consulting (Comber 2023)

6. Archaeological survey

Two archaeological surveys have been conducted within the Project Area. The first by Comber in 2019 and the second by Everick Heritage in 2023, a summary is provided here, additional detail is available in Appendix D –ATER.

6.1. Aims

The primary aims of the archaeological survey were to:

- To conduct an archaeological survey in accordance with the Code of Practice.
- To locate and record any Aboriginal objects located in the Project Area.
- Identify and record any areas of potential archaeological deposit (PAD)
- Consult with Registered Aboriginal Party members regarding the significance of the area and discuss recommendations for the management and mitigation of any Aboriginal archaeological or cultural values
- Verify the extent and nature of disturbance in the Project Area identified through background research (Section 4.4)

6.2. Timing and personnel

An archaeological survey of the Liverpool Boys' High School and Girls' High School was conducted by Comber in 2019, for Gulyangarri Public School, which included an inspection of the current Project Area. Site visits were conducted by Jillian Comber and David Nutley, archaeologists at Comber on the 31 October 2019 and 1 November 2019. Survey of the Project Area was undertaken over two days between 22-23 January 2024. The survey was supervised by Caitlin Cole (Senior Archaeologist, Everick Heritage).

6.3. Constraints

No constraints were encountered during the archaeological surveys.

6.4. Results

6.4.1. Comber 2019

During the 2019 inspections, two silcrete artefacts were recorded (Figure 5-2). As a result, the whole of the oval was registered on AHIMS as New Liverpool Public School (45-5-5507) containing two isolated artefacts and PAD. This site has since been listed as destroyed on AHIMS as a result of an SSD approval for the New Liverpool Public School which adjoins the Project Area. No information regarding the survey coverage, ground visibility and exposure or transect data was recorded in any of the archaeological assessments produced between 2019 and 2023 (Comber 2021).

6.4.2. Everick Heritage 2023

Both the Liverpool Boys' High School and Girls' High Schools have been subject to numerous previous archaeological surveys relating to prior development of the New Liverpool Public School, as such the survey and Project Area was constrained to the previously identified PAD3 identified by Comber Consultants in 2023 (Figure 5-3). The portion of the Project Area within Gulyangarri Public School was not surveyed as background research had indicated it had been sufficiently assessed in the previous surveys and subsequently fully impacted during construction of Gulyangarri Public School. The entire oval was subject to meandering survey by two archaeologists, and the six RAPs walking a single transect working east to west and then returning west to east across the PAD extent. Width between survey participants varied between 5 and 10 metres. Due to the relatively small size of the school oval and immediate surrounding open lawn area, only one survey unit was recorded (Survey Unit 1). No indication was seen that PAD 3 had been subject to addition disturbance since it was identified and was recorded as Liverpool BHS_GHS PAD1 (45-5-5883), in addition a single isolated artefact was identified to the south of the Project Area, Liverpool BHS GHS IA02 (45-5-5791).

7. Test excavation

7.1. Comber 2021

24 TPs were excavated during works (Figure 7-1). This totalled six square metres of excavation and representing less than 0.05 percent of New Liverpool Public School (45-5-5507). Once the character of the PAD was established, planned TPs were moved in order to establish the nature and extent of those deposits. The following sections summarise the test excavation results for the temporary school site. Six subsurface artefacts were identified during test excavation across the Project Area. Test excavation and subsurface results are shown in Figure 7-1. Owing to works undertaken prior to the construction of the New Liverpool Public School (now known as Gulyangarri Public School), the previously recorded artefacts have been salvaged and New Liverpool Public School (45-5-5507) is now listed on AHIMS as 'destroyed'.

The soil profile across all excavation units was typical of the Blacktown soil landscape matrix. The soil profile generally consists of a thin surface fill, followed by a dark brown silty loam to an average depth of 200 mm. This was followed by either a reddish brown or yellowish-brown clay subsoil occurring at depths between 200 - 300 mm, which could be seen in the intermixing of stone and gravel increasing in compaction in depth. This intermixing is most likely a result of smoothing and levelling of the site in the early 1950's associated with the construction of the high school oval. This would have likely distributed the clay fill across the site. An undisturbed profile was observed at a depth of 400 mm and appeared as a grey silty clay to light clay up to 100 mm thick. This profile is likely the undisturbed Pleistocene alluvial sediments associated with the alluvial terrace of the Georges River.

Figure 7-1: Image showing test excavation units (Comber 2021)

7.2. Everick Heritage 2024

Everick Heritage undertook test excavation of Liverpool BHS GHS PAD1 (45-5-5883) in 2024, excavations were undertaken as 500 mm x 500 mm TPs on a grid pattern with approximately 20 m intervals between them. This methodology was determined due to the moderate sensitivity identified by Comber, that would sufficiently identify Aboriginal objects, if present, and allow for offsetting at smaller intervals, should cultural material be encountered (Comber 2019, 2021a, 2021b, 2022, 2023). During the program, additional test pits were excavated, either to provide further spatial analysis of areas with cultural material present, or to better understand stratigraphic changes occurring over the Project Area. Due to cultural material present in TP 8, TPs 21 was placed nearby to test for the extent of cultural material. TP 22 was placed south of TP 24 to further survey landform changes in Liverpool BHS GHS PAD1 (45-5-5883) (see Figure 7-2). Soils were found to be consistent with those identified by Comber.

As a result of test excavation two new sites were identified, Liverpool BHS GHS AS01 (45-5-5789) and Liverpool BHS GHS IA01 (45-5-5791). Liverpool BHS GHS PAD1 (45-5-5883) was determined not to be a site. These sites and a summary of identified artefacts are listed below in Table 7-1 and Table 7-2. It is not considered likely that further Aboriginal objects would be located in any other location in the Project Area. Further data and analysis is contained within Appendix D –ATER.

Table 7-1 Summary of new sites.

AHIMS ID	New site name	Site Features	Notes
45-5-5789	Liverpool BHS GHS AS01	Artefact	Small Artefact Scatter identified in TP8, a total of five artefacts were identified within the test pit. No other nearby pits contained artefacts indicating a highly concentrated scatter, likely the result of a single event.
45-5-5790	Liverpool BHS GHS IA01	Artefact	A single isolated artefact identified in spit 2 of TP2. No other artefacts were identified in the area.
45-5-5791	Liverpool BHS GHS IA02	Artefact	Surface artefact, therefore, was required to remain in situ and unable to complete a detailed analysis.
45-5-5988	Liverpool BHS GHS_PAD1	Not a site	Liverpool BHS GHS PAD1 (45-5-5883), was determined not to be a site and the AHIMS database was updated to reflect this.

Table 7-2: Summary of artefacts

AHIMS ID	New site name	Raw material	Artefact type	Length (mm)	Width (mm)	Thickness (mm)	Notes
45-5-5791	Liverpool BHS GHS IA01	Silcrete	Flake	23.9	12.2	6.5	Complete silcrete flake, no retouch.
45-5-5790	Liverpool BHS GHS IA02	IMST	-	-	-	-	Surface artefact, therefore, was required to remain in situ and unable to complete a detailed analysis.
45-5-5789	Liverpool BHS GHS AS01	Silcrete	Debitage	16.6	13.8	2.5	Flat debris of possible flake. Too worn to determine termination.
45-5-5789	Liverpool BHS GHS AS01	Silcrete	Debitage	19.2	7.0	6.8	Possible core fragment given scarring on ventral face been bi-directional along spine (both positive and negative side).
45-5-5789	Liverpool BHS GHS AS01	Chert	Flake	14.1	10.5	4.2	-
45-5-5789	Liverpool BHS GHS AS01	Chert	Flake	14.3	12.1	6.9	Flake with presumed prior scars (negative) along edges of dorsal side.
45-5-5789	Liverpool BHS GHS AS01	Silcrete	Flake	12.1	6.2	9.1	-

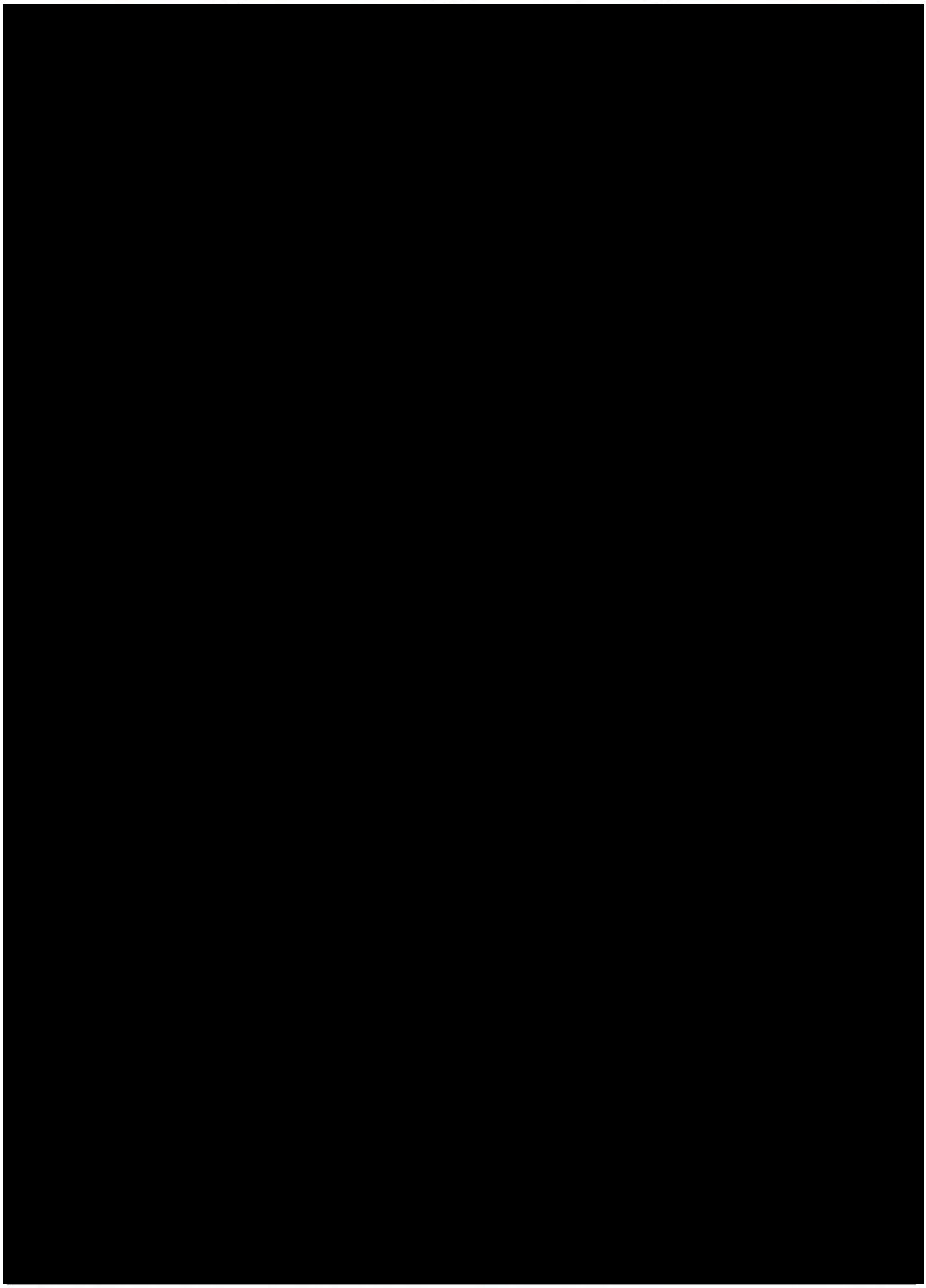


Figure 7-2: Test excavation results

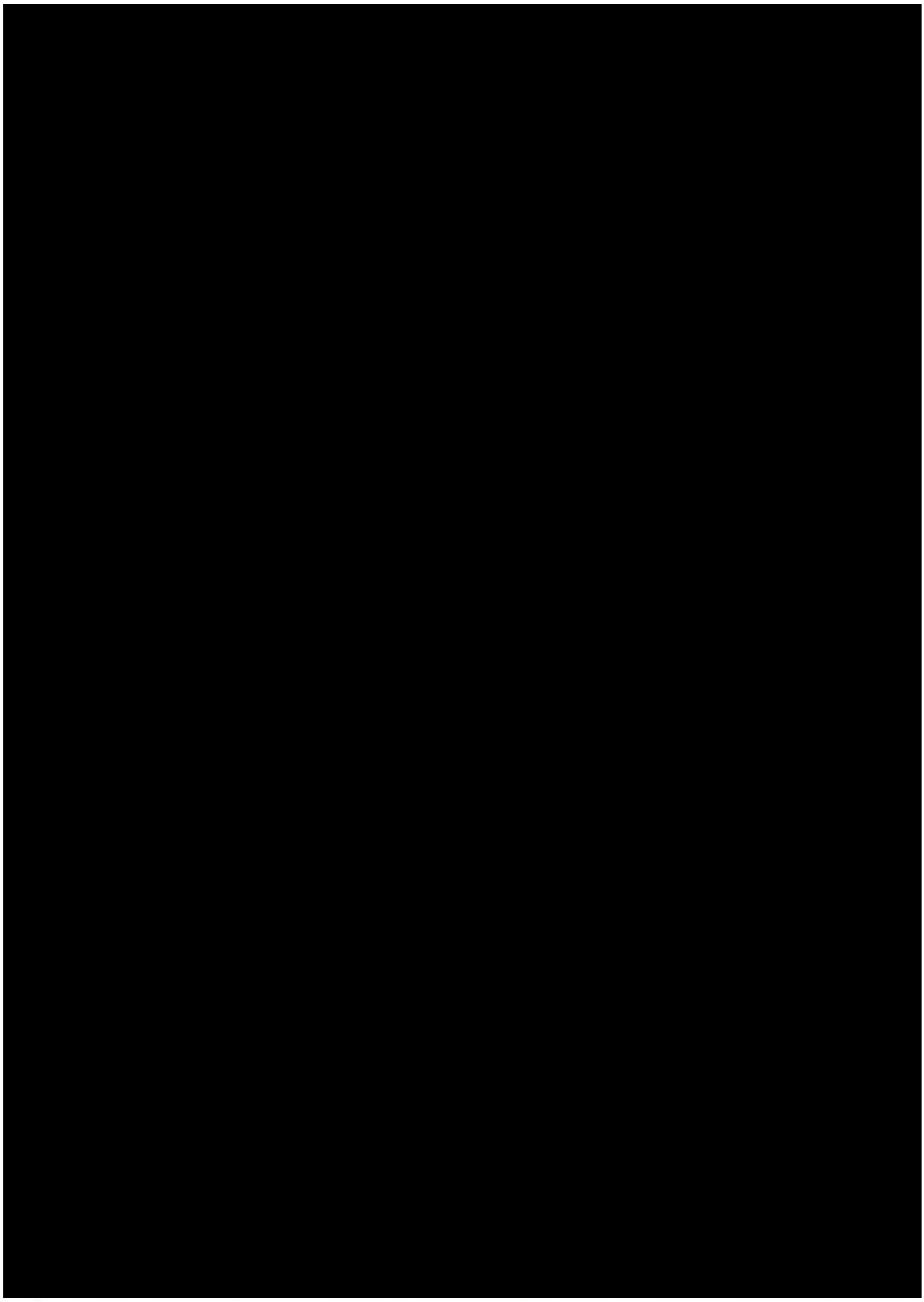


Figure 7-3: Test excavation site results map

8. Cultural values assessment

8.1. Cultural landscapes

Cultural landscapes are defined as:

> *A place or area valued by an Aboriginal group (or groups) because of their long and complex relationship with that land. It expresses their unity with the natural and spiritual environment. It embodies their traditional knowledge of spirits, places, land uses, and ecology. (US/ICOMOS 1996 in Andrews et al 2006).*

Andrews et al (2006) suggest the following guiding principles for evaluating Aboriginal cultural landscapes.

- The long associated Aboriginal group or groups have participated in the identification of the place and its significance, through the consultation process. This principle ensures that Aboriginal peoples will be consulted, involved and participate in the identification of frameworks and sites
- Spiritual, cultural, economic, social and environmental aspects of the group's long attachment with the identified place, including continuity of use and traditions, social and kinship relationships, intimate knowledge of the area, and spiritual affiliations illustrate its cultural value.
- The interrelated cultural and natural attributes of the identified place make it a valued cultural landscape. Recognising the integrated nature of Aboriginal relationship to place, including the inseparability of cultural and natural values. Tangible evidence may be largely absent, with the attributes primarily in oral and spiritual traditions and in activities related to the place. However, there could be tangible attributes which include natural resources, archaeological sites, burials/graves, material culture, and written or oral records.

  This guiding principle also recognises natural components such as ecosystem, climate, geology, topography, water, soils, views, and dominant and culturally significant fauna and flora in the context of the associated Aboriginal people's relationship to the place.
- The cultural and natural attributes that embody the significance of the place are identified through traditional knowledge of the associated Aboriginal group(s) including traditional environmental knowledge, narratives, place names, language, traditional uses, rituals, and behaviour related to the identified place. It recognises that some knowledge cannot be shared, but available knowledge must be sufficient to demonstrate the significance of the place in the culture of the associated group.

- The cultural and natural attributes that embody the significance of the place may be additionally understood through academic studies such as histories, including oral history and ethno-history, archaeology, anthropology, and environmental sciences.

Aboriginal cultural knowledge was traditionally bequeathed through oral traditions from generation to generation. Within all Aboriginal communities there was a time of dislocation and upheaval associated with the arrival of colonial settlers. This widespread disruption resulted in much of the detailed knowledge and understanding of many of the elements of the cultural landscape being lost from the Aboriginal community, nonetheless many Aboriginal people maintain a strong connection to the land of their ancestors and collectively possess a wealth of knowledge passed down through the generations.

8.2. Methodology

The cultural assessment in this report includes information collected through academic research, and consultation during the survey and through the consultation period for the RAP review, and incorporates the findings of the Connecting with Country assessment prepared by Unearthed Archaeology and Heritage (2023). This information was collected by Caitlin Cole (Senior Heritage Consultant, Everick Heritage) and Vanessa Edmonds (Principal, Everick Heritage), additional assessment was conducted by Gareth Holes (Senior Archaeologist, Everick Heritage).

8.3. Identified Aboriginal cultural heritage values

The following cultural values have been identified through background research. No specific comments regarding cultural heritage values by the RAPs were received during the ACHAR review process.

The Connecting to Country report notes that archaeological investigations (such as this Report) would need to be prepared for the development of the High School and it was agreed by the four Aboriginal focus group participants that any archaeological material which was uncovered during test excavation or salvage should be reburied on site or placed in a keeping place which may be designed to display the artefacts if appropriate (Unearthed Archaeology and Heritage 2023). Broadly the School sites were considered to be located at the boundary of three Aboriginal language groups, the Tharawal, Gandangara and the Darug.

The Project Area is also located in close proximity to the Georges River. Rivers and other watercourses are significant to Aboriginal people, providing both a range of resources, transportation and significant

locations within the landscape. The Project Area is also known to contain Aboriginal objects, which, while understood to be in a disturbed context and not to be stratigraphically intact, do offer a direct link to Aboriginal ancestors.

9. Significance assessment

9.1. Significance assessment criteria

An assessment of the cultural heritage significance of an item or place is required in order to form the basis of its management. The Guide (OEH 2011: 10) provides guidelines for identification and assessment of cultural significance assessment with reference to the Burra Charter (Australia ICOMOS 2013) and the NSW Heritage Office guidelines (2001):

- Social values – does the area have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.
- Historic values – is the area important to the cultural or natural history of the local area and/or region and/or state
- Scientific values - does the area have the potential to yield information that will contribute to an understanding of the cultural and natural history of the local area and/or region and/or state
- Aesthetic values – is the area important in demonstrating aesthetic characteristics in the local and/or region and/or state.

Scientific values should be further considered in light of the following criteria (OEH 2011: 10) and rated low, moderate or high:

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

A full assessment of the scientific value of all three sites has been prepared in Section 8.2 of the ATER (Appendix E). Liverpool BHS GHS PAD1 (45-5-5883) has not been assessed as it has been determined not to be a site.

9.2. Scientific significance assessment

Appendix D, Section 8.2 summarises the assessment of scientific significance for Liverpool BHS GHS_AS01 (45-5-5789), Liverpool BHS GHS IA01 (45-5-5791) and Liverpool BHS GHS_IA02 (45-5-5790). An assessment of the significance of all three sites, as they are interconnected in their representation of the prior occupation of the Project Area has been undertaken within the ATR.

9.3. Social significance assessment

Consultation with representatives of the Aboriginal community has indicated that the Project Area, and surrounding Liverpool region is important to the broader Aboriginal community. Social significance cannot be determined for Liverpool BHS GHS AS01 (45-5-5789), Liverpool BHS GHS IA01 (45-5-5791) and Liverpool BHS GHS IA02 (45-5-5790). Aboriginal community members were given chance to comment on the social significance of the abovementioned sites during the ACHAR review period (7 November 2024 to 5 December 2024, and no comments were received.

9.4. Historic significance assessment

Liverpool BHS GHS_AS01 (45-5-5789), Liverpool BHS GHS IA01 (45-5-5791) and Liverpool BHS GHS IA02 (45-5-5790) are not known to have any association with historically important persons, events phase or activity within the Aboriginal community. Further due to the low density and the lack of stratigraphic integrity for the sub surface deposits it is unlikely any historic associations are present.

Therefore Liverpool BHS GHS_AS01 (45-5-5789), Liverpool BHS GHS_IA01 (45-5-5791) and Liverpool BHS GHS IA02 (45-5-5790) are determined to have an overall low historic significance.

9.5. Aesthetic significance assessment

The aesthetic value of Liverpool BHS GHS AS01 (45-5-5789), Liverpool BHS GHS IA01 (45-5-5791) and Liverpool BHS GHS IA02 (45-5-5790) is determined to be of low to negligible value. All four sites are considered to have potential cultural significance; however, they have been removed from their traditional context and subsequent development has separated the visual and physical connection between these artefacts and the Georges River.

9.6. Summary statement of significance

The overall significance of the three artefact sites identified within the Project Area Liverpool BHS GHS AS01 (45-5-5789), Liverpool BHS GHS IA01 (45-5-5791) and Liverpool BHS GHS IA02 (45-5-5790) is considered to be low. The one artefact scatter and two isolated finds comprise low-density background scatters in a disturbed landscape and are not generally considered to be representative of a large open campsite with *in situ* archaeological deposit within the Project Area. All three sites are considered to have low scientific, historical and aesthetic significance, with the social significance of the sites to be determined by further consultation with the local Aboriginal community.

10. Impact assessment

Test excavations and survey of the Project Area identified that three Aboriginal sites are present and comprise six subsurface artefacts and one surface artefact. Liverpool BHS GHS_AS01 (45-5-5789), Liverpool BHS GHS IA01 ((45-5-5791) and Liverpool BHS GHS IA02 (45-5-5790) are low-density surface and subsurface artefact sites which have been heavily modified through disturbance related to the leveling and smoothing of the school oval. All of these sites have been assessed as being of low scientific significance. The remainder of the Project Area is assessed as low potential and unlikely to contain Aboriginal objects. The proposed works will be undertaken over two stages with three approval pathways:

- Temporary school facilities
- Main Works

10.1. Temporary school facilities

At this stage in the Project, a temporary school will be constructed on the existing oval and part of the Gulyangarri Public School to facilitate continued learning during the construction phase of the new school. Services will be required to support the temporary school including trenching works, extent and pathways from Lachlan Street, between the current Boys' and Girls' High Schools, and down to the oval. Liverpool BHS GHS_AS01 and Liverpool BHS GHS_IA01 were removed from the ground during the test excavation, therefore they will not be impacted by the proposed Temporary school facilities as they have already been impacted. Formal management of the impacts to Liverpool BHS GHS_AS01 and Liverpool BHS GHS_IA01 will be managed by the AHIP. Liverpool BHS GHS_IA02 will be subject to direct total harm and total loss of value. The impacts of the construction for the temporary school facilities are summarised in Table 10-1 (Figure 10-1 & Figure 10-2).

Table 10-1: Impact assessment, temporary school facilities

Site name (AHIMS ID)	Type of Impact	Degree of harm	Consequence of harm
Liverpool BHS GHS_AS01 (45-5-5789)	None	None	Total loss of value
Liverpool BHS GHS_IA01 (45-5-5791)	None	None	Total loss of value

Site name (AHIMS ID)	Type of Impact	Degree of harm	Consequence of harm
Liverpool BHS GHS_IA02 (45-5-5790)	Direct	Total	Total loss of value

10.2. Liverpool Boys and Girls High School construction

The Main works will require nine buildings across the Liverpool Boys' High School to be demolished and the new Liverpool High School to be constructed. The existing Liverpool Girls' school buildings will not be demolished at this stage in the project.

Large scale bulk works will be required to facilitate any cut and fill required to landscape and contour the new school. As such, large machinery will be required to move topsoil which will increase the risk of breakage of intact artefacts, if present, and cause widespread dispersal of artefacts into secondary and tertiary contexts.

Further impacts will include excavation for roads, stormwater, and other services for the facilities within the school grounds. The earthworks will precede construction of school buildings, roads, carports and future subsurface amenities including sewerage, fibre optic cables and stormwater drains. However, as it is anticipated that all three registered sites will be subject to total impact resulting from the temporary school facilities works prior to commencement of the main works no additional impacts are anticipated.

The impacts of the main works are summarised in Table 10-1 (Figure 10-3).

Table 10-2: Impact assessment, main works

Site name (AHIMS ID)	Type of Impact	Degree of harm	Consequence of harm
Liverpool BHS GHS_AS01 (45-5-5789)	None	None	Total loss of value
Liverpool BHS GHS_IA01 (45-5-5791)	None	None	Total loss of value
Liverpool BHS GHS_IA02 (45-5-5790)	None	None	Total loss of value

10.3. Summary of impacts

Liverpool BHS GHS_AS01(45-5-5789), Liverpool BHS GHS_IA01 (45-5-5791) were removed from the ground during the test excavation process. Due to the significant bulk earthworks including cut and fill activities for levelling the land and creation of underground services across the Project Area, it is anticipated that Liverpool BHS GHS_AS01(45-5-5789), Liverpool BHS GHS IA01 (45-5-5791) and Liverpool BHS GHS IA02 (45-5-5790) will suffer a total loss of value due to the project. These impacts are summarised in (Table 10-3)

Table 10-3: Summary of total impacts

Site name (AHIMS ID)	Type of Impact	Degree of harm	Consequence of harm
Liverpool BHS GHS_AS01 (45-5-5789)	Direct	Total	Total loss of value
Liverpool BHS GHS_IA01 (45-5-5791)	Direct	Total	Total loss of value
Liverpool BHS GHS_IA02 (45-5-5790)	Direct	Total	Total loss of value

10.4. Cumulative impact

A cumulative impact is the combined effects of environmental or social impacts that occur because of a range of activities or developments within a particular local area or region that impact on Aboriginal cultural heritage. Ideally cumulative impacts should be assessed from a baseline of data relating to the incremental impact of the actions of a development when added to other past, present and reasonably foreseeable future impacts.

An assessment of AHIPs granted in the Liverpool region indicates that low density artefact scatters are the most common site type to be identified in the region. SSD approval for the Gulyangarri Public School, and the modification for the Liverpool Hospital site to the south of the Project Area indicate that Aboriginal cultural material is present at a low density across the immediate region. The recorded impact from the granting of AHIPs also indicates that continued and sustained development in the Liverpool region is causing the gradual depletion of the archaeological record in the area. As a continued mitigation, archaeological and cultural assessments such as the current report are being prepared to record the

extent of Aboriginal cultural heritage which is being destroyed to facilitate development in Western Sydney.

10.5. Ecologically sustainable development principles

The Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011) specifies that Ecological Sustainable Development (ESD) principles must be considered when assessing harm and recommending mitigation measures in relation to Aboriginal objects.

The following relevant ESD principles are outlined in Section 3A of the *EPBC Act:*

- Decision-making processes should effectively integrate both long term and short term economic, environmental, social and equitable considerations (the 'integration principle')
- If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation (the Precautionary Principle)
- The present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations (the Principle of Intergenerational Equity).
- The conservation of biological diversity and ecological integrity should be a fundamental consideration in decision making (Conservation of Biodiversity).
- Improved valuation, pricing and incentive mechanisms should be promoted (Improved Valuation, Pricing and Incentive).

OEH (2011: 13) states that consideration of these principles should result in:

- An understanding of the cumulative impact of the proposal on Aboriginal objects or places in relation to other identified sites in the region.
- Ascertaining how wherever possible or practicable harm to significant Aboriginal objects or places can be avoided.
- Establishing and assessing the risks and consequences of various options.
- Assessing the costs and benefits of various options for future generations.
- Suggesting actions proposed to help promote intergenerational equality.

10.5.1. The Integration Principle

The Aboriginal heritage values of all recorded sites have been fully considered in the ATR (Everick Heritage 2024) and this ACHAR. These values have been considered with regard to the planning and approvals process for the Project Area and therefore, comply with the integration principle by considering long term and short term environmental and social effects.

10.5.2. The Precautionary Principle

One area of PAD was identified during the archaeological survey of the Project Area in 2021 (Comber 2021a). To address the precautionary principle with regard to uncertainty associated with that area of PAD. Archaeological test excavation confirmed the area of PAD was a site with the extent later delineated into three site areas. Two sites represented the artefacts recovered during the test excavation (Liverpool BHS GHS_AS01 (45-5-5789) and Liverpool BHS GHS_IA01 (45-5-5791). The archaeological scientific significance of these sites was considered to be low, due to the location within soils which had been redeposited as a result of the construction of the sports oval.

The combination of background research and test excavation results have been used to assess the probable nature of the archaeological nature of the Project Area (Cole and Eldon 2024). Salvage of surface artefact, Liverpool BHS GHS IA02 (45-5-5790), has been recommended as a condition of an AHIP for the construction of the temporary school as mitigation against loss of scientific and cultural information.

10.5.3. The Principle of Intergenerational Equity

The principle of intergenerational equity has been addressed through the assessments undertaken by Comber (2019; 2021a; 2021b; 2022; and 2023) and Everick Heritage (2024). These assessments for Liverpool BHS GHS_AS01(45-5-5789), Liverpool BHS GHS_IA01 (45-5-5791) and Liverpool BHS GHS IA02 (45-5-5790) ensure that information regarding the site is available for future generations. In addition, salvage of surface stone artefacts these sites will provide additional information regarding the site. The scientific information and retention of the stone artefacts recovered during the test excavation can form part of an interpretive installation within the grounds of the school which can be incorporated into a broader Aboriginal interpretation strategy which may be prepared for the school as part of the development process.

10.5.4. Conservation of Biodiversity

Cultural values associated with biodiversity are interwoven with the lives of Aboriginal people and their use of the landscape. The main construction works are being undertaken in consideration of impacts to and improvement of the local environment, namely the construction of adequate stormwater drainage to mitigate against low level flooding resulting from the proximity to the creek line

10.5.5. Summary statement of ecologically sustainable principles

While Aboriginal objects and sites have been identified within the works area and will be impacted by the proposed works, these sites are low density and not stratigraphically intact, therefore they have been assessed as of low significance. Existing assessments have ensured a full record of these sites has been kept and that this information will be available for future generations, further construction of the new school facilities will contribute to the health and education of the local community, including the Aboriginal community. Therefore, the ecologically sustainable principles have been addressed.

A recommendation is provided for increased Aboriginal heritage interpretation within the redevelopment of the Liverpool Boys and Liverpool Girls High Schools in consultation and participation with the Gandangara and Darug peoples. This will promote intergenerational equity, especially for the Indigenous students that may attend the new school site.

10.6. Statement of Significance (Planning)[1]

Based on the identification of potential issues, and an assessment of the nature and extent of the impacts of the proposed development, it is determined that:

- The extent and nature of potential impacts are low, and will not have significant adverse effects on the locality, community and the environment;
- Potential impacts can be appropriately mitigated or managed to ensure that there is minimal effect on the locality, community.

[1] A statement of significance (as used in this context for planning purposes) is not to be confused with a cultural statement of significance. A cultural statement of scientific significance for Aboriginal heritage within the site can be found in Section 9 of this report.

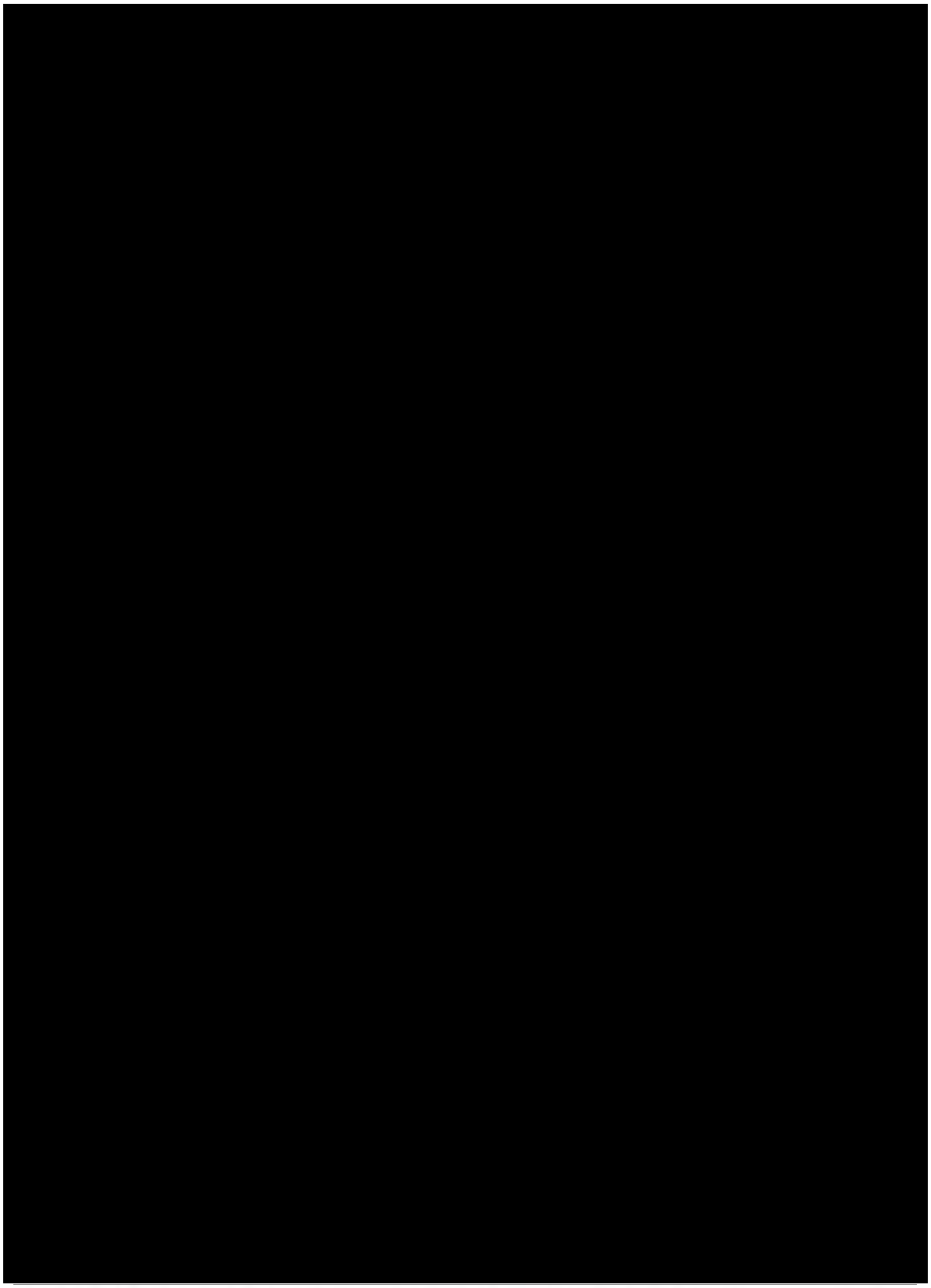


Figure 10-1: Impacts Temporary School Facilities

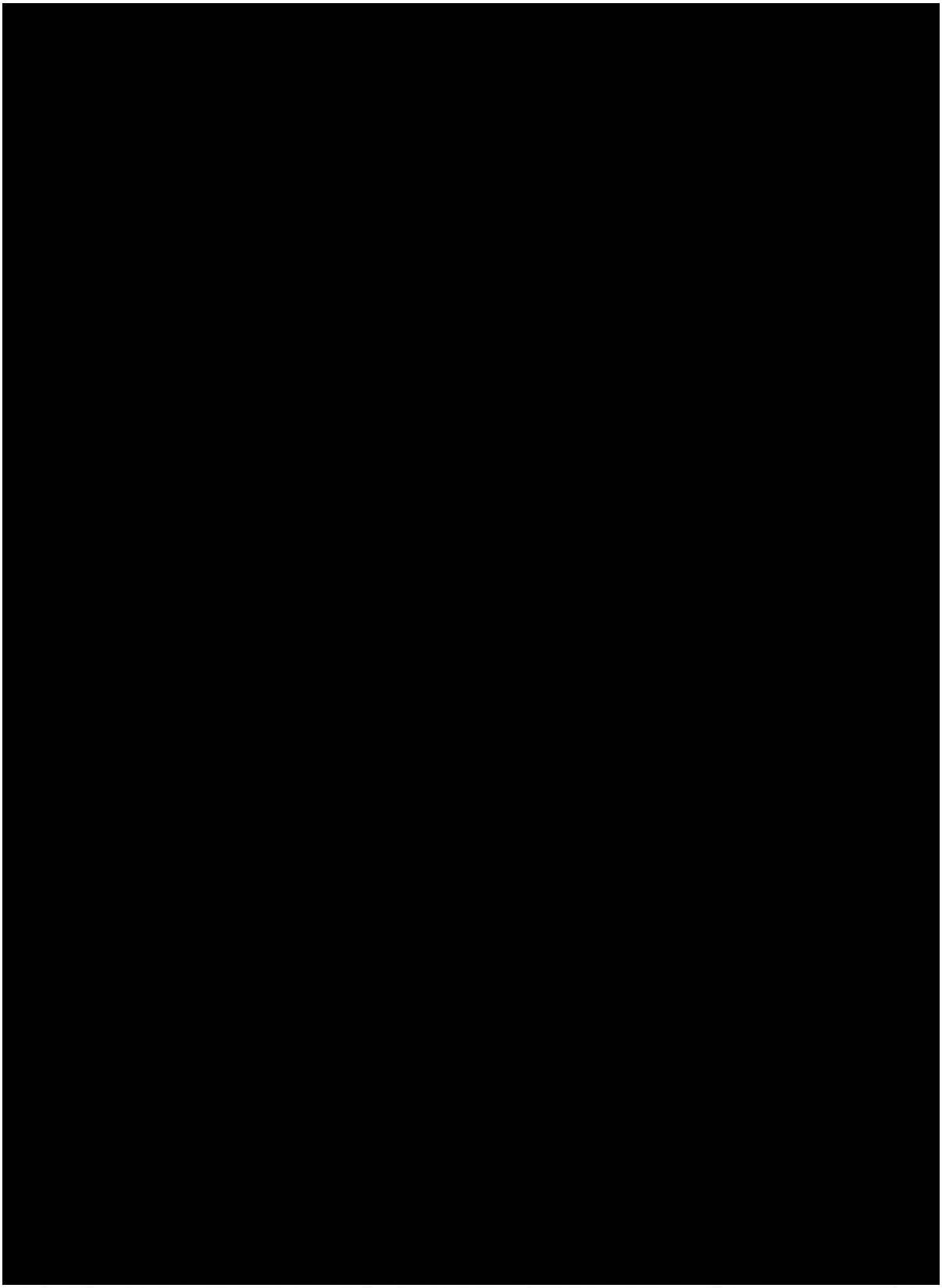


Figure 10-2: Impacts, demountable access plan

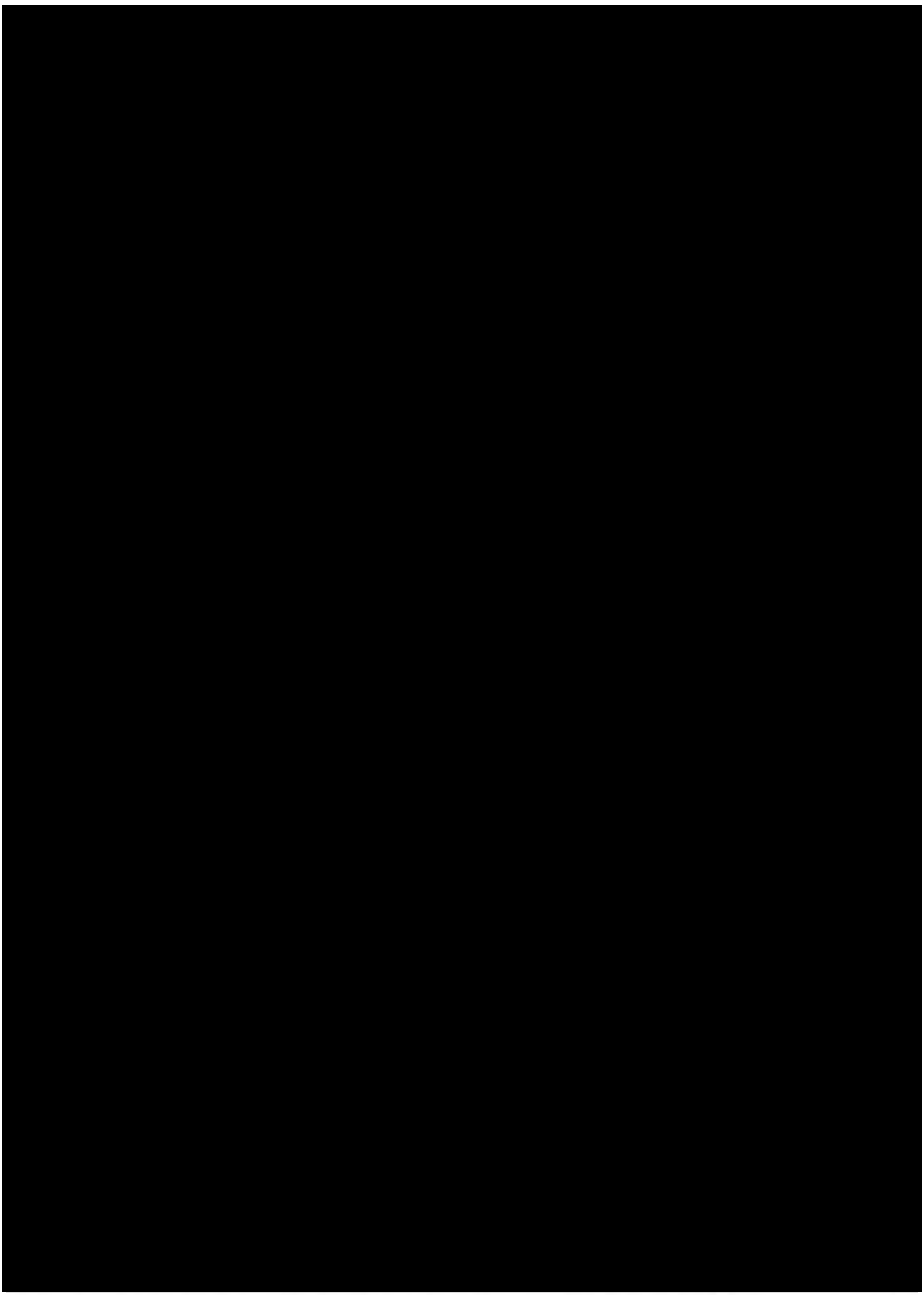


Figure 10-3: Impacts main works

11. Recommendations

11.1. Guiding principles

The overall guiding principle for cultural heritage management is that where possible, Aboriginal sites should be conserved. Conservation through avoidance of Aboriginal sites can be achieved through such measures as:

- Design change
- Buffering and exclusion zones
- Construction Environmental Management Plans which include Aboriginal heritage
- Cultural heritage awareness training.

If conservation is not practicable, measures should be taken to mitigate impacts to Aboriginal sites. Based on the current plans and strategy for the future works, the development will directly impact on Liverpool BHS GHS_AS01 (45-5-5789), Liverpool BHS GHS IA01 (45-5-5791) and Liverpool BHS GHS IA02 (45-5-5790)

The nature of the recommendations provided is based on the assessed low scientific significance of all three Aboriginal archaeological sites and acknowledges the existing and potential impacts to these sites. The final recommendations would also be informed by the RAPs in their responses during the next stage of consultation.

11.2. Management and mitigation measures

Recommended mitigation measures and further actions required will differ depending on work applications and the stage of development, in accordance with the development approval required, a summary of initial recommendations is provided in Table 11-1. The ACHAR will provide detailed management and mitigation measures in consultation with RAPs.

The recommended mitigation measures and further action required will differ depending on work applications and the stage of development in accordance with the development approval required. The ACHAR will provide detailed management and mitigation measures in consultation with the RAPs.

Investigation of options for the production of interpretation and educational materials relating to the results of the Aboriginal investigation and cultural heritage assessment should be undertaken. This must include ongoing consultation and engagement with the Aboriginal community.

Liverpool BHS GHS_AS01 (45-5-5789) and Liverpool BHS GHS IA01 (45-5-5791) were uncovered as a result of test excavation, and therefore have been removed from the ground, their formal impact will be managed with an AHIP application. The long-term management of these artefacts will be determined in consultation with RAPs for this project.

Liverpool BHS GHS IA2 (45-5-5790) is located in the approximate location of a new driveway and parking area at the southern end of the Girls High School. In order to facilitate the works, an AHIP for harm with community collection is recommended.

Based on previous survey of the Project Area, it is unlikely that objects will be present. It is recommended that an AHIP is granted prior to the construction of the temporary school on the oval to mitigate against harm to further unknown low density artefact deposits.

In addition to the below recommendations a Heritage Induction should be prepared.

Table 11-1: Recommended management measures

Site name (AHIMS ID)	Proposed Management
Liverpool BHS GHS_AS01 (45-5-5789)	Formal management through AHIP Recovered during test excavation
Liverpool BHS GHS_IA01 (45-5-5791)	Formal management through AHIP Recovered during test excavation
Liverpool BHS GHS_IA02 (45-5-5790)	• AHIP to harm • Surface artefact recovery through community collection
All other areas	• AHIP to harm

A summary of the proposed management and mitigation measures for the recorded AHIMS sites proposed at Liverpool Boys and Girls High School is summarised in Table 11-2.

Table 11-2: Summary of mitigation measures for the temporary school

Project Stage *Design (D)* *Construction (C)* *Operation (O)*	Mitigation Measures	Relevant Section of Report
D	*Apply for an AHIP for harm to* Liverpool BHS GHS_AS01 (45-5-5789), Liverpool BHS GHS IA01 (45-5-5791) and Liverpool BHS GHS_IA02 (45-5-5790) and all other areas of low archaeological potential	*Section 11.2.1*
C	*In accordance with granted AHIP, conduct community collection for* BHS GHS IA02 (45-5-5790)	*Section 11.2.2*
O	*Undertake reburial following the completion of site works following the construction of the Liverpool Boys and Girls High School Upgrade Project*	*Section 11.2.3*
D, C	*Ongoing Aboriginal community consultation, through design and construction*	*Section 11.2.6*

Table 11-3: Summary of mitigation measures for the construction of the new Liverpool Boys and Girls High School

Project Stage *Design (D)* *Construction (C)* *Operation (O)*	Mitigation Measures	Relevant Section of Report
D	*Prepare an Aboriginal Heritage Interpretation Strategy for incorporation into the final School design*	*Section 11.2.4*
O	*Implement an Aboriginal Heritage Interpretation Strategy for incorporation into the final School design*	*Section 11.2.4*
D	*Incorporate native plants into the landscaping plan for the site*	*Section 11.2.5*
D, C	*Ongoing Aboriginal community consultation, through design and construction*	*Section 11.2.6*
C	*Aboriginal heritage induction must be provided to all contractors prior to commencement of construction*	*Section* 11.2.7
C	*Enact an unexpected finds procedure for further Aboriginal cultural material inconsistent with the existing assemblage and Aboriginal ancestral remains identified within the AHIP boundary*	*Section* 11.2.8; 11.2.9

11.2.1. Aboriginal Heritage Impact Permit

Where impact to registered Aboriginal sites cannot be avoided the proponent must apply to Heritage NSW for an AHIP as a combination of REF and exempt development is the proposed development pathway. For works occurring within the oval during Stage 1 and Stage 2 an AHIP will be required for all three sites: Liverpool BHS GHS_AS01 (45-5-5789), Liverpool BHS GHS_IA01 (45-5-5791) and Liverpool BHS GHS_IA02 (45-5-5790). The AHIP application must be supported by an ACHAR which will provide details of the desktop research, survey and results and include consultation with the registered Aboriginal parties of the Project Area. This ACHAR report supports the REF for the temporary school under Part 5 of the EP&A Act, and the exempt development application would accompany the AHIP application in support of it.

Other than the three identified sites the Project Area has been assessed to have low potential and unlikely to contain Aboriginal objects, therefore, it is recommended an area AHIP is applied for to cover the entire Project Area footprint (Figure 11-1), including all sites identified as a part of this ACHAR. It is recommended the term of the AHIP be for five years. Should the development exceed the five-year time period an extension may be sought from Heritage NSW. An application for an extension should be requested at least six months prior to the end of the five year mark.

11.2.2. Surface collection

Prior to commencement of ground disturbing works the recorded location of Liverpool BHS GHS IA02 (45-5-5790) should be inspected and all surface artefacts should be recorded and collected.

A brief description and location of each artefact must be recorded and the artefact placed in a marked bag in accordance with the Code of Practice. Recovered artefacts must be subject to scientific analysis and will form part of the assemblage with previously excavated artefacts.

11.2.3. Long term management of stone artefacts

The long term management arrangements for the Aboriginal objects (stone artefacts) recovered during test excavation of the Project Area would include the following options in accordance with Requirement 26 of the Code of Practice:

- Aboriginal objects to be provided to the Australian Museum
- Aboriginal objects to be curated by an Aboriginal community in conjunction with a Care and Control permit for an on site keeping place or interpretive display within the school. An interpretation management plan and direct input from community members would be required
- Aboriginal objects to be reburied in within the Project Area at a location safe from future disturbance and with that reburial location recorded and submitted to AHIMS.

The ACHAR consultation and report will determine the outcome of the long-term management of the Aboriginal objects recovered though test excavation and from unexpected finds during construction.

Given the low archaeological significance and small size of the stone artefacts recovered it is considered unsuitable for deposition with the Australian Museum (Australian Museum 2012: 9-10). Consultation during the Connecting to Country workshops has indicated that reburial or included within interpretation within the grounds of the Schools would be beneficial to generational knowledge. Therefore, long term management will comprise reburial.

11.2.4. Aboriginal heritage interpretation strategy

- In accordance with the ESD intergenerational principle it is recommended that DoE develop and implement an Aboriginal heritage interpretation strategy which acknowledges the Darug, Gandangara and Tharawal people and the land on which the Liverpool Boys and Liverpool Girls High Schools stand. Any interpretation strategy should be developed in conjunction with local Aboriginal community and the Aboriginal Education Consultative Group (AECG) and could include such measures as:
    - Heritage interpretation boards – temporary or permanent; within or outside school buildings.
    - Cultural heritage awareness talks by Darug, Gandangara and Tharawal people.
    - Teaching material on local Aboriginal history and archaeology should be prepared.
    - Aboriginal cultural values should be incorporated through designing with Country initiatives.
    - It is acknowledged that the redevelopment of Liverpool Boys and Liverpool Girls High Schools may already implement the ESD intergenerational principle in some form or through the above strategies.

11.2.5. Landscaping

Native indigenous plants should be used for landscaping of the Project Area grounds in order to respect the cultural values of the place, that is the long occupation and traditions of the Darug, Gandangara and Tharawal people.

11.2.6. Ongoing Aboriginal Consultation

In accordance with the Consultation Requirements (DECCW 2010a) further Aboriginal consultation must be undertaken regarding the requirement for an AHIP for the Project. The purpose of further consultation is to ascertain and document any Aboriginal cultural values associated with the Project Area and to discuss management and mitigation of impacts to archaeological sites and cultural values (if present). Consultation must be maintained for the duration design and construction phases of the project.

In accordance with the Consultation Requirements any Aboriginal consultation must be maintained within a six month period to avoid the requirement to commence the consultation process again. Consultation must be documented, and at a minimum detail the person(s), organisation, date, method of correspondence, and details of the consultation.

11.2.7. Aboriginal Heritage Induction

An Aboriginal heritage induction must be prepared and provided to all contractors prior to the commencement of works, this induction must provide a brief background on the Aboriginal history of the legislative requirements and a description on management measures. The induction must also familiarise contractors with their legal responsibilities.

11.2.8. Unexpected finds

If any Aboriginal objects inconsistent with the assessed sites are identified, such as, high density stone artefacts scatters and/ or hearths, work must cease, until the objects can be assessed by an archaeologist.

11.2.9. Discovery of human remains

If suspected human remains are discovered and/or harmed in, on or under the land within the Project Area, the following actions must be undertaken:

- The remains must not be harmed/further harmed
- Immediately cease all works at that particular location
- Secure the area so as to avoid further harm to the remains
- Notify DoE Heritage and an archaeologist be engaged to assess whether the suspected human remains are likely to represent human remains
- Notify the NSW Police and the Environment Line (Heritage NSW) on 131 555 as soon as practicable and provide any details of the remains and their location
- Do not recommence any work at that particular location unless authorised in writing by Heritage NSW.

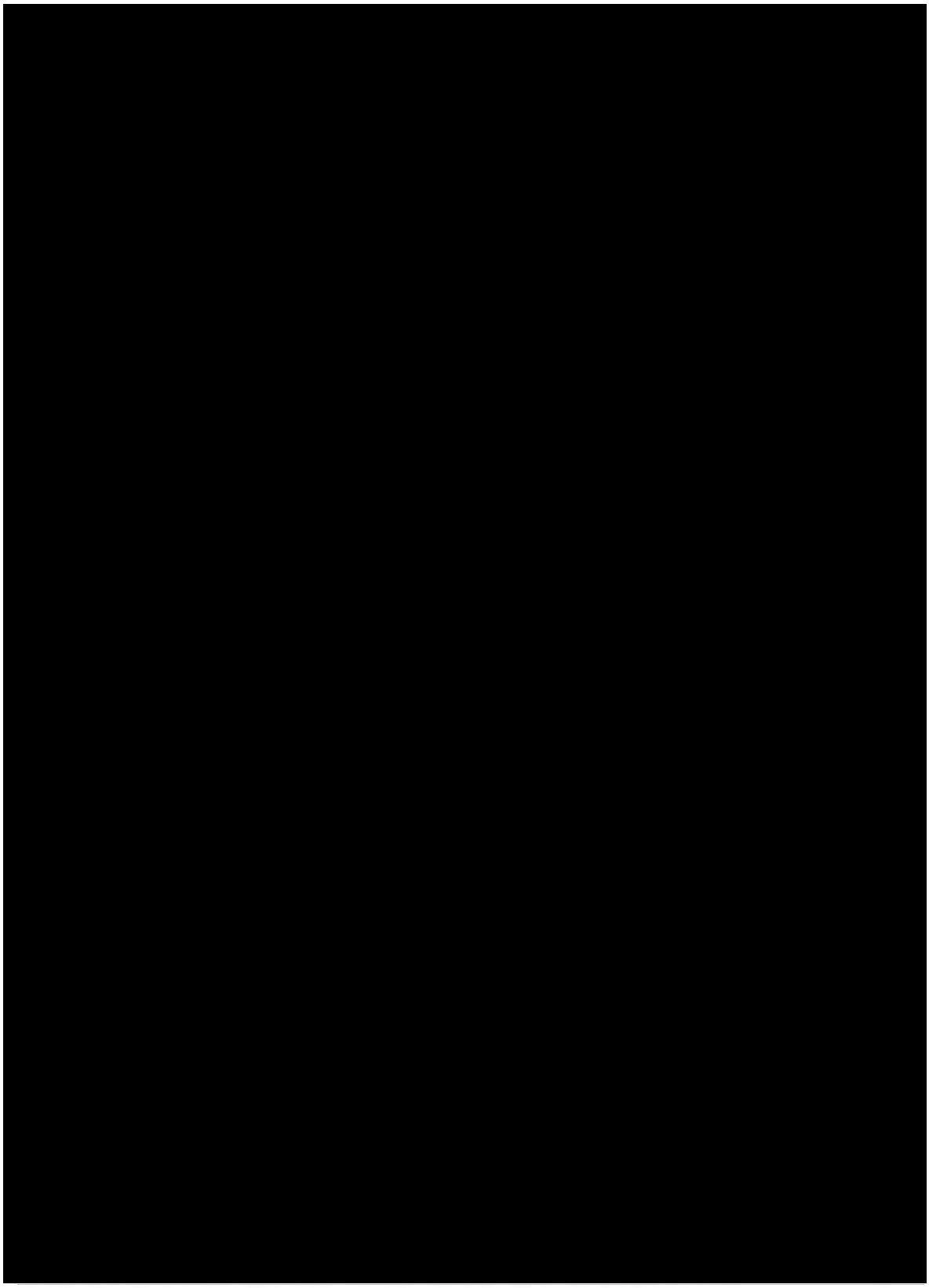


Figure 11-1: AHIP Boundary

12. References

AHMS 2012. Aboriginal Cultural Heritage Assessment, SIMTA, Sydney Intermodal Terminal Alliance. Part 3A Concept Application.

Andrews, G., Daylight, C., Hunt, J. 2006. Aboriginal Cultural Heritage Landscape Mapping of Coastal NSW. Prepared for the Comprehensive Coastal Assessment by the Department of Natural Resources, Sydney.

Artefact 2017. 30 Skipton Lane, Prestons. Aboriginal Heritage Due Diligence Assessment. Report to Firstyle Homes

Australia ICOMOS. 2013. Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013.

Attenbrow, V. 2010 Sydney's Aboriginal Past. Investigation the Aboriginal and historical records. UNSW Press, Sydney.

Bannerman S.M. and Hazelton P.A., 2011, Soil Landscapes of the Penrith 1:100,000 Sheet report, digital reprint, Office of Environment and Heritage, Sydney.

Comber Consultants 2019. Liverpool Boys' and Girls' High Schools Aboriginal Archaeological Assessment. Report to Department of Education, School Infrastructure NSW.

Comber Consultants 2021a. New Liverpool Primary School Aboriginal Archaeological Assessment Report to Department of Education, School Infrastructure NSW

Comber Consultants 2021b. Liverpool New Primary School Aboriginal Cultural Heritage Assessment Report. Report to Department of Education.

Comber Consultants 2022. New Liverpool Primary School Aboriginal Archaeological Salvage Report. Report to Adco Constructions on behalf of School Infrastructure NSW

Comber Consultants 2023. Liverpool New Primary School Aboriginal Cultural Heritage Assessment Report. Report to Department of Education.

Department of Environment Climate Change & Water. 2010a. Aboriginal cultural heritage consultation requirements for proponents 2010. Department of Environment Climate Change & Water NSW.

Department of Environment Climate Change & Water. 2010b. Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales 2010. Department of Environment Climate Change & Water NSW.

Douglas Partners 2019. Report on Geotechnical Investigation Proposed New Liverpool Primary School. Report prepared for School Infrastructure NSW.

Education Establishments and Child Care Facilities Stone Environmental Planning Policy (State Environmental Planning Policy) 2017

Everick Heritage, 2024. *Liverpool Boy's High School and Girls' High School, Liverpool, New South Wales: Archaeological Technical Report*. Everick Heritage Pty Ltd unpublished report prepared for School Infrastructure New South Wales.

EMM 2021. Moorebank Avenue Realignment Environmental Impact Statement Volume 1. Prepared for Sydney Intermodal Terminal Alliance.

GHD 2015. Department of Defence, 'Boot Land', Moorebank, NSW. Ecological Impact Assessment of Remediation

Heritage Office. 2001. Assessing heritage significance. NSW Heritage Office.

Keating C. 1996. On the Frontier: A Social History of Liverpool. Hale and Iremonger Pty Ltd: Sydney, NSW

Kohen, J. 1993. The Darug and Their Neighbours. Darug Link in Association with Blacktown and District Historical Society, NSW.

Liverpool City Council n.d. The Founding of Liverpool https://www.liverpool.nsw.gov.au/council/The-Liverpool-Area/the-founding-of-liverpool#:~:text=The%20Holsworthy%2DMoorebank%20area%20was,barracks%20and%20field%20training%20establishment.

Liverpool Local Environmental Plan 2008

Parker, C. 1983. Swelling Soil Survey, Profile 30, Collected from an Auger.

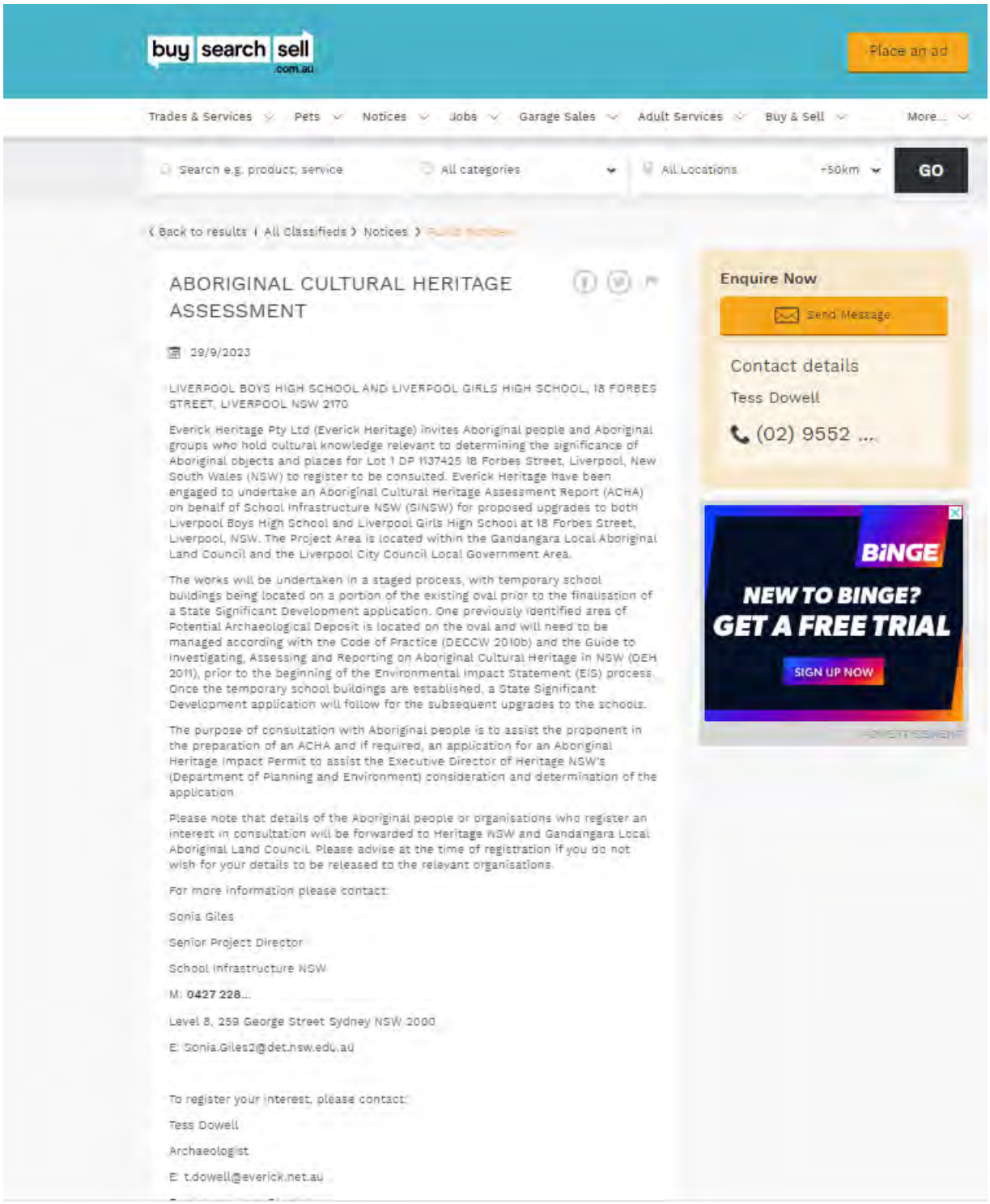
Office of Environment and Heritage. 2011. Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW. Office of Environment and Heritage, Department of Premier and Cabinet, Sydney.

RPS 2020. Liverpool Health and Academic Precinct – Multi-Storey Carpark, Aboriginal Cultural Heritage Assessment Report 2.0.

Unearthed Archaeology and Heritage, N.B. Liverpool Boys' and Girls' High School Connecting with Country

Appendix A – Consultation log

Appendix B – Newspaper notice



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ABORIGINAL CULTURAL HERITAGE ASSESSMENT

29/9/2023

LIVERPOOL BOYS HIGH SCHOOL AND LIVERPOOL GIRLS HIGH SCHOOL, 18 FORBES STREET, LIVERPOOL NSW 2170

Everick Heritage Pty Ltd (Everick Heritage) invites Aboriginal people and Aboriginal groups who hold cultural knowledge relevant to determining the significance of Aboriginal objects and places for Lot 1 DP 1137425 18 Forbes Street, Liverpool, New South Wales (NSW) to register to be consulted. Everick Heritage have been engaged to undertake an Aboriginal Cultural Heritage Assessment Report (ACHA) on behalf of School Infrastructure NSW (SINSW) for proposed upgrades to both Liverpool Boys High School and Liverpool Girls High School at 18 Forbes Street, Liverpool, NSW. The Project Area is located within the Gandangara Local Aboriginal Land Council and the Liverpool City Council Local Government Area.

The works will be undertaken in a staged process, with temporary school buildings being located on a portion of the existing oval prior to the finalisation of a State Significant Development application. One previously identified area of Potential Archaeological Deposit is located on the oval and will need to be managed according with the Code of Practice (DECCW 2010b) and the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011), prior to the beginning of the Environmental Impact Statement (EIS) process. Once the temporary school buildings are established, a State Significant Development application will follow for the subsequent upgrades to the schools.

The purpose of consultation with Aboriginal people is to assist the proponent in the preparation of an ACHA and if required, an application for an Aboriginal Heritage Impact Permit to assist the Executive Director of Heritage NSW's (Department of Planning and Environment) consideration and determination of the application.

Please note that details of the Aboriginal people or organisations who register an interest in consultation will be forwarded to Heritage NSW and Gandangara Local Aboriginal Land Council. Please advise at the time of registration if you do not wish for your details to be released to the relevant organisations.

For more information please contact:

Sonia Giles

Senior Project Director

School Infrastructure NSW

M: 0427 228...

Level 8, 259 George Street Sydney NSW 2000

E: Sonia.Giles2@det.nsw.edu.au

To register your interest, please contact:

Tess Dowell

Archaeologist

E: t.dowell@everick.net.au

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Appendix C – Consultation documentation

Stage 1

Stage 2 & 3

June Update

Stage 4

Appendix D –ATER

EVERICK HERITAGE

Liverpool Boys and Girls High School Upgrade Project

Archaeological Technical Report

Written for NSW Department of Education

January 2025

Liverpool Local Government Area

Report Reference:

Everick Heritage, 2025. *Liverpool Boy's High School and Girls' High School, Liverpool, New South Wales: Archaeological Technical Report*. Everick Heritage Pty Ltd unpublished report prepared for NSW Department of Education.

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4	C. Cole	Final	All	06.11.2024	K. Christian
5	C. Cole	Ethos Urban	Exec Sum; Intro; 9; 10	31.01.2025	K. Christian

Executive summary

NSW Department of Education (DoE; the Applicant) is proposing to undertake redevelopment at both the Liverpool Boys High School and Liverpool Girls High School located at 18 Forbes Street, Liverpool, New South Wales (NSW) (the site; Figure 1-1). This report accompanies a Review of Environment Factors that seeks approval for redeveloping the Liverpool Boys and Liverpool Girls High Schools into a single co-educational school.

During a previous archaeological assessment and survey for the construction of a new primary school (Gulyangarri Public School) on the Liverpool Boys High School site, Comber Consultants (Comber) (2018; 2019; 2021) identified two surface artefacts, Liverpool Boys and Girls High School Artefacts (45-5-5507) and three areas of Potential Archaeological Deposit (PAD) located within the current Liverpool Boys High School and Liverpool Girls High School. Two of the PADs, PAD 1 and PAD 2, were subject to test excavation by Comber (2021) with six artefacts found, and were not subject to test excavation for this Project, although part of the current site is located within PAD 2 within the Gulyangarri Public School. PAD 3, which is located within the current site, was not subject to test excavation (Figure 5-4). Therefore, DoE has engaged Everick Heritage Pty Ltd (Everick Heritage) to undertake further survey of the site and test excavation of PAD 3 to ascertain if Aboriginal cultural heritage will be impacted by Stage 1 and Stage 2. During the course of the project, PAD 3, as identified in Comber's reporting, was renamed to Liverpool BHS GHS PAD1 (45-5-5883).

This Aboriginal Cultural Heritage Assessment Report (ACHAR) has been prepared to document the strategy, methodology and results of the survey and test excavation for the site and will form an appendix to an Aboriginal Cultural Heritage Assessment Report (ACHAR) which will support an Aboriginal Heritage Impact Permit (AHIP) application.

Consultation

Everick Heritage has conducted the community consultation process in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (Department of Environment, Climate Change and Water [DECCW] 2010a known as the Code of Practice), Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW 2010b) and the Burra Charter 2013 (Australia ICOMOS 2013). Aboriginal consultation has been completed to the stage described in Section 60(5c) of the *National Parks & Wildlife Regulation 2019 (NSW)*.

Notification was provided to Heritage NSW on 12 January 2024 as to Everick's intent to undertake archaeological test excavations under Requirement 15c of Code of Practice starting from 22 January 2024. A full table of participants for the test excavation is included Table 3-1.

Survey results

A previous pedestrian survey was undertaken by Comber Consultants (Comber) (2019) for the Liverpool Boys High School and Liverpool Girls High School site which included the current site. As a result of the survey, two silcrete artefacts were recorded within the school oval. The entire oval was recorded as a new site; New Liverpool Public School (Aboriginal Heritage Information Management System [AHIMS] ID 45-5-5507), an artefact site with potential for subsurface deposits. Comber (2019) recommended that archaeological testing be undertaken to determine if subsurface Aboriginal objects are located within the oval.

Immediately prior to the test excavation undertaken on 22 January 2024, a pedestrian survey of the school oval was also undertaken by Everick Heritage. During this survey, no evidence of the previously recorded artefacts were located. This is consistent with the site, which is listed on AHIMS as 'destroyed' as a result of the construction of the neighbouring New Liverpool Public School development. One new artefact was identified at the base of a tree in the southeastern corner of the oval, which has been registered on AHIMS as Liverpool BHS GHS_IA02 (45-5-5790).

Excavation results

Previous test excavations (Comber 2021) and salvage excavations (Comber 2022) of the New Gulyangarri Public School confirmed the presence of a further 16 Aboriginal artefacts within the northeastern portion of the oval, adjacent to the current site. Therefore, a new ACHAR with test excavation was required to recommence the consultation process and adequately address whether Aboriginal objects will be harmed as a result of the current scope of works and future works within Lot 1 DP1137425.

Table 3-1 provides a summary of personnel involved in the current test excavation program. The program was undertaken from 22 January 2024 to 23 January 2024 encompassing two days of fieldwork.

Twenty-four test pits (TPs) were excavated during the test excavation program totalling six square metres of excavation. Six subsurface artefacts were identified as a result of test excavation in two site locations recorded on AHIMS as Liverpool BHS GHS_AS01 (45-5-5789) and Liverpool BHS GHS_IA01 (45-5-5791). The remainder of the test excavation area did not identify any Aboriginal objects, and determined that potential was low and further Aboriginal objects are unlikely to be present. Therefore Liverpool BHS GHS PAD1 (45-5-5883) was determined not to be a site.

Recommendations

Based on the results of the background research and test excavation, it was identified that Liverpool BHS GHS_AS01(45-5-5789), Liverpool BHS GHS_IA01 (45-5-5791) and Liverpool BHS GHS IA02 (45-5-

5790) will suffer a total loss of value due to the project. Therefore the following recommendations are made:

Site name (AHIMS ID)	Recovered During Testing (Y/N)	Proposed Management
Liverpool BHS GHS_AS01 (45-5-5789)	Y	• Formal management through AHIP • Recovered during test excavation
Liverpool BHS GHS_IA01 (45-5-5791)	Y	• Formal management through AHIP • Recovered during test excavation
Liverpool BHS GHS_IA02 (45-5-5790)	N	• AHIP to harm • Surface artefact recovery through community collection
All other areas	N/A	• AHIP to harm

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Definitions and abbreviations

ACHAR	means Aboriginal Cultural Heritage Assessment Report
AHIMS	means Aboriginal Heritage Information Management System
AHIP	means Aboriginal Heritage Impact Permit
AHMS	means Archaeological & Heritage Management Solutions Pty Ltd
ALR Act	means *Aboriginal Land Rights Act 1983*
ASR	means Aboriginal Archaeological Survey Report
ASRF	means Aboriginal Site Recording Form
BP	means Before Present (that is 1950)
Code of Practice	means Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales
Comber	means Comber Consultants
Consultation Requirements	means Aboriginal cultural heritage consultation requirements for proponents 2010, Department of Environment, Climate Change and Water
DCCEEW	means Department of Climate Change, Energy, the Environment and Water
DECCW	means Department of Environment, Climate Change and Water (now Heritage NSW)
DoE	means NSW Department of Education
Everick Heritage	means Everick Heritage Pty Ltd
GARI	means Guntawang Aboriginal Resources Inc
the Guide	means Guide to Investigating, Assessing and Reporting on Aboriginal cultural heritage in NSW
GPS	means Global Positioning System

ha	means hectares
IMST	means indurated mudstone/silicified tuff
km	means kilometres
LALC	means Local Aboriginal Land Council
LGA	means Local Government Area
m	means metres
mm	means millimetres
MHC	means Mundawari Heritage Consultants
NPW Act	means *National Parks and Wildlife Act 1974 (NSW)*
OEH	means (former) New South Wales Office of Environment and Heritage
PAD	means Potential Archaeological Deposit
The Project	means development of both Liverpool Boys High School and Liverpool Girls High School
RAP	means Registered Aboriginal Party
REF	means Review of Environmental Factors
s	means section
The site	means the area described in Figure 1-1
SSD	means State Significant Development

1. Introduction

1.1. Project background

This Archaeological Technical Report (ATR) has been prepared by Everick Heritage Pty Ltd (Everick Heritage) on behalf the NSW Department of Education (the Applicant) to assess the potential environmental impacts that could arise from the redevelopment of the Liverpool Boys High School and Liverpool Girls High School, at 18 Forbes Street, Liverpool NSW, 2170 (the site).

The report has been prepared to document the strategy, methodology and results of the survey and test excavation for the site and will form an appendix to an Aboriginal Cultural Heritage Assessment Report (ACHAR). A Preliminary Indigenous Heritage Impact Assessments (PIHAI) and an ACHAR for the Primary School development (now known as Gulyuangarri Public School) was undertaken by Comber Consultants in 2019. The results of the initial site inspection (Comber 2019) recorded an Aboriginal site comprising of two surface silcrete flakes within the school oval which is shared by both High Schools New Liverpool Public School (45-5-5507) comprising three areas of PAD (Figure 1-5). Two of the PADs, PAD 1 and PAD 2, were subject to test excavation by Comber (2021) with six artefacts found. PAD 1 and PAD 2 were subsequently destroyed in accordance with the Ministers Conditions of Consent for SSD10391. The current project will result in works within PAD 2 and PAD 3, DoE has engaged Everick Heritage Pty Ltd (Everick Heritage) to undertake further survey of the site and test excavation of PAD 3 to ascertain if Aboriginal cultural heritage will be impacted by the Liverpool Boys and Girls High School Project. As PAD 2 was destroyed no Aboriginal archaeological values remain within this portion of the site and therefore no further investigation is warranted.

This report accompanies a Review of Review of Environment Factors that seeks approval for redeveloping the Liverpool Boys and Liverpool Girls High Schools into a single co-educational school, including:

- [redacted]
- Construction and operation of a six-storey school building, including school hall and gymnasium;
- Associated parking and building services;
- Tree removal;
- Associated landscaping and play spaces;
- Augmentation of service infrastructure; and

- Associated off-site infrastructure works to support the school, including (but not limited to) services, kiss and drop point and pedestrian crossings.

Refer to the Review of Environmental Factors prepared by Ethos Urban for a full description of works.

1.2. Site description

The site is located at 18 Forbes Street, Liverpool, within the Liverpool Local Government Area (LGA). The site is legally described as Lot 1 DP1137425 and has a total area of approximately 74,973m2.

The site comprises a broadly rectangular portion of land which currently contains the existing Liverpool Boys High School, Liverpool Girls High School, and the Gulyangarri Public School, which commenced operations in January 2024 and is located to the east of the wider site.

The site's western portion contains Liverpool Boys High School and Liverpool Girls High School. Liverpool Girls High School in the site's southwest comprises three, two-storey buildings. Liverpool Boys High School in the site's northwest, comprises approximately four, two-storey buildings, with adjacent at-grade carparking and various sports courts.

An aerial image of the site is shown at Figure 1-1 below.

1.3. Study aims and objectives

This ATR will contribute to an ACHAR to support an application for works where required. This ATR been prepared in accordance with the following guidelines:

- Aboriginal cultural heritage consultation requirements for proponents 2010 (Consultation Requirements) (Department of Environment Climate Change & Water [DECCW] 2010a).
- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales 2010 (Code of Practice) (DECCW 2010b).

1.4. Statement of Significance (Planning)[1]

Based on the identification of potential issues, and an assessment of the nature and extent of the impacts of the proposed development, it is determined that:

- The extent and nature of potential impacts are low, and will not have significant adverse effects on the locality, community and the environment;
- Potential impacts can be appropriately mitigated or managed to ensure that there is minimal effect on the locality, community.

1.5. Authors and contributors

Caitlin Cole (Senior Archaeologist, Everick Heritage) supervised the test excavation and contributed to the production of this ATR. Caitlin has a Bachelor of Arts (Honours) in Archaeology and eight years experience in the heritage consulting industry in New South Wales.

Gareth Holes (Senior Archaeologist, Everick Heritage) contributed to the production of this ATR. Gareth has a Bachelor of Arts (Honours) in Archaeological Practice, a Master of Arts in Neolithic Europe, and 18 years experience in the heritage consulting industry in Australia and Internationally.

Grace Eldon (Consultant Archaeologist, Everick Heritage) undertook report writing and test excavation assistance. Grace has a Bachelor of Arts (Honours) in Archaeology and two years' experience in the heritage consulting industry in New South Wales.

Kylie Christian (Principal, Everick Heritage) provided a quality and compliance review of this report. Kylie has over 25 years of experience and is a Full Member of the Australian Association of Consulting Archaeologists Inc.

Mapping was prepared by Maryam Hosseini (GIS Specialist, Everick Heritage) and Andrew Robbins (GIS Specialist, Everick Heritage).

[1] A statement of significance (as used in this context for planning purposes) is not to be confused with a cultural statement of significance. A cultural statement of scientific significance for Aboriginal heritage within the site can be found in Section 8 of this report, and a full cultural heritage assessment of significance is contained within Section 9 of the *Liverpool Boys and Girls High School Upgrade Project Aboriginal Cultural Heritage Assessment Report prepared for NSW Department of Education.*

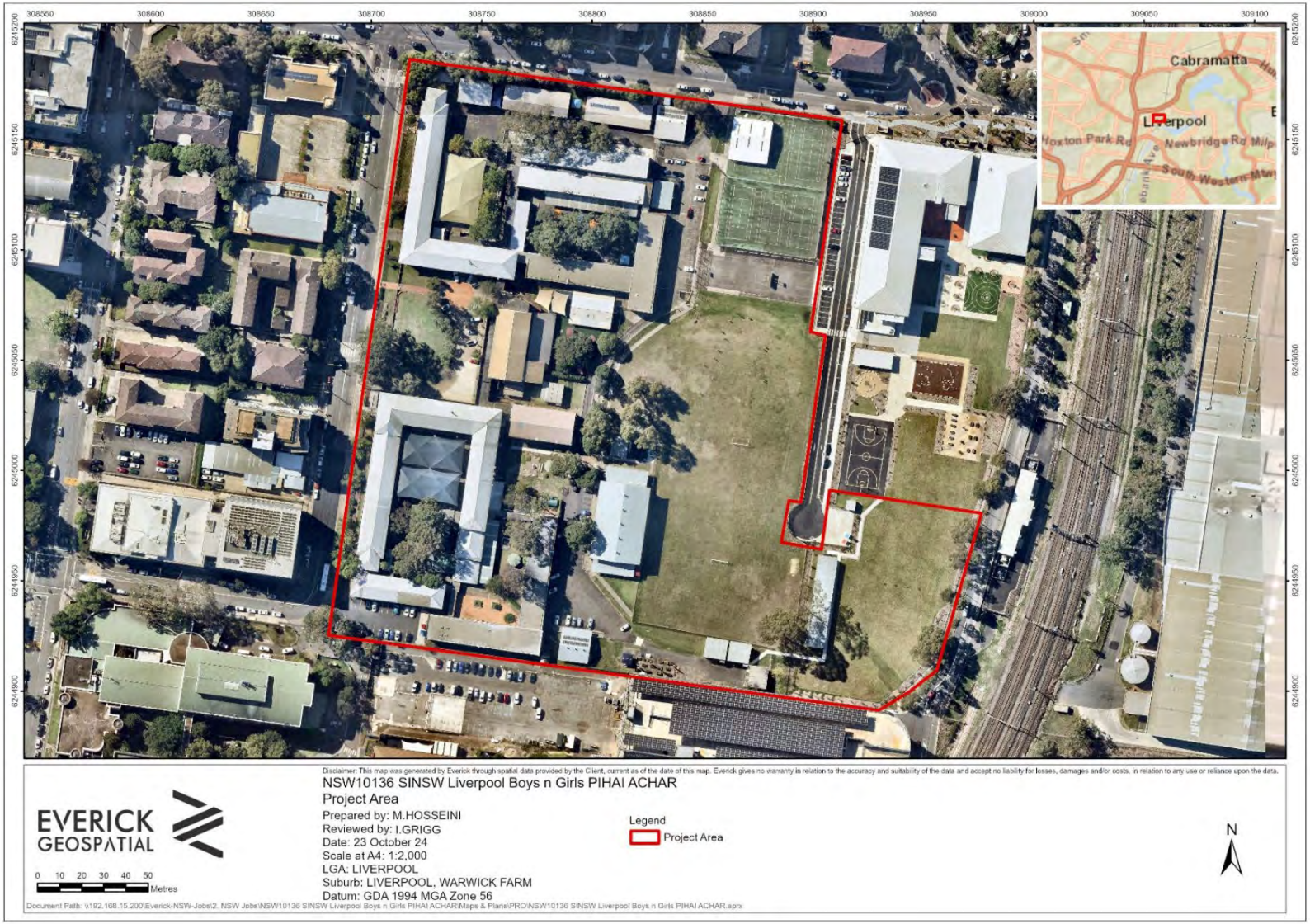


Figure 1-1: Location of the site

Figure 1-2: Proposed development plan (Source: Department of Education)

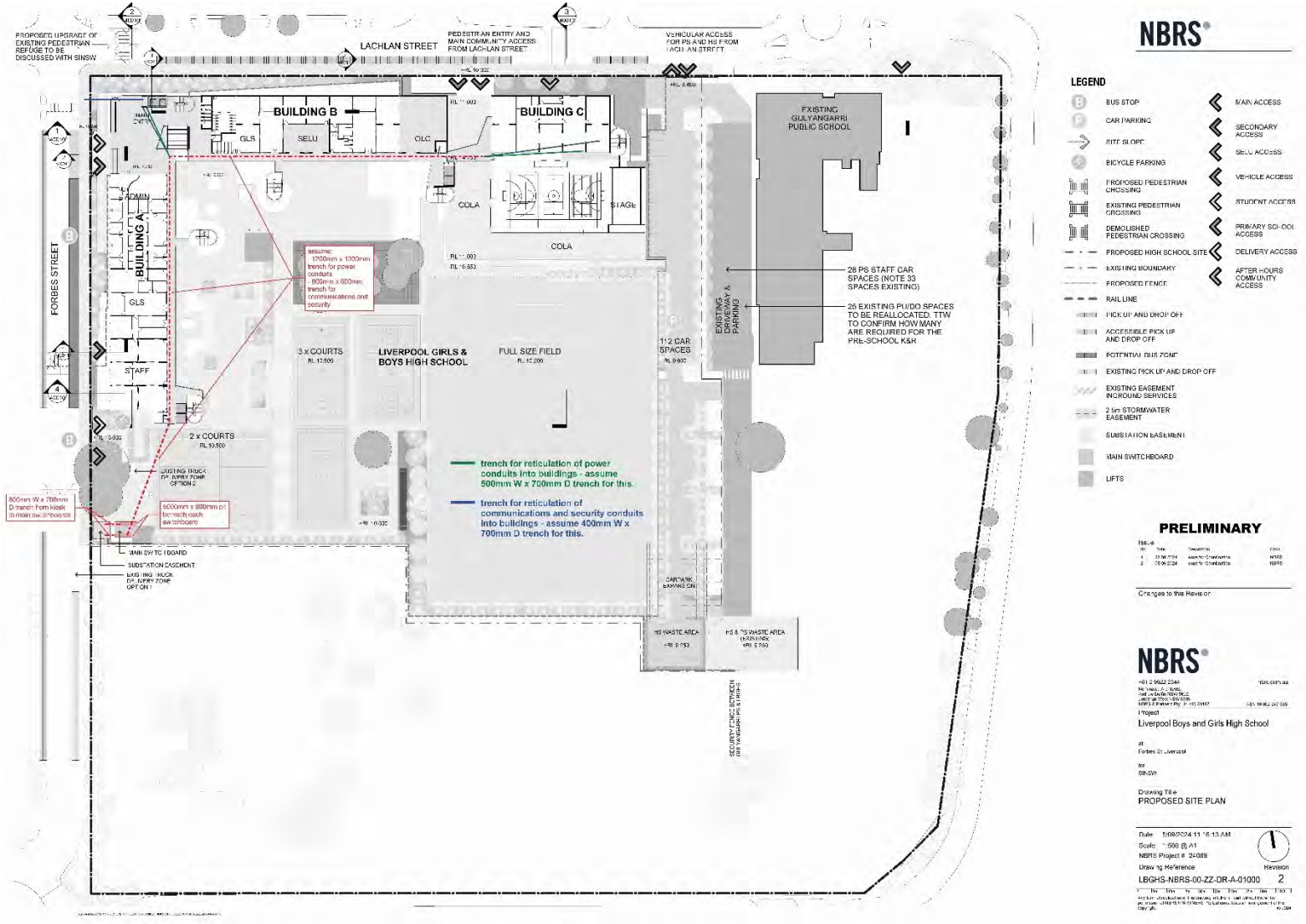


Figure 1-3: Proposed development plan (Source: Department of Education)

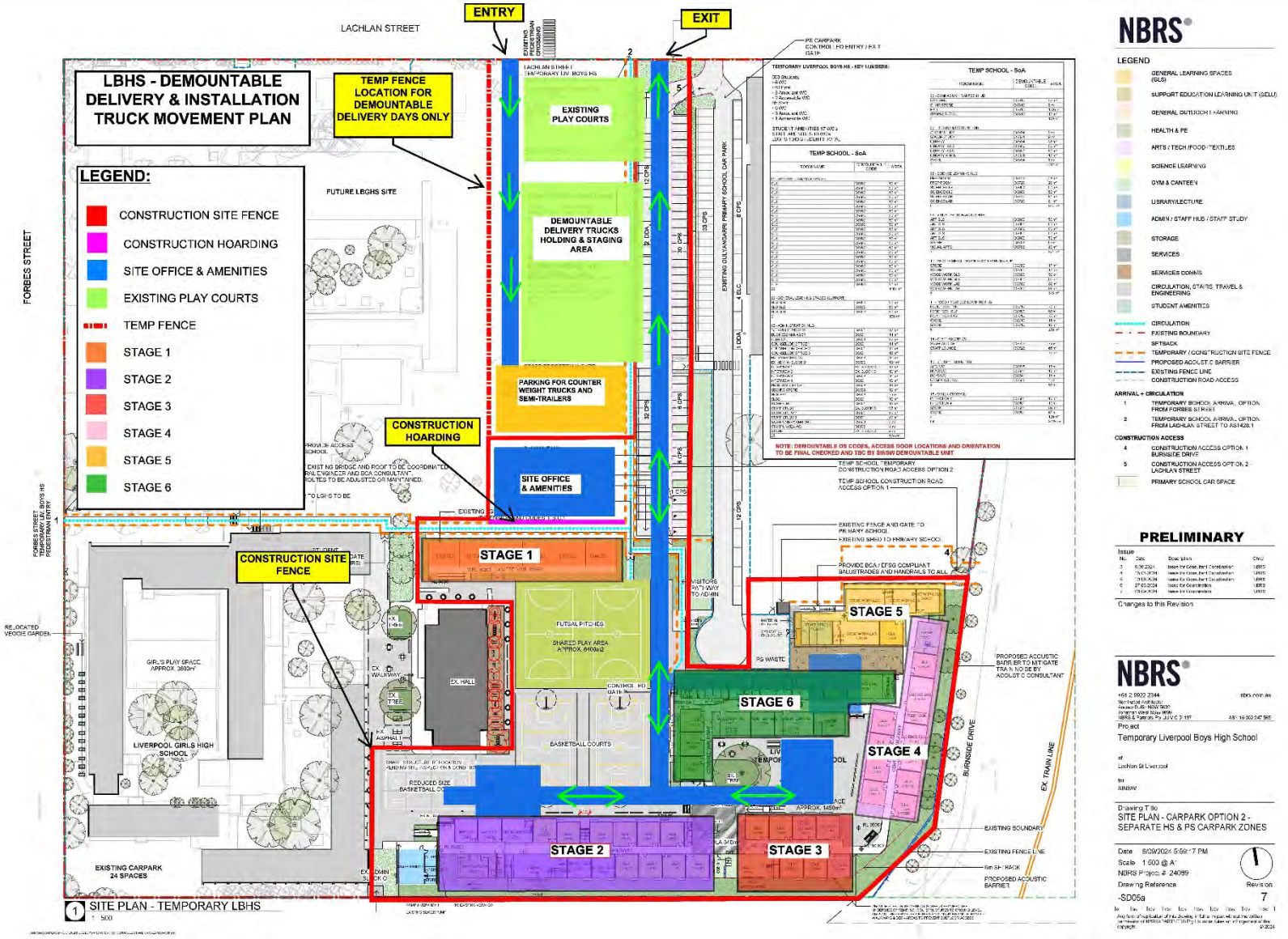


Figure 1-4: Demountable installation and truck movement plan (Source: Department of Education)

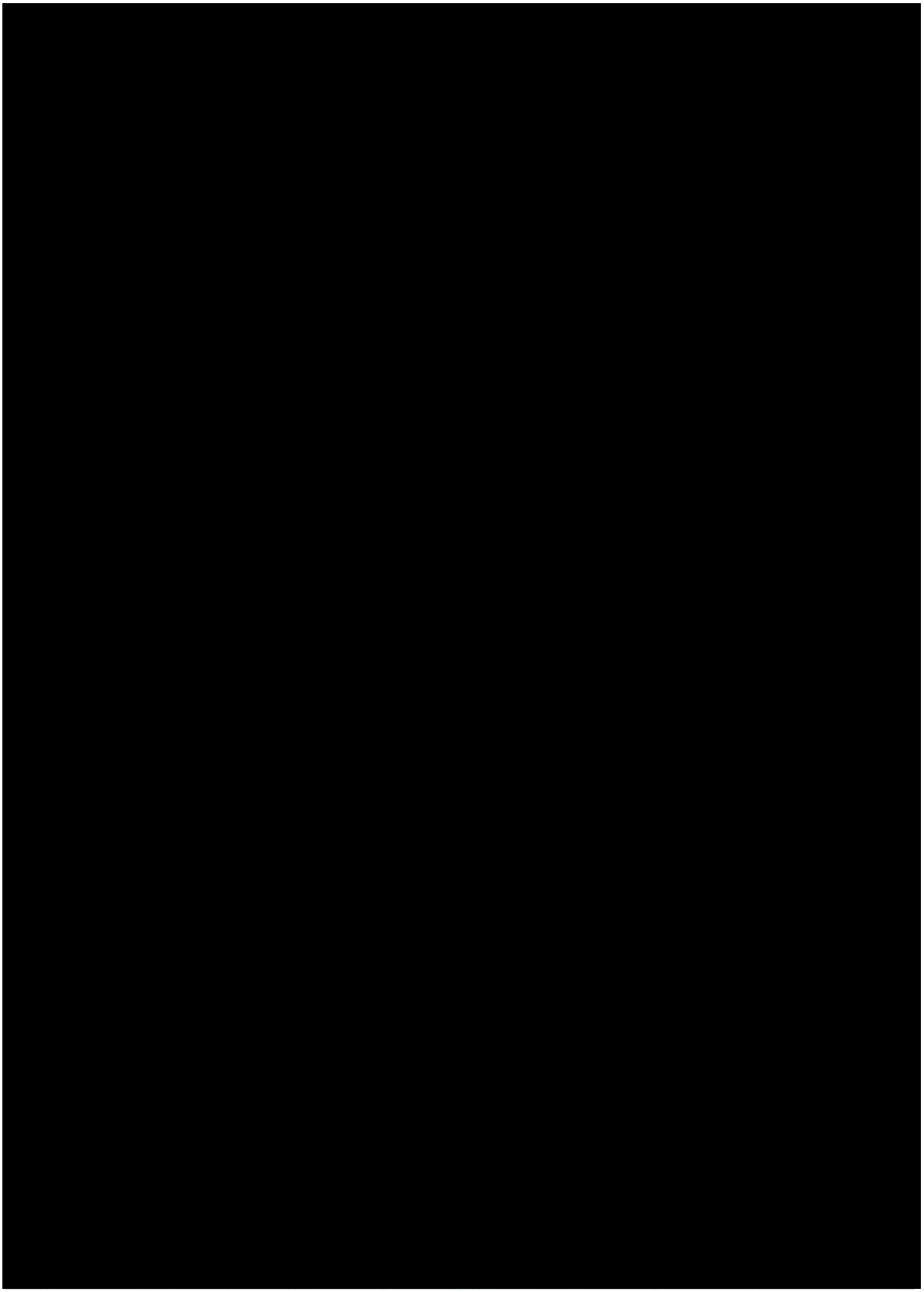


Figure 1-5: Gulyangarri Public school and PADs (Comber 2019)

2. Legislative context

2.1. National Parks and Wildlife Act 1974 (NSW)

The *National Parks and Wildlife Act 1974 (NSW) (NPW Act)* provides statutory protection to all Aboriginal places and objects. An Aboriginal object is defined as:

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

An Aboriginal Place is declared by the Minister under section 86 of the *NPW Act*. Aboriginal Places are recognised for their special significance to Aboriginal culture. Aboriginal Places gazetted under the NPW Act are listed on the State Heritage Register established under the *Heritage Act 1977 (NSW)*.

Part 6 of the *NPW Act* provides specific protection for Aboriginal objects and declared Aboriginal places by establishing offences of harm. Harm is defined to mean:

> *destroying, defacing, damaging or moving an object from the land.*

The protection provided to Aboriginal objects applies regardless of the level of their significance or issues of land tenure. Aboriginal objects and places are afforded statutory protection in that it is an offence to knowingly or unknowingly desecrate and Aboriginal object or place under section 86 of the *NPW Act*.

In accordance with section 89A, any person who is aware of the location of an Aboriginal object must notify the Chief Executive in the prescribed manner within a reasonable time of becoming aware of that object. The prescribed manner is through preparation and submission of an Aboriginal Site Recording Form to the Aboriginal Heritage Information Management System (AHIMS) (DECCW 2010b: 14).

In order to undertake a proposed activity which is likely to involve harm to an Aboriginal object or Aboriginal Place, it is necessary to apply to Heritage NSW for an AHIP. AHIPs are issued by Heritage NSW under section 90 of the *NPW Act* and permit harm to certain Aboriginal objects and Aboriginal Places.

2.2. *National Parks and Wildlife Regulation 2019 (NSW)*

The Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (Code of Practice), (DECCW 2010a) was adopted by Clause 3 of the *National Parks and Wildlife Regulation 2010 (NSW) (NPW Regulation)* The NPW Regulations were amended in 2019 by then Office of Environment & Heritage [OEH], now Department of Climate Change, Energy, the Environment & Water [DCCEEW]).

The purpose of the Code of Practice is to:

- Establish the requirements for undertaking test excavation as a part of an archaeological investigation without an AHIP. If these requirements are complied with and harm is done to an Aboriginal object when undertaking test excavations, those actions will be excluded from the definition of harm and as such will not be considered as committing an offence of harm to an Aboriginal object.
- Establish the requirements that must be followed when carrying out archaeological investigation in NSW where an application for an AHIP is likely to be made.

The Code of Practice also explains what information is required in relation to an archaeological investigation and to support the process of investigating and assessing Aboriginal cultural heritage by specifying the minimum standards for archaeological investigation undertaken in NSW under the *NPW Act*. The Code of Practice also states that for test excavation Aboriginal consultation must be completed to the stage described in Section 60(5c) of the *NPW Regulation*.

The *NPW Regulation* states that the proposed applicant must carry out Aboriginal community consultation in accordance with Section 60 before applying for an AHIP. The consultation process is detailed in the Consultation Requirements DECCW 2010a). Briefly, the process requires the registering of interested Aboriginal parties (registered Aboriginal parties [RAPs]), providing those registered Aboriginal parties with a proposed methodology to be used in the preparation of ACHAR to be submitted with the AHIP application and give those parties an opportunity to make submissions on the proposed methodology.

Part 6 of the *NPW Act*, states that anyone proposing to carry out an activity that may harm an Aboriginal object or a declared Aboriginal place must investigate, assess and report on the harm that may be caused by the activity they propose. An ACHAR is a written report detailing the results of the assessment and recommendations for actions to be taken before, during and after an activity to manage and protect Aboriginal objects and declared Aboriginal places identified by the investigation and assessment. The ACHAR will support any application made to Heritage NSW for an AHIP where harm cannot be avoided.

2.3. Native Title Act 1994 (NSW)

The *Native Title Act 1994 (NSW)* was introduced to work in conjunction with the *Native Title Act 1993 (Cth*). Native Title claims, registers and Indigenous Land Use Agreements are administered under the Act. A search of National Native Title Tribunal was undertaken on 18 October 2023. The search showed that Native Title does not exist across the site.

2.4. Aboriginal Lands Right Act 1983 (NSW)

Aboriginal Land Councils (at the State and local level were established by the *Aboriginal Land Rights Act 1983 (NSW) (ALR Act)*. Aboriginal Land Councils have a statutory obligation under the ALR Act to:

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

The site is within the boundary of the Gandangara LALC who have been consulted for this ATR.

3. Consultation

Everick Heritage has conducted the community consultation process in accordance with the Consultation Requirements, the Code of Practice, and the Burra Charter 2013 (Australia ICOMOS 2013). Aboriginal consultation has been completed to the stage described in Section 60(5c) of the *NPW Regulation*. A summary of the consultation process is provided below, and full details of the consultation process are provided in the ACHAR (Everick Heritage in prep).

In accordance with Step 4.3 of the Consultation Requirements a copy of the ACHAR methodology (Appendix B) was sent to the registered Aboriginal parties (RAP) by email on 6 December 2023 requesting a response and availability for fieldwork by 17 January 2024. Ten responses were received to the methodology and call for site officers for fieldwork, with availability confirmed with six confirmed respondents who were involved in the test excavation. Table 3-1 provides a list of those Aboriginal parties who were involved with the test excavation.

Table 3-1: Registered Aboriginal parties (RAP) for the test excavation.

Organisation	First name	Surname
Gandangara LALC	[redacted]	
Guntawang Aboriginal Resources In (GARI)		
Cubbitch Barta		
Mundawari Heritage Consultants (MHC)		
A1 Indigenous Services		
AHCS		

Notification was provided to Heritage NSW on 12 January 2024 as to Everick Heritage's intent to undertake archaeological test excavations under Requirement 15c of Code of Practice starting from 22 January 2024. Table 7-1 list the RAP participants in the survey and test excavation.

4. Environmental context

4.1. Geology and soils

The site is located within the Blacktown soil landscape according to the Soil Landscapes of the Penrith 1:100,000 Sheet report as mapped by Bannerman and Hazelton (2011) (Figure 4-1). The geology of the area is described as consisting of laminate and dark grey siltstone, Bringelly Shale, which consists of shale with occasional calcareous claystone, laminate, and infrequent coal, and Minchinbury sandstone consisting of fine to medium grained quartz lithic sandstone (Bannerman and Hazelton 2011: 39). Bringelly Shale is formed from alluvial sediments. Given the location of the site to the Georges River, Bringelly Shale dominates the site. Shales are brittle and not suitable for stone tool manufacture whilst the Minchinbury Sandstone does not weather to provide rock shelters or overhangs (Comber 2021:7). Comber (2021) describes the western portion of the school site, which includes the current site, as consisting of shale, carbonaceous claystone, laminate, fine to medium-grained lithic sandstone, rare coal and tuff in the western portion.

Two soil surveys, taken as part of a soil profile report for the Penrith area (Parker 1983) were taken from the nearby Liverpool Hospital, located adjacent to the site. The survey provides a general description of the soil profile down to bedrock. Due to the proximity of this report, the soil profile is assumed to similarly mirror the soil profile of the site. According to the previous soil reports, soils within the site are expected to reach a B clay horizon at 350 millimetres (mm), and thus, any subsurface archaeological deposits are predicted to be within the top 0-350 mm of the topsoil and A horizon (Parker 1983). The typical soil description consisted of a very dark reddish brown fine loamy sand overlying yellowish brown light clay.

No outcroppings of raw materials which would be conducive to artefact manufacture are expected within the site. However, several locations on the Cumberland Plain contain raw material suitable for stone tool manufacturing, such as basalt and silcrete. At Wetherall Park, approximately 9 kilometres (km) northwest of the site, volcanic breccia, including basalt, is present in outcroppings (Comber 2021: 16). Silcrete boulders and extensive artefact scatters are present at Moorebank, approximately 3 km southeast of the site (GHD 2015). Other material used in the manufacture of stone tools present across the Cumberland Plain, includes chert, tuff, quartz and quartzite, which are found within the Rickabys Creek Formation, about 37 kms northwest of the site (Comber 2021: 16).

A geotechnical report at the site of the Liverpool Boys and Liverpool Girls schools was developed by Douglas Partners for Department of Education in 2019 (Douglas and Partners 2019). Investigation consisted of eleven boreholes followed by logging, core photography, laboratory testing, and

engineering evaluation. The investigation was carried out in conjunction with investigation for the proposed redevelopment of the existing Liverpool Boys and Girls High Schools site. The results of the boreholes in the western sections of the site determined that the site is underlain by a shallow depth of filling and silty clay, with weathered siltstone. Boreholes in the eastern portion of the site demonstrated alluvial deposits over Bringelly Shale. The results of the investigation were that the site was relatively uniform, with topsoil and fill up to 800 mm overlying residual silty clay, shale, and laminate.

Test excavation for Gulyangarri Public School revealed a consistent soil profile comprising a highly disturbed landscape with fill encountered across the landscape with bioturbation visible throughout. The stratigraphy comprises 0-100mm of topsoil mixed with fill overlying a 500mm clay capping layer with building rubble, overlying silty loam varying from dark brown to grey with depth and the increase in clay to a depth of 350mm. The excavation halted at 450mm with dense medium clay B horizon (Comber 2021).

4.2. Topography and hydrology

The site is situated within the Cumberland Plain, in an area characterised by gently undulating slopes with broad, rounded ridges and gently inclined slopes (Figure 4-2). The Cumberland Plain is bordered by the Blue Mountains to the west, the Hornsby Plateau to the north, and the Georges River and Paramatta headwaters to the east.

The site is additionally located on the undulating rises on Wianamatta Shale. Crests and ridges are broad and rounded with convex upper slopes grading into concave lower slopes. Outcrops of shale do not occur naturally on the surface. They may occur, however, where soils have been removed.

The hydrology of the site primarily revolves around the Georges River, located 310 metres (m) south. The Georges River flows through Lake Moore, approximately 850 m southeast, and Chipping Norton Lake, an artificial lake and adjacent wetlands, about 1.7 km northeast. Brickmakers Creek is approximately 2 km west of the site. Prior to European occupation the area surrounding the natural part of the Georges River and Lake Moore would have been a resource rich wetland. As well as providing fresh water for cooking and drinking, the Georges River and its tributaries would have supported a diverse range of plant, riverine and animal resources. The presence of these major and minor waterways, being potential water and resource gathering sources for Aboriginal people in the past, indicates that Aboriginal sites may be present throughout the site.

A historic aerial from 1943 (Figure 4-3) shows that the northern portion of the site consisted of a small wetland, and a small possible creek line or drainage line in the southern portion of the site (Comber2021:14).

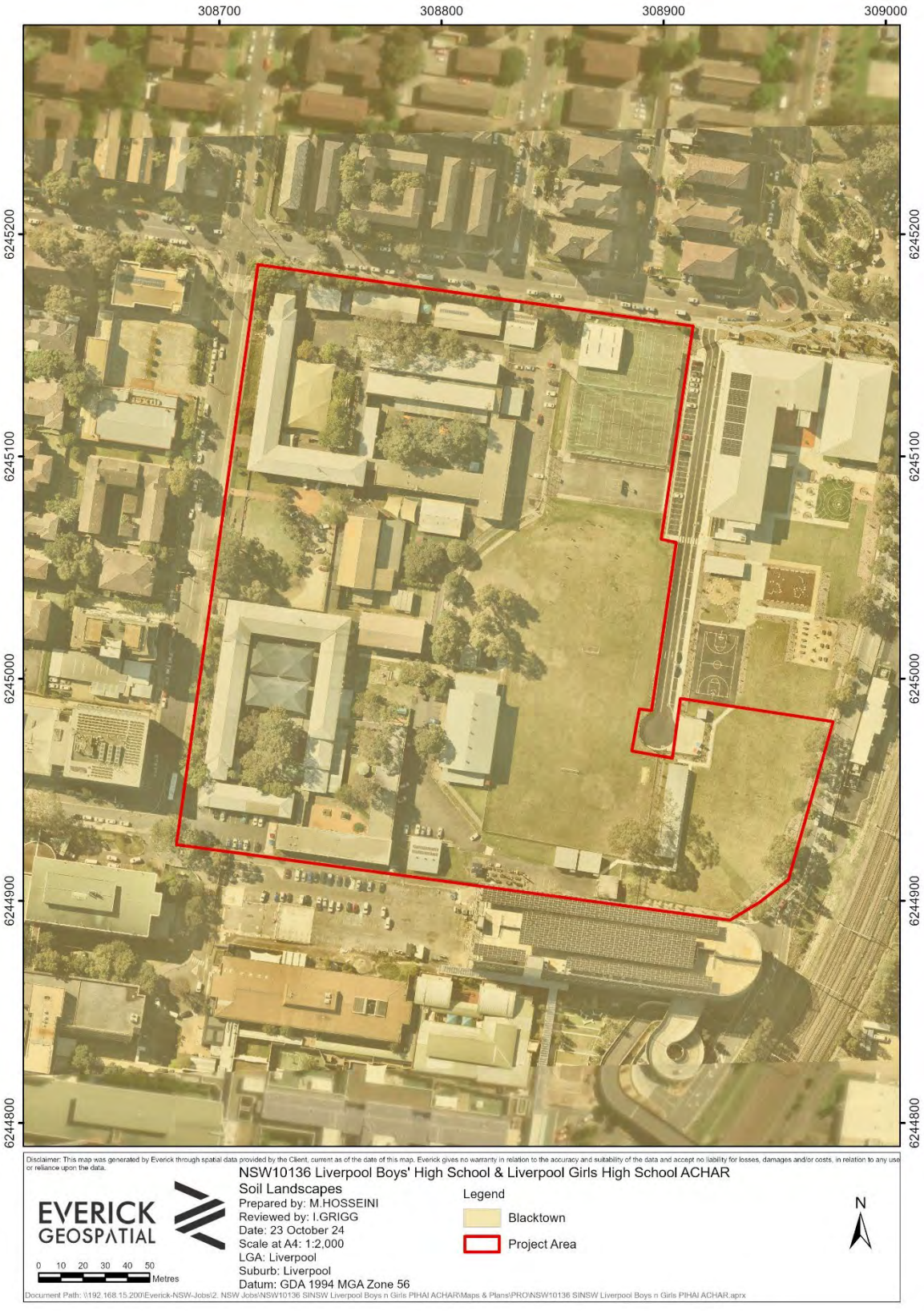


Figure 4-1: Soil landscapes of the site.

Figure 4-2: Topography and hydrology in relation to the site.

4.3. Vegetation

Woodlands and open forest of Grey Box (*Eucalyptus moluccana*), Forest Red Gum (*E. tereticornis*), Narrow-leaved Ironbark (*E. crebra*), Thin-leaved Stringybark (*E. eugenioides*), Cabbage Gum (*E. amplifolia*) and Broad-leaved Apple (*Angophora subvelutina*). Grassy to shrubby understorey often dominated by Australian Boxthorn (*Bursaria spinosa*), poorly drained valley floors, often salt affected with Swamp Oak (*Casuarina glauca*) and Paperbark (*Melaleuca sp.*).

Such a vegetation community would have provided a variety of edible plant species and plants suitable for resource subsistence. For example, the tall Grey Box and Red Gum's would have provided bark to make coolamons, shields or canoes, whilst the long Lomandra leaves would have been used for basket weaving (Baker et al 1986: 136 cited in Comber 2021: 7). Acacia gum was a sweet nutritious food source, and the acacia seeds were a valuable source of protein. The dried seeds were ground between stones and baked as a bread/damper and the green seeds eaten like peas (Low 1992: 86 cited in Comber 2021: 7). In addition, Cumberland Plain vegetation provided habitat for a variety of marsupials and birds whilst the Creek would have provided fish, yabbies and eels.

4.4. Land use history

4.4.1. Regional history

The township of Liverpool was founded in November 1810 by Governor Lachlan Macquarie and named it in honour of the Earl of Liverpool, the then Secretary of State for the Colonies. It is the fourth oldest town in Australia after Sydney, Paramatta, and Hobart, but was the first free planned settlement of Australia unlike these earlier towns (Liverpool City Council n.d.). Thomas Moore was commissioned as builder of Liverpool and supervised public works for the next decade. Moorebank is named in his honour. The railway was opened in 1856 and the electric telegraph in 1858, which provided safe transport and communication into the city (Liverpool City Council n.d). The history of the Local Government dates to 1848 when a district Council was formed. In 1872, the Liverpool Municipality was proclaimed, and Richard Sadlier became the first mayor. The first World War brought change to Liverpool. There were extensive military training activities in the area and German prisoners of war were held at Holsworthy. The Holsworthy-Moorebank area was used again during the second World War to train and house troops (Liverpool City Council n.d.).

4.4.2. Liverpool Boys High School and Liverpool Girls High School

Numerous reports by Comber (2019; 2021a;2021b; 2022; 2023) confirmed the previous land uses and disturbances to have occurred within the Liverpool Boys and Girls School complex between 1827 and 1955. A review of Parish Maps and Land Title documents as well as historical aerial photographs produced the following historical interpretation of the school site:

> *Occupation within the school site first commenced in 1827 with three small dwellings constructed on the western side of the site and the remainder of the site used for agricultural purposes. In 1884 the eastern portion of the site was subdivided into small allotments with Hart Road extended across the site linking Lachlan Street in the north and Campbell Street in the south. Whilst the allotments sold, only two dwellings appear to have been constructed within the eastern portion of the site. The land was resumed by the Government in 1946 for the school and construction began in 1947 and was completed in 1954.* (Comber 2019)

While most of the allotments were never built on, a 1943 historic aerial photograph illustrates that a few allotments had dwellings. A single dwelling with associated outbuildings and a fenced area is visible in the southwestern corner of the site (Figure 4-3). The site originally contained a mixture of low scrub and cleared land. A dam or water hole can be seen to the northeast of the dwelling. An unformed track known as Drummond Street, which was a street that was never formed, divides the site from north to south. While the surrounding lots appear to be undergoing urbanisation, the site remained largely undeveloped. There appears to be a small creek or drainage line to the south of the site, running west to east.

By 1947, the western half of the site is occupied by a range of incomplete school buildings, associated infrastructure and services in what is to become the foundations of the new Liverpool Boys and Girls High Schools (Figure 4-4). The eastern section remains largely undeveloped with a dense shrub visible on the far east boundary.

By 1955, the Liverpool Boys and Girls High Schools have been constructed. The current site is now occupied primarily by the Liverpool Boys High School facilities, playing fields and part of a former running track (Comber 2021: 7-8). No observable areas of vegetation can be seen in the 1955 aerial photo. Therefore, any vegetation present today is most likely revegetated.

The current configuration of the site has hardly changed since both schools' original construction in 1954. The eastern half of the site has been completely cleared of any remnant vegetation to make way for paved and bitumen sports courts, a car park and a grassed oval while the western half has been landscaped and is currently the Liverpool Boys High School.

In 2020 development of the Gulyangarri Public School was begun on the eastern boundary and in the south east of site, this development resulted in significant ground disturbance (Figure 4-6). Due to this development no potential for Aboriginal objects remains in this portion of the site.

Figure 4-3: 1943 historic aerial. Approximate location of site outlined in red (Source: NSW Imagery).

Figure 4-4: 1947 historic aerial. Approximate location of site outlined in red (Source: NSW Imagery).

Figure 4-5: 1955 historic aerial. Approximate location of site outlined in red (Source: NSW Imagery).

Figure 4-6: 2022 historic aerial. Approximate location of site outlined in red, showing construction of Gulyangarri Public School (Source: Google Earth).

4.5. Summary

The environmental background indicates the presence of a moderate depth of A horizon (approx. 350mm), demonstrating potential for Aboriginal objects to be present despite surface disturbance, however due shallow depth moderate subsurface disturbance will likely remove potential. Analysis of the Topography and hydrology of the site has demonstrated the presence of historical wetlands and a small creek, water sources such as these are known to indicate sensitivity for Aboriginal objects and sites. A range of flora and fauna would be present in the area, providing a wide range of resources for the Aboriginal community. Construction of the school complex is likely to have resulted in removal of the A horizon across much of the project area, removing potential for Aboriginal sites. Areas occupied by playing fields, nature strips and away school buildings are likely to reattain higher potential.

5. Archaeological context

5.1. Aboriginal Heritage Information Management System

Caution should be taken when using the Aboriginal Heritage Information Management System (AHIMS) database to reach conclusions about site prevalence or distribution. For example, a lack of sites in a given area should not be seen as evidence that the area was not occupied by Aboriginal people. It may simply be an indication that it has not been surveyed for cultural heritage, or that the surveys were undertaken in areas of poor surface visibility. Further to this, care needs to be taken when looking at the classification of sites. For example, the decision to classify a site an artefact scatter containing shell, rather than a midden can be a highly subjective exercise, the threshold for which may vary between archaeologists. It is also important to note that the nature and location of Aboriginal sites can be culturally sensitive information and should only be made publicly available with the consent of the Aboriginal community.

An extensive search of the Heritage NSW AHIMS was conducted on 19 September 2023 for the site and its surrounds (client ID: 821053), using the following search area:

Lat, Long From: **-33.9583, 150.8797**

Lat, Long To: **-33.8871, 151.0035.**

The AHIMS search returned 83 Aboriginal site listings, an updated search results were retrieved on 28 August 2024 (Table 5-1), the updated search results included five sites registered within the site, New Liverpool Public School (45-5-5507) was listed as destroyed and is discussed below. Liverpool BHS GHS_AS01, Liverpool BHS GHS_IA01, Liverpool BHS GHS IA02 and Liverpool BHS GHS PAD01 were registered as part of this project, Liverpool BHS GHS PAD 01, was subsequently updated as not a site, no additional sites had been recorded for a total of 87 listed sites within the search area (Figure 5-1, Figure 5-2). Of the 87 sites returned in the search, nine have been destroyed and a further 16 sites were determined not to be a site following excavation.

New Liverpool Public School (45-5-5507), is listed on AHIMS as a destroyed artefact site comprising 16 silcrete flakes and associated area of PAD, covering Gulyangarri Public School and portions of the Boys High School and Girls High School, and is partially located within the site. While the AHIMS database and site card lists AHIMS ID 45-5-5507 as destroyed and mentions test and salvage excavations were undertaken no description is provided on the site card. Further while the site card lists AHIMS ID 45-5-5507 as being totally destroyed, review of the test and salvage reports (discussed in more detail in Section

5.4), indicates that this is not the case and that the western portion of AHIMS 45-5-5507 (PAD3), had not been impacted (Figure 5-3; and Appendix C). Of the 83 sites returned in the search, there are seven sites which have been destroyed.

Of the remaining destroyed sites, the majority were artefacts destroyed by development two of which had associated areas of PAD. Of the registered sites subsequently determined not to be a site, the majority were modified trees, with a single PAD.

Heritage NSW lists 20 standard site features that can be used to describe a site registration with AHIMS, and more than one feature can be used for each site. For the 83 sites within the search area, a total of six different site features is recorded. Details of the occurrence of site features is provided in Table 5-1.

'Artefact' is the most frequently represented site type within the search area, accounting for 33 of the entries. The predominance of this type of evidence is likely to be related to several factors: the production of a large number of items (both tools and waste) in the production, maintenance and use of flaked stone artefacts; the permanent nature of the material; and the destruction of other types of evidence, through natural processes such as decomposition and post colonisation land-use practices such as vegetation clearance.

The distribution of registered sites is shown in Table 5-1. Many of the registered sites are close to the Georges River and its tributaries. This is likely to be at least partly the result of Aboriginal land use, indicating a preference for repeated and/or long-term occupation of areas close to water and associated resources.

Table 5-1: Frequency of AHIMS site features within the search area.

Site feature	Number	Percentage	Number destroyed	Number Not a Site
Artefact	36	41.38	7	0
Aboriginal Resource and Gathering, Potential Archaeological Deposit (PAD)	1	1.15	0	0
Artefact, Potential Archaeological Deposit (PAD)	13	14.94	2	0
Modified Tree (Carved or Scarred)	24	27.59	0	15
Potential Archaeological Deposit (PAD)	12	13.79	0	1
Shell	1	1.15	0	0
Total	**87**	**100**	**9**	**16**

5.2. Other database searches

The following heritage registers were accessed on 15 September 2023:

- The National Heritage List - Contains no heritage listings within or within close proximity to the site.
- Commonwealth Heritage List - Contains no heritage listings within or within close proximity to the site.
- Register of the National Estate - Contains no heritage listings within the site.
  i. Liverpool Hospital (former) (3294), located approximately 250 m to the south of the site
- The State Heritage Register (SHR)- Contains no heritage listings under Section 1 or 2 - Aboriginal Places listed under the *NPW Act* and Items listed under the *Heritage Act 1977 (NSW)* within the boundaries of the site, one gazetted SHR listed property is located in the vicinity of the site:
  i. Liverpool TAFE College (former Liverpool Hospital (SHR 01809) is located approximately 250 m to the south of the site.
- Liverpool Local Environmental Plan 2008 –
  i. The site is located adjacent to the Plan of Liverpool ('early town centre street layout' Hoddle 1827) (ID89) locally listed item.
  ii. Bigge Park Conservation Area (Co1)
  iii. Liverpool TAFE College (01809)
- AHIP public register – One AHIP was applied for the area adjoining the site was applied for, but then withdrawn on 3 February 2022 (The New Liverpool Primary School (18 Forbes Street, Liverpool) for early works for the new Public School.

Figure 5-1: AHIMS search results

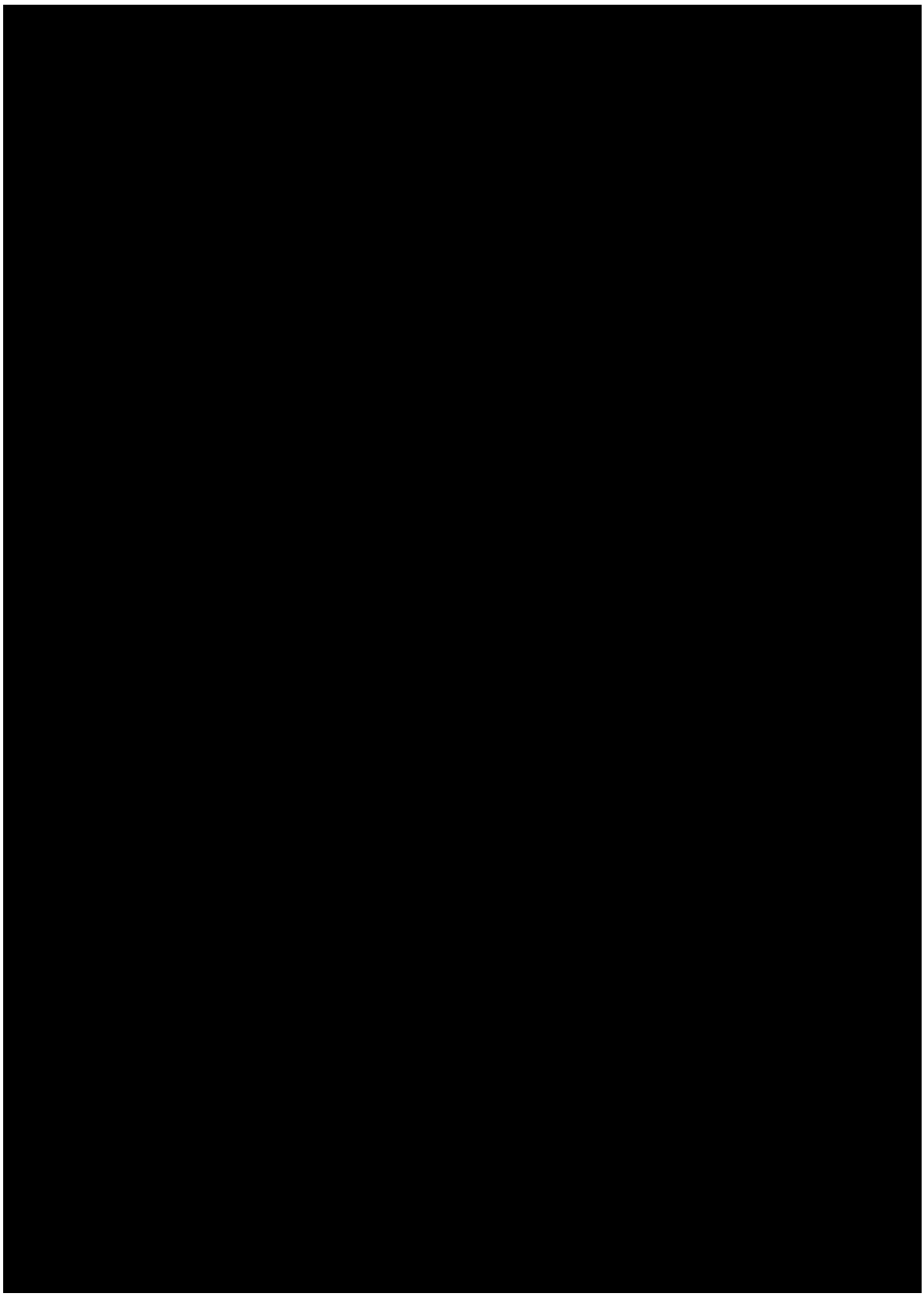


Figure 5-2: AHIMS sites within site

5.3. Regional context

5.3.1. SIMTA Moorebank Intermodal Terminal Facility (Archaeological and Heritage Management Solutions 2012)

Archaeological and Heritage Management Solutions (AHMS) were engaged by Hyder Consulting on behalf of Sydney Intermodal Terminal Alliance to prepare an Aboriginal Cultural Heritage Assessment for an Intermodal Terminal Facility at Moorebank Avenue, Moorebank, 3.79 km south of the current site. The study area was located beside the Georges River, historically this landform would have resembled a series of sloping river terraces, but modern cut and levelling works had altered the natural slope of the landscape. The study area was located across the Georges River from the Liverpool Boys and Girls High School site. The study area contained soils from the Berkshire Park Soil Group, characterised as shallow clayey sand soils with frequent ironstone pisoliths, found on low rises and terraces. The general area contains Mesozoic and Cainozoic geology, of Hawkesbury Sandstone, Mittagong Formation, and Ashfield Shale. The assessment suggests that more recent Quaternary deposits, specifically those of Pleistocene and Holocene age, have high potential for both natural and anthropogenic information. The Georges River, Williams Creek and Harris Creek all contain evidence of Quaternary deposits. A site inspection of the study area identified significant fill across the landscape. The A horizon, where archaeological material typically occurs, was assessed as having been removed. No evidence of natural landforms or soil profiles were identified within the site, and the likelihood of archaeological material being present was low. Areas of higher archaeological sensitivity were assessed as areas close to fresh water on river and creek flats, and river terraces, all of which are landforms considered to have Aboriginal archaeological potential. Areas that have been impacted by historical footings, foundation, and recent development works, including quarrying and the construction of the rail line, were significantly disturbed and unlikely to retain any in situ Aboriginal archaeological deposits.

5.3.2. Moorebank Intermodal Terminal (Navin Officer Heritage Consultants 2014)

Navin Officer Heritage Consultants Pty Ltd (NOHC) was commissioned in 2010 by Parsons Brinckerhoff to undertake a cultural heritage assessment for the Moorebank Defence precinct on behalf of the Department of Finance and Deregulation as part of the EIS for the Project. The study area for this assessment was located directly adjacent to the AHMS Project Area identified in Section 5.3.1. The predictive model identified three areas of archaeological potential within the Moorebank Intermodal Terminal study area:

- 100 m either side of the Georges River

- 100 m either sides of tributary drainage lines
- Elevated slopes and riverside margins on Tertiary alluvial terraces adjacent to the Georges River.

Archaeological field survey on the east of the Georges River was undertaken in February 2013 in conjunction with invited representatives of Aboriginal groups.

Subsurface testing was undertaken in September 2012 which utilised a combination of mechanical test pits and hand excavated test pits totalling 59 test pits in accordance with a pre-agreed methodology. The results of the testing program found 264 artefacts in 26 of the pits. Further excavation in 2013 consisted of 45 test pits (37 hand excavated pits and 8 mechanical pits). 14 artefacts were recovered from three site areas within a larger area of PAD. MA 11: artefacts associated with the Unit 3 fill that has been reworked and deposited as the result of mechanical earth works at the southern end of MAPAD2 (Pits 1 and 5). MA12: artefacts associated with Unit 2 fluvial sands across the central southern portion of MAPAD2 (Pits 9, 10, 12, 13, 14 and 42). MA13: a single artefact associated with the Unit 1 silts at the northern end of the test area (Pit 34, Spit 9). It was noted that where surface occurrences of artefacts were recorded during the survey the excavation results have shown that subsurface archaeological deposits are more widely distributed than surface evidence suggests. The densest and most diverse archaeological deposits were located within well drained aggrading landforms located in proximity to permanent water sources. Test pits excavated further away from the river bank had noticeably less dense subsurface artefact distributions, if sites were present at all. Artefact raw material type was dominated by silcrete, followed by quartz, quartzite and basalt and smaller amounts of siltstone, indurated mudstone tuff (IMCT)

5.3.3. Skipton Lane, Prestons (Artefact Heritage 2017)

Artefact Heritage were engaged by Firstyle Homes to prepare a due diligence assessment for a proposed subdivision and residential development at 30 Skipton Lane, Prestons, 5.87 km southwest of the current site. The study area is located within the Cumberland Plains, on a landscape of rolling hills and prominent rises. Soils within the study area consist of the residual Blacktown soil landscape, which is characterised by a hard setting red podzolic soil within upper slopes. The Blacktown Soil Landscape is typically texture contrast soils, with an upper loam horizon of up to 300 mm overlying clay loam. The predictive model developed as part of this assessment determined that artefact densities were most likely to be identified on terraces and lower slopes within 100 m of fresh water sources. Ridgelines and crests located between drainage lines were also determined as likely to contain archaeological evidence, though typically in the form of background scatter. Sites were suggested as likely associated with sloping landforms, although to a lesser extent than water sources. Sites were determined as generally not associated with land that

has been disturbed despite the presence of sensitive land formations. A site inspection of the study area did not identify any Aboriginal objects and no further archaeological investigation was recommended.

5.3.4. Liverpool Health and Academic Precinct – Multi Storey Carpark (RPS 2020)

RPS was engaged by Johnstaff Pty Ltd to prepare an Aboriginal Cultural Heritage Assessment Report for Health Infrastructure for the proposed Liverpool Health and Academic Precinct redevelopment, directly adjacent to the current site. The geology, hydrology, topography, and landscape of the study area is shared by the current site due to the proximity of the assessments. The predictive model developed for the Liverpool Health study area determined that low density artefact scatters and isolated artefacts were the most likely type of Aboriginal sites to be identified within the study area. Due to land disturbance, the potential for scarred trees and burials to be located within the study area was assessed as low. The results of a survey identified no archaeological objects or areas of archaeological potential. Due to extensive ground disturbance across the site, the Aboriginal archaeological potential of the study area was assessed as low.

5.3.5. Moorebank Avenue Realignment (EMM 2021)

EMM was engaged to prepare a preliminary Aboriginal heritage assessment for realignment works at Moorebank Avenue, approximately 1.4 km south of the current site. The landscape is defined as undulating hills and flats of the Cumberland Plains, and river terraces and floodplains along the Georges River. The study area is part of a transitional zone between two geological features of the Sydney Basin: the Hawkesbury Sandstone and Wianamatta Shale zones, and the study area is part of the catchment of the Georges River. The predictive model developed as part of the assessment determined that cultural material in the area is commonly located beside larger, higher order creeklines, rather than beside smaller tributaries. Cultural material in the area would thus likely be identified on the edges of the Georges River rather than the lesser waterbodies within the study area. Cultural material within these tributaries is additionally usually within elevated terraces, rather than on flats and swampy areas, or the floodplains associated with creek lines. The distribution of AHIMS sites supported this assertion with most sites occurring along the Georges River and few away from major water courses. Archaeological deposits, if present within the study area, were considered most likely to be varied density surface and subsurface stone artefacts. The potential for culturally modified trees was considered unlikely. The findings of the assessment were that the area would be characterised by low densities of stone artefacts, reflective of ephemeral or transitory use by Aboriginal people. Any present artefacts would be in disturbed contexts. No further archaeological investigation was recommended.

5.4. Archaeological investigations of the site

5.4.1. Liverpool Boys and Girls High Schools Aboriginal Archaeological Assessment (Comber 2019)

Comber were engaged in 2019 to provide an Aboriginal Archaeological Assessment as part of the Schools Infrastructure NSW's investigation into the development potential of Liverpool Boys and Girls Schools. The project was assessed as a State Significant Development. The predictive model developed as part of the assessment determined that the most likely site types to be identified in the study area would be open artefact scatters, scarred trees, and isolated finds, due to proximity to water and prolific natural resources such as bark for manufacturing containers, shields and canoes and plants for manufacturing twine. However, extensive land clearance and land modification for the construction of the school greatly reduces the likelihood of these sites being present within the study area.

The results of the desktop assessment were that the site is predicted to contain the potential for medium to high density sites. The site was determined as a possible site for seasonal camping as it is located within a low-lying area close to the river and former wetlands area.

An archaeological survey was undertaken of the site over two days in 2019. As a result of the survey, two Aboriginal artefacts were located, and the school grounds was registered on AHIMS as a site with artefacts and PAD. It was registered as New Liverpool Public School (45-5-5507). Figure 5-3 shows the boundaries of the registered site and the location of the two recorded artefacts.

As such, there is potential for subsurface evidence of occupation across the site. Further archaeological investigation was recommended by Comber in the form of an Aboriginal Cultural Heritage Assessment and archaeological testing under the Code of Practice.

Figure 5-3: Boundary of AHIMS ID 45-5-5507 shown in green (Comber 2021)

5.4.2. New Liverpool Public School Aboriginal Archaeological Testing Report (Comber 2021)

Comber was engaged in 2021 to undertake an Aboriginal Archaeological Testing Report as part of the Department of Education's proposal to construct the Gulyangarri Public School on the grounds of the existing Liverpool Boys and Girls High School.

A test excavation program was undertaken from 13 – 17 October and the 25 October 2021. For the purpose of testing the site, it was divided into three PADs (Figure 5-4). PAD 1 contained the area where the future primary school buildings would be located and PAD 2 contained the area where ancillary facilities, services and playing fields would be located. PAD 3, although identified in 2019 (Comber 2019), was not subject to testing as part of this testing programme because it was not subject to impact. Twenty-four 1 m x 1 m test trenches were placed approximately 20 m apart along transects across the landscape (Figure 5-5). Excavations determined that the soil landscape was highly disturbed, with fill present across the entire landscape. An indicative soil profile recorded during the archaeological test excavation is detailed in Table 5-2.

Six flaked artefacts were recorded during the course of test excavations, all were identified in the northeastern section of the study area. The artefacts comprised both silcrete and indurated mudstone/silicified tuff (IMST). The conclusions of the excavations were that the area was likely to have had Aboriginal occupation, associated with proximity to water sources. Ground disturbance was determined to impact on surface evidence, but subsurface evidence may still be present in areas of high disturbance.

Table 5-2: Indicative soil profile from test excavation at the New Gulyangarri Public School site (Comber 2021).

Spit Number	Description	Depth (mm)	Soil colour	Munsell	Ph
	Pasture grasses, topsoil and fill	0 – 100			
	Introduced clay forming a capping layer. Possibly originated from school development with excavated material being dumped in this area. Includes building rubble.	100 – 150			
1	Silty loam	150 – 200	Dark brown	10yr 3/3	7
2	Silty loam	200 – 250	Dark brown	10yr 3/3	6.9
3	Silty loam	250 - 300	Light brown to grey	10yr 6/2 7.5yr 6/1	6.8
4	Silty loam to silty clay (AI horizon)	300 – 350	Grey	7.5yr 6/6	6.9
5	Silty clay to clay (A2 horizon)	350 - 400	Grey to mottled grey/yellow	7.5yr 6/6	7
5	Dense medium clay (B horizon)	400 - 450	Mottled yellow brown	10yr 4/4	

Figure 5-4: Locations of PADs identified by Comber Consulting (Comber 2023)

Figure 5-5: Image showing test excavation units (Comber 2021)

5.4.3. New Liverpool Public School Aboriginal Archaeological Salvage Excavation Report (Comber 2022)

Comber was engaged in 2022 to provide additional investigation in the form of Aboriginal archaeological salvage excavations of New Liverpool Public School (45-5-5507) as part of the Department of Educations's investigation into the construction of the new Gulyangarri Public School. In accordance with recommendations from Comber (2019; 2021), salvage excavation was undertaken from 23 March and 4 April 2022.

The purpose of salvage excavation was to recover evidence that will compliment and extend the information obtained during the testing program. Ten Aboriginal objects were uncovered from 24 excavation units during the salvage excavations. The artefacts were mainly manufactured from silcrete, an indication that material for stone stool manufacture was most likely traded for with other clans. Following salvage excavation New Liverpool Public School (45-5-5507), was updated as destroyed despite this PAD3 had not been investigated and remained undisturbed.

5.5. Summary and predictive model

Predictive models of site distribution and density on the Cumberland Plain highlight the relationship between proximity to freshwater and landscape with patterns of Aboriginal occupation. Additionally, Heritage NSW advises that Aboriginal objects are likely to be present within 200 m of water, where historical ground disturbance has not impacted their survival (DECCW 2010a: 12).

The general predictive model for the Cumberland Plain indicates that stream order, and proximity to water sources is the primary determinant of complexity of archaeological sites. The number of sites within an area, and their relative density is determined by their proximity to higher order streams. Artefact sites with high densities (>100 artefacts per site) are more likely to be associated with large permanent watercourses, such as the Georges River. The test excavations at the Moorebank Intermodal Terminal concluded that higher complexity sites were more likely to be located on elevated and well drained ground in valley floor contexts associated with water sources. Lower density scatters, or artefacts redeposited by erosion and water discharge may be reburied in fluvial sediments. The lack of a surface expression of artefacts at a site does not necessarily preclude the presence of a subsurface deposit, likely due to poor ground exposure or subsequent burial by later sediments.

Given the above, the archaeological sensitivity of the entire site with the exception of the area in the south east occupied by Gulyangarri Public School, is considered to be moderate based on the proximity to

permanent water sources such as the Georges River. However, the degree of ground disturbance will be a key factor in determining the site's archaeological potential. Previous archaeological investigations for the Liverpool Boys and Girls High Schools (Comber 2019; 2021a; 2021b; 2022; 2023) indicate the site has undergone moderate to high landscape modification, mainly through the construction of the current Liverpool Boys and Girls Schools. This will have likely resulted in the disturbance of the upper parts of the soil profile (A horizon). Blacktown soils are typically shallow, and therefore only the upper A horizon has the potential to contain Aboriginal objects. Within the boundary of Gulyangarri Public School all potential is considered to have been lost due to the salvage excavation and subsequent development.

An analysis of past land use indicates that the majority of the former running track, has been subject to limited historical disturbance, as PAD 3 is considered to retain the moderate archaeological potential and require further assessment. Previous archaeological studies for the Cumberland Plain have confirmed the possibility of sub-surface archaeological deposits to remain in situ despite disturbances by non-Aboriginal activities, namely areas that have been disturbed by agricultural activities only. Archaeological survey, archaeological testing (Comber 2021a; 2021b) and salvage excavation (Comber 2022) has confirmed the model of occupation for the Cumberland Plan with reliable water being a factor in the location of occupation.

6. Archaeological survey

6.1. Previous archaeological survey

An archaeological survey of the Liverpool Boys High School and Girls High School was conducted by Comber in 2019, which included an inspection of the current site. Site visits were conducted by Jillian Comber and David Nutley, archaeologists at Comber on the 31 October 2019 and 1 November 2019. During the 2019 inspections, two silcrete artefacts were recorded (Figure 5-3). As a result, the whole of the oval was registered on AHIMS as New Liverpool Public School (45-5-5507) containing two isolated artefacts and PAD. This site has since been listed as destroyed on AHIMS as a result of an SSD approval for the new Gulyangarri Public School which included the south east of the site. Both the Liverpool Boys High School and Liverpool Girl High School were surveyed, and no other Aboriginal objects or areas of PAD were identified outside of the boundary of PAD3. Photographs show that the extent of the site was surveyed and recorded although no GPS record of the transect was prepared (Comber 2021).

As indicated in the desktop assessment, the most likely site type to be identified during the survey would be open artefact scatters, scarred trees and isolated finds. However, extensive land clearance and land modification for the construction of the school greatly reduces the likelihood of these sites being present within the site. It was noted in Comber (2019) that the site was a possible location for seasonal camping, as it is located within a low-lying area close to the river and former wetlands area. As such, there is potential for subsurface evidence of evidence if occupation across the site. Further archaeological investigation was recommended by Comber in the form of an Aboriginal Cultural Heritage Assessment and archaeological testing under the Code of Practice.

6.2. Current archaeological survey

In compliance with Requirement 5b of the Code of Practice (DECCW 2010b), an archaeological survey of the school oval was undertaken prior to and during the excavation. Global Positioning System (GPS) logs and survey coverage details were recorded during the survey.

The primary purpose of the archaeological survey was to:

- Revisit and reassess previously identified PAD3 and Aboriginal sites within the site
- Identify and record any additional Aboriginal sites
- Liaise with the RAPs regarding the archaeological and cultural sensitivity of the site

- Record the nature and location of ground disturbance.

6.3. Timing and personnel

Survey was undertaken prior to and concurrently with the test excavation program over a period of two days. Table 6-1 details the survey personnel.

Table 6-1: Survey personnel.

Name	Organisation / RAP	Attendance
Caitlin Cole	Everick Heritage	22 – 23 January 2024
Grace Eldon	Everick Heritage	22 – 23 January 2024
[redacted]	Gandangara LALC	22 – 23 January 2024
	A1	22 – 23 January 2024
	GARI	22 – 23 January 2024
	AHCS	22 – 23 January 2024
	MHC	22 – 23 January 2024
	Cubbitch Barta	22 – 23 January 2024

6.4. Survey strategy and methodology

Both the Liverpool Boys High School and Girls High Schools have been subject to numerous previous archaeological surveys relating to prior development of Gulyangarri Public School, as such the survey was constrained to the previously identified PAD 3 identified by Comber Consultants in 2023 (Figure 5-4). The entire oval was subject to meandering survey by two archaeologists, and the six RAPs walking a single transect working east to west and then returning west to east across the PAD extent. Width between survey participants varied between five and ten metres. Due to the relatively small size of the school oval and immediate surrounding open lawn area, only one survey unit was recorded (Survey Unit 1). The portion of the site within Gulyangarri Public School was not surveyed as background research had indicated it had been sufficiently assessed in the previous surveys and subsequently fully impacted during construction of Gulyangarri Public School.

6.5. Survey coverage

The school oval and immediate surrounding open grassed areas were easily accessible. The oval and grassed areas were relatively small at approximately 1,230 square metres. Survey coverage was variable, predominately due to the degree of grass cover present over the entire existing oval (Table 6-2). Exposures were present in opportunistic surface erosion areas likely resulting from use of the oval by children during the year. The survey was undertaken at the end of the January school holidays which allowed some of the existing grass to regrow in the December to January period. PAD3, or Survey Unit 1 has been delineated by a yellow outline as shown in Figure 6-1. Survey Unit 1 was walked over in its entirety.

6.6. Results

The archaeological survey was conducted of the existing couch grass covered oval, located in the southeastern corner of the two schools to which it shares a boundary. The oval has been maintained with manicured lawns. Areas of exposure were limited to opportunistic areas of wear from sports, and at the base of the mature eucalypt trees which were present at the northwestern corner and at the southeastern corner (Figure 6-3).

One surface artefact was identified, Liverpool BHS GHS IA02 (45-5-5790). The artefact was located at the base of a mature eucalyptus tree (Figure 6-4). There is a possibility that the flake was brought to the surface by the growth of the directly adjacent tree from a sub-surface deposit.

The site is generally located on a flat plain landform which has been subject to substantial levelling and ground disturbance as a result of the construction of the three school complexes within or in direct vicinity of the site (Figure 6-2). Recent disturbance was noted along the eastern boundary of the site as a result of the construction of Gulyangarri Public School. A review of aerial photography has confirmed that the trees were not present in the 1940s and were likely planted with the construction of the school in the 1950s.

Further investigation of the subsurface soil profile would assist in understanding whether further Aboriginal archaeological material is present and whether it would be located in an undisturbed, and not redeposited context. PAD 3 was recorded as Liverpool BHS GHS PAD1 and would be subsequently registered as 45-5-5883.

Table 6-2: Survey coverage.

Survey Unit	Area (m2)	Landform	Exposure (%)	Visibility (%)	Survey Coverage (m2)	Effective Survey Coverage (%)	Previously registered site name and AHIMS ID	New Aboriginal Site Name / AHIMS ID and New PADS
Survey Unit 1	1,230	Plain	20	20	49.2	4	New Liverpool Public School (45-5-5507) (Destroyed)	Liverpool BHS GHS_IA02 (45-5-5790); Liverpool BHS GHS_PAD1 (45-5-5883)
Total	**1230**				**49.2**	**4**		

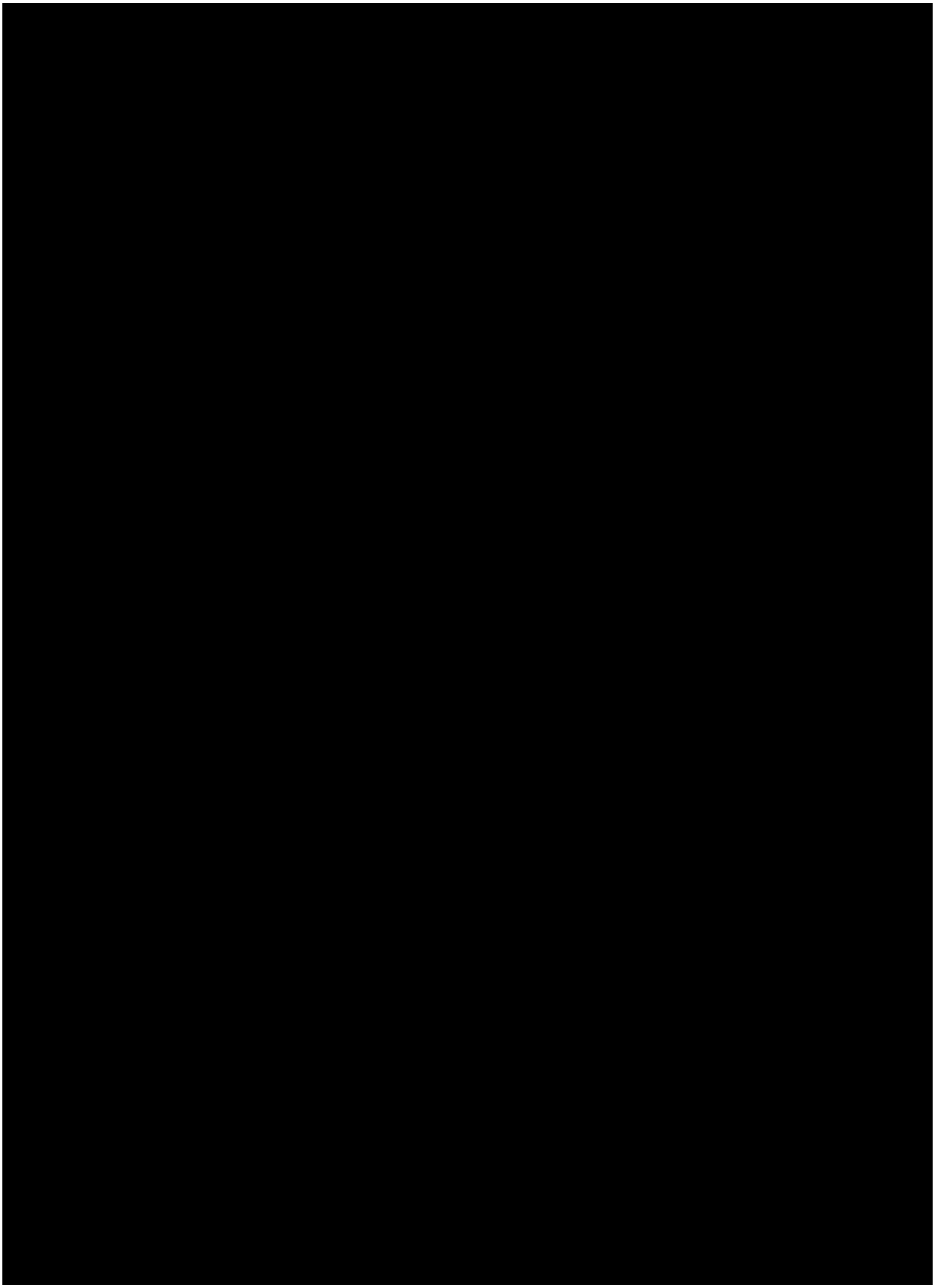


Figure 6-1: Results of transect survey in Survey Unit 1.

Figure 6-2: General ground visibility indicative of the entire oval. Photo facing north (C. Cole 22 January 2024).

Figure 6-3: Example of ground exposure at the base of the trees. Photo facing south (C. Cole 22 January 2024).

Figure 6-4: Liverpool BHS GHS IA2, context and close up of the ventral side of the IMST flake (G. Eldon 23 January 2024).

7. Test excavation

7.1. Aims and objectives

The primary purpose of the test excavation program was to establish whether Aboriginal archaeological subsurface deposit is present within the Liverpool BHS GHS_PAD1 (45-5-5883, Figure 5-4) and if so, what the nature and extent of that deposit is. The primary aims of the test excavations were to:

- Provide an opportunity for registered Aboriginal stakeholders to comment on the Aboriginal cultural heritage values of the Project Area.
- Identify any Aboriginal objects or sites.
- Assess the scientific significance of any archaeological deposits identified during the excavation and following the assessment of test excavation results.
- Provide recommendations for the management of Aboriginal cultural heritage where present.

7.2. Timing and personnel

Table 7-1 provides details of the personnel during the test excavation program. The program was undertaken from 22 January 2024 to 23 January 2024 encompassing two days of fieldwork.

Table 7-1: Test excavation personnel.

Name	Organisation / RAP	Title	Attendance
Caitlin Cole	Everick Heritage	Excavation Supervisor	22 – 23 January 2024
Grace Eldon	Everick Heritage	Excavation Assistant	22 – 23 January 2024
[redacted]	Gandangara LALC	Excavation Assistant	22 – 23 January 2024
	A1	Excavation Assistant	22 – 23 January 2024
	GARI	Excavation Assistant	22 – 23 January 2024
	MHC	Excavation Assistant	22 – 23 January 2024
	Cubbitch Barta	Excavation Assistant	22 – 23 January 2024

7.3. Sampling strategy

The test excavation strategy was designed to sample the area that had previously been identified by Comber (2019) and was registered as Liverpool BHS GHS_PAD1 (45-5-5883). This area was identified as the existing oval for both the Liverpool Boys and Girls High Schools, described as a low-lying area close to the Georges River and former wetlands.

The subsurface archaeological investigations included the excavation of 500 millimetre (mm) x 500 mm test pits (TP) at 20 m intervals in a grid across the oval, where the temporary school will be constructed (Figure 7-1). The use of 20 m intervals additionally would allow for modification of the program to include additional pits at smaller intervals where and if archaeological deposits are encountered.

7.4. Constraints

A Dial-Before-You-Dig search for underground utilities within the oval was undertaken prior to test excavation. No major constraints were encountered during the course of the test excavation program.

7.5. Methodology

7.5.1. Excavation

All test excavation was undertaken in accordance with Requirement 16a of the Code of Practice (DECCW 2010b). The excavation was undertaken by shovel or other manual instrument depending on the nature of the sediment.

Excavation across all TPs proceeded until an archaeologically sterile layer was reached, characterised by an increase in clay content in the matrix.

7.5.2. Sieving

All sediments were dry sieved through 5 mm wire mesh handheld metal sieves. Excavated deposit was placed in buckets and transported to a sieve area adjacent to the excavation but at a distance so as not contaminate sieved sediment with yet to be excavated sediment. Sieved sediments were captured onto tarps and this spoil was used to manually backfill test pits following their recording.

7.5.3. Recording

Photographic and scale-drawn records of the stratigraphy/soil profile were taken for each TP. A photographic record was taken for all TPs at the commencement and end of excavation. Stratigraphic information was documented via overhead and section photography utilizing the in-built iPad camera. Section drawings of the north wall of each test excavation unit were also prepared (Appendix F).

Soil colour (Munsell), type and texture were taken for all TPs to increase understanding of the subsurface conditions of the PAD and how they may relate to site formation processes influencing the presence and condition of subsurface archaeological deposits.

The location of each excavation unit was recorded using GDA 94 datum with a mobile GIS unit (Apple iPad).

All artefacts retrieved during test excavation (n=6) were double bagged and labelled with appropriate contextual information. The subsurface artefacts were analysed and recorded in the Everick Heritage Office (Appendix D). The artefacts retrieved through test excavation are being temporarily stored in a locked cupboard in the Everick Heritage Sydney Office:

Everick Heritage (Sydney Office)

Level 2/61 Renwick St,

Redfern NSW 2016

Consultation regarding the long-term management of archaeological material and objects recovered during the test excavation program will be undertaken with the RAPs for the Project during the review process for the ACHAR.

Options could include the following:

- Archaeological material and objects to be provided to the Australian Museum
- Archaeological material and objects to be curated by an Aboriginal community in conjunction with a Care and Control permit
- Archaeological material and objects to be reburied within the site at a location safe from future disturbance. The reburial location would be recorded and submitted to AHIMS.

7.6. Results and discussion

The area subject to archaeological test excavation, during this field programme, was identified during previous survey in 2019 by Comber Consultants, who identified the area as PAD 3 (Figure 5-4), part of New Liverpool Public School (45-5-5507). No test excavation of PAD 3was undertaken during the prior archaeological assessment of the site by Comber Consultants between 2019 and 2023.

The following sections summarise the test excavation results for each of the TPs. A summary of new sites is provided in Table 7-2 and a breakdown of the area excavated within the site is shown in Figure 7-1.

A total of six square metres was excavated across the site. This represents less than 0.05 percent of PAD 3. The small subsurface coverage could account for the low number of subsurface stone artefacts (n=6); however, it is likely the low-density nature of artefacts is representative of the nature of past-land use of the site as well as low-density occupation of in the past.

The site is located within a low-lying area approximately 300-500 m north from the Georges River and former wetlands. The site is currently used as the oval for both the Liverpool Boys and Girls High Schools, with mostly couch grass, broadleaf weeds and a few medium sized shade trees growing around the northeastern and southern boundaries. A varying degree of compaction was observed across all TPs, likely due to repeated levelling/capping of the oval. Beneath the grassy topsoil was a layer of thick brown loamy top-dressing followed by a predominantly reddish-brown clayey fill, containing a variable amount of stone and gravel. The natural soil profile was buried under these two disturbed layers. The undisturbed soil profile appeared as a grey silty clay loam. This was found buried at a depth of 400 mm in TP8.

Evidence of fill was noted in almost all TPs to a depth of 200-250 mm, historical fill and items such as glass, brick, railway ballast, ceramic, corroded metal and blue metal as well as broken wiring and coins were noted down to the clay B-Horizon.

As a result of test excavation one artefact scatter and one isolated artefact was identified, the remaining test pits of Liverpool BHS GHS_PAD1 (45-5-5883), did not contain any Aboriginal artefacts and it was determined to have low potential for Aboriginal objects. Therefore Liverpool BHS GHS_PAD1 (45-5-5883), was determined to not be a site and two new sites were recorded, an Isolated Artefact, Liverpool BHS GHS IA01 (45-5-5790), and an artefact scatter Liverpool BHS GHS AS01 (45-5-5789). These sites and a summary of identified artefacts are listed below in Table 7-2 and Table 7-3.

Table 7-2 Summary of new sites.

AHIMS ID	New site name	Site Features	Notes
45-5-5789	Liverpool BHS GHS AS01	Artefact	Small Artefact Scatter identified in TP8, a total of five artefacts were identified within the test pit. No other nearby pits contained artefacts indicating a highly concentrated scatter, likely the result of a single event.
45-5-5790	Liverpool BHS GHS IA01	Artefact	A single isolated artefact identified in spit 2 of TP2. No other artefacts were identified in the area.
45-5-5791	Liverpool BHS GHS IA02	Artefact	Surface artefact, therefore, was required to remain in situ and unable to complete a detailed analysis.
45-5-5988	Liverpool BHS GHS_PAD1	Not a Site (Formally PAD)	Liverpool BHS GHS_PAD1 (45-5-5883), was determined not to be a site and the AHIMS database was updated to reflect this.

Table 7-3: Summary of artefacts

AHIMS ID	New site name	Raw material	Artefact type	Length (mm)	Width (mm)	Thickness (mm)	Notes
45-5-5791	Liverpool BHS GHS IA01	Silcrete	Flake	23.9	12.2	6.5	Complete silcrete flake, no retouch.
45-5-5790	Liverpool BHS GHS IA02	IMST	-	-	-	-	Surface artefact, therefore, was required to remain in situ and unable to complete a detailed analysis.
45-5-5789	Liverpool BHS GHS AS01	Silcrete	Debitage	16.6	13.8	2.5	Flat debris of possible flake. Too worn to determine termination.
45-5-5789	Liverpool BHS GHS AS01	Silcrete	Debitage	19.2	7.0	6.8	Possible core fragment given scarring on ventral face been bi-directional along spine (both positive and negative side).
45-5-5789	Liverpool BHS GHS AS01	Chert	Flake	14.1	10.5	4.2	-
45-5-5789	Liverpool BHS GHS AS01	Chert	Flake	14.3	12.1	6.9	Flake with presumed prior scars (negative) along edges of dorsal side.
45-5-5789	Liverpool BHS GHS AS01	Silcrete	Flake	12.1	6.2	9.1	-

7.7. Summary

Twenty-four TPs were excavated during works. This totalled six square metres of excavation and represented less than one percent of the surveyed areas. Once the character of the PAD was established, planned TPs were moved in order to establish the nature and extent of those deposits. The following sections summarise the test excavation results for the temporary school site. Six subsurface artefacts were identified during test excavation across the site. Test excavation and subsurface results are shown in Figure 7-1 and Figure 7-2. Owing to works undertaken prior to the construction of Gulyangarri Public School, the previously recorded artefacts have been salvaged and are now listed on AHIMS as 'destroyed'.

All excavations were undertaken as 500 mm x 500 mm TPs on a grid pattern with approximately 20 m intervals between them. This methodology was determined due to the moderate sensitivity identified by Comber, that would sufficiently identify Aboriginal objects, if present, and allow for offsetting at smaller intervals, should cultural material be encountered (Comber 2019, 2021a, 2021b, 2022, 2023). During the program, additional test pits were excavated, either to provide further spatial analysis of areas with cultural material present, or to better understand stratigraphic changes occurring over the site. Due to cultural material present in TP 8, TP 21 was placed nearby to test for the extent of cultural material. TP 22 was placed south of TP 24 to further survey landform changes in Liverpool BHS GHS_PAD1 (see Figure 7-1).

The soil profile across all excavation units was typical of the Blacktown soil landscape matrix. The soil profile generally consists of a thin surface fill, followed by a dark brown silty loam to an average depth of 200 mm. This was followed by either a reddish brown or yellowish-brown clay subsoil occurring at depths between 200 - 300 mm, which could be seen in the intermixing of stone and gravel increasing in compaction in depth. This intermixing is most likely a result of smoothing and levelling of the site in the early 1950s associated with the construction of the high school oval. This would have likely distributed the clay fill across the site. An undisturbed profile was observed at a depth of 400 mm and appeared as a grey silty clay to light clay up to 100 mm thick. This profile is likely the undisturbed Pleistocene alluvial sediments associated with the alluvial terrace of the Georges River.

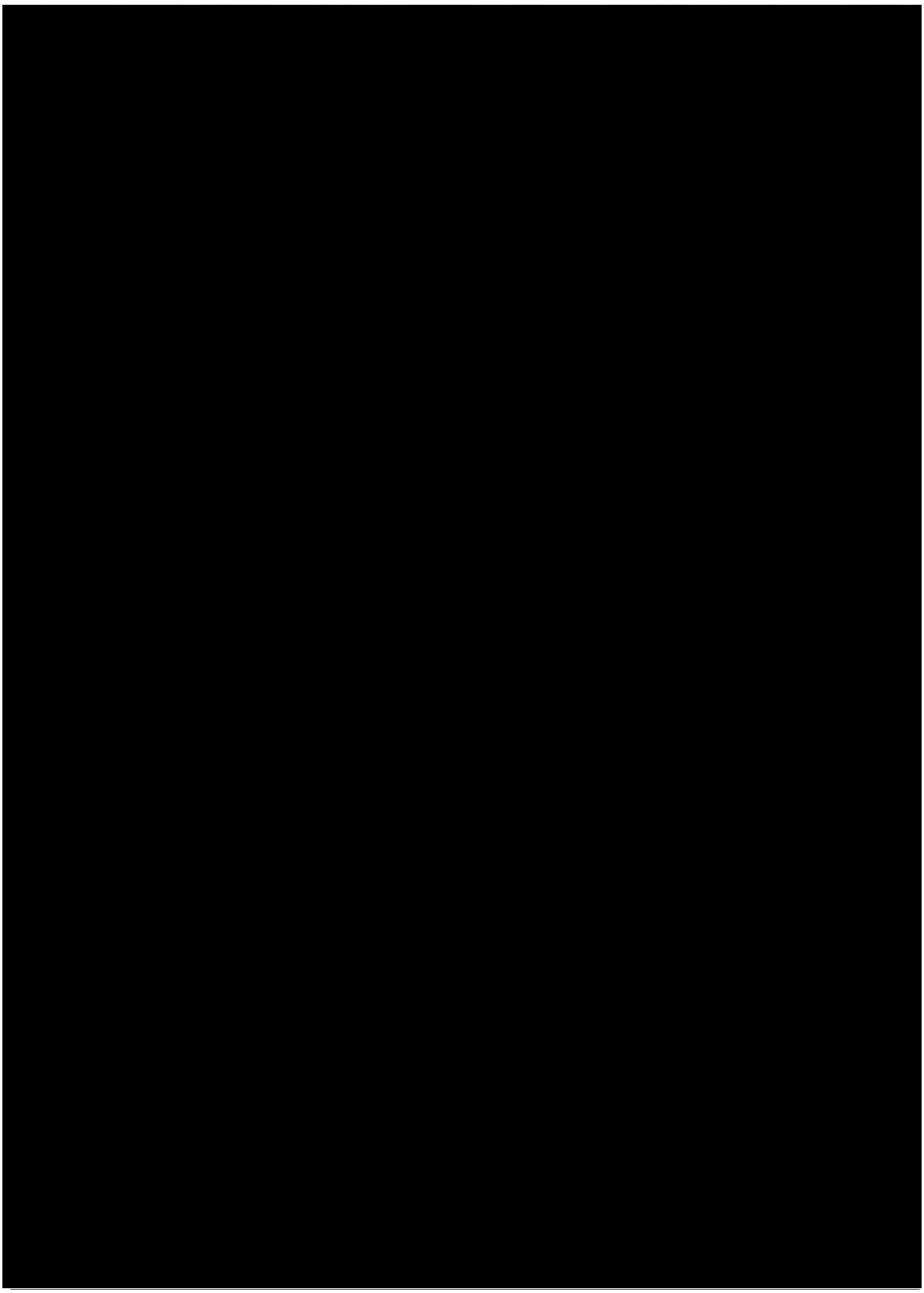


Figure 7-1: Test excavation results.

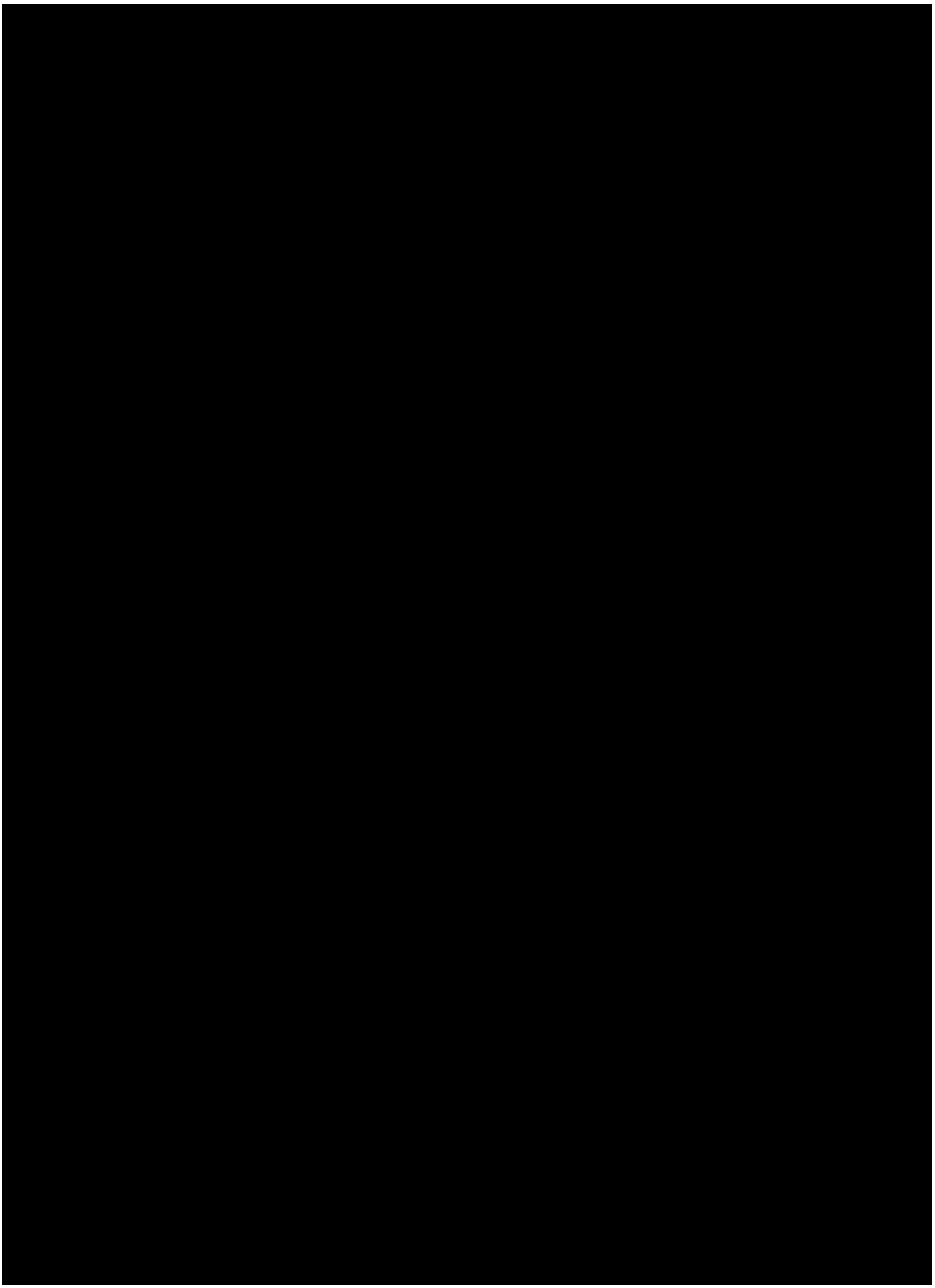


Figure 7-2: Test excavation site results map.

7.7.1. Soils and stratigraphy

Findings from the test pit program were, in most circumstances, very similar across the entirety of Liverpool BHS GHS_PAD1. Below are two examples of soil profile found and recorded within the site. TP 10 is used as the representative example for the general stratigraphic features present in all test pits present in Liverpool BHS GHS_PAD1. Whereas TP 8 is expanded upon as being unlike the other excavation units, primarily due to its varied context and the relatively high number of Aboriginal objects present. provides the stratigraphic drawings and soil profiles of all other test pits.

7.7.1.1. Test Pit 8

The soil profile of Test Pit 8 is separated into three layers excavated in six spits, depicted in Table 7-4. The A1 Horizon spreads across spit one to three with a 50 mm humic topsoil or very dark greyish brown silty sand. With a high concentration of grass rootlets, bioturbations, and general debris. Beyond 50 mm the sediment becomes more friable and eventually compacted, clay content simultaneously increases until 200 mm. One silcrete debitage, two silcrete flakes and one chert flake were identified in this layer.

The A2 Horizon becomes present at 200 mm which consists of a light yellowish brown silty clay, with flecks of carbon and clay nodules present. At 300 mm these transition into an olive brown mottled clay with corroded ironstone present. The A2 Horizon is characterised by heavy compaction, but containing one silcrete flake. The B horizon identified at the bottom of spit six, 500 mm, consisted of a grey clay transition from the olive brown mottled clay to cemented clay. Once reaching cemented clay excavation ceased. The B horizon is likely the undisturbed layer of alluvial sediments associated with the alluvial terrace mentioned above.

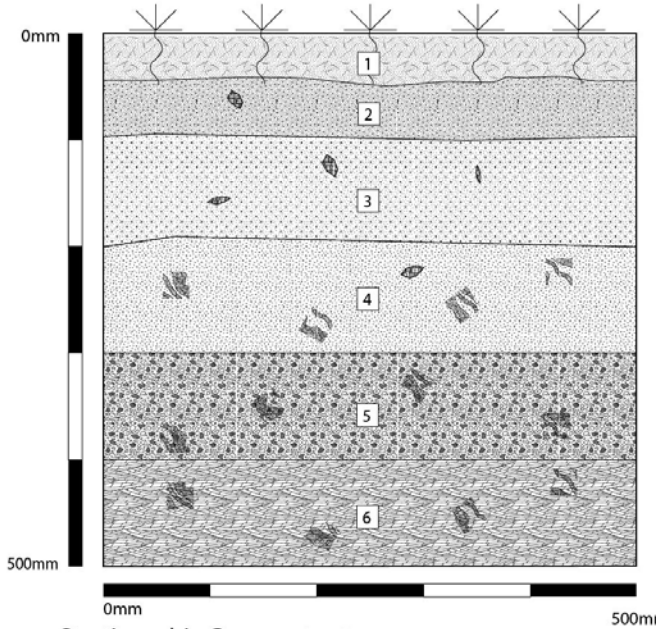
Table 7-4: Stratigraphy Test Pit 8

Test Pit 8	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	pH: -
	Munsell: 10YR 3/2 Very Dark Greyish Brown
	Description: Humic loose and dry grey silty sand with iron stone inclusions. Rootlets, bioturbation, and general debris also present.

Test Pit 8	
Spit 2	Depth: 50 – 100 mm
	pH: -
	Munsell: 10YR 4/2 Dark Greyish Brown
	Description: Friable yellow-grey silty sand. Very dry, with inclusions of ironstone, glass, and ceramic. Increasing reddish orange mottled clay content. One silcrete debitage found. Orange colour, distinct flake characteristics.
Spit 3	Depth: 100 – 200 mm
	pH: -
	Munsell: 10 YR 4/2 Dark Greyish Brown
	Description: Highly friable silty clay becoming more compacted with depth. Transition spit between layers one and two. Three artefacts identified, one chert flake and two silcrete flakes. Ironstone and clay nodule inclusions present in this spit.
Layer 2	
Spit 4	Depth: 200 – 300 mm
	pH: -
	Munsell: 2.5YR 5/3 Light Yellowish Brown
	Description:

Test Pit 8	
	Very dry light yellow-grey mottled silty clay. Flecks of clay and charcoal present. One silcrete flake identified not characterised as an artefact. At 200mm soil transitions from silty sand into clayey silt. Compaction increases with clay content.
Spit 5	Depth: 300 – 400 mm
	pH: -
	Munsell: 7.5YR 4/3 Olive Brown
	Description: Mottled orange and grey silty clay with charcoal flecks and clay modules. Nodules are larger in size and ironstone present is corroded. Small rootlets also present. Transition spit between second and third layers.
Layer 3	
Spit 6	Depth: 400 – 500 mm
	pH: -
	Munsell: 7.5YR 4/3 Olive Brown
	Description: Heavily compacted to cemented grey clay base with charcoal flecks. Change at 400mm from mottled clay to cemented clay at 500mm.
End Excavation	

Test Pit 8



Stratigraphic Compontents:

1	Humic loose and dry grey silty sand with iron stone inclusions. Rootlets, bioturbation and general debris also present.	4	Very dry light yellow-grey mottled silty clay. Flecks of clay and charcoal present. One silcrete flake identified not characterised as an artefact. At 200mm soil transitions from silty sand into clayey silt. Compaction increases with clay content.
2	Friable yellow-grey silty sand. Very dry, with inclusions of ironstone, glass, and ceramic. Increasing reddish orange mottled clay content. One silcrete debitage found. Orange colour, distinct flake characteristics.	5	Mottled orange and grey silty clay with charcoal flecks and clay modules. Nodules are larger in size and ironstone present is corroded. Small rootlets also present. Transition spit between second and third layers.
3	Highly friable silty clay becoming more compacted with depth. Transition spit between layers one and two. Three artefacts identified, one chert flake and two silcrete flakes. Ironstone and clay nodule inclusions present in this spit.	6	Heavily compacted to cemented grey clay base with charcoal flecks. Change at 400mm from mottled clay to cemented clay at 500mm.

7.7.1.2. Test Pit 10

Sediments in Test Pit 10 comprised three layers described in Table 7-5. The A1 Horizon identified in spit one comprised of a greyish brown sandy loam, with grass roots in a high concentration along with bioturbation present up to 50 mm. A1 horizon was in a loose to friable single-grained structure, only held in place due to the high concentration of grass. The A2 Horizon consists of a dark brown sandy loam, from 50 – 150 mm, with rootlets continuing through the A1 Horizon into this layer. A2 Horizon sees an increase in compaction, clay content and the presence of clay nodules with depth. The B Horizon

is comprised of yellowish brown to reddish brown clay, characterized by heavy compaction which was reached at 200 mm at which excavation was of Test Pit 10 ceased.

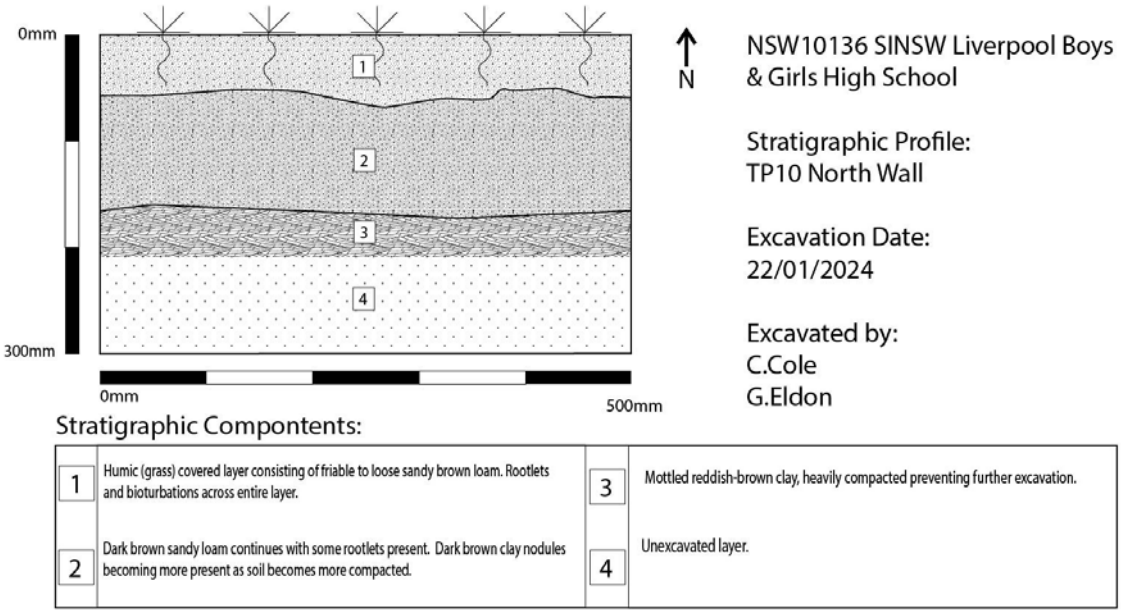
No cultural material was present in TP 10 however the soil profile is consistent with other sterile pits in Liverpool BHG GHS_PAD1. The heavy compaction and relatively high B Horizon indicate that the PAD has been heavily disturbed a result of smoothing and levelling of the site in the early 1950s associated with the construction of the high school oval. Ongoing maintenance and high activity common from sports ovals further support that TP 10 is generally representative of other test pits located in Liverpool BHS GHS_PAD1 with the exception of TP 8. Based on excavations in nearby surrounding test pits and in consultation with the RAPs, the B Horizon was determined to be an archaeologically sterile layer.

Table 7-5: Stratigraphy Test Pit 10

Test Pit 10	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	pH: -
	Munsell: -10 YR 3/2 Very Dark Greyish Brown

Test Pit 10	
	Description: Humic (grass covered layer consisting of friable-loose sandy loam. Rootlets and bioturbations present across entire layer.
Spit 2	Depth: 50 – 150 mm
	pH: -
	Munsell: -10 YR 3/3 Dark Brown
	Description: Dark brown sand loam continues with some rootlets present. Clay nodules becoming more present with depth and compaction.
Layer 2	
Spit 3	Depth: 150 – 200 mm
	pH: -
	Munsell: -10 YR 5/6 Yellowish Brown
	Description: Mottled reddish-brown clay, heavily compacted preventing further excavation.
End Excavation	

Test Pit 10



Stratigraphic Compontents:

1	Humic (grass) covered layer consisting of friable to loose sandy brown loam. Rootlets and bioturbations across entire layer.	3	Mottled reddish-brown clay, heavily compacted preventing further excavation.
2	Dark brown sandy loam continues with some rootlets present. Dark brown clay nodules becoming more present as soil becomes more compacted.	4	Unexcavated layer.

7.7.2. Site content and location

Six subsurface stone artefacts were recovered during the test excavation program, and one surface artefact was identified during the survey. Basic details of all stone artefacts retrieved from test excavation and survey can be found in Table 7-3, with a more detailed analysis in Appendix D.

The assemblage of stone artefacts is of two types: flakes (85 per cent) and undiagnostic debitage (15 per cent). Technology consists of two tertiary flakes, three primary flakes, one distal fragment and one piece of debitage. The site has an elevation of around 9 – 10 m above sea level and may be prone to inundation, as suggested by the low embankment supporting the nearby railway to the east. The poor drainage would have made the area boggy and not always suitable for consistent occupation. Additionally, the density of artefacts across the site is thought to be consistent with isolated artefacts or background scatter in secondary contexts in the vicinity of nearby open camp sites located along the Georges River.

Six of the artefacts are of silcrete and one, the surface artefact, is of indurated mudstone (IMST). The underlying geology of the site is primarily Bringelly Shale. Shales are known to be brittle and not suitable for stone tool manufacture. As such, the assemblage can be considered to have been sourced from wider Cumberland Plain area. Silcrete outcrops are located at Luddenham, approximately 22 km to the west and Plumpton, Ridge approximately 22 km to the northwest as well as St Clair, approximately 20 km to the northwest (Comber 2023). Volcanic breccia, including basalt, can be found at Wetheral Park, about 9 km to the northwest of the site while pictite and dolorite are located at Prospect, about 12 km to the north. IMST artefact production and usage have been identified across the Cumberland Plain (May 2021).

Higher densities of artefacts were observed along the peripheries of the oval, with five artefacts retrieved from TP 8 and one in TP 2. An isolated surface artefact was recorded in the southern portion of the site, in an exposure around a tree. It was noted that there were no further discernible landforms of archaeological potential (PAD) within the site. Most artefacts identified within the site were observed in areas of very thin grassy top-dressing and shallow intact alluvial sediments.

The majority of artefacts occurred between depths of 0-200 mm which supports the predictive model that low density subsurface scatters of stone artefacts could be found within disturbed contexts, namely where the ground has been less modified i.e., the oval. Further, the results of the test excavation generally conform with the predictive model that stream order and proximity to water sources is the primary determinant of complexity of archaeological sites.

7.8. Research framework

Research questions provide a framework for undertaking test excavation and ensure that the information collected during the program contributes to the knowledge of sites locally and within the regional archaeological record. The following answers have been determined in response to research questions developed for the test excavations at the commencement of the project:

Do stratified in situ deposits exist within the site?

No stratified in situ deposits exist within the site. The subsurface deposits observed in all TPs apart from TP 8, have little integrity due to the effects of impacts from historical pastoral use of the site as well as the construction of the school and oval. The oval was likely levelled and smoothed with a thin layer of clayey fill to cover any surface irregularities. This clayey fill is likely locally derived red brown (Cumberland series) clay subsoil (Comber (2022). This is exemplified particularly by mottled, highly intermixed clays forming a broad A2 horizon seen across much of the site. These deposits contain a variable amount of stone and gravel.

In TP 8 what appeared to be an undisturbed layer of mottled yellow-grey silty clay was recorded at a depth of 400 mm. This clay layer is believed to be the original alluvial deposit of the Georges River terrace. However, all artefacts present in TP8, Liverpool BHS GHS AS01 (45-5-5789), were recorded above this depth. As such, given that the site has a history of consistent disturbance since European occupation, we can assume that artefacts, seemingly in situ above this depth, are, in fact, displaced.

What is the nature and extent of subsurface archaeological deposit within the site?

Subsurface components have been identified in association with Liverpool BHS GHS IA01 (45-5-5790), and an artefact scatter Liverpool BHS GHS AS01 (45-5-5789). The subsurface component comprises inferred dispersed background artefact scatter in generally low numbers of individual artefacts between depths of 50 – 200 mm.

Does the subsurface deposit (if present) relate to landscape features such as contour, soil landscape or proximity to watercourses?

The subsurface deposit observed across majority of the site is not directly related to the presence of the Georges River located approximately 300-500 m to the south. The presence of artefacts found between depths of 0 – 200 mm are likely related to the redeposition of transferral deposits during the construction of the school grounds.

It is considered that the single artefact observable between depths of 200 – 300 mm in TP8 is also related to a redeposition. The yellow-grey silty clay deposit present at 400 mm was determined to be an alluvial deposit. Therefore, all artefact in and above this would be a result of alluvial deposition or, more likely, were displaced from the construction of the oval and, therefore, have not been found in situ.

How does the nature of any archaeological deposit compare with other excavated archaeological sites in the region?

The stone artefact types are predominantly flakes and debitage suggesting permanent camps were unlikely for the area. As the underlying geology of the site is primary Bringelly Shale, material types common in the Cumberland Plain such as silcrete and IMST are likely to have been imported into the area. The results of the excavation on a landform on the opposite side of the Georges River from the current site at the Moorebank Intermodal Facility, are broadly consistent with broader archaeological assemblage (NOHC 2010). Highest density sites are located within 100 m or less of permanent water (the Georges River or its tributaries). The artefact assemblage dominated by silcrete is in keeping with the broader

How do the results compare with the results of test excavations conducted for the previous ACHAR (Comber Consultants 2021; 2022) adjacent to the site?

The results of the Everick Heritage excavations generally align with similar results provided by Comber (2021; 2022), in that artefact scatters or low-density scatters will generally occur adjacent to rivers and higher order creeks. The results also conform in reference to the prevalence of silcrete as the dominant material type for stone tool manufacture.

Previous archaeological assessments for the Cumberland Plain consistently note that, despite surface representation of occupation, subsurface deposits are infrequently associated with above ground finds (Comber 2021a; 2021b; 2022). This is consistent with land-use history of the region; however, past assessments also note that the complete destruction of subsurface deposits is not guaranteed. Nonetheless, results from test excavation this generally support the conclusion that subsurface activity does not align with surface finds in areas that have been heavily disturbed by historical activity.

Are stone artefacts present and if so, what is the nature of the stone assemblage? How does this compare to the previous archaeological assessment?

A small number of stone artefacts were retrieved. The majority of artefacts comprise silcrete, suggesting some level of local transportation. Silcrete quarries have been recorded further west of Liverpool in several locations including Luddenham, Plumpton, St Clair and Erskine Park (Comber 2022). The distribution of raw materials associated with the manufacture of stone tools in the Cumberland Plain suggests that silcrete were carried or traded with other neighbouring clans.

Is it possible to determine the age of the archaeological deposit?

No. The soil profile of the site has been highly disturbed from historic land use and no culturally derived charcoal in the form of a lens or a hearth feature that might provide a basis for absolute dating techniques to be employed were identified.

What is the scientific and cultural significance of the archaeological deposit?

The scientific significance of the archaeological deposits within the site is low (Table 8-1). One in situ artefact was identified within TP8 which confirms that the site is situated on the original Pleistocene alluvial sediments of the Georges River. However, the low-density nature of deposits generally does not indicate the presence of an open camp site within the site.

The archaeological deposits are of cultural significance to the Gandangara people as an indicator of past land use of the embankment suitable for occupation beside the Georges River. The presence of

artefacts in consideration of the surrounding landscape is likely indicative of the general presence of an open camp site in the vicinity of the site. At this stage no interim commentary about the assemblage was provided in consultation with RAPs for this project. Further information will be provided following the draft report review phase.

How do the results of test excavation fit the predictive model presented?

The previous registration of New Liverpool Public School (45-5-5507), an artefact and PAD site which includes the current school oval (PAD3), indicated that there was a moderate potential for further low density, subsurface scatters of artefacts in disturbed contexts within the terraces of the Georges River. New Liverpool Public School (45-5-5507) was subsequently marked destroyed, despite PAD 3 not being investigated or impacted. PAD 3 was subsequently registered as Liverpool BHS GHS PAD1 (45-5-5881). Test excavation demonstrated that while Aboriginal objects were present in isolated locations, the PAD as a whole had low potential for Aboriginal objects, while this is a lower level of potential than expected it is broadly consistent with the predictive model.

8. Significance assessment

8.1. Significance assessment criteria

An assessment of the cultural heritage significance of an item or place is required in order to form the basis of its management. The Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (the Guide) (OEH 2011: 10) provides guidelines, in accordance with the Burra Charter (Australia ICOMOS 2013) and the NSW Heritage Branch (Heritage Office 2001) for significance assessment with assessments being required to consider the following criteria:

- Social values – does the area have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons
- Historic values – is the area important to the cultural or natural history of the local area and/or region and/or state
- Scientific values - does the area have the potential to yield information that will contribute to an understanding of the cultural and natural history of the local area and/or region and/or state
- Aesthetic values – is the area important in demonstrating aesthetic characteristics in the local and/or region and/or state.

Scientific values should be considered in light of the following criteria:

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

It is important to note that cultural significance is a dynamic value and will be considered in the ACHAR. Ratings are low, moderate or high. Further analysis of culturally values is presented in section 9 of the ACHAR.

8.2. Scientific significance

Liverpool BHS GHS_AS01 (45-5-5789), Liverpool BHS GHS_IA01 (45-5-5791), Liverpool BHS GHS IA02 (45-5-5790) are assessed to have overall low scientific significance. None of the above artefact scatters or isolated artefact sites are likely to be in situ or form part of larger intact site complexes. The artefact classes and forms are generally basic with no exemplary diagnostic features or particular traits as an assemblage that would provide educational potential. While stone artefacts are generally the most common site type in the record, it is noted that as a class of site that stone artefact sites will continue to become increasingly rare in response to continuous and ongoing development in Liverpool.

In addition, there is evidence across all excavation units that the Liverpool BHS GHS_PAD1 (45-5-5883) comprises a highly disturbed context, based on the results of the test excavation Liverpool BHS GHS PAD1 (45-5-5883) has low potential to contain additional Aboriginal objects, therefore has been determined not to be a site. TP8 containing Liverpool BHS GHS_AS01 (45-5-5789) was the only test pit excavated where a potential natural soil surface was identified above the basal clay. Liverpool BHS GHS_IA01 (45-5-5791) was identified within the disturbed soil matrix, found with plastic. The surface artefact, discovered during the survey, Liverpool BHS GHS_IA02, (45-5-5790) was located adjacent to TP21, which contained topsoil directly over introduced road gravel, which likely occurred during the construction of the new Gulyangarri Public School which is located 5 m directly to the east. The location of TP21 was chosen due to its proximity to the surface artefact, to ascertain whether intact soil profiles were present in association with the stand of trees, as with TP8 and the surrounding area. Therefore, Liverpool BHS GHS_AS01 (45-5-5789), Liverpool BHS GHS_IA01 (45-5-5791) and Liverpool BHS GHS_IA02 (45-5-5790) are assessed as being of low scientific significance.

Table 8-1: Summary of scientific significance

Site name (AHIMS ID)	Research value	Education potential	Representative value	Rarity	Overall scientific significance
Liverpool BHS GHS_AS01 (45-5-5789)	Moderate	Low	Low	Low	Low
Liverpool BHS GHS_IA01 (45-5-5791)	Low	Low	Low	Low	Low
Liverpool BHS GHS_IA02 (45-5-5790)	Low	Low	Low	Low	Low

9. Impact assessment

Test excavations and survey of the site identified that three Aboriginal sites are present and comprise six subsurface artefacts and one surface artefact. Liverpool BHS GHS_AS01 (45-5-5789), Liverpool BHS GHS IA01 (45-5-5791) and Liverpool BHS GHS IA02 (45-5-5790) are low-density surface and subsurface artefact sites which have been heavily modified through disturbance related to the leveling and smoothing of the school oval. All of these sites have been assessed as being of low scientific significance. It is not considered likely that there would be any further archaeological material within the site. The proposed works will be undertaken over several phases divided into two approval pathways:

- Temporary school facilities
- Liverpool Boys and Girls School construction

9.1. Temporary school facilities

At this stage in the Project, a temporary school will be constructed on the existing oval and part of the Gulyangarri Public School to facilitate continued learning during the construction phase of the new school, this will include access for demountable (Figure 9-1 & Figure 9-2). This stage is also considered to include all testing required for the assessment. Services will be required to support the temporary school including trenching works, extent and pathways from Lachlan Street, between the current Boys and Girls High Schools, and down to the oval. Liverpool BHS GHS_AS01 and Liverpool BHS GHS_IA01 were removed from the ground during the test excavation, therefore have already been subject to direct impact, total harm and total loss of value. Formal management of the impacts to Liverpool BHS GHS_AS01 and Liverpool BHS GHS_IA01 will be managed by the AHIP. Liverpool BHS GHS_IA02 will be subject to direct total harm and total loss of value. The impacts of the construction for the temporary school facilities are summarised in Table 9-1.

Table 9-1: Impact assessment, temporary school facilities

Site name (AHIMS ID)	Type of Impact	Degree of harm	Consequence of harm
Liverpool BHS GHS_AS01 (45-5-5789)	Direct	Total	Total loss of value
Liverpool BHS GHS_IA01 (45-5-5791)	Direct	Total	Total loss of value
Liverpool BHS GHS_IA02 (45-5-5790)	Direct	Total	Total loss of value

9.2. Liverpool Boys and Girls High School construction

The Main works will require nine buildings across the Liverpool Boys High School to be demolished and the new Liverpool High School to be constructed (Figure 9-3). The existing Liverpool Girls' school buildings will not be demolished at this stage in the project.

Large scale bulk works will be required to facilitate any cut and fill required to landscape and contour the new school. As such, large machinery will be required to move topsoil which will increase the risk of breakage of intact artefacts, if present, and cause widespread dispersal of artefacts into secondary and tertiary contexts.

Further impacts will include excavation for roads, stormwater, and other services for the facilities within the school grounds. The earthworks will precede construction of school buildings, roads, carports and future subsurface amenities including sewerage, fibre optic cables and stormwater drains. However as it is anticipated that all three registered sites will be subject to total impact resulting from the temporary school facilities works prior to commencement of the main works no additional impacts are anticipated.

The impacts of the main works are summarised in Table 9-1.

Table 9-2: Impact assessment, Liverpool Boys and Girls High School construction

Site name (AHIMS ID)	Type of Impact	Degree of harm	Consequence of harm
Liverpool BHS GHS_AS01 (45-5-5789)	None	None	Total loss of value
Liverpool BHS GHS_IA01 (45-5-5791)	None	None	Total loss of value
Liverpool BHS GHS_IA02 (45-5-5790)	None	None	Total loss of value

9.3. Summary of impacts

Liverpool BHS GHS_AS01(45-5-5789), Liverpool BHS GHS_IA01 (45-5-5791) were removed from the ground during the test excavation process. Due to the significant bulk earthworks including cut and fill activities for levelling the land and creation of underground services across the site, Liverpool BHS GHS_AS01(45-5-5789), Liverpool BHS GHS_IA01 (45-5-5791) and Liverpool BHS GHS IA02 (45-5-5790) will suffer a total loss of value due to the project. These impacts are summarised in (Table 9-3).

Table 9-3: Summary of total impacts

Site name (AHIMS ID)	Type of Impact	Degree of harm	Consequence of harm
Liverpool BHS GHS_AS01 (45-5-5789)	Direct	Total	Total loss of value
Liverpool BHS GHS_IA01 (45-5-5791)	Direct	Total	Total loss of value
Liverpool BHS GHS_IA02 (45-5-5790)	Direct	Total	Total loss of value

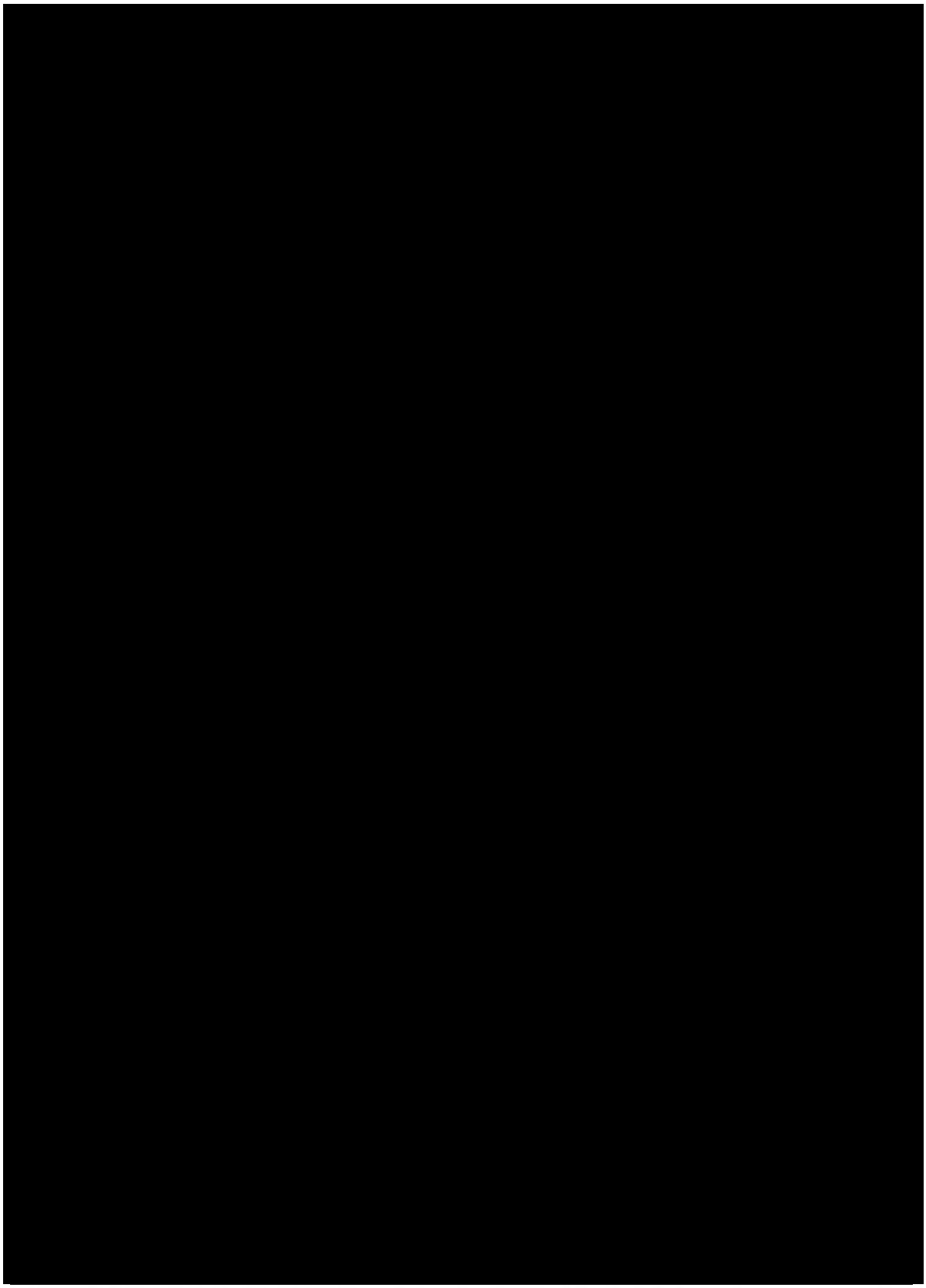


Figure 9-1: Impacts, temporary school facilities

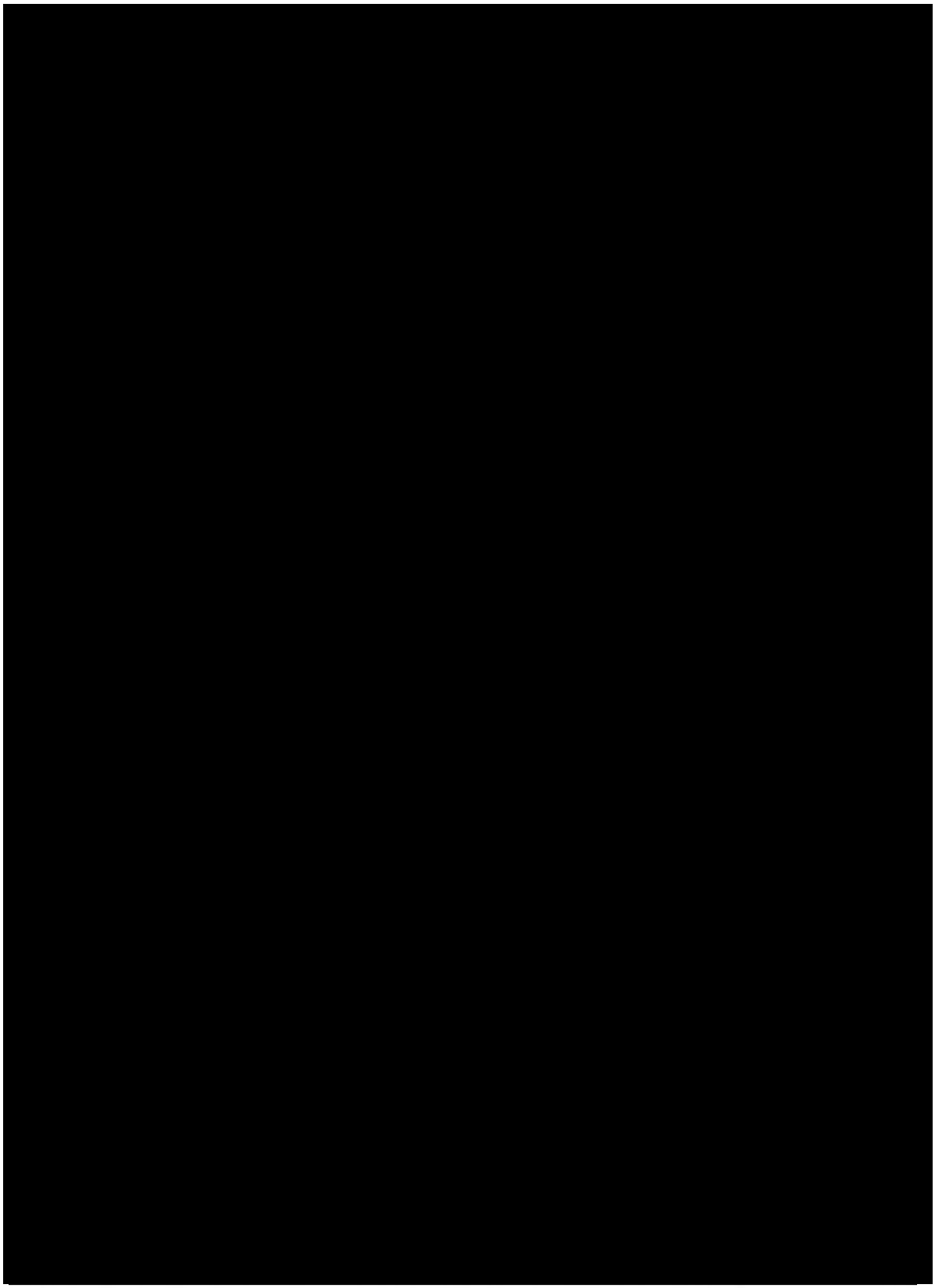


Figure 9-2: Impacts, demountable access plan

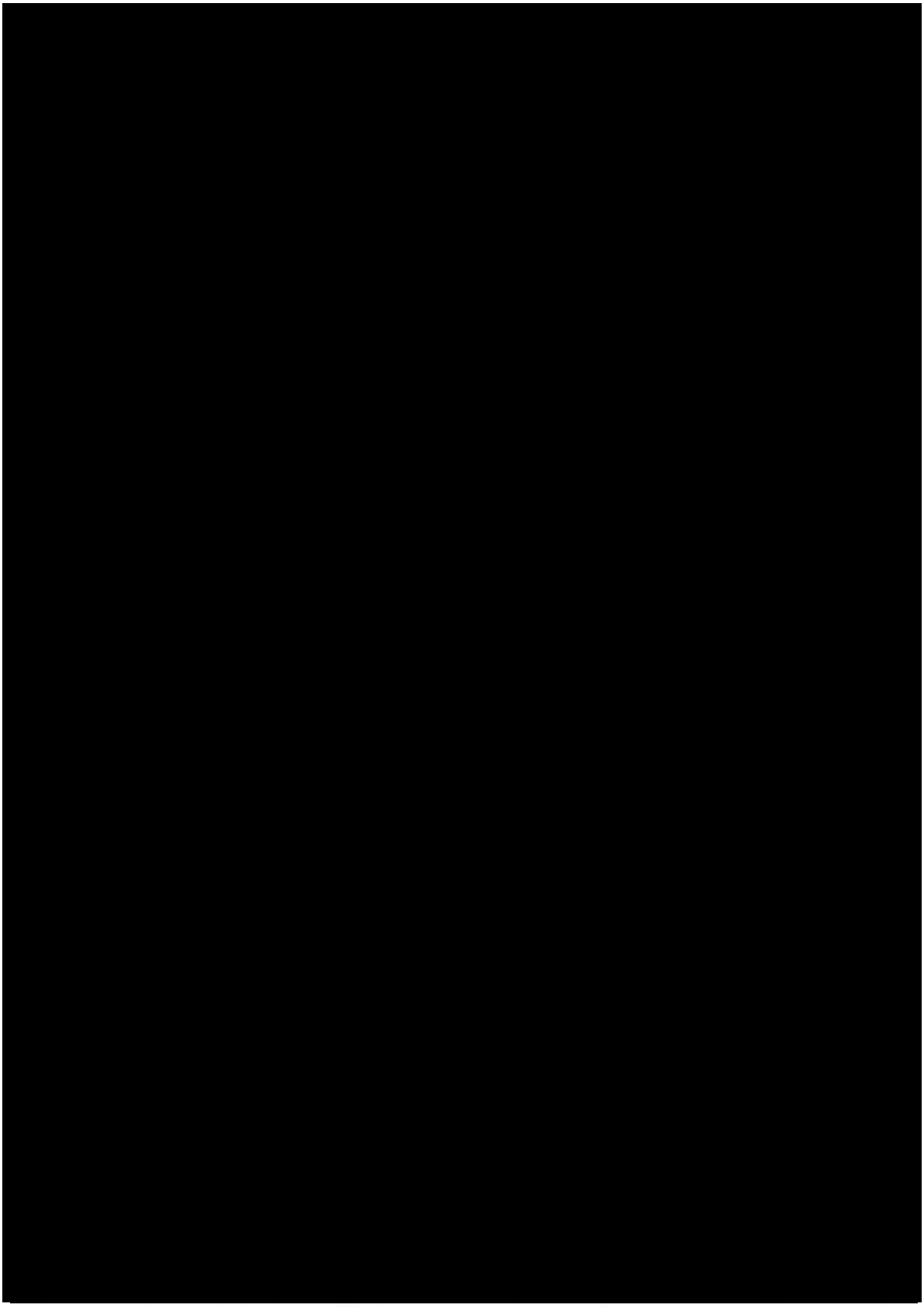


Figure 9-3: Impacts, construction of Liverpool Boys and Girls High School construction

10. Recommendations

10.1. Guiding principles

The overall guiding principle for cultural heritage management is that where possible, Aboriginal sites should be conserved. Conservation through avoidance of Aboriginal sites can be achieved through such measures as:

- Design change
- Buffering and exclusion zones
- Construction Environmental Management Plans which include Aboriginal heritage
- Cultural heritage awareness training.

If conservation is not practicable, measures should be taken to mitigate impacts to Aboriginal sites. Based on the current plans and strategy for the future works, the development will directly impact on Liverpool BHS GHS_AS01 (45-5-5789), Liverpool BHS GHS IA01 (45-5-5791) and Liverpool BHS GHS IA02 (45-5-5790).

The recommendations provided in Table 10-2 relate to the mitigation measures relating to the management of the artefactual material identified during this ATR. The nature of the recommendations provided is based on the assessed low scientific significance of all three Aboriginal archaeological sites and acknowledges the existing and potential impacts to these sites. The final recommendations would also be informed by the RAPs in their responses during the next stage of consultation. Further assessment of the potential recommendations and mitigation measures are included in the Liverpool Boys High School and Girls High School ACHAR (Section 11 in the ACHA).

10.2. Management and mitigation measures

Recommended mitigation measures and further actions required will differ depending on work applications and the stage of development, in accordance with the development approval required, a summary of initial recommendations is provided in Table 10-1. The ACHAR will provide detailed management and mitigation measures in consultation with RAPs.

The recommended mitigation measures and further action required will differ depending on work applications and the stage of development in accordance with the development approval required. The ACHAR will provide detailed management and mitigation measures in consultation with the RAPs.

Investigation of options for the production of interpretation and educational materials relating to the results of the Aboriginal investigation and cultural heritage assessment should be undertaken. This must include ongoing consultation and engagement with the Aboriginal community.

Liverpool BHS GHS_AS01 (45-5-5789), Liverpool BHS GHS_IA01 (45-5-5791) were uncovered as a result of test excavation, and therefore have been removed from the ground, their formal impact will be managed with an AHIP application. The long-term management of these artefacts will be determined in consultation with RAPs for this project.

Liverpool BHS GHS IA2 (45-5-5790) is located in the approximate location of a new driveway and parking area at the southern end of the Girls High School. In order to facilitate the works, an AHIP for harm with community collection is recommended.

It is recommended that an AHIP is granted prior to the construction of the temporary school on the oval to mitigate against harm to further unknown low density artefact deposits.

Table 10-1: Recommended management measures

Site name (AHIMS ID)	Recovered During Testing (Y/N)	Proposed Management
Liverpool BHS GHS_AS01 (45-5-5789)	Y	• Formal management through AHIP • Recovered during test excavation
Liverpool BHS GHS_IA01 (45-5-5791)	Y	• Formal management through AHIP • Recovered during test excavation
Liverpool BHS GHS_IA02 (45-5-5790)	N	• AHIP to harm • Surface artefact recovery through community collection
All other areas	N/A	• AHIP to harm

A summary of the proposed management and mitigation measures for the recorded AHIMS sites proposed at Liverpool Boys and Girls High School is summarised in Table 10-2.

Table 10-2: Summary of mitigation measures

Project Stage *Design (D)* *Construction (C)* *Operation (O)*	Mitigation Measures	Relevant Section of Report
D	*Apply for an AHIP for harm to* Liverpool BHS GHS_AS01 (45-5-5789), Liverpool BHS GHS IA01 (45-5-5791) and Liverpool BHS GHS_IA02 (45-5-5790) and all other areas of low archaeological potential	*Section 10.2.1*
D	*Finalise ACHAR with comment from RAPs*	*Section 10.2.1*
C	*In accordance with granted AHIP, conduct community collection for* BHS GHS_IA02 (45-5-5790)	*Section 10.2.3*
O	*Enact approved Care and Control agreement or reburial following the completion of site works following the construction of the Liverpool Boys and Girls High School Upgrade Project*	*Section 10.2.4*

10.2.1. Aboriginal Heritage Impact Permit

The Liverpool Boys High School and Girls High School redevelopment works are being undertaken by the Department of Education in a staged approach as outlined in Section 1.1. Works may harm impact on Liverpool BHS GHS_AS01 (45-5-5789), Liverpool BHS GHS IA01 (45-5-5791) and Liverpool BHS GHS IA02 (45-5-5790). Prior to the commencement of works, application for AHIP will be required. Consent under Part 4 or Part 5 of the EP&A must be obtained prior to lodgement for an AHIP.

Other than the three identified sites, the site has been assessed to have low potential and unlikely to contain Aboriginal objects, therefore, it is recommended an area AHIP is applied for to cover the entire site footprint. (Figure 10-1) including all sites identified as a part of this ACHAR. An ACHAR should accompany any AHIP application. It is recommended the term of the AHIP be for five years. Should the development exceed the five-year time period, an extension may be sought from Heritage NSW. If required, an application for an extension should be requested at least six months prior to the end of the five-year mark.

10.2.2. Aboriginal Cultural Heritage Assessment Report

An ACHAR, in accordance with the Guide (OEH 2011) and the Consultation Requirements (DECCW 2010a), must be prepared for the Project Area to support the application to Heritage NSW for an AHIP for the works, and to consult with the registered Aboriginal parties regarding appropriate mitigation and management measures. The AHIP application must be supported by an ACHAR which will provide details of the desktop research, survey and results and include consultation with the registered Aboriginal parties for the Project Area. The ACHAR report and the exempt development application would accompany the AHIP application. This ATR has formed an appendix within the final ACHAR.

10.2.3. Community collection

Prior to commencement of ground disturbing works the recorded location of Liverpool BHS GHS IA02 (45-5-5790) should be inspected and all surface artefacts should be recorded and collected.

A brief description and location of each artefact must be recorded, and the artefact placed in a marked bag in accordance with the Code of Practice. Recovered artefacts must be subject to scientific analysis.

10.2.4. Long term management of stone artefacts

The long-term management arrangements for the Aboriginal objects (stone artefacts) recovered during test excavation of the site would include the following options in accordance with Requirement 26 of the Code of Practice (DECCW 2010b):

- Aboriginal objects to be provided to the Australian Museum
- Aboriginal objects to be curated by an Aboriginal community in conjunction with a Care and Control permit for an on site keeping place or interpretive display within the school. An interpretation management plan and direct input from community members would be required
- Aboriginal objects to be reburied in within the site at a location safe from future disturbance and with that reburial location recorded and submitted to AHIMS.

The ACHAR consultation and report will determine the outcome of the long-term management of the Aboriginal objects recovered though test excavation and from unexpected finds during construction.

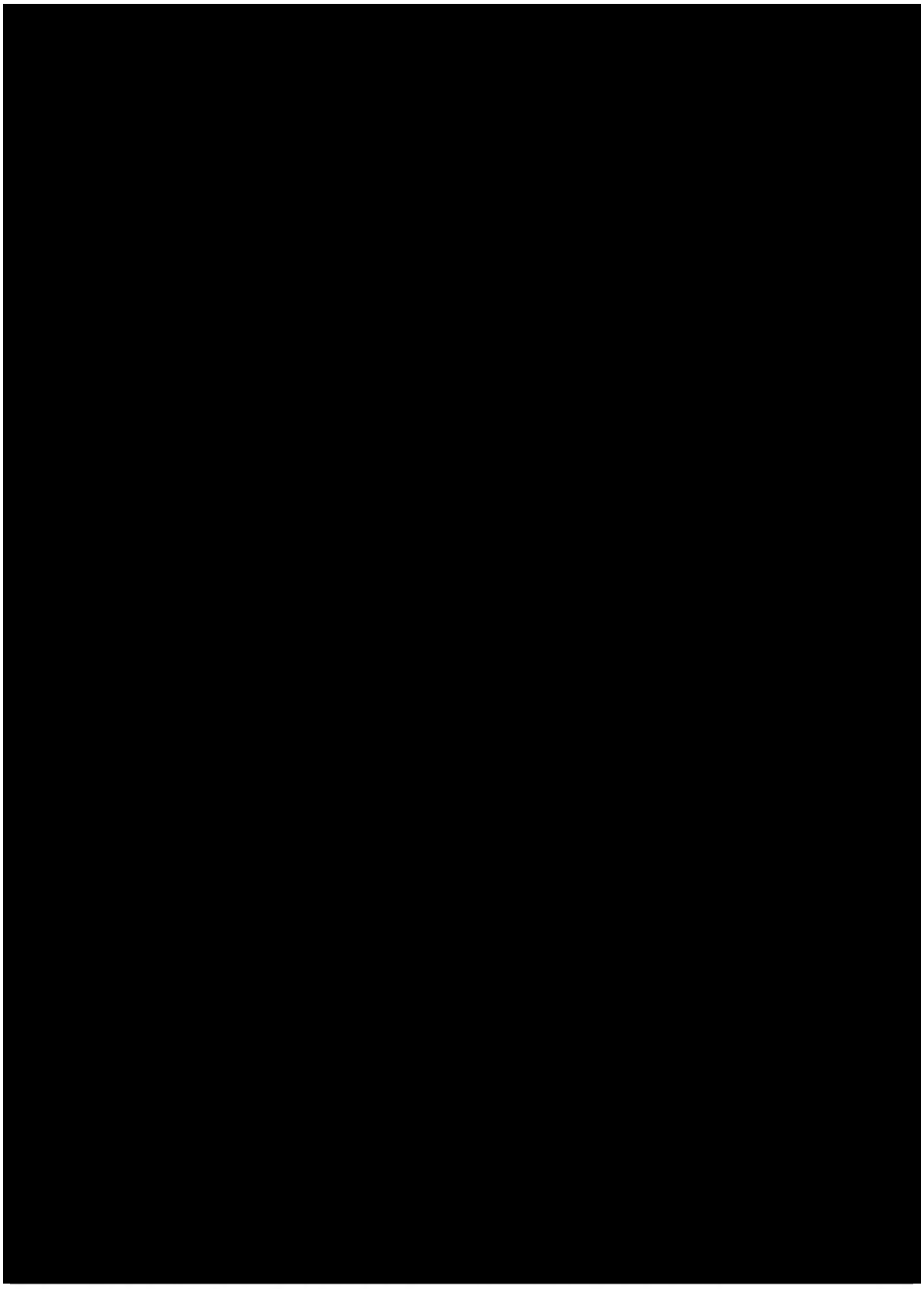


Figure 10-1: Proposed AHIP area

11. References

AHMS 2012. Aboriginal Cultural Heritage Assessment, SIMTA, Sydney Intermodal Terminal Alliance. Part 3A Concept Application.

Artefact 2017. 30 Skipton Lane, Prestons. Aboriginal Heritage Due Diligence Assessment. Report to Firstyle Homes

Australia ICOMOS. 2013. Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013.

Bannerman S.M. and Hazelton P.A., 2011, Soil Landscapes of the Penrith 1:100,000 Sheet report, digital reprint, Office of Environment and Heritage, Sydney.

Comber Consultants 2019. Liverpool Boys and Girls High Schools Aboriginal Archaeological Assessment. Report to Department of Education, School Infrastructure NSW.

Comber Consultants 2021a. New Liverpool Primary School Aboriginal Archaeological Assessment Report to Department of Education, School Infrastructure NSW

Comber Consultants 2021b. Liverpool New Primary School Aboriginal Cultural Heritage Assessment Report. Report to Department of Education.

Comber Consultants 2022. New Liverpool Primary School Aboriginal Archaeological Salvage Report. Report to Adco Constructions on behalf of School Infrastructure NSW

Comber Consultants 2023. Liverpool New Primary School Aboriginal Cultural Heritage Assessment Report. Report to Department of Education.

Department of Environment Climate Change & Water. 2010a. Aboriginal cultural heritage consultation requirements for proponents 2010. Department of Environment Climate Change & Water NSW.

Department of Environment Climate Change & Water. 2010b. Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales 2010. Department of Environment Climate Change & Water NSW.

Douglas Partners 2019. Report on Geotechnical Investigation Proposed New Liverpool Primary School. Report prepared for School Infrastructure NSW.

EMM 2021. Moorebank Avenue Realignment Environmental Impact Statement Volume 1. Prepared for Sydney Intermodal Terminal Alliance.

GHD 2015. Department of Defence, 'Boot Land', Moorebank, NSW. Ecological Impact Assessment of Remediation

Heritage Office. 2001. Assessing heritage significance. NSW Heritage Office.

Liverpool City Council n.d. The Founding of Liverpool https://www.liverpool.nsw.gov.au/council/The-Liverpool-Area/the-founding-of-liverpool#:~:text=The%20Holsworthy%2DMoorebank%20area%20was,barracks%20and%20field%20training%20establishment.

Office of Environment and Heritage. 2011. Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW. Office of Environment and Heritage, Department of Premier and Cabinet, Sydney.

Parker, C. 1983. Swelling Soil Survey, Profile 30, Collected from an Auger.

RPS 2020. Liverpool Health and Academic Precinct – Multi-Storey Carpark, Aboriginal Cultural Heritage Assessment Report 2.0.

White, Beth. (2021). The survival of artefacts from different historical phases in shallow open sites and the need for spit excavations: An overview from the Cumberland Plain, Western Sydney, Australia. Australian Archaeology. 87. 1-11. 10.1080/03122417.2021.1925415.

Appendix A – Glossary

Aboriginal cultural heritage: The material (objects) and intangible (mythological places, dreaming stories etc.) traditions and practices associated with past and present day Aboriginal communities.

Aboriginal object: Any deposit, object or material evidence (not being a handicraft made for sale), including Aboriginal remains, relating to the Aboriginal habitation of NSW.

Archaeological site: A location that has evidence of past Aboriginal activity (both material and mythological/ritual).

Artefact: An item of cultural material created by humans.

Artefact scatter: Where two or more stone artefacts are found within an area of potential archaeological deposit or a site.

Clay: A type of sediment with particles less than 4 microns in size and that is composed of clay minerals (Keary 2001: 49).

Flake: A stone piece removed from a core by percussion (striking it) or by pressure. It is identified by the presence of a striking platform and bulb of percussion, not usually found on a naturally shattered stone.

Floodplain: The area covered by water during a major flood and/or the area of alluvium deposits laid down during past floods.

In situ: A description of any cultural material that lies undisturbed in its original point of deposition.

Land system: Description for an area of land based on an assessment of a series of environmental characteristics including geology, geomorphology, climate, soils and vegetation.

Midden: The term midden is a Danish word meaning a mound of kitchen refuse. In archaeological terms, a midden refers to an accumulation of shell deposited after people had collected and eaten shellfish. These could contain estuarine and freshwater shellfish species in addition to faunal remains, stone artefacts and charcoal from cooking fires. In northern NSW in many areas, burials have been recorded in direct association with midden deposits.

Potential Archaeological Deposit (PAD): A PAD is a location that is considered to have a potential for subsurface cultural material. This is determined from a visual inspection of the site, background research of the area and the landform's cultural importance.

Pleistocene: The Pleistocene is an epoch within the early Quaternary period, extending from about 1.6 million years ago to about 11,700 years ago. The end of the Pleistocene is marked by the last of the great ice ages.

Quarry: In this report, 'quarry' can refer to a source of stone that was mined by Aboriginal people in the past. Rock from these sites could be used to make artefacts.

Sand: A material composed of small grains (0.625-2.0 mm) (Keary 2001: 233). Sand is formed from a variety of minerals and rocks, but commonly contains silica, such as quartz.

Sediment: Is a mineral that has undergone erosion or weathering and that is then deposited via aeolian, glacial or fluvial means.

Silcrete: Soil, clay or sand sediments that have silicified under basalt through groundwater percolation. It ranges in texture from very fine grained to coarse grained. At one extreme it is cryptocrystalline with very few clasts. It generally has characteristic yellow streaks of titanium oxide that occur within a grey and less commonly reddish background. Used for flaked stone artefacts.

Silt: A sediment with grains ranging from 4.0-62.5 microns in size (Keary 2001: 245). It can be found as a soil or in water.

Spit: Refers to an arbitrarily defined strata of soil removed during excavation (often 50 to 100 mm in depth).

Stone artefact: a piece or fragment of stone showing evidence of intentional human creation or modification

Stratification: The way in which soil forms in layers.

Stratigraphy: The study of soil stratification (layers) and deposition.

Test excavation: An archaeological method used to determine the cultural sensitivity of an area by excavating small (eg 1 m x 1 m) pits and recording the stratigraphy, material remains (such as stone tools) and disturbance.

Survey: In archaeological terms, this refers to walking over a surface while studying the location of artefacts and landmarks. These are then recorded and photographed.

TP: Acronym for 'test pit'. Generally, this refers to a 1 m x 1 m or 2 m x 1 m pit dug by shovel, trowel or mattock. Test pits were used to determine the extent of possible features (such as shell middens) in a controlled excavation of 50 mm spits

Appendix B – AHIMS search results

Appendix C – Site Cards

Appendix D – Stone artefact recording

Test pit	Spit	Raw material	Artefact type	Artefact description	Flake termination	Flake platform type	Length (mm)	Width (mm)	Thickness (mm)
2	2	Silcrete	Flake	-	Feather	Focal	23.9	12.2	6.5
8	2	Silcrete	Debitage	Flat debris of possible flake. Too worn to determine termination.	-	-	16.6	13.8	2.5
8	3	Silcrete	Debitage	Possible core fragment given scarring on ventral face been bi-directional along spine (both positive and negative side).	-	-	19.2	7.0	6.8
8	3	Chert	Flake	-	Feather	Broad	14.1	10.5	4.2
8	3	Chert	Flake	Flake with presumed prior scars (negative) along edges of dorsal side.	Feather	Dihedral	14.3	12.1	6.9
8	4	Silcrete	Flake	-	Feather	Broad	12.1	6.2	9.1

Appendix E – ACHAR methodology

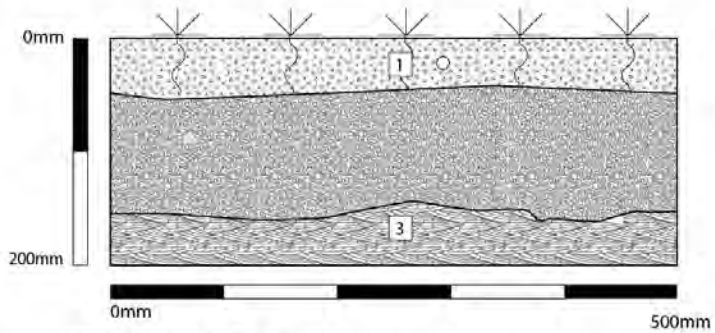
Appendix F – Test Pit recording

Table 11-1: Stratigraphy Test Pit One

Test Pit 1	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	Munsell: - 10 YR 3/2 Very Dark Greyish Brown
	Description: Humic (grass) dry friable dark brown sandy silt rootlets and bioturbations present. One 5c Coin found
Spit 2	Depth: 50 – 150 mm
	Munsell: 10 YR 3/3 Dark Brown
	Description:

Test Pit 1	
	More compacted sandy silt with slight increase in clay content. Glass, blue metal, and other debris inclusions present.
Layer 2	
Spit 3	Depth: 150 mm -
	Munsell: 10 YR 5/6 Yellowish Brown
	Description: Excavation ceased upon reaching compacted mottled reddish-grey clay at 150 mm
End Excavation	

Test Pit 1



NSW10136 SINSW Liverpool Boys & Girls High School

Stratigraphic Profile:
TP1 North Wall

Excavation Date:
22/01/2024

Excavated by:
C Cole
G Eldon

Stratigraphic Compontents:

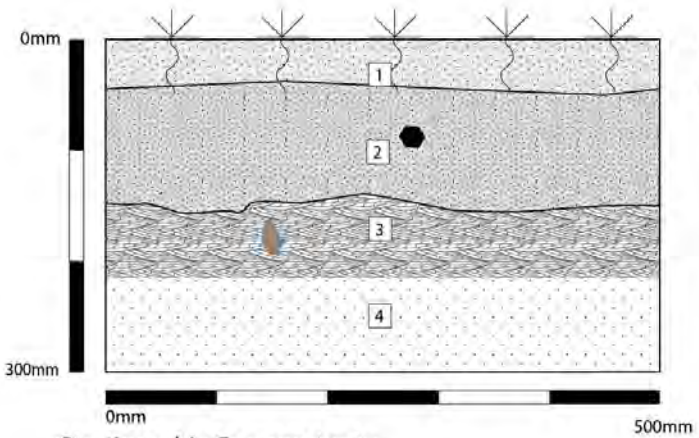
1	Humic (grass) dry friable dark brown sandy silt. Rootlets and bioturbations present. One 5c coin found.	3	Excavation ceased upon reaching compacted mottled reddish-grey clay at 150mm
2	More compacted sandy silt with slight increase in clay content. Glass, blue metal and other debris inclusions present.		

Table 11-2: Stratigraphy TP 2

Test Pit 2	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	Munsell: -10 YR 3/2 Very Dark Greyish Brown
	Description: Humic (grass) covered layer consisting of dry compacted sandy brown loam. Rootlets and bioturbations across entire layer.
Spit 2	Depth: 50 – 150 mm
	Munsell: - 10 YR 3/3 Dark Brown
	Description:

Test Pit 2	
	Dark brown sandy loam continues with some rootlets present. Dark brown clay modules present. Broken short piece of wire cable found compacted in situ at 80 mm
Layer 2	
Spit 3	Depth: 150 – 220 mm
	Munsell: -10 YR 5/6 Yellowish Brown
	Description: Mottled dark red-brown clay heavily compacted. 30 mm yellow silcrete artefact found at 180 mm. Excavation ceased at 220 mm.
End Excavation	

Test Pit 2



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NSW10136 SINSW Liverpool Boys & Girls High School

Stratigraphic Profile:
TP2 North Wall

Excavation Date:
22/01/2024

Excavated by:
C.Cole
G.Eldon

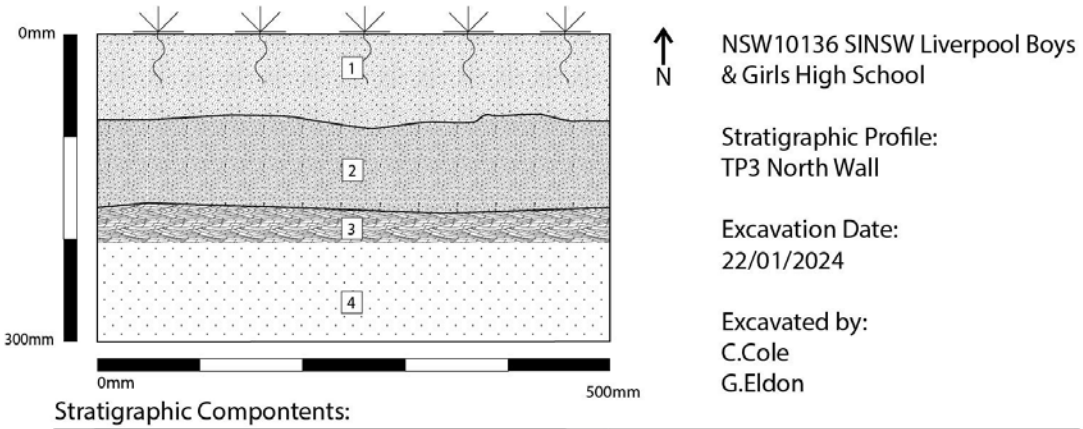
Stratigraphic Compontents:

1	Humic (grass) covered layer consisting of dry compacted sandy brown loam. Rootlets and bioturbations across entire layer.	3	Motted dark red-brown clay heavily compacted. 30mm yellow silcrete aretfact found at 180mm.
2	Dark brown sandy loam continues with some rootlets present. Dark brown clay nodules present. Broken short piece of wire cable found compacted in situ at 80mm.	4	Unexcavated layer. Excavtation stopped as clay compaction increased.

Table 11-3: Stratigraphy TP 3

Test Pit 3	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	Munsell: -10 YR 3/2 Very Dark Greyish Brown
	Description: Humic (grass) covered layer consisting of friable-loose sandy brown loam. Rootlets and bioturbations across entire layer.
Spit 2	Depth: 50 -150 mm
	Munsell: -10 YR 3/3 Dark Brown
	Description:

Test Pit 3	
	Dark brown sandy loam continues with some rootlets present. Dark brown clay modules becoming more present as soil becomes more compacted. Some moisture.
Layer 2	
Spit 3	Depth: 150 – 200 mm
	Munsell: -
	Description: Mottled reddish-brown clay, heavily compacted. Excavation ceased at 200 mm
End Excavation	



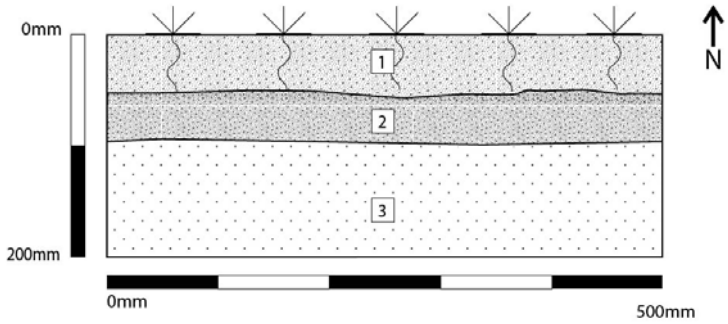
Stratigraphic Compontents:

1	Humic (grass) covered layer consisting of friable to loose sandy brown loam. Rootlets and bioturbations across entire layer.	3	Mottled reddish-brown clay, heavily compacted.
2	Dark brown sandy loam continues with some rootlets present. Dark brown clay nodules becoming more present as soil becomes more compacted.	4	Unexcavated layer.

Table 11-4: Stratigraphy TP 4

Test Pit 4	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	Munsell: -10 YR 3/2 Very Dark Greyish Brown
	Description: Humic layer comprising of very dry silty sand, loose massive structure. Light grey-brown colour with some inclusions of rootlets, litter, and ironstone.
Spit 2	Depth: 50 -100 mm
	Munsell: -10 YR 5/6 Yellowish Brown
	Description:

Test Pit 4	
	Friable dry silty sand with increasing clay content. Clay nodules present and soil colour becoming darker with increased moisture and clay.
End Excavation	



NSW10136 SINSW Liverpool Boys & Girls High School

Stratigraphic Profile:
TP4 North Wall

Excavation Date:
23/01/2024

Excavated by:
C Cole
G Eldon

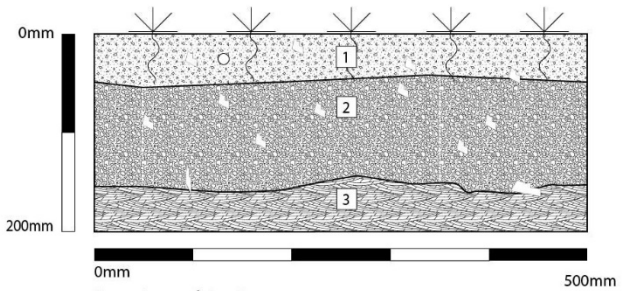
Stratigraphic Compontents:

1	Humic layer comprising of very dry silty sand, loose massive structure. Light grey-brown colour with some inclusions of rootlets, litter and ironstone.
2	Friable dry silty sand with increasing clay content. Clay nodules present and soil colour becoming darker with increased moisture and clay.
3	Unexcavated layer.

Table 11-5: Stratigraphy TP 5

Test Pit 5	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	Munsell: -
	Description: Humic loose, moist sandy silt. Rootlets and bioturbations present. 5 cent coin found in layer.
Spit 2	Depth: 50 – 150 mm
	Munsell: -
	Description:

Test Pit 5	
	More compacted sandy silt present, mix of general waste and debris from heavy disturbance. Small flecks of charcoal.
Layer 2	
Spit 3	Depth: 150 mm
	Munsell:
	Description: Compacted mottled reddish-grey clay, excavation stopped.
End Excavation	



Stratigraphic Compontents:

1	Humic loose, moist sandy silt. Rootlets and bioturbations present. 5 cent coin found in layer.
2	More compacted sandy silt present, mix of general waste and debris from heavy disturbance. Small flecks of charcoal.
3	Compacted mottled reddish-grey clay, excavation stopped.

N

NSW10136 SINSW Liverpool Boys & Girls High School

Stratigraphic Profile:
TP5 North Wall

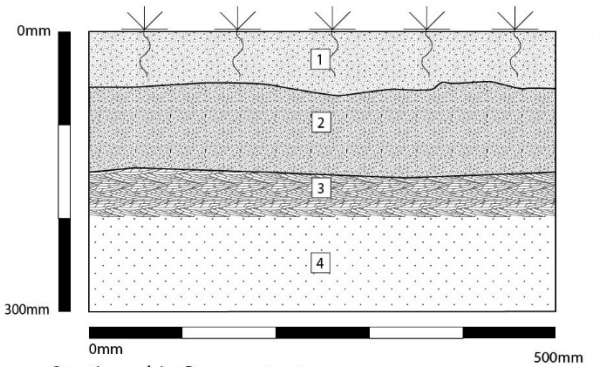
Excavation Date:
23/01/2024

Excavated by:
C Cole
G Eldon

Table 11-6: Stratigraphy TP 6

Test Pit 6	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	Munsell: -
	Description: Humic (grass) covered, layer consisting of friable-loose brown sandy loam Rootlets and bioturbations present across entire layer.
Spit 2	Depth: 50 – 150 mm

	pH: -
	Munsell: -
	Description: Dark brown sandy loam with some rootlets present. Dark brown clay modules becoming more present as soil becomes more compacted.
Layer 2	
Spit 3	Depth: 150 – 200 mm
	Munsell: -
	Description: Mottled reddish-brown clay, heavily compacted ending excavation.
End Excavation	



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NSW10136 SINSW Liverpool Boys & Girls High School

Stratigraphic Profile:
TP6 North Wall

Excavation Date:
22/01/2024

Excavated by:
C.Cole
G.Eldon

Stratigraphic Compontents:

1	Humic (grass) covered layer consisting of friable to loose sandy brown loam. Rootlets and bioturbations across entire layer.	3	Motted reddish-brown clay, heavily compacted preventing further excavation.
2	Dark brown sandy loam continues with some rootlets present. Dark brown clay nodules becoming more present as soil becomes more compacted.	4	Unexcavated layer.

Table 11-7: Stratigraphy TP 7

Test Pit 7	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	Munsell: -7.5 YR 3/3 Dark Brown
	Description: Humic (grass) covered layer consisting of dry loose brown sandy loam. Rootlets and bioturbations found across entire layer.
Spit 2	Depth: 50 – 150 mm
	Munsell: -10 YR 4/4 Dark Yellowish Brown
	Description:

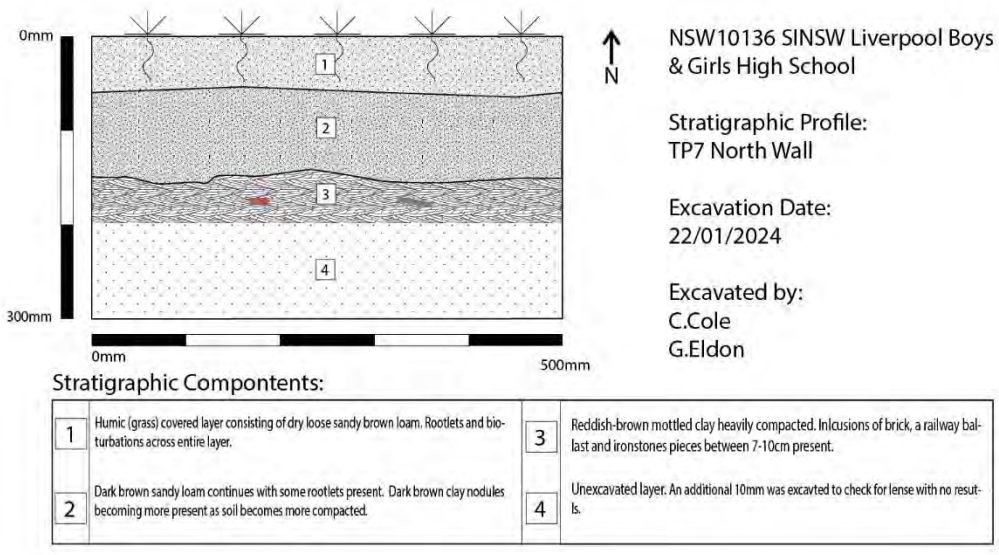
Test Pit 7	
	Dark brown sandy loam continues with rootlets present. Dark brown clay nodules becoming more present as soil becomes more compacted.
Layer 2	
Spit 3	Depth: 150 – 200 mm
	Munsell: -2.5 YR 4/4 Reddish Brown
	Description: Reddish-brown mottled clay heavily compacted. Inclusions of brick, a railway ballast and ironstones pieces between 70-100 mm present.
End Excavation	
	

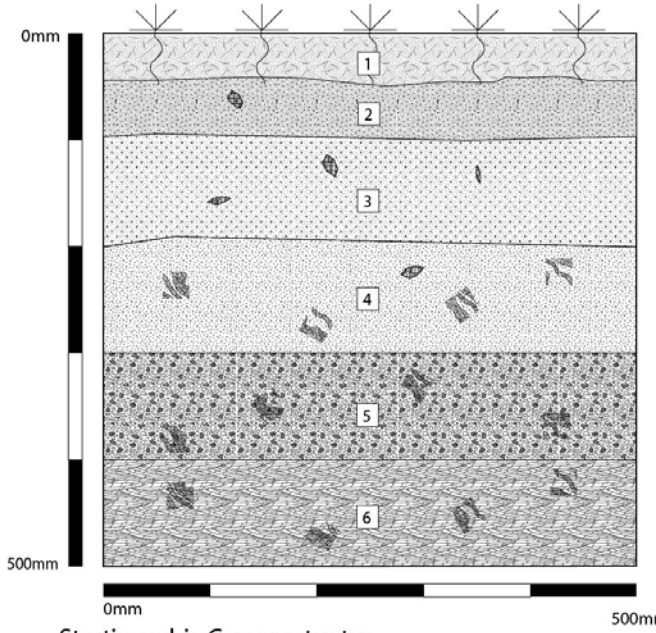
Table 11-8: Stratigraphy TP 8

Test Pit 8	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	Munsell: 10YR 3/2 Very Dark Greyish Brown
	Description: Humic loose and dry grey silty sand with iron stone inclusions. Rootlets, bioturbation, and general debris also present.
Spit 2	Depth: 50 – 100 mm

Test Pit 8	
	Munsell: 10YR 4/2 Dark Greyish Brown
	Description: Friable yellow-grey silty sand. Very dry, with inclusions of ironstone, glass, and ceramic. Increasing reddish orange mottled clay content. One silcrete debitage found. Orange colour, distinct flake characteristics.
Spit 3	Depth: 100 – 200 mm
	Munsell: 10 YR 4/2 Dark Greyish Brown
	Description: Highly friable silty clay becoming more compacted with depth. Transition spit between layers one and two. Three artefacts identified, one chert flake and two silcrete flakes. Ironstone and clay nodule inclusions present in this spit.
Layer 2	
Spit 4	Depth: 200 – 300 mm
	Munsell: 2.5YR 5/3 Light Yellowish Brown
	Description: Very dry light yellow-grey mottled silty clay. Flecks of clay and charcoal present. One silcrete flake identified not characterised as an artefact. At 200mm soil transitions from silty sand into clayey silt. Compaction increases with clay content.
Spit 5	Depth: 300 – 400 mm
	Munsell: 7.5YR 4/3 Olive Brown

Test Pit 8	
	Description: Mottled orange and grey silty clay with charcoal flecks and clay modules. Nodules are larger in size and ironstone present is corroded. Small rootlets also present. Transition spit between second and third layers.
Layer 3	
Spit 6	Depth: 400 – 500 mm
	Munsell: 7.5YR 4/3 Olive Brown
	Description: Heavily compacted to cemented grey clay base with charcoal flecks. Change at 400mm from mottled clay to cemented clay at 500 mm.
End Excavation	

Test Pit 8



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NSW10136 SINSW Liverpool Boys & Girls High School

Stratigraphic Profile:
TP8 North Wall

Excavation Date:
23/01/2024

Excavated by:
C.Cole
G.Eldon

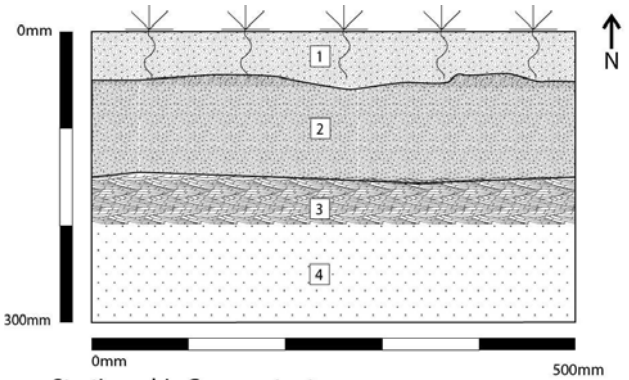
Stratigraphic Compontents:

1	Humic loose and dry grey silty sand with iron stone inclusions. Rootlets, bioturbation and general debris also present.	4	Very dry light yellow-grey mottled silty clay. Flecks of clay and charcoal present. One silcrete flake identified not characterised as an artefact. At 200mm soil transitions from silty sand into clayey silt. Compaction increases with clay content.
2	Friable yellow-grey silty sand. Very dry, with inclusions of ironstone, glass, and ceramic. Increasing reddish orange mottled clay content. One silcrete debitage found. Orange colour, distinct flake characteristics.	5	Mottled orange and grey silty clay with charcoal flecks and clay modules. Nodules are larger in size and ironstone present is corroded. Small rootlets also present. Transition spit between second and third layers.
3	Highly friable silty clay becoming more compacted with depth. Transition spit between layers one and two. Three artefacts identified, one chert flake and two silcrete flakes. Ironstone and clay nodule inclusions present in this spit.	6	Heavily compacted to cemented grey clay base with charcoal flecks. Change at 400mm from mottled clay to cemented clay at 500mm.

Table 11-9: Stratigraphy TP 9

Test Pit 9	
	
Layer 1	
	Munsell: - 10 YR 3/2 Very Dark Greyish Brown
	Description: Humic topsoil, comprising of loose and dry grey silty sand. Rootlets and general debris present.
Spit 2	Depth: 50 – 150 mm
	Munsell: -10 YR 3/3 Dark Brown
	Description: Friable brown-grey silty sand. Moisture present in layer with clay nodules becoming more common.

Test Pit 9	
Layer 2	
Spit 3	Depth: 150- 200 mm
	Munsell: -10 YR 5/6 Yellowish Brown
	Description: Mottled yellow-brown clay. Heavy compaction, excavation stopped.
End Excavation	



NSW10136 SINSW Liverpool Boys & Girls High School

Stratigraphic Profile:
TP8 North Wall

Excavation Date:
22/01/2024

Excavated by:
C.Cole
G.Eldon

Stratigraphic Compontents:

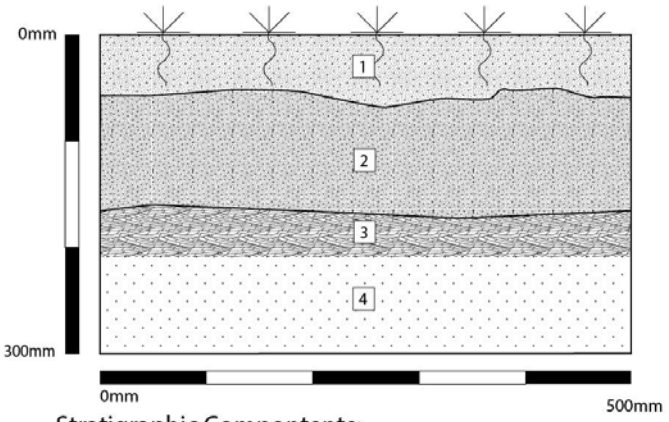
1	Humic topsoil, comprising of loose and dry grey silty sand. Rootlets and general debris present.	3	Mottled yellow-brown clay. Heavy compaction, excavation stopped.
2	Friable brown-grey silty sand. Moisture present in layer with clay nodules becoming more common.	4	Unexcavated layer as clay continued.

Table 11-10: Stratigraphy TP 10

Test Pit 10	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	pH: -
	Munsell: -10 YR 3/2 Very Dark Greyish Brown
	Description: Humic (grass covered layer consisting of friable-loose sandy loam. Rootlets and bioturbations present across entire layer.
Spit 2	Depth: 50 – 150 mm
	pH: -
	Munsell: -10 YR 3/3 Dark Brown

Test Pit 10	
	Description: Dark brown sand loam continues with some rootlets present. Clay nodules becoming more present with depth and compaction.
Layer 2	
Spit 3	Depth: 150 – 200 mm
	Munsell: -10 YR 5/6 Yellowish Brown
	Description: Mottled reddish-brown clay, heavily compacted preventing further excavation.
End Excavation	

Test Pit 10



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NSW10136 SINSW Liverpool Boys & Girls High School

Stratigraphic Profile:
TP10 North Wall

Excavation Date:
22/01/2024

Excavated by:
C.Cole
G.Eldon

Stratigraphic Compontents:

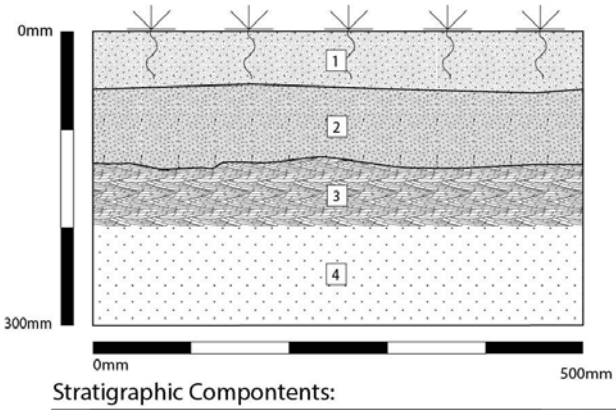
1	Humic (grass) covered layer consisting of friable to loose sandy brown loam. Rootlets and bioturbations across entire layer.	3	Mottled reddish-brown clay, heavily compacted preventing further excavation.
2	Dark brown sandy loam continues with some rootlets present. Dark brown clay nodules becoming more present as soil becomes more compacted.	4	Unexcavated layer.

Table 11-11: Stratigraphy TP 11

Test Pit 11	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	Munsell: 7.5YR 3/3 Dark Brown
	Description: Humic layer consisting of dry loose brown sandy loam. Rootlets and bioturbations across entire layer.
Spit 2	Depth: 50 – 150 mm
	Munsell: 7.5YR 3/3 Dark Brown
	Description:

Test Pit 11	
	Dark brown sandy loam continues with fewer rootlets present. Dark brown clay nodules becoming more present as soil become more compacted.
Layer 2	
Spit 3	Depth: 150 – 200 mm
	Munsell: 10YR 4/4 Yellowish Brown Clay 2.5YR 4/4 Reddish Brown Clay
	Description: Mottled dark reddish-brown clay, heavily disturbed with traces of yellowish-brown clay compacted in.
End Excavation	

Test Pit 11



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Stratigraphic Profile:
TP11 North Wall

Excavation Date:
22/01/2024

Excavated by:
C.Cole
G.Eldon

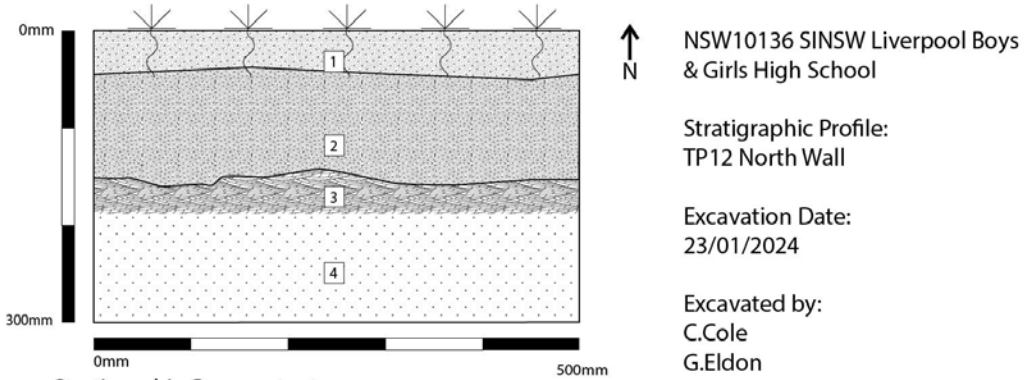
Stratigraphic Compontents:

1	Humic (grass) covered layer consisting of dry loose sandy brown loam. Rootlets and bio-turbations across entire layer.	3	Mottled dark reddish-brown clay, heavily disturbed with traces of yel-lowish-brown clay compacted in.
2	Dark brown sandy loam continues with some rootlets present. Dark brown clay nodules becoming more present as soil becomes more compacted.	4	Unexcavated layer. Excavtation stopped at 200mm due to clay compaction increasing.

Table 11-12: Stratigraphy TP 12

Test Pit 12	
	
Layer 1	
Spit 1	Depth: 0 – 50mm
	Munsell: -10 YR 3/2 Very Dark Greyish Brown
	Description: Humic cover layer consisting of compacted and very damp brown sandy loam. Rootlets continue throughout spit.
Spit 2	Depth: 50 – 150 mm
	Munsell: -10 YR 3/3 Dark Brown
	Description:

Test Pit 12	
	Dark brown sandy loam continues with some rootlets present. Dark brown clay nodules present.
Layer 2	
Spit 3	Depth: 150 – 180 mm
	Munsell: 10 YR 5/6 Yellowish Brown
	Description: Mottled dark red-brown clay heavily compacted. Excavation stopped as clay compaction increased.
End Excavation	



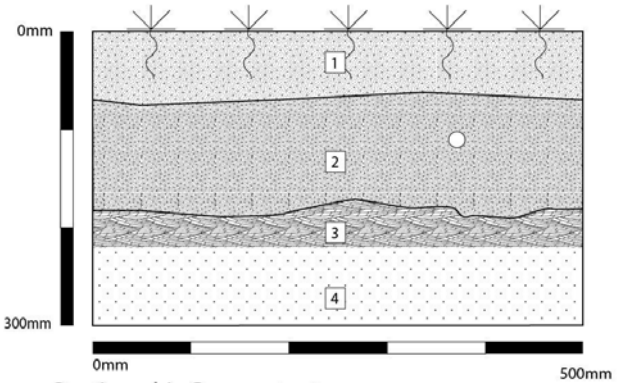
Stratigraphic Compontents:

1	Humic (grass) covered layer consisting of compacted and very damp sandy brown loam. Rootlets continue through entire spit.	3	Mottled dark red-brown clay heavily compacted. Excavation stopped as clay compaction increased.
2	Dark brown sandy loam continues with some rootlets present. Dark brown clay nodules present.	4	Unexcavated layer.

Table 11-13: Stratigraphy TP 13

Test Pit 13	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	Munsell: -10 YR 3/2 Very Dark Greyish Brown
	Description: Humic cover layer consisting of compacted and very damp brown sandy loam. Rootlets continue throughout spit.
Spit 2	Depth: 50 – 180 mm
	Munsell: -10 YR 3/3 Dark Brown
	Description:

Test Pit 13	
	Dark brown sandy loam continues with rootlets. Coin (2004) found in situ; layer heavily disturbed.
Layer 2	
Spit 3	Depth: 180 – 220 mm
	Munsell: -10 YR 5/6 Yellowish Brown
	Description: Mottled dark red-brown clay heavily compacted. Excavation stopped as clay compaction increased.
End Excavation	



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Stratigraphic Profile: TP13 North Wall

Excavation Date: 23/01/2024

Excavated by: C.Cole G.Eldon

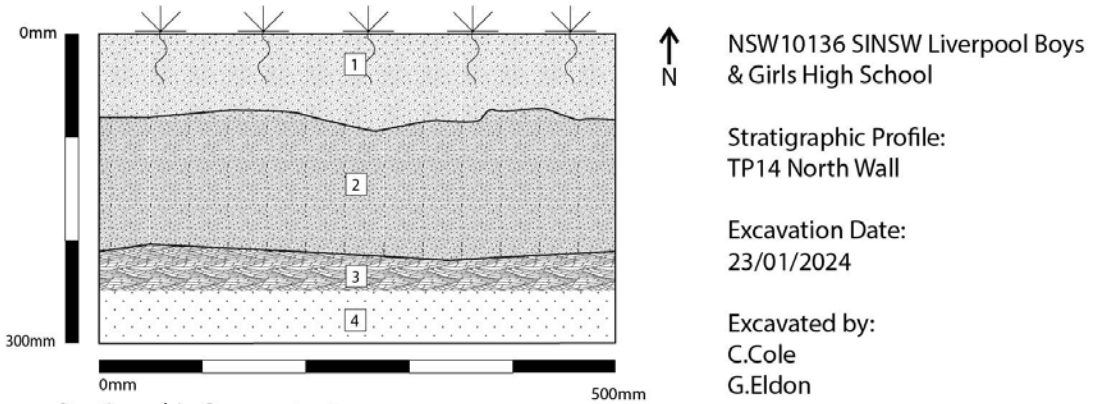
Stratigraphic Compontents:

1	Humic (grass) covered layer consisting of loose damp sandy brown loam. Rootlets continue through entire spit.	3	Mottled dark red-brown clay heavily compacted. Excavation stopped as clay compaction increased.
2	Dark Brown sandy loam continues with rootlets. Coin (2004) found in situ, layer heavily disturbed.	4	Unexcavated layer.

Table 11-14: Stratigraphy TP 14

Test Pit 14	
	
Layer 1	
Spit 1	Depth: 0 - 50 mm
	Munsell: -7.5 YR 3/3 Dark Brown
	Description: Humic layer consisting of friable-loose brown sandy loam. Thick rootlets and bioturbations across entire spit
Spit 2	Depth: 50 – 200 mm
	Munsell: -10 YR 4/4 Dark Yellowish
	Description:

Test Pit 14	
	Dark brown sandy loam continues with some rootlets present. Dark brown clay nodules becoming more present as soil becomes more compacted.
Layer 2	
Spit 3	Depth: 200 – 250 mm
	Munsell: -2.5 YR 4/4 Reddish Brown
	Description: Mottled reddish-brown clay, heavily compacted preventing further excavation.
End Excavation	



Stratigraphic Compontents:

1	Humic (grass) covered layer consisting of friable to loose sandy brown loam. Thick rootlets and bioturbations across entire layer.	3	Mottled reddish-brown clay, heavily compacted preventing further excavation.
2	Dark brown sandy loam continues with some rootlets present. Dark brown clay nodules becoming more present as soil becomes more compacted.	4	Unexcavated layer.

Table 11-15: Stratigraphy TP 15

Test Pit 15	
	
Layer 1	
Spit 1	Depth: 0 - 50 mm
	Munsell: -10 YR 3/2 Very Dark Greyish Brown
	Description: Humic (grass) covered topsoil, consisting of dark brown sandy loam. Rootlets and bioturbation present throughout layer.
Spit 2	Depth: 50- 150 mm
	Munsell: -10 YR 3/3 Dark Brown
	Description:

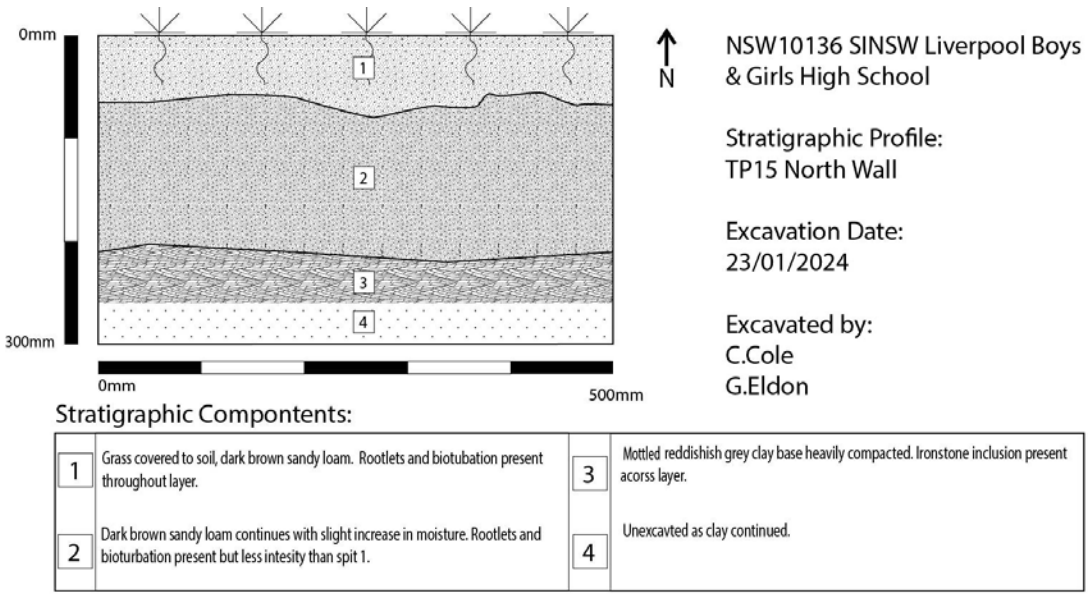
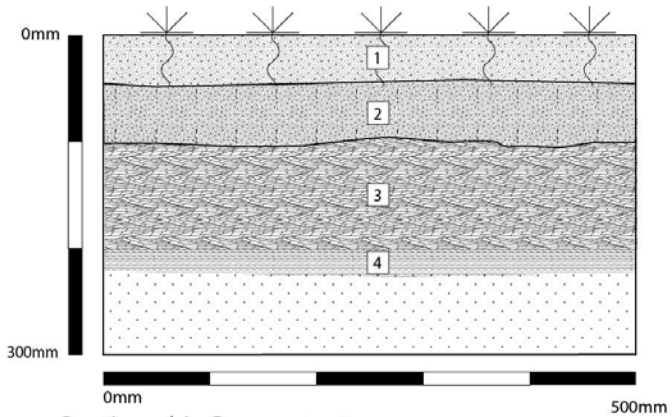
Test Pit 15	
	Dark brown sandy loam continues with slight increase in moistures and more friable. Rootlets and bioturbation present but with less intensity than spit 1.
Layer 2	
Spit 3	Depth: 150 – 200 mm
	Munsell: -10 YR 5/6 Yellowish Brown
	Description: Mottled reddish-grey clay base heavily compacted. Ironstone inclusion present across layer.
End Excavation	
	

Table 11-16: Stratigraphy TP 16

Test Pit 16	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	Munsell: -10 YR 3/2 Very Dark Greyish Brown
	Description: Humic (grass) covered topsoil consisting of very loose dark greyish-brown sandy loam. Rootlets and ironstone inclusions present.
Spit 2	Depth: 50-100 mm
	Munsell: -10 YR 3/3 Dark Brown
	Description: Friable dark brown sandy loam with increasing compaction. Rootlets continue with less intensity and a slowly increasing clay content.

Test Pit 16	
Layer 2	
Spit 3	Depth: 100 mm
	Munsell: -10 YR 5/6 Yellowish Brown
	Description: Mottled greyish-brown and orange clay. Inclusions of ironstone and rootlets present.
Spit 4	Depth: 200 – 220 mm
	Munsell: -10 YR 5/6 Yellowish Brown
	Description: Compacted light reddish-orange clay with ironstone nodules less than 5mm in size. Excavation stopped with increased compaction in clay.
End Excavation	

Test Pit 16



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Stratigraphic Profile:
TP16 North Wall

Excavation Date:
23/01/2024

Excavated by:
C.Cole
G.Eldon

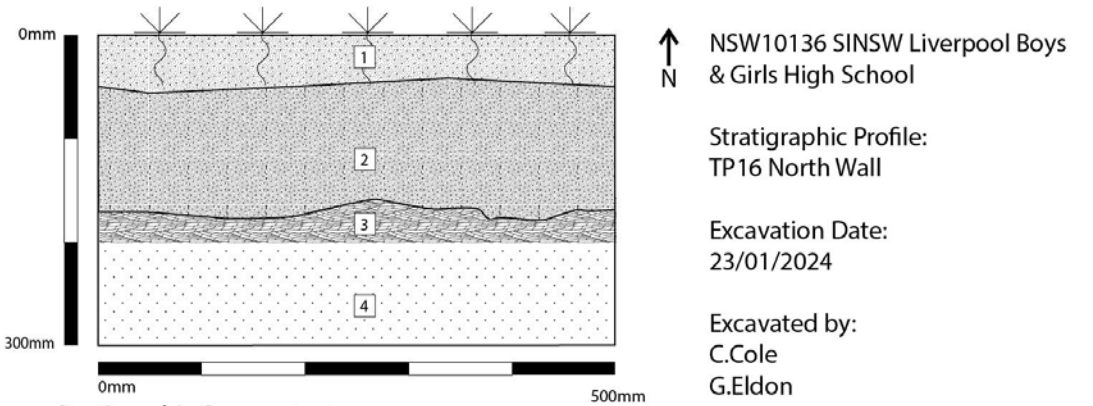
Stratigraphic Compontents:

1	Humic grass covered very loose sandy loam, dark greyish brown in colour. Rootlets and ironstone nodules.	3	Mottled greyish brown and orange clay with conitnued ironstone nodules. Rootlets continue.
2	Dark brown sandy loam with increasing compaction. Rootlets continue with less intensity and a slowly increasing clay content.	4	Compacted light reddish orange clay base with ironstone nodules less than 5mm in size. Excavation stopped.

Table 11-17: Stratigraphy TP 17

Test Pit 17	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	Munsell: - 7.5 YR 3/3 Dark Brown
	Description: Humic (grass) covered topsoil consisting of very loose dry sandy loam, dark greyish brown in colour. Rootlets present.
Spit 2	Depth: 50 – 150 mm
	Munsell: -10 YR 3/3 Dark Brown
	Description:

Test Pit 17	
	Dark brown sandy loam continues with pockets of ironstone fragments no larger than 5mm.
Layer 2	
Spit 3	Depth: 150 – 200 mm
	Munsell: -2.5 YR 4/4 Reddish Brown
	Description: Mottled clay base with rootlets and ironstone present in less intensity than previous spits. Excavation stopped as clay was heavily compacted and disturbed.
End Excavation	



Stratigraphic Compontents:

1	Humic (grass) covered layer consisting of very loose dry sandy loam, dark greyish brown in colour. Rootlets present.	3	Mottled clay base with rootlets and ironstone present in less intensity than previous spits. Excavation stopped as clay was heavily compacted and disturbed.
2	Dark brown sandy loam continues with pockets of ironstone fragments no largers than 5mm. Small fragments of Bringelly Shale littered throughout.	4	Unexcavated layer.

Table 11-18: Stratigraphy TP 18

Test Pit 18	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	Munsell: -10 YR 3/2 Very Dark Greyish Brown
	Description: Humic (grass covered layer consisting of dry loose sandy loam, dark brown in colour. Rootlets and bioturbations present across entire layer.
Spit 2	Depth: 50 – 150 mm
	Munsell: -10 YR 3/3 Dark Brown
	Description:

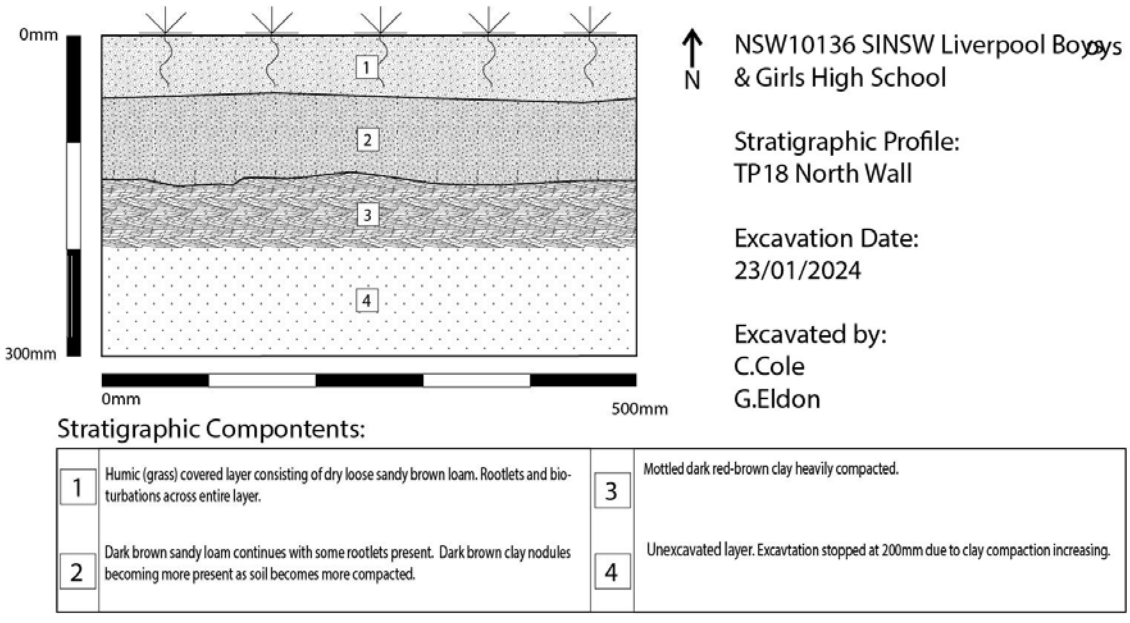
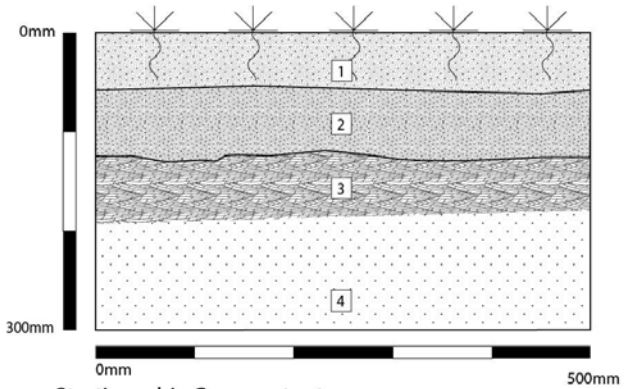
Test Pit 18	
	Dark brown sandy loam continues with some rootlets present. Dark brown clay nodules becoming more present as soil becomes more compacted.
Layer 2	
Spit 3	Depth: 150 – 200 mm
	Munsell: -10 YR 5/6 Yellowish Brown
	Description: Mottled red-brown clay heavily compacted.
End Excavation	
	

Table 11-19: Stratigraphy TP 19

Test Pit 19	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	Munsell: -10 YR 3/2 Very Dark Greyish Brown
	Description: Humic (grass) covered layer consisting of damp compacted brown sandy loam. Rootlets and bioturbations across entire layer.
Spit 2	Depth: 50 – 150 mm
	Munsell: -10 YR 3/3 Dark Brown
	Description: Dark brown sandy loam continuing through spit with some rootlets. Dark brown clay nodules becoming more present.

Test Pit 19	
Layer 2	
Spit 3	Depth: 150 – 200 mm
	Munsell: -10 YR 5/6 Yellowish Brown
	Description: Mottled dark orange-brown clay, heavily compacted.
End Excavation	



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Stratigraphic Profile:
TP19 North Wall

Excavation Date:
23/01/2024

Excavated by:
C.Cole
G.Eldon

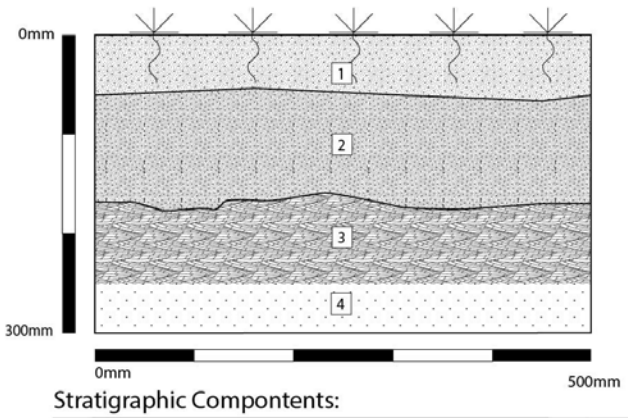
Stratigraphic Compontents:

1	Humic (grass) covered layer consisting of damp compacted sandy brown loam. Rootlets and bioturbations across entire layer.	3	Mottled dark orange-brown clay, heavily compacted.
2	Dark brown sandy loam continues with some rootlets present. Dark brown clay nodules becoming more present.	4	Unexcavated layer.

Table 11-20: Stratigraphy TP 20

Test Pit 20	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	Munsell: 10 YR 3/3 Dark Brown
	Description: Humic (grass) covered layer consisting of dry compacted brown sandy loam. Rootlets and bioturbations present across entire layer.
Spit 2	Depth: 50 – 150 mm
	Munsell: -10 YR 4/4 Dark Yellowish Brown
	Description:

Test Pit 20	
	Dark brown sandy loam continues with some rootlets present. Reddish-brown clay nodule inclusions scattered across spit.
Layer 2	
Spit 3	Depth: 150 – 250 mm
	Munsell: -2.5 YR 4/4 Reddish Brown
	Description: Mottled dark reddish-brown clay. Heavily disturbed then compacted.
End Excavation	



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NSW10136 SINSW Liverpool Boys & Girls High School

Stratigraphic Profile:
TP20 North Wall

Excavation Date:
23/01/2024

Excavated by:
C.Cole
G.Eldon

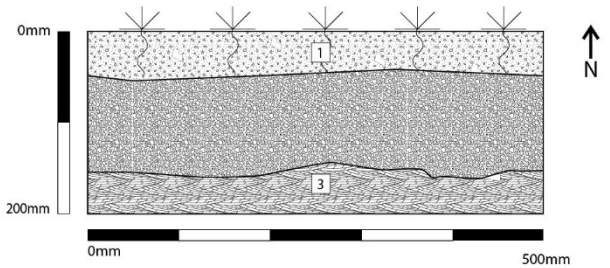
Stratigraphic Compontents:

1	Humic (grass) covered layer consisting of dry compacted sandy brown loam. Rootlets and bioturbations across entire layer.	3	Mottled dark red-brown clay heavily compacted.
2	Dark brown sandy loam continues with some rootlets present. Dark brown clay nodules becoming more present.	4	Unexcavated layer. Excavtation stopped at 250mm due to clay compaction increasing.

Table 11-21: Stratigraphy TP 21

Test Pit 21	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	Munsell: -10 YR 3/2 Very Dark Greyish Brown
	Description: Humic (grass) dry and friable dark brown sandy silt. Rootlets and bioturbations present.
Spit 2	Depth: 50 – 150 mm
	Munsell: -2.5 YR 4/3 Olive Brown
	Description:

Test Pit 21	
	More compacted sandy silt with slight increase in clay content. Very dry and friable, dark brown grey in colour.
Layer 2	
Spit 3	Depth: >150 mm
	Munsell: -2.5 YR 4/3 Olive Brown
	Description: Mottled reddish grey highly compacted clay. Excavation ceased upon reaching this layer at 150 mm.
End Excavation	



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Stratigraphic Profile: TP22 North Wall

Excavation Date: 23/01/2024

Excavated by: C Cole G Eldon

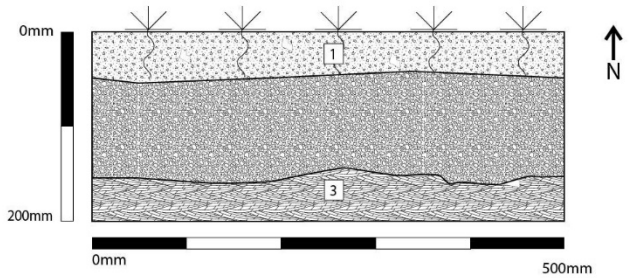
Stratigraphic Compontents:

1	Humic (grass) dry friable dark brown sandy silt. Rootlets and bioturbations present.	3	Excvation ceased upon reaching compacted mottled reddish-grey clay at 150mm
2	More compacted sandy silt with slight increase in clay content.		

Table 11-22: Stratigraphy TP 22

Test Pit 22	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	Munsell: -7.5 YR 3/3 Dark Brown
	Description: Humic (grass) dry friable dark brown sandy silt. Rootlets and bioturbations present.
Spit 2	Depth: 50 – 150 mm
	Munsell: -10 YR 4/4 Dark Yellowish Brown
	Description: Dark brown sandy silt compacted with inclusions of clay nodules.

Test Pit 22	
Layer 2	
Spit 3	Depth: 150 – 200 mm
	Munsell: -2.5 YR 4/4 Reddish Brown
	Description: Excavations cease at mottled reddish grey at 150 mm.
End Excavation	



NSW10136 SINSW Liverpool Boys & Girls High School

Stratigraphic Profile:
TP22 North Wall

Excavation Date:
23/01/2024

Excavated by:
C Cole
G Eldon

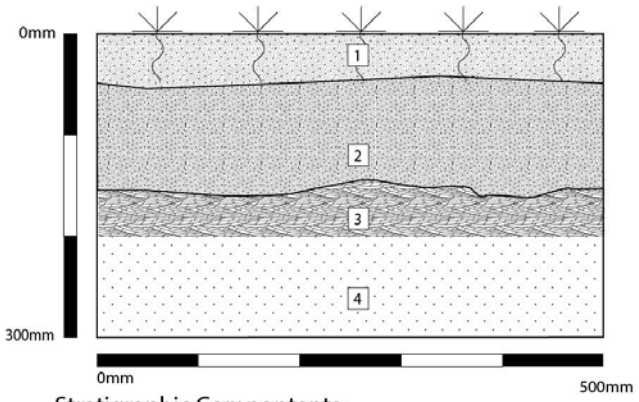
Stratigraphic Compontents:

1	Humic (grass) dry friable dark brown sandy silt. Rootlets and bioturbations present.	3	Excvation ceased uopn reaching compacted mottled reddish grey clay at 150mm
2	More compacted sandy silt with slight increase in clay content.		

Table 11-23: Stratigraphy TP 23

Test Pit 23	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	Munsell: -7.5 YR 3/3 Dark Brown
	Description: Humic (grass) covered layer consisting of compacted dry sandy loam, dark grey brown in colour. Rootlets and litter spread throughout layer.
Spit 2	Depth: 50 – 150 mm
	Munsell: -10 YR 4/4 Dark Yellowish Brown
	Description:

Test Pit 23	
	Dark brown sandy loam continues with pockets of ironstone fragments no larger than 5mm. Clay content increasing along with moisture at depth.
Layer 2	
Spit 3	Depth: 150 – 200 mm
	Munsell: -2.5 YR 4/4 Reddish Brown
	Description: Dark black and red mottled clay with eroded ironstone present. Excavation ceased as clay was heavily compacted.
End Excavation	



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NSW10136 SINSW Liverpool Boys & Girls High School

Stratigraphic Profile: TP23 North Wall

Excavation Date: 23/01/2024

Excavated by: C Cole G Eldon

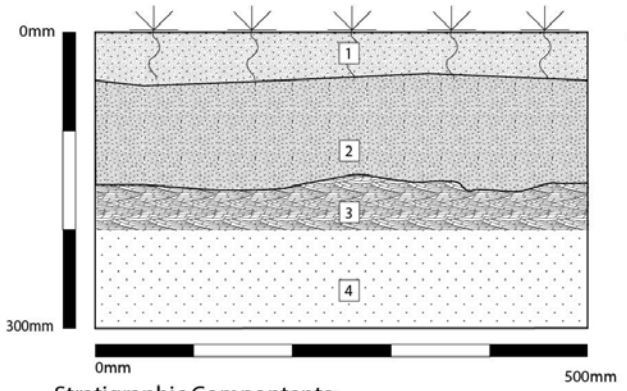
Stratigraphic Compontents:

1	Humic (grass) covered layer consisting of compacted dry sandy loam, dark greyish brown in colour. Rootlets and litter spread throughout layer.	3	Dark black and red mottled clay base with eroded ironstone present. Excavation stopped as clay was heavily compacted.
2	Dark brown sandy loam continues with pockets of ironstone fragments no largers than 5mm. Clay content increasing along with moisture.	4	Unexcavated layer.

Table 11-24: Stratigraphy TP 24

Test Pit 24	
	
Layer 1	
Spit 1	Depth: 0 – 50 mm
	Munsell: -7.5 YR 3/3 Dark Brown
	Description: Humic, friable-compacted dry sandy loam, dark grey brown in colour. Plastic litter distributed across layer.
Spit 2	Depth: 50 – 150 mm
	Munsell: -10 YR 4/4 Dark Yellowish Brown
	Description: Friable dark brown sandy loam with red-brown clay nodules.

Test Pit 24	
Layer 2	
Spit 3	Depth: 150 – 200 mm
	Munsell: -2/5 YR 4/4 Reddish Brown
	Description: Mottled light greyish yellow and reddish grey clays mixed and compacted. Small inclusions of ironstone present. Excavation stopped as clay became more compacted.
End Excavation	



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NSW10136 SINSW Liverpool Boys & Girls High School

Stratigraphic Profile: TP24 North Wall

Excavation Date: 23/01/2024

Excavated by: C Cole G Eldon

Stratigraphic Compontents:

1	Humic (grass) covered layer consisting of compacted dry sandy loam, dark greyish brown in colour. Plastic litter dsitributed across layer.	3	Mottled light greyish yellow and red clay with small fragments of ironstone. Ex-cavtation stopped as clay continued to become more comapcted.
2	Dark brown sandy loam continues with red clay nodules.	4	Unexcavated layer.