43-61 Turner Road, Gregory Hills

Aboriginal Cultural Heritage Assessment Report

LGA: Camden

Report to Arup

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artefact

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EXECUTIVE SUMMARY

Artefact Heritage and Environment (Artefact Heritage) have been engaged by Arup Pty Limited (Arup) to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) for the properties known as 43-61 Turner Road, Gregory Hills (Lots 14, 15, 16, and 17 DP 28024). The proposal involves the construction of a data storage centre at 43-61 Turner Road, Gregory Hills. The proposal will comprise data halls, mechanical and electrical equipment rooms, offices, substation, security gatehouse, other ancillary support spaces, and external/rooftop mechanical and electrical equipment.

The proposal is seeking development consent under the *Environmental Planning and Assessment Act 1979* as a State Significant Development (SSD). The Secretary's Environmental Assessment Requirements (SEARs) issued for the proposal (SSD-68013714) specify that:

> *19. Provide an Aboriginal Cultural Heritage Assessment Report (ACHAR) prepared in accordance with relevant guidelines, identifying, describing and assessing any impacts to any Aboriginal cultural heritage sites or values associated with the site.*

This Aboriginal Cultural Heritage Assessment Report has been prepared in accordance with the following requirements and guidelines

- *The Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010a)
- The Burra Charter (Australia ICOMOS 2013)
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011)
- *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010b)

In preparation of this assessment, existing technical reports that have investigated the present study area were analysed. In May 2021, Artefact completed a preliminary Aboriginal Archaeological Survey Report for land which comprised the present study area. The preliminary findings of that report found that a registered Aboriginal site, Aboriginal Heritage Information Management System (AHIMS) ID 52-2-3557, was located within the 2021 study area, and a portion of AHIMS ID 52-2-3873 was located within the 2021 study area. That report also found that two identified areas of potential archaeological deposit (PAD), TR PAD 01 and TR PAD 02 were located within the 2021 study area.

In April 2022, Austral completed an ACHAR which included the results of archaeological test excavation for land which comprised the present study area. The program of test excavation comprised registered AHIMS site extents and the areas of archaeological potential, TR PAD 01 and TR PAD 02, previously identified by Artefact. No Aboriginal objects were identified during test excavation; therefore, the extent of AHIMS ID 52-2-3873 was revised. Following this, Artefact finalised the Aboriginal Archaeological Survey Report in January 2022, which included revisions to the location and extent of TR PAD 01 and excluded TR PAD 02 as an area of archaeological potential. As a result, the revised location and extent of TR PAD 01 was not included within the program of test excavation conducted by Austral. Austral recommended that prior to the proposed works, Turner Road Industrial Pty Ltd should apply for an Aboriginal Heritage Impact Permit to destroy TR-1 (AHIMS ID 52-2-3557).

An impact assessment using the evidence previously gathered by Artefact (2021) and Austral (2022) was conducted, and it was determined that the proposed works would result in direct total harm and total loss of value for AHIMS ID 52-2-3557; however, due to the low significance of the site and lack

of artefacts identified during the subsurface testing conducted by Austral (2022), it was determined that salvage excavation would not be appropriate and consent to destroy the AHIMS ID 52-2-3557 must be sought. Further investigation has determined that the artefacts comprising AHIMS ID 52-2-3557 were previously collected and no other artefacts associated with this site have been identified during the surveys or test excavations that have occurred within this site. As such, AHIMS ID 52-2-3557 has been destroyed, and its site card in AHIMS has been updated to reflect this. Therefore, there are no Aboriginal objects or sites within the study area that will be harmed by the proposed works, nor are there likely to be.

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

- Consultation with Aboriginal stakeholders should be maintained throughout the proposed works. An update should be made every six months until consent is granted in line with the Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW 2010b).
- If changes are made to the proposal that may result in impact to areas not assessed by this report, further assessment must be undertaken.

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NOTE ON LANGUAGE IN QUOTES

A number of quotes used in this report come from documents written in the nineteenth and twentieth centuries by European observers. They have been included because they provide information on the lives of Aboriginal people in the region, though the language used and views expressed by these writers can be offensive and distressing.

GLOSSARY OF TECHNICAL TERMS

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

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

Aboriginal place: Any place declared to be an Aboriginal place under s.94 of the *National Parks and Wildlife Act 1974*.

AHIMS: Acronym for **'**Aboriginal heritage information management system'. AHIMS is a register that contains information about NSW Aboriginal heritage, and it is maintained by DECCW.

Alignment: The general route (e.g. of a roadway, pipeline) in plan and elevation.

Archaeological object: any object that was made, affected, used, or modified in some way by humans in the past and has been discarded.

Archaeology: The scientific study of human history, with focus on material remains and ethnographic evidence.

Area of archaeological sensitivity: A part of the landscape that contains demonstrated occurrences of cultural material. The precise level of sensitivity will depend on the density and significance of the material.

Artefact: An item of cultural material created by humans.

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

Burials: Burial sites may be composed of a single burial, isolated individuals in a general area, or cemeteries containing many individuals.

Chert: A fine grained rock composed of cryptocrystalline silica. It exhibits a range of textures and colours including red, green or black. Chert is easy to work and retains a sharp edge for an extensive period of time before resharpening is required. It has a low to medium fracture toughness.

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

Core: A stone piece from which a flake has been removed by percussion (striking it) or by pressure. It is identified by the presence of flake scars showing the negative attributes of flakes, from where flakes have been removed.

Cultural heritage assessment report: A report combining an Aboriginal archaeological assessment and Aboriginal cultural assessment, required to be submitted to DECCW for any Part 6 *National Parks and Wildlife Act 1974* approval or prepared for projects under Section 5.1 of the *Environmental Planning and Assessment Act 1979* where Aboriginal cultural heritage is identified as a key issue.

Debitage: Small, unmodified flakes produced as part of the flaking process, but discarded unused.

Easting: This is a measurement used to determine location. The easting is the x-coordinate and relates to the vertical lines on a map, which divide east to west. It increases in size when moving further east.

Fine grained siliceous (FGS) material: A rock that has a high content of silica and that is fine grained in appearance without any further identifying characteristics.

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

Layer: In stratigraphy, it is used to describe a horizon (soil, rock, charcoal) that is distinct from its surrounds.

Mudstone: A sedimentary rock formed from mud/clay.

Northing: This is a measurement used to determine location. The northing is the y-coordinate and relates to the horizontal lines on a map, which divide north to south. It increases in size when moving further north.

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

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

Quartz: A mineral composed of silica with an irregular fracture pattern. The quartz used in artefact manufacture is generally semi-translucent, although it varies from milky white to glassy. Glassy quartz can be used for conchoidal flaking, but poorer quality material is more commonly used for block fracturing techniques. Quartz can be derived from water worn pebbles, crystalline or vein (terrestrial) sources.

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

Sandstone: Is a sedimentary rock formed from sand-sized grains.

Scarred trees: Trees that feature Aboriginal derived scars are distinct due to the scar's oval or symmetrical shape and the occasional use of steel, or more rarely, stone axe marks on the scar's surface. Scarred trees are identified by the purposeful removal of bark for use in the manufacture of artefacts such as containers, shields and canoes. The bark was also used for the construction of shelters. Other types of scarring include toeholds cut in the trunks or branches of trees for climbing purposes and the removal of bark to indicate the presence of burials in the area.

Sedimentary: Sedimentary rock is formed through the accumulation of sediment deposits that are then consolidated. An example of this is mudstone.

Shale: A sedimentary rock of well-defined layers comprised of small particles (less than 4 microns in size) (Keary 2001: 16) sourced from weathered or eroded materials.

Scraper: A stone tool, usually with steep retouch along its edges that was ethnographically used to make wooden implements or process foods and other resources.

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

Stratification: The way in which soil forms in layers.

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

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

Tool: A stone flake that has undergone secondary flaking or retouch.

Visibility: Refers to the degree to which the surface of the ground can be observed. This may be influenced by natural processes such as wind erosion or the character of the native vegetation, and by land use practices, such as ploughing or grading. It is generally expressed in terms of the percentage of the ground surface visible for an observer on foot.

1.0 INTRODUCTION

1.1 Project brief

Artefact Heritage and Environment (Artefact Heritage) have been engaged by Arup Pty Limited (Arup) to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) for the properties known as 43-61 Turner Road, Gregory Hills (Lots 14, 15, 16, and 17 DP 28024). The proposal involves the construction of a data storage centre at 43-61 Turner Road, Gregory Hills. The proposal will comprise data halls, mechanical and electrical equipment rooms, offices, substation, security gatehouse, other ancillary support spaces, and external/rooftop mechanical and electrical equipment.

In preparation of this assessment, existing technical reports that have investigated the present study area were analysed. In May 2021, Artefact completed a preliminary Aboriginal Archaeological Survey Report for land which comprised the present study area. The preliminary findings of that report found that a registered Aboriginal site, Aboriginal Heritage Information Management System (AHIMS) ID 52-2-3557, was located within the 2021 study area, and a portion of AHIMS ID 52-2-3873 was located within the 2021 study area. That report also found that two identified areas of potential archaeological deposit (PAD), TR PAD 01 and TR PAD 02 were located within the 2021 study area.

In April 2022, Austral completed an ACHAR which included the results of archaeological test excavation for land which comprised the present study area. The program of test excavation comprised registered AHIMS site extents and the areas of archaeological potential, TR PAD 01 and TR PAD 02, previously identified by Artefact. No Aboriginal objects were identified during test excavation; therefore, the extent of AHIMS ID 52-2-3873 was revised. Following this, Artefact finalised the ASR for the current study area in 2022 which included revisions to the location, and extent of TR PAD 01, and excluded TR PAD 02 as an area of archaeological potential. As a result, the revised location and extent of TR PAD 01 was not included within the program of test excavation conducted by Austral. Austral recommended that prior to the proposed works, Turner Road Industrial Pty Ltd should apply for an Aboriginal Heritage Impact Permit (AHIP) to destroy TR-1 (AHIMS ID 52-2-3557) and the portions of GHSN (AHIMS ID 52-2-3873) that would be impacted by the proposed works.

An impact assessment using the evidence previously gathered by Artefact (2021) and Austral (2022) was conducted, and it was determined that the proposed works would result in direct total harm and total loss of value for AHIMS ID 52-2-3557; however, due to the low significance of the site and lack of artefacts identified during the subsurface testing conducted by Austral (2022), it was determined that salvage excavation would not be appropriate and consent to destroy the AHIMS ID 52-2-3557 must be sought. Further investigation has determined that the artefacts comprising AHIMS ID 52-2-3557 were previously collected and no other artefacts associated with this site have been identified during the surveys or test excavations that have occurred within this site. As such, AHIMS ID 52-2-3557 has been destroyed, and its site card in AHIMS has been updated to reflect this (Appendix A – Updated AHIMS site card). Therefore, there are no Aboriginal objects or sites within the study area that will be harmed by the proposed works, nor are there likely to be.

The proposal is seeking consent as a State Significant Development (SSD) under the *Environmental Planning and Assessment Act 1979*. The Secretary's Environmental Assessment Requirements (SEARs) issued for the proposal (SSD-68013714) specify that:

> *19. Provide an Aboriginal Cultural Heritage Assessment Report (ACHAR) prepared in accordance with relevant guidelines, identifying, describing and assessing any impacts to any Aboriginal cultural heritage sites or values associated with the site.*

Artefact Heritage and Environment are preparing an ACHAR to support SSD-68013714 and meet the condition of the SEARs.

The proponent is also seeking to complete enabling works within the study area under a Development Application (DA) ahead of these SSD works, and the impacts of these early works will be assessed in a separate ACHAR.

1.2 Description of the study area

The proposed development comprises an area of 97,400 m^2 and is located at 43, 49, 55 and 61 Turner Road, Gregory Hills Lot 14 DP28024, Lot 15 DP28024, Lot 16 DP28024 and Lot 17 DP28024 (the study area). The study area (Figure 1) abuts Turner Road to the south, Pioneer Street to the east, residential properties to the west and industrial buildings to the north.

The study area is within the Parish of Narellan and County of Cumberland and falls within the Camden Local Government Area (LGA) and the boundaries of Tharawal Local Aboriginal Land Council (Tharawal LALC).

1.3 Aims and objectives

Artefact Heritage and Environment have been engaged to prepare an ACHAR to meet the requirements of the SEARs. This report considers the impacts the proposed development might have on Aboriginal cultural heritage within the study area. The report has the following objectives:

- Complete assessment of the Aboriginal cultural heritage values of the study area and identification of any specific areas of cultural significance.
- Conduct Aboriginal stakeholder consultation.

1.4 Statutory framework

The proposal is seeking Development Consent under Part 4 Division 4.1 of the *EP&A Act 1979* as SSD. The SEARs were issued for the proposal on 1 March 2024 (SSD-68013714) on 1 March 2024. Item 19 of the SEARs requires provision of an ACHAR. The SEARs requirements are listed in Table 1.

Table 1. Secretary's Environmental Requirements

Item #	Secretary's Environmental Assessment Requirements	Where addressed in this report
19.	Provide an Aboriginal Cultural Heritage Assessment Report (ACHAR) prepared in accordance with relevant guidelines, identifying, describing and assessing any impacts to any Aboriginal cultural heritage sites or values associated with the site.	This report

This ACHAR is being prepared to address requirement 19 of the SEARs and to inform the EIS. This ACHAR has been prepared in accordance with the following guidelines:

- 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 the ACHAR Guide.
- Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW 2010b) – known as the Consultation Requirements.

Under section 4.41 of the *EP&A Act 1979*, projects with SSD an AHIP under the *National Parks and Wildlife Act 1974* is not required to authorise impact to an Aboriginal object where SSD consent has been granted.

Figure 1: Study area

2.0 SUMMARY OF CONSULTATION

2.1 Stage 1

2.1.1 Agency letters

In accordance with Section 4.1.2 of the Consultation Requirements, Artefact corresponded with the following organisations by email on 8 April 2024 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
- Native Title Service Corporation (NTSCorp)
- National Native Title Tribunal
- Office of the Registrar, Aboriginal Land Rights Act 1983
- Camden Council
- Tharawal Local Aboriginal Land Council
- Greater Sydney Local Land Services

The due date for responses was 22 April 2024.

2.1.2 Advertisement

In accordance with Step 4.1.3 of the Consultation Requirements, an advertisement was published in The District Reporter on 19 April 2024, 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. Responses were requested by 3 May 2024.

2.1.3 Registration of Aboriginal parties

In accordance with Step 4.1.3 of the Consultation Requirements, an Invitation to Register an Interest in the project was sent by email or letter to all those people identified through contacting the agencies on 24 April 2024. Responses were requested by 8 May 2024.

As a result of the interest letters and the advertisement, 30 individuals / organisations responded and these are listed in Table 2 as Registered Aboriginal Parties (RAPs).

Table 2: Groups or individuals registered as RAPs

RAP contact person	Organisation
Robyn Straub (CEO)	Tharawal LALC
John Carriage (Chief Executive Officer)	Thoorga Nura
Kayelene Terry	Bariyan Cultural Connections
Pearl Depoma	Pearl Depoma

RAP contact person	Organisation
Robert Young	Konanggo Aboriginal Cultural Heritage Services
Lilly Carroll and Paul Boyd	Didge Ngunawal Clan
Kelvin Boney	Wallanbah Aboriginal Site Conveyancing
Scott Franks	Yarrawalk PTY Limited
Dean Delponte	Mundawari Heritage Consultants
Ms Glenda Chalker	Cubbitch Barta Native Title Claimants Aboriginal Corporation (CBNTAC)
Wendy Morgan	Guntawang Aboriginal Resources Incorporated
Philip Boney	Wailwan Aboriginal Group
Phil Khan	Kamilaroi Yankuntjatjara Working Group
Vicky Slater	Wurrumay Pty Ltd
Steven Johnson	Woka Aboriginal Corporation
Jesse Johnson	Muragadi Heritage Indigenous Corporation
Basil Smith	Goobah Development PTY LTD (Murrin Clan/Peoples)
Kaarina Slater	Ngambaa Cultural Connections
Jennifer Beale	Butucarbin Aboriginal Corporation
James Davis	James Davis
Clive Freeman	Clive Freeman
Rodney Gunther	Waawaar Awaa Aboriginal Corporation
Carolyn Hickey	A1 Indigenous Services
Ali Maher	A&K Cultural Heritage
Bo Field (Manager)	Yurrandaali
Lee Field (Manager)	Barraby Cultural Services
Daniel Chalker	Wori Wooilywa
Kaarina Slater	Ngambaa Cultural Connections
[redacted]	

RAP contact person	Organisation
Aaron Slater (Manager)	Warragil Cultural Services

In accordance with Section 4.1.6 of the Consultation Requirements, a list of the RAPs was issued to Heritage NSW and Tharawal LALC on 7 June 2024. An update with an additional RAP registration was sent to Heritage NSW and Tharawal LALC on 30 July 2024.

2.2 Stage 2 and Stage 3

A copy of the proposed assessment methodology was sent to the RAPs by Email on 23 July 2024, requesting feedback by 20 August 2024. The draft assessment methodology presented information about the project and invited feedback on the cultural significance of the area. A summary of the comments received by Artefact is presented in Table 3.

Table 3. Summary of Aboriginal stakeholder comments on the Assessment Methodology

Person / RAP group	Comment	Response
Lilly Carroll and Paul Boyd Didge Ngunawal Clan	Agrees with the assessment methodology	Added to consultation log
Glenda Chalker Cubbitch Barta Native Title Claimants Aboriginal Corporation (CBNTAC)	Stated that there was insufficient information in the methodology to make an informed recommendation. Stated that the results of excavations could have been included with maps provided, including where test pits were previously located. Queried why test excavations were being proposed if test excavation had already occurred	The methodology provided was for the preparation of this ACHAR, not a test excavation program. The results of the test excavation program are summarised in this document which will be provided for consultation.
Wendy Morgan Guntawang Aboriginal Resources Incorporated	Supports and agrees with all sections of the ACHA Methodology	Added to consultation log
Dean Delponte Mundawari Heritage Consultants	Agrees with the methodology to be used to investigate and assess the study area	Added to consultation log
Jesse Johnson Muragadi Heritage Indigenous Corporation	Agrees with the recommendations	Added to consultation log
Vicky Slater Wurrumay Pty Ltd	Agrees with the assessment methodology	Added to consultation log

2.3 Stage 4

A copy of the draft ACHAR was sent to the RAPs by email on 2 October 2024, requesting feedback by 30 October 2024. A total of 2 RAP groups responded to the draft ACHAR. A summary of responses received by Artefact is provided in Table 4.

Table 4. Summary of Aboriginal stakeholder comments on the draft ACHAR

Person/ RAP group	Comment	Response
Wendy Morgan Guntawang Aboriginal Resources Incorporated	We are happy to support the recommendations of the DRAFT ACHAR.	Noted.
Phil Khan Kamilaroi-Yankuntjatjara Working Group	Thank you for your Draft ACHA for 43-61 Turner Road, Gregory Hills. It is sad to see our culture lost/destroyed re AHIMS ID 52-2-3557 this happens time and time again. We would like to agree and support your recommendations. We look forward to working alongside you on this project.	Noted.

3.0 SUMMARY AND ANALYSIS OF BACKGROUND INFORMATION

3.1 Archaeological background

3.1.1 Aboriginal material culture

Aboriginal people have lived in the Sydney region for at least 30,000 years, as indicated by radiocarbon dating from investigations in Parramatta (JMcD CHM 2005:87-94). Evidence of Aboriginal occupation has been found dated to 50-60,000BP at Lake Mungo in NSW. As such, it is likely that Aboriginal people have lived in the Sydney region for even longer than indicated by the oldest recorded dates known at present. The archaeological material record provides evidence of this long occupation, but also provides evidence of a dynamic culture that has changed through time.

The existing archaeological record is limited to certain 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 and their contexts have provided the basis for the interpretation of change in material culture over time. Technologies used for making tools changed, along with preference of raw material. Different types of artefacts appeared at certain times, for example ground stone hatchets are first observed in the archaeological record around 4,000 yBP in the Sydney region (Attenbrow 2010: 102). It is argued that these changes in material culture were an indication of changes in social organisation and behaviour.

3.1.2 Previous archaeological investigations

Extensive archaeological assessment has taken place in the vicinity of the study area. The majority of this work has been completed in response to planning requirements assessing the potential of land for development as part of the South West Growth Centre.

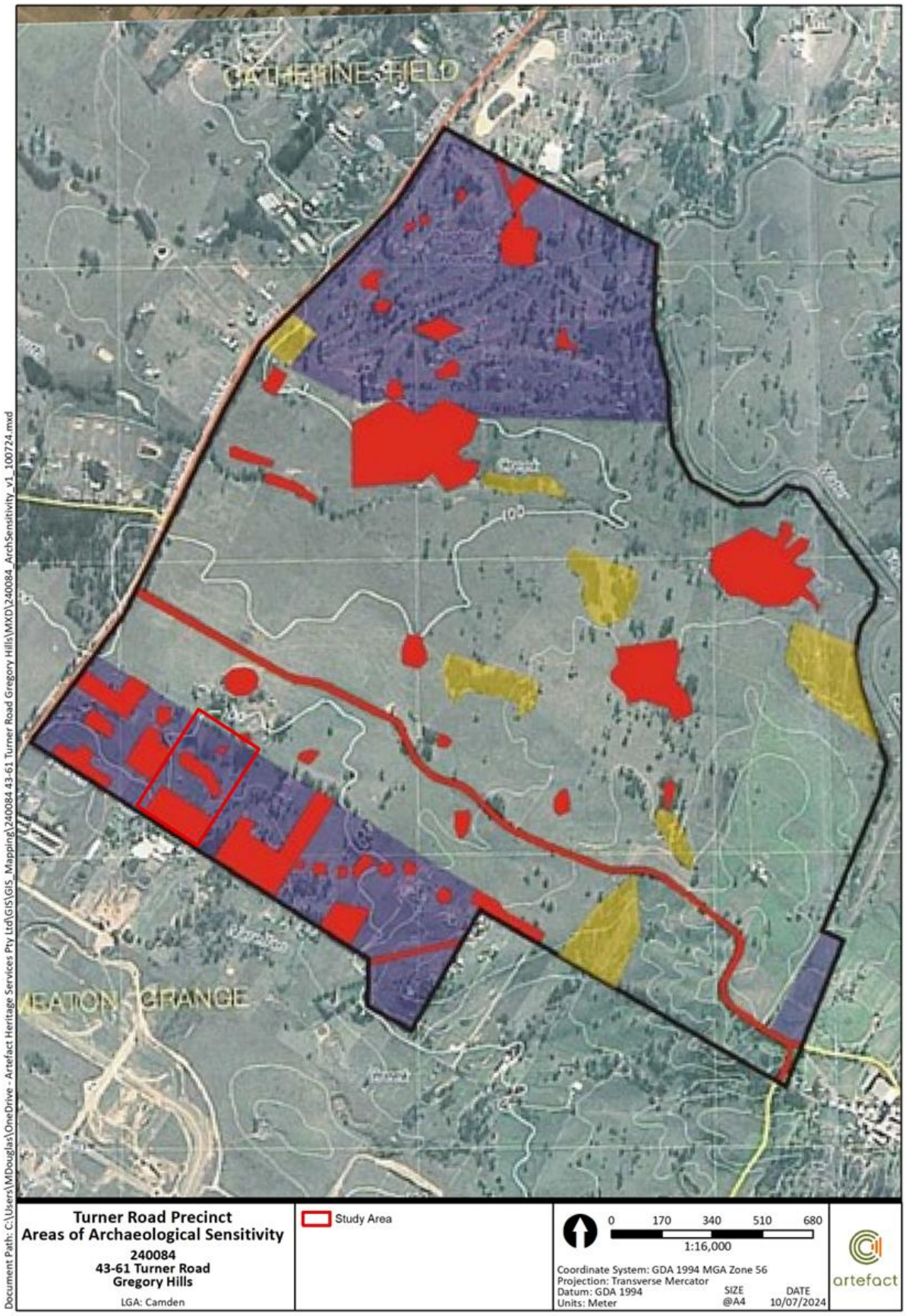
Jo McDonald CHM 2007

JMcD CHM completed a variety of archaeological work within of the Turner Road and Oran Park Precincts within the South West Growth Centre. The study area is within the Turner Road Precinct and was assessed by JMCD CHM (2007a and 2007b).

Preliminary assessment undertaken by JMCD CHM (2007a) included a stage 1 desktop assessment of both precincts (2007a). The assessment identified from aerial photographs and topographic maps areas of high, good, moderate and low potential for containing archaeological deposit. The study area is mapped by JMCD CHM (2007a: 41) as Zone 3 and Zone 4 archaeological sensitivity. Zone 3 is described as ‘land with moderate potential for containing intact archaeological deposit’ (JMCD CHM 2007a: 39) and Zone 4 as ‘land with low potential for containing intact archaeological deposit’ (JMCD CHM 2007a: 39). The study area in relation to JMCD CHM’s (2007a: 41) areas of archaeological sensitivity is shown in Figure 2 below.

Subsequent archaeological survey identified an extensive artefact scatter within 61 Turner Road (AHIMS ID 52-2-3557). The surface artefacts identified by JMCD CHM covered an area approximately 100 metres long and 30 metres wide. The associated report, mapping, and photos for the archaeological survey was not available at the time this report was prepared.

Figure 2: Areas of archaeological sensitivity in the Turner Road Precinct, with Zone 3 [blue] and Zone 4 [red] (JMCD CHM 2007a: 37)



Harrington Park and Mater Dei Rezoning Project (Australian Museum Business Services 2006)

The Harrington Park and Mater Dei precincts are located west of Camden Valley Way. The 2006 study of the Harrington Park and Mater Dei development areas followed on from a Phase 1 preliminary study which identified the need for further investigation (Central West Archaeological and Heritage Services 2004). The Phase 1 study identified 16 Aboriginal sites, including five possible scarred trees. The Phase 2 investigations identified a further 19 sites. A large portion of the proposed works corridor was assessed as having a medium to high archaeological sensitivity with generally low disturbance levels. It was recommended that large sections of the precinct should be zoned for conservation with 60 per cent of the recorded sites within the conservation areas.

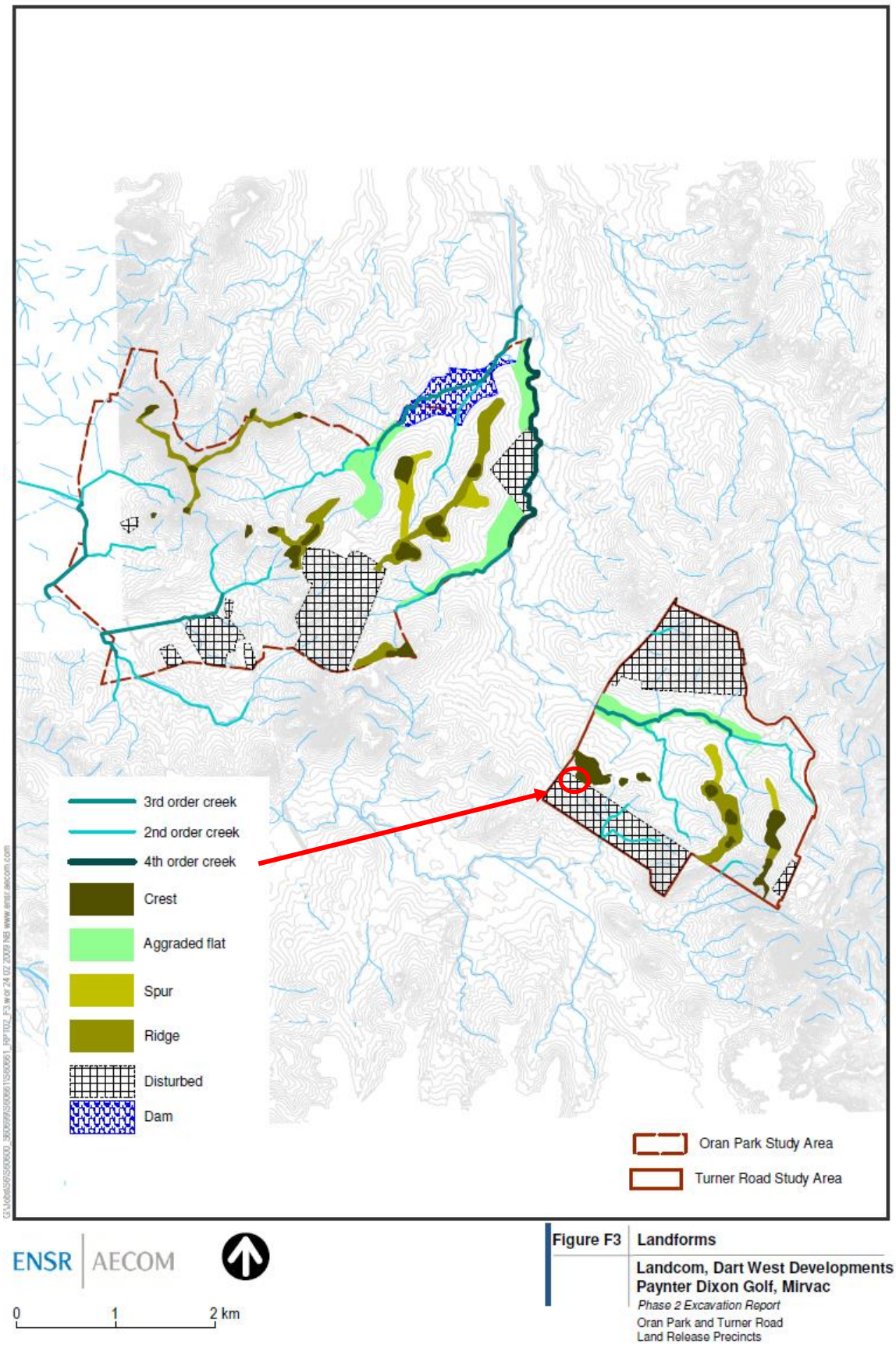
Archaeological Excavations at the Oran Park and Turner Road Precincts (ENSR/AECOM 2009).

The archaeological test excavations at Oran Park involved a program of test pitting and open area excavations. Three hundred and forty test pits were excavated across a variety of landform units, with 160 square metres of open area excavated during salvage excavations. A total of 4,780 artefacts were recovered from Phase 1 and Phase 2 excavations, with around three quarters of the artefacts made of silcrete. Approximately five per cent of the assemblage comprised of tools or cores including backed artefacts and scrapers.

The results of the excavations indicated a low density spread of archaeological material across the precinct which is argued to reflect a ‘pre-contact landscape of extensive but low intensity Aboriginal activity with evidence of strategic defensive positioning of campsites within a cultural interaction zone between different language groups’ (AECOM 2009:ES1).

The study area is located within the Turner Road precinct. No archaeological excavation was conducted within the study area are during ENSR/AECOM’s assessment, and the study area was mapped as a ‘disturbed’ area (see Figure 3), and not included in the revised archaeological model for the Turner Road precinct (see Figure 4). Further discussion of the findings of the ENSR/AECOM (2009) excavation program in relation to regional predictive models is included in Section 3.1.3 below.

Figure 3: Map prepared by ENSR/AECOM (2009: Figure F3) showing landform contexts and disturbed areas. Approximate location of study area is indicated with red circle and arrow – added by Artefact for the purposes of this report



Kelleher Nightingale Consulting Pty Ltd (KNC) 2009. Archaeological Salvage Excavation at Site HPK9 Harrington Park, Sydney.

KNC were engaged by Harpak Developments Pty Ltd to undertake an archaeological salvage excavation at Harrington Park Estate 2.2km north of Narellan following from AMBS 2006 (see above). The excavations were undertaken on an Aboriginal site HPK 9 (AHIMS #52-2-3382). This site is approximately 2km from the study area.

HPK9 was originally classified as *"a low density scatter of three stone artefacts, two silcrete and one quartz… [located] at the western end of a spur projecting from a nearby ridge"* (KNC 2009: 1). AMBS (2006) classified the site as having moderate to high subsurface deposits and recommended salvage excavation at HPK9 as it was within a potential impact zone for future development.

KNC undertook excavations in May 2007. Two parallel transects were laid out along the spur crest, with 15m intervals between each test square. The second transect was laid down approximately 10m south of the first transect. A total of 14 x 1m^2 test squares were excavated and one open area of 6m x 7m was excavated over eleven days. Average depth of test squares was 200mm. A total of 769 lithics were recovered, with the majority unearthed from the open area pit.

Results from the test squares, indicated that Silcrete (40.7%) and quartz (50%) were the predominate raw materials identified, with only a minor occurrence of tuff (5.6%), Chert (1.85%) and FGS(1.85%). The majority (87%) of artefacts were less than 1.5cm long and most artefacts were classified as being flaked debitage.

Results from the open area excavation, indicated that silcrete (69.7%) was predominate, followed by Quartz (26%), chert (1.4%), silicified wood (0.9%), Silicified tuff (0.7%), other chert (0.4%), FGS (0.4%) and metamorphic (0.3%). Flake debitage (74%) was the predominate type, followed by core's (2.3%), backed (4.2%) and heat shatter debitage (7.6%) across the open area excavation.

KNC (2009) suggested that the high density artefact scatter identified at HPK9 was a direct result of its elevated position on a ridge and overlooking the confluence of two watercourses, one being a first order and the other a second order. Radiocarbon dating at the site indicated an occupation period of around 1732+-37 BP. The site is important as an indicator for archaeological potential in contexts positioned within a similar landform within relations to watercourses.

3.1.3 Previous predictive models

Beth White and Jo McDonald prepared a discussion of the nature of Aboriginal site distribution as interpreted through lithic analysis of excavated sites in the Rouse Hill Development Area (RHDA) (White and McDonald 2010). That analysis brought together data from 631 dispersed 1m x 1m test squares from 19 sample areas, which yielded 4,429 stone artefacts in total. The findings of that study generally support earlier models that predicted correlations between proximity to permanent water sources and site location, but also highlighted the relationship between topographical unit and archaeological evidence of Aboriginal activities.

The major findings of White and McDonald's (2010) assessment were that artefact densities were most likely to be greatest on terraces and lower slopes within 100m of water. The stream order model was used to differentiate between artefact densities associated with intermittent streams as opposed to permanent water. It was found that artefacts were most likely to be located within 50-100m of higher (4th) order streams, within 50m of second order streams, and that artefact distribution around first order streams was not significantly affected by distance from the watercourse (White and McDonald 2010: 33).

Overall, White and McDonald (2010) found that landscapes associated with higher order streams (second order or greater) were found to have higher artefact densities, higher maximum densities, and more continuous distribution than lower order intermittent streams. The analysis also concluded that while there were statistically viable correlations that demonstrated a relationship between stream order, land form unit and artefact distribution across the RHDA, the entire area should be recognised as a cultural landscape with varied levels of artefact distribution (White and McDonald 2010: 37). This predictive model can be transferred to other areas of the Cumberland Plain, especially those on shale soil geology (such as the study area), as landscape, soils and artefacts patterning are similar throughout the region.

Differing perspectives on artefact distribution across the landscape have been presented, with ENSR/AECOM (2009) suggesting a different approach for the southern Cumberland Plain, following extensive archaeological investigation within the Growth Centres Commission Oran Park and Turner Road Precincts. The study area is located within the Turner Road precinct. ENSR/AECOM (2009: 65-66) suggest that Aboriginal artefact clusters were likely to occur in a continuous low density scatter up to 300 m from major watercourses, and 120 m from second order streams, with landscape characteristics, including reliable water and good outlook over surrounding valleys also determining factors.

ENSR/AECOM (2009: 66) summarise this statement by noting that artefact clusters are likely to occur up to 300 m of reliable watercourses:

> *'….it appears that archaeological deposit in the south west is of relatively low density with occasional clusters in association with all areas of reliable water regardless of stream order. Further assessments in south west Sydney would benefit from paying greater attention to the investigation of areas within 300 m of all reliable watercourses (ie. more than the conventional 50 m vicinity of watercourses)'*

ENSR/AECOM (2009: Figure F9) mapped areas within 300 m of reliable water and presented that information as a model of potential archaeological deposit within the Turner Road precinct. That figure is reproduced below in Figure 3. The study area is not located within any areas of archaeological potential as mapped by ENSR/AECOM (2009: Figure F9; see also Figure 3).

GML investigated Cumberland Plain predictive models at the East Leppington precinct site, a proposed subdivision area covering approximately six square kilometres. The East Leppington precinct is located on the eastern side of Camden Valley Way and approximately 5.5 km north of the study area.

GML discussed the application of the stream order model and the economic resource model. The stream order model is discussed above (White and McDonald 2010). The economic resource model described by GML includes consideration of the 'location with high value economic and/or food resources and their connection to landscape texture change and ecotones' (GML 2016: 65). Ecotones are defined by GML (2016: 65) as 'junctions between different ecosystems, and provide a rich diversity of natural resources', and may include changes in vegetation communities, change in soils, water resources, and landforms.

The basis of the economic resource model is that archaeological evidence of Aboriginal activities, such as stone artefacts, hearths, etc., would 'most likely be located on a suitable landform (defined by the texture changes and ecotone) adjacent to the economic zone' (GML 2016: 65).

The results of extensive archaeological excavation by GML across the East Leppington precinct was that a combination of the stream order model and economic resource model accurately identified the

areas with highest archaeological density, which was mainly focussed on the main watercourses flowing through the area (GML 2016: 320). The identification of areas of higher archaeological density away from the main watercourses and areas of economic resources was less successful (GML 2016: 320).

Essentially, the economic resource model overlaps with many aspects of the stream order model. The economic resource model provides more factors to consider in identifying archaeological potential, such as changes in vegetation or soil types, social or traditional factors, and landform. GML (2016: 319-320) found that the stream order model tended to cover a longer and narrower area bordering the major watercourses, whilst the economic resource model covered slightly shorter, but wider areas bordering the major watercourses. GML's (2016: 321-322) mapping of those areas within the East Leppington precinct is shown in Figure 5 and Figure 6 below.

Figure 4: Model of archaeological deposit prepared by ENSR/AECOM (2009: Figure F9). Approximate location of study area is indicated with green circle and arrow – added by Artefact for the purposes of this report

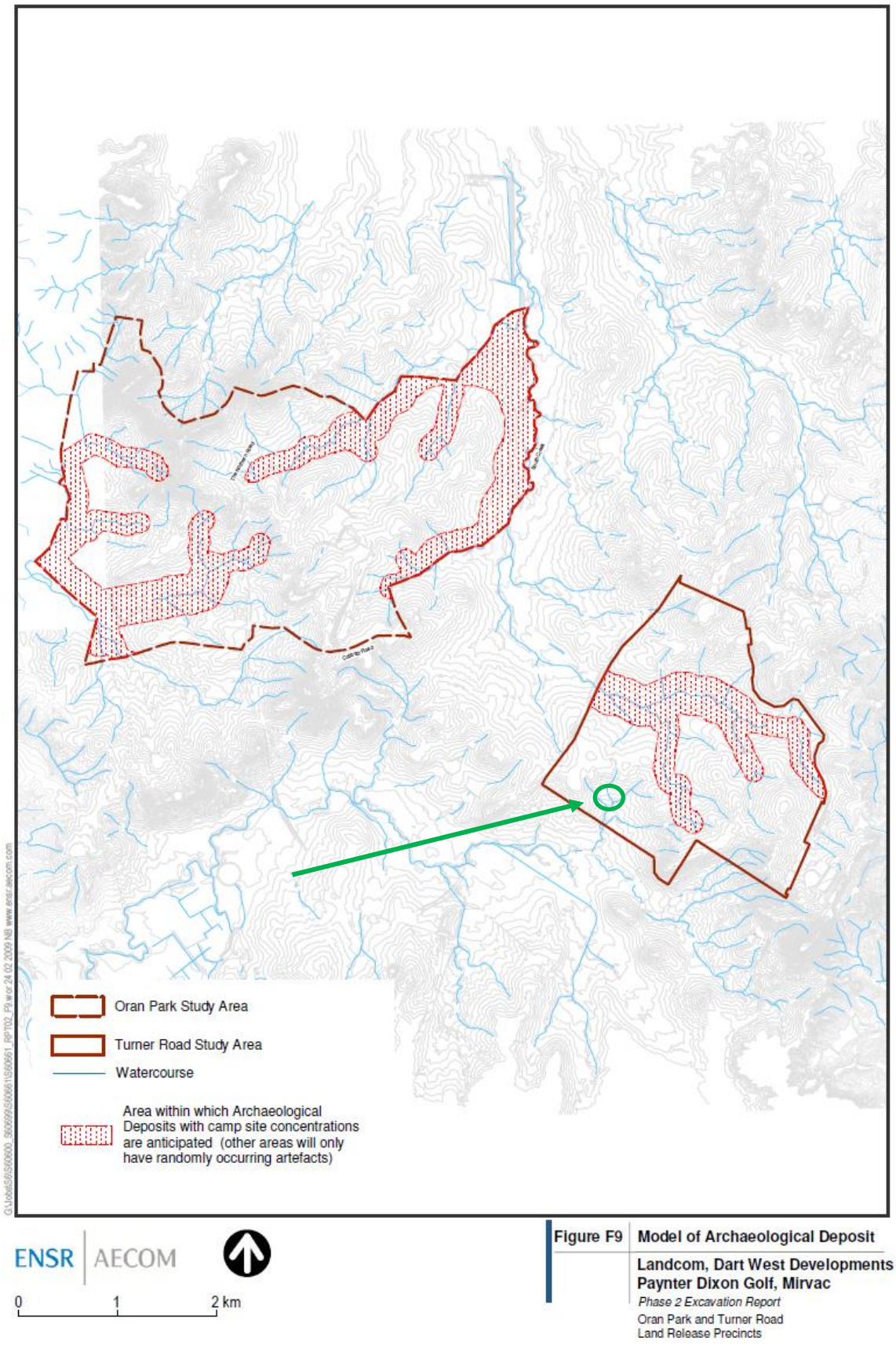


Figure 5: Application of stream order model and economic resource model to East Leppington precinct by GML (2016: 321)

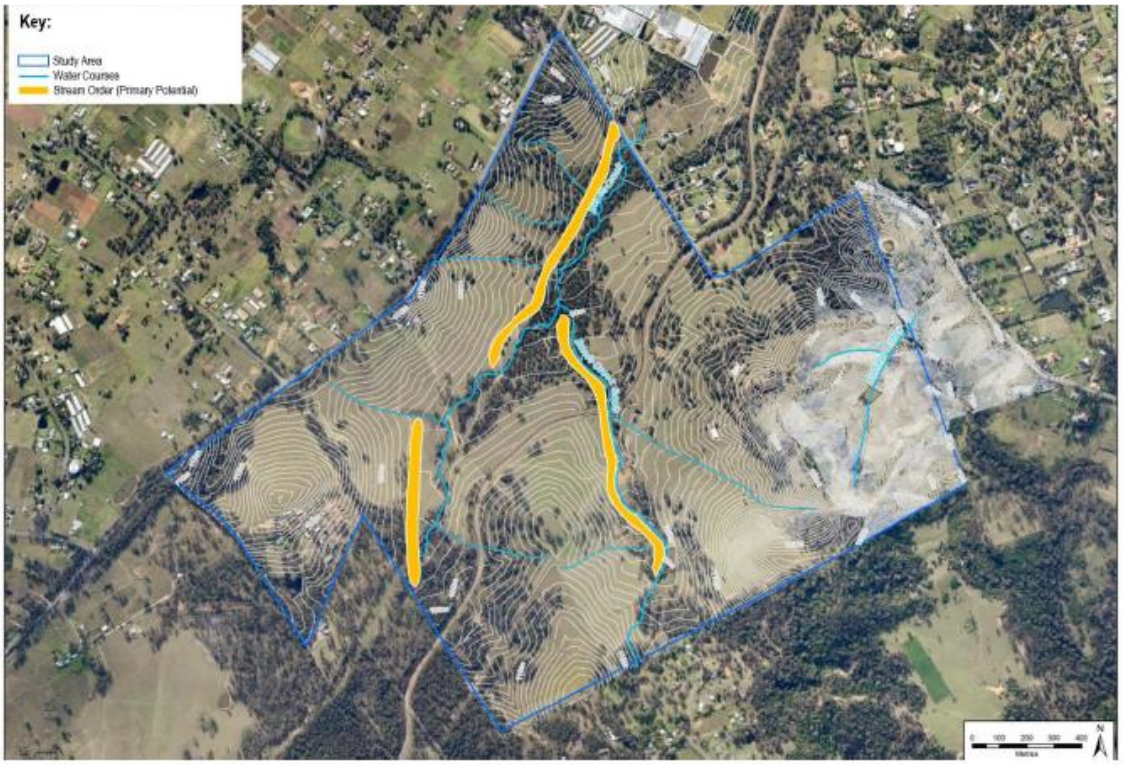


Figure 7.8 Application of the stream order model to East Leppington, showing the three primary zones designated with archaeological potential. (Source: Nearmap 2014 with GML additions)

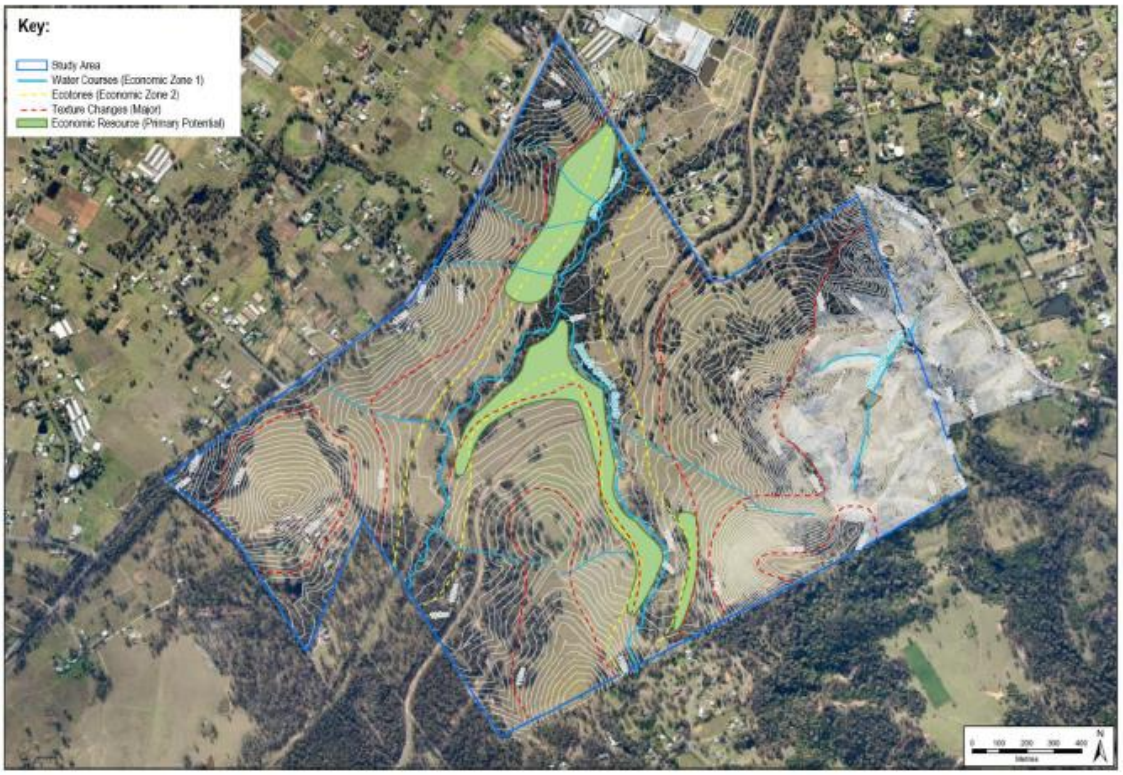


Figure 7.9 Application of the economic resource model to East Leppington, showing the three primary zones designated with archaeological potential. (Source: Nearmap 2014 with GML additions)

Figure 6: GML's overlap of stream order model, economic resource model, and identified areas of high and low density archaeological sites (GML 2016: 322)

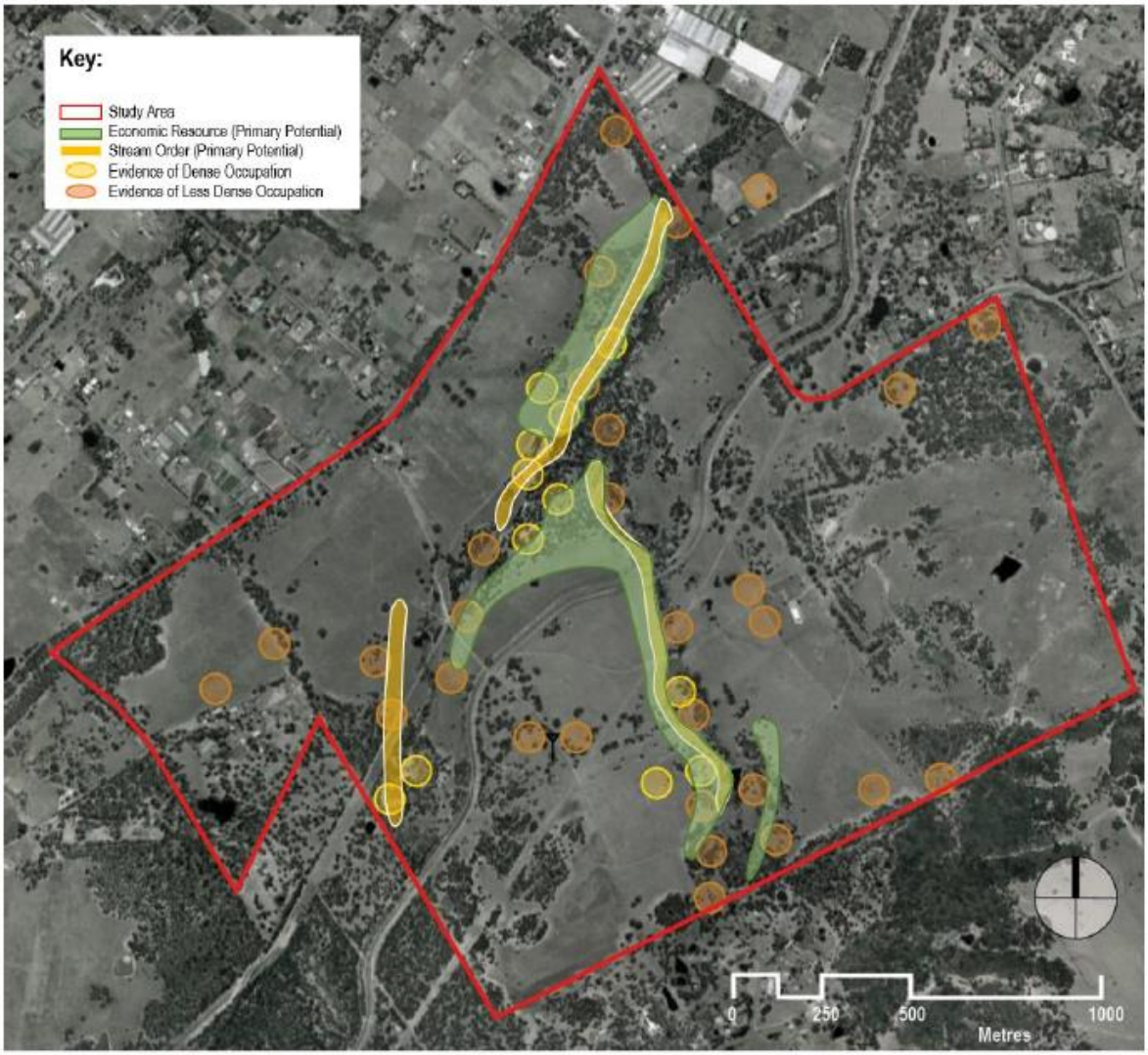


Figure 7.10 Application of the two predictive models, contrasted with the outcome of archaeological excavations. Domiciliary spacing of evidence is apparent within the core archaeological zone. (Source: Nearmap 2014 with GML additions)

3.2 AHIMS search

NOTE: The location of Aboriginal sites is considered culturally sensitive information. It is advised that this information, including the AHIMS data appearing on mapping below must be removed from this report if it is to enter the public domain.

An extensive search of the AHIMS was undertaken on 7 March 2024 (Client Service ID: 871107) to determine the location of Aboriginal sites in relation to the current study area. The search included an area of approximately two kilometres (east-west) by two kilometres (north-south) surrounding the study area to inform the characterisation of the local archaeological context. The AHIMS search parameters were as follows:

Datum:	GDA 1994, Zone 56
Eastings:	292362.0 - 294365.0
Northings:	6231213.0 - 6233673.0

Buffer	0 km
Number of sites	11

There were 11 registered sites within the search area. Of those sites, one registered site is located within the study area, and three sites were listed as destroyed.

The AHIMS database records sites using a list of twenty standard site types, and more than one feature can be used for each site. A total of two were found within the extensive search (OEH 2012):

- Artefact: Objects such as stone tools, modified glass or shell showing evidence of use by Aboriginal people
- Modified Tree (Carved or Scarred): A tree which shows evidence of Aboriginal cultural modification, as a result of cutting the bark for the manufacture of shields, canoes etc. or from the intentional carving of heartwood as a marker of cultural significance.

The frequency of recorded site types is summarised in Table 5 below.

Table 5 Frequency of site types in the AHIMS search results

Site Feature	Number	Percentage
Artefact	10	90.91
Modified Tree (Carved or Scarred)	1	9.09
Total	**11**	**100%**

Aboriginal occupation covered the whole of the landscape, though the availability of fresh water and resources was a significant factor in repeated and long-term occupation. Certain site types, such as culturally modified trees, are particularly vulnerable to destruction through historical occupation. As a result, more resilient site types, such as stone artefacts, are predominant in the archaeological record. Because of this, the nature and location of registered Aboriginal sites is an imperfect reflection of past Aboriginal occupation. Furthermore, the surviving archaeological record is also a reflection not only of historical land-use, disturbance, and the post-depositional events, but also reflects the sampling bias of previous archaeological investigation.

Of the registered sites within the search area, the vast majority (n=10, 90.91%) were Artefacts, with one Modified Tree (n=1, 9.09%). The distribution of sites in proximity to waterways, such as Kenny Creek, demonstrates the significance of freshwater resources to Aboriginal people within the region. While a relationship can be seen to exist between freshwater resources and site density, the distribution of artefact sites across a variety of landforms suggest they reflect a broader background scatter of artefacts across the region (Figure 7). A summary of AHIMS sites located within, or in proximity to the study area is provided below (Figure 8):

AHIMS ID 52-2-3557

AHIMS ID 52-2-3557, which is located within the study area, was recorded in 2007 by JMCD CHM. The site was identified at the rear of the house at 61 Turner Road. AHIMS ID 52-2-3557 was recorded as an open artefact scatter on an unformed track through a grove of red gums and box gums. The site card lists the following artefacts as recorded at the site by JMCD CHM in 2007:

- 1 pink silcrete flake
- 3 red silcrete flakes
- 1 yellow silcrete flake
- 1 orange silcrete flake
- 1 orange and blue banded tuff flake
- 1 cream tuff core
- 1 basalt flake
- 8 silcrete flaked fragments
- 3 tuff fragments.

The site card lists site condition as 'good'. No map or photos are included with the site card. Test excavation of this site was undertaken in 2022 by Austral, but no subsurface artefacts were identified within the site extents despite a lack of ground disturbance, indicating that this site is limited to a surface scatter.

According to Austral (2022), the artefacts listed above were collected by the previous landowner, effectively destroying the site. Artefact has subsequently updated the site card for AHIMS ID 52-2-3557 to reflect this.

AHIMS ID 52-2-3873

AHIMS ID 52-2-3873 is situated approximately 10m east of the study area at its closest point, and was recorded in 2011 by EMGA Mitchell McLennan (EMGA). The Aboriginal site was recorded as part of investigations for the proposed installation of a sewer main. The site extent as mapped on the site card is noted as:

> *Note that the site does not comprise visible surface artefacts and hence the site dimensions are based on modelling derived from archaeological test excavations conducted by Baker on the nearby Gregory Hills Land.*

Therefore, the site extent map included with the site card is assumed to be based archaeological modelling rather than identification of artefacts on the ground surface. Archaeological test excavation was conducted by EMGA along the proposed sewer main alignment through AHIMS ID 52-2-3557. Test excavation resulted in the retrieval of three artefacts from a total excavation area of 5m^2. Additional text excavation of the site was conducted by Austral in 2022, but no artefacts were identified in any of the test pits (Figure 9). Subsequently, Austral revised the extent of AHIMS ID 52-2-3873 following the absence of subsurface Aboriginal artefacts, with the site no longer extending into 61 Turner Road.

AHIMS ID 52-2-3874

AHIMS ID 52-2-3874 is located approximately 250m south of Turner Road and outside the study area. It was recorded as an artefact site and subjected to test excavation by ENSR in 2009. A total of 19 artefacts were recovered from an excavated area of 9.75m^2 (ENSR 2009). The site was reinterpreted as a low-density artefact scatter and no further excavation was deemed necessary (ENSR 2009).

Figure 7: AHIMS extensive search

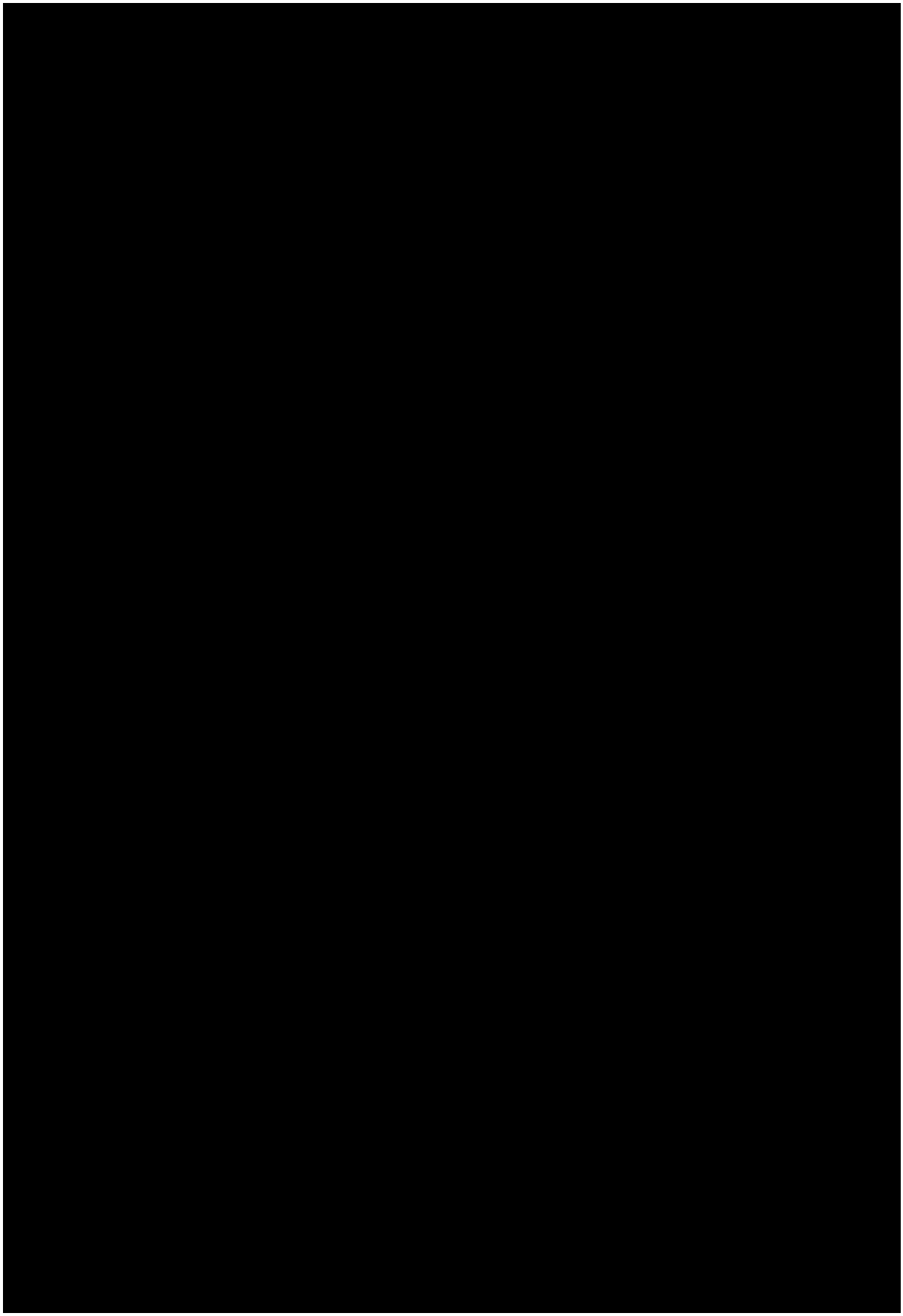


Figure 8: AHIMS registered sites near the study area

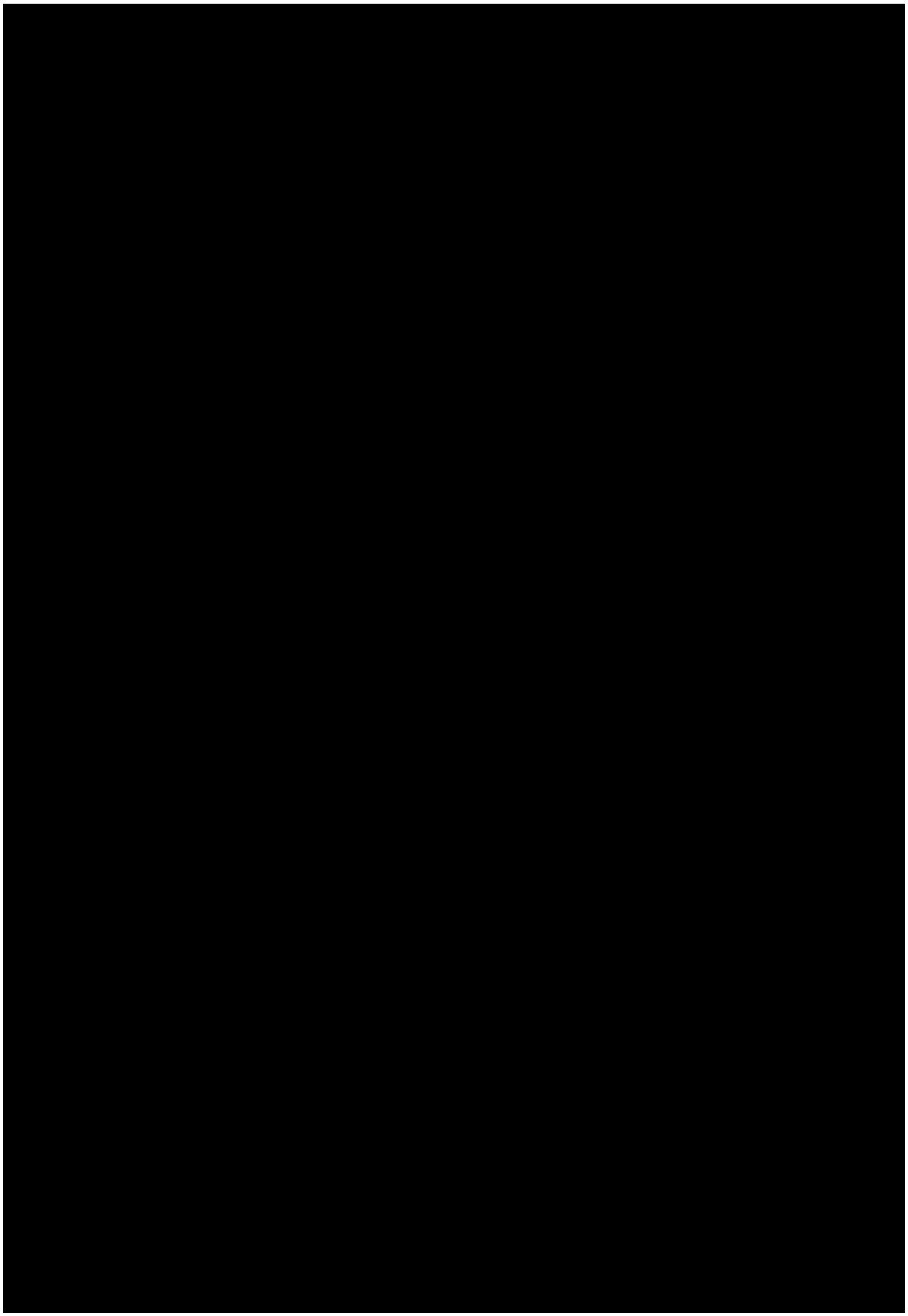


Figure 9: Test pits excavated by Austral in 2022 (Austral 2022)

7.21 - Results of Testing Area C

21158 - 43-61 Turner Road, Gregory Hills

Source: Nearmap

Drawn by: DC Date: 2022-04-08

AUSTRAL ARCHAEOLOGY

3.3 Environmental background

3.3.1 Geology and soils

The study area is located within the southern portion of the Cumberland Plain, a large low-lying and gently undulating landform in the Sydney Basin. The formation of the basin began between 300 to 250 million years ago when river deltas gradually replaced the ocean that had extended as far west as Lithgow (Pickett and Alder 1997). The oldest, Permian layers of the Sydney Basin consist of marine, alluvial and deltaic deposits that include shales and mudstone overlain by Coal Measures.

By the Triassic period the basin consisted of a large coastal plain, with deposits from this period divided into three main groups, the Narrabeen Group, Hawkesbury Sandstone and the Wianamatta Group (Clark and Jones 1991, Pickett and Alder 1997).

The underlying geology of the area consists of Bringelly Shale remnant from the Triassic deposit. Bringelly Shale generally consists of a combination of shale, carbonaceous claystone, laminate and coal. The predominant raw material identified in retrieved archaeological assemblages in the area is silcrete. The study area is characterised by a residual soil landscape known as Blacktown soil (Figure 10). The Blacktown soil landscape consists of shallow to moderately deep soil with relatively low susceptibility to erosion but a high susceptibility to ground disturbance. As such, Aboriginal objects within Blacktown soils tend to be better preserved at greater depths, whereas historical developments the capacity to displace or destroy subsurface archaeological materials located closer to ground surfaces.

3.3.2 Landform and hydrology

The study area consists of an undulating landscape of rolling hills and prominent rises. One first order tributary of Kenny Creek flows through the study area (Figure 11). A series of dams have been constructed along the watercourse. A second order tributary of Kenny Creek is located approximately 50m east of the study area. Previous archaeological studies have demonstrated that, within the Cumberland Plain, Aboriginal sites are concentrated within proximity to first order watercourses due to their ability to provide reliable sources of freshwater (White & McDonald 2010). The presence of Kemps Creek and Kennys Creek within and within proximity to the study area therefore supports the potential for Aboriginal objects or sites to be present in the area. Council's flood mapping did not indicate that the area was subject to flooding, suggesting that the study area may have been a suitable location for Aboriginal groups to camp.

3.3.3 Historic land use

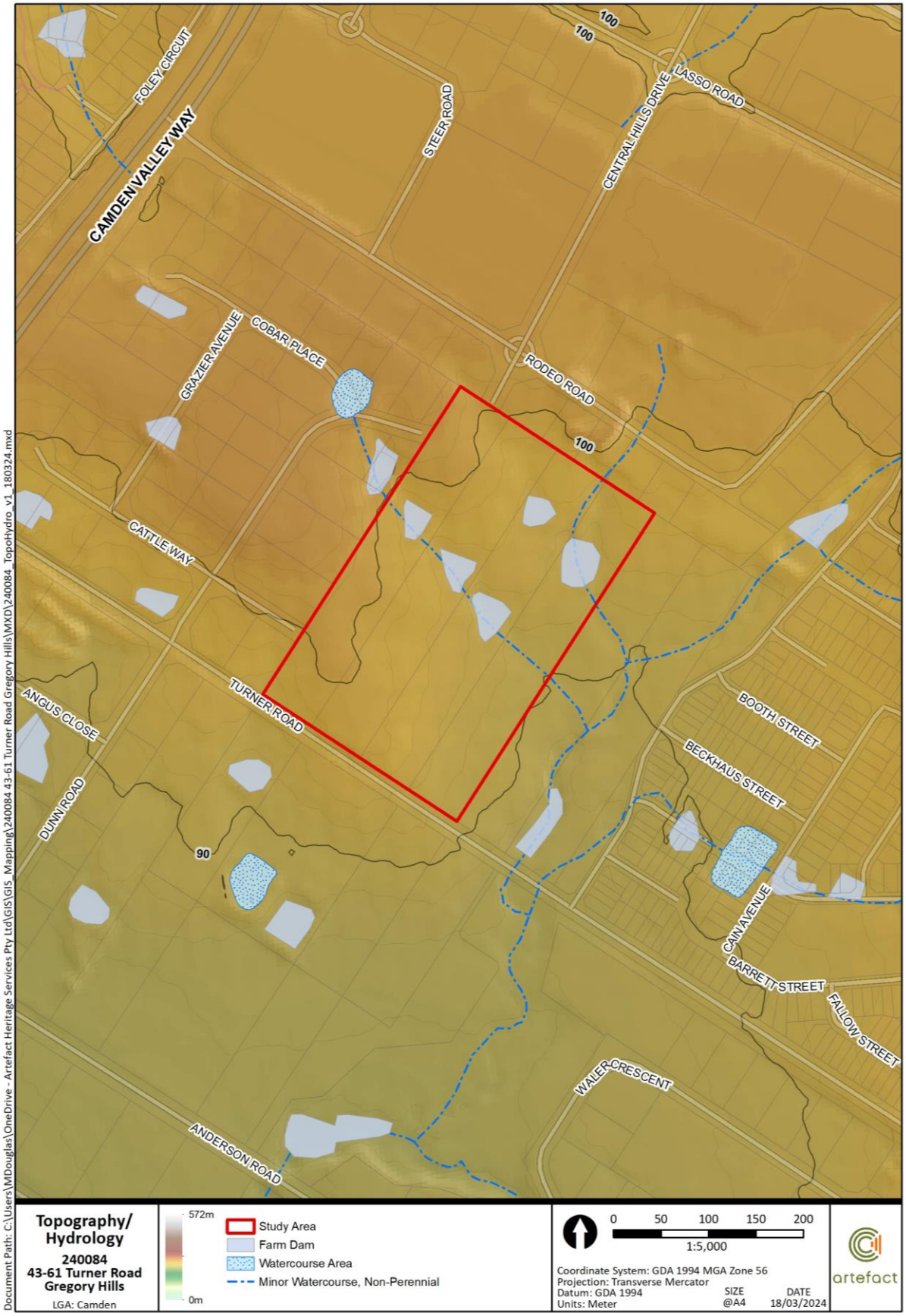
Early incentive for European exploration in the Camden and Campbelltown districts was the presence of a herd of wild cattle descended from two bulls and four cows that had escaped the first settlement in Sydney in 1788 (Wrigley 2001). Thirteen years later, Governor Hunter explored the region personally after learning of the cattle from other colonists and named the district the Cowpastures (Mylrea 2002:6). The southern limit of the Cowpastures was Stonequarry Creek at Picton extending beyond Narellan to the north, though its northern boundary was never formally defined (Atkinson 1988:8-9).

The first land grants in the area were appointed in 1805 when John Macarthur was granted 5000 acres on which to breed fine-wool sheep. The region soon became a flourishing farming community with Campbell Town established in 1820 and the hallmarks of a successful settlement such as the first post office, church, resident doctor and permanent local police established by 1828.

Gregory Hills is a recently established suburb, established in 2008. It was built upon land that was previously owned by the Marist Fathers, provided to them in a grant from Thomas Donovan in the 1920s. The grant was to establish a school for boys to learn skills to equip them for farming. The school, St Gregory's College, lends its name to the suburb (Changing Camden Blog, 2016). The study area and the region surrounding it appears to have predominantly been used for agricultural purposes during the twentieth century. During the first half of the century, the land appears to have been cleared and used for grazing, but in the latter half of the century structures and dams were constructed, resulting in localised ground disturbance across the site.

Figure 10: Soil landscapes of the study area

Figure 11: Topography and Hydrology of the study area



3.4 Predictive model

The predictive model comprises a series of statements about the nature and distribution of archaeological evidence of Aboriginal land use within the study area. A predictive model has been prepared for this report based on Artefact's 2022 ASR. These statements are based on the background information gathered regarding:

- Landscape context and landform units:
    - The eastern boundary of the study area borders a second order watercourse
    - The remainder of the study area is undulating terrain intersected by first order ephemeral tributaries
    - Reliable water – through review of topographic maps, review of previous reports for the study area and surrounding area, and discussions with landowners on site – the first order tributaries through the study area do not present reliable water. They are ephemeral and drain the higher ground to the northwest during periods of increased rain
    - Topography – the study area generally consists of undulating terrain intersected by first order watercourses. Elevation generally decreases from west to east, with the second order watercourses on the eastern boundary of the study area the lowest elevation. Topography includes minor spurs running from west to east, bordering the first order tributaries. The elevation along the western boundary of the study area appears to be a local high point. However, review of topographic maps demonstrates that the higher terrain to the west has recently been removed for development, and the higher terrain to the northwest was cut down and levelled for development. Therefore, the topography within the study area would originally have been bordered by higher elevation to the west and north-west and lower terrain to the west.
- Ethno-historical evidence of Aboriginal land use
- Distribution of natural resources
- Results of previous archaeological work in the vicinity of the study area.

Following the stream order model and review of that model in the local context (ENSR/AECOM 2009; EMGA 2011), the eastern portion of the study area is the most likely to contain relatively low-density clusters of Aboriginal artefacts.

When applying the economic resource model (GML 2016), there are no changes in soil type across the area, and the original vegetation coverage is unknown. Under this model the second order watercourse would likely be the main economic resource, with micro changes in topography likely where the narrow flat bordering the second order watercourse merges transitions to the surrounding spurs.

Based on the previous predictive models for the region, and considerations of topography and watercourses, it is unlikely that predictable concentrations of Aboriginal objects will occur across the remainder of the study area.

3.5 Summary of field investigations

Multiple investigations have taken place in the study area, including an ASR (Artefact 2022) and ACHAR (Austral 2022). The field investigations from those reports have been summarised below.

43, 49, 55 & 61 Turner Road, Gregory Hills: Final Aboriginal Archaeological Survey Report (Artefact 2022)

In November 2021 Artefact prepared a preliminary ASR for the study area. That report found that a registered Aboriginal site AHIMS ID 52-2-3557 was located wholly located within the study area, and a portion of AHIMS ID 52-2-3873 was located within the study area. That report also found that one identified area of archaeological potential, TR PAD 01, was located within the study area.

The survey found that the study area was located across undulating including slopes and minor crests intersected by two first order tributaries and a low-lying area that would likely act as a third watercourse during periods of heavy rain. The study area was found to be generally covered in dense grass with stands of trees mainly concentrated in the around the houses fronting Turner Road and in the northern portion of the study area adjacent to the two first order watercourse.

Mapped soil landscapes had identified residual soils across the study area. Except for isolated significant impacts to the soil profile observed across the study area from dam construction, houses/built structure construction, and modifications associated with vehicle access off Turner Road, the study area generally appeared intact.

It was predicted that sub-surface archaeological potential was likely present at AHIMS ID 52-2-3557 and in the associated western portion of AHIMS ID 52-2-3873 for the following reasons:

- General lack of identified disturbance across AHIMS ID 52-2-3557 and western portion of AHIMS ID 52-2-3873
- Extent of surface artefacts identified across the area during a period of greater surface visibility (2007)
- Both sites are located within 100 metres of a second order watercourse

The landowner of 61 Turner Road indicated that the tracks through the property where artefacts were identified consisted of introduced fill. It was stated that archaeological test excavation would be required to investigate further.

Sub-surface archaeological potential was also identified within the study area at TR PAD 01. TR PAD 01 was located within 100 m of a second order watercourse. The residual soils and lack of visible disturbance in both areas suggested that the sub-surface context in both locations should remain relatively intact. No other areas of archaeological potential have been identified in the study area.

As a result of the survey findings, it was recommended that a combined archaeological test excavation program should be undertaken within AHIMS ID 52-2-3557, the portion of AHIMS ID 52-2-3873 within the study area, and TR PAD 01.

43-61 Turner Road, Gregory Hills: Aboriginal Cultural Heritage Assessment (Austral 2022)

In April 2022, Austral completed an ACHAR for the same project which included the results of archaeological survey and test excavation for all identified areas of PAD within the study area.

The survey was intended to confirm the preliminary results obtained by Artefact (2021). The survey identified areas of extensive disturbance across the study area but did not observe disturbances in areas of previously identified sensitivity.

The subsequent program of test excavation comprised 39 test pits placed in a systemic grid across all areas of registered AHIMS site extents and identified archaeological sensitivity. There were no Aboriginal objects found during this test excavation.

The entirety of TR PAD 01 and TR PAD 02 were investigated and no archaeological deposits were identified. Through this investigation it was determined the areas do not have the any archaeological potential. It was recommended that before any works occur an AHIP to destroy TR-1 (AHIMS ID 52-2-3557) and the portions of GHSN (AHIMS ID 52-2-3873) that would be impacted by the proposed works must be obtained.

Following these works, it was identified that the 20 artefacts comprising AHIMS ID 52-2-3557 were collected by the landowner from their recorded locations. As a result, AHIMS ID 52-2-3557 was destroyed.

Summary

Following the results of previous investigations that have taken place within, and in proximity to the study area, AHIMS ID 52-2-3557 is the only registered site located within the study area (Figure 12). As a result of negative testing, Austral had previously recommended that before any works occur, an AHIP to destroy TR-1 (AHIMS ID 52-2-3557) would be required and that no further archaeological excavation is necessary. However as multiple surveys and test excavation failed to identify any other Aboriginal objects within AHIMS ID 52-2-3557 besides the 20 collected artefacts, no AHIP was necessary, and the study area is considered to be destroyed due to the collection of this artefacts prior to the proponents involvement. The site card for AHIMS ID 52-2-3557 has been updated to reflect this destruction.

Figure 12: Previous assessment site extents

4.0 CULTURAL HERITAGE VALUES

4.1 Methodology

The cultural assessment in this report includes information collected through desktop assessment and Aboriginal community consultation undertaken in accordance with the Consultation Requirements. This information was collected by Gareth holes (Senior Heritage Consultant, Artefact).

4.1.1 Cultural landscape

The World Heritage Convention of United Nations Educational, Scientific and Cultural Organisation (UNESCO) defines a cultural landscape as one which has 'powerful religious, artistic or cultural associations of the natural element rather than material cultural evidence, which may be insignificant or even absent' (UNESCO 2021). The relationship between Aboriginal Australians and the land is conceived in spiritual terms rather than primarily in material terms (Andrews et al 2006). Aboriginal cultural knowledge has been defined as:

> *Accumulated knowledge which encompasses spiritual relationships, relationships with the natural environment and the sustainable use of natural resources, and relationships between people, which are reflected in language, narratives, social organisation, values, beliefs and cultural laws and custom (Andrews et al 2006).*

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

4.1.2 Types of values

Aboriginal people hold significant knowledge about traditional use of land before and after contact. The landscape which encompasses the study area has cultural value of importance to the Aboriginal community. The Aboriginal community collectively holds values and knowledge that relate to:

- Traditional values: these are passed down by family and community as part of ancient tradition.
- Historical values: these are passed down by family and community and relate to the eras since colonisation; these may include information gained from historical source documents.
- Contemporary values: these are values of modern importance and relevance for Aboriginal stakeholder groups.

There is often no clear separation between these values, and they collectively co-exist with equal importance in forming the value that Aboriginal people place on landscape, cultural heritage, intangible heritage, and particular landforms or parts of the landscape.

4.2 Identified Aboriginal cultural heritage values

Table 6 provides a summary of the Aboriginal cultural heritage values associated with the study area.

Table 6: Cultural heritage values identified for the study area and surroundings

Cultural heritage value	Description	Source
Wider landscape	The local area was subject to extensive Aboriginal occupation and has demonstrated a distinctive character of low density mobile occupation. Archaeological sites and deposits associated with the archaeological record of Aboriginal occupation of the area are of cultural value to Aboriginal people.	Background research
Watercourses	Several permanent watercourses are present within and in close proximity to the study area. Watercourses are significant to Aboriginal people and contain intrinsic cultural value.	Background research

4.3 Aboriginal cultural values within the study area

The local area has been subject to extensive Aboriginal occupation and holds substantial cultural value for Aboriginal people. The study area has been demonstrated to contain Aboriginal objects which demonstrate the occupation of the area by Aboriginal people and contribute to our understanding of Aboriginal settlement and land use, all of which contribute to the cultural value of the study area.

5.0 SIGNIFICANCE ASSESSMENT

A significance assessment of the scientific, social, historic and aesthetic values of the study area is included below.

5.1 Significance assessment criteria

An assessment of the cultural heritage significance of an item or place is required in order to form the basis of its management. The Guide (OEH 2011: 10) provides guidelines, in accordance with the Burra Charter (Australia ICOMOS 2013) for significance assessment with assessments being required to consider the following criteria:

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

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

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

It is important to note that heritage significance is a dynamic value.

5.1.1 Historic value

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

While one Aboriginal site has been identified within the study area, no specific historic values have been identified. Therefore, the study area contains low historic value.

5.1.2 Aesthetic value

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 study area maintains some aesthetic value associated with the rural undeveloped nature of the study area, however clearance of the native vegetation, and development of the surrounding lots has impacted these values. No specific aesthetic value beyond this were identified, therefore the study area is assessed to have low aesthetic value.

5.1.3 Socio/cultural value

The Consultation Requirements specifies that the social or cultural value of a place must be identified through consultation with Aboriginal people.

No specific socio/cultural values were identified during the background research.

5.1.4 Scientific value

As a scatter of stone flakes that have been removed from their original location, AHIMS ID 52-2-3557 possesses low research potential, representativeness, and education potential, and is not a rare site type within the regional archaeological context. Additionally, due to the previous collection of these artefacts, this site has been destroyed removing any significance the site previously had. A summary of the archaeological significance of sites identified is presented in Table 7.

Table 7: Significance assessment

Site name (AHIMS ID)	Research potential	Representativeness	Rarity	Education potential	Overall significance assessment
52-2-3557	Nil	Nil	NIl	Nil	Nil

5.2 Statement of significance

While the landscape and environment of NSW as a whole is significant to Aboriginal people, no specific Aboriginal heritage values were identified during the significance assessment. One registered Aboriginal site (AHIMS ID 52-2-3557) was identified; this site was determined to be of low significance, and no specific cultural values were associated with the study area (Austral 2022). However, the artefacts comprising AHIMS ID 52-2-3557 were collected prior to the involvement of the proponent, thereby destroying the site. The site card for AHIMS ID 52-2-3557 has been updated to reflect this. Additionally, test excavation (Austral 2022) did not identify any additional subsurface Aboriginal objects associated with AHIMS ID 52-2-3557 and multiple archaeological surveys have also failed to identify any other Aboriginal objects within the extent of the site.

6.0 IMPACT ASSESSMENT

6.1 Proposed works

The proposal involves the construction of a data centre comprising of data halls, mechanical and electrical equipment rooms, offices, substation, security gatehouse, other ancillary support spaces, and external/rooftop, mechanical and electrical equipment (Figure 13 - Figure 17).

Historically, the Site has been used for rural residential development. Based on historic mapping the Site has been progressively developed since the 1940s. However, the Site is currently unoccupied following its acquisition by the applicant in 2023. Currently, the Site is vacant, with farm dams remaining present within the extent of the Site. The area surrounding the Site is predominantly commercial/industrial land. Immediately to the east is comprised of a riparian corridor, and farther east comprises of vacant land and residential properties. The Site is zoned IN1 General Industrial under State Environmental Planning Policy (Precincts – Western Parkland City) 2021 (WPC SEPP).

The Site generally slopes downward from the northwest corner to the southeast corner. Ground elevations vary with the Site at its highest in the northwest corner at about 104 metres Australian Height Datum (mAHD). The Site is at its lowest in the southwest corner at about 91 mAHD.

A summary of the proposal's key features includes:

- Construction of a two storey data centre comprising:
    - 2 data halls including fitout of IT Racks and equipment, associated cabling and supporting services
    - 27 backup generators
    - With an IT capacity of about 53 megawatts (MW).
- Construction of a guard house
- Infrastructure comprising civil, stormwater and drainage works and utilities servicing and connections.
- Diesel storage capacity of about 900 kilo litres (kL)
- High voltage substation incorporating 132/22 kilovolt (kV) transformers and associated switching and control buildings.
- 68 standard car parking spaces (of which five would have EV charging), 2 car parking spaces compliant with the *Disability Discrimination Act 1992*, 10 shared bicycle parking spaces.
- Hours of operation being on a 24 hours per day, 7 days per week basis.

A separate development application will be lodged with Camden Council for the site preparation and early works including construction of a new eastern access road, turning head at White Cliffs Avenue and connection of Central Hills Drive through the northwestern portion of the site (refer to Figure 2).

It is expected to take approximately 18 months to build the data centre with construction of the building commencing in Q1 2026 and be completed in Q2 2027 (subject to planning approval and weather conditions). It would take an additional twelve months post-construction to fully fit out the data centre. The Proposal is expected to be fully operational in Q2 2028.

Figure 13: Proposed Site Analysis Area Schedule (Source: Greenbox Architecture 2024)

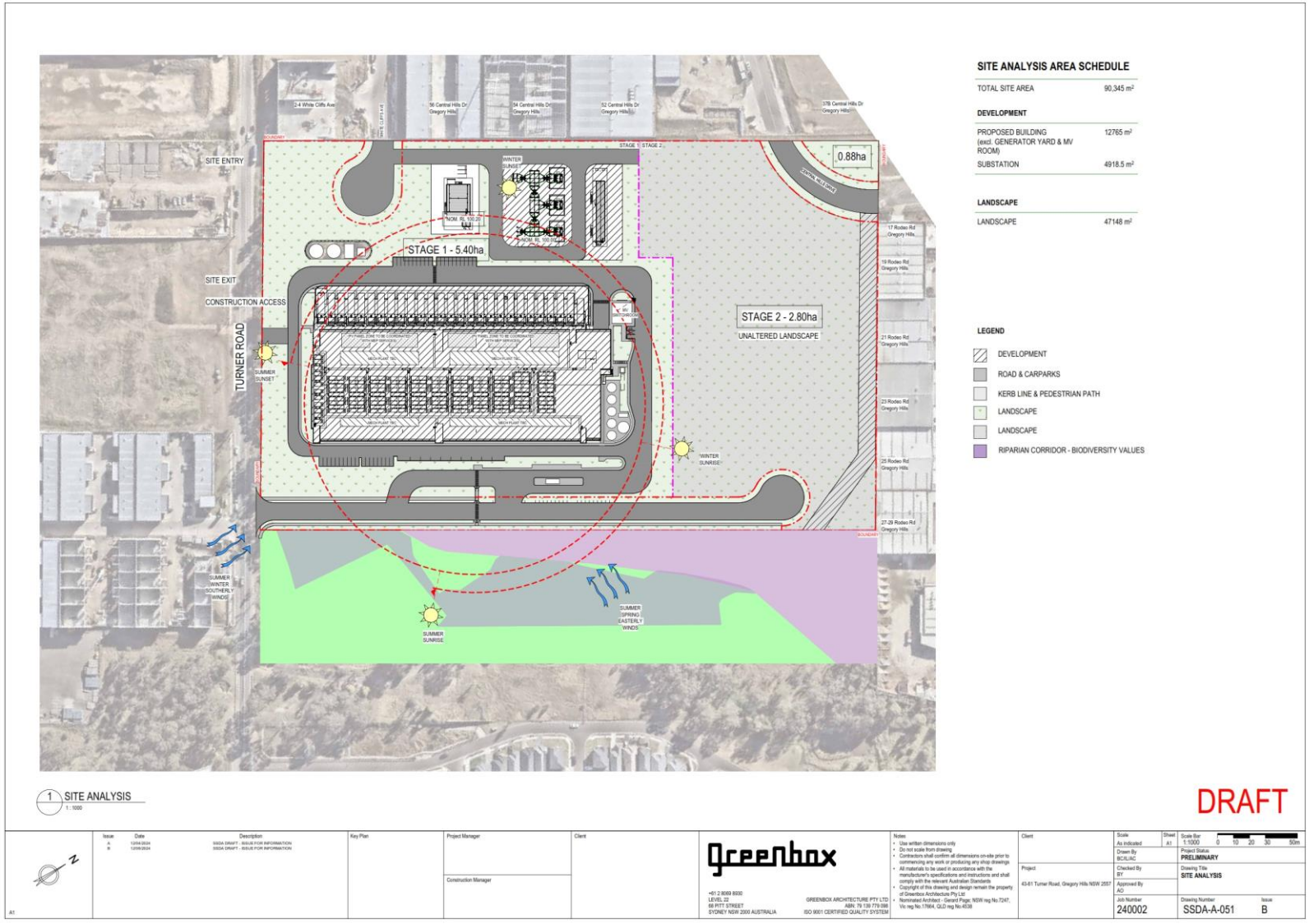


Figure 14: Proposed Site Plan (Source: Greenbox Architecture 2024)

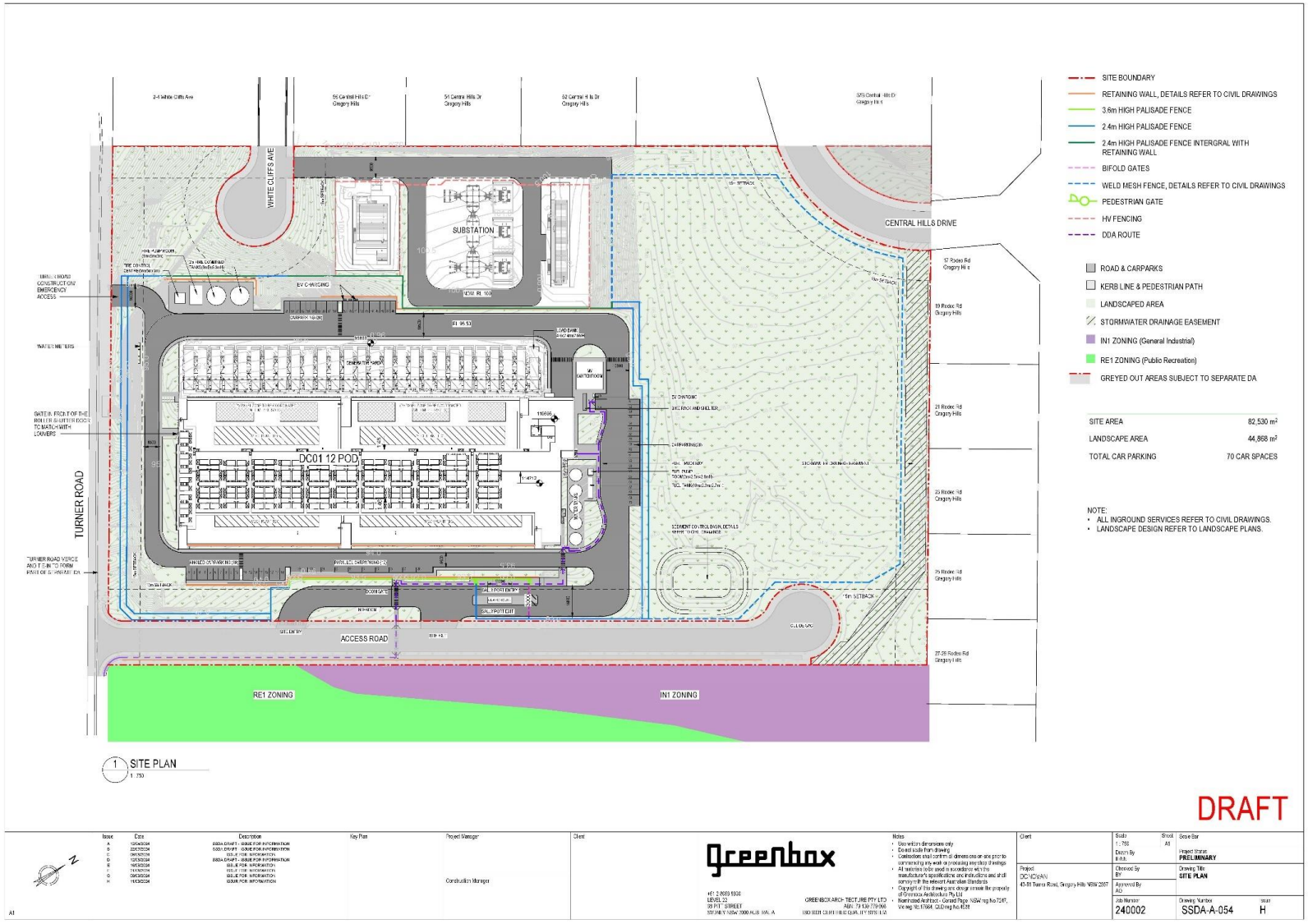


Figure 15: Proposed axonometric site view (Source: Greenbox Architecture 2024)

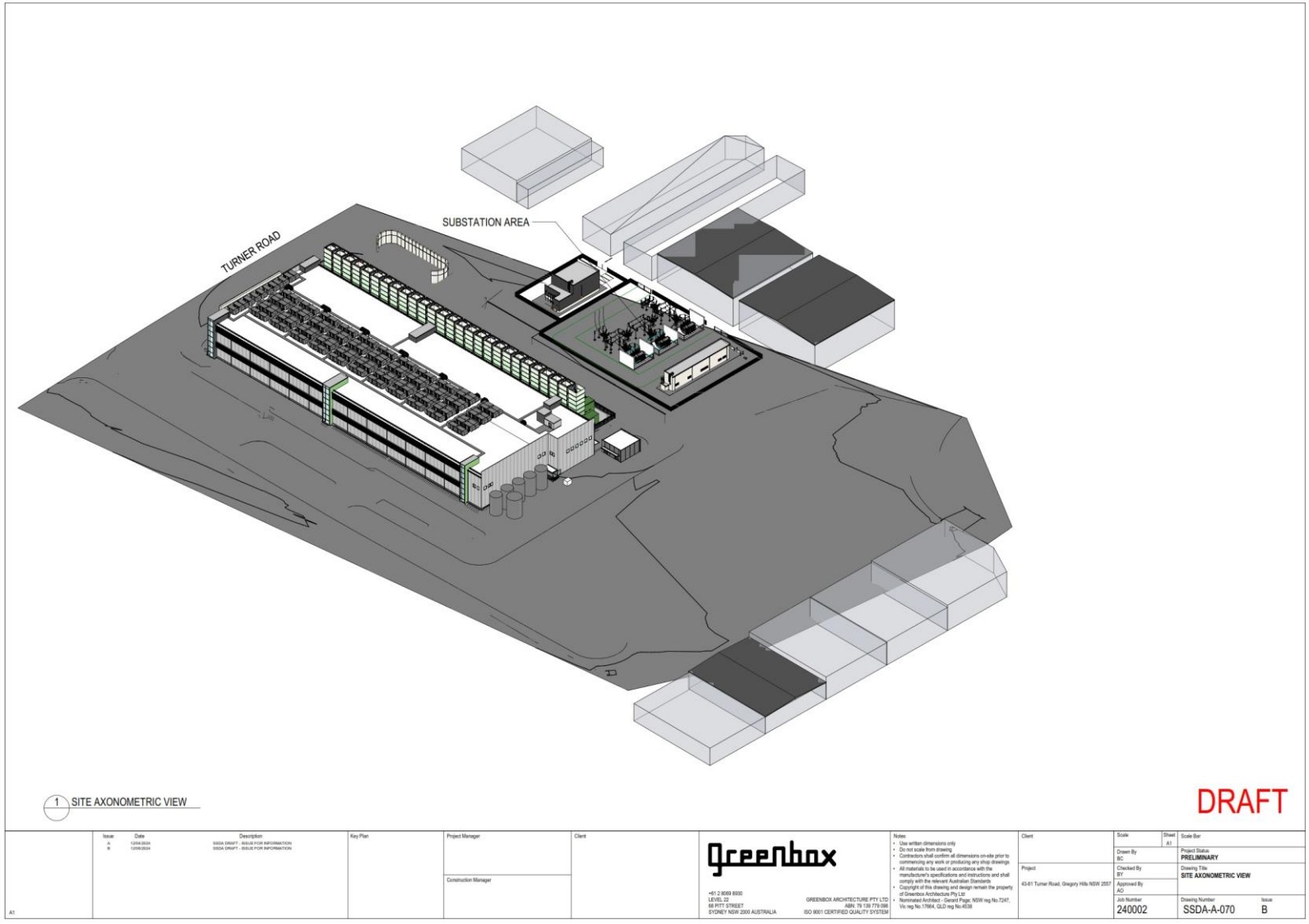


Figure 16: Proposed northwest and southwest elevation designs (Source: Greenbox Architecture 2024)

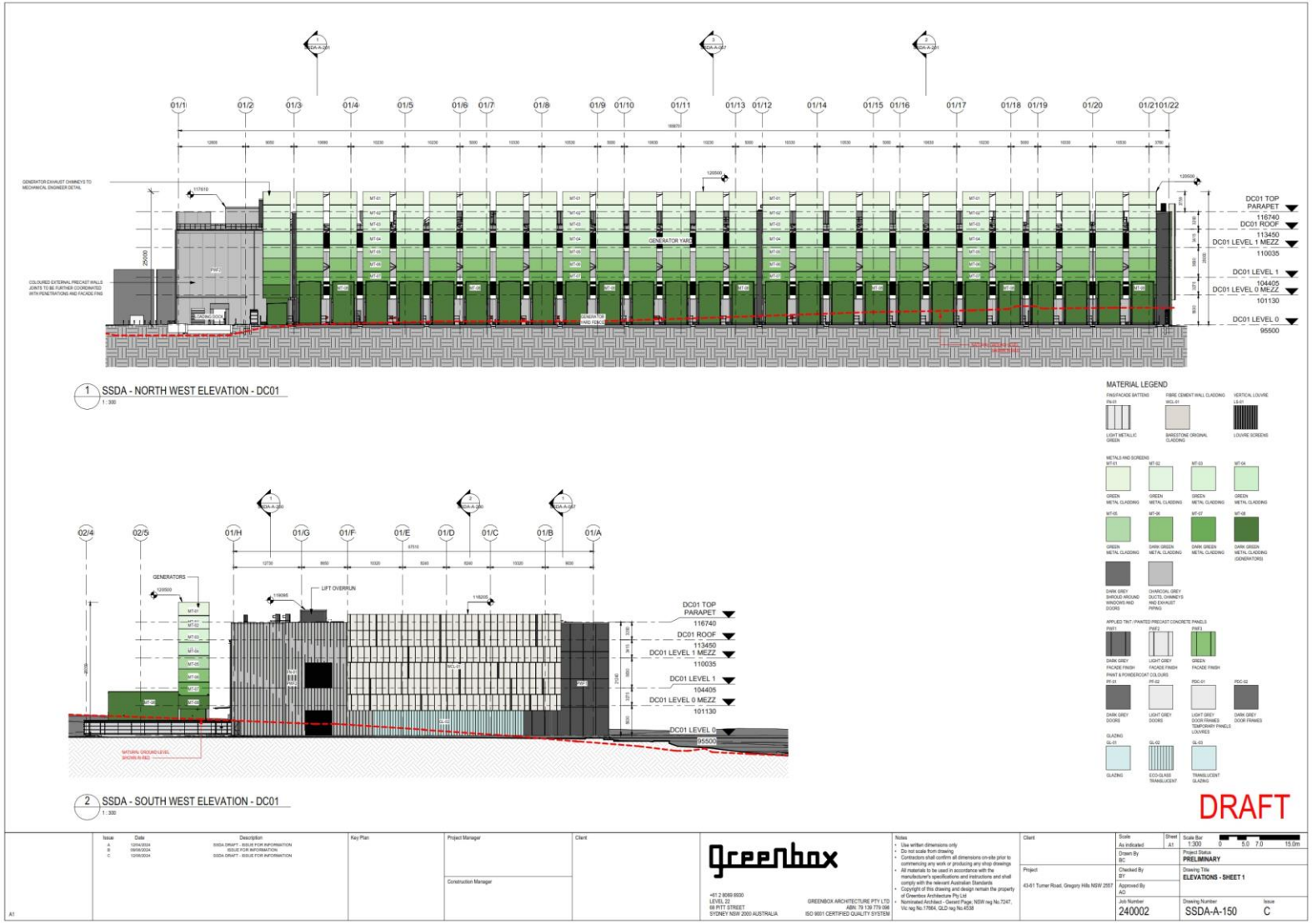
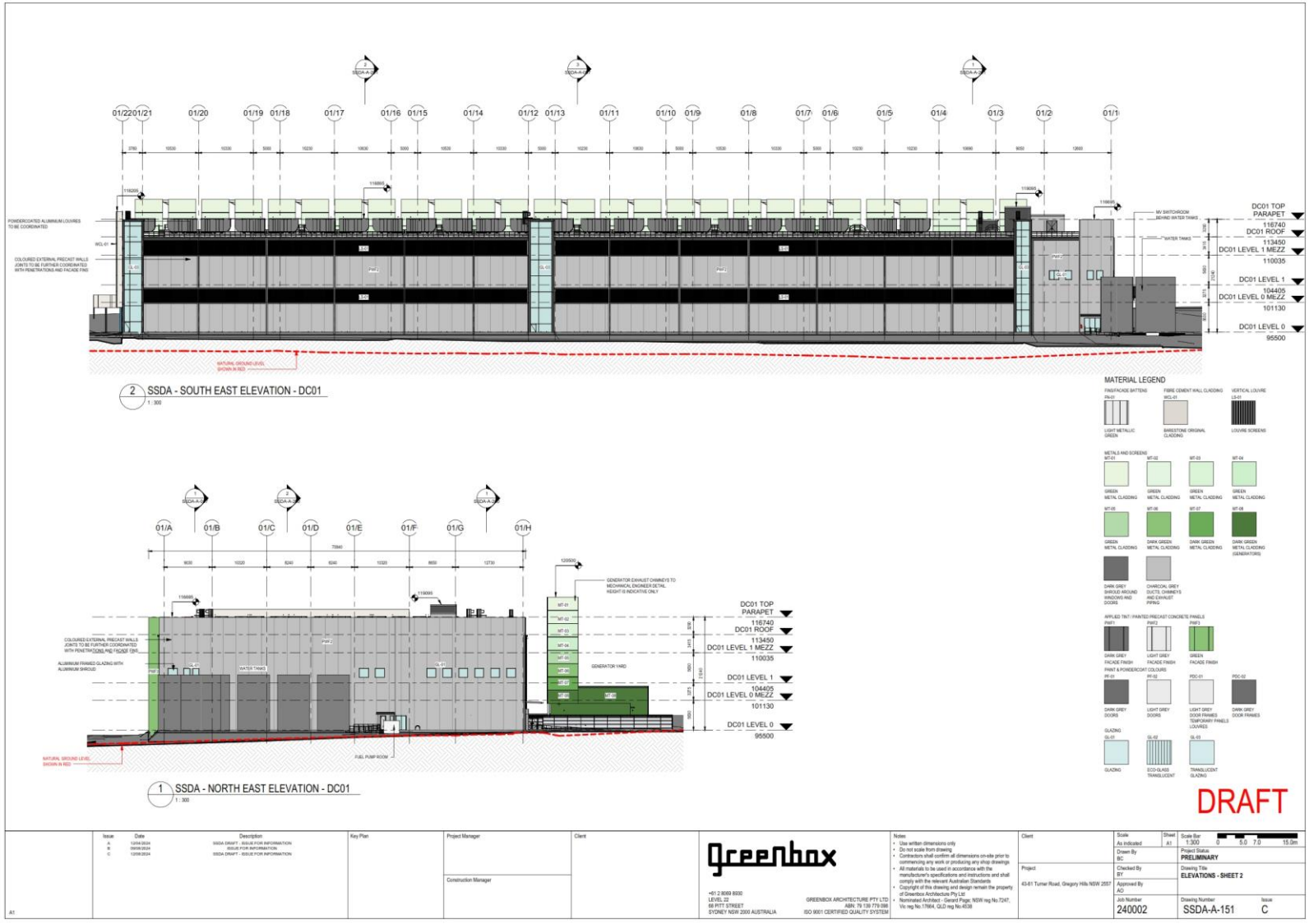


Figure 17: Proposed southeast and northeast elevation designs (Source: Greenbox Architecture 2024)



6.2 Aboriginal heritage impact

AHIMS ID 52-2-3557 is an artefact site, located within the eastern portion of the study area. However, the artefacts which comprised this site were previously collected and moved from their original locations by the landowner, thereby destroying the site. The site card for AHIMS ID 52-2-3557 has been updated to reflect this.

Multiple archaeological surveys and a program of test excavation failed to identify any other artefacts within the extent of AHIMS ID 52-2-3557. Based on this evidence, the collected artefacts comprise the extent of this artefact site and it unlikely that any other Aboriginal objects are present in this area on or beneath ground surfaces.

As no valid AHIMS sites or Aboriginal objects are present or likely to be present in the study area, the proposed works would have no impacts on Aboriginal heritage. A summary of the impacts is provided in Table 8.e

Table 8: Impact assessment

Site name (AHIMS ID)	Type of harm	Degree of harm	Consequence of harm
AHIMS ID 52-2-3557	None	None	None

6.3 Ecological Sustainable Development principles

The Guide (OEH 2011) specifies that Ecological Sustainable Development (ESD) principles must be considered when assessing harm and recommending mitigation measures in relation to Aboriginal objects.

The following relevant ESD principles are outlined in Section 3A of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*:

- Decision-making processes should effectively integrate both long term and short term economic, environmental, social and equitable considerations (the 'integration principle')
- If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation (the 'precautionary principle')
- The present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations (the 'principle of intergenerational equity').

6.3.1 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.

6.3.2 The precautionary principle

The preparation of this ACHAR demonstrates regard for the precautionary principle by investigating the impacts of the proposed works on Aboriginal sites and cultural values within the study area. This assessment has demonstrated that the works will not impact any Aboriginal sites, as the one site that was present in the area has been destroyed.

6.3.3 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. The ATR previously prepared an assessment of the study area and synthesised the regional character of Aboriginal objects and sites for posterity and future generations.

6.4 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. One Aboriginal site, AHIMS ID 52-2-3557 was identified within the study area, however no additional Aboriginal objects were identified during multiple archaeological surveys or test excavation and the artefacts comprising this site were collected prior to the proponent's involvement in the project, thereby destroying the site. Therefore, no cumulative impacts are expected.

7.0 MANAGEMENT AND MITIGATION MEASURES

7.1 Guiding principles

The overall guiding principle for cultural heritage management is that where possible Aboriginal sites should be conserved.

Where unavoidable impacts occur then measures to mitigate and manage impacts are proposed. Mitigation measures primarily concern preserving the heritage values of sites beyond the physical existence of the site. The most common methods involve detailed recording of Aboriginal objects, archaeological test and salvage excavations, artefact analysis and, where appropriate, reburial of Aboriginal objects in a location determined by the RAPs.

Mitigation measures vary depending on the assessment of archaeological significance of a particular Aboriginal site and are based on its research potential, rarity, representatives and educational value. In general, the significance of a site would influence the choice of preferred conservation outcomes and appropriate mitigation measures, usually on the following basis:

- Low archaeological significance – conservation where possible. SSD Conditions of Approval would be required to impact the site before work can commence
- Moderate archaeological significance – conservation where possible. If conservation was not practicable, further archaeological investigation would be required such as salvage excavations or surface collection in accordance with the SSD Conditions of Approval.
- High archaeological significance – conservation as a priority. Where all other practical alternatives have been discounted mitigation measured such as comprehensive salvage excavations in accordance with the SSD Conditions of Approval would be required.

7.2 Proposed measures

AHIMS ID 52-2-3557 has been destroyed. Therefore, no mitigation it required as there will be no harm. Consultation with Aboriginal stakeholders should be maintained throughout the proposed works. An update should be made every six months until consent is granted in line with the Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW 2010b).

7.3 Changes to the project area

Advice provided within this ACHAR is based upon the most recent information provided by the proponent at the time of writing. Any changes made to the project should be assessed by an archaeologist in consultation with the RAPs. Any changes that may impact on Aboriginal sites not assessed as part of the project may warrant further investigation and result in changes to the recommended management and mitigation measures.

8.0 CONCLUSION

The following results and recommendations are based on consideration and 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* (DECCW, 2011) – known as ACHAR guidelines.
- *The Aboriginal Heritage Consultation Requirements for Proponents* (DECCW, 2010b) – known as Consultation Guidelines.

8.1 Results

This ACHAR determined the following:

- One Aboriginal site, AHIMS ID 52-2-3557, is present in the study area
- The site, an artefact scatter, has been subjected to previous destruction through the landowner collecting the artefacts. The site card for AHIMS ID 52-2-3557 has been updated to reflect the site's destruction.
- Previous test excavation and multiple archaeological surveys of AHIMS ID 52-2-3557 have not identify any additional Aboriginal objects on or beneath ground surfaces additional subsurface objects within the site's extent, and the site has been determined to be of overall low significance.
- Due to previous collection, the proposed works would not harm AHIMS ID 52-2-3557.

8.2 Recommendations

Based on the results of this assessment, the following recommendations are made:

- Consultation with Aboriginal stakeholders should be maintained throughout the proposed works. An update should be made every six months until consent is granted in line with the Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW 2010b).
- If changes are made to the proposal that may result in impact to areas not assessed by this ACHAR, further assessment must be undertaken.

9.0 REFERENCES

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APPENDIX A – UPDATED AHIMS SITE CARD

APPENDIX B – CONSULTATION RECORDS

These records have been redacted for public display.

artefact

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