URBIS

ANGEL PLACE
LEVEL 8, 123 PITT STREET
SYDNEY NSW 2000

URBIS.COM.AU
Urbis Pty Ltd
ABN 50 105 256 228

4 March 2021

Mr Nathan Stringer
Principal Planning Officer
Department of Planning, Industry and Environment

Dear Mr Stringer,

P0029153 - ABORIGINAL CULTURAL HERITAGE ASSESSMENT FOR TAFE NSW CONSTRUCTION CENTRE OF EXCELLENCE, 2-44 O'CONNELL STREET, KINGSWOOD - EIS COVER LETTER

Urbis have been engaged by TAFE NSW to produce an Aboriginal Cultural Heritage Assessment (ACHA) for the proposed redevelopment of land at 2-44 O'Connell Street, Kingswood, forming part of the TAFE NSW Nepean Kingswood Campus, for the purposes of development of the TAFE NSW Construction Centre of Excellence (CCoE).

The ACHA report (ACHAR), currently in draft stage, will accompany a detailed State Significant Development Application (SSDA)- 8571481 for the development of an educational facility at the TAFE Nepean Kingswood Campus, located at 2-44 O'Connell Street, Kingswood (the site). The legal description of the site is Lot 1 in DP 866081.

This purpose of this short letter is to clearly outline the ACHA process undertaken to date in addition to the anticipated delivery timeframe of the ACHA for TAFE NSW CCoE.

The ACHA has been prepared according to the statutory guidelines under the NPW Act including:

- *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Department of Environment, Climate Change and Water (DECCW), 2010) (the Consultation Guidelines).
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (Office of Environment and Heritage 2011) (the Assessment Guidelines).
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010).
- *The Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter).

The western and southern portions of the subject area have experienced high levels of disturbance in localised areas associated with the construction of TAFE. The eastern and central portions of the subject area, however, have experienced considerably lower disturbance. These areas have been

cleared for agricultural practices since c.19th century. Current impacts are proposed within the eastern portion of the subject area, where disturbance has been minimal.

The subject area is located within the Luddenham soil landscape (lu). Soils within this landscape are described as shallow to moderately deep (<100-150cm).

Due to the surrounding hydrology, the subject area retains potential for the presence of Aboriginal archaeological resources. The subject area contains a tributary of Werrington Creek, which is located approximately 900m north of the site. The tributary runs southward from elevated ground and has been dammed. South Creek is located approximately 2km east of the subject area. As the subject area is within 200m of a waterway, this increases the potential for Aboriginal objects and sites.

There are landscape features with potential for Aboriginal objects or archaeological deposits located within the subject area.

Urbis recommend that additional investigation is considered warranted in the form archaeological test excavation to establish the level of disturbance of the A horizon/topsoil in addition to the presence or absence of Aboriginal objects/archaeological resources within the subject area.

The process, undertaken to date and anticipated, for the Aboriginal Cultural Heritage Assessment is outlined in Table 1 below.

Table 1 – ACHA Timeline

Project Stage and Scope	**Timing and Conditions**
Stage 1 Agency notice	Sent 6th November 2020, closed 20th November 2020 (Stage 1.2 Agency request sent to DPC 10th November 2020) Department of Premier and Cabinet provided Stakeholder List on 17th November 2020
Stage 1 Public notice Placed in the Koori Mail	Published in the 16th December 2020 edition
Stage 1 Invitation to Register letter sent to identified stakeholders	Sent 11th December 2020 and closed 31 December 2020 18 Stakeholders registered for the project
Stage 1 Registered Aboriginal Party notification to Department of Premier and Cabinet and Deerubbin Local Aboriginal Land Council	Sent to both DPC and DLALC on 18th January 2021
Stage 2 and 3: Provision of comments on the provided project information and proposed methodology (this document).	Document provided to the RAPs on 21st January 2021. The consultation period close on 18th February 2021. This provided 28 days for RAP comment

Project Stage and Scope	Timing and Conditions
Site survey (Andrew Crisp – Senior Archaeologist and Site Officer from Local Aboriginal Land Council).	Undertaken on 23rd February 2021
Test excavation sampling strategy under Requirement 15B of *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010). Requirement 15c – Test excavation sampling strategy A sampling strategy must be developed. This strategy must do the following: ▪ provide a framework for sampling all potential archaeological deposits (PAD) that are at risk of harm (within the subject area). ▪ describe the differentiation of the PAD to be test-excavated from the surrounding archaeological landscape (i.e. explain why the PAD is anticipated to be of higher significance than the continuous distribution of archaeological material in which it exists), and ▪ test those areas of PAD that have no archaeological exposure or visibility, or ▪ test the boundaries of known sites (where appropriate). ▪ confirm areas of low potential (where relevant).	Provided on 3rd March 2021 to: Dr Samantha Higgs Senior Team Leader Aboriginal Cultural Heritage Regulation - North Heritage NSW, Department of Premier and Cabinet Level 6, 10 Valentine Ave Parramatta NSW 2124 E: heritagemailbox@environment.nsw.gov.au

Project Stage and Scope	Timing and Conditions
▪ comply with the methods described in the Code ▪ describe how the sampling area relates to the area that is proposed to be impacted by the proposed activity.	
Notification of intention to undertake archaeological test excavation under Requirement 15C of *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010). Requirement 15c – Notification At least 14 days before undertaking any test excavations the relevant Heritage NSW regional office must be notified, in writing, of the following: ▪ the location of the proposed test excavation and the subject area. ▪ the name and contact details of the legal entity with overall responsibility for the project. ▪ the name and contact details of the person who will be carrying out the test excavations where this is different to the legal entity with overall responsibility for the project. ▪ the proposed date of commencement, and estimated date of completion, of the test excavations. ▪ the location of the temporary storage location for any	Provided on 3rd March 2021 to: Dr Samantha Higgs Senior Team Leader Aboriginal Cultural Heritage Regulation - North Heritage NSW, Department of Premier and Cabinet Level 6, 10 Valentine Ave Parramatta NSW 2124 E: heritagemailbox@environment.nsw.gov.au

Project Stage and Scope	Timing and Conditions
Aboriginal objects uncovered during the test excavations. ▪ A copy of the sampling strategy for test excavation must also be provided.	
Test excavation The test excavations will be undertaken in line with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010) in order to understand the nature, extent, integrity and research significance of the Aboriginal archaeological resource.	The five-day test excavation of Lot 60 DP 259135 is proposed to **start on Monday 22nd March 2021** and be **completed by Friday 26th March 2021**. Note that this timeframe is dependent on weather conditions and test excavation results.
Post-excavation tasks: Artefact analysis, Archaeological Technical Report (ATR) and update Aboriginal Cultural Heritage Assessment Report (ACHAR) with findings from ATR.	Anticipated two weeks of the end of the test excavation. Earliest **9th April 2021**.
Stage 4: Provision of the draft ACHAR and ATR reports (including the proposed management and mitigation measures) to the client for review. Provision of the draft ACHAR and ATR reports (including the proposed management and mitigation measures) to the RAPs for review 28-day review.	Draft ACHAR/ATR to client for review anticipated two weeks of the end of the test excavation. Earliest **9th April 2021**. Draft ACHAR/ATR to RAPs for review following the incorporation of client comments. Anticipated **16th April 2021** with **close 14th May 2021**
Stage 4: Finalisation of the ACHA report including the consideration of all comments and feedback.	Anticipated one week of the closing of the comment period for the draft ACHA report. Anticipated **21st May 2021**

*The length of the test excavation is indicative only. If high density subsurface assemblage(s) and/or rare/significant archaeology is identified during the 5-day program additional excavation shall be warranted. An extended program will be discussed immediately with the client.

Kind regards,

Andrew Crisp
Senior Consultant
+61 2 8233 7642
acrisp@urbis.com.au

URBIS

ANGEL PLACE
LEVEL 8, 123 PITT STREET
SYDNEY NSW 2000

URBIS.COM.AU
Urbis Pty Ltd
ABN 50 105 256 228

3 March 2021

Dr Samantha Higgs
Senior Team Leader
Aboriginal Cultural Heritage Regulation - North
Heritage NSW, Department of Premier and Cabinet
Level 6, 10 Valentine Ave
Parramatta NSW 2124
E: heritagemailbox@environment.nsw.gov.au

Dear Samantha,

NOTIFICATION UNDER REQUIREMENT 15C: ARCHAEOLOGICAL TEST EXCAVATION & SAMPLING STRATEGY - STATE SIGNIFICANT DEVELOPMENT APPLICATION - TAFE NSW CONSTRUCTION CENTRE OF EXCELLENCE, 2-44 O'CONNELL STREET, KINGSWOOD NSW

1. SUBJECT AREA & CONTEXT

Urbis have been engaged by TAFE NSW to produce an Aboriginal Cultural Heritage Assessment (ACHA) for the proposed State Significant Development of land at 2-44 O'Connell Street, Kingswood, forming part of the TAFE NSW Nepean Kingswood site, for the purposes of development of the TAFE NSW Construction Centre of Excellence. The Aboriginal Cultural Heritage Assessment Report (ACHAR) will accompany a detailed State Significant Development Application (SSDA)- 8571481 for the development of an educational facility at the TAFE Nepean Kingswood Campus, located at 2-44 O'Connell Street, Kingswood (the site). The legal description of the site is Lot 1 in DP 866081. The site comprises a rectangular lot with an area of approximately 23 hectares (ha).

Specifically, the SSDA seeks development consent for the construction and operation of the TAFE NSW Construction Centre of Excellence (TAFE CCoE) a multi-level, integrated educational facility designed to accommodate specialised training and education for construction-related TAFE NSW courses (the project). The TAFE CCoE will be a new learning environment with an emphasis on flexibility and adaptability, to encourage cross-disciplinary collaboration, industry engagement and educational excellence. On 27 February 2019, the NSW Government announced the delivery and associated funding for the CCoE.

The ACHA is being prepared in accordance with the following guidelines:

- *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Department of Environment, Climate Change and Water (DECCW), 2010) (the Consultation Guidelines).
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (Office of Environment and Heritage 2011) (the Assessment Guidelines).
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010).
- *The Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013 (Burra Charter.*

The site comprises a rectangular lot with an area of approximately 23 ha, with an interface to Great Western Highway to the north, O'Connell Street to the west, adjoining residential property to the south and the Western Sydney University (WSU) Werrington campus to the east.

The area in which the development is proposed is located on the eastern boundary of the site. This area comprises of clear grassed fields with no site improvements and is currently utilised by TAFE NSW.

1.1. DEVELOPMENT DESCRIPTION

It is proposed to construct a new TAFE CCoE on the eastern portion of the subject area. The proposed TAFE CCoE will be TAFE NSW's signature training facility for infrastructure and smart cities at the heart of the TAFE NSW Western Sydney Region. It will accommodate up to 3,500 students annually and will facilitate an active learning environment co-locating building, construction and plumbing and electrical disciplines. The proposed scope of works comprises; site preparation works, including tree removal and excavation; construction of a 2-3 storey CCoE accommodating approximately 8,400m² of GFA and including learning and workshop spaces, workspaces and areas for industry engagement; provision of additional car parking; and landscaping works.

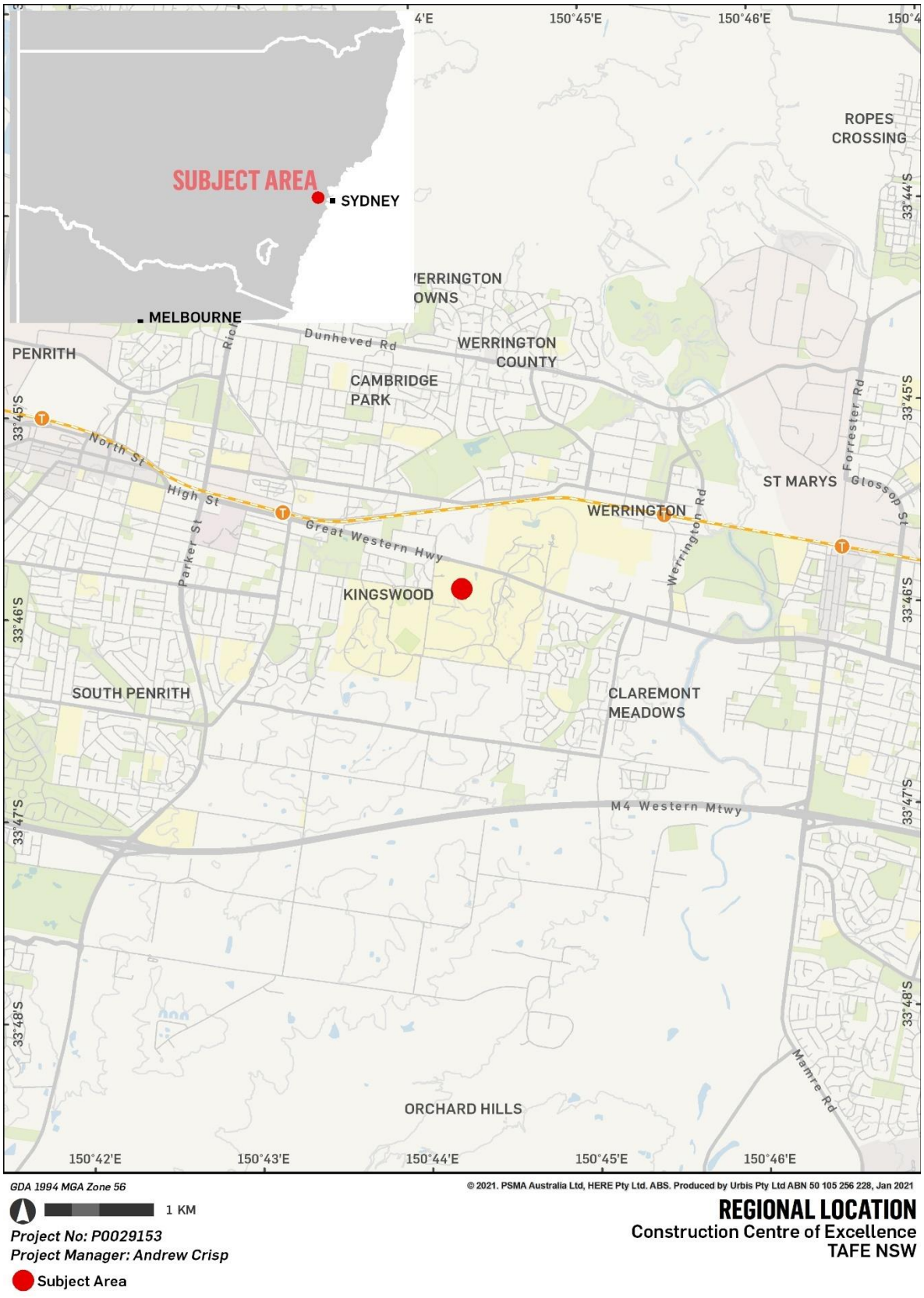

Figure 1 – Regional location

Figure 2 – Subject area

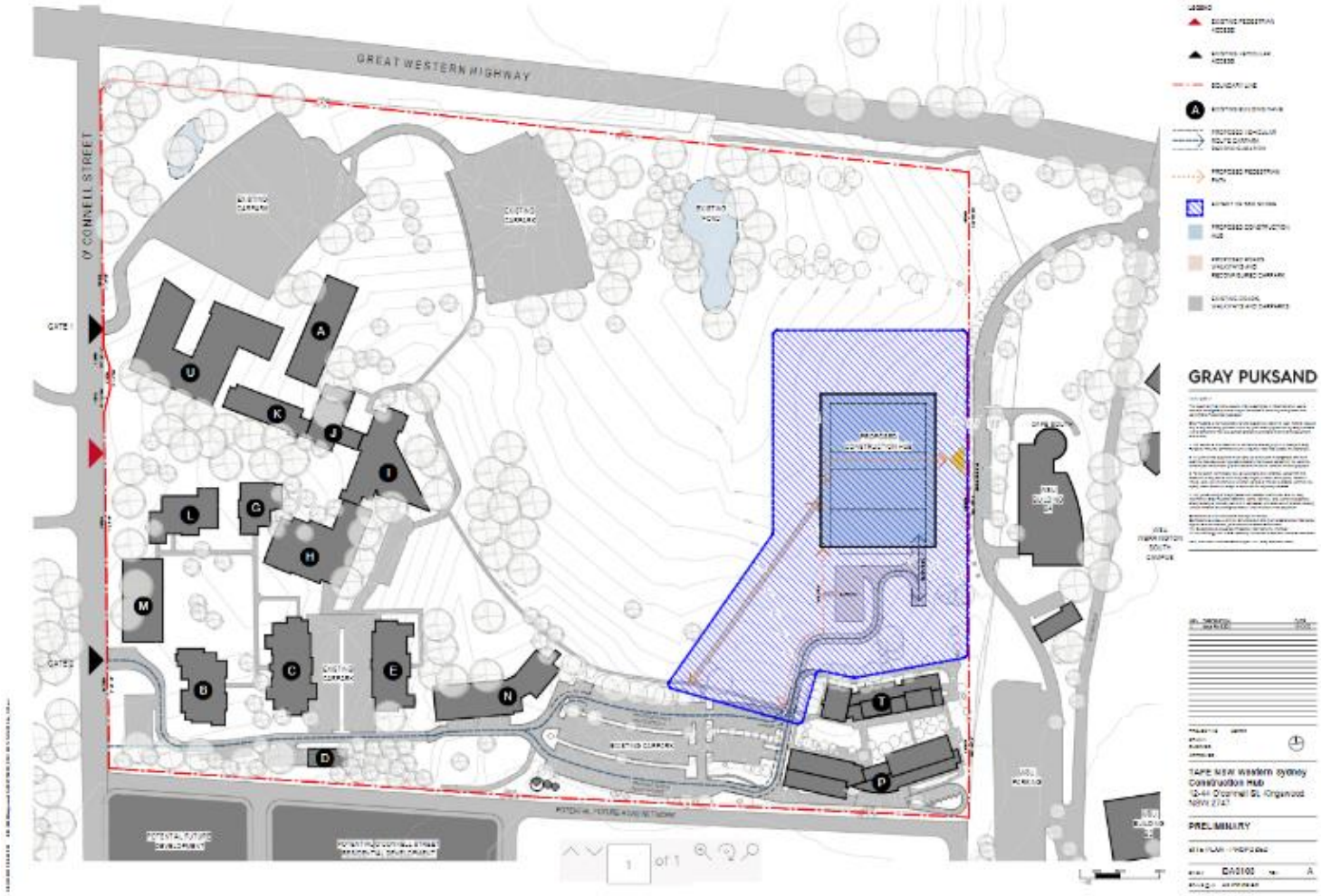

Figure 3 - Site plan showing location of proposed works/impact footprint (blue hatching) in the eastern portion of the subject area (red dashed).
Source: Gray Puksand 2020

2. NAME AND CONTACT DETAILS OF THE PROPONENT

The proponent can be contacted via

Sam Gibson
Project Manager
Cadence Australia Pty Ltd (on behalf of TAFE NSW)
1/10 Mallett Street
Camperdown NSW 2050
E: sgibson@cadenceaust.com

3. NAME AND CONTACT DETAILS OF THE EXCAVATION DIRECTOR

The Urbis Excavation Director for the proposed test excavation program can be contacted via:

Andrew Crisp
Senior Archaeologist
Urbis Pty Ltd
Angel Place
Level 8, 123 Pitt Street
Sydney NSW 2000
E: acrisp@urbis.com.au

4. PROPOSED DATE OF TEST EXCAVATION PROGRAMS

The five-day test excavation of Lot 60 DP 259135 is proposed to **start on Monday 22nd March 2021** and be **completed by Friday 26th March 2021**. Note that this timeframe is dependent on weather conditions and test excavation results.

5. SCOPE & METHODOLOGY

5.1. ARCHAEOLOGICAL RESEARCH DESIGN

The below Archaeological Research Design (ARD) has been developed to provide a framework to investigate the nature and origin of the potential archaeological resource within the subject area.

This ARD has been designed based on the results of the Aboriginal Cultural Heritage Assessment Report (ACHAR), particularly the results of the archaeological background research and predictive model.

This ARD has been prepared to cover the following objectives:

- Investigate the nature, spatial and stratigraphical extent, condition and integrity of any archaeological deposits that may be present.
- If archaeological deposits are identified, apply relevant research questions to interpret the finds and results in context of local and regional archaeological modelling.

To fulfil the objectives of the ARD, the following indicative research questions have been formulated:

1. Is there a subsurface archaeological deposit present?
2. If an archaeological deposit present, how can it be interpreted?
   - What is the spatial and vertical extent of the deposit?
   - What is the integrity and condition of the deposit?
   - What are the physical attributes and compositions of the deposit (eg. stone artefacts, features, remains of original environment, contact period artefacts)?
   - What are the characteristics of the stone artefact assemblage? What types of artefacts are present and what specialisation if any can be detected in the assemblage?
   - Does the archaeological deposit have evidence of intra-site patterning or various occupational periods?
   - Should faunal and/or shell material be located, what species present were utilised by Aboriginal people?
3. Can the archaeological deposit be interpreted in a local context?
   - Are there similarities or differences with nearby archaeological sites?
   - Is there evidence of connection to nearby sites in terms of raw material, composition and nature of the assemblage?
4. Can the archaeological deposit be interpreted in the regional context?
   - Where did the raw materials originate from?
   - Is there any indication of trade in connection of raw material procurement?
   - How does the assemblage compare to other archaeological sites within the region?
5. Do the results if the archaeological excavation changes the scientific and cultural significance of the site?
   - What is the scientific and cultural value of the assemblage?
   - How do the Aboriginal stakeholders view the cultural value of the deposit and assemblage?

5.2. ARCHAEOLOGICAL TEST EXCAVATION

The test excavations will be undertaken in line with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010) in order to understand the nature, extent, integrity and research significance of the Aboriginal archaeological resource. The test excavation will also aim to sample the various landscape features located within the subject area for any potential sub-surface archaeological deposits.

This section presents the methodology for the proposed test excavation programs. According to the Code of Practice "*test excavations should be sufficiently comprehensive to allow characterisation of the Aboriginal objects present without having a significant impact on the archaeological value of the subject area*".

The test excavation will include:

- The initial Stage 1 of testing will include the excavation of up to 60 (sixty) 50 cm by 50 cm test pits in a systematic grid system at a spacing of 20m. The location of the test pits (Figure 4 below) has been informed by the results of the archaeological survey and the predictive model of the ACHAR.
- The location and number of transects and test pits will be further adjusted by on-site observation of localised disturbance and in consultation with the Aboriginal officers on site.
- All excavated material will be wet sieved through a 5mm metal sieve station.

5.2.1. Test Excavation Stage 1

- The test pits shall be excavated by hand (inclusive of trowels, shovels and other hand tools) along each transects at intervals of 20m.
- The first test pit within each transect and/or landform shall be excavated in 5cm spits to establish the depth and nature of soil and any stratigraphy present. Subsequent test pits conducted within the same transect and/or landform and/or potential archaeological deposit shall then be excavated in either 10cm spits or stratigraphic units (whichever is smaller) to the base of Aboriginal object-bearing units being the removal of the A-horizon soil deposit down to the sterile clay layer (B-horizon).
- All test pits will be excavated using the above methods in each transect before any further adjustment is made to the transect or additional pits are excavated.
- All excavated soil will be sieved through 5mm nested sieves using wet sieving method.
- At the completion of Stage 1 Urbis will inform the proponent (TAFE NSW) whether it has been determined that Stage 2 test excavation is required. The Excavation Director (Andrew Crisp) will determine whether it is necessary to excavate additional 50cm by 50 cm test pits in order to identify the spatial extent of identified archaeological resources, or existing pits will be expanded to further excavate those pits that yielded archaeological material or features to better understand the nature, extent and integrity of the identified archaeological resources. ***This would extend the 5-day test excavation program into a minimum second week. Written sign off from the proponent is required prior to beginning of Stage 2.***

5.2.2. Test Excavation Stage 2

- Following the completion of Stage 1, the Excavation Director (Andrew Crisp) will make the decision whether it is necessary to excavate additional 50cm by 50 cm test pits in order to identify the spatial extent of identified archaeological resources, or existing pits will be expanded to further excavate those pits that yielded archaeological material or features to better understand the nature, extent and integrity of the identified archaeological resources.
- Test pits may be expanded into a 1m x 1m square or other arrangements in line with the Code of Practice at the discretion of the Excavation Director. The additional pits would be excavated in 50cm x 50cm test pit units, to further understand the archaeological resource.
- Additional 50cm x 50cm test pits may be placed at an interval of 3, 5 or 10m (or other justifiable and regular spacing appropriate to the scale of the area being tested) from the test pits that yielded archaeological resource to test further the immediate area for artefact concentrations and/or archaeological features, or to define a site boundary. These additional test pits would be excavated using the same methodology outlined above.
- Expansion test pits may be combined and excavated as necessary in 50cm x 50cm units for the purposes of further understanding site characteristics. Note that under the Code of Practice, the maximum area that can be excavated in any one continuous area is $3m^2$.

5.2.3. General Procedures

- The Code of Practice dictates that the maximum surface area of all test excavation units must be no greater than 0.5% of the Potential Archaeological Deposit or landform unit area being investigated.
- All excavated soil shall be sieved in 5 mm sieves using wet sieving method.
- Artefacts will be collected, bagged and tagged with a unique identification number according to test pit location, spit or context number.
- Each test pit shall be recorded using standard archaeological procedure, including standardised recording forms, coordinates collected using a GPS, photographic recording with scale and stratigraphic / soil profile for each test pit shall be recorded in scale drawings as required by Code of Practice recording requirements.
- Test excavation units shall be backfilled as soon as practicable, **to be organised by the proponent**. Alternatively, if manual collapse of the test pits is deemed appropriate this will be agreed to **prior** to the test excavation program.
- An AHIMS site card shall be prepared and submitted to the AHIMS Registrar for any new sites identified during test excavations.
- An AHIMS Site Impact Recording form shall be completed and submitted to the AHIMS Registrar for any sites impacted during test excavations.
- In the unlikely event that suspected human remains are identified works will immediately cease and the NSW Police and DPC will be notified.
- Test excavations shall cease when enough information***** has been recovered to adequately characterise the objects/assemblage(s) present with regard to their nature and significance.

***Enough information is defined by DPC as meaning "*that the sample of excavated material clearly and self-evidently demonstrates the deposit's nature and significance. This may include things like locally or regionally high object density: presence of rare or representative objects: presence of archaeological features: or locally or regionally significant deposits stratified or not*"** (DECCW 2010a).

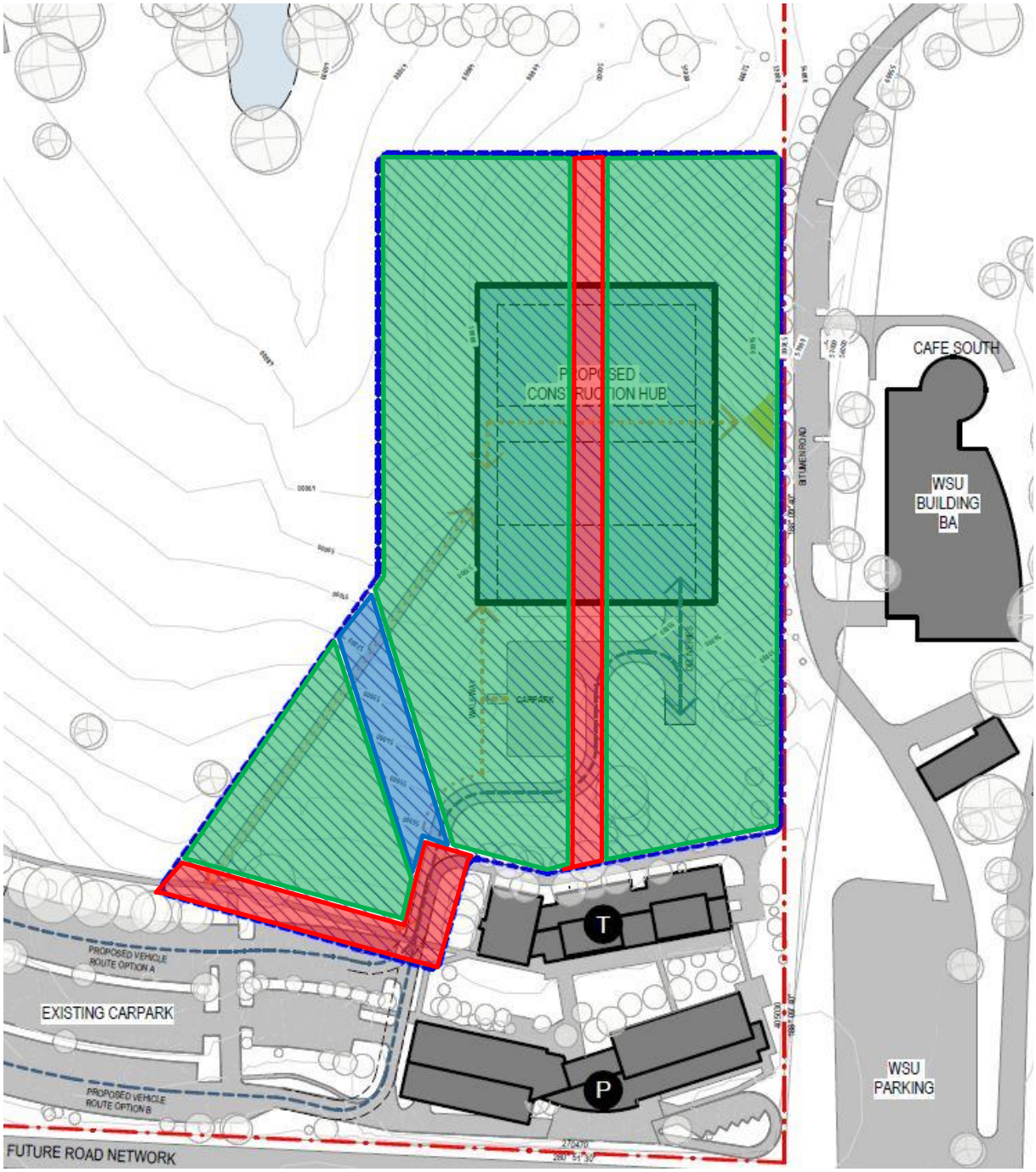

Figure 4 - Proposed impact footprint (blue hatched area), areas of identified disturbance (red), drainage line/open depression (blue). A systematic grid of test pits will be established at 20m intervals across the remainder of the impact footprint (green).

5.3. POST-EXCAVATION ANANLYSIS

All collected materials shall be temporarily held at the Urbis office, where they shall be analysed and catalogued by Urbis archaeological staff using the standard artefact curation protocol of the Australian Museum. Selected artefacts or representative samples will be photographed and included and further analysed in detail in the report. The collection shall be analysed using *A Record in Stone* (Holdaway & Stern 2004) and other contemporary methods.

5.3.1. Care and control

A strategy for management of Aboriginal artefacts recovered from the site shall be developed through consultation with the RAPs (***costs associated with the determined care and control conditions are not covered under the current agreement and would be subject to an outcome specific variation***). The RAPs are invited to provide comment on the long-term management of artefacts.

Artefacts identified and collected during test excavations will be temporarily held in a lockable, secure location at the Urbis Sydney office (ANGEL PLACE, LEVEL 8, 123 PITT STREET SYDNEY, NSW 2000, AUSTRALIA) where they shall be catalogued and analysed by an Urbis archaeologist / artefact specialist.

Following completion of artefact cataloguing and analysis any artefacts recovered during test excavations and subsequent salvage excavations (if necessary) will be moved to the agreed long-term keeping place as soon as practicable in accordance with:

- Requirement 26 “Stone artefact deposition and storage” in the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (24 September 2010)

5.4. ARCHAEOLOGICAL TECHNICAL REPORT

The purpose of the archaeological investigation and accompanying Archaeological Technical Report (ATR) is to understand the presence, nature and extent of the Aboriginal archaeological resource within the areas of proposed works. The cataloguing and analysis of the recovered artefacts will inform the scientific, cultural and historical significance of the site and in turn management of the heritage resource.

The ATR will be produced in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010) and attached as an appendix to the Aboriginal cultural Heritage Report (ACHAR).

6. SUMMARY

Please do not hesitate to contact the undersigned on (02) 8233 7642 or 0431 874 011 should you wish to discuss further.

Kind regards,

Andrew Crisp
Senior Consultant
+61 2 8233 7642
acrisp@urbis.com.au

URBIS

INTERIM ABORIGINAL CULTURAL HERITAGE ASSESSMENT

TAFE NSW
CONSTRUCTION CENTRE
OF EXCELLENCE
2-44 O'CONNELL STREET
KINGSWOOD NSW

Prepared for
TAFE NSW
29 January 2021

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

Associate Director	Balazs Hansel, MA Archaeology, MA History
Senior Consultant	Andrew Crisp, BA Archaeology (Hons), M. ICOMOS
Consultant	Meggan Walker, BA Archaeology (Hons) and ancient history.
Consultant	Alexandra Ribeny, BA Archaeology (Hons), M. Arch. Sci.
Assistant	Aaron Olsen, BSc (Hons), MIP, PhD
Project Code	P0029153
Report Number	Interim Draft 1

Urbis acknowledges the important contribution that Aboriginal and Torres Strait Islander people make in creating a strong and vibrant Australian society.

We acknowledge, in each of our offices the Traditional Owners on whose land we stand.

urbis.com.au

CONTENTS

FIGURES

TABLES

EXECUTIVE SUMMARY

This report has been prepared to accompany a detailed State Significant Development Application (SSDA) SSD - 8571481 for the development of an educational facility at the TAFE Nepean Kingswood Campus, located at 2-44 O'Connell Street, Kingswood (the site). The legal description of the site is Lot 1 in DP 866081. The site comprises a rectangular lot with an area of approximately 23 hectares.

The objectives of this ACHA are to:

- Investigate the presence, or absence, of Aboriginal objects and/or places within and in close proximity to the subject area, and whether those objects and/or places would be impacted by the proposed development.
- Investigate the presence, or absence, of any landscape features that may have the potential to contain Aboriginal objects and/or sites and whether those objects and/or sites would be impacted by the proposed development.
- Document the nature, extent and significance of any Aboriginal objects and/or place and sites that may located within the subject area.
- Document consultation with the Registered Aboriginal Parties (RAPs) with the aim to identify any spiritual, traditional, historical or contemporary associations or attachments to the subject area and any Aboriginal objects and/or places that might be identified within the subject area.
- Provide management strategies for any identified Aboriginal objects and/or places or cultural heritage values.
- Provide recommendations for the implementation of the identified management strategies.
- Prepare a final Aboriginal Cultural Heritage Assessment Report (ACHAR) to be accompany SSD-8571481

Specifically, the SSDA seeks development consent for the construction and operation of the TAFE NSW Construction Centre of Excellence (TAFE CCoE) a multi-level, integrated educational facility designed to accommodate specialised training and education for construction-related TAFE NSW courses (the project). The TAFE CCoE will be a new learning environment with an emphasis on flexibility and adaptability, to encourage cross-disciplinary collaboration, industry engagement and educational excellence. On 27 February 2019, the NSW Government announced the delivery and associated funding for the CCoE.

The proposed development is classified as State Significant Development (SSD) on the basis that it falls within the requirements of clause 4, Schedule 19 of the State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP), being 'development for the purpose of a tertiary institution… that has a capital investment value of more than $30 million'.

The Minister for Planning, or their delegate, is the consent authority for the SSDA and this application is lodged with the NSW Department of Planning, Industry and Environment (NSW DPIE) for assessment.

This report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) issued for the project. Specifically, this report has been prepared to respond to the following SEARs:

Table 1 – SEARs (SSD-8571481) and relevant Urbis responses

SEARS #	Requirement	Urbis response
10. Aboriginal Heritage	Identify and describe the Aboriginal cultural heritage values that exist across the site and document these in an Aboriginal Cultural Heritage Assessment Report (ACHAR). This may include the need for surface survey and test excavation;	Section 2 and Section 4
	Identify and address the Aboriginal cultural heritage values in accordance with the *Guide to investigating,*	Section 2 and Section 4

SEARS #	Requirement	Urbis response
	assessing and reporting on Aboriginal Cultural Heritage in NSW (Office of Environment and Heritage (OEH), 2011) and *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW* (OEH, 2010), and in consultation with Heritage NSW;	
	Document consultation with Aboriginal people in accordance with *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Department of Environment, Climate Change and Water) (DECCW). The significance of cultural heritage values of Aboriginal people who have a cultural association with the land are to be documented in the ACHAR;	Section 3
	Identify, assess and document all impacts on the Aboriginal cultural heritage values in the ACHAR;	Section 5
	Demonstrate attempts to avoid any impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR and EIS must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to Heritage NSW and the Environment, Energy and Science Group of the Department of Planning, Industry and Environment; and	Section 6
	Outline procedures to be followed if Aboriginal objects are found at any stage of the life of the project to formulate appropriate measures to manage unforeseen impacts.	Section 7 and Section 8

Recommendations and Conclusions

[INCLUDE ONCE ACHAR FINALISED]

1. INTRODUCTION

This report has been prepared to accompany a detailed State Significant Development Application (SSDA) SSD - 8571481 for the development of an educational facility at the TAFE Nepean Kingswood Campus, located at 2-44 O'Connell Street, Kingswood (the site). The legal description of the site is Lot 1 in DP 866081. The site comprises a rectangular lot with an area of approximately 23 hectares.

Specifically, the SSDA seeks development consent for the construction and operation of the TAFE NSW Construction Centre of Excellence (TAFE CCoE) a multi-level, integrated educational facility designed to accommodate specialised training and education for construction-related TAFE NSW courses (the project). The TAFE CCoE will be a new learning environment with an emphasis on flexibility and adaptability, to encourage cross-disciplinary collaboration, industry engagement and educational excellence. On 27 February 2019, the NSW Government announced the delivery and associated funding for the CCoE.

The proposed development is classified as State Significant Development (SSD) on the basis that it falls within the requirements of clause 4, Schedule 19 of the State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP), being 'development for the purpose of a tertiary institution… that has a capital investment value of more than $30 million'.

The Minister for Planning, or their delegate, is the consent authority for the SSDA and this application is lodged with the NSW Department of Planning, Industry and Environment (NSW DPIE) for assessment.

This report has been prepared in response to the requirements contained within the Secretary's Environmental Assessment Requirements (SEARs) issued for the project. Specifically, this report has been prepared to respond to the following SEARs (Table 2):

Table 2 – SEARs (SSD-8571481)

SEARS #	Requirement	Urbis response
10. Aboriginal Heritage	Identify and describe the Aboriginal cultural heritage values that exist across the site and document these in an Aboriginal Cultural Heritage Assessment Report (ACHAR). This may include the need for surface survey and test excavation;	Section 2 and Section 4
	Identify and address the Aboriginal cultural heritage values in accordance with the *Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW* (Office of Environment and Heritage (OEH), 2011) and *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW* (OEH, 2010), and in consultation with Heritage NSW;	Section 2 and Section 4
	Document consultation with Aboriginal people in accordance with *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Department of Environment, Climate Change and Water) (DECCW). The significance of cultural heritage values of Aboriginal people who have a cultural association with the land are to be documented in the ACHAR;	Section 3
	Identify, assess and document all impacts on the Aboriginal cultural heritage values in the ACHAR;	Section 5

SEARS #	Requirement	Urbis response
	Demonstrate attempts to avoid any impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR and EIS must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to Heritage NSW and the Environment, Energy and Science Group of the Department of Planning, Industry and Environment; and	Section 6
	Outline procedures to be followed if Aboriginal objects are found at any stage of the life of the project to formulate appropriate measures to manage unforeseen impacts.	Section 7 and Section 8

1.1. LOCATION AND DESCRIPTION

The subject area (Figure 1 and Figure 2) is located at 2-44 O'Connell Street, Kingswood within the local government area (LGA) of Penrith. The site is legally described as Lot 1 of DP 866081.

The site comprises a rectangular lot with an area of approximately 23 ha, with an interface to Great Western Highway to the north, O'Connell Street to the west, adjoining residential property to the south and the Western Sydney University (WSU) Werrington campus to the east.

The area in which the development is proposed is located on the eastern boundary of the site. This area comprises of clear grassed fields with no site improvements and is currently utilised by TAFE NSW.

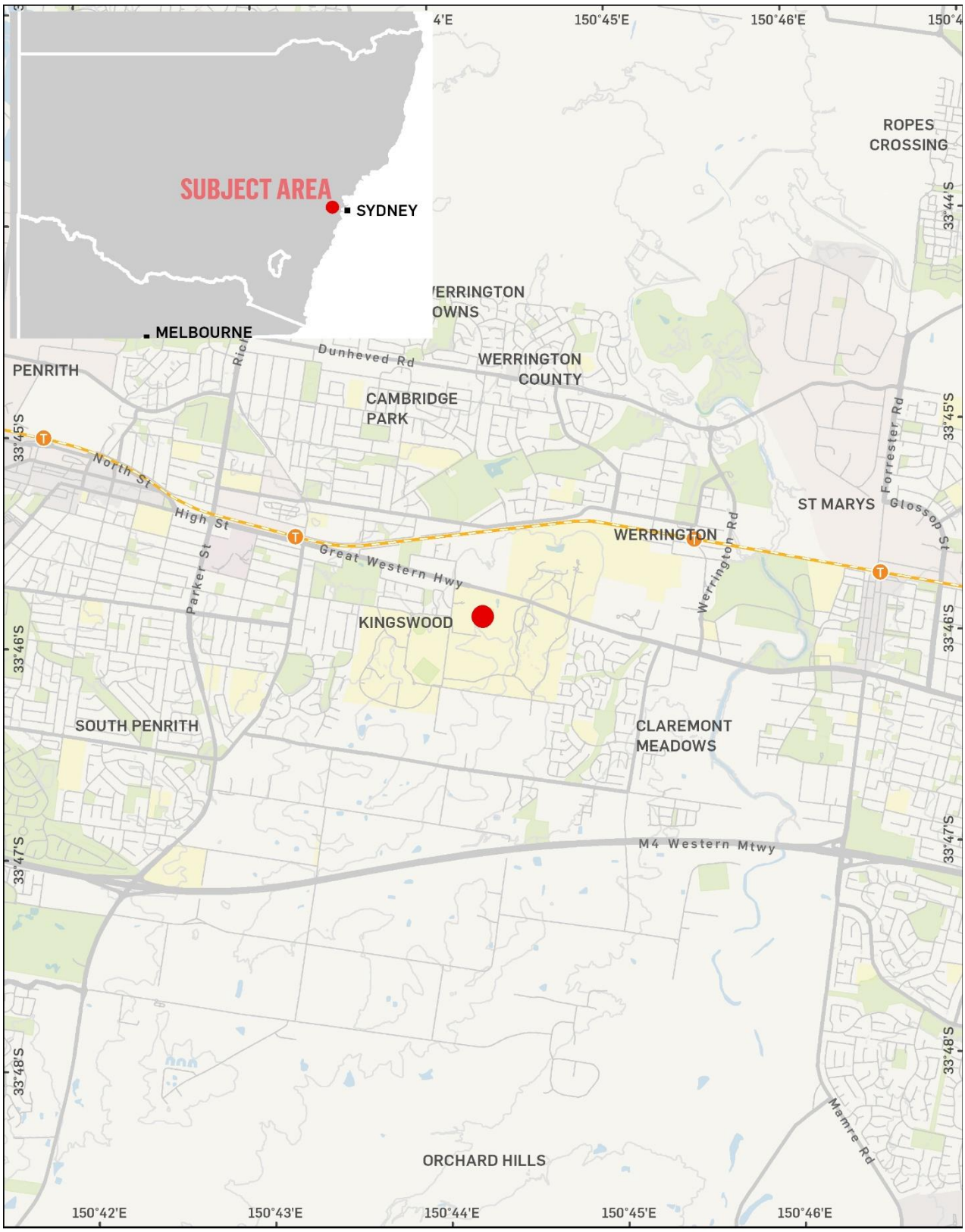

Figure 1 – Registered Aboriginal sites in extensive search area

Figure 2 – Registered Aboriginal sites in extensive search area

1.2. METHODOLOGY & LIMITATIONS

This ACHAR has been prepared according to the statutory guidelines under the NPW Act including:

- *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Department of Environment, Climate Change and Water (DECCW), 2010) (the Consultation Guidelines).
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (Office of Environment and Heritage 2011) (the Assessment Guidelines).
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010).
- *The Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter).

This assessment has not considered historical archaeology. Historical archaeology is addressed in the Historical Archaeological Impact Assessment prepared by Urbis under a different cover (Urbis, 2021).

1.3. PROPOSED WORKS

It is proposed to construct a new Construction Centre of Excellence (CCoE) in the eastern portion of the subject area (Figure 3). The proposed TAFE CCoE will be TAFE NSW's signature training hub for infrastructure and smart cities at the heart of the TAFE NSW Western Sydney Region. It will accommodate up to 3,500 students annually and will facilitate an active learning environment co-locating building, construction and engineering disciplines. The proposed scope of works comprises; site preparation works, including tree removal and excavation; construction of a 2-3 storey Construction Hub accommodating approximately 8,400m² of GFA and including learning and workshop spaces, workspaces and areas for industry engagement; provision of additional car parking; and landscaping works.

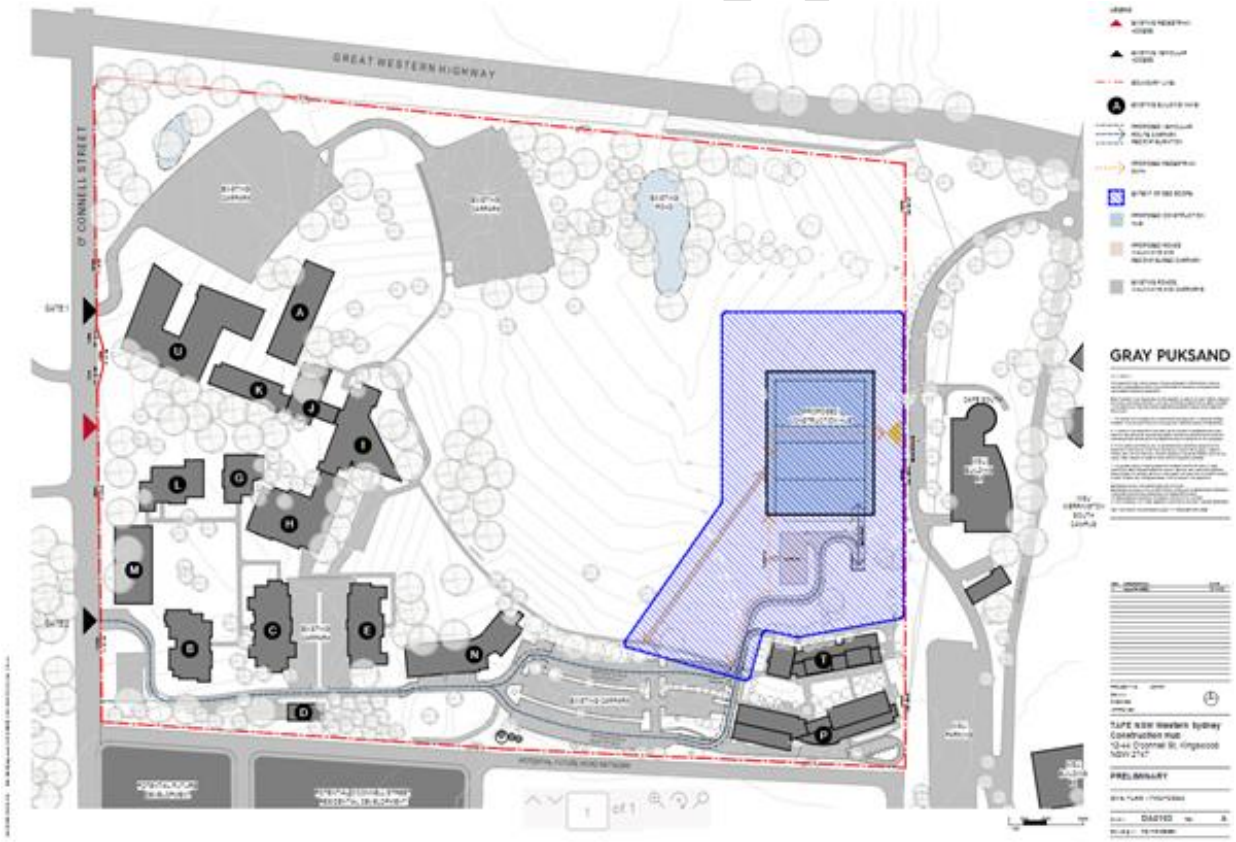

Figure 3 – Proposed site plan showing location of works (blue hatching) in the eastern portion of the site

Source: Gray Puksand 2020

The Design Response from Gray Puksand for the development is outlined below (Figure 4). The design of the new CCoE will provide a venue for learning that points to the future of skills training in the building and construction industry. The built form will both passively and actively contribute to the teaching and learning experience.

Functional programs at WSCH can evolve over time. This will require a structure and service configuration that allows for seamless reconfigurability. Driven by the need to re imagine jobs of the future, the design will ensure that current and future training programs will be supported as continual advancements in construction skills, technology and methodologies emerge. Functionally this will be achieved by organised educational spaces around a series of exhibition areas and social space.

This combined with the logistics required for multi-disciplinary operations, the building will showcase the future of skills training and be prototype for tertiary education, a demonstration to industry within its educational precinct.

To achieve this the design will display a refined and contextually relevant aesthetic. The design is a direct response to place and function. With a prominent entry to the west serving as the TAFE NSW/compass entry, civic presence will be established on the east facade that faces the university precinct. A dual address resulting in legible and welcoming arrival points for students, visitors, industry and the community.

This is a true ‘building in the round’ with all sides being activated with a variety of visible education opportunities, exhibition spaces and settings for student amenity. This is further augmented with prominent event space for industry engagement and civic presence. A facility that is an invitation to students and industry for learning, re- skilling and industry collaboration.

Driven by a desire to create a rational and adaptable program of educational spaces the design is underpinned with the notion of ‘pavilion in the landscape’. A building that will be seen ‘in the round’ within a backdrop of gently undulating grasslands sloping from a high point to the east, westward towards the centre of the campus. A variety of mature trees and an existing dam further augment the natural beauty of the site and opportunities for student amenity, health and wellbeing.

This notion of ‘pavilion in the landscape’ is developed with a simple composition of parts that form a unified aesthetic. Starting with a simple rectangular form, two ground plane levels are split via a north/south delivery and storage axis. A student or campus entry is established on the lower ground floor to the west and a civic/educational precinct entry on upper ground is provided on the east of the building. These main entry points set up a cross axis (east/west) that transverse all levels of building. With this simple circulation planning students, educators and visitors are kept completely separate to loading and logistics. The natural fall of the land has been utilised to provide a variety of double and triple height internal workshops, all visually connect via an internal spine, an atrium activated with passive collaboration settings and social spaces.

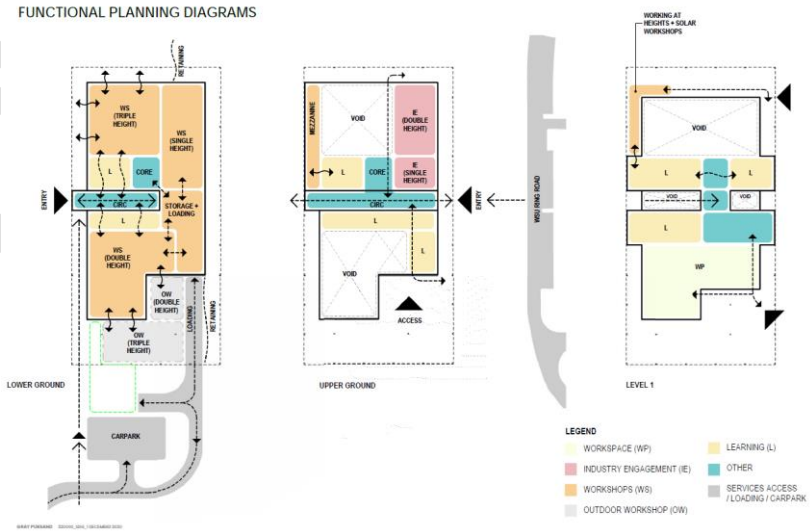

Figure 4 – Proposed site plan showing functional planning of the spaces.

Source: Gray Puksand 2020

Figure 5 – Proposed render – external.

Source: Gray Puksand 2020

Figure 6 – Proposed render – internal.

Source: Gray Puksand 2020

1.3.1. Penrith City Council Local Environment Plan 2010

As legislated by the Environmental Planning and Assessment Act 1979 (EP & A Act), each LGA is legally obliged to produce a Local Environment Plan (LEP). Within each LEP, Schedule 5 provides relevant information on locally listed heritage items, identifying items and areas of local heritage significance, and outlining consent requirements.

A search of the Penrith City Council LEP 2010 was undertaken on 17th December 2020. The subject area is not listed on the Penrith City Council LEP 2010.

1.3.2. Penrith Development Control Plan 2014

As legislated by the EP & A Act, each LGA is legally obliged to produce a Development Control Plan (DCP). Not all LGAs provide information regarding Aboriginal cultural heritage and specific development controls to protect Aboriginal cultural heritage.

Section 7.2 of the Penrith Development Control Plan 2014 addresses Aboriginal cultural heritage. This section identifies the following objective:

> *To preserve items and sites of Aboriginal archaeological significance located within the City of Penrith.*

The following controls relating to Aboriginal cultural heritage are stated in Section 7.2C of the Penrith DCP 2014:

> *1) If the development, including subdivision, but not strata subdivision, is on land identified as potentially archaeologically sensitive, an archaeological investigation is required with the development application. The Office of Environment and Heritage should be contacted for advice on survey needs and requirements.*
>
> *2) Despite (a) above, an archaeological assessment is required if the site area is 5 hectares or more. The archaeological assessment should determine whether or not Aboriginal archaeological resources are present on the site, and where appropriate, identify management principles to be implemented.*
>
> *3) The requirements stated in (a) and (b) above will not apply to developments where there is no: a) disturbance of the soil, or b) construction works on the land. For the purposes of this section, any internal or external works to an existing building is not deemed to be construction work.*

The present report is prepared to determine whether or not Aboriginal archaeological resources are present within the subject area and, if appropriate, identify management principles to be implemented, in fulfilment of the controls of Section 7.2C of the Penrith DCP 2014.

1.4. OBJECTIVES

The objectives of this ACHA are to:

- Investigate the presence, or absence, of Aboriginal objects and/or places within and in close proximity to the subject area, and whether those objects and/or places would be impacted by the proposed development.
- Investigate the presence, or absence, of any landscape features that may have the potential to contain Aboriginal objects and/or sites and whether those objects and/or sites would be impacted by the proposed development.
- Document the nature, extent and significance of any Aboriginal objects and/or place and sites that may located within the subject area.
- Document consultation with the Registered Aboriginal Parties (RAPs) with the aim to identify any spiritual, traditional, historical or contemporary associations or attachments to the subject area and any Aboriginal objects and/or places that might be identified within the subject area.
- Provide management strategies for any identified Aboriginal objects and/or places or cultural heritage values.
- Provide recommendations for the implementation of the identified management strategies.

- Prepare a final Aboriginal Cultural Heritage Assessment Report (ACHAR) to be accompany SSD-9138102.

1.5. AUTHORSHIP

This ACHA has been prepared by Aaron Olsen, Urbis Assistant Archaeologist, Alexandra Ribeny and Meggan Walker, Urbis Consultant Archaeologists and Andrew Crisp, Urbis Senior Archaeologist, with review and quality control undertaken by Balazs Hansel, Urbis Associate Director Archaeology.

Aaron Olsen holds a Bachelor of Science (Honours - First Class in Chemistry) and PhD (Chemistry) from the University of Newcastle, a Masters (Industrial Property) from the University of Technology Sydney and is currently completing a Diploma of Arts (Archaeology) at the University of Sydney.

Alexandra Ribeny holds a Bachelor of Arts (Honours - First Class in Archaeology) from the University of Sydney and a Master of Archaeological Science from the Australian National University and is currently a PhD candidate at the Australian National University.

Meggan Walker holds a Bachelor of Arts (Honours – First Class in Archaeology) from the University of Sydney.

Andrew Crisp holds a Bachelor of Arts (Honours - First Class in Archaeology) from the University of Sydney.

Balazs Hansel holds a Masters (History) from the University of Szeged in addition to Masters (Archaeology and Museum Studies) from the University of Szeged and is currently completing a PhD (Archaeology) at the University of Sydney.

2. ARCHAEOLOGICAL ASSESSMENT

2.1. ABORIGINAL ARCHAEOLOGICAL CONTEXT

This section comprises the summary of the archaeological background research for Aboriginal cultural heritage resources. This includes the search of the Aboriginal Heritage Information Management System (AHIMS) previous archaeological investigations pertinent to the subject area and broader region.

2.1.1. Regional Background

The archaeological record provides evidence of the long occupation of Aboriginal people in Australia and the Sydney region. The oldest generally accepted date for a site in the Sydney basis is 17,800 years before present (BP), recorded in a rock shelter at Shaw's Creek (Nanson et al 1987), near Castlereagh (approximately 25km north-west of the present subject area). Radiocarbon dating of charcoal samples from sand sheet contexts in proximity to the Cooks River have suggest occupation as early as 40,000 years BP (JMCHM 2005). Older occupation sites along the now submerged coastline would have been flooded around 10,000 years BP, with subsequent occupation concentrating along the current coastlines and Cumberland Plain (Attenbrow 2010).

Due to the absence of written records, it is difficult to infer what Aboriginal life was like prior to the arrival of European settlers. Much of our understanding of Aboriginal life pre-colonisation is informed by the histories documented in the late 18th and early 19th century by European observers. These histories provide an inherently biased interpretation of Aboriginal life both from the perspective of the observer but also through the act of observation. The social functions, activities and rituals recorded by Europeans may have been impacted by the Observer Effect, also known as the Hawthorne Effect. The Observer/Hawthorne Effect essentially states that individuals will modify their behaviour in response to their awareness of being observed. With this in mind, by comparing/contrasting these early observations with archaeological evidence is possible to establish a general understanding of the customs, social structure, languages, beliefs and general of the Aboriginal inhabitants of the Sydney Basin (Attenbrow 2010).

Given the early contact with Aboriginal tribes in the Sydney region, more is known about these groups than those which inhabited regional areas. At the time of European contact, it is believed that the Darug (also spelt as Dharug or Daruk) people inhabited areas from the mouth of the Hawkesbury River west to Mount Victoria, taking in areas around Campbelltown, Liverpool, Camden, Penrith and Windsor (Tindale, 1974). Included within these territories is Kemps Creek and the present subject area. The Darug are considered to have been a woodland people whose diet consisted primarily of hunted land animals, such as kangaroos and emus, and also yams and other roots (Flynn, 1997; Tench 1791).

The archaeological record is limited to 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 preference of raw material. Different types of tools appeared at certain times, for example ground stone hatchets are first observed in the archaeological record around 4,000 BP in the Sydney region (Attenbrow 2010:102). The archaeological record attests to the use of ground edge stone axes by the Darug people in general vicinity of the present subject area (e.g. AHIMS ID# 45-5-5186).

The Aboriginal population in the greater Sydney region at the time of European contact is estimated to have been between around 4000 and 8000 people. After European contact, Aboriginal people of the Cumberland Plain 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, for example at Prospect (Ngara Consulting 2003).

Based on the above background, it is possible that similar evidence of Aboriginal occupation is present within original and/or intact topsoils throughout the Cumberland plain, including within the present subject area.

The following regional archaeological assessments have informed the development of predictive models for the Cumberland Plain.

Kohen, J. L. 1985, an Archaeological Survey of Industrial Land in the City of Blacktown. Report for Blacktown City Council

This assessment involved an analysis of archaeological surveys of industrial zoned land around the Blacktown City Council Area. Kohen acknowledged a distinct absence of archaeological information for the

area at the time owing to limited interest in the Cumberland Plain prior to the introduction of legislative requirements for archaeological assessments in developments. Kohen established that the vast majority of Aboriginal sites within the area that demonstrate intensive occupation are located along creeks and streams which eventuate at the Hawkesbury River, or on ridges sub-parallel to these waterways. Kohen also stated that extremely poor surface visibility factors inhibit the identification of artefacts, with sites almost always located in areas of erosion or exposure usually associated with creeks or disturbance. This concept has informed subsequent predictive models for the wider Cumberland Plain. Kohen argued that site density reflected the activity undertaken, with less dense sites likely reflective of one-off activities such as of tool repair.

Smith, L., 1989. Liverpool Release Areas: Archaeological Site Survey and Planning Study Liverpool Survey Report

Archaeological assessment of the Liverpool Release Areas. In this assessment Smith aimed to establish a spatial predictive model for the southern Cumberland Plain and to test whether the conclusions drawn for the northern Cumberland Plain apply. The 5-day survey program identified 26 previously unrecorded archaeological sites, with 19 scatters, 5 isolated finds and 2 scarred trees. Smith hypothesised that artefacts would be located within 50m of water sources and in lower densities than in the northern Cumberland Plain. Smith effectively surveyed 0.63% of the subject area on foot, once visibility conditions were accounted for (incidentally, Smith viewed visibility conditions as a primary factor in the locating of archaeological sites). Smith determined artefact scatters and isolated finds were located on almost all topographic features within the study area, except for slopes. Smith found that 62% of sites occurred within 50m of a water source, with 53% within 10m and only 2 sites located at a distance greater than 100m. This assessment informed early predictive models for the Cumberland Plain and was formative in the development of Jo McDonald's (1992) predictive model widely applied today.

Jo McDonald Cultural Heritage Management (JMCHM), 1992. Archaeological Investigation of Project 12603, Cowpasture Rd, Hoxton Park, NSW Hoxton Park Archaeological Report

Archaeological assessment intended to investigate the archaeological potential within Precinct 4 of Hoxton Park Stage II Release Area, establish the archaeological significance of the site and determine any threats to areas of archaeological significance proposed by the development. This assessment was also used as an opportunity to test the predictive model established by Smith and Kohen. This assessment resulted in the recording of 147 artefacts in total, with silcrete the dominant raw material. The spatial location and density of artefacts recovered from these excavations, with highest density approximately 80-90m from the creek on higher ground, disputed previous claims about spatial distribution of sites within the Cumberland Plain region and led to the development of the currently accepted predictive model.

Australian Museum Business Services (AMBS), 1997. Cumberland Plain Regional Archaeological Study: Stage 1

In this assessment, AMBS identified their aims as to examine and assess the concept of representativeness for Aboriginal sites on the Cumberland Plain, to critically assess the planning framework and to produce guidelines on the recognition of silcrete artefacts. AMBS argued that the earlier developed predictive models were not adequately tested and further that there has been a serious issue with the identification of silcrete artefacts – in that items identified as silcrete artefacts at Plumpton Ridge were instead naturally fractured silcrete gravels. AMBS argue for a more scientific and analytical method of analysis and site predictive modelling, with the valid acknowledgement that lack of scientific method complicates the comparison of results and information. AMBS also argue that the nature of the conservation framework – where sites considered representative are afforded higher protections – is problematic due to subjectivity, with this issue also addressed through creating a more scientific and comparable method of analysis. AMBS advocate for more interpretative research designs rather than descriptive predictive models in archaeological approaches to the Cumberland Plain.

2.1.2. Previous Aboriginal archaeological investigations

Previous archaeological investigations may provide invaluable information on the spatial distribution, nature and extent of archaeological resources in a given area. While there are no readily available assessments of the subject area itself, there have been numerous archaeological investigations carried out in and around Kemps Creek. A summary of findings of the most pertinent to the subject area is provided in Table 3.

Table 3 – Summary of Pertinent Aboriginal archaeological investigations

Report	Summary	Relevance to Subject Area
2020, Urbis. Aboriginal Objects Due Diligence Assessment, 706-752 Mamre Road, Kemps Creek, NSW.	Aboriginal due diligence for 706-752 Mamre Road, Kemps Creek. This assessment identified 6 AHIMS sites within the subject area, with two erroneously recorded sites within the subject area. This is important as it identifies the potential for errors within the AHIMS system and supports the need to ground-truth AHIMS search results through field survey. The ar5ea was also identified as having low disturbance, and landscape features which identify archaeological sensitivity, with moderate archaeological potential on the basis of the presence of objects, landscape features, low disturbance and the survey results. An ACHA was recommended. This is currently in preparation.	Archaeological deposits may be retained in land with a history of agricultural use. Test excavation may be required to determine the level, significance and extent of archaeological deposits. Archaeological deposits may be associated with waterways and elevated ground.
Artefact Heritage 2019a	Artefact undertook Mamre Road Precinct Aboriginal Constraints Assessment for Mirvac in relation to one of their sites. Artefact conducted a search of the AHIMS database, which identified 21 sites within the study area – all identified as of various densities of stone artefacts. They highlighted #45-5-2552 and #45-2-2553 as two culturally modified trees present on the western edge of the study area, and comment on the general rarity of remnant vegetation in the study area. In terms of sensitivity, they utilised the information from DPIE's archaeological guidelines, and highlighted areas in close proximity to water, as well as areas where intact subsurface deposits were considered to survive. In contrast, areas that had experienced extensive ground disturbance, such as market gardens were deemed less archaeologically sensitive, while creeks, including ephemeral first order streams were assessed as a sensitive landform. Where surface artefact sites were recorded on AHIMS, these locations were deemed to have the potential for additional artefacts either on the surface or in subsurface deposit.	Archaeological deposits may be retained in land with a history of agricultural use. Test excavation may be required to determine the level, significance and extent of archaeological deposits. Archaeological deposits may be associated with waterways and elevated ground.

Report	Summary	Relevance to Subject Area
Artefact Heritage 2019b.	Artefact Heritage 2019b Artefact undertook a due diligence investigation of Lots 54-58 DP 259135 Mamre Road. Investigations consisted of a background review and brief site inspection. These found a cleared and often moderately disturbed landscape, including creation of substantial rural dams. Soil profiles presented were generally shallow, with a topsoil often <20 cm in thickness. These investigations identified an artefact scatter (MAM AS1901) and an area of archaeological potential. The artefact scatter consisted of thirteen artefacts adjacent a tributary on the edge of an artificially created dam. Artefacts included a ground edge axe, nine silcrete flakes, two IMTC flakes and a quartzite flake. Based on these findings, and guided by low disturbance, a large area of archaeological potential was identified throughout the study area.	Surface archaeological expression may not correlate with subsurface deposits. Archaeological deposits may be retained in land with a history of agricultural use. Test excavation may be required to determine the level, significance and extent of archaeological deposits. Archaeological deposits may be associated with waterways and elevated ground
Biosis 2019. *First Estate Access Road: Aboriginal Cultural* *Heritage Due Diligence Assessment, Final Report.*	Aboriginal due diligence for 657-769 Mamre Road, Kemps Creek. The land use history of the site is consistent with that of the current subject area, being a semirural property, cleared of the majority of native vegetation and with a number of medium to large dams and low density residential and farm structures. Site surveys identified two artefact scatters and an isolated find within similar exposures to that found within the current subject area (associated with dams and similar surface disturbances). Three areas of archaeological potential were also identified in the western portion of the study area adjacent to South Creek and the north-eastern portion of the study area across a low rise adjacent to an open depression. Test excavations identified subsurface deposits in all three areas of potential, including a number of backed artefacts (dated to approx. 4,000-1,000 years before present). Archaeological assemblages were found a significant distance (over 500 m) from South Creek and high density subsurface archaeological deposits were associated with raised ground in proximity to a perennial water source.	Surface archaeological expression may not correlate with subsurface deposits. Archaeological deposits may be retained in land with a history of agricultural use. Test excavation may be required to determine the level, significance and extent of archaeological deposits. Archaeological deposits may be associated with waterways and elevated ground.

Report	Summary	Relevance to Subject Area
Biosis 2016. *Mamre West Precinct Orchard Hills: Aboriginal Cultural Heritage Assessment Report.*	Aboriginal Cultural Heritage Assessment for the Mamre West Precinct, Orchard Hills. A survey identified a new artefact scatter and areas of archaeological potential. Subsequent test excavation identified four artefact scatters, consisting of flakes, flaked pieces and cores. The primary raw material was silcrete, with a lesser amount of chert. Elevated portions of the area in close proximity to water sources were considered to have high cultural significance.	Aboriginal objects associated with elevated ground and waterways. Silcrete identified as a common raw material in the area.
Appleton, J 2002. *The archaeological investigation of Lot 2, DP 120673, the site of a proposed new clay and shale extraction area, Old Walgrove Road, Horsley Park, west of Sydney, NSW.*	Archaeological assessment involving survey at Old Walgrove Road, Horsley Park. The study identified two previously unknown sites, both isolated stone artefacts, and a PAD associated with one of the sites. Two areas were also identified as Potentially Archaeological Sensitive and further investigation of these areas was recommended.	Isolated artefact sites may occur near permanent or semi-permanent creeks. Sites may survive in disturbed contexts.
Jo McDonald Cultural Heritage Management 2001. *Survey for Aboriginal Sites, 1503 Elizabeth Drive, Kemps Creek.*	Archaeological survey report for a site at 1503 Elizabeth Drive, Kemps Creek, the development of Nolans Quarry. One PAD site was identified as a result of the survey, on the basis of land use disturbance, one one Isolated Find (quartz flake) present on the surface. The potential for identification of other sites was reduced by previous activties including land clearance and bulldozing which may have destroyed archaeological materials. Test excavation was recommended to understand the density and extent of artefacts associated with the PAD due to low ground surface visibilty.	Surface archaeological expression may not correlate with subsurface deposits. Archaeological deposits may be retained in land with a history of agricultural use. Test excavation may be required to determine the level, significance and extent of archaeological deposits. Archaeological deposits may be associated with waterways and elevated ground
Jo McDonald Cultural Heritage Management 2000. *Archaeological Survey for Aboriginal Sites: Proposed Light Industrial Subdivision, "Austral Site" – Mamre Road, Erskine Park, NSW.*	Archaeological survey report for the "Austral Brick Company" site, Erskine Park. The survey identified six new artefact scatters and three isolated artefacts within or adjacent to the subject area. All sites were within 150m of a waterway and were dominated by silcrete artefacts. Aboriginal objects were	Aboriginal objects are frequently associated with waterways. Silcrete is the dominant raw material used for stone artefacts in the area. Sites may survive in disturbed contexts.

Report	Summary	Relevance to Subject Area
	found in areas of disturbance due to vegetation clearance, erosion, vehicle activity, livestock activity and bulldozing for dam construction.	
DSCA 1999. *Archaeological Survey Report for Land Between Luddenham & Mamre Roads, Luddenham, New South Wales*	Survey report for a 350ha study area generally bounded by South Creek and Luddenham Road, but also extending to the east of South Creek. The survey identified five previously unidentified artefact scatters and one isolated find. The sites were generally located in association with waterways and ridges. The artefacts were dominated by silcrete, with chert, mudstone and quartz and quartzite also present. Aboriginal objects were found in areas of disturbance due to animal and vehicle traffic and erosion. Aboriginal objects were found in areas of disturbance due to animal and vehicle traffic.	Aboriginal objects are frequently associated with waterways and high ground. Silcrete is the dominant raw material used for stone artefacts in the area. Sites may survive in disturbed contexts.
Dallas, M 1988. *Preliminary archaeological study: Luddenham Equestrian Centre, Luddenham Road, Erskine Park, NSW*	Archaeological report for a 354ha study area in Erskine Park bounded by South Creek and Luddenham Road. A survey identified 12 artefact scatter sites located within the study area. The sites were located in association with Cosgrove Creek or South Creek, or on the ridge to the west of South Creek. The artefacts were dominated by silcrete, with chert, mudstone and quartz and quartzite also present. Aboriginal objects were found in areas of disturbance due to animal and vehicle traffic and erosion.	Aboriginal objects are frequently associated with waterways and high ground. Silcrete is the dominant raw material used for stone artefacts in the area. Sites may survive in disturbed contexts.
Smith, L-J. 1988 *Aboriginal Site Planning Study in the Sydney Basin, Stage 1: The Cumberland Plain*	This report, commissioned by the National Parks and Wildlife Service, details survey work undertaken as part of the first stage of a management study of Aboriginal sites on the Cumberland Plain. The majority of previous studies had been carried out within he northern third of the Plain, making it difficult to identify the variation of sites and their association with micro-environments. 15 areas were surveyed in the northern section of the Cumberland Plain. 79 open sites stone artefact scatters and 29 isolated finds were located. Sites were fairly homogeneous across the study area, although they varied in terms of their size and artefact density. Sites dominated by either debitage were found over most of the study area, whereas there was a tendency for	Surface archaeological expression may not correlate with subsurface deposits. Archaeological deposits may be retained in land with a history of agricultural use. Test excavation may be required to determine the level, significance and extent of archaeological deposits. Archaeological deposits may be associated with waterways and elevated ground

Report	Summary	Relevance to Subject Area
	sites dominated by block fracture pieces to be associated with raw material sources.	
McDonald, J. 1986 *Preliminary Archaeological Reconnaissance of the Proposed Schofields Regional Depot, Plumpton NSW*	Report commissioned by the Metropolitan Waste Disposal Authority (MWDA) which details preliminary archaeological reconnaissance of the proposed Regional Waste Disposal Depot at Schofields. Previous investigations had established that Plumpton Ridge is a major silcrete outcrop on the Cumberland Plain which was extensively exploited by Aborigines as a raw material source for stone tool manufacture. Previous investigations had also identified evidence of quarrying. The report concluded that: - the proposed development would destroy the majority of the archaeological site; - because of the preliminary nature of the investigations, is was not possible to state what a representative sample of sites in this area would be; - because of the nature of the proposed development, and presence of a range of site types, retention of a sample of each site type would not be possible; and - the area which would be suitable for the proposed conservation area overlapped completely with the site and would suffer maximum impact.	Surface archaeological expression may not correlate with subsurface deposits. Archaeological deposits may be retained in land with a history of agricultural use. Test excavation may be required to determine the level, significance and extent of archaeological deposits. Archaeological deposits may be associated with waterways and elevated ground
Dallas, M. 1982 *An Archaeological Survey at Riverstone, Schofields and Quakers Hill, NSW*	Report commissioned by the Land Commission of NSW, which included an archaeological survey of Quakers Hill, Riverstone and Schofields. The survey was commissioned as part of the first stage of a 3-stage development plan which would guide the future development of the study area. The survey results found that the sites located fell into two groups: - open campsites associated with the small eastern tributaries of Eastern Creek; and	Surface archaeological expression may not correlate with subsurface deposits. Archaeological deposits may be retained in land with a history of agricultural use. Test excavation may be required to determine the level, significance and extent of archaeological deposits.

Report	Summary	Relevance to Subject Area
	- stone tool manufacturing and campsites above and alongside Eastern Creek itself where there is abundant stone and permanent water. Many sites had been destroyed by development and all sites had some degree of disturbance. Two sites were identified as having archaeological significance. Both sies had an abundance of raw materials used for tool making and a likelihood of undisturbed subsurface material.	Archaeological deposits may be associated with waterways and elevated ground

2.1.3. Aboriginal Heritage Information Management System (AHIMS)

The Aboriginal Heritage Information Management System (AHIMS) database comprises previously registered Aboriginal archaeological objects and cultural heritage places in NSW and it is managed by the Department of Premier and Cabinet (DPC) under Section 90Q of the *National Parks and Wildlife Act 1974* (NPW Act). Aboriginal objects are the official terminology in AHIMS for Aboriginal archaeological sites. The terms 'Aboriginal sites', 'AHIMS sites' and 'sites' are used herein to describe the nature and spatial distribution of archaeological resources in relation to the subject area.

A search of the AHIMS database was carried out on the 10th November 2020 (AHIMS Client Service ID: 548864) for an area of approximately 6km^2. The basic and extensive AHIMS search results are included in Appendix A. A summary of all previously registered Aboriginal sites within the extensive search area is provided in Table 4 and the relative distribution of site type show in Figure 7. The spatial distribution of sites identified in the extensive search area and in proximity to the subject area are shown in Figure 8. The results of the AHIMS search are discussed below.

It should be noted that the AHIMS register does not represent a comprehensive list of all Aboriginal objects or sites in a specified area as it lists recorded sites only identified during previous archaeological survey effort. The wider surroundings of the subject area have been the subject of various levels and intensity of archaeological investigations during the last few decades. Most of the registered sites have been identified through targeted, pre-development surveys for infrastructure and maintenance works, with the restrictions on extent and scope of those developments.

2.1.3.1. Registered Sites in the Extensive Search Area

Altogether 81 Aboriginal objects and 0 Aboriginal places were identified within the search area.

The search found **no** registered Aboriginal objects within or adjacent to the subject area.

Aboriginal objects are the official terminology in AHIMS for Aboriginal archaeological sites. From this point in the assessment forward the terms of 'Aboriginal sites', 'AHIMS sites' or 'sites' will be used to describe the nature and spatial distribution of archaeological resources in relation to the subject area.

Within the broader AHIMS search area, a total of 81 registered Aboriginal sites were identified. One site was subsequently identified as not a site, reducing the total count to 80 (Table 4). A further 9 sites did not have site cards available through AHIMS, however, these have been considered for the purpose of the below analysis.

Table 4 – AHIMS search results (Client Service ID: 548864)

Site Type	Context	Number	Percentage
Artefact Scatter	Open	18	22.5%
Artefact Scatter – Destroyed	Open	18	22.5%
Isolated Find – Destroyed	Open	16	20%
Isolated Find	Open	12	15%
Artefact Scatter with PAD	Open	9	11.25%
Artefact Scatter with PAD – Destroyed	Open	3	3.75%
Isolated Find with PAD	Open	2	2.5%
PAD	Open	1	1.25%
Grinding Grooves with Artefact Scatter	Open	1	1.25%
Total		**80**	**100%**

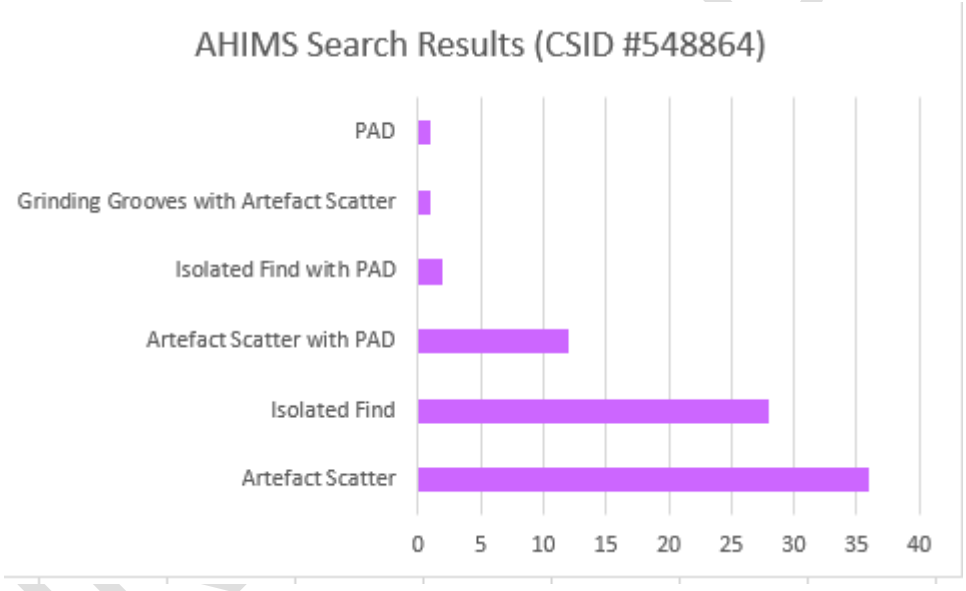

Figure 7 – Distribution of site types with the extensive AHIMS search area (Client Service ID: 548864)

‘Closed context’ sites are those which occur within rock shelters, and include site types such as shelters by themselves, or with art, middens, and/or artefact scatters. The occurrence of outcroppings of sandstone is generally low within the search area, with the underlying geology primarily Wianamatta Group Ashfield Shale and Bringelly Shale formations. This accounts for the absence of registered closed-context sites across the surrounding area, or sites such as engravings or grinding grooves (of which there was 1 site registered within the search area, comprising 1.25% of results) which occur upon sandstone outcrops. ‘Open context’ sites, sites which occur outside of rock shelters, comprised 100% (n=80) of identified site types.

99% (n=79) of sites contained confirmed culturally modified lithics. The remaining site was a Potential Archaeological Deposit (PAD). PADs typically represent areas where the environmental context and level of disturbance are such that subsurface remains are deemed to be likely, and the registering of PADs is usually followed by test excavation which will either realise this potential through the identification of sites, or result in the de-registering of the area due to the absence of materials. PADs are typically registered within areas where deposits indicative of habitation are anticipated to occur.

Artefact scatter sites are sites with multiple culturally modified lithics within a 10m area. This is the most frequently identified site type across the search area, comprising 61% (n=49) of identified sites. Artefact scatters range in size; from small, low intensity, ‘background’ scatter, to large scatters of hundreds of artefacts, with accompanying materials which would indicate use of the area for long term habitation purposes. Accompanying materials include Potential Archaeological Deposits (PADs), comprising 15% (n=12) of sites; and grinding grooves, comprising 1.5% (n=1) of sites.

Isolated find sites are sites which contain only one artefact, typically located in a disturbed context. They are also common throughout the search area, comprising 38% (n=30) of identified site types, where they occurred either on their own or with PADs.

No midden or burial sites are present within the search results. Middens are common in coastal areas, or areas in close proximity to waterways where aquatic subsistence resources could be extracted and processed. Burials are typically located within proximity to culturally modified trees or buried in sand dunes.

There is one site registered adjacent to the subject area, in the lot to the north, in proximity to the waterway. This is AHIMS ID# 45-5-2406. This site is identified as an Artefact Scatter, with the site card location description stating the following:

> *“Site is located 80min north along eastern boundary fence of army signals depot at Kingswood on access road (enter from SE Corner).”*

This site contained three artefacts across a 20 x 3m area on access road/fence break, at the bottom of a slope, with the suggestion that artefacts had washed down from up slope.

It is important to note that the results of the AHIMS search do not represent a definitive list of sites across search area, but rather reflect where archaeological investigations have been undertaken and sites identified. Aboriginal sites may still occur in other areas where investigation has not yet been undertaken. In rural areas, where development has been limited, investigations have not been undertaken and therefore limited site identified.

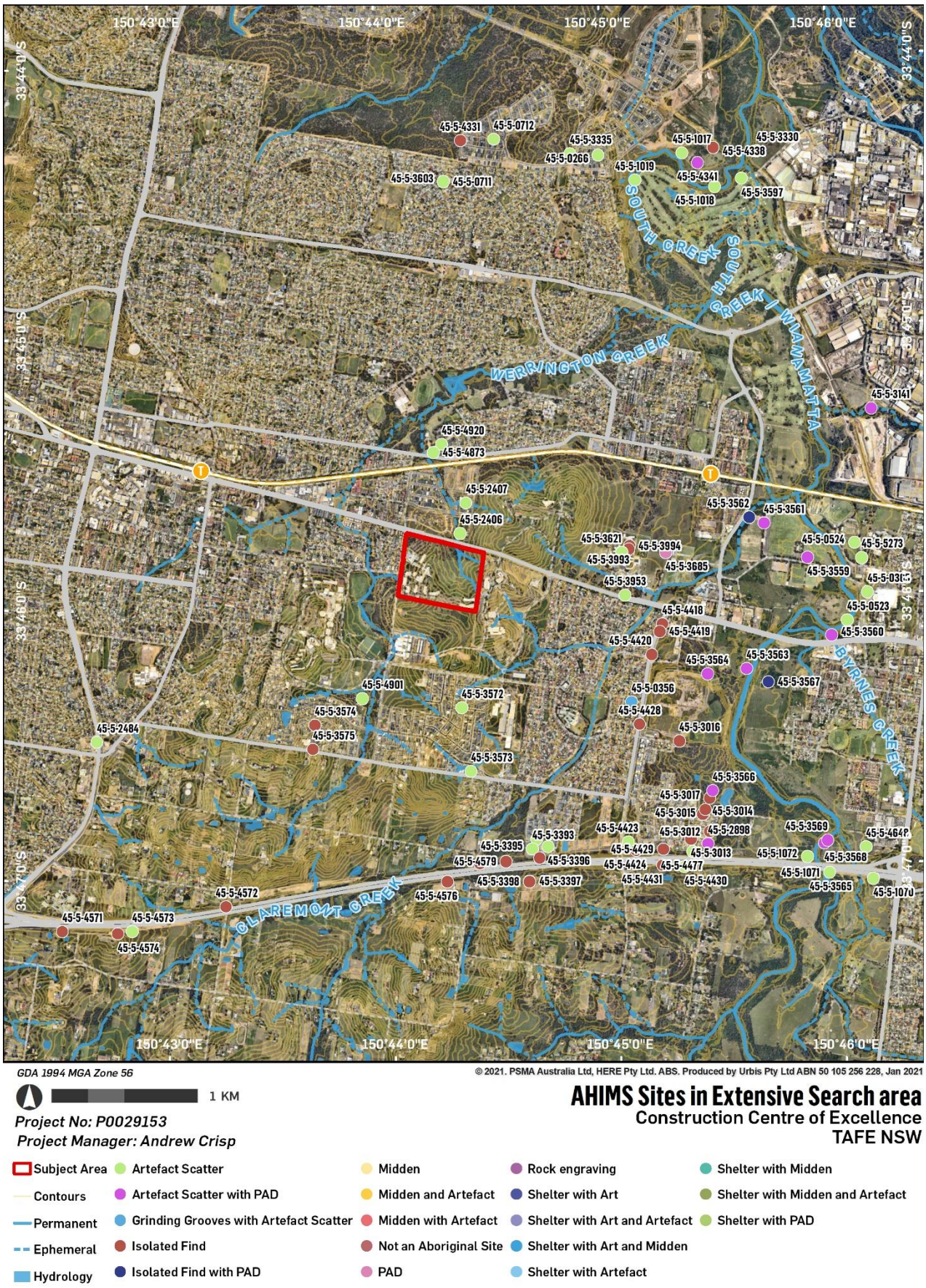

Figure 8 – Registered Aboriginal sites in extensive search area

2.2. LANDSCAPE ANALYSIS

The environmental context of the subject area is significant as the current predictive model for the Cumberland Plain (within which the subject area falls) predicates that Aboriginal sites are more or less likely to occur on the basis of the presence or absence of environmental factors such as topography, geology and soils, hydrology and disturbance.

2.2.1. Landform and Topography

The subject area resides upon an undulating terrain. The subject area is atop a crest to the east, with simple slope to the west, with a minimal mid-slope. There is evidence that the topography of the subject area has been modified, with mounding visible from the A44 Motorway (Great Western Motorway) to the north of the site.

Archaeologically, regional predictive models for the Cumberland Plain identify crests and flats in proximity to water ways as the most sensitive landforms for Aboriginal archaeological materials, on the basis of knowledge surrounding land use. Different landforms were utilised in different ways by Aboriginal communities. For example, alluvial plains provided easy access to resources for camping, while ridgelines provided safe travel routes and depressions provided shelter for ceremonial activities.

2.2.2. Geology and Soils

Soils Landscapes can inform the archaeological potential of a site, due to anticipated depth of natural soils and level of disturbance. Where disturbance extends below the anticipated depth of natural soils, for example basements to a depth >2m generally, this will likely have resulted in their removal and thus the removal of any associated archaeological materials. Where sand bodies are present, for example the Sydney and Parramatta Sand Sheets, their undulations and depth result in the retention of archaeological potential despite disturbance activities as typically natural soils extend 10-20m+ in these contexts and disturbance is unlikely to have removed these natural soils.

The subject area is located within the Sydney Basin, upon the Cumberland Plain. The Cumberland Plain lies on Triassic shales and overlain by Hawkesbury sandstone. The region consists of mostly low rolling hills and wide valleys.

The subject area is located within the Luddenham soil landscape (lu) (Figure 9). This soil landscape is described as residing upon Wianamatta Group Ashfield Shale and Bringelly Shale formations. The Ashfield Shale consists of laminite and dark grey shale. Bringelly Shale consists of shale, calcareous claystone, and laminite. Between these two shale members is the Minchinbury Sandstone consisting of fine to medium-grained lithic quartz sandstone. Soils are described as shallow (<100cm) dark podzolic soils (Dd3.51) or massive earthy clays (Uf6.71) on crests; moderately deep (70-150cm) red podzolic soils (Dr2.11, Dr2.41, Dr3.11) on upper slopes; moderately deep (<150cm) yellow podzolic soils (Dy4.22) and prairie soils (Gn3.26) on lower slopes and drainage lines. Dominant soil materials include Friable dark brown loam, Hard setting brown clay loam, whole coloured strongly pedal clay, mottled grey plastic clay and apedal brown sandy clay.

The depth of natural soils is an important factor in determining if disturbance will have impact archaeological materials. Given the depth of natural soils present within the subject area, disturbance <150cm will likely have left remnant natural soils intact, whereas disturbance >150cm will likely have removed all naturals soils and any associated archaeological deposits, or at least disturbed their integrity.

2.2.3. Hydrology

Hydrology is an important factor in any analysis of environmental factors and their contribution to archaeological potential. The predictive model for the Cumberland Plain developed across the 1980s-late 1990s and supported by more recent assessments theorises that proximity to permanent watercourses was a primary factor in the determination of locations for habitation. While the primacy of environmental determinism as a theory for the determination of predictive models to understand Aboriginal use of the land has been challenged in recent years (Owen, 2015), areas in proximity to watercourses are generally considered to be archaeologically sensitive. This includes the alluvial plains of watercourses and ridgelines and elevated areas above waterways.

The subject area contains a tributary of Werrington Creek, which is located approximately 900m north of the site. The tributary runs southward from elevated ground and has been dammed for agricultural purposes. South Creek is located approximately 2km east of the subject area. As the subject area is within 200m of a waterway, this increases the potential for Aboriginal objects and sites.

2.2.4. Vegetation and Resources

The subject area currently comprises cleared agricultural land with replanted trees along roads and in the vicinity of buildings.

Vegetation within the Luddenham Soil Landscape is typified by extensively cleared open forest (dry sclerophyll forest). Dominant tree species include *Eucalyptus maculate* (spotted gum) and *E. moluccana* (grey box). Lesser occurrences of *E. fibrosa* (broad-leaved ironbark), *E. crebra* (narrow-leaved ironbark), *E. tereticornis* (forest red gum) and *E. longifolia* (woollybutt) occur. Understorey shrub species include *Bursaria spinosa* (blackthorn), *Breynia oblongifolia* (coffee bush), *Allocasuarina torulosa* (forest oak), *Acacia implexa* (hickory) and *Clerodendrum tomentosum* (hairy clerodendrum).

The open forests of the Luddenham Soil Landscape would likely have provided a suitable hunting ground for Aboriginal people.

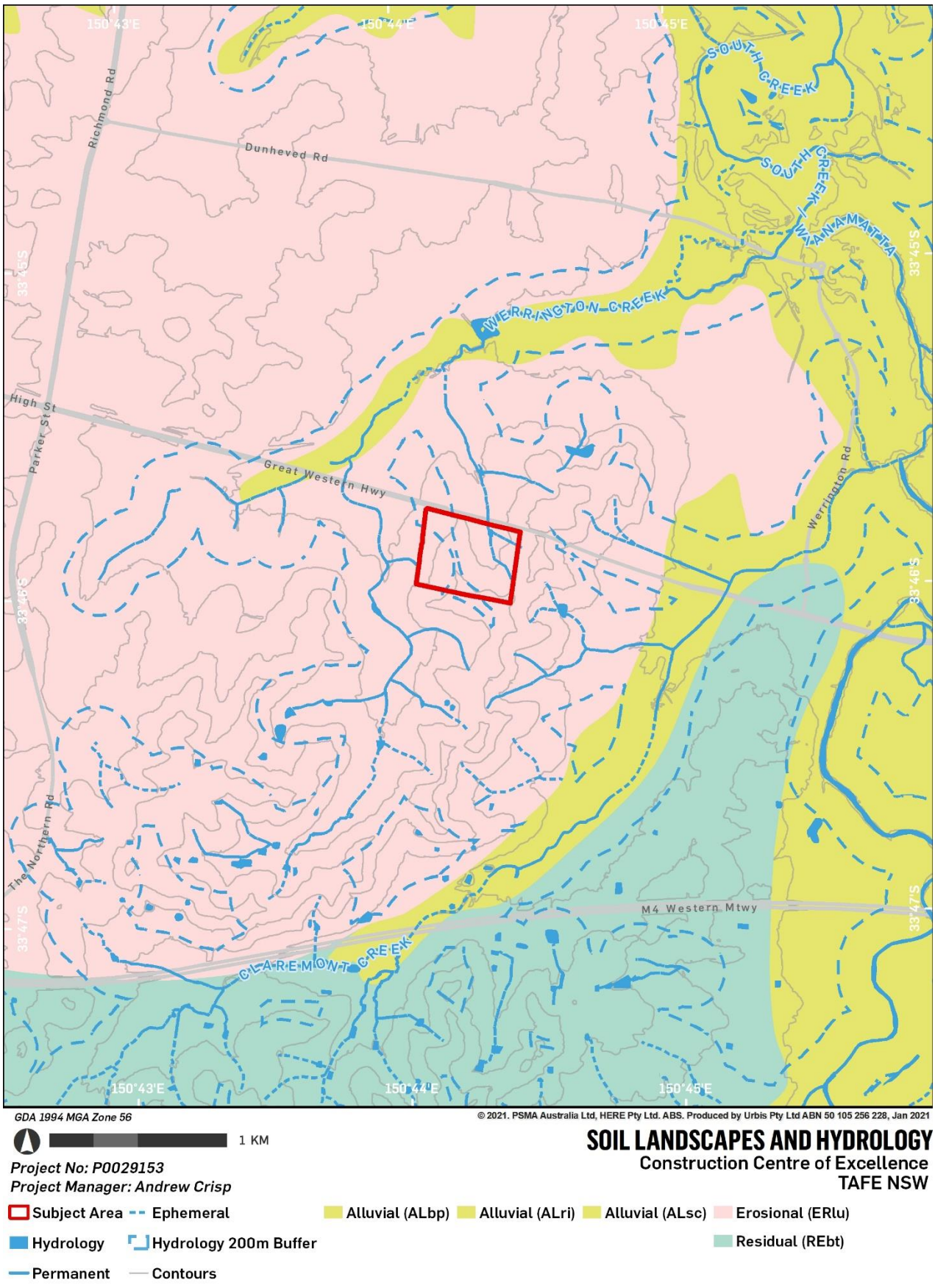

Figure 9 – Soils landscapes and hydrology

2.2.5. Topography

There are varying morphological types of landform elements (see Figure 10 and Figure 11). The Australian Soil and Land Survey Field Handbook (CSIRO, 2009) identifies ten landform element types. These types are presented in Table 5 below.

Table 5 – Landform definitions

Type	Definition
Crest (C)	Landform element that stands above all, or almost all, points in the adjacent terrain. It is characteristically smoothly convex upwards in downslope profile or in contour, or both. The margin of a crest element should be drawn at the limit of observed curvature.
Hillock (H)	Compound landform element comprising a narrow crest and short adjoining slopes, the crest length being less than the width of the landform element.
Ridge (R)	Compound landform element comprising a narrow crest and short adjoining slopes, the crest length being greater than the width of the landform element.
Simple Slope (S)	Slope element adjacent below a crest or flat and adjacent above a flat or depression.
Upper Slope (U)	Slope element adjacent below a crest or flat but not adjacent above a flat or depression.
Mid Slope (M)	Slope element not adjacent below a crest or flat and not adjacent above a flat or depression.
Lower Slope (L)	Slope element not adjacent below a crest or flat but adjacent above a flat or depression.
Flat (F)	planar landform element that is neither a crest nor a depression and is level or very gently inclined (<3% tangent approximately).
Open Depression (vale) (V)	Landform element that stands below all, or almost all, points in the adjacent terrain. A closed depression stands below all such points; an open depression extends at the same elevation, or lower, beyond the locality where it is observed. Many depressions are concave and their margins should be drawn at the limit of observed curvature.
Closed Depression (D)	Landform element that stands below all, or almost all, points in the adjacent terrain. A closed depression stands below all such points; an open depression extends at the same elevation, or lower, beyond the locality where it is observed. Many depressions are concave upwards, and their margins should be drawn at the limit of observed curvature.

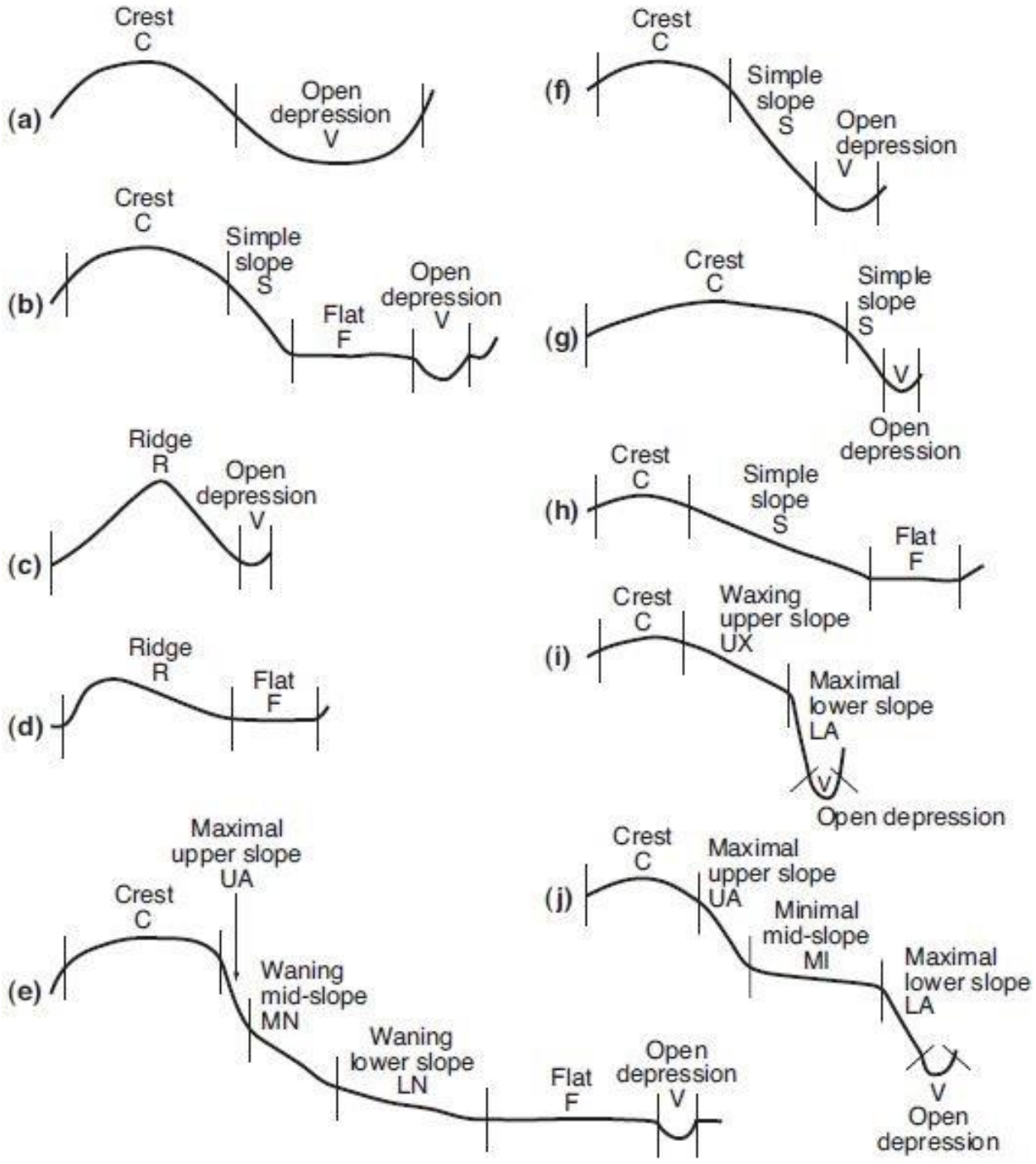

Figure 10 – Landform type
Source: CSIRO, 2009

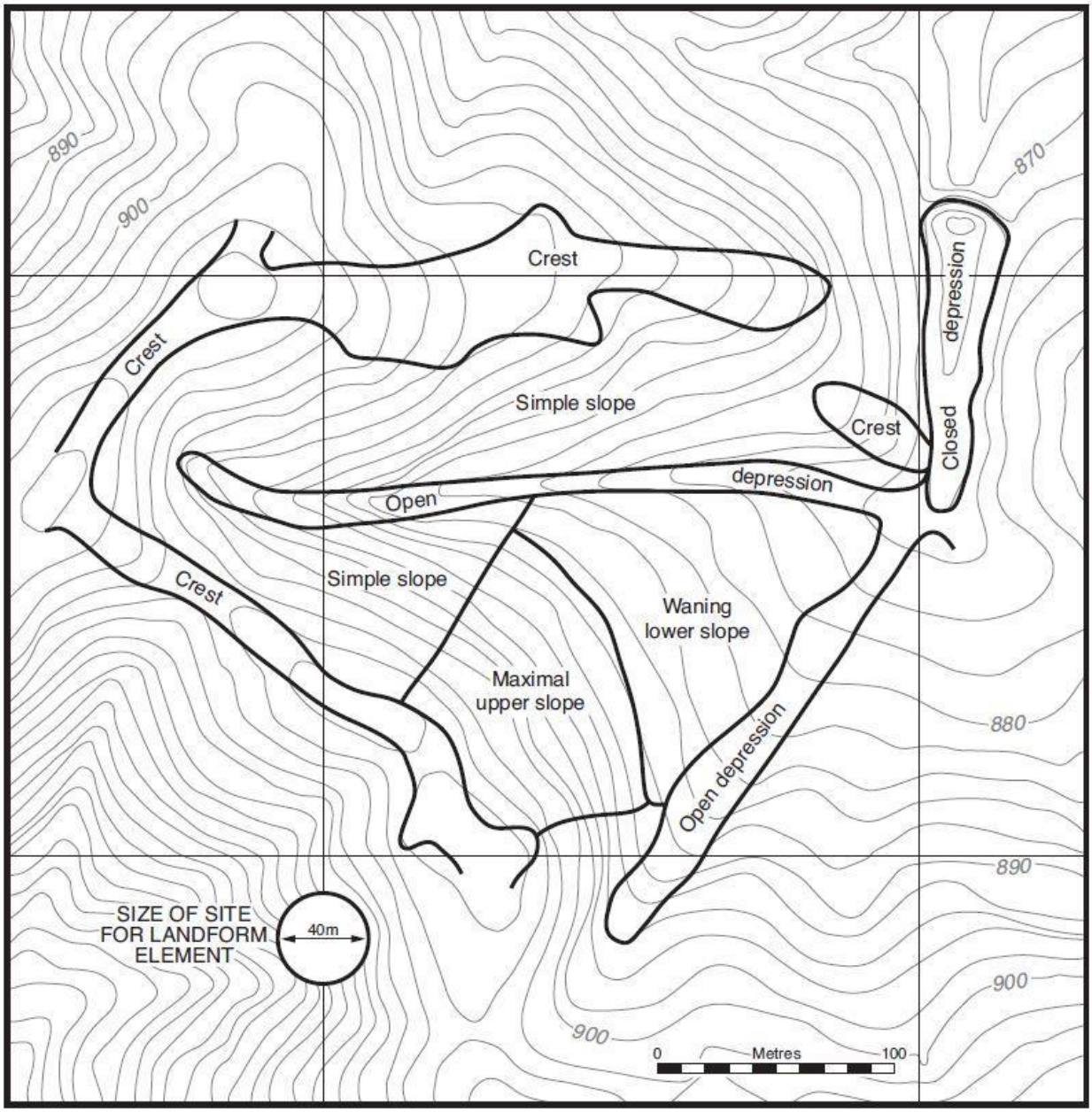

Figure 11 – Landform pattern
Source: CSIRO, 2009

The subject area resides upon an undulating terrain. The subject area is atop a crest to the east, with simple slope to the west, with a minimal mid-slope. There is evidence that the topography of the subject area has been modified, with mounding visible from the A44 Motorway (Great Western Motorway) to the north of the site.

Archaeologically, regional predictive models for the Cumberland Plain identify crests and flats in proximity to water ways as the most sensitive landforms for Aboriginal archaeological materials, on the basis of knowledge surrounding land use. Different landforms were utilised in different ways by Aboriginal communities. For example, alluvial plains provided easy access to resources for camping, while ridgelines provided safe travel routes and depressions provided shelter for ceremonial activities.

2.2.6. Geotechnical Analysis

Pells Sullivan Meynink (PSM) undertook a geotechnical investigation for the proposed development and prepared a report (PSM 2021) to accompany a detailed SSDA (8571481). The geotechnical investigation area addressed by this report is classified by PSM as the 'Construction Site – Zone 1'. bound by the boundary shown below in Figure 12 (9.5-hectare L-shaped site).

Figure 12 – Construction Site – Zone 1

Source: PSM

Ten boreholes were drilled over two days (18-19 November 2020) using a track mounted geotechnical drill rig. The boreholes were drilled to a final depth of between 1m and 14.5m. All boreholes were advanced to practical refusal using auger.

At the time of the geotechnical field work the following observations were made:

- The majority of the Construction Site – Zone 1 consisted of greenfield regions (grassy areas with some trees) with the southern areas covered mainly by existing buildings, paved on-grade car parking and access roads
- The surface elevation increased from west to east, and from north to south of the site

Inferred Geotechnical Unit	Encountered depth to top of inferred unit [m]	Description
Topsoil	0.0	Sandy CLAY: low to medium plasticity, brown to dark brown, fine grained sand, trace gravel up to 5mm, sub-angular, with some rootlets
Natural Soil	0.1 to 0.2	CLAY: medium plasticity, brown and mottled orange-pale grey, minor rock fabric and shale fragments observed
Bedrock A	0.6 to 4.1	SHALE: Orange-grey and brown, extremely too highly weathered, very low strength.
Bedrock B	1.0 to 7.3	SHALE: grey to dark grey, thinly laminated, sub-horizontal, moderately weathered to fresh, low to medium strength

Figure 13 – Reproduction of Table 4 – Summary of inferred subsurface conditions encountered in PSM boreholes

Source: PSM

Borehole ID	Inferred elevation of top of inferred geotechnical units [mRL]				
	TOPSOIL	NATURAL SOIL	BEDROCK A	BEDROCK B	EOH
BH01	51.0	50.8	46.9	45.5	42.5
BH02	54.4	54.3	51.5	47.1	39.9
BH03	49.0	48.8	47.4	N.E.	44.0
BH04	54.3	54.1	51.3	49.9	49.3
BH05	46.0	45.8	44.4	41.6	41.0
BH06	48.6	48.4	45.9	N.E.	43.6
BH07	55.0	54.8	53.1	51.4	50.0
BH08	58.1	58.0	57.5	57.1	57.1
BH09	62.0	61.9	61.3	60.2	60.0
BH10	49.5	49.3	47.1	N.E.	44.5

Note: EOH = End of hole
N.E. = Not Encountered

Figure 14 – Reproduction of Table 5 – Inferred elevation of top of inferred geotechnical units encountered in PSM boreholes

Source: PSM

In summary the geotechnical investigation conducted by PSM (2021) confirms the presence of a shallow natural soil profile within the subject area.

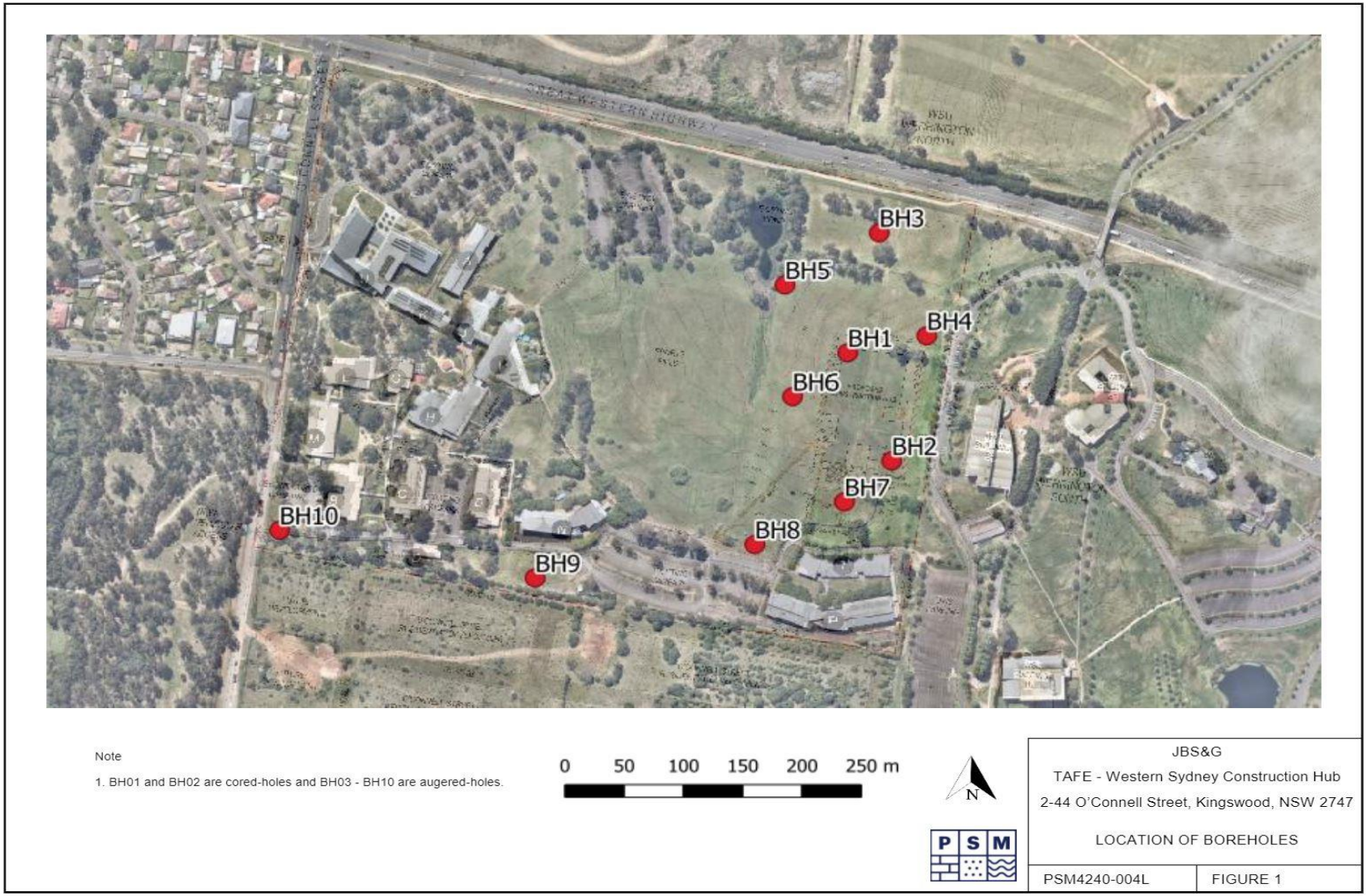

Figure 15 – Location of PSM boreholes within subject area

Source: PSM

2.3. PAST ABORIGINAL LAND USE

Aboriginal people have lived in the Sydney area for more than 20,000 years. The oldest securely dated site in the greater Sydney region is 17,800 years before present (yBP), which was recorded in a rock shelter at Shaw's Creek (Nanson et al 1987), near Castlereagh. Evidence of Aboriginal occupation has been found dated to 50-60,000 years before present (yBP) at Lake Mungo in western NSW, so it is likely that Aboriginal people have lived in the Sydney region for even longer than indicated by the oldest recorded dates we have 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.

Aboriginal groups were not known to keep written records prior to the arrival of European colonisers in 1788. Therefore, the historical record is dominated by European views on Aboriginal people following settlement, rather than the voices of these groups and individuals themselves, and it is difficult to ascertain details of life prior to European arrival. These histories provide an inherently biased interpretation of Aboriginal life, which is not only distorted by the European lens but also by the observer effect wherein individuals are known to behave differently when being observed as opposed to when on their own. Archaeological data and ethnographic information provides additional records for how Aboriginal people may have utilised the landscape.

The subject area falls within the traditional lands of the Dharug (also spelt *Darug* or *Dharuk)* Aboriginal group. This name refers to the language spoken by groups who resided within the wider area and was attributed to this area following 1870 (Attenbrow, 2010). The Aboriginal groups which occupied the greater Penrith region were Darug speaking groups of the hinterland dialect. R. H. Matthews described the boundaries of Dharug land as follows:

> *"The Dharruk speaking people adjoined the Thurrawal on the north, extending along the coast to the Hawkesbury River, and inland to what is now Windsor, Penrith, Campbelltown and intervening town…Dialect was spoken at Campbelltown, Liverpool, Camden, Penrith and possibly as far as east Sydney"* (R. H. Matthews, cited in Attenbrow, 2010).

Like all Aboriginal groups, the Darug people lived on and with Country – the land provided and was protected. Coastal Darug groups subsisted on primarily shellfish and employing different hunting techniques to those who occupied the Hinterland (Biosis, 2019). Floral resources available included various Acacia, melaleuca banksia, grevillea and hakea species, providing food but also gum and wood for the manufacture of tools and implements (Dixson, 1999). Vegetation communities and waterways such as Kemps and South Creeks also supported a variety of faunal resources including kangaroos, possums, wombats, birds, reptiles and aquatic animals (DSCA, 2004).

With the arrival of European colonists, the Cumberland Plain was progressively cleared to form agricultural land. As the bushland was removed, Aboriginal groups were displaced following conflict and violence between settlers and Aboriginal people competing for the same resources. Europeans also brought with them disease, such as smallpox, which had a heavy toll on the Aboriginal communities (Evidence, 1835; Collins, 1798).

While European settlement did heavily impact the Traditional Owners of the wider Penrith region, it did not decimate populations as popular narrative would suggest. Aboriginal people continued to live in the area, adapting to the changes brought by settlement. The fight for recognition was a political one. On 26th January1938, a "Day of Mourning" protest was held, following campaigns by Aboriginal individuals including Jack Patten, William Cooper and Pearl Gibbs who fought for civil rights including the right to vote and representation in Parliament. This struggle was long fought, and Aboriginal and Torres Strait Islanders were granted the right to vote Australia wide by 1965. Aboriginal people were recognised in the census and subject to Commonwealth laws following the referendum for Indigenous Rights in 1967. Aboriginal people across Australia continue to fight for recognition. In February 2008, then Prime Minister Kevin Rudd delivered an address apologising for the mistreatment of Aboriginal people throughout history and committing to closing the gap, recognising Aboriginal cultures as "the oldest continuing cultures in human history" (Rudd, 2008). In contemporary times, respect for Aboriginal people and connection to Country continues to grow. Despite attempts to eradicate Aboriginal people throughout the 19th and 20th centuries, Aboriginal communities continue to thrive across Australia, and Aboriginal individuals play a vital role in all levels of society.

2.4. HISTORICAL LAND USE

Ground disturbance caused by historical land use may significantly reduce Aboriginal archaeological potential. Aerial images 1975, 1986,1991 & 2004 (Figure 18) were visually analysed to develop an understanding of historical land use and ground disturbance within the subject area (Table 6).

It is apparent from the historic aerial imagery that the historical land use of the subject area has been used primarily for agricultural purposes. Historical development of the subject area has caused localised high levels of ground disturbance (dam construction), while the majority of the subject area has been subject to low to moderate levels of physical impact (vegetation clearance, agricultural uses and building construction). In conjunction with the shallow soil profile of the present subject area, the observed levels of historical ground disturbance may reduce archaeological potential. An assessment of ground disturbance and archaeological potential across the subject area is mapped in Figure 19 below (TBC).

Table 6 – Analysis of historical aerials

Year	Observation
1975	In the 1975 aerial, the subject area has been cleared and is utilised as agricultural land. There is evidence of ploughing and other ground disturbing farming practices across the subject area. The centre and portions of the western section of the subject area contain a few buildings, including sheds and farm buildings. There is also a central access road within the subject area at this time.
1986	In the 1986 aerial, development for the TAFE has commenced in the south western portion of the subject. There are several buildings and a carpark within this portion of the subject area at this time. Further imagery from c.1985 (see Figure 16 and Figure 17) demonstrates the high levels of disturbance involved in the construction of the TAFE buildings, with cutting, filling and stockpiling evident. The north western portion appears to have been recently burnt. The eastern portion of the subject area has experienced minimal change from 1975, with a central corridor of farm buildings bordering the agricultural land. There is an access path through the eastern portion o the site at this time.
1991	By 1991, the eastern portion of the subject area remains agricultural land, with a more formalised series of access paths and a small farm building to the south eastern corner. The western portion of the subject, however, has undergone extensive change by this time. This includes the construction of several TAFE buildings to the south west, and a carpark and roads to the north west.
2004	By 2004, the development associated with the TAFE site has spread from the western portion of the site to the southern and northern portions. This includes landscaping and the construction of several buildings and carparks across the subject area. The eastern portion is no longer used as agricultural land at this time, but instead forms fields and open grassed areas for the TAFE.

Figure 16 – Construction of Werrington College of TAFE (now known as TAFE NSW Kingswood Campus), O'Connell St, Kingswood, c.1985. This image demonstrates the disturbance to the subject area resulting from the construction of the buildings.

Source: Penrith Library, 000267.

Figure 17 – Construction of Werrington College of TAFE (now known as TAFE NSW Kingswood Campus), O'Connell St, Kingswood, c.1985. This image demonstrates the disturbance to the subject area resulting from the construction of the buildings.

Source: Penrith Library, 000266/.

2.4.1. Summary

The subject area has experienced high levels of disturbance in localised areas associated with the construction of TAFE facilities to the western and southern portions. The eastern and central portions of the subject area, however, have experienced considerably lower disturbance. These areas have been cleared with their primary use being for agricultural practices since c.19th century (see Heritage Impact Statement and Historical Archaeological Impact Assessment, prepared by Urbis under different covers, 2020). Current impacts are proposed within the eastern portion of the subject area, where disturbance has been minimal. It should also be noted that to the north east, a dam has been constructed recently, not visible in the historical aerials.

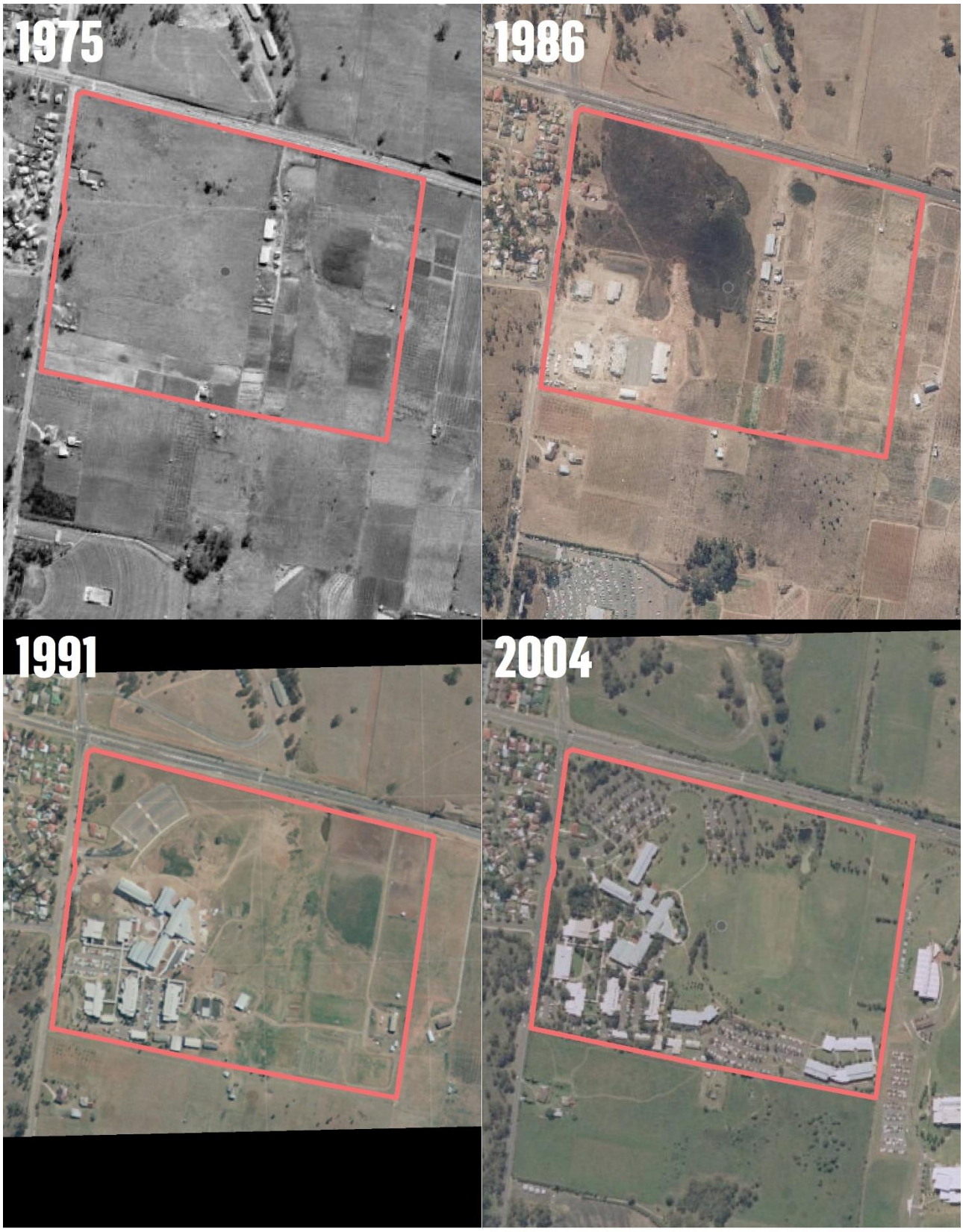

Figure 18 – Historical aerial photographs

[INSERT FIGURE]

Figure 19 – Levels of ground disturbance and archaeological potential across subject area.

2.5. ARCHAEOLOGICAL FIELD SURVEY

{INSERT DESCRIPTION OF FIELD SURVEY AND RELATIONSHIP TO DESKTOP ASSESSMENT FOLLOWING SURVEY}

2.6. ARCHAEOLOGICAL TEST EXCAVATION

{TBC FOLLOWING TEST EXCAVATION}

2.7. PREDICTIVE MODEL

The *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* requires that an appropriate predictive model be used when undertaking an ACHA. A predictive model is used to estimate the nature and distribution of evidence of Aboriginal land use in a subject area. The results produced by a predictive model can be used to identify potential archaeological deposits (PADs).

A predictive model should consider variables that may influence the location, distribution and density of sites, features or artefacts within a subject area. Variables typically relate to the environment and topography, such as soils, landscape features, slope, landform and cultural resources. The following predictions for the subject area have been formulated on the basis of previous assessments, regional models and the AHIMS data provided in Section 2.1.3.

There are several site types which are known to occur within New South Wales. These site types and their likelihood to occur within the subject area are evaluated in Table 8 below.

The general process archaeologists employ to determine the likelihood of any particular site type (artefact scatter, shelter, midden etc) to occur within a given subject area requires the synthesis of information for general distribution of archaeological sites within the wider area including:

- Detailed analysis of previous archaeological investigations within the same Region.
- Presence or absence of landscape features that present potential for archaeological resources (human occupation, use) such as raised terraces adjacent to permeant water.
- Analysis of the geology and soil landscape within the subject area which allows for a determination to be made of the type of raw material that would have been available for artefact production (silcrete, tuff, quartz etc) and the potential for the accumulation of archaeological resource within the subject area.
- Investigation of and determination of the level of disturbance/historical land use within the subject area which may impact on or remove entirely any potential archaeological material.

The combination of these would give us an indication of various levels of possibility of finding archaeological resource within a given area. Please refer to Table 7 below for an example of the indicative process of determining the likelihood of a given site occurring within a subject area.

Table 7 – Indicative process of determining the likelihood of a given site occurring within a subject area

Likelihood	Indicative subject area context	Indicative action
High	Low level of disturbance, presence of one or more archaeologically sensitive landforms (raised terrace adjacent to permanent water, sand dunes, rock shelter etc), presence of archaeologically sensitive soil landscape (Tuggerah, Blacktown, South Creek etc), presence of previously recorded archaeological site(s) and/or identification of previously unrecorded archaeological site(s) within the subject area	Detailed archaeological investigation including but not limited to survey, test excavation and potentially (depending on density and/or significance of archaeological deposit) salvage excavation.

Likelihood	Indicative subject area context	Indicative action
Moderate	Moderate level of disturbance, presence of one or more archaeologically sensitive landforms (raised terrace adjacent to permanent water, sand dunes, rock shelter etc), presence of archaeologically sensitive soil landscape (Tuggerah, Blacktown, South Creek etc), presence of previously recorded archaeological site(s) and/or identification of previously unrecorded archaeological site(s) within the subject area	Detailed archaeological investigation including but not limited to survey, test excavation and potentially (depending on density and/or significance of archaeological deposit) salvage excavation.
Low	High level of disturbance, presence of one archaeologically sensitive landform (raised terrace adjacent to permanent water, sand dunes, rock shelter etc), presence of archaeologically sensitive soil landscape (Tuggerah, Blacktown, South Creek etc).	Employ chance finds procedure and works can continue without further archaeological investigation.
Nil	Complete disturbance, complete removal of natural soil landscape, zero archaeologically sensitive landform, geological or soil features. Zero previously recorded archaeological sites.	Employ chance finds procedure and works can continue without further archaeological investigation.

Table 8 – Predictive Model

Site type	Description	Potential	Justification
Artefact Scatters/ Camp Sites	Artefact scatters/camp sites represent past Aboriginal occupation and possible stone knapping activities and include archaeological remains such as stone artefacts and potentially hearths. This site type usually appears as surface accumulation of stone artefacts in areas where vegetation is limited, and ground surface visibility increases. Such scatters of artefacts are also often exposed by erosion, agricultural events such as ploughing, and the creation of informal, unsealed vehicle access tracks and walking paths. These types of sites are often located on dry, relatively flat and elevated land along or adjacent to rivers and creeks.	Moderate to high	• The distribution of artefact sites in the region suggests that there would be archaeological potential for these site types within the subject area. • The subject area contains archaeologically sensitive landforms: elevated ground and hill slopes associated with waterways. • Areas of low historical ground disturbance in the subject area increase the potential that these site types would remain intact.
Isolated Finds	Isolated finds represent artefactual material in singular, one off occurrences. Isolated finds are generally indicative of stone tool production, although can also include contact sites. Isolated finds may represent a single item discard event or be the result of limited stone knapping activity. The presence of such isolated artefacts may indicate the presence of a more extensive, in situ buried archaeological deposit, or a larger deposit obscured by low ground visibility. Isolated artefacts are likely to be located on landforms associated with past Aboriginal activities, such as ridgelines that would have provided ease of movement through the area, and level areas with access to water, particularly creeks and rivers.	Moderate to high	• The distribution of artefact sites in the region suggests that there would be archaeological potential for these site types within the subject area. • The subject area contains archaeologically sensitive landforms: elevated ground and hill slopes associated with waterways. • Areas of low historical ground disturbance in the subject area increase the potential that these site types would remain intact.

Site type	Description	Potential	Justification
PAD	Potential Archaeological Deposits (or PADs) are areas where there is no surface expression of stone artefacts, but due to a landscape feature there is a strong likelihood that the area will contain buried deposits of stone artefacts. Landscape features which may feature in PADs include proximity to waterways, particularly terraces and flats near 3rd order streams and above; ridge lines, ridge tops and sand dune systems.	Moderate to high	• The distribution of artefact sites in the region suggests that there would be archaeological potential for these site types within the subject area. • The subject area contains archaeologically sensitive landforms: elevated ground and hill slopes associated with waterways. • Areas of low historical ground disturbance in the subject area increase the potential that these site types would remain intact.
Scarred Trees	Scarred trees are the results of the stripping-off the bark by Aboriginal people for various reasons, including the construction of shelters (huts), canoes, paddles, shields, baskets and bowls, fishing lines, cloaks, torches and bedding, as well as being beaten into fibre for string bags or ornaments (sources cited in Attenbrow 2002: 113). The removal of bark exposes the heart wood of the tree, resulting in a scar that can heal by the regrowth of the bark or remain an exposed scar for a prolonged period. Such scars, when they occur, are typically described as scarred trees. These sites most often occur in areas with mature, remnant native vegetation. The locations of scarred trees often reflect an absence of historical clearance of vegetation rather than the actual pattern of scarred trees. Carved trees are different from scarred trees, and the carved designs may indicate totemic affiliation (Attenbrow 2002: 204); they may also have been carved for ceremonial purposes or as grave markers.	Nil	▪ Historical vegetation clearance in the subject area has removed all original trees.
Axe Grinding Grooves	Grinding grooves are the physical evidence of tool making or food processing activities undertaken by Aboriginal people. The manual rubbing of stones against other stones creates grooves in the rock; these are usually found on	Low	▪ It is unlikely that the exposed sandstone outcrops required for

Site type	Description	Potential	Justification
	flat areas of abrasive rock such as sandstone. They may be associated with creek beds, or water sources such as rock pools in creek beds and on platforms, as water enables wet grinding to occur.		this site type would occur within the subject area.
Bora/Ceremonial	Aboriginal ceremonial sites are locations that have spiritual or ceremonial values to Aboriginal people. Aboriginal ceremonial sites may comprise natural landforms and, in some cases, will also have archaeological material. Bora grounds are a ceremonial site type, usually consisting of a cleared area around one or more raised earth circles, and often comprised of two circles of different sizes, connected by a pathway, and accompanied by ground drawings or mouldings of people, animals or deities, and geometrically carved designs on the surrounding trees.	Low	▪ Historical land-use in the subject area is likely to have destroyed any bora grounds or ceremonial sites.
Burial	Aboriginal burial of the dead often took place relatively close to camp site locations. This is due to the fact that most people tended to die in or close to camp (unless killed in warfare or hunting accidents), and it is difficult to move a body long distances. Soft, sandy soils on, or close to, rivers and creeks allowed for easier movement of earth for burial; and burials may also occur within rock shelters or middens. Aboriginal burial sites may be marked by stone cairns, carved trees or a natural landmark. Burial sites may also be identified through historic records or oral histories.	Low	• The subject area is not situated on soft, sandy soils. • The subject area does not include any visible rock overhangs suitable as shelters.
Contact site	These types of sites are most likely to occur in locations of Aboriginal and settler interaction, such as on the edge of pastoral properties or towns. Artefacts located at such sites may involve the use of introduced materials such as glass or ceramics by Aboriginal people or be sites of Aboriginal occupation in the historical period.	Low	• Contact sites in the area are possible due to early European settlement. • Historical land-use in the subject area reduces the potential for these sites.
Midden	Midden sites are indicative of Aboriginal habitation, subsistence and resource extraction. Midden sites are expressed through the occurrence of shell deposits of edible shell species often associated with dark, ashy soil and charcoal. Middens often occur in shelters, or in eroded or collapsed sand dunes. Middens occur along the coast or in proximity to waterways, where	Nil to low	• The subject area is not situated near the coast. • The lower order tributary within the subject area is not conducive to this type of site.

Site type	Description	Potential	Justification
	edible resources were extracted. Midden may represent a single meal or an accumulation over a long period of time involving many different activities. They are also often associated with other artefact types.		
Art	Art sites can occur in the form of rock engravings or pigment on sandstone outcrops or within shelters (discussed below). An engraving is some form of image which has been pecked or carved into a rock surface. Engravings typically vary in size and nature, with small abstract geometric forms as well as anthropomorphic Figures and animals also depicted (DECCW, 2010c). In the Sydney region engravings tend to be located on the tops of Hawkesbury Sandstone ridges where vistas occur. Pigment art is the result of the application of material to a stone to leave a distinct impression. Pigment types include ochre, charcoal and pipeclay. Pigment art within the Sydney region is usually located in areas associated with habitation and sustenance.	Nil to low	• The subject area does not include any visible sandstone outcrops or rock overhangs. • It is unlikely that the exposed sandstone outcrops required for this site type would occur within the subject area.
Shelters	Shelter sites are places of Aboriginal habitation. They take the form of rock overhangs which provided shelter and safety to Aboriginal people. Suitable overhangs must be large and wide enough to have accommodated people with low flooding risk. Due to the nature of these sites, with generic rock over hangs common particularly in areas with an abundance of sandstone, their use by Aboriginal people is generally confirmed through the correlation of other site types including middens, art, PAD and/or artefactual deposits.	Nil to low	• The subject area does not include any visible rock overhangs. • It is unlikely that the exposed sandstone outcrops required for this site type would occur within the subject area.

2.8. SUMMARY

Conclusions from analysis of the AHIMS results, previous archaeological reports, preliminary site inspection, landscape analysis and predictive modelling are as follows:

- There are no Aboriginal sites registered within the subject area and two sites registered within 1km of the subject area.
- Archaeological sites can be found across a variety of landforms in the Cumberland Plain, with greater frequency in the vicinity of waterways, lower slopes and river terraces.
- {Ground disturbance}
- {Overall assessment of archaeological potential / specific site types following survey and test excavation}
- The subject area resides upon an undulating terrain. The subject area is atop a crest to the east, with simple slope to the west, with a minimal mid-slope.
- The subject area is located within the Luddenham soil landscape (lu). Soils within this landscape are described as shallow to moderately deep (<100-150cm).
- The subject area contains a tributary of Werrington Creek, which is located approximately 900m north of the site. The tributary runs southward from elevated ground and has been dammed for agricultural purposes. South Creek is located approximately 2km east of the subject area. As the subject area is within 200m of a waterway, this increases the potential for Aboriginal objects and sites.
- The subject area is cleared agricultural land with replanted trees forming vegetation barriers from roads and buildings.

Due to the surrounding hydrology, the subject area retains potential for the presence of Aboriginal archaeological resources.

3. ABORIGINAL CONSULTATION

In administering its statutory functions under Part 6 of the *NSW National Parks and Wildlife Act 1974*, the Department of Premier and Cabinet (DPC) requires that Proponent consult with Aboriginal people about the Aboriginal cultural heritage values (cultural significance) of Aboriginal objects and/or places within any given development area in accordance with Clause 80c of the NSW National Parks and Wildlife Regulation, 2009.

The DPC maintains that the objective of consultation with Aboriginal communities about the cultural heritage values of Aboriginal objects and places is to ensure that Aboriginal people have the opportunity to improve ACHA outcomes by (DECCW 2010a):

- Providing relevant information about the cultural significance and values of Aboriginal objects and/or places.
- Influencing the design of the method to assess cultural and scientific significance of Aboriginal objects and/or places.
- Actively contributing to the development of cultural heritage management options and recommendations for any Aboriginal objects and/or places within the proposed subject area.
- Commenting on draft assessment reports before they are submitted by the Proponent to the DPIE.

Consultation in line with the Consultation Requirements (DECCW 2010) is a formal requirement where a Proponent is aware that their development activity has the potential to harm Aboriginal objects or places. The DPC also recommends that these requirements be used when the certainty of harm is not yet established but a proponent has, through some formal development mechanism, been required to undertake a cultural heritage assessment to establish the potential harm their proposal may have on Aboriginal objects and places.

The Consultation Requirements outline a four-stage consultation process that includes the following:

- Stage 1 – Notification of project proposal and registration of interest.
- Stage 2 - Presentation of information about the proposed project.
- Stage 3 - Gathering information about the cultural significance.
- Stage 4 – Review of draft cultural heritage assessment report.

The document also outlines the roles and responsibilities of the DPC, Registered Aboriginal Parties (RAPs) including Local and State Aboriginal Land Councils, and proponents throughout the consultation process.

To meet the requirements of consultation it is expected that proponents will:

- Bring the RAPs, or their nominated representatives, together and be responsible for ensuring appropriate administration and management of the consultation process.
- Consider the cultural perspectives, views, knowledge and advice of the RAPs involved in the consultation process in assessing cultural significance and developing any heritage management outcomes for Aboriginal objects(s) and/or places(s).
- Provide evidence to the DPIE of consultation by including information relevant to the cultural perspectives, views, knowledge and advice provided by the RAPs.
- Accurately record and clearly articulate all consultation findings in the final ACHAR.
- Provide copies of the cultural heritage assessment report to the RAPs who have been consulted.

The consultation process undertaken to seek active involvement from relevant Aboriginal representatives for the project followed the current NSW statutory guideline, namely, the Consultation Requirements. Section 1.3 of the Consultation Requirements describes the guiding principles of the document. The principles have been derived directly from the principles section of the *Australian Heritage Commission's Ask First: A guide to respecting Indigenous heritage places and values* (Australian Heritage Commission 2002).

The following outlines the process and results of the consultation conducted during this assessment to ascertain and reflect the Aboriginal cultural heritage values of the subject area.

3.1. STAGE 1: NOTIFICATION OF PROJECT PROPOSAL AND REGISTRATION OF INTEREST

3.1.1. Government Organisation Contact

The aim of Stage 1 is to identify, notify and register Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places in the subject area.

A search of the Native Title Tribunal was undertaken on 2nd November 2020. This search identified the subject area as freehold tenure, which extinguishes Native Title.

To identify Aboriginal people who may be interested in registering as Aboriginal parties for the project, the organisations stipulated in Section 4.1.2 of the Consultation Guidelines were contacted (refer to Table 9).

Table 9 – Contacted Organisations

Organisation	Date notification sent	Date Response Received
National Native Title Tribunal	10 November 2020	2 November 2020
Office of the Registrar, Aboriginal Land Rights Act 1983	6 November 2020	17 November 2020
Heritage NSW, Department of Premier and Cabinet	10 November 2020	17 November 2020
NTS Corp	6 November 2020	N/A
Deerubbin Local Aboriginal Land Council	6 November 2020	N/A
Local Land Services, Greater Sydney	6 November 2020	N/A
Penrith City Council	6 November 2020	N/A

The template for the emails sent to the above-mentioned organisations is at Appendix C. A total of 61 Aboriginal groups and individuals with an interest in the subject area were identified following this stage. These groups were contacted, with further information presented at Section 3.1.2 below.

3.1.2. Registration of Interest

In accordance with Section 4.1.3 of the Consultation Guidelines, letters were sent to the 61 Aboriginal groups and individuals via email or express post on 11 December 2020 (depending on the method identified by each group), to notify them of the proposed project. A total of 57 were sent via email, with 4 by express post. The letters included a brief introduction to the project and the project location and set a deadline of 31 December 2020 for registration, in accordance with the 14-day minimum requirement. The letter template is included in Appendix C.

A total of 18 groups registered interested in the project as a result of this phase (Table 10). Acknowledgement emails were sent by Urbis to all respondents to confirm registration had been received.

Table 10 – Stage 1 Consultation – Registration of Interest

Organisation/Individual	Contact Person
Deerubbin Local Aboriginal Land Council	Steven Randall
Barking Owl Aboriginal Corporation	Jody Kulakowski
Biamanga	Seli Storer
Cullendulla	Corey Smith
Clive Freeman	Clive Freeman

Organisation/Individual	Contact Person
Goobah Developments	Basil Smith
Gulaga	Wendy Smith
Kamilaroi Yankuntjatjara Working Group	Phil Khan
Murramarang	Roxanne Smith
Ngambaa Cultural Connections	Kaarina Slater
Waawaar Awaa Aboriginal Corp	Rodney Gunther
Muragadi Heritage Indigenous Corporation	Jesse Johnson
Didge Ngunawal Clan	Lillie Carroll / Paul Boyd
Gunjeewong Cultural Heritage Aboriginal Corporation	Cherie Carroll Turrise
Aragung Aboriginal Cultural Heritage Site Assessments	Jamie Eastwood
Butucarbin Aboriginal Corporation	Jennifer Beale
Woronora Plateau Gundangara Elders Council	Kayla Williamson
Wurrumay Pty Ltd	Vicky Slater

3.1.3. Public Notice

In accordance with Section 4.1.3 of the Consultation Guidelines, an advertisement was placed in a local newspaper, The Koori Mail. The advertisement was published in the 16th December 2020 edition, and registration was open until 31st December 2020, providing 14 days to register an interest in accordance with the Consultation Requirements. A copy of the advertisement is included in Appendix C.

3.1.4. Stage 1.6 Notice to DPC/LALC

The list of Registered Aboriginal Parties (RAPs) was provided to DPC – Aboriginal Branch and the Deerubbin Local Aboriginal Land Council on the 18th January 2021 (see Appendix C).

3.2. STAGE 2: PRESENTATION OF INFORMATION ABOUT THE PROJECT

The aim of Stage 2 is to provide registered Aboriginal parties with information about the scope of the proposed project, and the proposed cultural heritage assessment process. A Stage 2/3 Information Pack which included a brief introduction to the project, the project location, and AHIMS search result to provide understanding of the registered cultural sites in the local area, was sent to registered Aboriginal parties via email on the 21st January 2021. A response to the Stage 2/3 Information Packet was requested by 18th February 2021.

The Information Pack was prepared as a combination of Stage 2 and 3 of the Consultation Guidelines, and included the following information:

- Project overview, location and purpose.
- Proposed works.
- Brief environmental and historical background.
- Notification of the site inspection.
- Protocol of gathering information on cultural heritage significance.
- Request for comment on methodology and recommendations for site investigation, and request for any cultural information the respondent wished to share.

- The letter is included in Appendix C of this report.

3.3. STAGE 3: GATHERING INFORMATION ABOUT THE PROPOSED PROJECT

Stage 3 is concerned with gathering feedback on a project, proposed methodologies, and obtaining any cultural information that registered Aboriginal parties wish to share. This may include ethno-historical information, or identification of significant sites or places in the local area.

{Number} responses were received to the Stage 2 and 3 Information Pack. These responses are included in Appendix C and addressed in Table 11 below.

Table 11 – RAP responses to the Stage 2/3 Information Pack

RAP	Response	Urbis Response

3.3.1. Site inspection and meeting

[INSERT following Survey]

3.4. STAGE 4: REVIEW OF DRAFT ACHA REPORT

The aim of Stage 4 is to prepare and finalise an ACHAR with input from registered Aboriginal Parties.

A draft ACHAR was sent to registered Aboriginal parties via email on the XX 2021 with comment on the draft ACHAR requested prior to XX 2021. It is noted that the time allowed for comment should reflect the size and complexity of the project.

{INSERT FOLLOWING CLOSE OF STAGE 4}

3.5. SUMMARY

{INSERT SUMMARY OF CONSULTATION SECTION}

4. CULTURAL HERITAGE VALUES AND STATEMENT OF SIGNIFICANCE

4.1. METHODS OF ASSESSING HERITAGE SIGNIFICANCE

Heritage significance is assessed by considering each cultural, or archaeological site, against the significance criteria set out in the Assessment Guidelines. In all case, the assessment of significance detailed below is informed by the Aboriginal community, which is documented in this report. If any culturally sensitive values were identified they would not be specifically included in the report, or made publicly available, but would be documented and lodged with the knowledge holder providing the information.

4.2. ASSESSMENT FRAMEWORK

The Burra Charter (Australia ICOMOS 1999) defines the basic principles and procedure to be observed in the conservation of important places. It provided the primary framework within which decisions about the management of heritage sites should be made. The Burra Charter defines cultural significance as being derived from the values listed below.

4.2.1. Social or Cultural value

Social or cultural value refers to the spiritual, traditional, historical or contemporary associations and attachments the place or area has for Aboriginal people. Social or cultural values is how people express their connection with a place and the meaning that place has for them.

Places of social or cultural value have associations with contemporary community identity. These places can have associations with tragic or warmly remembered experiences, periods, or events. Communities can experience a sense of loss should a place of social or cultural value be damaged or destroyed.

There is not always a consensus about a place's social or cultural value. When identifying values, it is not necessary to agree with or acknowledge the validity of each other's values, but it is necessary to document the range of values identified.

Social or cultural values can only be identified through consultation with Aboriginal people. This could involve a range of methodologies, such as cultural mapping, oral histories, archival documentation and specific information provided by Aboriginal people specifically for the investigation.

When recording oral history:

- Identify who was interviewed and why.
- Document the time, place and date the interview was conducted.
- Describe the interview arrangements (the number of people present, recording arrangements, information access arrangements).
- Provide a summary of the information provided to the person being interviewed.
- Summarise the information provided by each person interviewed.

More information on conducting oral history projects can be found in OEH's publication *Talking history: oral history guidelines*.

Occasionally information about social value may not be forthcoming. In these circumstances, document the consultation process but make it clear in the discussions and conclusions about social value that this was the case.

4.2.2. Historic value

Historic value refers to the associations of a place with a historically important person, event, phase or activity in an Aboriginal community. Historic places do not always have physical evidence of their historical importance (such as structures, planted vegetation or landscape modifications). They may have 'shared' historic values with other (non-Aboriginal) communities.

Places of post-contact Aboriginal history have generally been poorly recognised in investigations of Aboriginal heritage. Consequently, the Aboriginal involvement and contribution to important regional historical themes is often missing from accepted historical narratives. This means it is often necessary to collect oral histories along with archival or documentary research to gain a sufficient understanding of historic values.

4.2.3. Scientific (Archaeological) value

This refers to the importance of a landscape, area, place or object because of its rarity, representativeness and the extent to which is may contribute to further understanding and information (Australian ICOMOS 1988).

Information about scientific values will be gathered through any archaeological investigation undertaken. Archaeological investigations must be carried out according to OEH's *Code of practice for archaeological investigation of Aboriginal objects in NSW*.

Scientific significance, also referred to as archaeological significance, is determined by assessing an Aboriginal heritage site or area according to archaeological criteria. The assessment of archaeological significance is used to develop appropriate heritage management and impact mitigation strategies.

Criteria for archaeological significance have been developed in accordance DPIE guidelines, as shown in, Table 12 below.

Table 12 – Scientific (archaeological) significance criteria

Significance Criteria	Description
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?
Condition	What is the condition of the site? Does it appear to have been impacted/altered?

4.2.4. Aesthetic value

This refers to sensory, scenic, architectural, and creative aspects of the place. It is often closely 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 (Australian ICOMOS 1988).

4.3. IDENTIFYING VALUES

The information collected in the background review of the project can be used to help identify these values. The review of background information and information gained through consultation with Aboriginal people should provide insight into past events. These include how the landscape was used and why any identified Aboriginal objects are in this location, along with contemporary uses of the land.

Information gaps are not uncommon and should be acknowledged. They may require further investigation to adequately identify the values present across the subject area. It may be helpful to prepare a preliminary values map that identifies, to the extent of information available, the:

- Known places of social, spiritual, cultural value, including natural resources of significance.
- Known historic places.
- Known Aboriginal objects and/or declared Aboriginal places.

- Potential places/areas of social, spiritual, cultural value, including natural resources, historic or archaeological significance.

Places of potential value that are not fully identified or defined should be included as 'sensitive' areas to target further investigation.

4.4. ASSESSING VALUES AND SIGNIFICANCE

This stage is used to assess and discuss the cultural significance of the values identified during the identification and assessment of cultural significance by consulting Aboriginal people and to prepare a statement of significance. The assessment of values is a discussion of what is significant and why. An assessment of values is more than simply restating the evidence collected during the background review and identification of values stages of the project. Rather, the assessment should lead to a statement of significance that sets out a succinct summary of the salient values that have been identified.

The assessment and justification in the statement of significance must discuss whether any value meets the following criteria (NSW Heritage Office 2001):

- Does the subject area have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons? – social value.
- Is the subject area important to the cultural or natural history of the local area and/or region and/or state? – historic value.
- 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? – scientific (archaeological) value.
- Is the subject area important in demonstrating aesthetic characteristics in the local area and/or region and/or state? – aesthetic value.
- Assessment of each of the criteria (above) should be graded in terms that allow the significance to be described and compared; for example, as high, moderate, or low. In applying these criteria, consideration should be given to:
- 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?

Then discuss what is significance and why – this should be summarised into a statement of significance. Thus, the statement of significance is a succinct summary of the salient values drawn from the identification of values.

4.4.1. Assessment of Cultural Heritage Significance and Values

An assessment of cultural heritage significance and values incorporates a range of values which may vary for different individual groups and may relate to both the natural and cultural characteristics of places or sites. Cultural significance and Aboriginal cultural views can only be determined by the Aboriginal community using their own knowledge of the area and any sites present, and their own value system. All Aboriginal heritage evidence tends to have some contemporary significance to Aboriginal people, because it represents an important tangible link to their past and to the landscape.

Consultation with members of the local Aboriginal community (project RAPs) was undertaken to identify the level of spiritual/cultural significance of the subject area and its components. In acknowledgment that the Aboriginal community themselves are in the best position to identify levels of cultural significance, the project RAPs were invited to provide comment and input into this ACHAR and to the assessment of cultural heritage significance and values presented therein.

Comments received from the representatives of the project RAPs indicate that [INSERT COMMENTS & ASSESSMENT]

4.4.2. Assessment of Scientific (Archaeological) Significance

In accordance with the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW*, and in consultation with representatives of the local Aboriginal community, the following assessment of the scientific (archaeological) significance of identified sites within the subject area has been prepared.

[INSERT ASSESSMENT]

5. IMPACT ASSESSMENT

{INSERT ASSESSMENT}.

5.1. POTENTIAL HARM

This section identifies the potential impacts to cultural heritage arising from the proposal, including demolition, excavation, and construction phases. Harm can be direct or indirect, defined by the Assessment Guidelines as:

- Direct harm – may occur as the result of any activity which disturbs the ground including, but not limited to, site preparation activities, installation of services and infrastructure, roadworks, excavation, flood mitigation measures.
- Indirect harm – may affect sites or features located immediately beyond or within the area of the proposed activity. Examples include, but are not limited to, increased impact on art in a shelter from increased visitation, destruction from increased erosion and changes in access to wild food resources.

The nature, extent and level of harm (indirect or direct) cannot be identified at this stage due to the lack of sufficient information on the presence or absence of Aboriginal objects and archaeological resources within the subject area. This ACHA has concluded that there is moderate to high archaeological potential for subsurface Aboriginal archaeological deposits. However, should Aboriginal archaeological resources found within the subject area, the proposed development will have direct impact on those resources and potentially remove the archaeological resource completely.

The level, nature and extent of potential harm cannot be ascertained until the results of archaeological excavation is undertaken.

5.2. LIKELY IMPACTED VALUES

The level of archaeological potential of subsurface Aboriginal objects and archaeological resources that still may exist within the subject area can only be further assessed by archaeological test excavation.

These potential Aboriginal objects and/or sites may represent various scale camping events and Aboriginal utilisation of the land in the form of hearths and/or stone artefacts.\

The level, nature and extent of potential harm cannot be ascertained until the results of archaeological excavation is undertaken.

5.3. CONSIDERATION OF INTER-GENERATIONAL EQUITY

5.3.1. Cumulative Impact Assessment

The principle of inter-generational equity (IGE) holds that the present generation should make every effort to ensure the health, diversity and productivity of the environment – which includes cultural heritage – is available for the benefit of future generations.

Cumulative impact of any development on Aboriginal sites assesses the extent of the proposed impact on the site and how this will affect both the proportion of this type of Aboriginal site in the area and the impact this destruction will have on Aboriginal cultural heritage values generally in the area. For example, if an artefact scatter is destroyed in the course of a proposed development, how many artefact scatters are likely to remain in that area and how will the destruction of that site affect the overall archaeological evidence remaining in that area? If a site type that was once common in an area becomes rare, the loss of that site (and site type) will affect our ability to understand past Aboriginal land uses, will result in an incomplete archaeological record and will negatively affect intergenerational equity.

As the ACHA identified that further investigation is needed in the form of subsurface archaeological test excavation, the principles of the IGE can only be partially assessed at this stage and further information will be provided following the archaeological test excavation.

This assessment has established that the current subject area does not contain any previously identified Aboriginal sites.

The level, nature and extent of potential harm cannot be ascertained until the results of archaeological excavation is undertaken.

6. AVOIDING AND MINIMISING HARM

The nature, extent and level of harm (indirect or direct) cannot be identified at this stage due to the lack of sufficient information on the presence or absence of subsurface archaeological resources within the subject area. The ACHA concluded that there is potential for subsurface Aboriginal objects and archaeological resources within the underlaying soil landscape and recommends additional investigation in the form of archaeological test excavations. This test excavation is to establish the presence/absence and extent of subsurface archaeological resources that may be present within the subject area.

The nature and complexity of mitigation measures to avoid and/or minimise harm to any Aboriginal objects and archaeological resources that might be identified will be provided in context of the nature, extent and significance of those any resources uncovered during the proposed test excavation program.

7. CONCLUSIONS

This ACHAR was prepared as per the relevant section of the *National Parks and Wildlife Act 1974* (NPW Act) and the *National Parks and Wildlife Regulations 2009* (NPW Reg) and in accordance to the following guidelines:

- *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Department of Environment, Climate Change and Water (DECCW), 2010) (the Consultation Guidelines).*
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (Office of Environment and Heritage 2011) (the Assessment Guidelines).*
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010).*
- *The Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013 (Burra Charter.*

The ACHA process included:

- A comprehensive background research of all available archaeological and cultural heritage information for the subject area in context with the scope of the project.
- Analysis and interpretation of the background research.
- Archaeological field survey of the subject area (to be conducted).
- Consultation with the Registered Aboriginal Parties (RAPs).
- Site inspection and meeting with the RAPs.
- Summarising of results and providing recommendations for the proposed development in relation to Aboriginal cultural heritage and archaeological resources.

The ACHAR concluded that:

- {INSERT CONCLUSIONS}

8. RECOMMENDATIONS

Based on the conclusions of this assessment the proposed activity can proceed under the following recommendations:

{TO BE REVISED FOLLOWING SITE VISIT AND TEST EXCAVATION}

Recommendation 1 – Archaeological Test Excavation

An Archaeological Research Design (ARD) and Methodology should be prepared for the sub-surface Archaeological test excavation must be carried out in XX of the subject area

An Archaeological Research Design (ARD) and Methodology should be prepared for the sub-surface investigation of the identified landscape features and their potential for retaining Aboriginal objects and archaeological resources. The purpose of the archaeological test excavation is to confirm the presence or absence and potential extent of Aboriginal objects and archaeological resources within the subject area.

The archaeological test excavation must be undertaken according to the developed ARD and with the participation of the nominated Aboriginal RAPs and appropriately qualified archaeologists. The ARD must be developed in line with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010) (the Code of Practice).

The results of the test excavations must be incorporated into the ACHAR or addendum document and supplied to the project RAPs for comment in accordance with *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Department of Environment, Climate Change and Water* (DECCW), 2010) (the Consultation Guidelines).

Recommendation 2 – Aboriginal Cultural Heritage Induction

It is recommended that induction materials be prepared for inclusion in site inductions for any contractors working at the subject area. The induction material should include an overview of the types of sites to be aware of (i.e. artefact scatters or concentrations of shells that could be middens), obligations under the NPW Act, and the requirements of an archaeological finds' procedure (refer below). This should be prepared for the project and included in any site management plans.

The induction material may be paper based, included in any hard copy site management documents; or electronic, such as "PowerPoint" for any face to face site inductions.

Recommendation 3 – Archaeological Chance Find Procedure

Although considered highly unlikely, should any archaeological deposits be uncovered during any site works, a procedure must be implemented. The following steps must be carried out:

1. All works stop in the vicinity of the find. The find must not be moved 'out of the way' without assessment.
2. Site supervisor, or another nominated site representative must contact either the project archaeologist (if relevant) or DPC to contact a suitably qualified archaeologist.
3. The nominated archaeologist examines the find, provides a preliminary assessment of significance, records the item and decides on appropriate management, in conjunction with the RAPs for the project. Such management may require further consultation with DPC, preparation of a research design and archaeological investigation/salvage methodology and preparation of AHIMS Site Card.
4. Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required, and further archaeological investigation undertaken.
5. Reporting may need to be prepared regarding the find and approved management strategies. Any such documentation should be appended to this ACHAR and revised accordingly.
6. Works in the vicinity of the find can only recommence upon relevant approvals from DPC.

Recommendation 4 – Human Remains Procedure

In the unlikely event that human remains are uncovered during any site works, the following must be undertaken:

1. All works within the vicinity of the find immediately stop.
2. Site supervisor or other nominated manager must notify the NSW Police and DPC.
3. The find must be assessed by the NSW Police, and may include the assistance of a qualified forensic anthropologist.
4. Management recommendations are to be formulated by the Police, DPC and site representatives.
5. Works are not to recommence until the find has been appropriately managed.

Recommendation 5 – RAP Consultation

A copy of the final ACHA must be provided to all project RAPs. Ongoing consultation with RAPs should occur as the project progresses, to ensure ongoing communication about the project and key milestones, and to ensure the consultation process does not lapse, particularly with regard to consultation should the CFP be enacted.

9. BIBLIOGRAPHY

Attenbrow, V. 2002. *Sydney's Aboriginal Past.* University of New South Wales Press, Sydney: Australia.

Attenbrow, V. 2010. *Sydney's Aboriginal Past, 2nd Edition,* University of New South Wales Press, Sydney: Australia.

Biosys, 2018. *Mamre South State Significant Development Application. Statement of Heritage Impact*.

Department of Environment, Climate Change and Water NSW (DECCW) *2010 Aboriginal cultural heritage consultation requirements for proponents 2010: Part 6 National Parks and Wildlife Act 1974*, Department of Environment, Climate Change and Water NSW.

DECCW 2010 *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales: Part 6 National Parks and Wildlife Act 1974*, Department of Environment, Climate Change and Water NSW.

DECCW 2010 *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in New South Wales: Part 6 National Parks and Wildlife Act 1974,* Department of Environment, Climate Change and Water NSW.

Dominic Steele Consulting Archaeology (DSCA) 2010. *Aboriginal and non-Aboriginal Cultural Heritage Impact Assessment, LOGOS Kemps Creek Logistics Project.*

Flynn, M 1997. *Holroyd history and the Silent Boundary Project*, Holroyd City Council.

ICOMOS, 2013. *The Burra Charter.*

JMCHM, 2005. *Archaeological testing and salvage excavation at Discovery Point, Site #45-5-2737, in the former grounds of Tempe House*.

MacLaurin, ECB. 1966. 'Fitzgerald, Richard (1772–1840)', *Australian Dictionary of Biography*, National Centre of Biography, Australian National University.

Nanson, GC, Young, RW and Stockton, ED 1987, Chronology and palaeoenvironment of the Cranebrook Terrace, near Sydney, containing artefacts more than 40,000 years old, *Archaeology in Oceania*, vol. 22, pp. 72-78.

Ngara Consulting Pty Ltd, 2003. *Archaeological Assessment of Aboriginal Heritage: Reservoir Entry Lands (AHIMS#102059)*, Prospect. Unpublished report to Conybeare and Morrison.

Tench, W. 1789. *A Narrative of the Expedition to Botany Bay,* p. 53. Cited in Flannery, 2012. *Watkin Tench: 1788,* The Text Publishing Company, Melbourne: Australia.

Tindale, NB. 1974. *Aboriginal Tribes of Australia. Their Terrain, Environmental Controls, Distribution, Limits and Proper Names.* ANU Press, Canberra: Australia.

DISCLAIMER

This report is dated 29 January 2021 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd **(Urbis)** opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of TAFE NSW **(Instructing Party)** for the purpose of an Aboriginal Cultural Heritage Assessment **(Purpose)** and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

In preparing this report, Urbis was required to make judgements which may be affected by unforeseen future events, the likelihood and effects of which are not capable of precise assessment.

All surveys, forecasts, projections and recommendations contained in or associated with this report are made in good faith and on the basis of information supplied to Urbis at the date of this report, and upon which Urbis relied. Achievement of the projections and budgets set out in this report will depend, among other things, on the actions of others over which Urbis has no control.

In preparing this report, Urbis may rely on or refer to documents in a language other than English, which Urbis may arrange to be translated. Urbis is not responsible for the accuracy or completeness of such translations and disclaims any liability for any statement or opinion made in this report being inaccurate or incomplete arising from such translations.

Whilst Urbis has made all reasonable inquiries it believes necessary in preparing this report, it is not responsible for determining the completeness or accuracy of information provided to it. Urbis (including its officers and personnel) is not liable for any errors or omissions, including in information provided by the Instructing Party or another person or upon which Urbis relies, provided that such errors or omissions are not made by Urbis recklessly or in bad faith.

This report has been prepared with due care and diligence by Urbis and the statements and opinions given by Urbis in this report are given in good faith and in the reasonable belief that they are correct and not misleading, subject to the limitations above.

APPENDIX A BASIC AND EXTENSIVE AHIMS SEARCH RESULTS

APPENDIX B REGISTERED ABORIGINAL PARTY CONSULTATION LOG

APPENDIX C REGISTERED ABORIGINAL PARTY CONSULTATION DOCUMENTATION

URBIS