Oakdale East Industrial Estate

Aboriginal Cultural Heritage Assessment Report (ACHAR)

Report to Goodman Property Services Pty Ltd

July 2022

artefact

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EXECUTIVE SUMMARY

Background

Artefact Heritage has been engaged to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) for Goodman Property Services Pty Ltd (the proponent) who propose the development of the Oakdale East Industrial Estate at 2-10 Old Wallgrove Road, Horsley Park, NSW 2175. The proposal comprises a concept masterplan for an industrial estate, bulk earthworks, estate roads, services, expansion of an existing warehouse and construction and fit out of a second warehouse.

This ACHAR will address the requirements of the Secretary's Environmental Assessment Requirements (SEARs) issued to the proponent on the 1 March 2022 (SSD-37486043). This ACHAR is a requirement of the State Significant Development award, submitted by the proponent to the NSW Department of Planning and Environment (DPE).

Consultation with Aboriginal stakeholders was undertaken and completed for this ACHAR.

Overview of findings

The following results and recommendations are based on consideration of:

- The requirements of Aboriginal heritage guidelines including:
  - *The Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010a) – known as *The Code of Practice*
  - Guide to investigating and assessing and reporting on Aboriginal Cultural Heritage in New South Wales (OEH 2011) – known as ACHAR guidelines.
  - *The Aboriginal Cultural Heritage consultation requirements for proponents 2010* (OEH 2010b)- known as Consultation Guidelines)
- Project SEARs
- the results of the stakeholder consultation
- extensive search of the AHIMS database
- in depth background research and assessment following an archaeological survey.

The assessment found that:

- No sites listed on the Aboriginal Heritage Information Management System (AHIMS) were located in the study area
- The location of a site known as [redacted] ([redacted]) within Survey Unit 1 of the study area was documented in previous archaeological investigations undertaken in 2018 and 2021.
- The location of [redacted] ([redacted]) within Survey Unit 1 appeared not to have been disturbed since 2021.
- The study area within Survey Unit 2 was assessed to have nil to low archaeological potential because of it was within low-lying ground close to the creek that was prone to flooding

- The remainder of the study area had been assessed has having nil archaeological potential due to the mining activities undertaken there since the 1970s which have resulted in heavy disturbance to the ground.
- Consultation with RAPS has been completed and feedback recorded in the final report
- The site officer of the Deerubbin LALC did not identified any cultural values apart from those associated with [redacted] ([redacted])
- The archaeological values of the study area are associated with [redacted]
- [redacted] should be protected from any impact occurring from the development.

Recommendations

Based on the results of this assessment and in accordance with Aboriginal heritage guidelines mandated in the SEARs for the proposal, the following recommendations are made:

- As the area in which [redacted] is located will not be impacted by the planned development it is recommended that further archaeological assessment is not required.
- The results of the Aboriginal consultation are support the results of the ACHAR
- If changes are made to the proposal that may result in impacts to areas not assessed by this ACHAR further assessment would be required.
- If changes are made to the proposal that may result in impacts to [redacted] which has been assessed by this ACHAR, further investigation in the form of test excavation would be required.
- Unexpected Aboriginal objects remain protected by the *National Parks and Wildlife Act 1974*. If any such objects, or potential objects, are uncovered in the course of the activity, all work in the vicinity should cease immediately. A qualified archaeologist should be contacted to assess the find and Heritage NSW and Deerubbin LALC must be notified.
- If human remains, or suspected human remains, are found in the course of the activity, all work in the vicinity should cease, the site should be secured, and the NSW Police and Heritage NSW should be notified.

CONTENTS

FIGURES

TABLES

1.0 INTRODUCTION

1.1 Project background

Artefact Heritage has been engaged to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) for Goodman Property Services Pty Ltd (the proponent) who propose the development of the Oakdale East Industrial Estate (the Estate) at 2-10 Old Wallgrove Road, Horsley Park, NSW 2175. The proposal comprises a Concept Plan comprising 5 Precincts across the Estate and approval for Stage 2 of works at the Estate. Stage 1 of works, focused on Precinct 1, was completed in September 2021. As such, Precinct 1 does not fall within the study area of this ACHAR (Figure 1 and Figure 2).

The Concept Plan is proposed to set the development controls for the Estate which will override the Development Control Plan (DCP) that is currently with Department of Planning and Environment (DPE) for consideration. This DCP has been lodged with DPE to support the Rehabilitation Development Application (DA 347.1/2021) that is currently with Fairfield City Council for consideration. An Aboriginal Heritage Due Diligence Assessment (DD) undertaken by Artefact in 2021 accompanied the DA. The DD assessment found that the study area (Figure 14 and Figure 19) held no archaeological significance, but confirmed an area of archaeological potential known as [redacted] beyond the study area's eastern boundary, in what is now referred to as Precinct 5. The site [redacted] had been identified earlier in an Archaeological Survey Report (Artefact in 2018). Both investigations are discussed in Section 5.3 and 5.4 of this report. The DD recommended that the area of archaeological potential (known as [redacted]) be sequestered to prevent damage.

The Rehabilitation Development Application seeks approval for works to Precinct 1 expansion (not included in the current study area), Precincts 2, 3 and 4 and excludes works to Precinct 5 in which [redacted] is located.

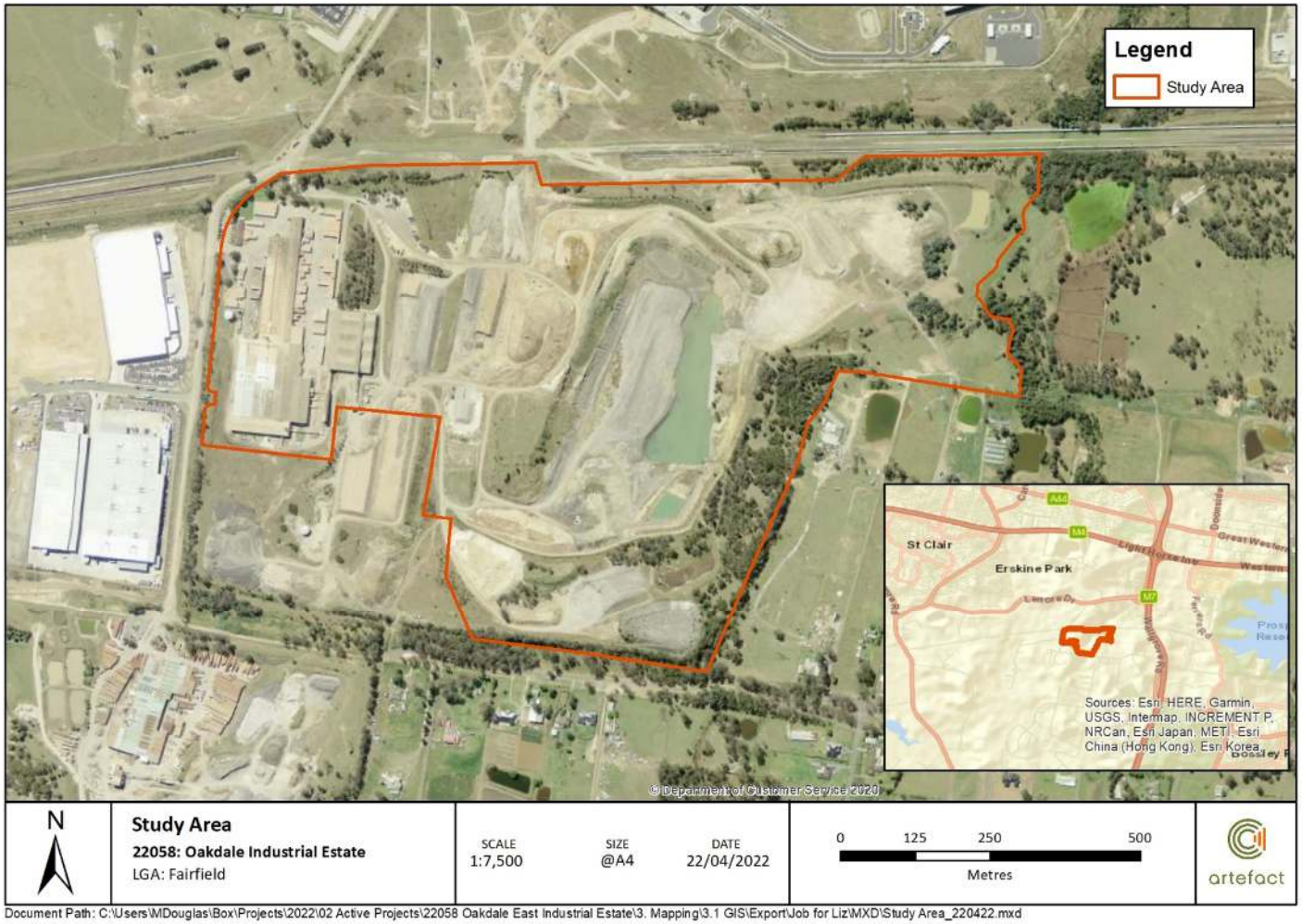
This ACHAR will address the requirements of the Secretary's Environmental Assessment Requirements (SEARs) issued to the proponent on the 1 March 2022 (SSD-37486043). This ACHAR is a requirement of the State Significant Development award, submitted by the proponent to the NSW Department of Planning and Environment (DPE).

1.2 Location

The study area is 879,535m^2 and located at 2/10 Old Wallgrove Road, Horsley Park, NSW 2175. The area covers the cadastral boundaries of Part Lot 100 DP 1257276 and Lot 101 DP 1257276 (see Figure 1). The property is in the Fairfield Local Government Area, and within the boundaries of the Deerubbin Local Aboriginal Land Council.

The site is located 15km west of the Parramatta CBD and approximately 13km northeast of the Western Sydney International Airport site.

Figure 1: Study Area



1.3 Overview of the project

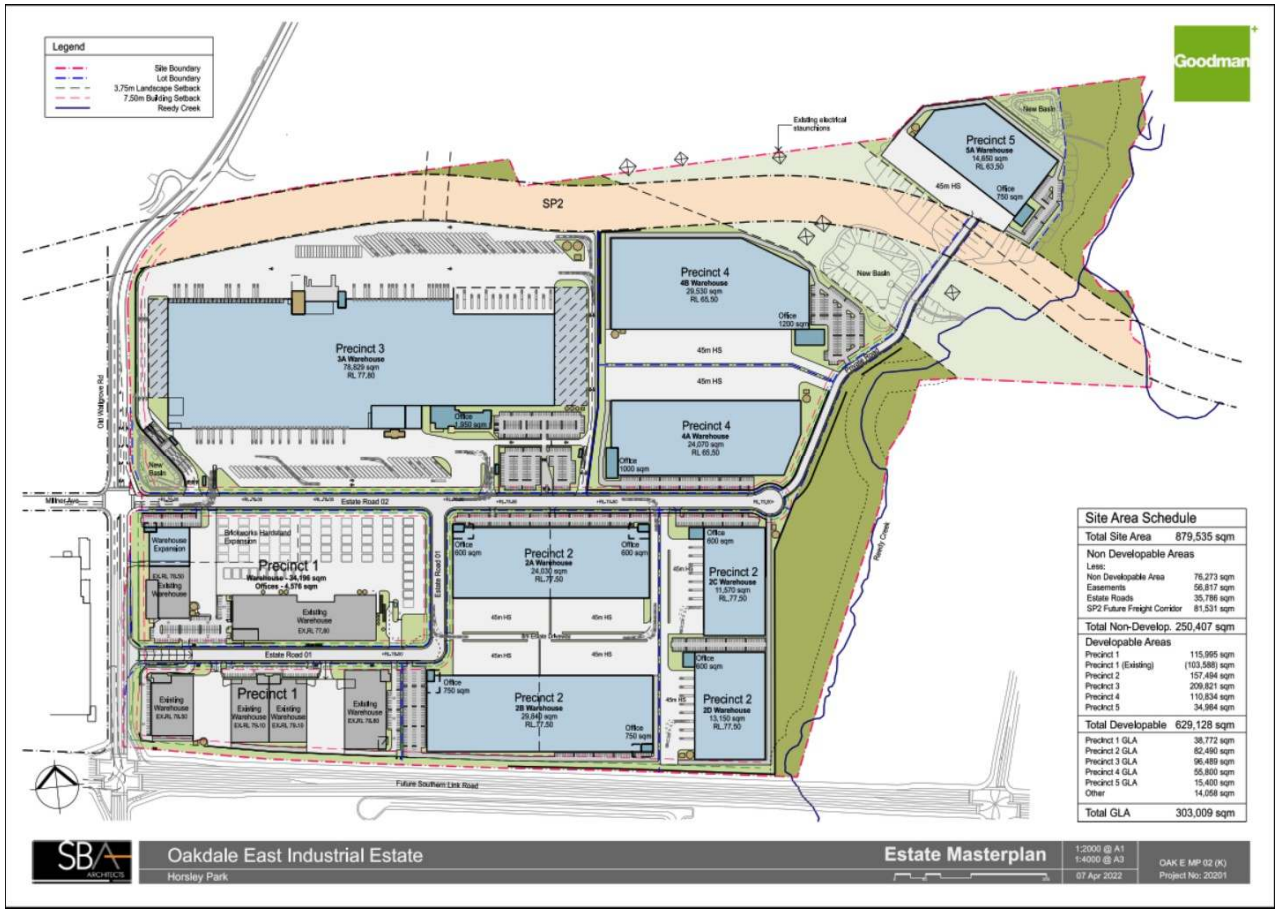
The project comprises an application seeking approval for a Concept Plan and Stage 2 development consent for the Oakdale East warehouse and logistics estate. The Oakdale East Estate (OEE) will comprise the staged development of eight warehouse buildings over five precincts. Stage 1 of the OEE was completed in September 2021 and included Precinct 1 building and infrastructure works, (see Figure 2). Precinct 1 is not included in the current study area. The Rehabilitation Development Application seeks approval for works to Precinct 1 expansion (not included in the current study area), Precincts 2, 3 and 4 and excludes works to Precinct 5.

Figure 2 shows the precincts and the location of an infrastructural zone.

Given the site's history and use as a quarry, the majority of the site has been significantly disturbed, with a former masonry plant located in the western area of the site. Vegetation is generally limited to the eastern boundary of the site, in the Reedy Creek riparian corridor, with isolated stands of vegetation in other parts of the site.

An Aboriginal Heritage Due Diligence Assessment undertaken by Artefact in 2018 to accompany DA 347.1/2021 confirmed the presence of an artefact scatter and potential archaeological deposit (OE AS1) adjacent to Reedy Creek and suggested a riparian corridor excluding works along Reedy Creek to ensure OE AS1 is not impacted (EIS 6.13.1 and discussed in Section 5 of this report).

Figure 2. Preliminary Site Analysis Plan: showing composition of the environmental zone and proposed works. The site plan is larger than the study area.



1.3.1 Detailed Description

The Concept Plan is proposed to set the development controls for the Estate which will override the Development Control Plan ("DCP") that is currently with Department of Planning and Environment (DPE) for consideration. This DCP has been lodged with DPE to support the Rehabilitation Development Application that is currently with Fairfield City Council for consideration.

The Rehabilitation Development Application seeks approval for works only to Precinct 1 expansion, Precincts 2, 3 and 4 and includes the following (this application excludes works to Precinct 5):

- Cut and Fill works to provide bulk pad levels;
- Provision of Estate stormwater infrastructure including completion of detention basins and swales;
- Removal of 2.58 ha of vegetation;
- Demolition of the Brick Factory and rehabilitation of the surrounding land;
- Installation of 1 x retaining wall on the eastern portion of Precinct 3;
- Geotech and Aboriginal heritage considerations for Precinct 1 through to 4.

The proposed Concept Plan approval seeks approval for:

- The proposed Estate masterplan allowing development of 303,009 sqm of GLA;
- 24/7 hours of operation;
- Building Height of 43m for Precinct 3 (excluding roof-top plant and solar) and 15m (excluding roof-top plant and solar) to the remainder of the Estate;
- Estate subdivision;
- Estate wide planning controls as shown in the EIS
- Construction hours 7 am to 6 pm Monday to Friday, 8 am to 1 pm Saturday
- Geotech and Aboriginal heritage considerations for Precinct 5

The Stage 2 works considered under this application include the following:

- Cut and fill works to Precinct 5 only to provide bulk pad level;
- Completion of lead-in infrastructure works including intersection upgrades at Millner Ave / Old Wallgrove Road and Lenore Drive / Old Wallgrove Road
- Clearing of 0.44 ha of native vegetation
- Completion of the internal road network (incl. the proposed private driveway providing access to Precinct 5 as well as all other roads shown on the proposed masterplan);
- Reticulation of services infrastructure to provide serviced development pads to all precincts;
- Completion of retaining walls across the entire Estate;
- Completion of Building works to Precinct 1 expansion and Precinct 3 including any ancillary on lot infrastructure and detailed civil works required;

Precinct 1 expansion:

- Construction, operation, fit-out and use approval of a warehouse with ancillary office spanning 3,122 sqm of GLA;
- 24/7 hours of operation;
- 15m building height (excluding solar and rooftop plant)

Precinct 3:

- Construction, operation, fit-out and use approval of a temperature controlled automated distribution centre;
- Total GLA of 96,810 sqm including 10,009 sqm of which is for future expansion;
- In addition to this, 35,977 sqm of mezzanines will be installed within the premises;
- 43m building height (excluding solar and rooftop plant)
- Storage of dangerous goods and flammable goods that exceed the SEPP33 threshold; and
- 24/7 hours of operation.

The proposed Concept Masterplan takes into consideration the location of the Western Sydney Freight Line and ensures no impact on, and provides space for, the infrastructure corridor.

The proponent has consulted with TfNSW to confirm that the future freight line will be elevated above the level of the OEE development and will include bridge infrastructure to ensure an overpass (Client information EIS document section 4.7).

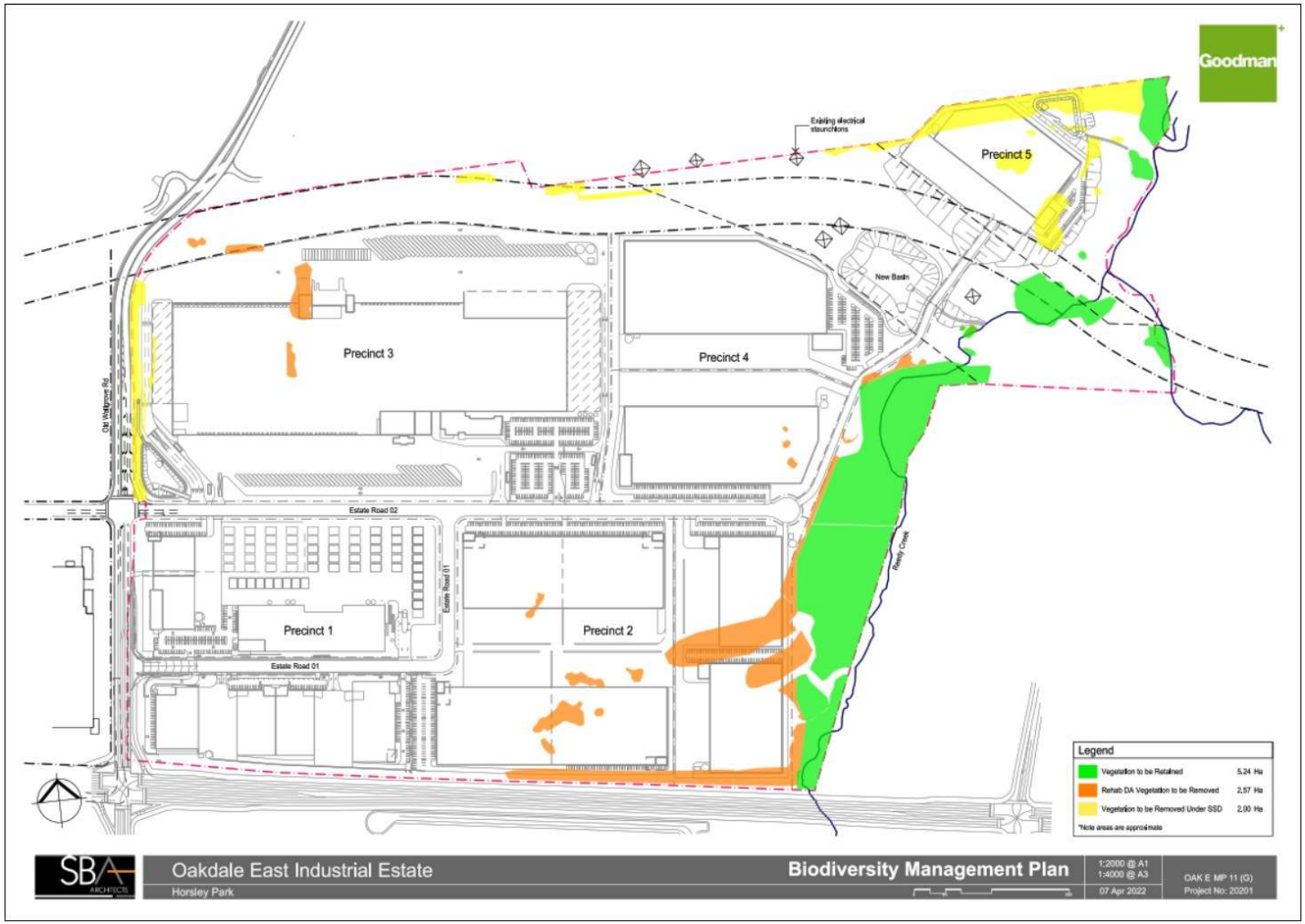
While the site is relatively flat, sloping from west to east, a small portion of the site fronting Reedy Creek is affected by flooding in a 1 in 100 year event.

Detention (OSD) basins are proposed for the site, one of which is located in the north east portion of the study area. Approximately five (5) hectares of vegetation will be retained along the eastern boundary of the site, and includes the Reedy Creek riparian corridor. Potential impacts to the riparian zone have been assessed and the following mitigation measures suggested.

- Flora and Fauna Management Plan (FFMP) which documents pre-clearance and clearance processes.
- considering potential noise and light spill into habitat areas during the design phase
- the preparation and implementation of a Vegetation Management Plan (VMP) for the restoration of native vegetation areas in addition to the Reedy Creek riparian corridor
- managing on-site detention basins to achieve pre-development hydrological conditions
- preparation of an Erosion and Sediment Control Plan to manage stormwater flows across the site and minimise the risks of sediment laden water entering Reedy Creek
- the preparation of a Biosecurity Management Plan.

The Biodiversity Management Plan (Figure 3) indicates that the vegetation on and surrounding OE AS1 will be retained.

Figure 3. Biodiversity Management Plan indicating areas where vegetation will be retained.



1.4 Purpose and scope of the report

Artefact Heritage has been engaged to prepare an ACHAR to meet the requirements of the SEARs. This report considers the impacts the proposed construction might have on Aboriginal cultural heritage and the potential archaeological resources within the study area. The report includes:

- Assessment of the Aboriginal cultural heritage values of the study area and identification of any specific areas of cultural significance
- Assessment of archaeological potential for the study area
- Aboriginal stakeholder consultation
- Preparation of a methodology for archaeological management including test excavation and salvage where required.

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 (DECCW 2010a)
- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011)
- Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW 2010b).

1.5 Secretary's Environmental Assessment Requirements

1.5.1 State Significant Developments.

The SEARs were issued by the DPE on 1 March 2022 (SSD-37486043). Under the Key Issues of the SEARs the proponent is required to undertake an assessment of Aboriginal Cultural Heritage as part of the EIS documentation. Table 1, outlines the specific requirements.

Table 1. Secretary's Environmental Requirements

Item	Secretary's Environmental Assessment Requirements	Where addressed in this report
1	Identify and describe the Aboriginal cultural heritage values of the site	In progress. Sections 5, 6, 7
2	Assess any impacts on the Aboriginal cultural heritage values on the site	In progress. Sections 8, 9
3	Provide evidence and details of consultation with Aboriginal people in accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010).	In progress - This document, Section 3, 7, 8
4	Consult with the relevant government bodies and organisations, specifically Heritage NSW and the Local Aboriginal Land Council	In progress - Consultation Log and Appendices

1.6 Authorship

This ACHAR has been prepared by Elizabeth Bonshek (Senior Heritage Consultant, Artefact Heritage) with review and management provided by Sandra Wallace (Director, Artefact Heritage).

2.0 LEGISLATIVE CONTEXT

2.1 Introduction

There are several pieces of legislation that are relevant to the assessment of Aboriginal cultural heritage for the proposal. This chapter provides a summary of these Acts and the potential implications for the proposal.

2.2 NSW *National Parks and Wildlife Act 1974*

The *National Parks and Wildlife Act 1974* (NPW Act) provides statutory protection to all Aboriginal places and objects. An Aboriginal Place is declared by the Minister, under Section 84 of the NPW Act in recognition of its special significance with respect to Aboriginal culture. Under Section 86 of the NPW Act objects are places are protected. 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.*

The protection provided to Aboriginal objects applies irrespective of the level of their significance or issues of land tenure. However, areas are only gazetted as Aboriginal Places if the Minister is satisfied that sufficient evidence exists to demonstrate that the location was and/or is of special significance to Aboriginal culture.

If it is assessed that sites exist or there is a likelihood of existing within the activity area and maybe impacted by the proposed activity, further archaeological investigations may be required. The SSD requirements state that attempts to avoid damage must be made. Where damage is unavoidable the ACHAR and EIS must outline mitigation measures.

As the project is being assessed as SSD under Part 4 Division 4.7 of the Environmental Planning & Assessment Act 1979, permits issued under the NPW Act are not required for works undertaken in accordance with the SSD Conditions of Approval issued by DPE.

All Aboriginal objects, whether recorded or not, are protected under the NPW Act.

2.2.1 National Parks and Wildlife Regulation 2019

Under the authority of the NPW Act, the National Parks and Wildlife Regulation 2019 provides regulations for Aboriginal heritage assessment and consultation with registered Aboriginal parties.

Part 5 (Division 2) of the National Parks and Wildlife Regulation sets out the requirements of a due diligence assessment process and provides requirements for more detailed assessment and consultation with registered Aboriginal parties for activities that may result in harm to Aboriginal objects. This includes:

- Clause 60 – consultation process to be carried out before application for Aboriginal Heritage Impact Permit (AHIP)
- Clause 61 – application for AHIP to be accompanied by cultural heritage assessment report.

In order to comply with Clause 60 and 61 of the National Parks and Wildlife Regulation 2019, preparation of an ACHAR and consultation with RAPs must be in accordance with the following guidelines:

- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales 2010 (DECCW 2010a)
- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011)
- Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW 2010b).

The current assessment has been carried out in accordance with the above guidelines in order to meet the SEARs which refer to them.

2.3 NSW Environmental Planning and Assessment Act 1979

The *Environmental Planning & Assessment Act 1979* (EP&A Act) provides planning controls and requirements for environmental assessment in the development approval process. The EP&A Act consists of three main parts of direct relevance to Aboriginal cultural heritage: Part 3 which governs the preparation of planning instruments; Part 4 which relates to development requiring consent; and Part 5 which relates to activity that does not require consent.

The project is subject to assessment and approval by the NSW Minister for Planning under Part 4 Section Division 4.7 of the EP&A Act, which establishes an assessment and approval regime for SSD.

An EIS supported by the current assessment has been prepared to assess the impacts of the proposal, in accordance with SEARs.

Section 4.12(8) of the EP&A Act provides that environmental planning instruments (such as local environmental plans and SEPPs) do not, with some exceptions, apply to SSD projects. Notwithstanding, the environmental planning instruments that are relevant to the proposal have been considered for consistency, as described below.

2.3.1 Fairfield Local Environment Plan (LEP) 2013

LEPs are prepared by councils in accordance with the EP&A Act to guide planning divisions for LGAs. Each LGA is required to develop and maintain an LEP that includes Aboriginal and historical heritage items listed within its schedule and which are protected under the EP&A Act and the Heritage Act 1977.

The study area falls within the Fairfield LEP 2013. There are no Aboriginal cultural heritage items identified in the Fairfield LEP which fall within the study area.

As the development project has been approved as an SSD, a development application is not required to be approved by Council.

2.4 NSW Aboriginal Land Rights Act 1983

The *Aboriginal Land Rights Act 1983* (ALR Act) established Aboriginal Land Councils (at State and Local levels). These bodies 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 study area is within the boundary of the Deerubbin LALC.

2.5 NSW Native Title Act 1994

The *Native Title Act 1994* was introduced to work in conjunction with the Commonwealth *Native Title Act 1993*. Native Title claims, registers and Indigenous Land Use Agreements are administered under the Act.

Request for information concerning any determinations in regard to the study area were made to the Native Title Tribunal on the 3 December 2021.

There are no Native Title claims currently registered in the study area.

2.6 Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The *Environment and Heritage Legislation Amendment Act (No. 1) 2003* amends the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) to include 'national heritage' as a matter of national environmental significance and protects listed places to the fullest extent under the Constitution. It also establishes the National Heritage List and the Commonwealth Heritage List.

The *Australian Heritage Council Act 2003* establishes a new heritage advisory body – the Australian Heritage Council – to the Minister for the Environment and Energy and retains the Register of the National Estate.

The *Australian Heritage Council (Consequential and Transitional Provisions) Act 2003* repeals the *Australian Heritage Commission Act 1975*, amends various Acts as a consequence of this repeal and allows the transition to the current heritage system.

Together the above three Acts provide protection for Australia's natural, Indigenous and non-Indigenous heritage. The new framework includes:

- A new National Heritage List of places of national heritage significance
- A Commonwealth Heritage List of heritage places owned or managed by the Commonwealth
- The creation of the Australian Heritage Council, an independent expert body to advise the Minster on the listing and protection of heritage places
- Continued management of the non-statutory Register of the National Estate.

2.6.1 National Heritage List

The NHL is a list of places with outstanding heritage value to our nation, including places overseas. So important are the heritage values of these places that they are protected under the EPBC Act. This means that a person cannot take an action that has, will have, or is likely to have, a significant impact on the national heritage values of a national heritage place without the approval of the Australian Government Minister for the Environment and Heritage

There are no items listed on the National Heritage List located within the study area for this assessment.

2.6.2 Commonwealth Heritage List

The Commonwealth Heritage List (CHL) is a list of places managed or owned by the Australian Government and not of relevance to this project.

There are no items listed on the Commonwealth Heritage List located within the study area for this assessment.

3.0 ABORIGINAL COMMUNITY PARTICIPATION

3.1 Aboriginal consultation

Aboriginal community consultation has been conducted in accordance with the Consultation Requirements (DECCW 2010a).

A consultation log has been maintained which details all correspondence with the registered Aboriginal parties for the ACHAR. The consultation log and copies of correspondence are included in the Appendices

3.2 Identification of stakeholders and registration of interest

The consultation for this ACHAR commenced in anticipation of the SEARs being awarded for the proposal.

In accordance with step 4.1.2 of the Consultation Requirements, Artefact Heritage corresponded with the following organisations by email on the 16 March 2022 requesting the details of Aboriginal people who may hold cultural knowledge relevant to determining the Aboriginal significance of Aboriginal objects and/or places within the local area:

- Heritage NSW
- Fairfield Council
- Native Title Service Corporation (NTSCorp)
- National Native Title Tribunal
- Office of the Registrar, Aboriginal Land Rights Act 1983
- Deerubbin Local Aboriginal Land Council

In addition to this, and in accordance with Step 4.1.3 of the Consultation Requirements, an advertisement was placed in The Koori Mail on 16 March 2022 inviting the participation of Aboriginal people who may hold cultural knowledge relevant to determining the Aboriginal significance of Aboriginal objects and/or places within the local area.

In accordance with Step 4.1.3 of the Consultation Requirements, on the 1 April 2022, emails or letters were sent to all Aboriginal persons or organisations identified through advertisement or through responses from agencies contacted as part of Step 4.1.2. In accordance with Step 4.2 the letters provided details about the location and nature of the proposal, as well as an invitation to register as an Aboriginal stakeholder.

As a result of that process 20 groups/individuals registered their interest (see Table 2). Two RAPs requested that only their organisation name be included. One stakeholder registered after the closing date. A copy of the proposed Assessment Methodology was sent to registered Aboriginal parties (RAPs) by email on 4 May 2022, requesting comments at the close of 28 days, on 1 June 2022. By 6 May, 3 RAPs had responded (Table 3). At the end of the review period, feed back will be incorporated in the draft Report which will then be circulated for review for a further 28 days.

Table 2: Registered Aboriginal parties for the study area

Contact Name	Organisation/ Individual
	Gunya Aboriginal Cultural Heritage Services PTY LTD
Carolyn Hickey	A1 Indigenous Services
Clive Freeman	
Daniel Chalker	Wori Wooilywa
Darleen Johnson	Murra Bidgee Mullangari Aboriginal Corporation
Jamie Eastwood	Aragung Aboriginal Cultural Heritage Site Assessments
Jennifer Beale	Butucarbin Aboriginal Corporation
Justine Coplin	Darug Custodian Aboriginal Corporation
Lillie Carroll	Didge Ngunawal Clan
	Corroboree Aboriginal Corporation
Phil Khan	Kamilaroi Yankuntjatjara Working Group
Philip Boney	Wailwan Aboriginal Group
Phillip Carroll	Mura Indigenous Corporation,
Rodney Gunther	Waawaar Awaa Aboriginal Corporation
Scott Franks	Tocomwall
Shayne Dickson	Gunjeewong Cultural Heritage Aboriginal Corporation
Steve Randall	Deerubbin Local Aboriginal Land Council
Steven Hickey	Widescope Indigenous Group
Steven Johnson	Woka Aboriginal Corporation
Wendy Morgan	Guntawang Aboriginal Resources Incorporated
Lee Field	Barraby Cultural Services

A summary list of RAP comments on the Assessment Methodology is presented in Table 3.

Table 3: Summary of RAP comments on ACHAR methodology.

Name	Comments
Wendy Morgan	"Guntawang Aboriginal Resources Inc agrees with the Methodology proposed for the ACHAR at Oakdale East Industrial Estate Horsley Park".
Carolyn Hickey	"I have reviewed the document and support the Information and Methodology".
Carol Slater	"Gilay Consultants agree with the Assessment Methodology at the above project in Horsey Park."
Ryan Johnson/ Darleen Johnson	"I have read the project information and ACHAR methodology for the above project, I endorse the recommendations made."
Phil Khan, Kamilaroi Yankuntjatjara Working Group	"We would like to agree to your methodology, and we support your report. We look forward to working along side you on this project" Asks if the proponent has sought cultural interpretation for the project to recognise Aboriginal people as the owners of the land? Ways in which this can be archived is through design, art, digital displays, apps, native gardens. It is important to incorporate interpretation into you project as it educates the wider community and our next generations about the traditional owners of the land. A keeping place should also be sort to house artefacts on country." Full comment presented in consultation log. .

A copy of the Draft ACHAR was sent to the RAPs on 2 June 22, with 28 days response. A summary list of RAP comments on the draft report is presented in Table 4, below.

Table 4: Summary of RAP comments on draft ACHAR.

Name	Comments
Darleen Johnson, Murra Bidgee Mullangari Aboriginal Corporation	"I have read the project information and achar draft for the above project, I endorse the recommendations made."
Lillie Carroll, Didge Ngunawal Clan	DNC is happy with everything as we have finished reviewing the Oakdale draft
Carol Slater, Gilay Consultants	Acknowledged receipt of the draft report.
Phil Khan, Kamilaroi Yankuntjatjara Working Group	"We would like to agree to your ACHA, and we look forward to working alongside on this project". Full response includes a statement that the area is significant because Eastern Creek is close by, and this water way has been important for many aspects of everyday life for tens of thousands of years. It is a connection to land and way finding. Full comment in consultation log. .

4.0 ENVIRONMENTAL CONTEXT

4.1 Geology and soils

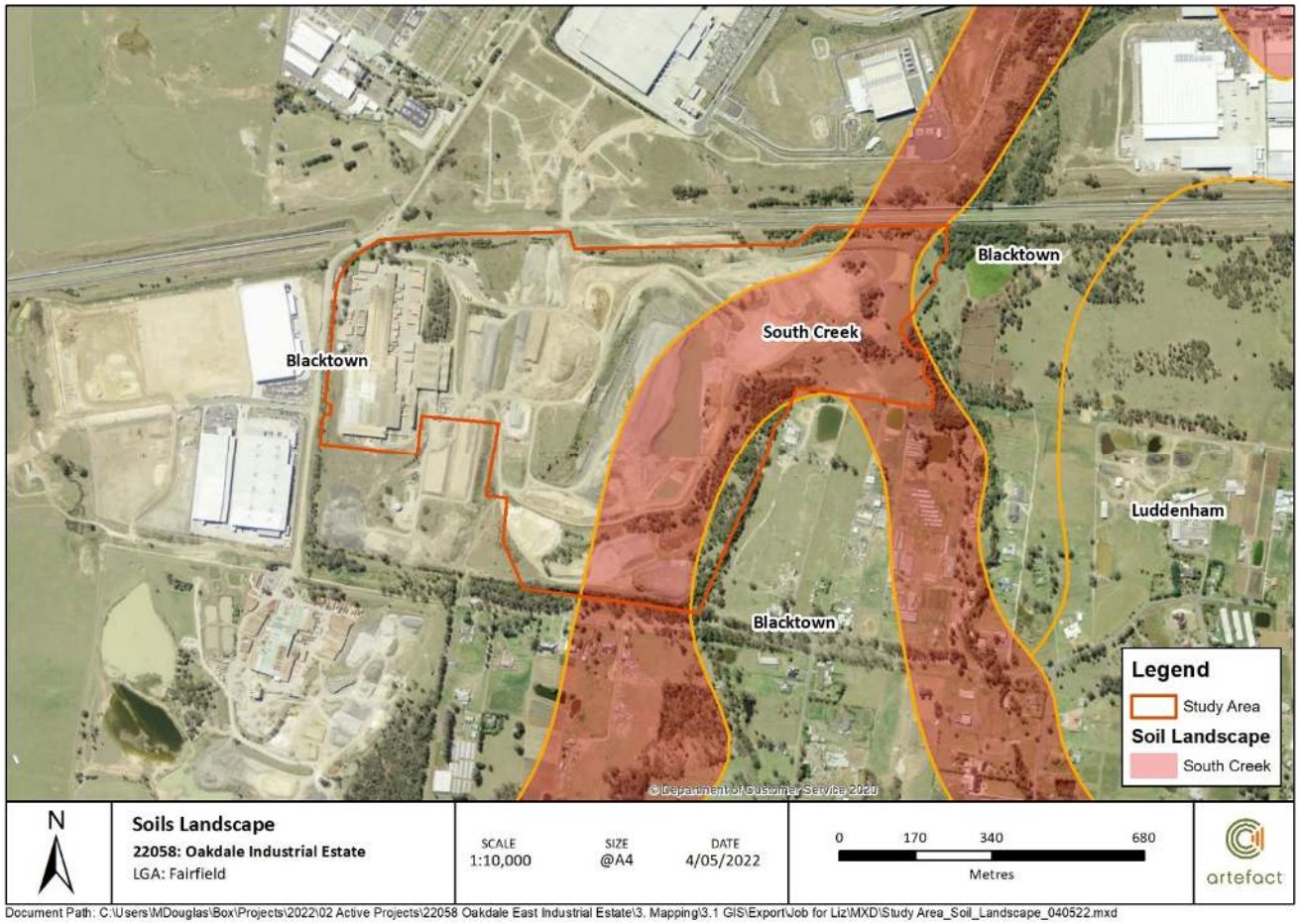
The geology of the study area is characterised by the Triassic Wianamatta group which consists of black to dark grey shale and laminate on top of medium to coarse-grained quartz sandstone, very minor shale and laminate. The landforms are a result of the weathering of local bedrock. The underlying geology is the Hawkesbury sandstone that was laid down as river sediments and is described as medium to course grained quartz sandstone, this is overlain by the finer sedimentary material caps of Ashfield Shale. Hawkesbury Sandstone weathers to form thin, sandy soils with low water-retaining qualities. (Artefact 2018 verbatim)

The western portion of the study area is comprised of the Blacktown Residual soil landscape which has shallow to moderately deep, hard setting mottled texture contrast soils, red and brown podzolic soils on crests grading to yellow podzolic soils on lower slopes and in drainage lines. (Artefact 2018 verbatim). This soil landscape is also present in parts of the creek edge and the easternmost side of the study area (Figure 4).

The eastern portion of the study area, which contains a relic creek channel and the current course of the creek line known as Reedy Creek, is the current active floodplain of many drainage networks of the Cumberland Plain. The soil landscape here is known as South Creek, an alluvial environment characterised by floodplains, valley flats and drainage depressions. The soils are often very deep, layered sediments over bedrock or relic soils. Plastic clays or structured loams occur in and immediately adjacent to drainage lines. Red and yellow podzolic soils are most common on terraces with small areas of structured grey clays, leached clay and yellow solodic soils (Bannerman and Hazelton 1990). The South Creek soil landscape has the potential to retain stratified archaeological deposits. (Artefact 2018 verbatim).

The study area today has had extensive modification however, and the natural Blacktown soil profile is almost entirely absent from the area. There is potential for remnant intact South Creek soils along the eastern boundary (Artefact 2018 verbatim).

Figure 4. Soil profiles in the study area: orange area is South Creek soil landscape, the remainder is Blacktown soil landscape.



4.2 Landform and hydrology

Reedy Creek, which forms the eastern boundary of the study area, is a tributary of Eastern Creek which is a major watercourse across the Cumberland plain that flows north into South Creek through prominent areas such as Bungarribee, Nuringingy Reserve and past Plumpton Ridge. (Artefact 2018).

The surrounding vicinity of the Oakdale East site has a network of creeks and tributaries that area associated with the South Creek drainage system of the Cumberland Plain (Artefact 2018 verbatim).

4.3 Vegetation

The study area has been assessed as generally cleared of vegetation because of its use as a quarry and brick manufacturing site. Four plant communities have been identified as present (EIS document):

- Cumberland river flat forest
- Cumberland shale plains woodland
- Cumberland swamp oak forest
- *Phragmites* and *Typha orientalis* coastal freshwater wetlands of the Sydney Basin Bioregion (allocated to farm dam areas).

The study area would have once been covered by open Cumberland Plain Woodland, which is typical of the Wianamatta Group shale geology. Tree species would have included Forest Red Gum (*Eucalyptus tereticornis*), Sydney Blue Gum (*E. saligna)* and Grey Box (*E. moluccana*). The understory would likely have consisted of grass species, including Spear Grass, and shrub species such as Blackthorn. Much of the native vegetation communities in the vicinity of the study area have been extensively cleared since European settlement and several areas of vegetative regrowth have been heavily recolonised by *Casuarina glauca.* The historic clearing of vegetation may have also had an impact on the integrity of archaeological deposits and will have removed culturally modified trees (however, see AHIMS 45-5-2983 survives).

In 2018 a small stand of Cumberland Plain Woodland was present within the study area. The dominant canopy trees comprised *Eucalyptus moluccana* (Grey Box). The shrub layer was dominated by *Bursaria spinosa* (Blackthorn) and it would have been common to find abundant grasses such as *Themeda triandra* (Kangaroo Grass)

4.4 European history and land use

European expansion throughout the Cumberland Plain displaced Aboriginal people from their traditional lands and effectively cut off their access to many resources. The first European activity in the area was exploratory; however, this was shortly followed by settlement.

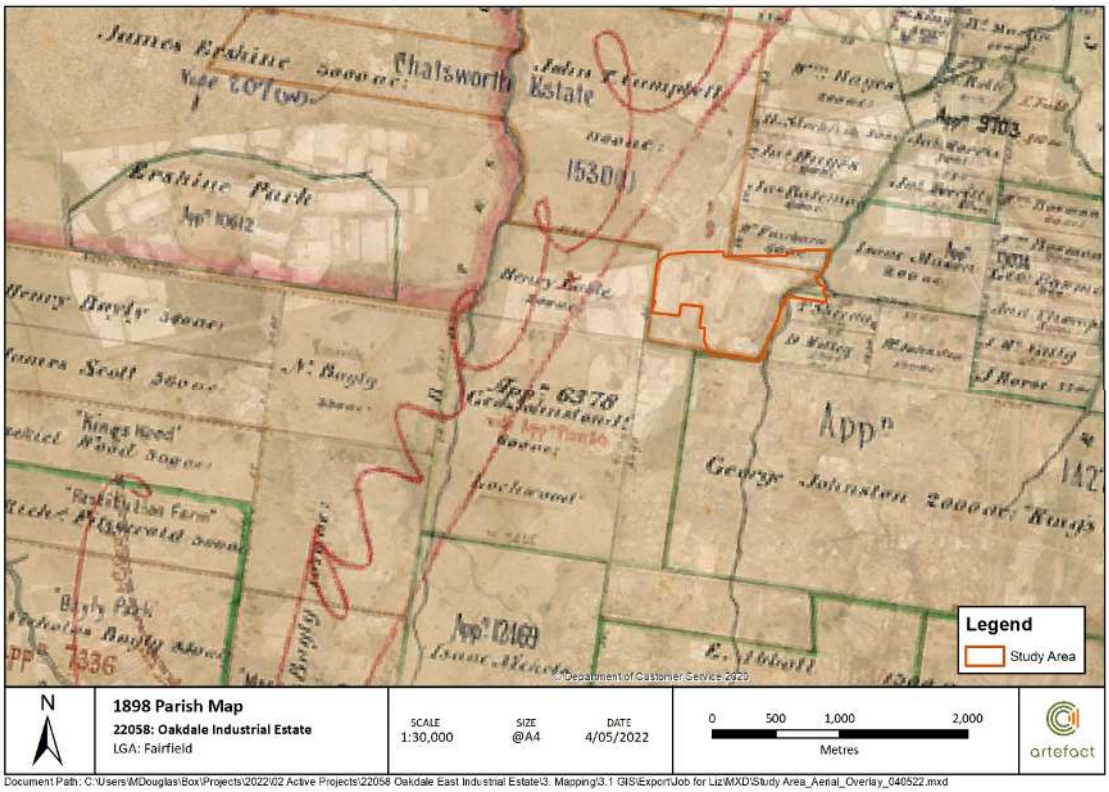
Early residential settlement in the broader Fairfield/ Penrith area was driven by the availability of fertile soil and easily accessible water sources such as creeks and river-beds. For example, the Nepean River (to the west of the study area) provided the most fertile soil in the region and occupation and farming took place along its banks and alluvial from 1789 onwards (Thorpe 1986). Over the following decade, frequent flooding forced settlement to spread inland, to the east of the

river. At this time, Eastern Creek (east of the study area) became associated with smaller allotments, often given to emancipated convicts while land surrounding the study area-further inland and less fertile-was issued to free settlers in the form of large acreages (AMBS 2007).

The earliest European land use of the study area and the surrounding vicinity was likely to have been associated with timber getting, grazing and pastoralism from the early 19th century onwards (AMBS 2007).

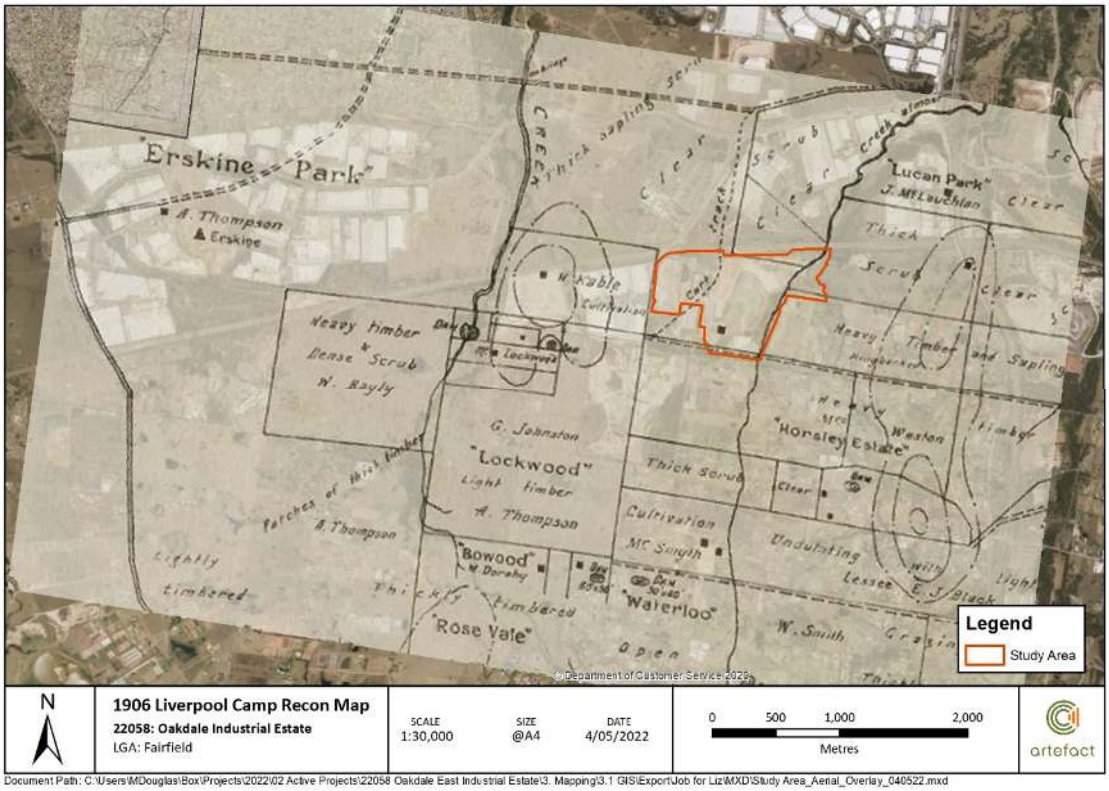
The study area is located on land granted to John Thomas Campbell, secretary to Governor Lachlan Macquarie, after 1811 (Figure 5). John Thomas Campbell was known as a most efficient farmer and breeder of cattle and horses and owned several properties in the Sydney region including a property of 1,100 acres near Rooty Hill, which he named 'Mount Philo' (Holder 1966). The property was inherited by Reverend Charles Campbell in 1830, and subsequently sold to Charles Roberts in 1832, who also acquired other property in the area (Yarwood 1967). In 1856, the property was sold to three brothers: Thomas William Shepherd; Patrick Lindsay Shepherd; and David Shepherd. They amalgamated the land with the neighbouring property of Erskine Parks Estate and named the newly formed property Chatsworth Estate. It is likely more extensive agricultural practices were undertaken at this time (Nicolaidis 2000) as the brothers ran a nursery. The portion of the estate containing the study area had belonged to a Frederick Thomas Bigg (Nicolaidis 2000).

Figure 5. 1898 Parish Map showing the amalgamation of properties to form Chatsworth Estate, with the study area shown in red. Source – HLRV, A.O. Map No. 248.



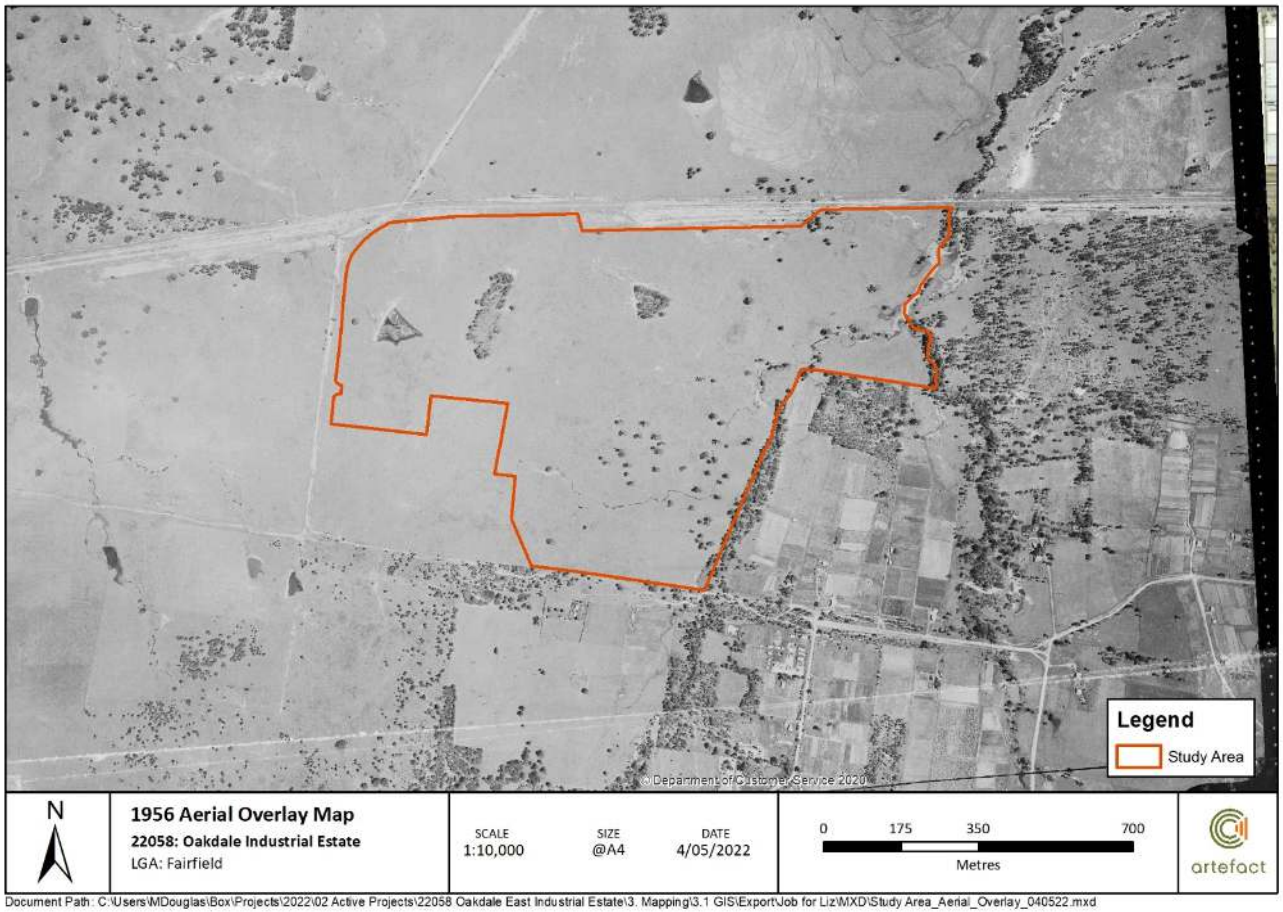
By 1906 a map of the area shows that the study area has been cleared, as it is nestled next to land marked as “cultivation” and “clear scrub” (Figure 6).

Figure 6. 1906 reconnaissance map of the neighbourhood Liverpool camp, showing the general location of the study area outlined in red. Source – Trove, Call No. M 981.2/A



The current study area was acquired by Brickworks Limited between1959 and 1960. Prior to this time, the land had been cleared, and was only sparsely vegetated (Figure 7).

Figure 7. Landscape of the study area in 1956 prior to quarrying/ mining works. (NSW Historical Imaging)



Brickworks Limited started acquiring substantial landholdings around Sydney to ensure constant supply of shale reserves for the brickmaking industry between 1959 and 1960. Although construction of tunnel kilns for extruded texture brick commenced at Wallgrove in 1960, these early works were at Austral Plant no. 1 and 2, which are outside of the current study area. The use of the study area as a quarry did not start immediately, as by 1970, no quarries or buildings had been constructed (Figure 8). Use of the study area as a shale quarry commenced in 1972 (Figure 9) and the study area became known as Austral Plant no.3. In 1982, the plant closed down for upgrades and reopened in 1984 with a fully automated production line (Brickworks 2020). The quarry is still operational (Artefact 2018). While the area has been stripped of vegetated, mining activities commenced in the western part of the study area and have crept eastwards. The area bordering Reedy Creek has remained undisturbed by mining activity until 1994 (Figure 9, Figure 10 and Figure 11).

Figure 8. 1970 aerial photograph of the study area prior to quarrying. Source: NSW Government Historical Imagery.

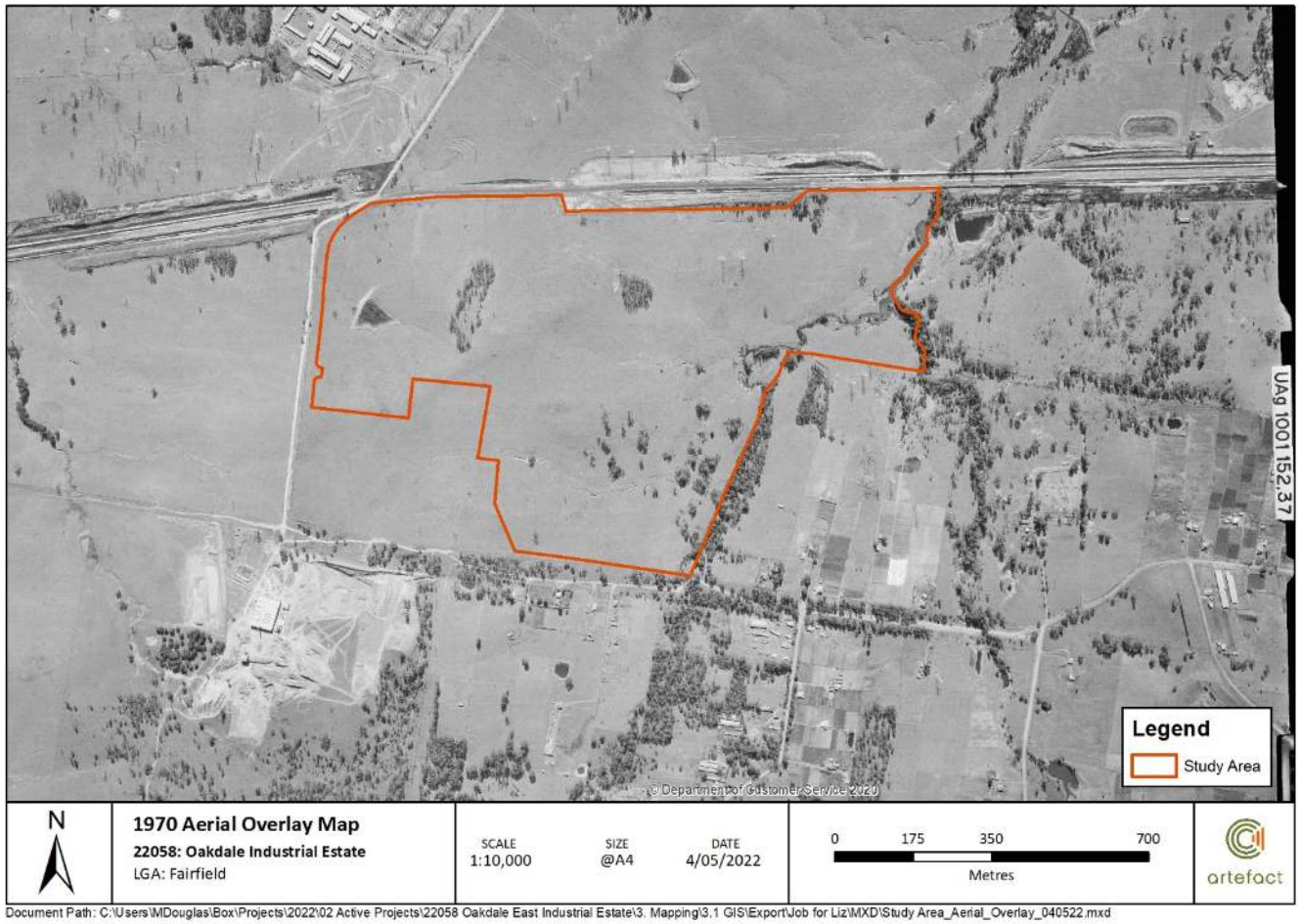


Figure 9. 1975 aerial photograph of the study area during quarrying. Source: NSW Government Historical Imagery, 2327_06_093.jp2.jpeg

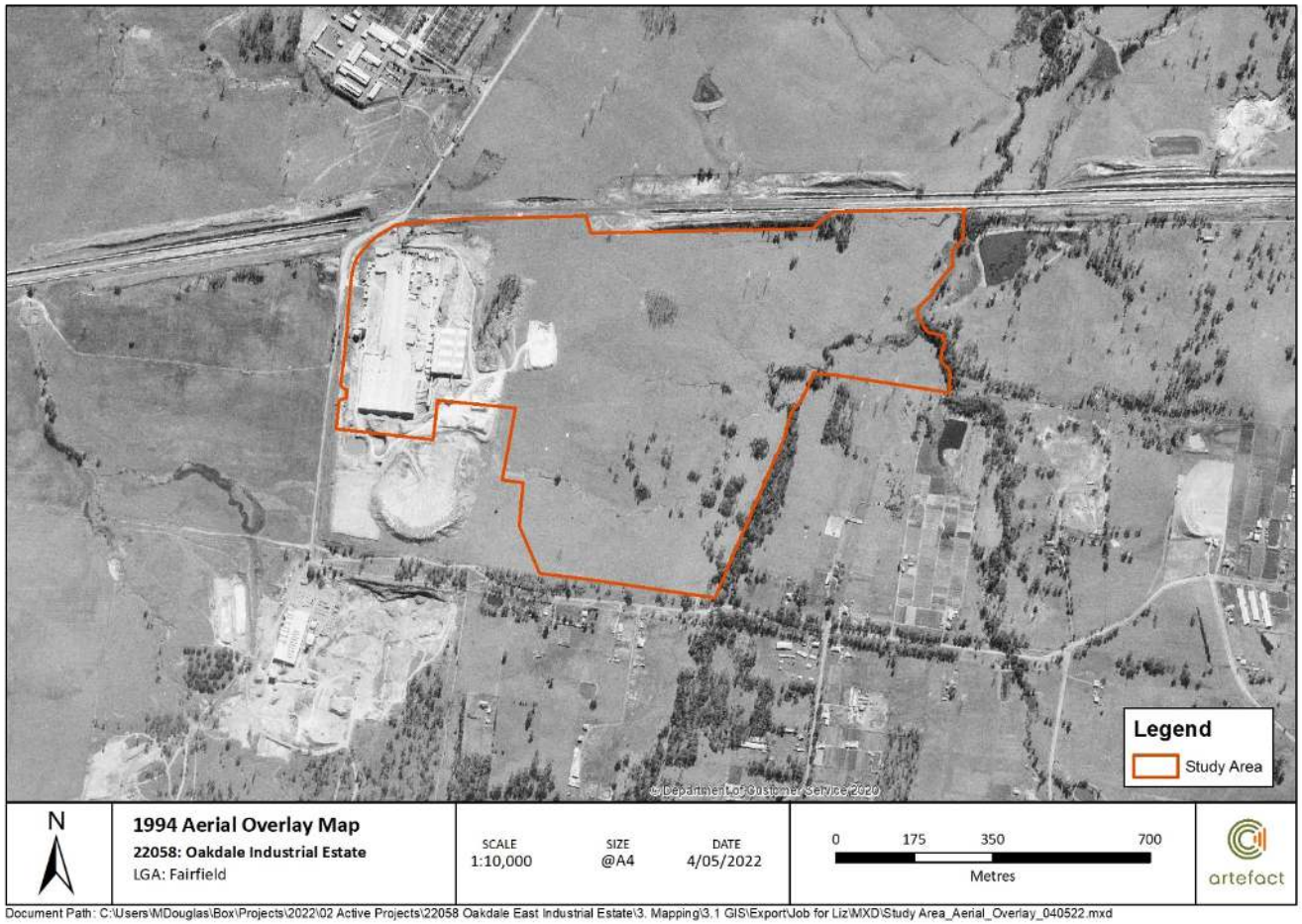


Figure 10. Aerial imagery from 1994 of the active Austral brickworks. Source: Goodman

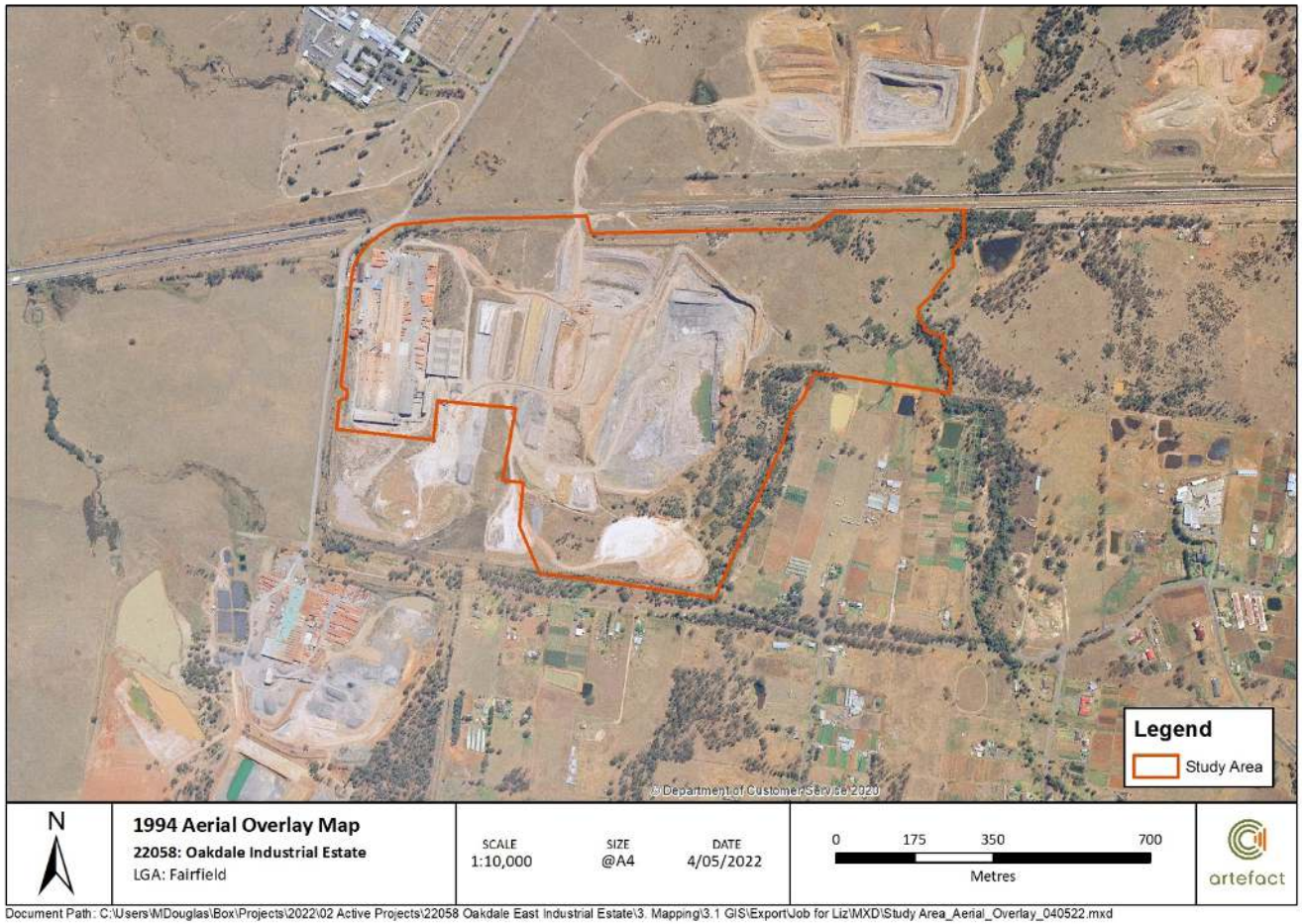
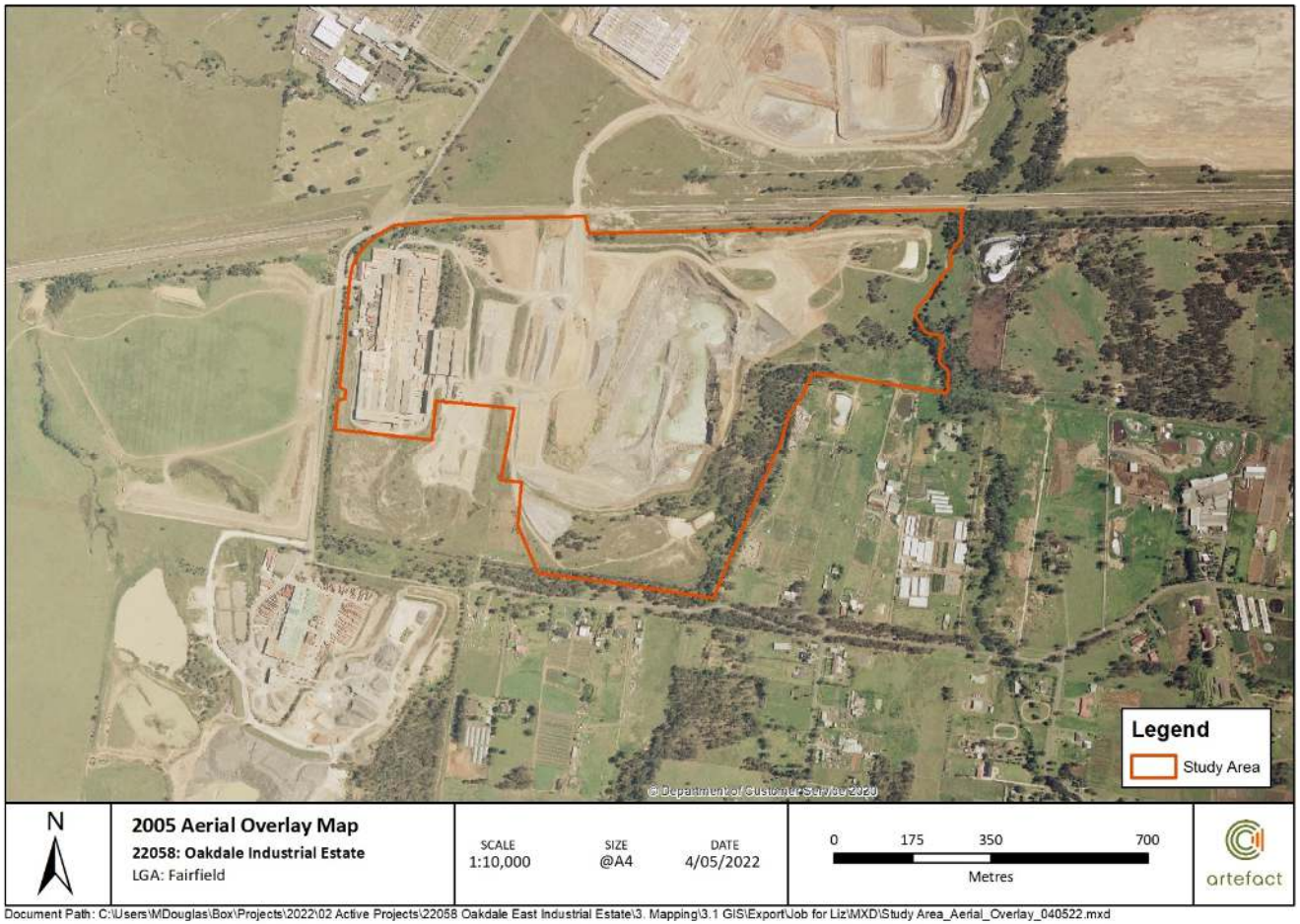


Figure 11. Aerial imagery 2005. (https://portal.spatial.nsw.gov.au/download/historic/4937/4937_09_237.jp2.jpeg)



5.0 ARCHAEOLOGICAL AND ETHNOGRAPHIC CONTEXT

5.1 Ethnographic and historical evidence

Prior to the appropriation of their land by Europeans, Aboriginal people lived in small family or clan groups that were associated with particular territories or places. It seems that territorial boundaries were fairly fluid, although details are not known. The language group spoken on the Cumberland Plain is known as Darug (Dharruk – alternative spelling).

Aboriginal people were highly mobile hunter-gatherers. They used a range or resources, some of which were only available seasonally, and that therefore necessitated movement or trade (Attenbrow 2010: 78). Inland Darug relied heavily on land mammals such as kangaroos, wallabies, possums, fruit bats and echidnas, with freshwater fish, shellfish, crustacea and tortoises and mammals (e.g. platypus and water rats) also eaten. A wide range of plant foods were also relied upon, some of which were also used for medicine and manufacturing tools. There are European accounts of Aboriginal people in canoes on rivers and in the ocean, catching and cooking fish on small fires within the vessels (Collins 1798). Darug-speaking peoples living on the Cumberland Plain appear to have mainly utilised bark huts for housing. With respect to settlement duration Attenbrow (2010: 54) states:

> *there is little direct historical evidence for the length of time people stayed at any one campsite (be it a rock shelter or bark hut), how often they moved, or what motivated them to move to another campsite.*

This term Darug was used for the first time in 1900 (Matthews and Everitt 1900) as before the late 1800s language groups or dialects were not discussed in the literature (Attenbrow 2010:31). The Darug language group is thought to have extended from Appin in the south to the Hawkesbury River, west of the Georges River, Parramatta, the Lane Cove River and to Berowra Creek (Attenbrow 2010:34). This area was home to a number of different clan groups throughout the Cumberland Plain.

British colonisation had a profound and devastating effect on the Aboriginal population of the Sydney region, including Darug speakers. In the early days of the colony Aboriginal people were disenfranchised from their land as the British claimed areas for settlement and agriculture. The colonists, often at the expense of the local Aboriginal groups, also claimed resources such as pasture, timber, fishing grounds and water sources. Overall, the devastation of the Aboriginal culture did not come about through war with the British, but instead through disease and forced removal from traditional lands. It is thought that during the 1789 smallpox epidemic over half of the Aboriginal people of the Sydney region died. The disease spread west to the Darug of the Cumberland Plain and north to the Hawkesbury. It may have in fact have spread much further afield, over the Blue Mountains (Butlin 1983). This loss of life meant that some of the Aboriginal groups who lived away from the coastal settlement of Sydney may have disappeared entirely before Europeans could observe them or record their clan names (Karskens 2010: 425).

The British initially thought that Aboriginal people were confined to the coast taking advantage of the abundant marine resources available. The first major recorded expeditions into the interior did not witness any Aboriginal people, but evidence of their existence was noted. In April 1788, Governor Philip led an expedition west to Prospect Hill. It was noted,

> …that these parts are frequented by the natives was undeniably proved by the temporary huts which were seen in several places. Near one of these huts, the bones of kangaroo were found, and several trees where seen on fire (Phillip 1789).

It wasn't until rural settlement began in the western Cumberland Plain, during the 1790s, that Aboriginal groups in this region came into regular and permanent contact with British colonists. Relations quickly disintegrated, and tensions over land and resources spilled over. Governor King sanctioned the shooting of Aboriginal peoples in a General Order made in 1801 (Kohen 1986: 24). Intermittent killings on both sides continued for over 15 years, including the Appin massacre and attacks at South Creek in 1816 (Kohen 1986: 23; Karskens 2010: 225).

5.2 Archaeological Evidence

The archaeological understanding of the early Aboriginal settlement of the Sydney Basin and surrounds is constantly expanding and developing. The oldest evidence of human occupation in the vicinity of the study area comes from Cranebrook Terrace, located approximately 20 km northwest of the study area (Attenbrow 2010: 18-20) which has been dated to 41,700 years Before Present (yBP) (ANU-4016).

Dates from the three closest sites to the study area include:

- Power Street Bridge 2, approximately 11 km northeast of the study area, dated to 5,957 years BP (NZA-3112)
- Regentville RS1, located 20 km west of the study area, dated to 12,100 years BP (W-1986 [TL])
- Plumpton Ridge, located 15 km north of the study area, dated to 2,250 years BP (Beta 195216).

The existing archaeological record is limited to those materials and objects that were able to withstand degradation and decay. As a result, the most common type of Aboriginal objects remaining in the archaeological record are stone artefacts. Archaeological analyses of these artefacts in their contexts have provided the basis for the interpretation of change in material culture over time. Technologies used for making tools changed, along with preferences of raw material types. Different types of tools appeared at certain times, for example ground stone hatchets are first observed in the archaeological record in the Sydney region around 4,000yBP (Attenbrow 2010: 102). It has been argued that such changes in material culture represent an indication of changes in social organisation and behaviour (Binford 2001, Wright, 1977).

Building on earlier collaborative work (McCarthy, Bramell and Noone 1946) the Eastern Regional Sequence refined the typological constructed by McCarthy in 1948 to explain the differences he was seeing in stone tool technology in different stratigraphic levels of excavations such those he carried out at Lapstone Creek near the foot of the Blue Mountains (McCarthy *et al*. 1948). The Lapstone Creek sequence had three phases that corresponded to different technologies and tool types (the Capertian, Bondaian and Eloueran). These categories have been refined through the interpretation of further excavation data and radiocarbon dates (Hiscock and Attenbrow 2005; McDonald 2006). It is now thought that prior to 8,500 yBP tool technology remained fairly static with a preference for silicified tuff, quartz and some unheated silcrete. Bipolar flaking was rare with unifacial flaking predominant. No backed artefacts were found of this antiquity.

After 8,500 yBP, silcrete was more dominant as a raw material, and bifacial flaking became the most common technique for tool manufacture. From about 4,000 to 1,000 yBP backed artefacts appear more frequently. Tool manufacture techniques become more varied and bipolar flaking increased (JMcD CHM 2001). It has been argued that from 1,400 to 1,000 years before contact there is evidence of a decline in tool manufacture. This reduction may be the result of decreased tool making, an increase in the use of organic materials, changes in the way tools were made, or changes in what types of tools were preferred (Attenbrow 2010: 102). The reduction in evidence coincides with the reduction in frequency of backed blades as a percentage of the assemblage.

After European colonisation Aboriginal people of the Cumberland Plain often continued to manufacture tools, sometimes with new materials such as bottle glass or ceramics. There are several sites in Western Sydney where flaked glass has been recorded with a recent analysis providing a synthesis of such artefacts across the Sydney Region (Goward, 2011).

5.3 Registered Aboriginal sites

The locations and details of Aboriginal sites are considered culturally sensitive information. It is recommended that this information, including the AHIMS data and GIS imagery, is removed from this report if it is to enter the public domain.

The AHIMS search provides archaeological context for the area and identifies whether any previously recorded Aboriginal sites are located within or near the study area. An extensive search of the Aboriginal Heritage Information System (AHIMS) database was undertaken by Elizabeth Bonshek on 06 April 2022 (Client ID 673619). An area of approximately 5.5km was included in the search. The parameters of the search were as follows:

GDA 1994 MGA 56 [redacted]

Buffer 0 km
Number of sites 114

A total of 114 sites were identified in the extensive AHIMS search area. None of these were located within the study area. The AHIMS database records sites using a list of twenty standard site types (OEH 2012) of which four were found within the extensive search

- Artefacts: Objects such as stone tools, modified glass or shell showing evidence of use by aboriginal people.
- Artefact: PAD
- Modified Tree (Carved or Scarred): Trees which show marks of modification as a result of cutting of the bark, or intentionally carving the heartwood.
- PAD: An area where Aboriginal objects may exist below the ground surface.

The frequency of recorded site types is summarised in Table 5. For the 114 sites within the search area comprised the following types: Artefact (86%) (n=98); Artefact: PAD (5%) (n=6); Potential Archaeological Deposit (PAD) (7%) (n=8) and Modified Tree (Carved or Scarred) (2%) (n=2).

The distribution of these recorded sites is shown in Figure 12. Sites located within approximately 1.2 to 1.3 kms from the study area are shown in Figure 13.

In addition to the registered sites, a Due Diligence survey carried out in 2020 found 6 artefacts on the previously documented scatter known as [redacted] which was identified in 2018. The location of the

2020 study area (yellow), the location of the Scatter and the location of the 2020 finds within [redacted] is shown in Figure 14.

Figure 12. The study area in relation to AHIMS registered sites.

Figure 13. The study area in relation to AHIMS sites within 1.2 to 1.3 kms.

Figure 14. Location of earlier study area (2020) (yellow) and [redacted] in relation to the current study area (red).

Table 5: Frequency of recorded site types

Site feature	Frequency	Per cent (%)
Artefact	98	86
Artefact: PAD	6	5
PAD	8	7
Modified Tree (Carved or Scarred)	2	2
Total	114	100

The nature and location of the registered sites is a reflection of the past Aboriginal occupation from which they derive, but is also influenced by historical land-use, and the nature and extent of previous archaeological investigations. Although Aboriginal occupation covered the whole of the landscape, the availability of fresh water, and associated resources, was a significant factor in repeated and long-term occupation of specific areas within the landscape. Certain site types, such as culturally modified trees, are particularly vulnerable to destruction through historical occupation, while others, such as stone artefacts, are more resilient.

5.3.1 Oakdale East Artefact [redacted]

OE AS1 is located in the current study area on the eastern side of Reedy Creek during as Archaeological Survey Report undertaken by Artefact in 2018.

The details of the site are recorded as:

Site type: Artefact Scatter and PAD
Centroid: [redacted]
Site extent: [redacted]

[redacted] was assessed as having Low overall scientific potential. This site has since been been registered by AHIMS as [redacted].

The scatter extended beyond the boundary of the 2018 study area and was recorded as [redacted] north to south and [redacted] east to west, situated on raised ground immediately [redacted] f Eastern Creek. An artificial drainage channel ran north south to an artificial dam that sat above the natural soil landscape. Vegetation consisted of immature tree growth, probably from revegetation during rehabilitation practices. The vegetation included, but was not limited to melaleuca, wattle, and various eucalypt species and introduced grasses. The ground in which the artefacts were located appeared to be in relatively intact and was considered may hold subsurface potential for Aboriginal cultural materials.

The 2018 ASR reports that [redacted] that thirteen pieces of silcrete with evidence of human manufacture were located within the site extent (Figure 15) which was [redacted] adjacent creek line (Reedy Creek) (Figure 16).

The site was recorded as having experienced minimal disturbance from previous pastural, and grazing practises and the soils had experienced erosional effects. The archaeological integrity of the site was assessed as moderate to high, with potential disturbances from grazing cattle/ horses and land clearance.

Vegetation around the site had been previously cleared as there was no old tree growth. Ground visibility at the [redacted] was high due to sparse grass and weed cover. Any exposures within the site showed silty loams with well-rounded ironstone/shale gravels (Figure 17).

Figure 15. Three of thirteen silcrete flakes found within the [redacted] Norfolk, 18 October 2018).

Figure 16. Location of [redacted] east view of th adjacent to creek (J Norfolk, 18 October 2018).

Figure 17. Surface visibility and soils at location of [redacted] (J Norfolk, 18 October 2018).

5.3.2 [redacted]

[redacted] comprises a small artefact scatter found exposed on a dam wall, in spoil excavated for the construction of the dam. Therefore it was determined that the artefacts were not *in situ* but had originally been located in the area currently occupied by a dam.

Three pieces of red silcrete and a single piece of brown mudstone were identified during the initial investigations, however they were not relocated during collection under the SSD 5248 undertaken in 2020 and the site was determined to be destroyed.

The site was approximately [redacted] of Reedy Creek and highlights the association of creek lines with Aboriginal archaeologi [redacted] l as well as the survival of intact aboriginal material despite minor impacts and disturbance (AMBS 2008).

5.3.3 [redacted]

[redacted] comprises a large PAD, [redacted] north-south and [redacted] east-west, located on the [redacted] Reedy Creek. This site borders the study area, about [redacted] A total of 15 artefacts were identified within the PAD which was interpreted as background scatter. The site was recorded in April 2020.

[redacted] appears to be located on a similar landform to that seen on the western side of Reedy Creek. It highlights the Aboriginal archaeological potential intrinsic to this landform, and the correlation of proximity to water sources for the Aboriginal sites.

5.3.4 [redacted]

[redacted] comprises a single isolated find of red silcrete found in an area of ground exposure located in [redacted] to the study area, being located on the [redacted] reek bank, and about [redacted] f the creek. The area was described as being subject to “relatively gross ground disturbance” (Site Card). Only a single red silcrete flake was identified in a 35 m by 30 m exposure. The site is on the [redacted] which runs alongside the study area on the northern boundary. The site [redacted] cer (2000).

5.3.5 Austral Bricks: [redacted]; [redacted] and [redacted]

5.3.5.1 Austral [redacted]

Located approximately [redacted] of the study area, Austral [redacted] is a described as a scarred tree/open camp site. T [redacted] the tree was made by a metal axe so occurred post contact. The age of the tree suggests the modification was made during the early colonial period. Six stone artefacts were found at the base of the tree, four of which lay within 30cm of each other. The latter were red silcrete flakes and one pink/red silcrete chunk; the remainder comprised one silicified tuff flake fragment and one quartz bipolar fragment.

The tree and the artefacts were located [redacted] of Reedy Creek. The site is located in an area that would have provided food resources (w [redacted] ngaroos, emu, snakes, echidna, fish) and retained scattered old growth Eucalpts and Casuarina) (site card). The site condition was recorded as partially destroyed; this disruption having been caused by quarry activity in the vicinity of the finds. Nonetheless, testing of the area was suggested.

The areas was investigated in relation to the survey and assessment of DEPP59 land (JMcD CHM 2002).

5.3.5.2 Austral [redacted]

This isolated find, a broken, glossy-red, silcrete flake, was discovered approximately [redacted] of Austral [redacted] in a mound comprised of disturbed “unit A deposit”. The artefact was

assessed as having low significance, but it was recorded that there were pockets of undisturbed areas which might hold high potential. The site environment was the same as Austral [redacted] and the site condition was similarly disturbed. The artefact was found [redacted] of Reedy Creek.

5.3.5.3 Austral [redacted]

This artefact is a yellow, silicified tuff flake, broken, with a focal platform. It was found between Austral [redacted] of Reedy Creek. The artefact was assessed as having low significance and was located in an undisturbed deposit assessed as having high potential.

5.3.6 PGH [redacted]

This artefact was found in 1994 during a survey of Aboriginal sites within PGH Brickworks. Two artefacts, one silcrete core, and one silcrete flake, were discovered in a site classified as an Open Camp site. The site was found [redacted] Reedy Creek in a cleared area under trees. Vegetation consisted of open Eucalypt woodland, with no faunal or floral resources available. The site was partially disturbed. (JMcD CHM 2002 Archaeological Assessment of Aboriginal Sites: Eastern Creek Strategic Landuse Study; SEPP59 lands in Blacktown Council NSW).

5.3.7 Darug Tribal Aboriginal Corporation [redacted]

This open site, artefact and PAD was found on an upper slope within an undulating landform, which had been cleared and used as pastoral/grazing land. It was [redacted] Ropes Creek and approximately [redacted] from the western boundary of the study area. The site was completely destroyed for a SSD/SSI/Part 3A project approved in 25 September 2012. Following salvage work, the site was completely destroyed (Major Civil Construction Planning Approval SSI-5100).

5.3.8 HP [redacted]

This site was discovered during the archaeological investigation of an area designated for a proposed clay and shale extraction area west of Old Wallgrove Road, [redacted] the study area. Jon Appleton found a single artefact located on a flat within an undulating landform which had been cleared for pastoral and grazing land use. It was found [redacted] rom Ropes Creek, and [redacted] from a temporary, unnamed water source. The artefact was d [redacted] by Appleton as a “red cherty mudstone (tuff?) flaked piece”. A subsequent survey identified a second artefact, a red silcrete flaked piece which caused the site to be reclassified as an open site. The second find was located on [redacted] at the same location, but on a different track. Recording of the site for the second survey (2007) described the site as a disturbed context, [redacted] and recommended archaeological excavation (AHIMS Site Card).

5.3.9 Oakdale [redacted]

This is an isolated find, a grey/cream chert flaked piece, which was located on [redacted] located in the Austral Bricks quarry, on the west side of Old Wallgrove Road. The find was located [redacted] from Ropes Creek in land that was disturbed, and which had been cleared and used for grazing. Other artefacts had been located in the area. The site is located approximately [redacted] of the study area.

5.3.10 Summary

The study area has sites on the [redacted] of its boundary, and both in-situ sites and sites discovered in dam walls [redacted] to the Reedy Creek northwards. The sites found to the [redacted]

are occurring near between [redacted] to [redacted] from the creek line, and one (scarred tree) indicates activity undertaken in the early colonial period in this area that would have offered food and subsistence resources. As Reedy Creek meanders [redacted] an artefact was found [redacted] on the mid-slope. The sites on the west s [redacted] st distant from Reedy [redacted] en the latter and Ropes Creek to the west.

5.4 Previous archaeological investigations

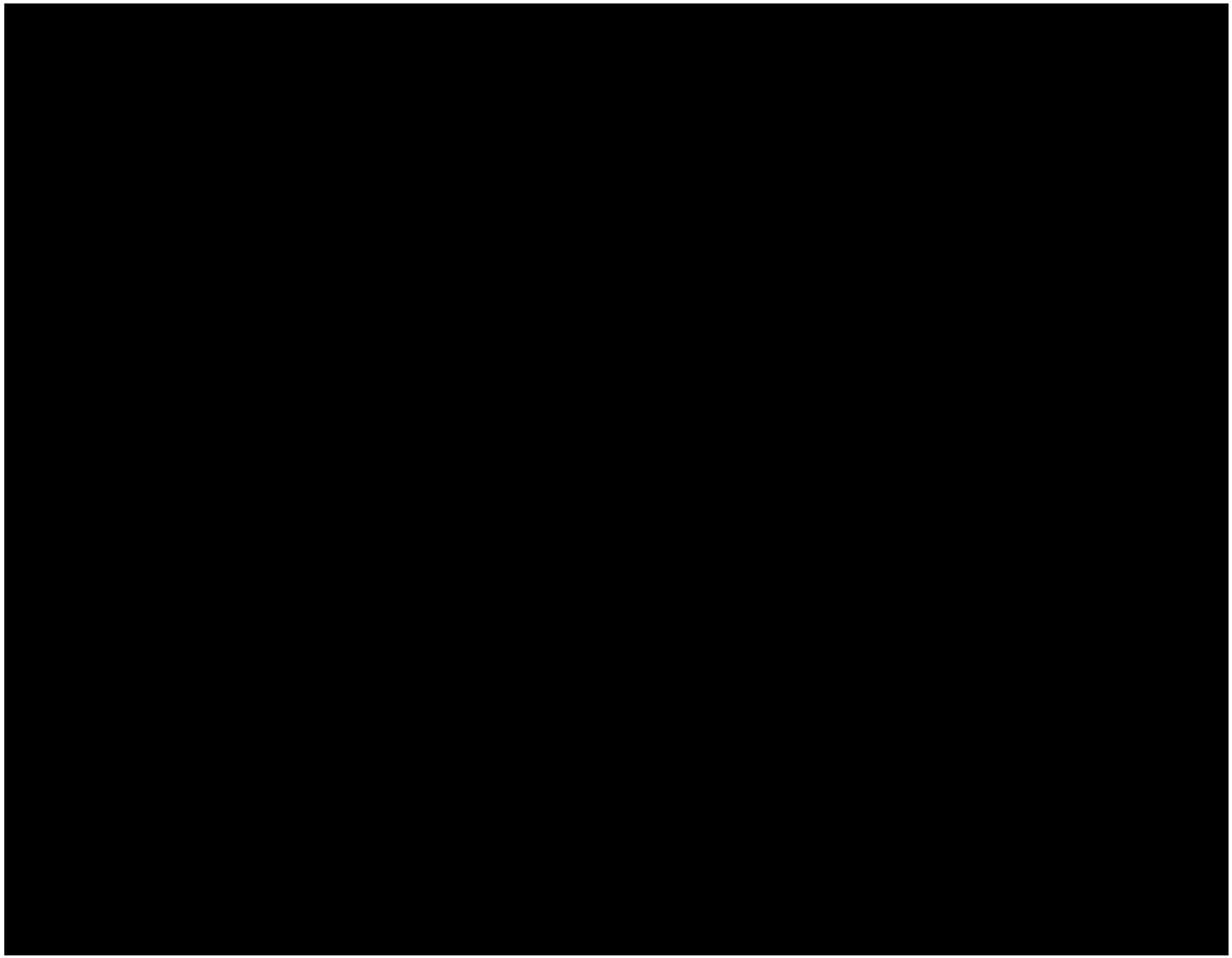
Parts of the study area have been assessed as part of a Due Diligence report undertaken in 2021 which is discussed below and supplements information provided above. In broader terms, Oakdale East is one several precincts included in the Oakdale Concept Plan for which Godden Mackay Logan Heritage (GML Heritage) prepared an Aboriginal Heritage Assessment in 2007. The other precincts include Oakdale Central, Oakdale South and Oakdale West. Archaeological investigations in these areas are all in near proximity to the study area and some of these are summarized below.

Artefact 2021 Oakdale East Industrial Estate Stage 4. Aboriginal Heritage Due Diligence Assessment. Brickworks Land & Development 25 June 2021

Artefact prepared a Due Diligence Assessment for parts of the study area for Brickworks Land & Development as part of assessment to identify site constraints in the area with view to rehabilitation works and future development. The 2021 study area was a subset of the current study area and excluded a portion of land located in the north eastern corner and adjacent to the eastern side Reedy Creek (Figure 14). The site survey determined that the western and central parts of the study area had been subject to intensive impacts caused by quarrying, clearing of vegetation, vehicle movement and construction works and that no intact topsoil survived.

Inspection of the area on the eastern side of Reedy Creek revealed [redacted] into the study area. While dense ground cover impeded visibility, the remaining 30% of the area comprised exposures caused by water erosion which provided good visibility. This area is the location of [redacted] dentified in 2018) (see above) and 6 artefacts were found here (Figure 18). (The location of [redacted] in relation to the current study area is shown in Figure 14). This area was assessed as similar to the landform in which three nearby sites [redacted] are located and where [redacted] g the remainder of the study area was assessed as holding nil archaeological sensitivity (indicated as yellow in Figure 14).

Figure 18. Due Diligence study area of 2021, and location of OE AS1 (Artefact 2021).



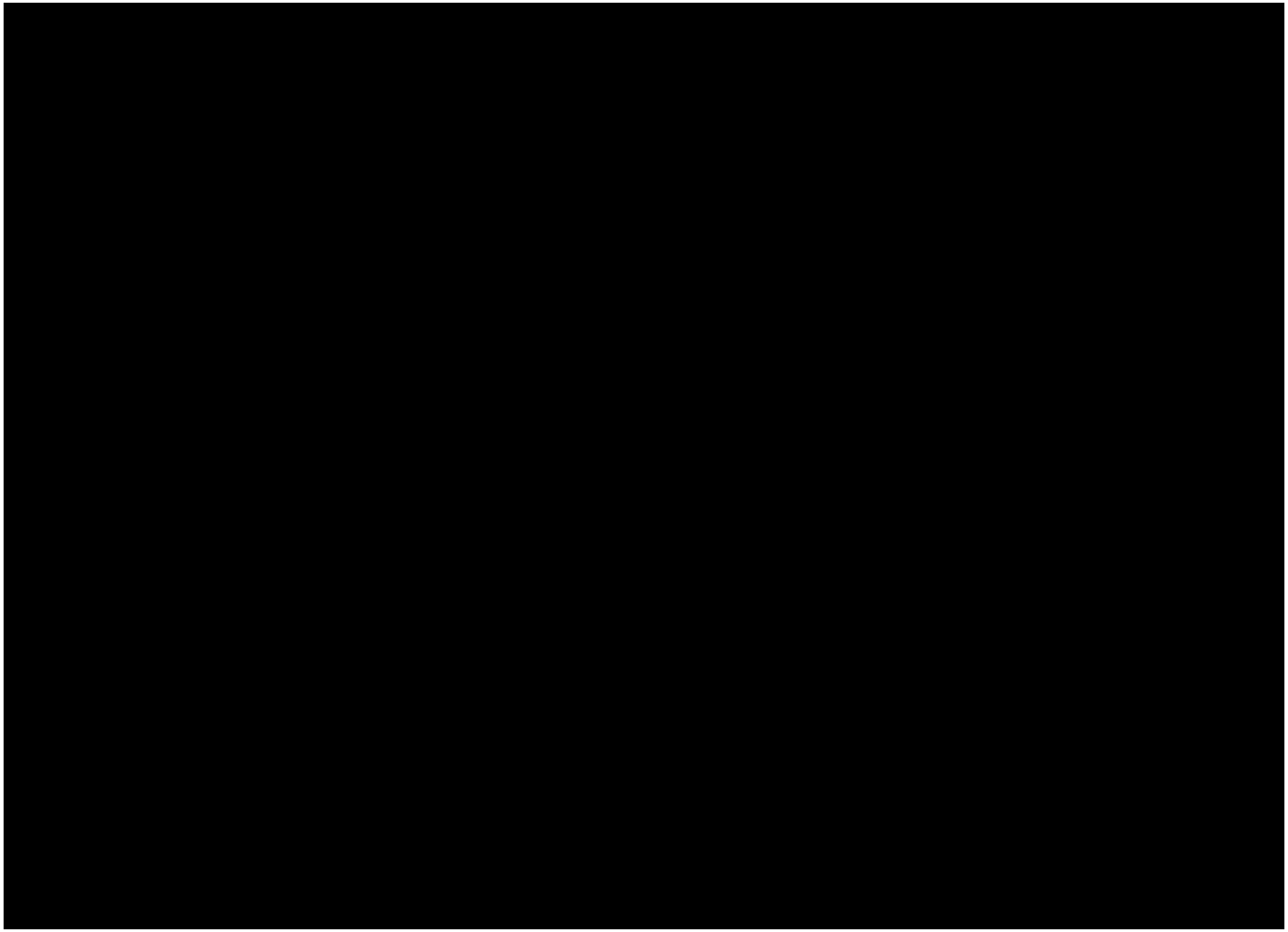
Artefact Heritage 2018 (Oakdale East: 224-398 Burley Road, Horsley Park Archaeological Survey Report [ASR])

In 2018 Artefact Heritage prepared an ASR for Stage 1 of the Oakdale East project, covering the southern portion of the current study area (Figure 19). The survey found one Aboriginal site, [redacted] comprising an artefact scatter and associated Potential Archaeological Deposit (PAD) [redacted] to Reedy Creek in [redacted] of the current study area (described above, and Figure 19). [redacted] (Figure 20).

The remainder of the site [redacted] Figure 20) was highly disturbed and comprised modified slopes, spoil mounds, deep excavated pits, quarry infrastructure and vehicle access tracks. Transmission lines ran through [redacted] While visibility was poor, where subsurface soil profiles were visible in exposed excavation pit walls, no intact soil profiles above clay were visible. No aboriginal objects were found in [redacted] [redacted] was assessed to hold low potential for archaeological remains to be present. The 2021 Due Diligence assessment assessed the eastern half of this section [redacted] as holding nil significance (Figure 14).

Figure 19. Former study area for 2018 ASR which identified OE AS1 extending beyond the boundaries on the northern side.

Figure 20. Survey Units 1 and 2 for ASR 2018 (Artefact). Survey unit 2 assessed to hold low archaeological potential.



GML 2013 (Oakdale Central Aboriginal Archaeological Technical Report [ATR])

GML undertook a field survey of an area previously identified as of moderate potential along Eastern Creek which lies west of the study area. GML undertook subsurface testing of the area of potential, and recovered a total of 285 lithic artefacts comprising a mix of silcrete, mudstone, quartz and quartzite.

It was found that artefacts were concentrated [redacted] with a sparse density of artefacts found on the slopes. Due to the proximity to the current study area, it is likely that a similar distribution of artefacts will be present.

Artefact Heritage 2018 (Oakdale South Archaeological Salvage Report). Report to Goodman Property Services.

Goodman proposed to construct several industrial use buildings, internal access roads which involved the initial bulk earthworks to create broad flat areas for development. As a result of successive stages of investigation and archaeological assessment between 2014-2015 salvage excavation was undertaken at two Aboriginal sites. This work included consultation with Aboriginal stakeholders. The salvage works were located approximately [redacted] south-west of the study area.

Oakdale South [redacted] and Oakdale South [redacted] were subject to salvage excavation and a total of 1,302 artefacts were retrieved. The salvage excavation revealed a rich and varied assemblage of artefacts across a variety of landscapes. Most significant of these included: very high densities of artefacts at sites [redacted] with densities of between 50 and 100 artefacts per square metre were identified; possible contact sites were identified at Oakdale South [redacted] with three flaked artefacts identified within [redacted] and a rare, edge ground hatchet was identified at Oakdale South [redacted] The hatchet is large and made from a riverine dolerite and unique in the Oakdale South assemblage.

Artefact Heritage 2015a and b (Oakdale South Industrial Estate Archaeological Survey and Test Excavation Report [ACHAR])

In 2015 Artefact Heritage undertook an archaeological survey and test excavation immediately south west of the current study area. Four Aboriginal archaeological sites were identified within the study area [redacted]
The t

It was found that the artefacts were concentrated in [redacted] and primarily comprised of silcrete, although a concentration of indurated mudstone was identified.

Artefact Heritage 2016 (Oakdale South Industrial Estate ACHAR)

Following the survey and test excavation in 2015, Artefact Heritage prepared an ACHAR, for the Oakdale South Industrial Estate. The ACHAR included a predictive model that focussed on the proximity to water sources as being the predominant indicator of Aboriginal archaeological potential. Aboriginal consultation was undertaken for the ACHAR with no additional cultural values identified.

Artefact Heritage 2019 (Oakdale Industrial Estate, Oakdale West Aboriginal Cultural Heritage Assessment Report)

In 2019 Artefact Heritage prepared an ACHAR for Oakdale West, located [redacted] of the current study area. The ACHAR summarised the results of a previous test excava [redacted] by Artefact Heritage in 2015 which had identified five Aboriginal archaeological sites within the Oakdale West study area.

The test excavation identified a total of 34 Aboriginal artefacts predominantly composed of silcrete (n:20, 58.82%), followed by mudstone (n:7, 20.59%.). Complete flakes were the most common artefact type (n:23, 67.65%) identified during the excavation, with only a single core identified (2.94%).

The ACHAR highlighted the importance of water sources for Aboriginal archaeological potential, while the results of the test excavation indicate that while silcrete is the most common raw material used within the wider area a range of other materials were used in lesser quantities.

Appleton 2002 (The Archaeological Investigation of Lot 2, DP 120673, the site of a proposed new clay and shale extraction area. Old Wallgrove Road Horsley Park)

Located [redacted], [redacted] to the current study area, Appleton identified an area of PAD [redacted]. Two mudstone flakes were identified during a field survey.

The PAD was located on a raised platform [redacted] similar to that found on the western side of the creek within the current study area.

Navin Officer (2003) Proposed 132kV Transmission Line Erskine Park, NSW, Cultural Heritage Assessment

Navin Officer conducted an Aboriginal cultural heritage assessment for Integral Energy for the proposed 132 kV transmission line extending from the Sydney West Substation 3.5 km west to Erskine Park. Two Aboriginal sites (artefact scatters) were identified and an area of archaeological potential. [redacted] The PAD was identified [redacted] They concluded higher densities are likely to be locate near permanent water sources. The raw materials were mudstone and silcrete

JMcD CHM 2004 (Archaeological Investigations at the Austral Site [redacted] Wallgrove Road, Horsley Park)

Located [redacted] f the current study area and located [redacted] along the margin of an alluvial floodplain, a test excavation was conducted at [redacted] by JMcD in in 2004. The excavation program recovered over 2000 lithic artefacts. A range of raw materials were identified included silicified tuff, quartz, silcrete and silicified wood.

JMcD CHM (2005) Heritage Conservation Strategy for Aboriginal sites in the lands owned by Valad Funds Management Ltd and Sargents P/L, in the Eastern Creek Business Park (Stage 3) Precinct Plan

The assessment area was located approximately [redacted] of the current study area. The assessment identified areas of high archaeologic [redacted] hill slopes, first order tributary creek lines, shale ridges and low ridgetops. Areas of moderate archaeological sensitivity were identified as areas surrounding high value landforms and exhibited low levels of disturbance. Areas of low archaeological sensitivity were identified as those that demonstrated high levels of disturbance. This included areas that had been quarried.

5.4.1 Summary Conclusions

The reports above found potential for Aboriginal archaeological sites to be located throughout the landscape. Certain landforms were considered to have higher archaeological potential. Creek lines and associated lower slopes and alluvial flats are considered to have high potential for Aboriginal archaeological sites. JMcD CHM (2005) also identified areas of high archaeological value on shale hill slopes, first order tributary creek lines, shale ridges and low ridgetops.

Artefact scatters and open camp sites are expected to be the dominant site type and density of artefacts within the surrounding landscape will be higher located near to permanent water sources. The expected raw material for stone artefacts will be silcrete, mudstone and quartz, silcrete is a locally available source.

5.5 Predictive model

5.5.1 Regional model

Archaeological investigation across the Cumberland Plain has been comprehensive over the past 30 years, including survey, excavation, and desktop analysis studies. This varied and intensive investigation has led to the development and continual refinement of a predictive model for Aboriginal occupation within the region.

The Cumberland Plain has been extensively studied due to the growth demand of the ever-increasing Sydney population. Regional studies have been done on the large Growth Centres of the North West and South West of the Cumberland Plain, west of Sydney Basin. White and McDonald (2010) have contributed to the debate over site prediction by discussing the nature of Aboriginal site distribution, interpreted through lithic analysis of excavated sites in the Rouse Hill Development Area (White and McDonald 2010). The Rouse Hill Development Area is located about 15 km north of the current study area, the watercourses in the development area (Caddies Creek and Second Ponds Creek) derive from the same source as South Creek, Hawkesbury River, and are of a similar stream order. The Soil landscapes are also reflective of those in the current study are, South Creek Soil Landscape along the high order watercourses and associated remnant Blacktown Soil Landscape. The study gave rise to the commonly referred Stream Order Model which provides a sound basis for archaeological investigations in the Cumberland plain. The paper provides a spatial and distributive analysis of Aboriginal objects in relation to freshwater resources and along varying landform units. The findings of this study highlighted the relationship between proximity to freshwater and landscape with archaeological evidence of Aboriginal occupation. The study found that artefact densities were most likely to be greatest on terraces and lower slopes within 100 m of freshwater resources (White and McDonald 2010). The predictive model identified that ridgelines and crests located between drainage lines will contain archaeological evidence though usually representative of background scatter (White and McDonald 2010).

While White and McDonald's (2010) predictive model can be seen as an indicative model of the archaeology of the Cumberland Plain, a more recent study has been conducted by Godden Mackay and Logan (GML 2012) at the East Leppington Precinct. The study utilised the Stream Order Model developed by White and McDonald (2010) in their investigations and three different and complementary models to explain their findings. The Stream Order Model is a regional based model and doesn't consider the small-scale intra-landform variations that can affect the predictions of this model.

Owen and Cowie (2017) describe three other models that can be used to more accurately describe archaeological probability within the landscape. Economic Resource Model, Activity Overprinting Model and Domiciliary Spacing Model. The Economic Resource Model focuses on the resource zones, confluences of creeks are considered high resource zones due to the richness in flora and fauna. The model suggests that the evidence of Aboriginal activities will decrease with distance from theses resource rich nodes. Activity Overprinting Model was used to explain the density of sites at increasing distances from the creek and Domiciliary Spacing Model was used to describe the features and spatial variation of a site.

In conjunction with these models, an understanding of the soil landscape and the nature and prevalence of cultural material within these contexts is important in the predictive model process. Deposits that contain cultural material are likely to exist within both Blacktown soil landscapes and South Creek soil landscapes however, these are generally not stratified. Blacktown soils retrieve cultural material in A Horizon deposits which generally extend approximately 300 mm below the ground surface. Stratified archaeological deposits are likely to be located within the South Creek soil landscape. These stratified deposits area most likely to exist within raised embankments where environmental forces, such as flash flooding, are less likely to have impacted Aboriginal cultural material situated on the ground surface. The deposits may have a vertical distribution that parallels alluvial deposition over time. The NSW Soil and Land Information System produced a technical report outlining the results of a core sample taken approximately 1.3 km north of the current study area, along the alluvial flats of South Creek. The results show that the South Creek soils extends to a depth of 2 m in this area and may parallel the depth of deposit within the study area.

Every predictive model has its limitations and constraints and should be used as a guiding factor for future investigation and be used as a bridging tool to further current understanding of the cultural environment.

5.5.2 Local model

Based on the recorded AHIMS sites, previous studies and the environmental context, predictions can be made on the type of Aboriginal archaeological evidence potentially present within the current study area. This evidence could be found in the form of certain site types:

- **Open artefact scatters or isolated finds** – this was the most common site feature from the AHIMS search and is the most prevalent source of evidence of Aboriginal occupation that has influenced the predictive models for many studies. The visibility of these sites is dependent on surface visibility and exposure and affected by the nature of the soil landscape. The erosional nature of the Blacktown soils within the study areas suggest that possible deposits are susceptible to erosion, yet the depositional nature of permanent watercourses such as the Eastern Creek gives rise to the probability of intact occupational records in the deep stratigraphic layers. Using the Stream Order Model and Economic Resource model we can assume there is a high likelihood for sites. Reedy Creek is connected to Eastern Creek, a high order watercourse as well as a resource rich environment. It is likely that artefact scatters will be located on the slopes and crests associated with the floodplains. The dominant material type is expected to be silcrete.
- **Culturally modified scarred trees** – while extensive clearing occurred post-European contact these sites may occur in any pockets of mature native trees. Types of scarring that

would be expected are bark removal for utensils, weapons and habitation and resource collection.

- **Potential archaeological deposits** – where subsurface stone artefacts and or other cultural materials are likely to occur. Areas in which there are intact soil profiles that have experienced minimal to no previous disturbance may contain a record of Aboriginal occupation or utilisation of the study area. The creek line along the eastern boundary exhibited potential for subsurface artefacts due to the presence of stone material eroding out of the surface.

6.0 SITE SURVEY METHODOLOGY

6.1 Aboriginal site definition

An Aboriginal site is generally defined as an Aboriginal object or place. An Aboriginal object refers to any deposit, object or material evidence (not being a handicraft) relating to Aboriginal habitation of the area that comprises New South Wales (DECCW 2010). Aboriginal objects may include stone tools, scarred trees or rock art. Some sites, or Aboriginal places, can also be intangible and although they might not be visible, these places have cultural significance to Aboriginal people.

The Code of Practice states, in regard to the definition of a site and its boundary, that one or more of the following criteria must be used when recording material traces of Aboriginal land use:

- The spatial extent of any visible Aboriginal objects, or direct evidence of their location
- Obvious physical boundaries where present, for example mound site and middens (if visibility is good), a ceremonial ground
- Identification by the Aboriginal community on the basis of cultural information

6.2 Archaeological survey methodology

6.2.1 Aims of archaeological survey

The aims of the archaeological survey were to:

- Inspect the ground surface of the site
- Record any surface or potential subsurface Aboriginal sites that have not been recorded in AHIMS
- Identify areas of PAD that may be present in areas that have had no or minimal disturbance
- Collect information to ascertain whether further archaeological investigation is required.

6.2.2 Site Survey

A site survey was carried out on 22 April, 2022 by Elizabeth Bonshek (Senior Heritage Consultant), Michael Lever (Heritage Consultant) and Steve Randall, Deerubbin LALC.

More than half of the study area (approximately 54%) was assessed in 2021 as having nil archaeological potential due to mining disturbance, therefore this area was excluded from the survey. The land bounding the northern edge of the study area was also disturbed, due to the construction of access tracks for heavy earth moving equipment. As this area was an active work site it was not possible to photograph this area which was reserved for transiting through the site. A water pipeline has been installed along the external edge of the study area's northern boundary, and an embankment built up along this boundary (Figure 21 and Figure 22).

The eastern boundary of the study area was surveyed in two parts: Survey unit 1 consisted of the creek bank located on the southern end of the boundary and Survey Unit 2 consisted of the meadow and creek line located at the northern end of the eastern boundary.

- Survey Unit 1. Creek bank located on the southern end of the eastern boundary
- Survey Unit 2. Meadow and creek line located at the northern end of the eastern boundary

6.2.2.1 Survey Unit 1. Creek bank located on the southern end of the eastern boundary

[redacted] is located in this survey unit.

This landform in this area comprises a slope running downwards from west to east towards Reedy Creek. The mining operations have cut into the landform on the western side (Figure 23 and Figure 24). An area of vegetation runs in a south to north direction, following the path of Reedy Creek and marks the perimeter of the Ecological Zone marked on (Figure 2). A drainage channel runs along the western perimeter of the Ecological Zone (Figure 24) which has caused erosion in this area. This area is densely vegetated with young tree growth, scrub, weeds and grass (Figure 25).

Ground visibility in most of the area was zero, being covered in overgrown grass, lantana and leaf debris (Figure 25 and Figure 26). Typical areas of exposure, such as one approximately 10m in length (Figure 27) were covered with leaf matter and moss. Recent evidence or flooding in the area was visible in high water levels in the creek (Figure 29 and Figure 30).

A second drainage line was located towards the southern end of the survey unit (Figure 30) and occurs [redacted]. The landform on the south side of the drainage line does not appear substantially different to the land form on which [redacted] is situated. The density of the foliage at the southern end prevented full investigation of the section running down to the boundary Figure 31). Cattle had recently moved through the area (probably from the property on the eastern side of the creek) as fresh footprints were visible in the mud along the creek, suggesting that the neighbouring animals cross the creek and graze in the area. The northern end of the Survey Unit was also swampy, joining up with the drainage line travelling along the western boundary (Figure 34).

No artefacts were found in this area.

Due to the poor visibility in this area, it was not possible to confirm or contradict the presence of the site.

Figure 21. NSW Water pipeline located on north side of northern boundary

Figure 22. Pipeline running alongside study area, view from embankment constructed parallel in study area.

Figure 23. Western side of landform, which as been cut into.

Figure 24. Drainage ditch on western perimeter of Ecological Zone.

Figure 25. Heavily vegetated area, with young tree growth, lantana and weeds.

Figure 26. Zero ground visibility.

Figure 27. Exposure located adjacent to the

Figure 28. Moss covered exposures.

Figure 29. Trees standing in the high water of Reedy Creek.

Fi rainage line located at south end of [redacted]

Figure 31. View to southern most section of the Ecological Zone which was too dense to penetrate.

Figure 32. Swampy area at northern end of Survey Unit 1.

6.2.2.2 Survey Unit 2. Meadow and creek line located at the northern end of the eastern boundary

Survey Unit 2 comprised a meadow (Figure 33) and an area of swampy land adjacent to the creek line (Figure 34). The landform sloped gently towards Reedy Creek (Figure 35) and was mushy underfoot. Ground visibility in this area was zero (Figure 36) due to dense grass growth. At copse of trees were present, but no old growth trees. Many of these were tea tree, with a few young eucalypts.

No artefacts were found in this area.

Figure 33. View to the meadow, remnant trees to left.

Figure 34. Swampy land adjacent to the creekline at the northern most section of Survey Unit 2.

Figure 35. Meadow sloping towards Reedy Creek at far side of image.

Figure 36. Ground visibility in the meadow and surrounding areas was poor.

Results

Archaeological potential is closely related to levels of ground disturbance in the area. Other factors are also taken into account, such as whether artefacts were located on the surface, and whether the area is within a sensitive landform unit according to the predictive statements for the area. The potential for discovering artefacts lies in landforms which have been subject to a light to moderate disturbance.

In summary, no artefacts were found in the study area. Overall, visibility in the study area was very poor to zero. As a result, it was not possible to verify the location [redacted]. However, observation of the landform in Survey Unit 1 affirms the findings of the 2018 assessment, namely, the land in the survey unit is [redacted] At the time of the survey, Survey Unit 2 was moist underfoot, and assessed as being swampy and therefore unlikely to reveal subsurface archaeological deposits.

The 2018 study suggested that the area had minimal disturbance from previous pastural, and grazing practises and the soils have experienced erosional effects. The archaeological integrity of the site was assessed as being moderate to high, with potential disturbances from grazing cattle/ horses and land clearance. The area continues to be used by animals which cross the creek. However, the area has been isolated from disturbances caused by mining activities by the erection of a fence cordoning off the creek area. Therefore, the archaeological assessment of the area was considered to be the same as in 2021.

In summary:

- no artefacts were found across the study area
- the extent of the boundary (especially the west-east limits) of [redacted] potential archaeological deposit could not be confirmed or discounted
- the landform situated south of the current extent of [redacted] is, given visibility on the day, similar to that on which [redacted] is located
- the northern end of [redacted] appears [redacted]
- the historical images show that the site has escaped mining disturbance
- the landform lies within [redacted] of the creek line, on an elevated flat
- the location of [redacted] as recorded in 2018 and reconfirmed in 2021, falls within the distance observed in the predictive model which suggests artefacts may be found on lower slopes within 100m of a creek line
- the soils of the area are Blacktown and South Creek soils, which are archaeologically sensitive.

The site appeared undisturbed since the 2021 Due Diligence, and the free growth of vegetation supported this as evidence of low human interaction in the site.

6.3 Archaeological survey coverage

Table 5 presents a summary of the level of visibility and exposure at the site---- to determine the effective coverage of the study area and takes into consideration the effective coverage of the landform. Effective coverage was 1% Ground surface visibility was 10%.

The Landform survey coverage is presented in Figure 6. The effective coverage of the land form was 2% surveyed..

Table 5. Effective survey coverage

Survey unit	Landform	Survey unit area (sq. m)	Visibility (%)	Exposure (%)	Effective coverage area (sq. m)	Effective coverage (%)
1	Elevated landform	47,500	10	10	475	1
2	Meadow	46,340	10	10	463	1

Table 6. Landform survey coverage

Landform	Landform area (sq. m)	Area effectively surveyed (sq. m)	% of landform effectively surveyed	Number of sites identified
Elevated landform	47,500	475	1	1
Meadow	46,340	463	1	0
Total	93,840	938	2	0

7.0 SIGNIFICANCE ASSESSMENT

7.1 Significance assessment methodology

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* (OEH 2011) provides guidelines for heritage assessment with reference to the *Burra Charter* (Australia ICOMOS 2013). The assessment is made in relation to four values or criteria (Table 7). In relation to each of the criteria, the significance of the subject area should be ranked as high, moderate, or low.

Cultural heritage consists of places or objects, that are of significance to Aboriginal people. Cultural heritage values are the attributes of these places or objects that allow the assessment of levels of cultural significance.

Assessing the cultural significance of a place or object means defining why a place or object is culturally important. It is only when these reasons are defined that measures can be taken to appropriately manage possible impacts on this significance. Assessing cultural significance involves two main steps, identifying the range of values present across the study area and assessing why they are important.

Social/cultural heritage significance should be addressed by the Aboriginal people who have a connection to, or interest in, the site. As part of the consultation process the Aboriginal stakeholders were asked to provide information on the cultural significance of the study area. Information on consultation with Aboriginal stakeholders for the project is provided in Section 3.1.

Table 7. Burra Charter Heritage significance criteria

Criterion	Description
Social	The spiritual, traditional, historical or contemporary associations and attachments the place or area has for Aboriginal people. Social or cultural value is how people express their connection with a place and the meaning that place has for them. Does the subject area have strong or special association with the Aboriginal community for social, cultural or spiritual reasons?
Historic	Historic value refers to the associations of a place with a historically important person, event, phase or activity in an Aboriginal community. Is the subject area important to the cultural or natural history of the local area and/or region and/or state?
Scientific	This refers to the importance of a landscape, area, place or object because of its rarity, representativeness and the extent to which it may contribute to further understanding and information. Information about scientific values will be gathered through any archaeological investigation carried out. Does the subject area have potential to yield information that will contribute to an understanding of the cultural or natural history of the local area and/or region and/or state?
Aesthetic	This refers to the sensory, scenic, architectural and creative aspects of the place. It is often linked with the social values. It may consider form, scale, colour, texture and material of the fabric or landscape, and the smell and sounds associated with the place and its use. Is the subject area important in demonstrating aesthetic characteristics in the local area and/or region and/or state?

In addition to the four criteria, Heritage NSW (OEH 2011; 10) requires consideration of the following:

- 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?

7.2 Socio/cultural significance

Socio/cultural heritage values should be addressed by Aboriginal people who have a connection to, or interest in, the area.

The consultation process did not identify any socio/cultural values relating to the study area.

One RAP commented on the cultural significance of the area to Aboriginal people including the importance of Eastern Creek, a water way which was utilised by many for a number of reasons such as bathing, gathering food and everyday activities. Waterways such as this one are regarded as the "giver of life" and areas which should be kept as natural as possible. They are regarded as way-finders used by Aboriginal people over tens of thousands of years and are a connection to the land and the skies.

7.3 Historic significance

Historic values refer to the association of place with aspect of Aboriginal history. Historic values are not necessarily reflected in physical objects, but may be intangible and relate to memories, stories, or experiences.

The consultation process did not identify any heritage values relating to the study area.

7.4 Scientific significance

Scientific values refer to a site's potential to contribute to our current understanding and information. The presence of [redacted] appears undisturbed, and therefore the archaeological values assigned during the Due Diligence undertaken in 2021 are supported although this assessment takes into account the significance of the entire PAD not just the artefact scatter.

[redacted] scatter is assessed as having moderate archaeological/scientific significance.

Table 8: Scientific significance assessment

Site Name (AHIMS ID)	Research potential	Representativeness	Rarity	Education potential	Overall significance assessment
[redacted]	Moderate	Moderate	Low	Moderate	Moderate

7.5 Aesthetic significance

Aesthetic values refer to the sensory, scenic, architectural, and creative aspects of the place. These values may be related to the landscape and are often closely associated with social/cultural values.

The consultation process did not identify any aesthetic values relating to the study area..

7.6 Statement of significance

The consultation process did not revealed particular socio/cultural, historic, or aesthetic heritage significance relating to the study area. In more general terms the area was commented upon as being important because of the nearby waterway.

The status of the scientific significance of the study area as holding Low archaeological value has been maintained.

8.0 AVOIDING AND MINIMISING HARM

8.1 Proposed works

The proposed extensions to the current facility and hardstand areas will push the working area of the facility to towards the cadastral boundaries on all sides of the study area. However, there is no plan for impacts to be made in the area in which [redacted] is located.

8.2 Impact assessment methodology

The definition of harm to an object or place under the NPW Act includes any act or omission that 'destroys, defaces or damages the object or place or in relation to an object –moves the object from land on which it had been situated.'

Direct harm may occur as a result of activities which disturb the ground surface including site preparation activities, earthworks and ground excavation, and the installation of services and infrastructure.

Indirect harm for Aboriginal heritage refers to impacts that may affect sites or features located immediately beyond or within the area of the proposed works. Indirect harm may include impacts from vibration, increased visitation, or increased erosion, including ancillary project activities (construction and/or operation) that are not located within the study area.

8.3 Aboriginal heritage impact assessment

While there were no Aboriginal objects identified in the survey area, and no sites identified in the AHIMS database, the presence of [redacted] has been documented.

[redacted] an artefact scatter and PAD has been assessed as having a moderate archaeological significance. The impacts of the proposed works will be focused outside the area in which [redacted] lies, and [redacted] is currently fenced off from the proposed works.

No site specific cultural values have been identified at this stage of consultation.

As the proponent does not plan to impact the areas in which [redacted] is located (Figure 37), the proposal is unlikely to impact any Aboriginal archaeological values

Figure 37. Location of [redacted] overlaid on the Biodiversity Management Plan. The [redacted] is located in areas where vegetation will be retained.

8.4 Ecological Sustainable Development principles

In accordance with the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales*[1], the principles of ecologically sustainable development have been considered in preparation of this Aboriginal heritage assessment, including options to avoid impacts to Aboriginal cultural heritage, assessment of unavoidable impacts, identification of mitigation and management measures, and taking account of Aboriginal community views. The principles of ecologically sustainable development are detailed in the NSW *Protection of the Environment Administration Act 1991*. Principles of ecologically sustainable development relevant to the assessment of the project as it relates to Aboriginal cultural heritage are considered below.

8.4.1 The integration principle

Decision making processes should effectively integrate both long term and short term economic, environmental, social and equitable considerations (the 'integration principle'). The preparation of this ACHAR demonstrates regard for the integration principle by considering Aboriginal heritage values and impacts to these from the proposal during the planning phase. The nature of the proposal is in itself one that contributes to the long term economic and social needs of current and future residents of the area.

8.4.2 The precautionary principle

If there are threats of serious or irreversible environmental damage, lack of full scientific confidence should not be used as a reason for postponing measures to prevent environmental degradation (the 'precautionary principle').

As there is no plan to impact [redacted] and no other archaeological sites were identified elsewhere in [redacted] no further archaeological investigation is recommended.

8.4.3 The principle of intergenerational equity

The proposed works would adhere, as close as possible, to the principle of intergenerational equity by collating scientific and cultural information on former Aboriginal occupation of the study area through the previous investigations and this ACHAR.

This report has assessed that no further archaeological investigations through test excavations need be conducted. However, see Unexpected Finds below.

8.5 Cumulative impacts

A cumulative impact is an impact on Aboriginal cultural heritage resulting from the incremental impact of the action/s of a development when added to other past, present and reasonably foreseeable future actions.

A draft of the ACHAR was sent to the RAPS for commentary and feedback once the period of consultation for the Assessment Methodology was completed (on 1 June 2022). This report was updated with feedback following a review period of 28 days.

[1] Office of Environment and Heritage 2011

9.0 MANAGEMENT AND MITIGATION MEASURES

9.1 Ongoing consultation with registered Aboriginal parties

Consultation with the registered Aboriginal parties has been completed. Following the Unexpected finds policy below, consultation with Aboriginal parties will continue at completion of the ACHAR and also according to the results of the consultation process which is currently ongoing.

9.2 Unexpected finds

An unexpected finds policy would be implemented in the event of any unexpected finds of Aboriginal sites, objects, or archaeological deposits being identified during construction.

An unexpected archaeological finds policy would involve the following actions:

- Stop work within the affected area, protect the potential archaeological find, and inform environment staff or supervisor
- Contact a suitably qualified archaeologist to assess the potential archaeological find
- If Aboriginal archaeological material is identified, works in the area should cease, and NSW Heritage should be informed. Further archaeological mitigation may be required prior to works recommencing
- If human remains are found:
  - Immediately cease all work at the particular location
  - Notify site manager and project archaeologist
  - Notify NSW Police
  - Notify Heritage NSW on the Environment Line 131555 as soon as practicable and provide details of the remains and their locations
  - Notify the Metropolitan LALC

10.0 CONCLUSIONS AND RECOMMENDATIONS

The following results and recommendations are based on consideration of:

- The requirements of Aboriginal heritage guidelines including:
  - *The Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010a) – known as *The Code of Practice*
  - Guide to investigating and assessing and reporting on Aboriginal Cultural Heritage in New South Wales (OEH 2011) – known as ACHAR guidelines.
  - *The Aboriginal Cultural Heritage consultation requirements for proponents 2010* (OEH 2010b)- known as Consultation Guidelines)
- Project SEARs
- the results of the stakeholder consultation
- extensive search of the AHIMS database
- in depth background research and assessment following an archaeological survey.

The assessment found that:

- No sites listed on the Aboriginal Heritage Information Management System (AHIMS) were located in the study area
- The location of a site known as [redacted] within [redacted] of the study area was documented in previo [redacted] ns undertaken in 2018 and 2021.
- The location of [redacted] within [redacted] appeared not to have been disturbed since 2021.
- The study area within [redacted] was assessed to have nil to low archaeological potential because of it was within low-lying ground close to the creek that was prone to flooding
- The remainder of the study area had been assessed has having nil archaeological potential due to the mining activities undertaken there since the 1970s which have resulted in heavy disturbance to the ground.
- Consultation with RAPS has been completed and feedback recorded in the final report
- The site officer of the Deerubbin LALC did not identified any cultural values apart from those associated with [redacted]
- The archaeological values of the study area are associated with [redacted]
- [redacted] should be protected from any impact occurring from the development.

Recommendations

Based on the results of this assessment and in accordance with Aboriginal heritage guidelines mandated in the SEARs for the proposal, the following recommendations are made:

- As the area in which [redacted] is located will not be impacted by the planned development it is recommended that further archaeological assessment is not required.
- The results of the Aboriginal consultation are support the results of the ACHAR
- If changes are made to the proposal that may result in impacts to areas not assessed by this ACHAR further assessment would be required.
- If changes are made to the proposal that may result in impacts to [redacted] which has been assessed by this ACHAR, further investigation in the form of test excavation would be required.
- Unexpected Aboriginal objects remain protected by the *National Parks and Wildlife Act 1974*. If any such objects, or potential objects, are uncovered in the course of the activity, all work in the vicinity should cease immediately. A qualified archaeologist should be contacted to assess the find and Heritage NSW and Deerubbin LALC must be notified.
- If human remains, or suspected human remains, are found in the course of the activity, all work in the vicinity should cease, the site should be secured, and the NSW Police and Heritage NSW should be notified.

11.0 REFERENCES

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12.0 APPENDIX

12.1 Consultation Log

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