Aboriginal and non-Aboriginal Cultural Heritage Impact Assessment

LOGOS Kemps Creek Logistics Project

Lot 1, DP 104958, 708 Mamre Road, Kemps Creek

Proposed Industrial Development

Report to

PJEP Environmental Planning on behalf of

LOGOS Property

Dominic Steele Consulting Archaeology

(Draft Version 4) 12 August 2010

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1.0 Introduction

1.1 Background

This report has been prepared for *PJEP Environmental Planning* on behalf of *LOGOS Property*. It presents the results of a combined *Aboriginal and non-Aboriginal Cultural Heritage Impact Assessment* that has been completed to inform a concept plan and a concurrent project application currently being finalised for submission to the *NSW Department of Planning* (DoP) and *Penrith City Council* (Council) for the proposed future industrial development of an approximately 52 ha parcel of land located at 708 Mamre Road, Kemps Creek, NSW.

The site is situated on the corner of Mamre Road and Bakers Lane. Comprising Lot 1 in DP 104958, the study area is broadly rectangular in shape, measures approximately 1000m by 500m, and is bounded by Mamre Road to the west, Bakers Lane to the north, and by private rural-residential properties to the south and east.

The general location of the study area is indicated in **Figure1.1**. The recent aerial photographs presented here as **Figures 1.2** and **1.3** illustrate the current nature of the property and its surrounding landscape context.

The development proposal (Major Project 10_0061 and 10_0062) is being assessed under Part 3A (Section 75F and 75M) of the *Environmental Planning & Assessment Act 1979*.

This report addresses the Aboriginal and non-Aboriginal archaeological and cultural heritage issues that form a part of the DoP *Director-General's Requirements* (DGR's) that have been developed to guide the *Concept Plan* (CP) and *Environmental Assessment* (EA) in support of the project application. The proposed industrial development is to be known as the 'LOGOS Estate'.

The objectives of this study have been to identify, in partnership with the Aboriginal community, potential Aboriginal and non-Aboriginal (hereafter 'European') archaeological and cultural heritage opportunities and constraints at this stage of the planning process that can be purposively used by all stakeholders to direct how the proposed development of the land can be best achieved in a manner that will avoid adversely impacting upon the Aboriginal and European archaeological and cultural heritage values of the place.

1.2 Director General's Requirements

The DGR's Key Issues for the project (issued by the DoP on 6 May 2010) include the requirement for the following heritage policy documents to be addressed in order to assist in the development of the LOGOS Estate EA and CP:

Aboriginal Heritage: *'Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (2005)*'*.[1]

'NSW Heritage Manual' (NSW Heritage Office).

Non-Aboriginal Heritage: *'The Burra Charter' (The Australian ICOMOS Charter for Places of Cultural Significance)'*.[2]

1.3 The LOGOS Estate Development Proposal

Two tenants are currently finalising major logistics developments on the proposed LOGOS Estate site. These comprise:

- *DHL* for approximately 145,880 sqm of land.
- *Metcash* for approximately 80,386 sqm of land.

A Masterplan has been developed for the LOGOS Estate site that outlines the key characteristics of the proposal for the two major tenants. This is illustrated in **Figure 1.4** and combines Project 1 (*DHL* Campus Concept in proposed *Lot 1*) and Project 2 (*Metcash* Concept Overview in proposed Lot 2) as illustrated in **Figure 1.5**.

- The *DHL* Campus Concept Plan is illustrated in **Figure 1.6**.
- The proposed *Metcash* site layout within the subject site is illustrated in **Figure 1.7**.

[1] This document is now superseded by the NSW Department of Environment, Climate Change and Water's 'Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010. Part 6 National Parks and Wildlife Act 1974 (April 2010)'

[2] The Burra Charter has been adopted by Australia ICOMOS which establishes the nationally accepted principles for the conservation of places of cultural significance.

The site has direct access to Mamre Road and Bakers Lane. Mamre Road services the Erskine Park Employment Area that is located less than1 kilometre to the north of the site, and also provides arterial road access to the M4 Motorway and Sydney's orbital motorway network. Bakers Lane provides local access to existing rural and special uses facilities (schools and the Emmaus retirement village etc) in the Kemps Creek area. Bakers Lane is proposed to form the start of the Southern Link Road which forms a key component of the regional road network for the Western Sydney Employment Area.

Although components of the regional road network south of the Sydney Water pipeline are yet to be confirmed, it is likely that a road network will connect to Bakers Lane with the probability that the western section of the southern link road will ultimately follow the alignment of Bakers Lane given the alignment of this road and the current lack of other significant functional corridors situated to the south of this location.

The LOGOS Estate development proposal includes a commitment to facilitate the development of the regional road network south of the Sydney Water pipeline involving the upgrading of Bakers Lane to a dual carriageway (4 lanes) to provide greater amenity for the road's envisaged future arterial status.

To this end, it is proposed to develop the site conservatively according to the envisaged future road network that will include 20 metre setbacks to both Mamre Road and Bakers Lane, and an additional 10 metre allowance for future road reserve widening of Bakers Lane to provide for a 40 metre corridor for this road.

It is proposed to subdivide the site into industrial subdivisions of varying dimensions. Each will be levelled and developed using a combination of buildings, hardstand areas and associated access roads and car parking facilities.

The proposal indicates that site topography will not be a constraint to the implementation of the project. Cut and fill estimates[3] demonstrate the site can be developed with landscaped batters to Bakers Lane and Mamre Road, removing the need for large retaining walls to be constructed along these key frontages. A bulk earthworks plan that has been developed for the property is illustrated in **Figure 1.8**.

[3] It is estimated that final built levels on the site will vary between RL 53.0m and RL 63.0m. Achieving final landform will require earthworks with maximum cut depth of c.22m and maximum fill depth of c.15m.

The site contains minimal existing vegetation, as it was cleared for farming purposes during the late nineteenth and early twentieth century.[4]

1.4 Statutory Context and Controls

1.4.1 Statutory Protection for Aboriginal Cultural Heritage

Two principal pieces of legislation provide automatic statutory protection for Aboriginal heritage and the requirements for its management in New South Wales: These are:

- The *National Parks and Wildlife Act* (1974 as amended); and
- The *Environmental Planning and Assessment Act* (1979 as amended).

The principal implications of these statutory controls (specifically the NPW Act) within the context of the current Aboriginal archaeological and cultural heritage assessment component of the project are outlined below.

The *National Parks and Wildlife Service* (NPWS) is the principal government agency with responsibility for the protection and management of Aboriginal archaeological sites and cultural heritage values. It now comprises an administrative branch of the *Department of Environment, Climate Change and Water* (DECCW).

National Parks and Wildlife Act (1974)

The *National Parks and Wildlife Act 1974* (NPW Act) has recently been amended. However, a number of changes that form a part of the *National Parks and Wildlife Amendment Act 2010* are not yet in force. It is expected that some of the amendments summarised below will come into effect in October 2010.

- The NPW Act provides statutory protection for all Aboriginal 'Sites' or 'Objects' (consisting of any material evidence of the indigenous occupation of NSW) under Section 90 of the Act, and for 'Aboriginal Places' (areas of cultural significance to the Aboriginal community) under Section 84 of the Act.

[4] The Section 149 Planning Certificate issued for the site by Penrith City Council on 19/11/2007 (Certificate No: 07/04580) confirms the land does not include or comprise critical habitat, is not in a conservation area, and no items of environmental heritage are situated on the property.

- Section 5 of the Act defines an 'Aboriginal Object' as: '*any deposit, object or material evidence (not being a handicraft for sale) relating to Indigenous and non-European habitation of the area that comprises New South Wales, being habitation both prior to and concurrent with the occupation of that area by persons of European extraction, and includes Aboriginal remains*'.
- Prior to recent amendments to the Act (see below), Section 90 of the Act stated that it was an offence to knowingly destroy, deface, damage or desecrate, or cause or permit the destruction, defacement, damage or desecration of, an Aboriginal object or Aboriginal place, without prior written consent from the Director-General of the NPWS.
- The 2010 Amendment Act amends the Aboriginal heritage provisions of the NPW Act to create a system of strict liability whereby anyone who damages or destroys an Aboriginal object or Aboriginal place is automatically guilty of an offence. As a defence to this, a system of due diligence is being created if a development proponent demonstrates that they have exercised due diligence in investigating the likelihood of Aboriginal heritage being impacted upon by their proposed activity, they are not guilty of an offence. It is still an offence to knowingly impact an Aboriginal object or Aboriginal place and greater penalties now apply to that offence.
- The protection provided to Aboriginal sites/objects applies irrespective of the level of their significance or issues of land tenure. However, areas are only gazetted as Aboriginal Places if the Minister is satisfied that sufficient evidence exists to demonstrate that the location was and/or is of special significance to Aboriginal culture.[5]
- Section 91 of the Act requires that the DECCW Director-General be notified of the location of any newly identified Aboriginal site or object which is then registered with the NSW DECCW on the *Aboriginal Heritage Information Management Service* (AHIMS) database.[6]
- As the administrator of the NPW Act, the DECCW has issued guidelines outlining the preferred structure for archaeological investigations and reporting.[7] More recently, it has also

[5] The term 'Aboriginal Place' is a statutory term. It may or may not contain Aboriginal 'Sites' or 'Objects'.

[6] AHIMS has replaced the previous NPWS Aboriginal Sites Register.

released requirements for Section 87 and Section 90 Permit Applicants under Part 6 of the NPW Act as noted above. DECCW have also drafted Regulations and a Due Diligence Code of Practice to guide how this new system will work that will come into effect shortly.

In summary, NPWS Permits and Consents are only granted where sufficient information is supplied in written form to the Director-General of the DECCW from Aboriginal stakeholders, archaeologists and developers that demonstrate accuracy and transparency in the site assessment process and the good faith intended by each of these parties in applying for consent to either move, disturb and/or destroy statutorily protected objects.

Best practice advocates that development impact to documented and/or potential sites of Aboriginal cultural heritage sensitivity be avoided where practicable and/or mitigated at the minimum, and that all decisions made for either course of action be made consequent to direct guidance provided by Aboriginal stakeholders.

Environmental Planning and Assessment Act (1979)

The EP&A Act, administered by the *NSW Department of Planning*, provides planning controls and requirements for environmental assessments in the development approval process. It also establishes the framework for Aboriginal heritage values to be formally assessed in the land-use planning and development consent processes.

This Act has three main parts of direct relevance to Aboriginal cultural heritage. These are:

- Part 3 that governs the preparation of planning instruments;
- Part 4 which relates to the development assessment process for local government (consent) authorities; and
- Part 5 relates to activity approvals by governing (determining) authorities.

Part 3 of the EPA Act deals primarily with development planning in which sites and places sacred or significant to Aboriginal communities are to be assessed and are to be taken into consideration in initial studies. The DECCW (and more recently the *NSW Department of Planning*) has produced

[7] NSW National Parks and Wildlife Service 1997. 'Standards Manual for Archaeological Practice in Aboriginal Heritage Management' in the Aboriginal Cultural Heritage Standards and Guidelines Kit (Draft).

guidelines on the preparation of planning instruments that explicitly list Aboriginal sites and places of significance as values which should be assessed as part of initial planning studies.

Part 4 of the EPA Act deals with decisions made within the context of new development applications. The DECCW is an approving body under Part 5 of the EPA Act and will require formal consideration of a variety of cultural and community factors.

These may variously include potential impacts to significant anthropological, archaeological, and cultural and historical values, and will typically be addressed through the completion of environmental studies where appropriate including Heritage Assessments, Heritage Impact Studies, and Review's of Environmental Factors.

Section 75F of the EP&A Act (1979) no longer requires the development proponent to obtain NPWS S87 or S90 Permits. The DoP however can require these to be sought as a condition of development consent as deemed appropriate.

1.4.2 Statutory Protection for European Cultural Heritage

NSW Heritage Act (1977)

The primary purpose of the *NSW Heritage Act 1977* (as amended) is to protect, conserve and manage the environmental heritage of the State. Environmental heritage is broadly defined under Section 4 of the Act as consisting of the following items:

> *those places, buildings, works, relics, moveable objects, and precincts, of State or Local heritage significance.'*

Amendments to the Act made in 2009 have changed the definition of an archaeological 'relic' whereby a 'relic' is now referred as an archaeological deposit, resource or feature that has assessed heritage significance at a Local or State level.

The definition is no longer based primarily on age (previously a 'relic' was described as comprising any item older than 50 years of age). This significance based approach to identifying 'relics' is consistent with the way other heritage items such as buildings, works, precincts or landscapes are identified and managed in NSW.[8]

[8] Heritage Branch. December 2009. 'Assessing Significance for Historical Archaeological Sites and Relics'. NSW Department of Planning.

While a number of the archaeological provisions of the Act have been streamlined, the Act nevertheless retains the core principals and objectives that require anyone proposing to disturb land to obtain a permit from the *NSW Heritage Council* (under Section 140 or Section 160 of the Act) if it is known or suspected that 'relics' of significance may be disturbed, moved or destroyed by future land alterations.

1.5 Report Scope and Objectives

The objectives of the current study have been to prepare a combined *Aboriginal and non-Aboriginal Cultural Heritage Impact Assessment* to inform the LOGOS Estate development proposal according to the following:

1.5.1 Aboriginal Consultation

- To initiate consultation with the local Aboriginal community with regards to the proposed development of the subject land.
- To incorporate the views, possible concerns, and management recommendations provided by the local Aboriginal community into the current study.

1.5.2 Background Research and Assessment

- To undertake background research into the location and nature of any previously recorded Aboriginal archaeological sites (and/or areas of potential Aboriginal cultural heritage sensitivity) known to be present either within the boundaries of the study area or in immediately adjacent areas.[9]
- To provide on the basis of the above Aboriginal archaeological and cultural heritage review, a predictive model outlining the potential Aboriginal archaeological sensitivity of the site and an evaluation of the possibility for as yet any unrecorded Aboriginal archaeological sites (and/or areas of likely sensitivity) to occur within the study area.
- To undertake a search of relevant national, state and local government heritage registers and listings into the location (and nature) of any previously recorded European archaeological sites

[9] This background included a search of the DECCW AHIMS Aboriginal Sites Register and an evaluation of previous Aboriginal cultural heritage assessments undertaken in the local Kemps Creek and Erskine Park landscapes.

or items that may be present within the boundaries of the study area. These include the National Heritage List, the Register of the National Estate, the State Heritage Register, the National Trust of Australia, and the Penrith City Council 2008 Draft Local Environmental Plan.

1.5.3 Site Inspection and Evaluation

- To outline the rationale and methods to be employed during the site inspection(s) and recording of the study area.
- To provide a summary of the observations recorded during the site inspection(s), and an evaluation of the results of the fieldwork.

1.5.4 Analysis, Evaluation and Report

- To prepare a combined *Aboriginal and non-Aboriginal Cultural Heritage Impact Assessment* that includes the outcomes of consultation undertaken with the local Aboriginal community, an evaluation of the results of the site inspection(s), and a discussion of the Aboriginal and European archaeological and cultural heritage management conclusions that have been developed to guide the development proposal.
- To provide appropriate Aboriginal and European cultural heritage management options and recommendations directed to establish a suitable framework for the ongoing protection (and/mitigation measures) of any documented and/or potential Aboriginal and European archaeological sites (or areas of potential cultural heritage sensitivity) that may be identified relative to the proposed LOGOS Estate development.

1.6 Aboriginal Community Consultation

The *NSW Aboriginal Land Rights Act 1983*, administered by the *NSW Department of Aboriginal Affairs*, establishes the *NSW Aboriginal Land Council* (NSWALC) and *Local Aboriginal Land Council's* (LALCs). The Act requires these bodies to:

- Take action to protect the culture and heritage of Aboriginal person's in the Local Aboriginal Land Council's area, subject to any other law.

- To promote awareness in the community of the culture and heritage of Aboriginal persons in the Local Aboriginal Land Council's area.[10]

The proposed LOGOS Estate site falls within the administrative boundaries of the *Deerubbin Local Aboriginal Land Council* (DLALC). A number of additional western Sydney Aboriginal community organisations also claim traditional and historical links within the greater Sydney landscape of which the Kemps Creek site forms a part.

Currently, at-least five other Aboriginal community organisations (excluding the DLALC) are generally consulted with where Aboriginal heritage issues form a part of development applications and/or are contingent with notable land-use modification circumstances in the *Penrith City Council* LGA. These organisations comprise the following:

- The Darug Custodian Aboriginal Corporation (DCAC).
- The Darug Tribal Aboriginal Corporation (DTAC).
- The Darug Aboriginal Cultural Heritage Assessments (DACHA).
- Darug Land Observations (DLO).
- Yarrawalk (a division of Tocomwall Pty Ltd).

The (now) *Department of Environment and Climate Change and Water* (DECCW) have produced a series of documents that have been progressively developed since 2005 to guide best-practice Aboriginal cultural heritage management approaches, protocols, and procedures in development circumstances comparable to the current LOGOS Estate development project. These include the following:

- NSW National Parks & Wildlife Service. Draft Guidelines for Aboriginal Heritage Impact Assessment. Prepared by NSW National Parks & Wildlife Service with Additional Text by Kristal Buckley, Context Pty Ltd. Nd.
- Department of Environment and Conservation (DEC). National Parks and Wildlife Act 1974: Part 6 Approvals. Interim Community Consultation Requirements for Applicants. December 2004.

[10] Aboriginal Land Rights Act 1983, s52(1) (m).

- Department of Environment and Climate Change (DECC). Aboriginal Cultural Heritage. Draft Community Consultation for Proponents. Part 6 National Parks and Wildlife Act 1974. May 2009.
- Department of Environment, Climate Change and Water (DECCW). Aboriginal Cultural Heritage Consultation Requirements for Proponents. Part 6 National Parks and Wildlife Act 1974. April 2010.

The latter document now supersedes all previous guidelines and requires the need to extend the opportunity for any Aboriginal individual or group to express an interest in being involved in the assessment process and to have due input in decision making where DECCW s.87/s.90 Permits are likely to be required. The DECCW guidelines suggest this outcome would be best facilitated through public advertisement. The current requirements also indicate it would be sufficient for development proponent to provide written notification to the organisations listed below at the preliminary phase of development planning process:

- The relevant DECCW (Environmental Protection and Regulatory Group - EPRG).
- The relevant Local Aboriginal Land Council (s).
- The Registrar, Aboriginal Land Rights Act 1983, for a list of Aboriginal owners.
- The National Native Title Tribunal for a list of registered native title claimants, native title holders and registered Indigenous Land Use Agreements.
- The Native Title Services Corporation Limited (NTSCORP Limited).
- The relevant Local Council(s).

The notification would set out the details of the proposal and invite registrations from interested groups or individuals. A closing date for registration of interest would also be included. The time allowed would reflect a consideration of the project's size and complexity, but in most cases would allow at least 10 working days for interested parties to respond.

The proponent would record all registrations in writing before the closing date and present and/or provide the proposed methodology for the cultural and archaeological assessment to the registered stakeholders. The stakeholders would then be provided with a reasonable time (at least 21 days) to review and provide feedback to the proponent, including the identification of issues/areas of cultural significance that might affect, inform or refine the methodology'.

In accordance with these requirements (and the DoP DGR's referred to in **Section 1.2**), Dominic Steele of DSCA contacted the organisations listed above (in correspondence forwarded from DSCA dated 19 May 2010) and the nature and scope of the project was discussed. Available site plans and other pertinent background information were also forwarded to each of these organisations at that time.

The *Office of the Registrar* subsequently provided advice for the project as indicated in the appended correspondence (see **Appendix 1**). A search of the *Register of Aboriginal Owners* relative to the subject site indicates the study area does not have any registered Aboriginal owners pursuant to Division 3 of the *Aboriginal Land Rights Act 1983.*

The DECCW (see **Appendix 2**) provided advice regarding other possible Aboriginal community groups and individuals that may wish to express and interest in the project.

A public notification for the project was placed with the *Koori Mail* on 2 June 2010 (see **Appendix 4**). All responses from this public notification (seeking request for registration of interest in the project and input into the assessment process) were duly logged as per DECCW requirements.

No additional responses were received by DSCA from any other organisations that were formally informed about the proposal as a result of the DSCA May 2010 correspondence and the subsequent July 2010 public notification.

A preliminary archaeological (scientific) inspection of the LOGOS Estate site was undertaken by DSCA (represented by Mr Dominic Steele and Mr Paul Irish) on 15 June 2010. This initial inspection was carried out in order to evaluate the existing nature and condition of the property, the landforms potentially present within the study area, and the possible Aboriginal archaeological constraints (surface visibility conditions and limitations etc) that may be anticipated to be evidence that could affect effective survey coverage and the subsequent recognition and assessment of any documented and potential Aboriginal archaeological sites.

One isolated Aboriginal flaked stone artefact (coded here as LOGOS IF1) was located on the margins of a small excavated dam at the eastern boundary of the property during this preliminary June 2010 site visit and review undertaken by DSCA. This item is described, illustrated and evaluated in **Sections 4.0** and **5.0** of this report.

A series of independent Aboriginal cultural heritage inspections of the site were subsequently undertaken after this first DSCA field evaluation by the above Aboriginal community organisations during the period spanning 19 June to 26 June as follows:

- Darug Land Observations – 19 June 2010 – Mr Gordon Workman.
- Yarrawalk – 19 June 2010 – Mr Scott Franks.
- Darug Aboriginal Cultural Heritage Assessments – 21 June 2010 – Ms Celestine Everingham and Mr Gordon Morton.
- The Deerubbin Local Aboriginal Land Council – 25 June – Mr Steve Randall.
- Darug Custodian Aboriginal Corporation – 25 June – Ms Leanne Watson.
- Darug Tribal Aboriginal Corporation – 26 June 2010 – Mr John Reilly

A supplemental site visit was undertaken by DSCA on 15 July 2010 following the completion of these Aboriginal community organisation field surveys. This supporting site inspection was carried out in order:

- To prepare a comprehensive Aboriginal and European cultural heritage assessment of the LOGOS Estate site as reported here relative to the development proposal.
- To best correlate, and reconcile where possible, the various findings, conclusions and recommendations provided by the above Aboriginal groups following their respective site visits in June 2010. This advice was variously provided to DSCA on behalf of *PJEP Environmental Planning* in written form and/or via phone and email correspondence. This information is reviewed and evaluated in **Sections 4.0** and **5.0** of this document.

A draft of this report has been forwarded to each of the above Aboriginal community organisations for review and comment. Each group has also been invited to provide a *Cultural Heritage Statement* regarding their respective views on the results of the completed site inspections and the archaeological (scientific) conclusions and management recommendations documented here.

The statements that have been received to date from these groups are appended to this report. It is intended that the statements that are still in preparation will be forwarded directly to *LOGOS Property*,

PJEP Environmental Planning, Council and the DoP to supplement this document upon their respective completions.[11]

1.7 Report Outline

This *Aboriginal Archaeological & non-Aboriginal Cultural Heritage Assessment* of the LOGOS Estate site at 708 Mamre Road, Kemps Creek, presents the following:

- An introduction to the project (**Section 1.0**).
- A review of the environmental context of the study area including its geology, topography, hydrology, vegetation and soils. This section also includes a summary of how existing landscape conditions can often assist in the development of Aboriginal archaeological/cultural heritage sensitivity predictive models that can be purposively used as a management tool in planning studies within new development circumstances. A description and evaluation of the historical development and existing condition of the property is also presented in this section. This was completed in advance of the physical inspections of the site (**Section 2.0**).
- A review of the results of previous Aboriginal heritage studies undertaken in the local landscape, and a predictive model of the likely Aboriginal archaeological evidence that may be present/survive within the boundaries of the subject site. This section also includes a summary description and assessment of a now vacant and derelict early twentieth century homestead and former garden that is present on the Kemps Creek property (**Section 3.0**).
- A summary of the observations recorded during the June and July 2010 site visits, and the results of these field inspections (**Section 4.0**).
- The conclusions that have been developed for the current project that are based upon the results of the above background Aboriginal and European research, the results of the June and July 2010 site inspections and evaluations, and the outcomes of the ongoing consultation undertaken with the local Aboriginal community. This summary is presented in the form of an

[11] The DACHA, the DCAC, the DLO, and Yarrawalk have provided written responses on the results of their independent inspections and evaluations prepared for the LOGOS State site project to date as indicated in Appendices 7 to 10. It is understood the DLALC and DTAC will have their Statements available shortly for submission.

Aboriginal and non-Aboriginal Heritage Impact Statement relative to the LOGOS Estate development proposal (**Section 5.0**).

- The provision of Aboriginal and European cultural heritage management recommendations and strategies relative to the proposed future development of the subject site (**Section 6.0**).
- Sources and references cited in this report (**Section 7.0**).
- Supporting documentation including the *Cultural Heritage Statements* that have been prepared (and received to date) for the project by the local Aboriginal community (**Appendices**).

1.7 Authorship and Acknowledgements

This report has been written by Dominic Steele of *Dominic Steele Consulting Archaeology* (DSCA) with valuable assistance provided by Mr Paul Irish (DSCA Associate).

The site plans presented in **Section 1.0** of this report as **Figures 1.4** to **1.7** and **1.9** have been provided by *PJEP Environmental Planning* on behalf of *LOGOS Property*. All other images presented in this report have been prepared by DSCA or as otherwise referenced.

The background environmental information presented in **Section 2.0** of this report is supported by geotechnical information that has been provided by *Pells Sullivan Meynink Engineering Consultants Pty Ltd* (June 2010).

The results of a search of pertinent European heritage registers and listings into the potential location and nature of any documented European archaeological sites or items present within the boundaries of the subject site presented in **Section 3.0** of this report is supported by the research of the former homestead on the property prepared by *Hubert Architects Pty Ltd* in April 2009.[12] The assistance this research has provided in the course of completing this report is duly acknowledged.

The generous advice and time provided by Ms Kerrie Navin of *Navin Officer Heritage Consultants* to assist in reconciling some previous DECCW AHIMS Site Register considerations as reviewed in **Section 3.0** of this report has assisted in the preparation of this document.

[12] NSW State Heritage Inventory (SHI) Form.

The discussion presented in **Section 5.0** concerning the identification and evaluation of a possible Aboriginal scarred tree on the property is supported by information that has been provided by *The Arborist Network (*July 2010). This report is appended (see **Appendix 11**).

DSCA would like to also acknowledge the assistance and advice provided by the following people in the course of preparing this report:

Mr Craig Trimbole	DNC Property Group.
Mr John March	LOGOS Property.
Mr Phil Jones	PJEP Environmental Planning.
Mr Sam Quick	Octavius Consulting Group Pty Ltd.
Mr Kevin Cavanagh	Deerubbin Local Aboriginal Land Council.
Mr Steve Randall	Deerubbin Local Aboriginal Land Council.
Ms Leanne Watson	Darug Custodian Aboriginal Corporation.
Ms Sandra Lee	Darug Tribal Aboriginal Corporation.
Mr John Reilly	Darug Tribal Aboriginal Corporation.
Mr Denis Hardy	Darug Tribal Aboriginal Corporation.
Ms Celestine Everingham	Darug Aboriginal Cultural Heritage Assessments.
Ms Gordon Morton	Darug Aboriginal Cultural Heritage Assessments.
Mr Scott Franks	Yarrawalk.
Mr Gordon Workman	Darug Land Observations.
Mr Mark Hartley	The Arborist Network.
Ms Kerrie Navin	Navin Officer Heritage Consultants.
Mr Shannon Freeburn	DECCW AHIMS Aboriginal Heritage Operations Branch.

Figure 1.1: The Location of the LOGOS Estate Site (Green) in its Local Context (Source: Prospect and Liverpool 1:25,000 Topographic Map).

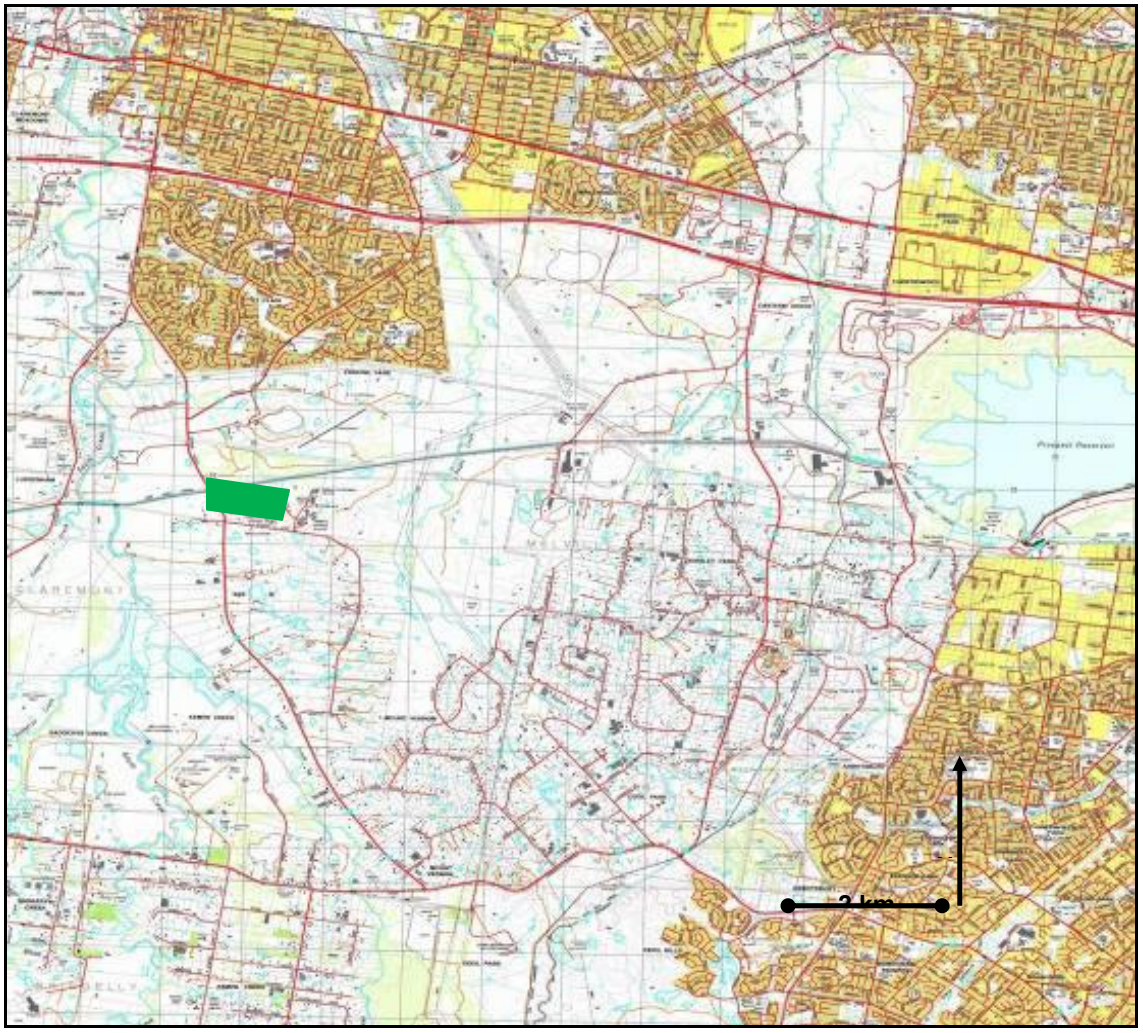


Figure 1.2: An Aerial View of the LOGOS Estate Site (in Red) and its Surrounds (Source: Google Maps 2010).

Figure 1.3: A Detailed View of the Existing Nature and Layout of the LOGOS Estate Site Shaded in Red (Source: Google Maps 2009).

Figure 1.4: LOGOS Estate Layout Masterplan (Source: Axis Architectural 2010).

Figure 1.5: LOGOS Estate Plan Lot 1 and 2 (Axis Architectural 2010).

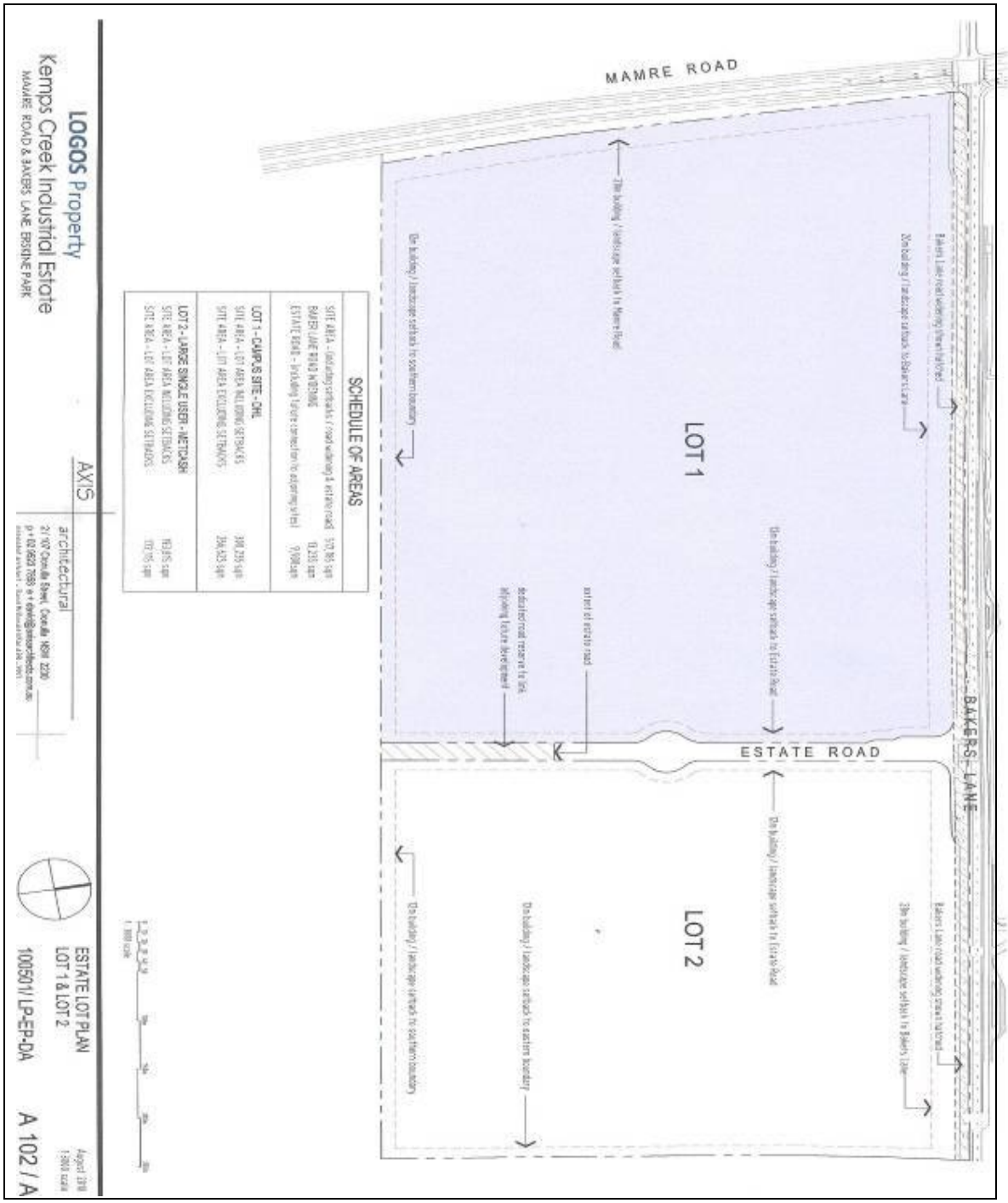


Figure 1.6: Proposed DHL Campus on the LOGOS Estate Site (Lot 1) and Site Data (Source: Axis Architectural 2010).

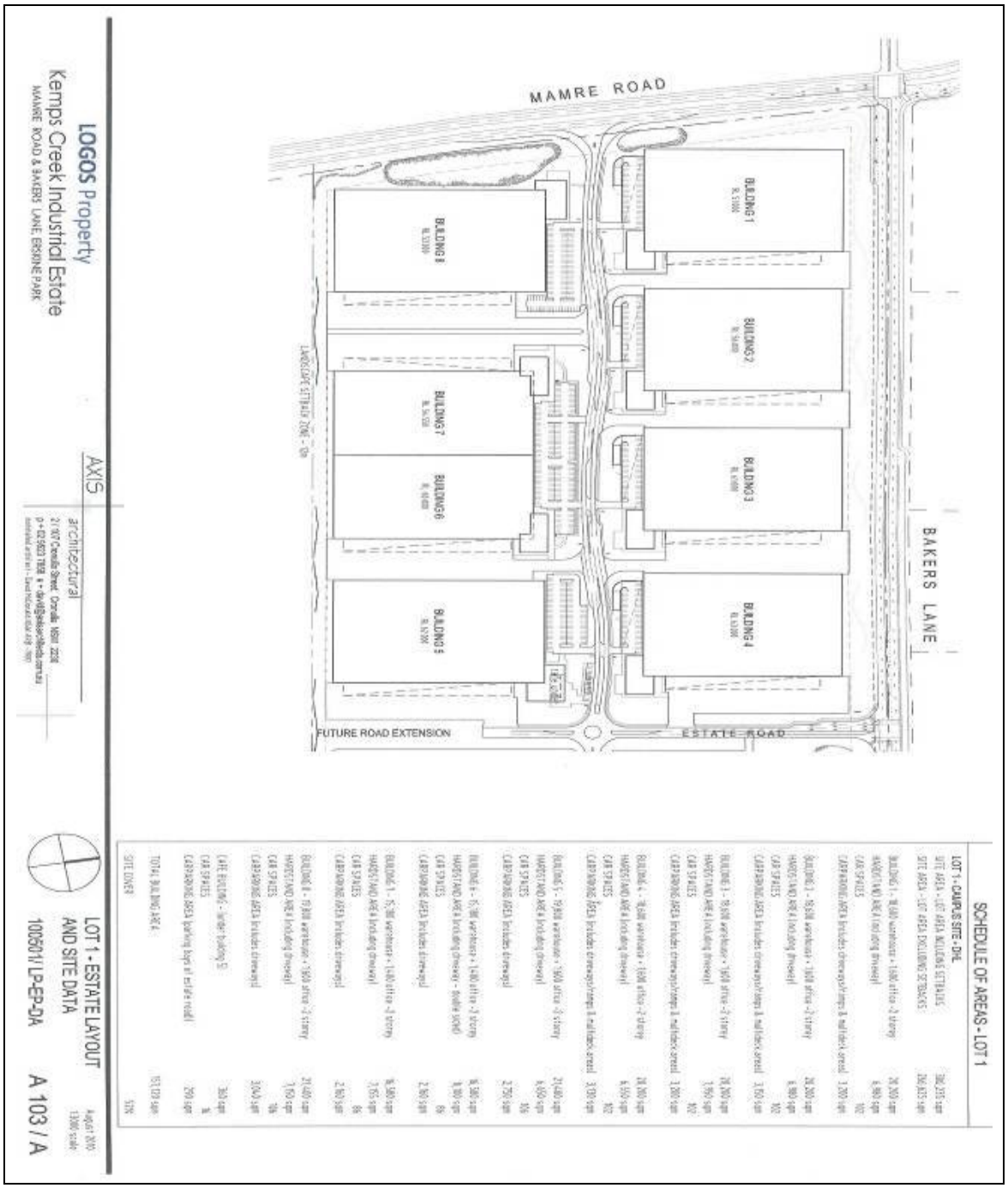


Figure 1.7: Proposed Metcash Layout Plan on the LOGOS Estate Site (Lot 2) and Site Data (Source: Axis Architectural 2010).

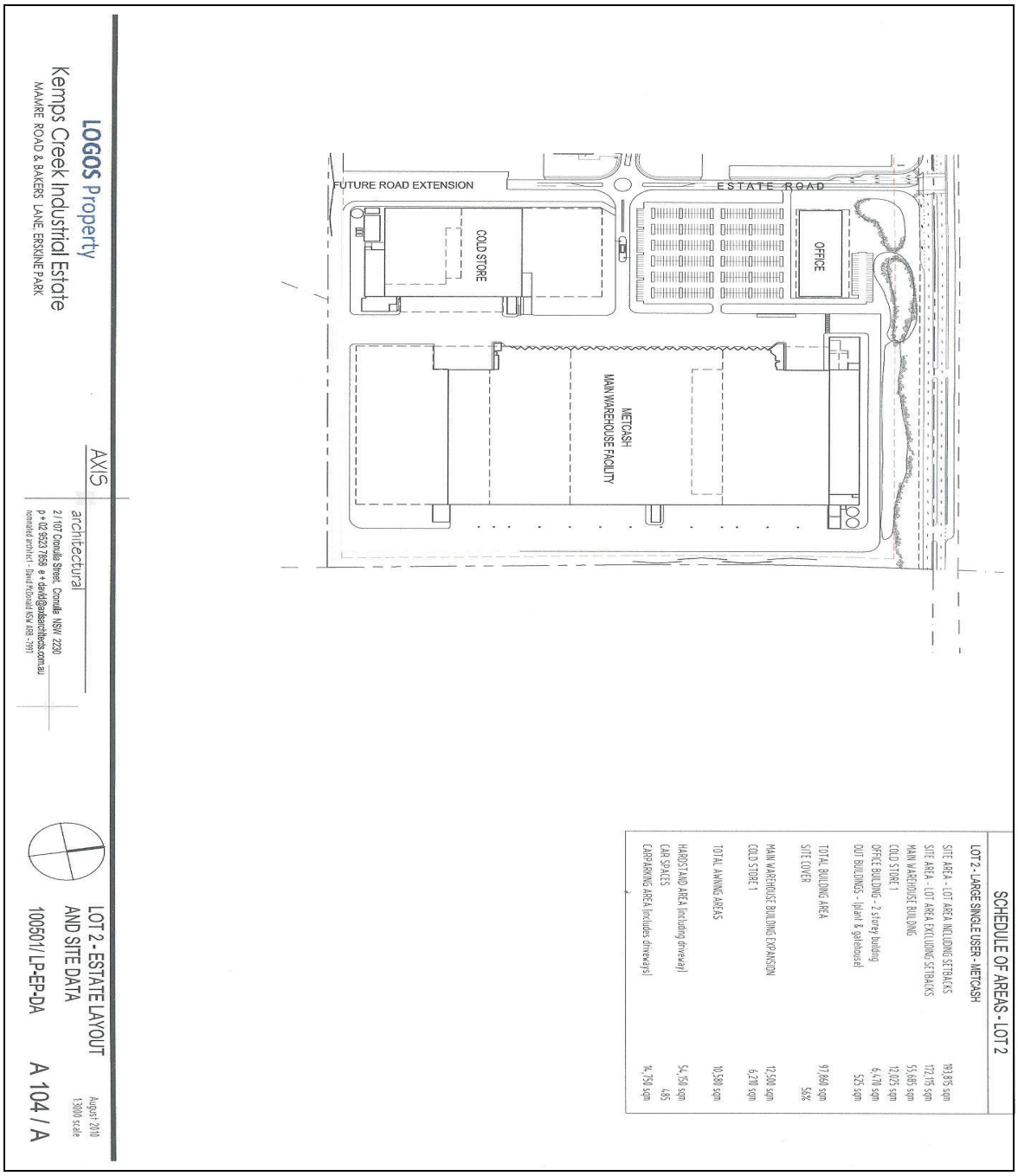
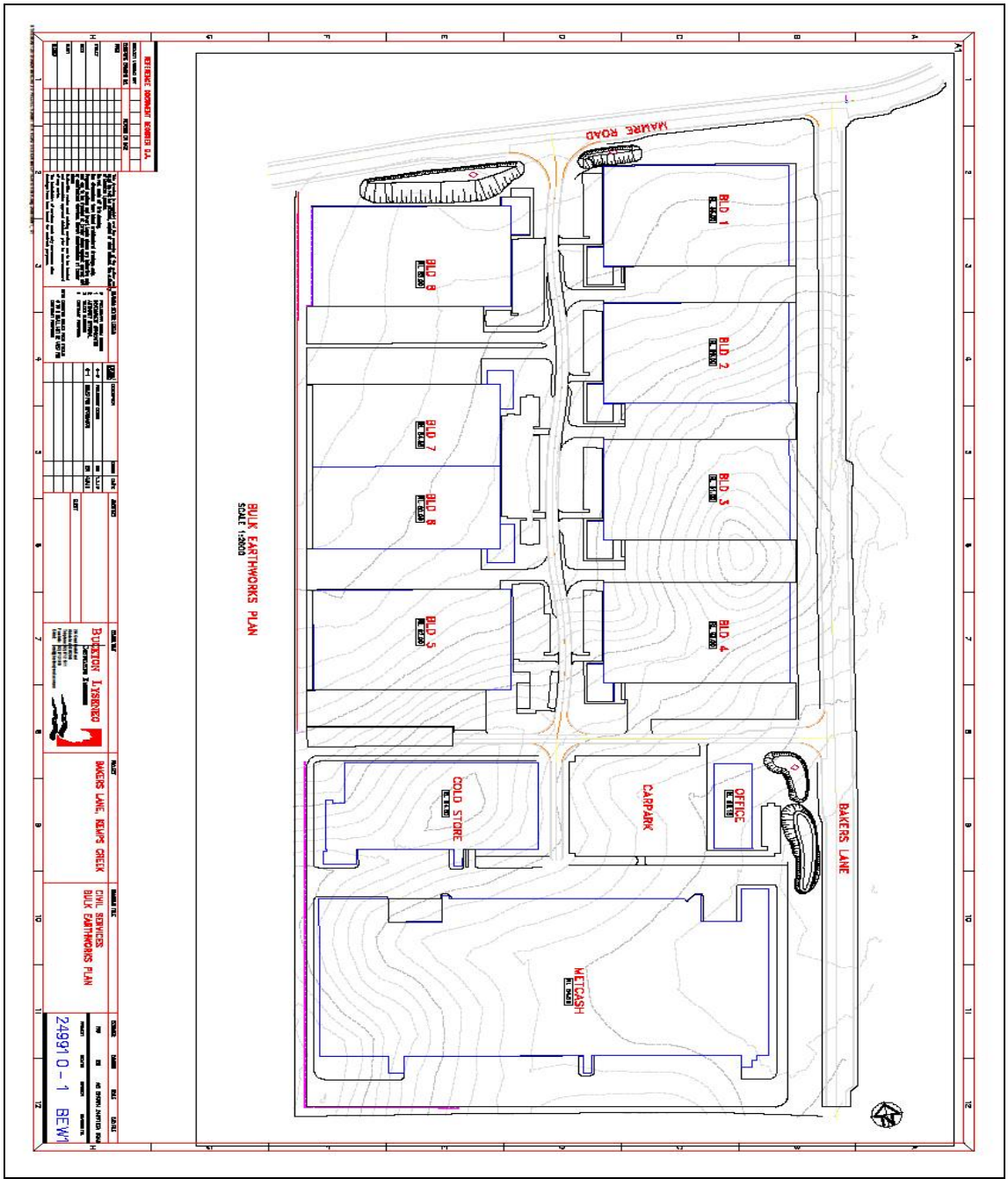


Figure 1.8: Proposed LOGOS Estate Site Bulk Earthworks Plan (Source: Axis Architectural 2010).



2.0 Environmental and Historical Context

2.1 The Environment and Aboriginal Archaeological Patterning

Ongoing archaeological research in the greater Sydney region (see for example Attenbrow 2010 for a useful review and summary) demonstrates how the natural (pre-Contact) environment influenced not only the availability of resources to Aboriginal people in the past, but also largely determines in the present what types of Aboriginal archaeological sites/cultural heritage evidence is likely to be located (and/or survive) when land is assessed in contemporary subdivision and development circumstances.

The past distribution and availability of resources such as drinking water, plant and animal foods, raw materials of stone, wood and vegetable fibre used for tool production and maintenance were all strongly influenced by the nature of soils, the composition of vegetation cover, and the climactic characteristics of any given region. The locations of different site-types (such as open campsites, sheltered habitation and art sites, axe grinding grooves and engravings, and scarred trees etc) that may have originally occurred (and/or now survive) in an area was therefore strongly influenced by such factors as these, along with a range of other associated features which are specific to different land-systems and bedrock geologies.

In addition, the nature and extent to which any given parcel of land has been subject to impacts as a consequence of post-Contact land-use practices (such as vegetation clearance, development, grazing and other agricultural activities etc) will also strongly define what types of Aboriginal archaeological evidence is likely to survive and its likely integrity.

Detailing the environmental context of a study area is therefore an integral procedure necessary for understanding potential past Aboriginal land-use practices, along with predicting potential Aboriginal archaeological site distributions and their possible nature within any given landscape.

The information outlined below (in combination with the results of the background Aboriginal and European archaeological and cultural heritage review presented in **Section 3.0**) is considered to be pertinent to the current assessment of the potential Aboriginal and European archaeological and cultural heritage sensitivity of the LOGOS Estate site relative to the current development proposal.

2.2 Regional Site Context, Geology, Hydrology, Vegetation & Soils

The LOGOS Estate site is located in the western Sydney suburb of Kemps Creek that is situated within the Cumberland Lowland physiographic region that forms a part of the centre of the broader

Sydney Basin. The Cumberland Lowlands are in general terms surrounded by the Hornsby Plateau to the north-east, the Blue Mountains Plateau to the west, and the Woronora Plateau to the south.

The topography of the broader Cumberland Lowlands region is generally characterised by a combination of both low-lying and gently undulating plains, low to moderately steep and rolling hills with occasional ridges and crests, and which are generally underlain by Wianamatta Group Shales. This group of shales is divided into two principal subgroups that comprise the Ashfield Shales and the Bringelly Shales. Bringelly Shale predominates across the Plain, while Ashfield Shale is confined largely to the Plain's margins.

The Cumberland Lowlands are characterized by a dense drainage network of predominantly northward flowing river and creek channels. Few areas across the Cumberland Plain would be in excess of 1km from either a temporary or permanent source of water. Three major creeks drain the Plain. These comprise Ricabys Creek, South Creek, and Eastern Creek. These three watercourses flow into the Nepean-Hawkesbury River and are fed by numerous tributaries and smaller watercourses.

As described in greater detail below, the original (pre-European) vegetation regimes formerly present across large areas of the lands surrounding the subject site have been extensively and progressively cleared as a result of past agricultural activities and ongoing residential and industrial development.

2.3 Local Soil Landscapes, Geology, Hydrology, Vegetation & Soils

The LOGOS Estate site is located along a ridge between Ropes Creek to the east and South Creek to the west. A rough ridge line runs through the centre and southeast of the site with a RL of up to 86m. It slopes down towards the northeast and southwest with the lowest RL of 42m on the southwest boundary of the study area.

The site is located near a boundary between two principal soil landscapes. These comprise the (Residual) Blacktown Soil Landscape located to the west within the vicinity of the lower-lying Mamre Road site frontage, and the Erosional Luddenham Soil Landscape that is mapped to occur further to

the east and north-east along the Bakers Lane site frontage.[13] These soils are developed on Wianamatta Shale and Minchinbury Sandstone.

These are summarised below in order to support of the discussion and conclusions that are presented in following sections of this report.

Blacktown Soil Landscape (Bt)

This soil landscape consists of gently undulating rises on Wianamatta Group Shales with local relief in the order of 10m to 30m, with slopes generally less than 5% but up to 10%. Crests and ridges are broad (200-600m) and rounded with convex upper slopes grading into concave lower slopes (Bannerman & Hazelton 1990:28).

The geology of this soil profile comprises Ashfield Shales that consist in the main of laminate and dark grey siltstone. The underlying Bringelly Shales consist of shale with occasional calcareous claystone, laminate and infrequent coal, and Minchinbury Sandstone consisting of fine to medium-grained quartz lithic sandstone. Outcrops of shale do not occur naturally on the surface. They may occur however where soils have been removed.

Soils are generally shallow to moderately deep (<100 cm), with Red and Brown Podzolic Soils on crests, upper slopes and well-drained areas; deep (150-300 cm) Yellow Podzolic Soils and Soloths occur on lower slopes and in areas of poor drainage.

Dominant soil materials often include:

- *bt1 – Friable brownish black loam to clay loam*: Occurring as topsoil (A1 horizon). Colour is commonly brownish-black but can range from dark reddish-brown to dark yellowish-brown. Roots are common and rounded iron indurated fine gravel-sized shale fragments and charcoal fragments are sometimes present;
- *bt2 – Hard-setting brown clay loam to silty clay loam*: Commonly occurs as an A2 horizon. Colour is commonly dark brown, often ranging to dark reddish-brown to dark brown. Platy ironstone gravel-sized shale fragments are common. Charcoal fragments and roots are rarely present;

[13] Bannerman, S.M and P.A. Hazelton. 1990. Soil Landscapes of the Penrith 1:100 000 Sheet. Soil Conservation Service of NSW, Sydney.

- *bt3 – Strongly pedal, mottled brown light to medium clay*: usually occurring as a subsoil (B horizon). Colour is usually brown, often ranging to reddish brown. Red, yellow or grey mottles are commonly present and often become more numerous with depth. Fine to coarse gravel-sized shale fragments are common and often occur in stratified bands. Both roots and charcoal fragments are rare;
- *bt4 – Light grey plastic mottled silty to heavy clay*: usually occurring as a deep subsoil above shale bedrock (B3 or C horizon). Colour is usually light grey, sometimes greyish yellow. Red, yellow or grey mottles are common. Strongly weathered ironstone concretions and rock fragments are common; gravel-sized shale fragments and roots are occasionally present; charcoal fragments are rare.

Occurrence & relationships often include:

- On crests and ridges, up to 30 cm of friable brownish-black loam (bt1) overlies 10-20 cm of hard-setting brown clay loam (bt2) and up to 100 cm of strongly pedal, brown mottled light clay (bt3) (Red Podzolic Soils (Dr 3.21, 3.11) and Brown Podzolic Soils (Db 2.11)) where bt1 material is occasionally absent. Boundaries between the soil materials are usually clear. Total soil depth is <100 cm.
- On upper slopes and mid-slopes up to 30 cm of bt1 overlies 10-20 cm of bt2 and 20-50 cm of bt3; this in turn overlies up to 100 cm of light grey plastic mottled clay (bt4). Occasionally, the bt1 material is absent. The boundaries between the soil materials are usually clear and total soil depth is <200 cm (Red Podzolic Soils (Dr 3.21), Brown Podzolic Soils (Db 2.21)). On lower side-slopes up to 30 cm of bt1 overlies 10-30 cm of bt2 and 40-100 cm of bt3. Below bt3 there is usually >100 cm of bt4. The boundaries between the soil materials are clear and total soil depth is >200 cm (Yellow Podzolic Soils (Dy 2.11, Dy 3.11)).

Luddenham Soil Landscape (Lu)

This soil landscape consists of undulating to low rolling and low hills on Wianamatta Group Shales (Ashfield and Bringelly) often associated with Minchinbury Sandstone that separates these formations. Local relief is often in the order of 50m to 120m, with slopes generally being between 5% and 20%. Convex narrow (20m to 300m) ridges along with hill-crests and slopes that grade into moderately inclined side-slopes with narrow drainage lines (with moderately inclined slopes of between 10% and 15%) are the dominant landforms.

The geology of this soil profile comprises Ashfield Shales that consist in the main of laminate and dark grey shale. As for the Blacktown soil profiles, the underlying Bringelly Shales generally consist of shale, calcareous claystone, over Minchinbury Sandstone consisting of fine to medium-grained quartz lithic sandstone.

Soils are generally shallow and subject to sheet-erosion in areas of previous disturbance and/or within cultivated pastoral paddocks subject to over-grazing where the narrow minor gullies have accelerated the movement of disturbed topsoil down along fence-lines and stock access tracks.

Past Vegetation Regimes

Prior to European settlement and subsequent land-use, two main vegetation communities would have dominated the Wianamatta Shales and podzolic soils of the local study region; Grey Box Woodland and Grey Box-Ironbark Woodland (Bannerman & Hazelton 1990; Benson 1981). These have been researched and mapped to have comprised the following:

- Grey Box Woodland, together with Grey Box-Ironbark Woodland, was once the major association covering most of the undulating country of the central Cumberland Plain where the average annual rainfall is 700-800 mm. The dominant taxa would have included Grey Box (*Eucalyptus moluccana*) and Forest Red Gum (*Eucalyptus tereticornis*). Other eucalypts present would have included Red Ironbark (*Eucalyptus fibrosa*) with a dense under-storey of Paperbark (*Melaleuca nodosa*), Cabbage Gum (*Eucalyptus amplifolia*), Broad-leaved Apple (*Angophora subvelutina*) and Rough-barked Apple (*Angophora floribunda*). There are five species of Acacia and nine members of the Fabaceae with a wide variety of twiners, herbs and grasses making up the under-storey that are commonly recorded now to be present in some of the lesser-disturbed contexts in the local landscape.
- Grey Box – Ironbark Woodland occurs on slightly elevated shale areas. The dominant tree canopy species are Grey Box *(Eucalyptus moluccana), Forest* Red Gum *(Eucalyptus tereticornis*) and Narrow-leaved Ironbark *(Eucalyptus crebra).* Associated tree species include Thin-leaved Stringybark *(Eucalyptus eugenioides),* Broad-leaved Apple *(Angophora subvelutina*) and Rough-barked Apple *(Angophora floribunda).* A medium-density under-storey includes *Acacia parramattensis, Bursaria spinosa, Dillwynia sieberi, Indigofera australis* and *Ozothamnus diosmifolius.* The medium-high density ground layer is dominated by grasses and includes *Aristida vagans, Chloris truncata, Glycine tabacina, Panicum simile* and *Themeda australis.*

Water Sources

The LOGOS Estate site is situated between the catchments of two principal watercourses that traverse the local Kemps Creek/Erskine Park landscapes. These creek-lines flow from south to north. They comprise South Creek that is situated some 1.5km to the west of the site and Ropes Creek that drains in the main 1.0km to 1.5 km from the eastern boundary of the study area. These watercourses would have represented the most reliable source of permanent drinking water to Aboriginal people in the past prior to European settlement.

The nearest surface water features that exist today on the LOGOS Estate property are a number of modern farm dams (created in the period spanning c.1947 to 2005) that are sourced by a small number of potentially connected minor drainage lines leading into the site from the north and west.

2.4 Resources Available to Aboriginal People in the Past

2.4.1 Introduction

The following sections of this report provide an indication of the types of resources that may have been available to Aboriginal people in the local Kemps Creek/Erskine Park landscape in the past. This summary is by no means exhaustive.

In particular, our understanding of the nature and location of sources of stone materials that may have been suitable for the manufacture of flaked and ground artefacts has increased considerably as a result of recent archaeological investigations, and a detailed review of this information is beyond the scope of this current report.

The review below is intended rather to provide an indicative picture of the likely resources that may have been available to people within the Kemps and Ropes Creeks' corridors and their catchment fringes that encompass the LOGOS Estate site.

2.4.2 Stone Resources

Stone raw material sources known to have been used by Aboriginal people on the Cumberland Plain are found in three major geological formations. These comprise the following:

- The Cranebrook Formation
- The Ricabys Creek Formation
- The St. Marys Formation;

Cranebrook Formation

This Quaternary alluvial formation stretches along the Nepean River from near Penrith to the Castlereagh area and consists of a gravel horizon comprised of granite, porphyry, chert, quartz, quartzite and silcrete (see Gobert 1976, Smith 1988).

Ricabys Creek Formation (or Ricabys Creek Gravels)

This late Tertiary to early Pleistocene formation occurs between Richmond and Windsor in the north, to Dunheved and Cranebrook in the south, and between Marsden-Shane Parks in the east, and Castlereagh to Agnes Banks to the west. It consists of alluvial deposits of gravel, sand silt and clay.

The rock types found in these gravels include quartz, quartzites, chert, granite, indurated mudstones, some silcrete and sandstone. The Londonderry Clay, originally laid down as silt during periods of flooding of the Nepean River, overlies the Ricabys Creek Formation. The accessibility of the raw materials contained in the Ricabys Creek Formation therefore tends to be limited to where creek lines may have over time incised into the gravel deposits, or where the gravels may now be very close to the surface and exposed in limited areas on ridge top locations (see Gobert 1976, Smith 1988).

St. Marys Formation

This well-consolidated Tertiary formation is the most abundant known source of silcrete[14] in the Cumberland Plain.

The St Marys silcrete are thought to be colluvium deposits and comprise of silicified fine sandy flood plain loam. They are typically light reddish or yellowish brown in colour. Indurated mudstones are also found in limited quantities in this formation (Smith 1985). The type site for the St. Marys formation is a small outcrop located in a railway cutting east of the St. Marys Railway Station. More extensive outcrops are known to occur along a north-south tending ridge line at Plumpton, and on a ridge line in the Riverstone area. Three small outcrops also occur along Eastern Creek between Riverstone and Vineyard (Smith 1988).

Other potential sources of lithic raw materials are also found in gravels containing chert, quartz, quartzite, and basalt along the Nepean River. Quaternary deposits of sand, silt, clay and some gravels may be found along Eastern Creek, South Creek and a number of their tributaries.

[14] Aboriginal artefacts created through the use of silcrete are the most recognised/reported finds in the Cumberland Plain.

2.4.3 Fauna and Flora Resources

The original pre-Contact flora and fauna of the Cumberland Lowlands region surrounding the LOGOS site would have most likely provided a rich and diverse resource base to local Aboriginal people in the past as daily needs required.

The vegetation provided food, utilitarian items, decorative mediums and medicines, with many species providing more than one resource for any given use.

Various Acacia, Melaleuca Banksia, Grevillea and Hakea species are known to have provided edible seeds, flowers, nectar, fruits and leaf-bases, and also gum and wood for the manufacture of a range of implements (see Dixson 1999). Other trees and shrubs, such as Kurrajong (*Brachychiton populneus*) and Grass Tree (*Xanthorrhoea spp*.) are recorded to have provided fibres for string bags and fishing lines. The latter species is known also known to have been employed for gum extraction and adhesive, and used for the fabrication of spear shafts (Dixson 1999, Kohen & Downing 1992). The bark of a range of trees is finally recorded to have been employed in certain locations for the construction of semi-permanent shelters and/or dwellings, in the absence of rock-shelters within the immediate Kemps Creek/Erskine Park study area.

The above vegetation communities supported extensive faunal communities in the local landscape surrounding the LOGOS Estate study area. Food is recorded to have been derived from kangaroo, possums, snakes, lizards, insects and birds (including eggs). In addition to food, animals also provided skins and furs for clothing, sinews for hafting tools, twisted fur twines used for traps and in the hafting process and feathers as decorative items. The numerous small creeks which dissect the Plain (with Kemps and Ropes Creek's' as a focus) would also most likely have provided marine species such as fish, eels and small amphibians (see Kohen 1993).

2.5 Historical Land Use and Current Condition of the Site

The LOGOS Estate Site forms part of a 300 acre grant to Edward King in c.1825 on the eastern side of the present day Mamre Road. King was an ensign in the 48th Regiment, and later became a 'Barrack Master'. It is understood that Mr King did not live on the property during his tenure over the land (Hubert Architects Pty Ltd 2009, Paul Davies Pty Ltd 2007).

As discussed in more detail in **Section 3.0** of this report, the now vacant farmhouse that is located just off Bakers Lane in the northwest of the site was most likely constructed around the time the land on the eastern side of Mamre Road was subdivided from the original King grant in 1912.

A review of historical title information (Pells Sullivan Meynink 2010) indicates that the property was occupied and/or owned by a Mr Samuel Charles Baker (farmer) from perhaps 1913 to 1957. From 1957 to 1966 a Mr Henry Charles Hoyer (farmer) and a Mrs Olive May Hoyer are listed on the title deeds, followed by Mrs Hoyer (widow) between 1966 and 1972. *Werona Pastoral Co Pty Limited* is listed on the deeds from 1972 to 2002 as owners/managers of the place.

The site today comprises an approximately 52 ha parcel of rural land that is situated in a predominantly rural area of Erskine Park. The surrounding land-use includes the college facilities to the north of the site, and market gardens/rural land to the south, east and west.

A review of historical aerial photography (Pells Sullivan Meynink 2010) indicates the site has a long history of pastoral and farming land use.

As described and illustrated in further detail in **Section 4.0** of this report, a 2005 aerial photograph of the site shows the property in its current state as comprising a series of fenced paddocks with a number of filled farm dams. In a 1994 aerial image the condition and layout of the site appears the largely the same. In 1986 the site appears as above, with less surrounding development being present. In 1978 and 1961 the site appears to be again largely similar, however no large farm dams are evident.

It is likely that the current dams on the property were created during the latter stages of occupation/ownership by *Werona Pastoral Co Pty Ltd*. The site appears in the same condition in a 1961 aerial photograph.

As illustrated in **Figure 2.1**, a 1947 aerial photograph shows the property to have been almost entirely cleared of timber by this time. The homestead and its associated garden at the rear of the house (fronting Bakers Lane) are visible, and only two small dams are present. The ground within the existing (small) woodland area along the main ridgeline within the site southeast of the former dwelling has clearly been scoured, as have several other areas across the site.

2.6 Summary

In summary, the background environmental and post-Contact historical research undertaken to inform the current LOGOS Estate development proposal indicates that:

- The site comprises a mix of ridgeline/crest, slope and lower-lying landforms and topographic units that are situated between the main channels and tributaries of the principal watercourses that drain the local landscape.
- The original pre-Contact natural values of the site have been impacted upon to a degree as a result of a number of past (and ongoing) land-use practices.
- These include past timber felling, de-stumping, and under-storey vegetation clearance seemingly undertaken by at least the mid-twentieth century and no doubt dating back to well before this period, ongoing pastoral use inclusive of dam construction works, the creation of associated contour drainage channels, stock grazing (leading to accelerated erosion along the intermittent drainage lines/dams present on the property), and in one obvious case the construction and subsequent occupation and use of a former homestead precinct situated adjacent to Bakers Lane in the northwest of the property.
- Geotechnical information (see the test pit and borehole location plan presented here as **Figure 2.1**) suggests topsoil soil profiles in many areas of the property are quite shallow, and in particular along the more elevated portions of the site. It is likely that natural processes of soil erosion (water run-off, soil creep etc) have been accelerated as a result of historic period activities such as vegetation clearing.

Figure 2.1: 1947 Aerial Photograph (Site in Red) Illustrating the Condition of the LOGOS Estate Site (Source: PJEP Environmental Planning and LOGOS Property 2010).

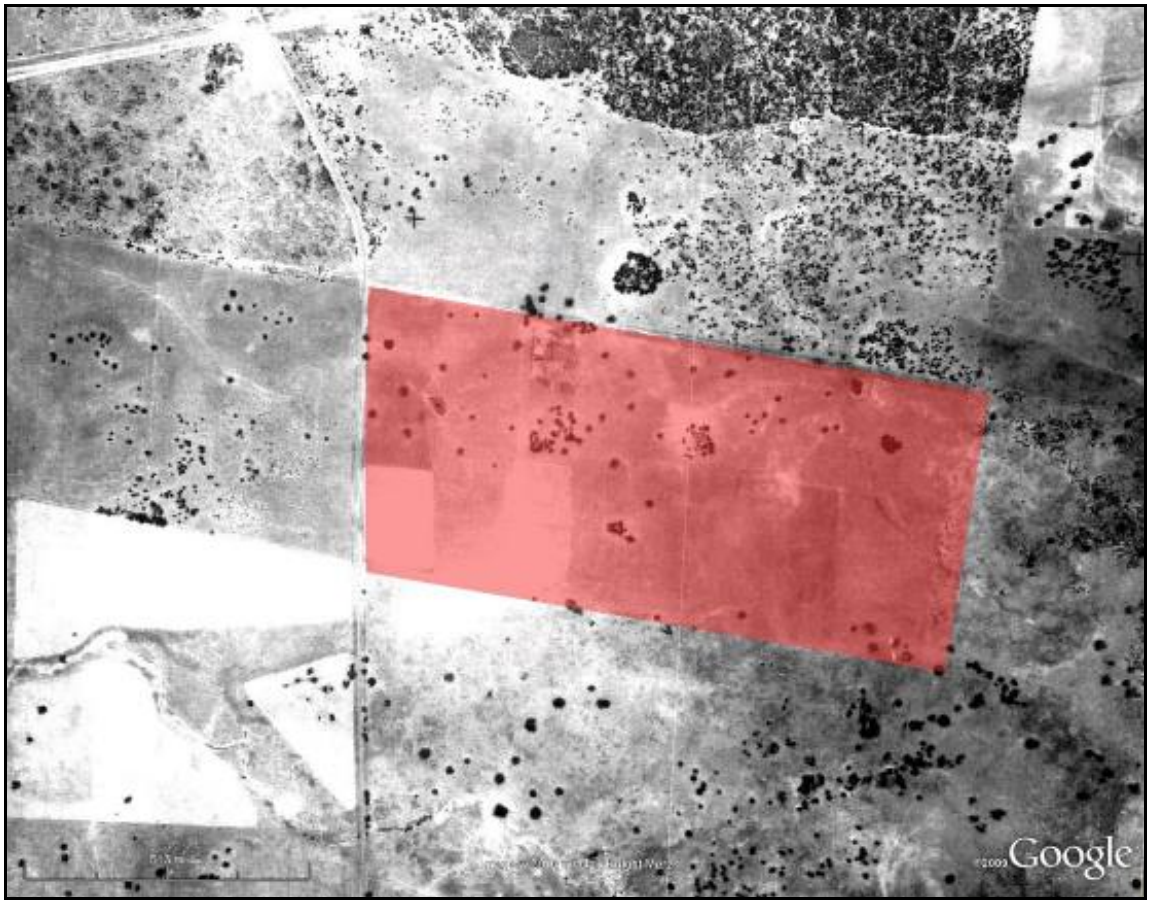
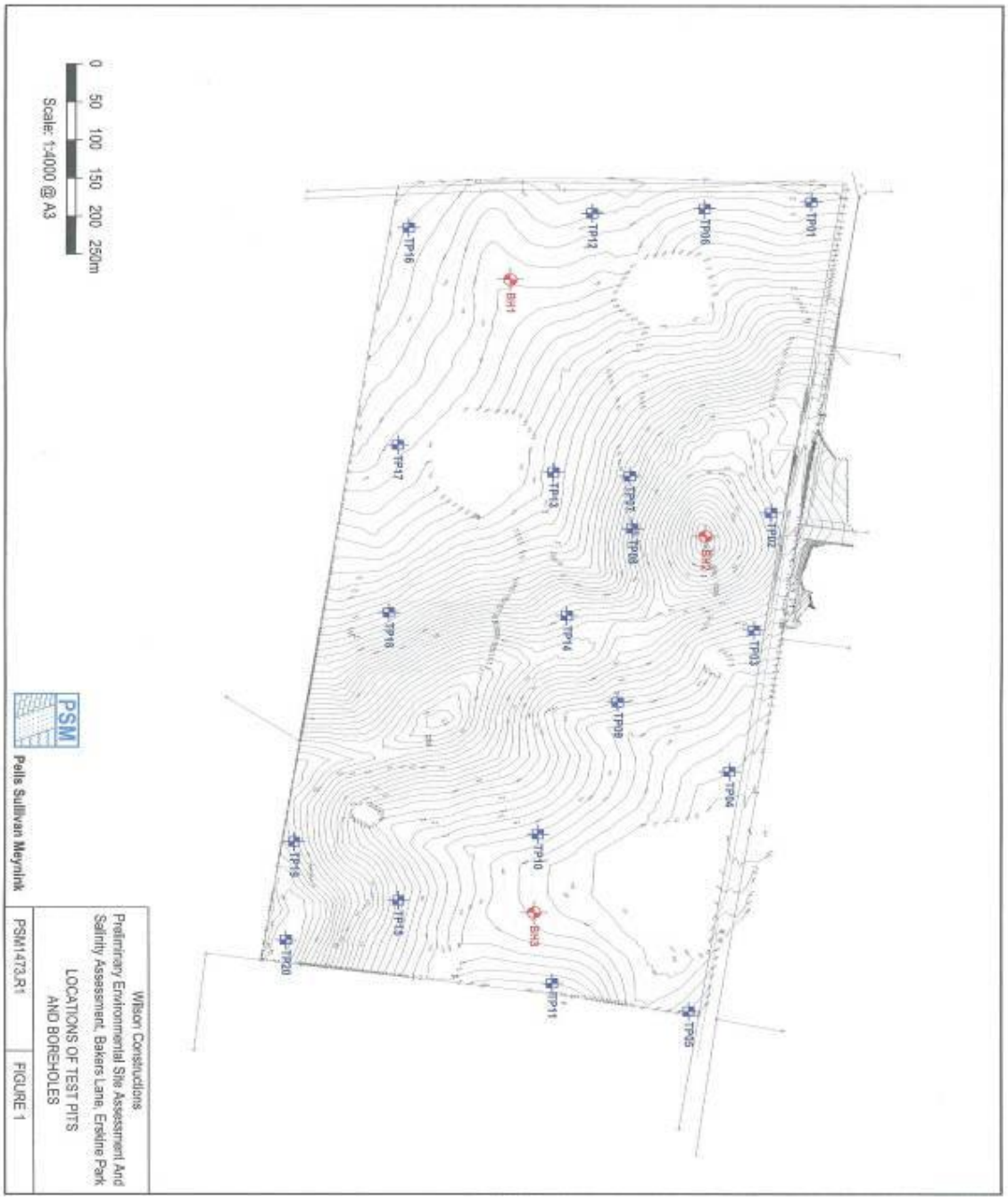


Figure 2.2: Location of the LOGOS Estate Site Geotechnical Test Pits and Boreholes (Source: Pells Sullivan Meynink 2010).



3.0 Aboriginal and European Cultural Heritage Context

3.1 Regional Aboriginal Archaeological Overview

3.1.1 Site Types, Frequency and Survival

Well over 4,000 Aboriginal archaeological sites have been registered with the DECCW AHIMS Sites Register in the greater Sydney region to date (see Attenbrow 2010 for a review). Despite the extensive impacts that have accompanied some 222 years of post-Contact occupation and land development, Aboriginal archaeological sites have been located in all types of landforms in the region and include:

- Shell midden deposits contained within both sandstone rock shelters of suitable size that provided protection to people in possibly inclement weather conditions, and also in open (most often coastal/estuarine foreshore) contexts and adjacent to principal watercourses.

  These Aboriginal site types are relatively uncommon in this part of the Cumberland Plain.

- Painted and drawn art images in (primarily) sandstone overhangs/shelters.

  These site types are uncommon in the local landscape.

- Engraved images and axe grinding grooves created on the surfaces of usually flat rock platforms that are more predominant in Hawkesbury Sandstone landforms that occur around the periphery of the Cumberland Plain, at the shale-sandstone junction.

  These site types are uncommon in the local landscape.

- Open campsites usually represented by the presence of durable materials such as flaked and ground stone artefacts.

  These site types are the most commonly recorded across the Cumberland Plain.

- Occasional scarred and (rarer) carved trees.

  Most trees of a sufficient age to possess evidence for Aboriginal scarification have died naturally and/or have been long-since felled during the post-Contact historical period.

- Some stone arrangements, waterholes, burials, and mythological sites reported to have been present in the local Sydney landscape over time.

Details for many of these types of sites are however often scant in the DECCW AHIMS Sites Register.

- A number of post-Contact historical campsites that are documented to occur in and around the bays and hinterland of Sydney Harbour and its principal river and creek catchments further to the west in the Cumberland Plain.

The distribution (and likely survival) of past Aboriginal archaeological cultural evidence in the Cumberland Plain region is strongly related to bedrock geology and local topographic features including relative elevation and the presence of drinking water and associated resource zones from which needed food and other raw materials (such as stone and organic items etc) used for tool manufacture and maintenance would have been procured as people's daily needs required.

3.1.2 A Summary of Aboriginal Occupation of the Greater Sydney Region

Aboriginal people are known to have inhabited the greater Sydney region for at least 30,000 years before present. A Pleistocene sand body on the Parramatta River, archaeologically excavated in three different development contexts in recent years, has returned possibly the oldest date for the first Aboriginal use and occupation of the region (see McDonald 2007:36-37).

Dated sheltered occupation sites have been documented to occur in the Blue Mountains and its foothills (see for example Stockton & Holland 1974 and Kohen et al 1984). Two dates ranging from 10,000 to 12,000 years before present have also been reported for an open campsite at Regentville, while a rock shelter on Darling Mills Creek at West Pennant Hills that has revealed a date of a little over 10,000 years for first occupation. A number of open campsites investigated in recent years in western Sydney have also revealed dates ranging from between approximately 4,600 and 6.000 years before present.

The earliest dated coastal sites are located at Burrill Lake that shows evidence for first occupation approximately 20,000 years ago (see Lampert 1971), and at Bass Point which is dated to some 17,000 years ago (see Bowdler 1970). Both of these sites would have been occupied at a time when the sea level was much lower and the present coastline would have formed part of an inland environment drained by a series of rivers and streams. There are no other coastal Aboriginal sites of comparable age known at present.

Two further sites dated to around 7,000–8,000 years before present that consist of a sheltered occupation site at Curracurrang and an open campsite (containing a cooking hearth) at the Prince of

Wales Hospital in Randwick provide indications about how people may have lived around the time of sea level fluctuations and subsequent stabilisation along the eastern sea-board of New South Wales during this period (see for example Attenbrow 2010).

The majority of Aboriginal archaeological sites recorded in the western Sydney region are however dated to within the last 2,500 to 3,000 years. Available evidence suggests that the early occupation of the Sydney region was not intensive nor included large groups of people, and that around 5,000-6,000 years ago (when the sea levels stabilized at the present levels) more intensive use of the landscape by Aboriginal people subsequently began. Many open sites situated away from the coast appear likely to have been first occupied in the last 1,500 years before Contact.

Our understanding of how and when Aboriginal people occupied and used the Sydney landscape in the past is largely based upon changes that have been observed in the composition of stone tool assemblages and the use of certain types of stone materials used for tool manufacture that are apparent from the analysis of excavated archaeological assemblages undertaken in recent decades.

Over the 30,000 years of Aboriginal occupation of the region, and in particular the last 5,000 to 8,000 years, various temporal markers have been established in an attempt to distinguish the more significant changes in tool types and tool kit composition over time (see for example Attenbrow 1987, Lampert 1971, McCarthy 1948, Megaw 1965).

The most widely used terminology for the archaeological phases within what is currently known as the *Eastern Regional Sequence* are the *Capertian*, and the *Early*, *Middle* and Late *Bondaian*. This sequence is still being refined and continues to be clarified by ongoing archaeological work. The sequence is generally accepted and is regularly applied throughout most of the eastern sea-board of Australia.

- The *Capertian* stone tool phase appears to have been essentially composed of large and quite heavy stone artefacts fashioned from fine grained siliceous cherts and silcrete materials. Tool types included uni-face pebble tools, core tools, denticulate stone saws, scrapers, hammer-stones, some bipolar cores and flakes, and burins.
- The change from the *Capertian* to the *Bondaian* appears to have taken place some time after 5,000 to 6,000 years before present, and is defined by a noticeable shift in stone tool size, raw material use, and in the range of raw materials utilised by people for subsequent tool production. Features of the *Capertian* phase appear to have continued in many areas on the

east coast of Australia, but backed and edge ground implements appear to have been progressively introduced and widely used over this time period.

- The three phases which are recognised as belonging to the *Bondaian* sequence are largely based on the timing of the introduction, and subsequent decline, of backed stone implements, as well as the increased use of bi-polar flaking techniques. Other technological innovations which are evident during the *Bondaian* period include the introduction of ground edge implements (around 4,000 years before present), and the widespread use of shell fish hooks for fishing during the last 1,000 years. The three *Bondaian* phases are summarised below.
- The *Early Bondaian* phase (from approximately 5,000 years ago to approximately 2,800 years ago) appears to have been dominated by the use of fine grained siliceous cherts and silcrete materials. While the use of the larger and heavier stone implements characterising the earlier *Capertian* period seems to have persisted, archaeological evidence suggests backed and edge ground implements were widely introduced and used over time.
- The *Middle Bondaian* phase (from approximately 2,800 years ago to approximately 1.600 years ago) appears to have been dominated by the use of fine grained siliceous cherts and silcrete materials and the manufacture and use of smaller backed implements. This phase is seemingly characterised by the increased manufacture of micro-blades such as Bondi Points and bi-polar artefacts, and the use of quartz as a ready source of a raw material for the production of flaked stone implements.
- The *Late Bondaian* phase (last 1,600 years) appears to have been dominated by the increased use of quartz (with the use of other raw materials of stone), common manufacture and use of edge ground implements, and the use of bone and shell implements (including shell fish-hooks) at some investigated Aboriginal archaeological sites.

3.2 Local Aboriginal Archaeological Context

3.2.1 Archaeology in the Cumberland Plain

Ongoing archaeological research has yielded considerable evidence concerning the nature of Aboriginal occupation of the Cumberland Plain. The most common sites in the local landscape consist of open campsites and isolated finds (upwards of 90% or more in combination), followed by far few scarred tree recording due to disturbance (2%). Stone extraction sites occur in areas where there naturally occurring lithic resources.

A number of models have been proposed to attempt to explain the distribution and variability of Aboriginal heritage sites across the Cumberland Plain. Haglund's (1980) model for sites in the Blacktown area stated that these would most likely occur on or near water sources, often on elevated ground. Based on a larger sample of surface artefact scatter data (as opposed to subsurface excavated collections), Kohen (1986) and Smith (1989) found that the primary determinant for Aboriginal open site location on the Cumberland Plain was proximity to water.

Other models suggest that distance from stone raw material sources explain some variability in surface variability in surface assemblages (distance-decay model). Dallas and Witter (1983) suggested that sites close to raw material sites close to raw material sources (e.g. silcrete), would have more cores and knapping debitage and less utilized stone than sites further from the source. Artefacts would tend to be discarded in earlier stages of manufacture and be larger nearer the source. Since this study, new silcrete sources have been identified on the Cumberland Plain. The above model is less successful where there are many potential sources of useable cobbles across the landscape.

A number of key studies undertaken over the last fifteen years or so have progressively refined our understanding of past Aboriginal land-use practices in the Cumberland Plain. In particular, this research has demonstrated that many earlier models, which tried to explain and accurately describe the characteristics of Aboriginal archaeological sites in the local landscape and predict site location distribution patterns and/or their relative variability (often based primarily on surface evidence), have been largely flawed. Extensive test and salvage archaeological investigations undertaken in Rouse Hill and further work in other areas of the Cumberland Plain have provided significant data useful for refining these earlier models.

The following summary of these findings is provided below (as modified from information presented in Jo McDonald Cultural Heritage 2005:5-6) that provides an appropriate context for the current study:

- Open campsites have been identified in all landscape types in the Cumberland Plain. These include along creek-lines of varying stream order (size etc) and principal river bank channels, as in more elevated topographic land units such as hill topes and ridge lines.
- The high proportion of sites that have been recorded on creek-banks or creek-bank combinations in the past is likely to be more indicative of ground surface visibility conditions and/or taphonomic factors (such as ground erosion or burial by sediment deposition), rather

than an accurate picture of the original distribution of sites/artefacts across the broader landscape.

- In most locations across the Cumberland Plain that have been subject to controlled archaeological excavation (as opposed to surface survey alone), even those with sparse or no surface archaeological remains, have been found to contain sub-surface archaeological materials of varying density and integrity.
- Contrary to earlier models, many open campsites do contain high densities of finds, with variability appearing to depend on the range of activities areas and site types present despite the effects of factors such as past vegetation clearance and ploughing.
- The complexity of the archaeological record in certain landscape contexts across the Cumberland Plain is more complex that previously thought. Intact knapping floors, backed blade manufacturing sites, heat treatment locations, a number of specialised tool types, and generalised camp sites have all recently been located during recent investigations such as in and around Rouse Hill and along Second Ponds Creek.
- On the basis of environmental factors, sites on permanent water (and perhaps in close proximity to useful stone raw material sources and other needed food and vegetable resources) are likely to be more complex and have represented a focus for larger groups of people or to have been used repeatedly by smaller groups over a long period of time, than sites on ephemeral or temporary water-lines.

In summary, based on previous archaeological studies in the region and using stream order models (after Schrever 1966 and Strahler 1952 etc), it can be generally predicted for much of the Cumberland Plain that the nature (density and complexity) of archaeological evidence will vary according to the permanence of water (e.g. stream order), landscape unit, and proximity to lithic (useable stone) resources in the following way.

- In the headwaters of upper tributaries (first order creeks) archaeological evidence would be expected to be sparse and represent little more than background scatters of flaked stone artefacts.
- In the middle reaches of minor tributaries (second-order creeks) it would be expected that archaeological evidence would be sparse, but potentially reflecting focused activity (such as

one-off camp site locations and/or single episode knapping events) undertaken by people in the past of the place.

- In the lower reaches of minor tributaries (third order creeks) it would be expected that archaeological evidence for more frequent occupation will be found. These archaeological remains may possibly include evidence for repeated occupation by small groups, possible knapping floors, and potential surviving evidence for more concentrated day to day activities undertaken by people over time.
- On major creek lines such as South, Eastern and Ropes Creek (fifth order creeks) there would potentially be archaeological evidence for more permanent or repeated occupation. Sites would be expected to be more complex, and some may be found to be stratified[15] depending on local sedimentation processes.
- Creek junctions (confluences) may provide evidence for the foci of past Aboriginal site activity. The size of the confluence (in terms of stream ranking nodes) could be expected to influence the size and /or complexity of the documented/potential Aboriginal heritage site.
- According to this model, ridge top locations located between drainage lines will usually contain limited archaeological evidence, although isolated knapping floors or other forms of one-off occupation may occur in such locations.
- Where naturally outcropping lithic resources such as silcrete occur, it is expected that these will have been exploited by people in the past. Evidence for stone extraction activities (such as de-cortication, stone material quality testing and perhaps limited stone knapping) would be expected to occur in such locations, as might more general occupation evidence.
- Sites in close proximity to an identified (and accessible) stone raw material source would likely cover a range of characteristics relating to artefact size and the retention of cortex. As a general rule, the size of artefacts in an assemblage should decrease, as should the percentage of cortex with distance from the source from which it was procured in the past. In this context, raw material conservation would not be expected, given the short distances between stone sources in the local study area.

[15] This term refers to Aboriginal archaeological sites that may have the potential to have multiple layers of cultural heritage remains that may be dated to assist in the documentation of how the occupation of a place may have taken place over time.

3.2.2 AHIMS Aboriginal Sites Register Search

Background research into archaeological investigations previously completed either potentially within the boundaries of LOGOS Estate site study area or its immediate surrounds was undertaken prior to the commencement of the current Aboriginal archaeological survey and assessment program. Sources accessed included the NSW DECCW AHIMS Aboriginal Sites Register, the DECCW Catalogue of Archaeological Reports, and other secondary sources.

A search of the AHIMS Register was undertaken for a 3km (east-west) by 3km (north-south) area that was centred on the subject land.[16] This search returned records for a total of 19 Aboriginal sites (see the appended site search results), all of which are open flaked stone artefacts scatters comprising one or more stone artefacts.

The AHIMS site search results (see **Appendix 3**) initially suggested that two open Aboriginal campsites had seemingly been previously located within the LOGOS Estate site (AHIMS Sites #45-5-3030 and #45-5-3036), and that a further four archaeological sites had potentially been identified and recorded immediately to the south of the current Kemps Creek property (AHIMS Sites #45-5-3029, #45-5-3031, #45-5-3034 and #45-5-3035).

The original site recordings for these registrations were not available on the AHIMS Sites Register at the time of the search that was undertaken for the current study, and no supporting archaeological reports covering the areas within which these Aboriginal sites were located to occur at the initiation of the present background heritage documentation evaluation stage of the project were sourced.

Following a subsequent review of the available DECCW AHIMS information that was gathered in May and June 2010, it became apparent that all of these sites noted above had been recorded by *Navin Officer Heritage Consultants* during ongoing (and various) works undertaken during 2005.

This consultancy firm was subsequently contacted by DSCA in early June 2010 to best determine the nature of these previous Aboriginal site recordings and their location.

This revealed that the site coordinates were in error, and in fact related to sites previously recorded during archaeological excavation works undertaken to the north of the Sydney Water pipeline (see

[16] AMG coordinates in Zone 56 of E294000- E297000 and N6252000-N6255000.

Figure 3.1) and were therefore located a kilometre or so north of the LOGOS Estate site.[17] A request was made by DSCA to submit corrected records such that these errors would not occur in future.

Bearing this clarification in mind, there are no previously recorded Aboriginal sites within or immediately adjacent to the subject land, and no previous archaeological survey appears to have been undertaken within the property prior to the completion of the current study.

The closest recorded sites relate to recent archaeological survey and excavation works undertaken within the Emmaus School site north of Bakers Lane (as reviewed below).

3.2.3 Previous Archaeological Research in the Local Landscape

A search of the DECCW AHIMS Catalogue of Archaeological Reports showed that a large number of Aboriginal archaeological assessments and a smaller number of archaeological excavations have taken place within the vicinity of the LOGOS Estate site over the last 25 years. Most have been related to industrial subdivision works to the north of the Sydney Water pipeline.

Those studies of most relevance to the current study are reviewed below in order to provide an appropriate background context for the discussions to follow.

Emmaus Village, Kemps Creek

An Aboriginal archaeological assessment was undertaken ahead of a proposed extension of the Emmaus Village aged care facilities immediately to the north of the subject site in 2005 (AHMS 2005a). The survey was undertaken adjacent to the existing village and included some relatively undisturbed re-growth woodland near a first order tributary of South Creek. The survey resulted in the recording of four open artefact scatters (coded EV1-4) and a recommendation to undertake a broad scale testing program in the vicinity of sites EV3 and EV4.

This testing program involved the bulk mechanical excavation of eighteen [18] 1m x 1m pits at 50m intervals along four selected transects (AHMS 2005b). The excavations revealed the presence of topsoil of between 5-15cm in depth with a moderate level of historical and natural (bio-turbation) disturbance.

[17] Email received by DSCA on 1/6/10 from Kerry Navin.

Just eleven [11] largely unremarkable flaked stone artefacts were retrieved as a results of these investigations.

AGL Gas Exploration Well (Lot 1 in DP102673)

An Aboriginal archaeological survey was undertaken by DSCA (2007) within Lot 1 DP120673 immediately to the northeast of the LOGOS Estate site on the northern side of Bakers Lane for a proposed gas exploration well and associated access road.

Several pieces of un-worked silcrete (probably manuports as explained below) were located along an existing track, but no definitive Aboriginal cultural material or areas of archaeological potential were identified.

Oakdale Employment Lands

An Aboriginal archaeological survey was undertaken by DSCA (GML 2007) of around 400 hectares of land proposed for industrial subdivision located to the east and northeast of the LOGOS Estate site between Bakers Lane and the Sydney Water pipeline.

Several previous surveys within parts of this land had been undertaken (e.g. Appleton 2002 and Curran 1997) and a number of Aboriginal sites had previously been recorded.

The study area was characterised by the main channel and several tributaries of Ropes Creek, and was found to consist of cleared farmland similar to the current subject land.

The 2007 study resulted in the identification of several low-density or isolated occurrences of surface stone artefacts, as well as two areas requiring further intensive archaeological survey along the main creek channels. It is unclear at this point whether this additional survey works was (or has) subsequently undertaken.

Erskine Park Employment Lands

The area known as the Erskine Park Employment Lands is located about 500-1000m to the north of the LOGOS Estate site and is bounded by the suburb of St Clair to the north, Ropes Creek to the east, the Sydney Water pipeline to the south, and Mamre Road to the west.

This area has been the focus of a number of archaeological surveys over the last two decades which have resulted in the identification of a number of low-density surface artefact scatters and isolated finds, along with areas recommended to require further subsurface archaeological investigation prior to development (e.g. McIntyre 1984, JMcDCHM 1998 & 2000, HLA 2004, Navin Officer 2005c).

A survey of this area undertaken in 2005 (Navin Officer 2005a) resulted in the identification of two isolated stone artefact finds, and an open campsite[18] consisting of three artefacts, as well as areas of subsurface archaeological potential (in addition to several previously recorded sites). Archaeological potential was identified primarily in association with the banks and floodplain of Ropes Creek. This study recommended that an archaeological testing program be undertaken to investigate these areas of potential.[19]

Subsurface investigations of a number of areas across the CSR lands in the central western portion of the Erskine Park Employment Lands immediately to the north of Lot 1 DP102673 (see above) have been undertaken in recent years. The first of these examined two areas near Lenore Lane along the northern edge of the CSR lands with 21 and 17 mechanically excavated test pits respectively being investigated (Navin Officer 2005a). This excavation program retrieved less than 50 artefacts spread over 20 of the 38 pits, indicating a very low artefact density attributed to low intensity use of the place by Aboriginal people in the past.

Further excavations were undertaken in eleven other areas across the CSR lands sampling different topographic contexts and avoiding existing quarried areas located in the western portion of the land. Initially a total of 256 mechanically excavated pits were investigated across the eleven sampled areas with a total of less than 300 artefacts being retrieved from about a third of the excavated test pits (Navin Officer 2005b). Additional testing in one area (coded Area 11) involved excavation of a further 24 test pits and subsequently retrieved an additional 172 artefacts (Navin Officer 2005d). Most of the excavated pits were found to contain low numbers of artefacts (averaging less than five artefacts per square metre but up to almost thirty in some pits).

Summary

The background Aboriginal archaeological research that has been undertaken for the current study indicates that:

[18] In general terms, open artefacts scatter or camp sites (as opposed to an isolated find) are commonly defined by the presence of two or more artefacts within 50m of each other.

[19] Although open campsites have been recorded in most topographic contexts in the region (such as floodplains, hill-slopes, and ridge-tops etc), within the Erskine Park Employment Lands all reported sites to date have revealed less than 25 artefacts per excavation trench with densities of less than one artefact per square metre.

- No Aboriginal archaeological sites (or any specific areas of potential Aboriginal cultural heritage sensitivity) have been previously registered with the DECCW to occur within the boundaries of the LOGOS site. It appears that the current study area has not been subject to any previous systematic Aboriginal archaeological survey and assessment.
- Previous Aboriginal archaeological survey and assessment studies (generally undertaken in advance of development at preliminary planning stages) have resulted in the location of a number of Aboriginal archaeological sites in the local landscape surrounding the LOGOS Estate site.
- These comprise a combination of open camp sites, isolated finds (of flaked stone), and areas of *Potential Archaeological Deposit* (PAD) that refer to specific locations in the landscape that do not show any physical (surface) manifestations of Aboriginal archaeological evidence but may have been assessed to posses possible Aboriginal cultural heritage sensitivity on environmental, topographical, and land-use grounds.
- A limited number of subsurface archaeological excavations have been undertaken to date within relatively close proximity to the proposed LOGOS Estate development site. The closest of these studies being investigations undertaken in 2005 within the Emmaus School that is located immediately to the north of Bakers Lane.
- Controlled archaeological investigations at the Emmaus School retrieved a small number of seemingly utilitarian flaked stone artefacts that are consistent in material type, form, and character with previous artefact findings as reported from nearby excavation and analysis studies in the local Kemps Creek/Erskine Park landscape.[20]
- Archaeological test excavation and salvage investigation projects completed to date within the local landscape situated within the catchments between Kemps and Ropes Creek have, in the main, revealed largely low-density distributions of flaked stone artefacts to occur that suggests a low intensity use of the place by Aboriginal people in the past may well characterise how people used this particular landscape in the past.

[20] The precise date frames when these materials may have been created or discarded in the past is currently unknown.

3.3 An Aboriginal Archaeological Site Prediction

3.3.1 Rationale

Predictive models of Aboriginal archaeological site location attempt to identify areas of relative archaeological/cultural heritage sensitivity (high, moderate and low etc) as a tool that can be used for the planning and management of known Aboriginal sites and places of potential sensitivity within future development and/or land-use modification circumstances.

These models are generally based upon information including the types of landscape units contained within a study area, the results of previous Aboriginal archaeological and cultural heritage investigations undertaken in the surrounding landscape, the distribution of previously recorded sites along with their known nature, integrity, and potential composition, and upon an understanding of traditional Aboriginal land-use patterns (where possible) as guided by contemporary Aboriginal communities.

3.3.2 A Prediction of Possible Archaeological Evidence in the Subject Site

The LOGOS Estate site is characterised by undulating to sloping lands above and around the upper reaches of minor tributaries of South Creek. These tributaries are first order streams which the predictive Aboriginal archaeological model for the broader Cumberland Plain outlined above suggests would most likely retain largely background artefact scatters of flaked stone that would be suggestive of intermittent and low intensity usage of the place by Aboriginal people in the past.

As previously reviewed, a relatively high number of surface surveys, and subsequent subsurface archaeological investigations in adjacent and nearby areas, have repeatedly demonstrated both the low density of archaeological materials to occur in similar contexts investigated to date relative to the current subject land, and also the degree of past historical and (ongoing) natural disturbance factors.

Based on this background information, and the geological and topographic associations of the subject land identified during this study, the types of Aboriginal archaeological evidence which were considered likely to occur/survive within the subject land (as prepared prior to the commencement of the current site inspection and assessment program) were outlined.

- *Open Camp Sites*: These sites are likely to occur on dry and relatively flat landforms along or adjacent to both major and minor watercourses in the Cumberland Plain. However, repeatedly or continuously occupied sites are more likely to be located on elevated ground situated at principal creek confluences in the local landscape.

Surface scatters of flaked stone artefacts (or potentially durable food remains such as animal and fish bone or shell etc in favourable preservation circumstances) may be the result of mobile hunting activities, while single or associated low-density occurrences might relate to tool loss, tool maintenance activities or abandonment. These types of sites are often buried in alluvial or colluvial deposits and only become visible when sub-surface sediments are exposed by erosion or disturbance.

It was anticipated at the initiation of the project that this potential evidence of past Aboriginal visitation and use of the site may possibly be in evidence.

II *Isolated Artefacts*: These items may occur without any associated evidence for prehistoric activity or occupation. Isolated finds can occur anywhere in the landscape and may represent the random loss, deliberate discard or abandonment of artefacts, or the remains of dispersed artefact scatters.

Manuports are items consisting of raw materials of stone that do not naturally occur within the soil profiles of a given region. Transported onto a site by Aboriginal people from sources elsewhere, these items may have subsequently been discarded before use as flaked or ground stone tools.

It was anticipated at the initiation of the project that there was some chance that isolated stone artefacts or manuports may occur within the study area. As per 'open campsites' noted above, these items are likely to be difficult to detect in preliminary site survey studies subject to prevalent ground cover conditions etc.

III *Scarred Trees*: These sites are the result of bark or wood removal to make shields, shelter, canoes, containers or carving designs into the exposed wood. These sites have rarely survived early timber clearance, bush fires and timber cutting. The definite ascription of scarring on a tree to an Aboriginal origin is not always immediately possible.

Europeans often removed bark for roofing material and stock watering troughs as ongoing pastoral property maintenance needs required. Other scars may be the result of surveyor and property owner blazes, lightning strikes or cockatoo pecking. It is suggested that unless the tree is at least 150 years old, the scarring is unlikely to have an Aboriginal origin.

The largely cleared nature of most of the LOGOS Estate site (supported by the 1947 aerial photograph presented in **Section 2.0** of this report) suggested at the initiation of the project that

the likelihood for scarred trees to occur on the property was possible, but was generally unlikely.[21]

In summary, the evidence for past Aboriginal use and/or occupation of the site which may exist was expected to be scant in reality, most likely to consist of low density scatters of Aboriginal flaked stone artefacts with the possibility for individual stone artefact finds to occur throughout the subject land, and the probability for tree scars of Aboriginal cultural origin to be survive on at the place to be limited.

3.4 European Archaeological and Cultural Heritage Context

3.4.1 Introduction

A search of relevant heritage registers and listings into the location and nature of any previously recorded European archaeological sites or items potentially present within the boundaries of the LOGOS Estate site was undertaken at the initiation of the current study. This revealed the following:

- The *Section 149 Planning Certificate* issued for the site by *Penrith City Council* (Council) on 19 November 2009 correctly indicated (at that time) that *no* European heritage items had been identified to occur on the property.
- The *Penrith Heritage Study 2007* (Paul Davies Pty Ltd 2007) prepared for Council presents a review of heritage items and places within the Penrith LGA. It provides information needed to assist decisions to be made on whether items should be included (or not) in Schedule 5 of the *Draft Local Environmental Plan 2008* (draft LEP 2008), or Schedule 1 of the Draft Amendment No.1 to the preceding *Penrith Local Environmental Plan 1991 (*Environmental Heritage Conservation*).*[22]
- The 2007 Heritage Study identified the LOGOS Estate site as having *possible* heritage significance (with regard to the former homestead fronting Bakers Lane - see below) and duly recommended its listing as a heritage item on to the draft LEP 2008.

[21] See the report provided by The Abrorist Network dated 23 July 2010.

[22] Together, these two schedules list most of the heritage items, conservation areas, and known European archaeological sites in the Penrith LGA.

- The 2007 Heritage Study (Ibid 118) referred the above item (coded 'KC-02' - SHI #2260103) as comprising *'planting to* [the] *homestead, 705-752 Mamre Road (site on Bakers Lane),* [and that] *'this area was nominated for the landscape quality of* [the] *garden of the farmhouse and hedging of the paddock which is clearly defined by the ridge line of undulating hills*. *The listing should include the farmhouse and structures'.*[23]
- The draft LEP 2008 was placed on public exhibition from 28 October 2008. Schedule 5 of the draft LEP 2008 identified the existence of the above *'heritage item'.* The owner of the property at that time was advised of this matter just prior to exhibition process.[24]
- The public exhibition period for the draft Penrith LEP 2008 and draft Amendment No 1 to the Penrith LEP 1991 have now closed.
- The land owner made a submission during the exhibition period of the draft LEP 2008 questioning the appropriateness of the proposed listing of the Bakers Lane former homestead as a heritage item.
- Council initiated a review of the original 2007 heritage assessment of the farmhouse and surrounding garden precinct in 2009. Council are currently considering the recommendations of this review (Hubert Architects Pty Ltd 2009) as discussed in the following section of this report relative to the current LOGOS Estate development proposal.
- Finally, no additional European archaeological heritage sites or items of possible sensitivity were identified to be present on the LOGOS Estate site in the course of undertaking this background documentary review.

3.4.2 2009 Review and Assessment of the Bakers Lane Farmhouse

The following description and evaluation of the former homestead complex fronting Bakers Lane has been adapted from the research and review undertaken by Hubert Architects Pty Ltd in April 2009 as requested by Council. This information is discussed (and illustrated) in further detail in **Section 4.0** of this report.

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[23] This item was identified in an inventory of the heritage of Penrith LGA originally prepared in 1987 by Fox and Associates, but was not subsequently listed in Schedule 2 of the Penrith LEP 1991.

[24] Correspondence from Penrith City Council dated May 2009.

The proposed LOGOS Estate site is a grazing property on the eastern side of Mamre Road. The majority of the land has been cleared of its original timber canopy and under-storey vegetation. Isolated stands of trees remain in a number of the now grassed pastoral paddocks, along with a number of trees and hedge planted around the former house. Three large water retention dams are located on the site, one approximately 250m to the south of the farmhouse, one approximately 150m to the southwest of the former dwelling, and one at the northeast corner of the property approximately 500m to the east of the farmhouse.

The former dwelling (seemingly constructed in c.1912/1913) is located on the rise of a small hill near Bakers Lane where it is sited to take advantage of views of the Blue Mountains. The crest of the hill is located approximately 150m to the east of the house and is marked by a 1972 trig marker.

Facing west, the house is a single storey dwelling with a hipped and gabled roof. A verandah on the western, north and eastern sides and is terminated on the west by a gabled front and on the east by hipped roofed rear wing. The roof is of metal sheets profiled to appear as tiles laid directly over the top of painted corrugated steel sheets. Gutters are late twentieth century. The walls of the farmhouse are clad on the front (western) elevation with rusticated weatherboards and with splayed weatherboards on the south, north and east of the dwelling.

French doors open to the north verandah. The original door leafs have been replaced, possibly in the 1950s. Window openings are in the gabled front and south walls. Most window frames and the double hung sashes (paired in the front elevation) have been removed, while those that remain have been vandalised. The front door is a flush veneered. Half glazed flush veneer doors open to the rear (east) of the building.

The verandah has a low pitched roof, hipped at the corners, and supported on stop chamfered posts. The roof framing for the verandah at the rear of the dwelling has been replaced, likely at the same time the roof was re-sheeted.

The farmhouse was originally lined with timber boards internally. These have been re-sheeted over with compressed cement sheeting. The house has also been re-clad as evidenced by fibreglass insulation in the walls.

Original chimney pieces, chimney pots, and grates have been removed. A single brick chimney survives and has a corbelled top.

A weatherboard clad laundry addition occurs on the northern side of the house. It is not clear when this structure was added to the farmhouse.

A large rendered brick cistern is located to the northeast of the house. It has substantial cracks in its walls above ground.

A hedge of African Boxhorn is present on the northern side of the house providing screening and defining the former homestead precinct. African Boxhorn is a Class 4 Noxious Weed in NSW and requires control in accordance with a Management Plan. This normally requires removal. A mature Hackleberry tree is located to the northeast of the house, while a bougainvillea is planted adjacent to the northwest corner of the verandah.

The 2009 recording of the former farmhouse concludes that the homestead is in extremely poor condition. Most windows have been removed, and doors vandalised. The exposed timber shows evidence of extensive termite damage. The original garden associated with the house (as evident in the 1947 aerial photograph) has not been maintained.

The 2009 recording of the former Federation period weatherboard homestead provides the following Statement of Significance:

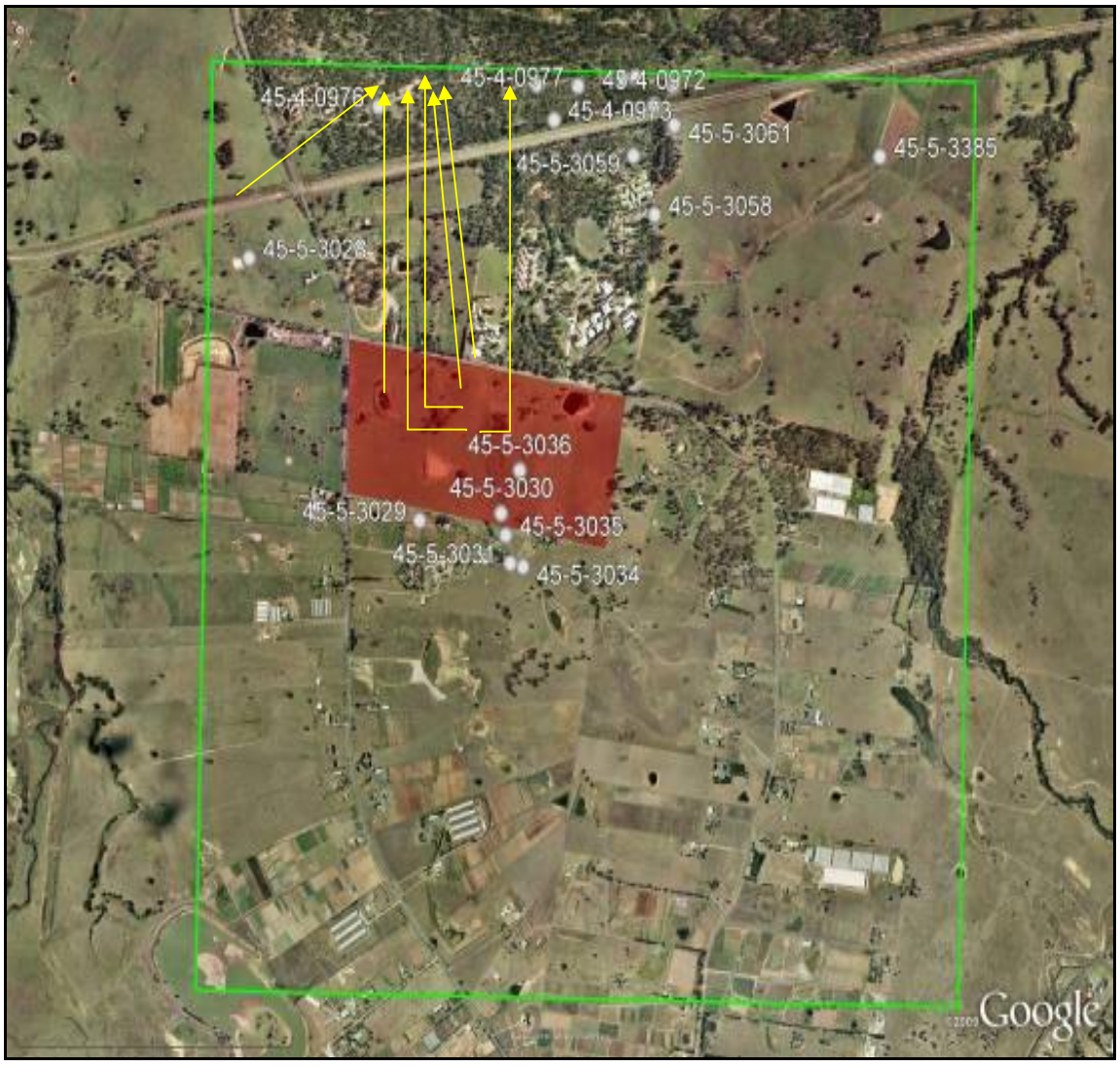
> *'The property is representative of early grazing properties in the Kemps Creek area. It is important in the Local Government Area for its evidence of the continuum of use for grazing with the surviving early twentieth farmhouse and "home paddock" marked by the African Boxhorn hedge.*
>
> *The homestead and homestead precinct are a rare surviving example of early twentieth century occupation of grazing land in the Kemps Creek area. Sited on the side of a hill they have aesthetic valuable as a legible Federation homestead and associated plantings that provide interest in the local landscape of grazing land and undulating hills.*
>
> *The condition of the house is very poor with extensive termite damage. The integrity of the house is compromised by the replacement of most doors in the Post WWII period and by vandalism resulting in the loss of original windows.*
>
> *The hedge that marks the homestead precinct on the property is African Boxhorn, a class 4 noxious weed in NSW that should be controlled by removal. This will further compromise the integrity of the significant aspects of the property.*

While the property has some historical and aesthetic value, it is not recommended for listing as a heritage item'.

On the basis of a detailed consideration and application of current *State Heritage Register* (SHR) significance criteria (not repeated here), the research and review undertaken by Hubert Architects Pty Ltd in April 2009 as requested by Council for the former Bakers Lane homestead and surrounding precinct provides the following recommendation:

- *Do not recommend listing of homestead and landscape as a heritage item on the Local Environmental Plan.*

Figure 3.1: Approximate Location of Recorded Aboriginal Archaeological Sites Identified in the AHIMS Search Area (Green Box). Note the Arrows Identify the Approximate Location of the Previously Incorrectly Recorded Sites as Explained in the Text (Source: DSCA 2010).



4.0 June and July 2010 Site Inspections

4.1 Introduction

Two separate (scientific) archaeological site inspections undertaken by DSCA, and supported by a series of independent site visits undertaken by the local Aboriginal community, were completed over the period spanning 15 June to 15 July to inform the current LOGOS Estate site development proposal.

Ground visibility was found to be relatively limited across the majority of the site during all inspections due to the nature of the prevalent grass cover that currently characterises the study area. However, a considerable number of locations across the property were found to nevertheless display varying levels of ground exposure useful for Aboriginal (and European) archaeological site detection.

These included excavated surfaces and sections/batters associated with the farm dams that have been created within the study area in recent times, exposed and eroded soil profiles that are present in and amongst the remnant scattered tree stands that survive today in a number of different locations across the site, the ground exposures that are now provided by stock grazing tracks that traverse the pastoral/grazing paddocks that characterise the property, and the original excavation (and ongoing erosion) of various contour drainage features now present on the place.

Despite that archaeological visibility conditions have not been ideal during the June and July 2010 fieldwork programs, the illustrations, descriptions, rationales, and discussion provided below are considered to be effective to underpin the conclusions and recommendations that are presented in following sections of this report that have been developed to inform the current development proposal with regards to the potential Aboriginal and European archaeological and cultural heritage sensitivity of the LOGOS Estate site.[25]

4.2 Site Inspection and Recording Methods

The preliminary (June 2010) and supplemental (July 2010) DSCA site inspections reported here for the LOGOS Estate site were undertaken according to generally accepted DECCW field and reporting methods (see NPWS 1997 – that are currently being amended). This included:

[25] The information presented here should be read in conjunction with the advice provided to date by the Aboriginal community as detailed in their respective appended cultural heritage statements.

- Documentation of observations pertinent to the assessment of potential Aboriginal and European archaeological and cultural heritage sensitivity (including a consideration of the land units on the site, topography, existing nature and condition of vegetation; the nature of ground exposures/visibility; and the extent of past/present landform disturbances etc).
- Photography to record the June and July 2010 field work program was undertaken using a Nikon FinePix A120 digital camera and a range of scale bars as needs dictated.
- A Magellan Explorist 100 handheld GPS was utilised as required to accurately plot noteworthy heritage features and/or historical landscape values.
- Air photos dating from 1947 to the present, available proposed development plans, useful site sketch plans, and a 1:25, 000 topographic map were also used as necessary to correlate all field observations as reported below.

For the purposes of description and recording, the LOGOS Estate site was prior to inspection divided by DSCA into six separate survey units (coded here as Areas 1 to 6).

Mindful of the differing landform units that were seemingly contained within the property at the initiation of the project, it was recognised that these proposed survey units were in some cases likely to a degree be relatively arbitrary and in some places across the study area would potentially overlap in terms of the need for description, detailed photographic recording, and subsequent heritage assessment.

The inspection areas that were developed to guide the proposed program of field inspections comprised the following:

- Survey Area 1: This survey unit was assessed to comprise the current alignment of Bakers Lane that forms the present northern boundary of the proposed LOGOS Estate property development footprint. The future widening of this road corridor forms a part of the current development project. The detailed photographic and recordings at *Locations No 1* and *12* illustrated **Figure 4.1** of this report indicates those sections of the Bakers Lane verge and easement that were inspected in detail during the fieldwork program.
- Survey Area 2: This survey unit was assessed at the initiation of the project to include the site of the former Bakers Lane c.1912/1913 farm homestead and its associated surrounding precinct as indicated by *Locations 2* and *3* in **Figure 4.1**.

- Survey Area 3: This survey unit was considered to include the ridge-top land and hill-slope areas extending to the south of the farmhouse and to encompass the remnant woodland stand that is presently situated between the former house and the large farm dam located towards the southern boundary of the study area. The approximate extent of this survey unit is illustrated by *Locations 5* to *8* in **Figure 4.1**.
- Survey Area 4: This survey unit was considered to comprise the lower-lying topography that now dominates the western quarter of the LOGOS Estate property that fronts Mamre Road. The approximate location and extent of this survey unit is illustrated by survey and recording *Locations 9* to *11* in **Figure 4.1**.
- Survey Area 5: This survey unit was assessed, prior to field verification, to comprise the lower-lying land (and its dams) located at the north-eastern corner of the property, and also a section of more elevated topography extending along the eastern and south-eastern boundaries of the subject site. The portion of the property to which this survey unit applies is illustrated by *Locations 13* to *16* in the **Figure 4.1**.
- Survey Area 6: This final survey unit was evaluated at the preliminary planning stage to encompass the generally undulating land that occurs within the centre of the subject site as illustrated by *Locations 17* to *19* in **Figure 4.1**.

4.3 June and July 2010 Field Observations

4.3.1 Survey Area 1

Indicative views of the existing Bakers Lane road and easement corridor are provided by **Figures 4.2** and **4.3**. The former illustration presents a view looking west down the sealed and c.1940s road from a vantage point close to the entrance to the LOGOS property at the site of the former homestead. It clearly depicts the extensive cutting into the naturally sloping topography of the place that has occurred in the past for the creation of the road and its easement, and more recent impacts associated with the provision of power utilities to both sides of the bitumen/asphalts road. The latter image provides a view looking along Bakers Lane alignment a little further to the west, and in the vicinity of the College facilities access entry points.

The road easement that may be impacted by the future Bakers Lane widening/improvement works is clearly disturbed as a result of past road construction works and utility installation.

No Aboriginal or European heritage items were identified during the field program during the DSCA inspection of this locality. The road corridor is assessed to retain no archaeological potential relative to the proposed future road works and no further heritage input to refine this conclusion appears warranted at this time.

4.3.2 Survey Area 2

Indicative views of the former Federation period (c.1912/1913) Bakers Lane homestead and surrounding garden precinct are provided in **Figures 4.4** to **4.8**. The dilapidated nature of the now vacant dwelling, the modern and poor nature of its additions, and the derelict outbuildings and features surrounding this early twentieth house is evident in these images.

The disturbed (and discernibly furrowed and 'hummocked') nature of the grassed ground surface in front and to the rear of the dwelling is readily apparent evident in the foreground of **Figure 4.4**, while the African Boxhorn hedge that is shown to the right of this image requires management. Similar observations of the site are demonstrated in **Figures 4.5** and **4.6.** The existing condition of the now derelict brick cistern, partly demolished concrete slab and wall features nearby, and the later stock holding pens are illustrated in **Figures 4.7** to **4.8** which show the place has diminished European cultural heritage values within the context of the local Kemps Creek pastoral historical landscape.

As previously noted in **Section 3.0** of this report, the former farm house, outbuildings and facilities, and associated garden features contained within the Bakers Lane homestead precinct have some historical and aesthetic value. However, the recommendation for the non-listing of this item as a heritage item on the draft Penrith LEP 2008 provided by Hubert Architects Pty Ltd (April 2009) provides a sound and considered response to this European heritage concern.

This recommendation to Council is supported by the current observations that the built fabric of the place are in poor condition, have been subject to vandalism in the past, the former garden or associated homestead complex has not been maintained since the property was vacated and fell into disuse, and is unlikely to be re-established to its former early twentieth century layout, original landscape character, and condition in the immediate future reflecting its originals design and ongoing historical functional intentions.

In combination, these considerations have clearly significantly diminished the overall European heritage values of this former pastoral residence.

No previously undocumented European archaeological features or deposits relative to the historically recorded use and occupation of the house and its surrounds were located during the recently completed site inspections reported here. No areas of European Potential Archaeological Deposit (PAD) have been identified during this study.

Likewise, no Aboriginal archaeological sites or objects were recorded during the fieldwork program programs in this portion of the LOGOS Estate site reported here.

As illustrated in the previously discussed images, the locality has been extensively disturbed by past construction works and other activities during the occupation and use of the former dwelling. It is assessed that the potential for any as yet any undetected Aboriginal archaeological finds to be present will be extremely low, and where they may remain buried at this time they will most likely consist of isolated and/or at best sparse distributions of items that will be encountered in highly disturbed recovery contexts retaining minimal archaeological integrity.

4.3.3 Survey Area 3

Indicative views of the landscape and agricultural features contained within Survey Area 3 are presented in **Figures 4.9** to **4.12**. The cleared and heavily grassed nature of this portion of the study area is indicated in **Figure 4.9**. Few ground exposures were identified in this eastern portion of the survey unit. A view looking down (south) from 'Trig Hill'[26] to a stand of eucalypts and a large water retention dam (behind) is provided by **Figure 4.10**. A smaller dam is also present in this locality and connected by an excavated contour drainage channel. Historical aerial photography indicates that at least the larger dam illustrated in these images was created in the post c.1978 period of pastoral use of the property.

The nature of the current ground exposures that are evident in and amongst these trees is illustrated in **Figure 4.11**. These provide a useful characterisation of the shallow soil profiles that are in association with this remnant vegetation stand. The trees here are in the main sapling re-growth (immature in age), and are interspersed with a combination of introduced plantings in places and a few weed varieties.

[26] The survey marker on the crest of the hill some 150m to the east of the former homestead.

The nature of the ground exposures that provide adequate archaeological visibility conditions around the margins of the large dam in this portion of Survey Area 3 is indicated in **Figure 4.12**. These consist of a combination of both up-cast soils around the margins of the dam deposited following past excavation and creation of the dam walls, and the exposure of soils beneath the grass cover revealed by the processes of natural erosion and accelerated by the effects of ongoing stock traffic.

No Aboriginal artefacts were located upon the exposed ground surfaces observed within the above tree stand, around the margins of the dams, or upon the stock tracks and drainage features present in this survey unit. Likewise, no European archaeological items or obvious areas of potential heritage sensitivity were identified during the fieldwork program.

4.3.4 Survey Area 4

This survey unit comprises the lower-lying topography that characterises much of the western half of the property that fronts Mamre Road. In **Figure 4.13,** a view of the relatively flat and now grassed paddock lands looking east towards the main ridge-line in this portion of the study area is presented.

The view looking south provided here as **Figure 4.14** presents a comparable characterisation of the current nature of this portion of the LOGOS Estate site. The flat, fully cleared, and heavily grassed landscape is evident in the background of this image. An excavated drainage channel extending from the steeply mounded southern wall (to the left) of the main farm dam is evident in the foreground of this photograph.

The nature of the main dam, an associated (smaller) back-up retention dam, and the drainage features connecting these agricultural items are illustrated in **Figures 4.15** and **4.16**.

Following an inspection of the property undertaken by *Yarrawalk* and *Darug Land Observations* on 19 June 2010, the former Aboriginal community organisation report the location of one isolated find (coded 'TOC 004') and one area of PAD (coded 'TOC PAD4') as illustrated and described in the appended Cultural Heritage Statement (**Appendix 7**). On the basis of the locative information provided by *Yarrawalk*, these finds were plotted on a preliminary site plan prepared by DSCA in late June 2010 as presented here as **Figure 4.17**.

The identified isolated find of silcrete ('TOC 004') was plotted according to the coordinates provided (the small dam illustrated here in **Figure 4.16**), but was not marked on the attached *Yarrawalk* site map. There is a yellow area on the *Yarrawalk* plan nearby noted by this organisation to potentially require 'test pitting' (in the vicinity of the dam illustrated here as **Figure 4.15**). It appears likely that the

isolated artefact was located in this location and the grid coordinates are incorrect, or else the yellow 'test pitting' area ('TOC PAD4') has been erroneously plotted on the wrong dam within Survey Unit 4.

The DSCA site inspection undertaken on 15 July 2010 failed to relocate the isolated silcrete find in the suggested location. A detailed examination of the excavated up-cast dam wall deposits and created batters plotted within the vicinity of the identified 'TOC PAD4' indicates the location is heavily disturbed and unlikely to retain the potential to reveal substantial and intact buried Aboriginal archaeological remains.

Following an inspection of the property on 21 June 2010, the *Darug Aboriginal Cultural Heritage Assessments* (DACHA) identified an area of PAD (coded 'DACHA PAD4') in the approximate location of the site plan provided in the DACHA Cultural Heritage Statement appended to this report (see **Appendix 8**). No description of this area of PAD is provided, and no further details are known that support the identification of this area of potential sensitivity. The estimated location of DACHA PAD 4 is plotted on the preliminary site plan prepared by DSCA in June 2010 as illustrated in **Figure 4.17.** An inspection of this locality revealed the location to be cleared, flay and low-lying.

No additional Aboriginal archaeological sites, isolated finds, or areas of potential sensitivity were identified in Survey Area 4 during the course of the DSCA site inspections or the six respective Aboriginal community group site visits.

4.3.5 Survey Area 5

Field inspections of Survey Area 5 focused upon the various ground exposures around the margins of a dam complex (and a series of associated drainage channels) present in the north-eastern corner of the LOGOS Estate site as illustrated in **Figures 4.18** to **4.20**. Excluding one other specific location (see below), the remainder of the land in this survey unit, that becomes increasingly elevated further to the south, was found be heavily grassed and to contain relatively few soil exposures.

A number of Aboriginal flaked stone artefacts were variously reported to occur in the vicinity of the dams in this locality by the Aboriginal community groups during their respective site inspections, and a number were subsequently relocated and recorded by DSCA on 15 July 2010.

There appears however to be a number of overlapping (and duplicated) observations for this portion of the site and the find reporting's received to date, and the summary discussion provided below attempts to correlate and reconcile the available information. On the basis of the locative information

available at the time, the various finds were plotted on to the preliminary site plan prepared by DSCA in late June 2010 as illustrated in **Figure 4.17**.

Yarrawalk identified 3 flaked stone artefacts on the dam walls in this locality (as coded open camp site 'TOC002' in **Appendix 7**). These comprise two items of mudstone and one of quartz. The grid coordinates supplied for these finds are incorrect. The easting location details places this site some 2km to the west, while the northing location details include an extra digit. Using the plan provided by *Yarrawalk*, the location of this site has been re-mapped (and marked as 'TOC PAD 2') as indicated in the above preliminary figure. This original area of PAD (in yellow) was recommended for 'test pitting' according to the plan provided that is associated with 'TOC002'.

The plan accompanying the DACHA Cultural Heritage Statement appended to this report (see **Appendix 7**) identifies two find locations (coded 'DACHA A and DACHA B') on the western and eastern sides of the main dam respectively. The precise number or nature of the finds observed in these two locations is unknown. The approximate locative information provided for these areas by this organisation (see the appended plan) has been used to plot the likely locations of these finds as illustrated in **Figure 4.17**.

DACHA has also identified two areas of Potential Archaeological Deposit (coded as DACHA PAD 1 and 2) in this locality. No descriptions of these areas of PAD are provided in their Cultural Heritage Statement. DACHA have requested 'that further investigation' of these locations be undertaken.

The *Deerubbin Local Aboriginal Land Council* (DLALC) identified one isolated find of flaked stone (coded DLALC1). The coordinates for this find were provided by Mr Steve Randall (DLALC). The DLALC also identified two flaked stone artefacts of mudstone (coded DLALC2). Again, the coordinates of these finds were provided by the land council and duly mapped in **Figure 4.17.**

DSCA re-located and recorded a number of Aboriginal flaked stone artefacts in this locality during the 15 July 2010 site inspection (see **Appendix 12**).[27] Mindful of the uncertainties of the likely duplication of records, it is reasonable to assume that each of the finds described above form components of a single archaeological site exposed by dam excavation and associated drainage works undertaken in this portion of the LOGOS site in the past. It is therefore considered to be prudent to map and

[27] DSCA Field Notes. 15 July 2010.

evaluate these finds as representing a single open camp site as discussed in further detail in following sections of this report.

A single quartzite flaked stone artefact was located on the up-cast bank of a small dam (fringed by sapling re-growth) located immediately adjacent to the eastern boundary of the study area, and to the south of the above recordings. This isolated find is illustrated in **Figure 4.21**.

No additional Aboriginal archaeological sites, isolated finds, or areas of potential sensitivity were identified in Survey Area 5 during the course of the DSCA site inspections or the six respective Aboriginal community group site visits summarised above. No European items were likewise identified during the fieldwork program.

4.3.6 Survey Area 6

An indicative view of an extensive cutting that occurs within the centre of Survey Area 6 is provided by **Figure 4.22**. This is marked by *Location 18* illustrated in **Figure 1**. This image demonstrates the lack of original topsoil in this locality, exposed clay and subsoil profiles, and possible exposed (or perhaps up-cast sandstone bedrock fabric) that is evident along the main ridge line in this portion of the LOGOS Estate property.

A detailed inspection of this extensive cutting undertaken by DSCA on 15 July 2010, which extends for a considerable distance to the southeast of the site, revealed comparable soil profiles illustrated in the above photograph. No Aboriginal artefacts were found to be exposed along the length of this exposure.

This outcome has a number of implications for the assessment of potential Aboriginal archaeological sensitivity of this locality that is reviewed in the following sections of this report.

An indicative view of a remnant stand of timber re-growth timber in this survey unit, again along the main ridge line on the property immediately to the north of the above cutting, is presented within **Figure 4.23**. This remnant timber is marked by *Location 19* illustrated in **Figure 4.1**.

The evaluation of the Aboriginal archaeological finds identified in this locality (see **Figure 4.17**) and the nature of the prevalent shallow (if not skeletal) soil profiles identified in association with these artefacts (as described and illustrated below), again have implications for the assessment of potential Aboriginal archaeological sensitivity of this locality as reviewed in sections of this report to follow.

The inspection of the property undertaken by *Yarrawalk* and *Darug Land Observations* (DLO) on 19 June 2010, with a particular focus on the small area of re-growth illustrated in **Figure 4.23**, resulted in the identification of one open camp site (coded 'TOC 003') and to comprise a total of five [5] artefacts (see below) and surrounded by an area marked in yellow as PAD TOC PAD3) as illustrated in the appended *Yarrawalk* Cultural Heritage Statement attached to this report (**Appendix 7**). On the basis of the locative information provided by *Yarrawalk*, these finds were plotted on the preliminary site plan prepared by DSCA presented here as **Figure 4.17**.

This area was assessed by *Yarrawalk* and DLO to warrant at that time future test excavation to inform the LOGOS Estate development proposal.

The locality was re-inspected by DSCA on 15 July 2010 and two of the original finds were relocated at this place (see **Figure 4.24** and **Appendix 12**). The red/orange marker flags illustrated in this image identify the approximate locations of where these finds were first recorded by *Yarrawalk* and DLO to occur around the base of the tree shown in this photograph.

It is not currently clear where the additional 3 [three] finds previously located relative to the preliminary mapping plan presented here in **Figure 4.17** and **Appendix 7** were located. While a number of unmodified (natural) quartz and shale/iron stone fragments were observed in the woodland stand during the DSCA July site inspection, no additional definitive Aboriginal heritage items were found to occur in this location comparable to the findings of *Yarrawalk* and DLO as appended.

The three artefacts subsequently re-located and recorded in this locality by DSCA in July 2010 are summarised and illustrated in **Appendix 12**.

An Aboriginal PAD was identified by DACHA to occur to the south of the above woodland stand during their June 2010 inspection (as coded 'DACHA PAD3'). The likely location of this site is mapped in **Figure 4.17**. No further details about the context, nature, or details for this PAD are currently available to support this identification.

It would appear that this area of PAD may have been incorrectly recorded and may actually relate to the woodland stand where a number of flaked stone Aboriginal artefacts are now recorded a short distance to the north of this locality. The currently exposed soils in the locality of this DACHA PAD suggest the likelihood for intact and in situ archaeological Aboriginal cultural heritage remains to be present/or survive on the property is limited as illustrated in **Figures 4.22** to **4.24**.

The presence of a possible scarred tree on the property was identified in this survey unit at the initiation of the project (coded as 'TOC 001' as illustrated in **Figure 4.17**), along with a possible area of PAD nearby (coded 'TOC PAD1').

Yarrawalk (see (**Appendix 7**) suggested the tree may have been used to make a 'coolamon' and considered the registration of an area of PAD with a buffer zone of some approximately 100m around the item.

The tree is a large *Eucalyptus tereticornis* (Forrest Red Gum) growing approximately 660 metres along Bakers Lane from the Mamre Road intersection and is sited approximately 40 metres from the edge of the road, close to the edge of the proposed LOGOS Estate development buffer zone.

The tree has a trunk diameter of approximately 120cm. There is a large basal wound extending close to ground level, and a number of other natural wounds are present on the tree. The tree is otherwise in fair condition, and is producing vigorous wound wood.

The tree was inspected by DSCA on 15 July 2010. It was noted at this time that the tree displayed a number of natural scars (due to branch loss over time etc), and that a *possible* Aboriginal scar illustrated in **Figure 4.25** was located some 10m up the main branch of the tree from ground level. It was further noted in the field at the time of the inspection (see **Appendix 12**) that the top right corner of the upper scar was irregular in form and suggested a natural origin, and that the tree appeared to be of insufficient age to have been scarred traditionally.

As illustrated in the preliminary Aboriginal site location plan presented here as **Figure 4.17**, the 'TOC PAD1' on the map provided by *Yarrawalk* (see (**Appendix 7**) appears to be in the wrong location. The ground inspection undertaken by DSCA around this tree in July 2010 revealed skeletal soil profiles to be present associated with the tree and therefore this location had minimal archaeological potential.

The suggestion that test excavation should be undertaken in this locality was as a result neither considered appropriate (or warranted given the shallow soils), and it was also noted at this time that if the tree did in fact retain evidence of Aboriginal scarification then the creation of a buffer zone in the context of future development would be appropriate and that a qualified aborist should be consulted to appraise the likely age of the tree.

As previously discussed in **Sections 2.0** and **3.0** of this report, unless a tree is at least around 150 to 200 years old it is not likely to have been used by Aboriginal people in the past in recorded traditional (pre-Contact/early post-Contact) practices.[28]

In response to the matters raised during the current survey and assessment program concerning the possibility of this tree retaining a scar of Aboriginal origin, and in particular whether this related to a possible 'coolamon' scar contained about 10 metres off the ground on the eastern side of the tree, independent advice was sought from *The Aborist Network* (see **Appendix 11**) who inspected the site on 23 July 2010. The following extract from their subsequent report is provided below (The Aborist Network July 2010:2).

> *'The branched and multi-stemmed form of the tree demonstrates that the tree has grown in an open woodland or cleared environment. A tree of this size growing in this environment would typically be somewhere between 60 and 120 years of age. This is based upon similar sized Forrest Red Gums of a known age.*
>
> *The scar would indicate that the injury occurred approximately 80% of the way through the life of that portion of the tree. (For ease of the discussion let us assume that this portion of the tree is the same age as the tree itself even though this is strictly not the case). If we assume the tree as 120 years old then the scar is no more than 25 years old. Even if we allow an error of 100% the scar is less than 50 year old and as such does not coincide with indigenous land use in the area.*
>
> *It must be understood that the way that trees respond to wounding is reasonably predictable. Because of their anatomy and the way that wound wood forms trees frequently produce elliptical or pointed elliptical (mandorla) shaped scars. In fact the frequency of this shape resulted in earlier arborists adopting the practice of dressing and scribing wounds to form an elliptical shape because it was believed to emulate the trees behaviour and thus would accelerate wound closure.*

[28] The earliest European crown land grants in the Kemps Creek area were one of two to Anthony Fenn Kemp in 1810, and the King grant of which the subject site forms a parts was is declared in c.1825. Available historical records suggest by this time that most pre-Contact Aboriginal groups had been dispossessed of their traditional lands (Fox & Associates 1987).

Based on the age of the tree and the maximum age of the tree and the frequency of wounds of this shape there is no merit undertaking any further testing of the tree'.'

This independent report also notes that two large *E. tereticornis* are growing in the front yard 28 Martin Street, Regentville, and these trees were not present in a 1943 aerial image, and that a similar sized *E tereticornis* is growing at the entrance of 42 Addison Road Marrickville and was a small tree less than 8 metres high in the 1943 aerial photographic records.

Given this advice, and on the recognition that a number of similar isolated trees of comparable size and presumed age occur on the property that display the same sort of scars, it appears unlikely that this *possible* scarred tree is of Aboriginal origin.

No additional Aboriginal archaeological sites or areas of potential sensitivity were identified in Survey Area 6 during the course of the DSCA and Aboriginal community group site visits and evaluations described above.

No previously documented or potential European items were likewise identified during the fieldwork program in this portion of the LOGOS Estate site.

4.4 Summary of the Results of the June and July Site Inspections

4.4.1 Background

The following summary presents the results of the physical inspections of the study area undertaken by DSCA and the Aboriginal community organisations indentified in **Section 1.0** of this report during June and July 2010.

The location of the principal Aboriginal archaeological sites and areas of potential Aboriginal cultural heritage sensitivity identified in this study prepared to inform the proposed LOGOS Estate development project are presented in **Figure 4.26** of this document and are evaluated further detail in **Section 5.0** of this report

4.4.2 Results

The site inspections of the proposed LOGOS Estate site at Kemps Creek reported here revealed the following as mapped in **Figure 4.26**:

- Evidence for the past Aboriginal visitation and use of the subject site (in Survey Area 3) that is demonstrated by the presence of a single isolated artefact located adjacent to a modern dam wall at the western side of the property near Mamre Road coded here as 'LOGOS IF 2'.
- A suggested area of PAD in the above locality situated to the south of this find at the southern margin of the proposed LOGOS Estate site coded here as 'DACHA PAD1'.
- An open camp site coded here as 'LOGOS OC2' situated within a stand of remnant re-growth timber in the centre of property in Survey Area 6.
- A possible scarred tree and an associated area of possible PAD coded here as 'TOC 001' located approximately mid-way along the Bakers Lane frontage of the LOGOS site in Survey Area 6.
- An open camp site coded here as 'LOCOS OC1' that is situated around the margins of a modern dam complex in the north-eastern portion of the study area in Survey Area 6.
- An isolated Aboriginal flaked stone tool find located on the eastern boundary of the LOGOS Estate site coded here as 'LOGOS IF1' in Survey Area 5.
- No other evidence of past Aboriginal visitation of the largely cleared and grassed LOGOS site was identified during the current study.
- Namely, none of the scattered trees on the property displayed any evidence for past scarification (the removal of bark for the creation of various implements and vessels etc), no additional sites or objects were identified, and no foreign stone materials (manuports etc) were located.
- No previously undocumented European archaeological features or deposits relative to the historically recorded use and occupation of the former c.1912/1913 homestead fronting Bakers Lane and its surrounds were identified during this study.
- No additional areas of potential European heritage sensitivity were identified in any other areas of the proposed LOGOS Estate site during the course of the reported site survey and assessment program documented here.

It is concluded in summary:

The effective survey coverage was found to be relatively constrained across many parts of the LOGOS Estate site due to the presence of extensive grass cover. However, the levels of disturbance

associated with past timber felling, vegetation clearance, some agricultural works (the creation of dams and drainage lines, possible ploughing in places), and the shallow and often truncated nature of the soil profiles observed in certain portions of the study area, suggests that the probability that as yet undetected Aboriginal or European sites or features of *significance* are present within the subject site is limited.

As evaluated in the following section of this report, it is expected that any Aboriginal archaeological remains that remain unrecorded at this time within the study area relative to the identified locations illustrated in **Figure 4.26** will most likely consist of isolated items and/or low-density distributions of flaked stone artefacts that will be encountered within relatively disturbed recovery contexts.

Figure 4.1: Site Survey Areas and Detailed Photographic and Site Recording Locations (Source DSCA 2010).

Figure 4.2: Bakers Lane Road Cutting and Easement Looking West (Source DSCA 2010).

Figure 4.3: Bakers Lane Road Cutting Easement Looking East (Source DSCA 2010).

Figure 4.4: An Indicative View of the Former Bakers Lane Homestead and Surrounding Curtilage Looking to the South (Source DSCA 2010).

Figure 4.5: An Indicative View of the Former Bakers Lane Homestead and Surrounding Curtilage Looking to the West (Source DSCA 2010).

Figure 4.6: An Indicative View of the Former Bakers Lane Homestead and Surrounding Curtilage Looking to the North (Source DSCA 2010).

Figure 4.7: An Indicative View of the Former Bakers Lane Homestead and Surrounding Curtilage Looking to the North West (Source DSCA 2010).

Figure 4.8: An Indicative View of the Former Bakers Lane Homestead and Surrounding Curtilage Looking to the South (Source DSCA 2010).

Figure 4.9: An Indicative View of Survey Area 3 Looking Northeast (Source DSCA 2010).

Figure 4.10: An Indicative View of the Property Looking South Down to a Large Farm Dam From 'Trig Hill' (Source DSCA 2010).

Figure 4.11: Looking South Down to a Large Farm Showing and Ground Exposure at the Base of a Tree in the Timber Stand in Survey Area 3 (Source DSCA 2010).

Figure 4.12: Eastern Edge of a Large Farm Present in Survey Area 3 (Source DSCA 2010).

Figure 4.13: A View Looking East Below the Large Dam in Survey Area 4 Towards the Main Ridge Line on the Property (Source DSCA 2010).

Figure 4.14: A View Looking from the Southern Wall of the Large Dam in Survey Area 4 Showing an Excavated Drainage Channel & Prevalent Low Topography (Source DSCA 2010).

Figure 4.15: A View Looking Along the Western Edge of the Large Dam in Survey Area 4 (Source DSCA 2010).

Figure 4.16: A View of the Main Dam in Survey Area 4 and an Associated Small Dam and Drainage Channel Looking Southwest (Source DSCA 2010).

Figure 4.17: Preliminary Plan of Identified Aboriginal Cultural Heritage Sites and Areas of Potential Sensitivity Locations Prepared in June 2010 (Source DSCA 2010 – Base Map Google 2009).

Figure 4.18: A View of the Northern Section the Main Dam in the Northeast Corner of Survey Area 5 Looking East (Source DSCA 2010).

Figure 4.19: A View of the Main Dam in Survey Area 5 Looking Southeast up to the Minor Elevated Land Occupied by a Private Residence (Source DSCA 2010).

Figure 4.20: Small Dam in Survey Area 5 Looking West to 'Trig Hill' and the Main Ridge Line (Source DSCA 2010).

Figure 4.21: Isolated Find LOGOS IF1 on the Margins of the Small Dam at the Eastern Boundary of Survey Area 5 (Source DSCA 2010).

Figure 4.22: Cutting in Survey Area 6 Showing the Lack of Original Topsoil, Exposed Clay and Subsoil, and Bedrock Along the Main Ridge Line on the Property (Source DSCA 2010).

Figure 4.23: Re-growth Timber Stand in Survey Area 6 Along the Main Ridgeline on the Property Below 'Trig Hill' (Source DSCA 2010).

Figure 4.24: An indicative View of the Re-growth Timber Stand in Survey Area 6 containing the Artefacts Originally Reported to Comprise Site TOC 003 and TOC PAD3 (Source DSCA 2010).

Figure 4.25: Indicative Views of a Possible Scared Tree in Survey Area 6 Reported to Comprise Site TOC 001 and Nearby TOC PAD1 (Source The Aborist Network July 2010).

Figure 4.26: Mapped Aboriginal Archaeological Sites and Area of PAD on the Proposed LOGOS Estate Site (Source DSCA 2010 – Base Plan Google 2009).

5.0 Summary and Conclusions

5.1 Aboriginal Archaeological & Cultural Heritage Impact Statement

The background Aboriginal archaeological and cultural heritage research, site inspection, analysis and assessment of the LOGOS Estate site undertaken for the current survey and assessment study indicate that:

- Prior to the commencement of the present Aboriginal heritage assessment process, no *previously* documented Aboriginal archaeological sites or 'objects' were known to occur within the boundaries of the subject site.
- An AHIMS site search for the property received at the initiation of the project indicated the presence of a number of sites to occur within the boundaries of the study area. However, subsequent analysis of these results demonstrated that the original location coordinates accompanying the site registration data were in fact incorrect and that each of these were recorded to the north, and outside of the LOGOS Estate site.
- A small number of isolated finds and open camp sites, each comprising low numbers of largely unremarkable flaked stone artefacts, has been located on the surfaces of number of exposed areas in the locations illustrated in **Figure 4.26**. A detailed description of each of these sites, along with illustrations of a selected number of the items comprising some of these sites, is provided in **Appendix 12**.
- A re-inspection and evaluation of the landform and disturbance levels around the margins of the large farm dam at which LOGOS OC1 has been located suggests the locality retains minimal subsurface archaeological potential as a result of extensive landscaping associated with the creation and ongoing use of the dam. While it may be expected that further artefacts may occur in this locality, it is unlikely they will be in situ but would rather be identified in eroded and/or disturbed recovery contexts. It is concluded that future test excavation at this site is not warranted given the minimal information of value that is likely to be revealed by such investigations.
- A re-inspection and evaluation of the landform and disturbance levels in and around the remnant and re-growth timber stand at which LOGOS OC2 has been located suggests the locality retains minimal subsurface archaeological potential. The recorded flaked stone artefacts in this locality occur in a seemingly disturbed context on lag (and skeletal) lag

gravels. There is little to no topsoil in this area as demonstrated by a cutting immediately to the west and a 1940s aerial photograph showing past scraping the area. While further artefacts may occur in low numbers in this locality, it is unlikely that future test excavation at this site will result in the recovery of information to significantly augment our understanding of past Aboriginal visitation and use of the property beyond that which is provided by the existing surface recordings.

- The archaeological potential at the sites of the LOGOS IF1 and IF2 finds is assessed to be low for the similar reasons outlined for the recorded sites noted above.
- A small number of additional areas of Potential Archaeological Deposit (PAD) were identified by *Yarrawalk,* the *Darug Land Observations*, and the *Darug Aboriginal Cultural Heritage Assessments* during their respective site inspections as illustrated in **Figure 4.26**.
- The information available to date for these areas of PAD is sparse, as is the rationale upon which the nomination of these locations has been made. A re-inspection of these areas of mapped PAD demonstrates the soil profiles to be extremely shallow, if not entirely absent in places, indicating the potential for substantial and intact archaeological evidence of significance to remain un-detected (buried) in these locations at this time would appear to be relatively limited.
- A *possible* scarred tree (coded TOC001) has been suggested to be present on the property situated close to the north central Bakers Lane site frontage as illustrated in **Figure 4.26**. A re-inspection and evaluation of this tree raised some doubts as to whether the suggested scar was of Aboriginal origin or of natural origin (limb loss etc), and whether the tree was of sufficient age to posses evidence for Aboriginal cultural modification. Independent advice provided by a qualified arborist suggests the tree is highly unlikely to have been modified by Aboriginal people in the past.
- None of the remaining isolated timber inspected on the site display any evidence for cultural modification. In any case, the few surviving trees currently on the site consist either of sapling re-growth or relatively immature specimens that are highly unlikely to be of a sufficient age to display evidence of past Aboriginal scarification.

- No foreign stone materials (commonly referred to as 'manuports') potentially transported onto the site suitable for use by people in the past for the creation of flaked or ground stone artefacts were identified.
- No midden deposits (potentially comprising discarded animal, fish and shell fish food refuse etc) were observed during the June and July 2010 site inspections. If formerly present on the site, the likelihood for the survival of this type of archaeological evidence is in all probability likely to be minimal due to the shallow and acidic nature of the resident soils across the site. In general terms, shell middens are rare in the Cumberland Plain. Most occur around the margins of the Plain in both open and sheltered coastal and estuarine contexts (the latter occurring in sandstone overhangs providing favourable protective conditions etc), and associated with principal river catchments present within the broader Sydney region.
- Finally, no exposed sandstone outcrops occur within the study area that may have been used by Aboriginal people in the past for the creation of engraved rock art images and axe grinding grooves that are the result of the manufacture and maintenance (sharpening) of edge ground axe/hatchet heads.
- No additional Aboriginal archaeological remains excluding the sites mapped in **Figure 4.26** and summarised in **Appendix 12** were located in any other portions of the LOGOS Estate site during the fieldwork program reported here.
- In summary, it is considered likely that past and ongoing agricultural land-use activities (timber felling, vegetation clearance, dam constructions, possible ploughing and stock grazing etc) will have had a relatively significant impact upon the shallow soil profiles that characterize much of the LOGOS Estate with the potential to contain as yet undetected Aboriginal archaeological remains of significance.

With these observations in mind, it is concluded that the LOGOS Estate site possesses relatively limited Aboriginal archaeological sensitivity relative to the current development proposal. This evaluation is based upon the following observations and archaeological considerations:

- The study area is located *between* the catchments of two of the principal watercourses that traverse the local Kemps Creek/Erskine Park landscape. These are Kemps Creek to the west and Ropes Creek to the east.

- A small number of minor drainage lines (now dammed) occur on the property. What the original water flows of these may have been in the past (in terms of providing people a reliable source of fresh drinking water) is unclear.
- The previously reviewed Aboriginal archaeological site predictive modelling presented in **Section 3.0** of this report (based on stream order variables) suggests that in the headwaters of upper tributaries archaeological evidence will be sparse and represent little more than a background scatter, while in the middle reaches of minor tributaries there will be archaeological evidence for sparse but focused activity (e.g. one-off camp locations and single episode knapping events).
- On this basis, there is no reason to expect that the current study area in itself would have been subject to intensive or repeated visitation and use by Aboriginal people in the past that would have created substantial and significant archaeological deposits.
- It more likely that the subject land may have been visited sporadically by people over time as they moved *to* and *from* more attractive landscape contexts and resource zones in the local landscape that may have potentially included such areas as the more permanent catchments of Kemps and Ropes Creeks, and even South and Eastern Creeks located further distances away.
- A number of previous archaeological excavations have been undertaken within relatively close proximity to the LOGOS Estate site. The closest of these being undertaken in 2005 within the Emmaus School that is located immediately to the north of Bakers Lane.
- As described in **Section 3.0** of this report, the archaeological investigations at the Emmaus School retrieved a small number of largely unremarkable flaked stone artefacts that are consistent in material type, form, and character with previous artefact findings reported from nearby excavation and analysis studies in the local Kemps Creek/Erskine Park landscape.
- Archaeological test excavation and salvage investigation projects completed to date within the local landscape situated within the catchments between Kemps and Ropes Creek have, in the main, have revealed largely low-density distributions of flaked stone artefacts that suggests a low intensity use of the place by Aboriginal people in the past may well characterise how people used this particular landscape in the past.

- Mindful of the sparse nature of the documented Aboriginal archaeological sites on the property, the shallow soils that characterise the site, the location of the study area relative to the principal watercourses in the surrounding landscape that are likely to have represented more abundant resource zones and hence attractive camp site locations to people in the past, and the impacts associated with past and ongoing land-use practices, there are no compelling reasons to suggest future archaeological excavations on the LOGOS Estate will result in the recovery of substantial and significant remains that will differ from the patterns previously recorded through investigations in the local area.

In conclusion, it is expected that any as yet undetected evidence for past Aboriginal visitation and use of the subject site that may be exposed by the proposed future development will consist of either isolated items or very low-density distributions of flaked stone artefacts that will most likely be encountered in largely disturbed contexts.

5.2 Evaluation

On the basis of the above considerations, it is concluded that the LOGOS Estate development proposal is unlikely to have a *significant* adverse impact upon the Aboriginal archaeological heritage values of the place and that no *critical* Aboriginal archaeological constraints are apparent for the proposal proceeding as planned subject to the implementation of the management recommendations provided below should approval be granted by the DoP.

5.3 European Archaeological & Cultural Heritage Impact Statement

The background European archaeological and cultural heritage research, site inspection, analysis and assessment of the LOGOS Estate site undertaken for the current survey and assessment study indicate that:

- While the now vacant and dilapidated former Federation period farming homestead fronting Bakers Lane has some historical and aesthetic value, a previous recording and evaluation of the house and its surrounding precinct recommends that the property does not sufficiently meet current significance criteria requirements to justify its listing as a heritage item on the draft Penrith LEP 2010.

- No previously undocumented European archaeological features or deposits relative to the historically recorded use and occupation of the former c.1912/1913 homestead have been identified during this course of preparing the current study.
- No additional areas of potential European heritage sensitivity have been identified in any other areas of the proposed LOGOS Estate site during the course of the reported site survey and assessment program documented here.
- The potential for as yet undocumented European archaeological features or deposits of significance to be present on the property relative to the LOGOS Estate development proposal is assessed to be low.

5.4 Evaluation

On the basis of the above considerations, it is concluded that the LOGOS Estate development proposal is unlikely to have a *significant* adverse impact upon the European archaeological heritage values of the place and that no 'clear or obvious' European archaeological and cultural heritage constraints are apparent for the proposal proceeding as planned subject to the implementation of the management recommendations provided below should approval be granted by the DoP.

6.0 Management Recommendations

6.1 Basis for Recommendations

It is assessed that the LOGOS Estate development proposal is unlikely to have an adverse impact upon the Aboriginal and European archaeological and cultural heritage values of the property.

It is therefore concluded that there are no *significant* Aboriginal archaeological (scientific) or European heritage constraints for the proposal proceeding at this time subject to the consideration of the following conditions:

- Recognition of the legal requirements and automatic statutory protection provided to Aboriginal 'objects' and 'places' under the terms of the *National Parks and Wildlife Act* of *1974*, where it is an offence to knowingly damage, deface or destroy Aboriginal sites or relics without the prior consent of the Director-General of the *National Parks and Wildlife Service* (NPWS) that now comprises an administration branch of the *Department of Environment and Climate Change and Water* (DECCW).
- Consideration of the views and advice provided by the *Deerubbin Local Aboriginal Land Council*, the *Darug Tribal Aboriginal Corporation*, the *Darug Custodian Aboriginal Corporation*, the *Darug Aboriginal Cultural Heritage Assessments,* the *Darug land Observations*, and *Yarrawalk* as outlined in their respective *Cultural Heritage Statements* that have been received to date (as appended).
- Recognition of the protection provisions of the *NSW Heritage 1977* that while a number of the archaeological provisions of the Act have been recently amended, the Act nevertheless retains the core principals and objectives that require anyone proposing to disturb land to obtain a permit from the *NSW Heritage Council* (under Section 140 or Section 160 of the Act) if it is known or suspected that 'relics' of significance may be disturbed, moved or destroyed by future land alterations.

6.2 Recommendations

I The Aboriginal archaeological sites and isolated finds recorded on the LOGOS Estate site identified during the current study be registered with the DECCW AHIMS Aboriginal Sites Register.

II The currently identified Aboriginal flaked stone artefacts mapped in the locations illustrated in **Figure 4.26** should be temporary collected prior to the commencement of any future development works on the land, and subsequently relocated to an appropriate location at the completion of development works on the site. The precise relocation on-site (or storage and curation off-site) of these finds would be determined by the Aboriginal community in consultation with the DECCW, and would be duly reported to update the DECCW AHIMS Aboriginal heritage records.

III Based on the conclusion that the *potential* for further undetected Aboriginal archaeological items of significance to occur within the subject site that may be affected by future site works is assessed to be *low*, it is recommended that there are no *significant* Aboriginal archaeological constraints to the proposed LOGOS Estate site development proceeding as planned.

IV Prior to the commencement of future works on the site if approved, all planners and contractors involved should be made aware of the existence of the Aboriginal archaeological sites on the property and the assessed possibility (albeit limited) that further as yet undiscovered Aboriginal archaeological materials may exist within the footprint of the proposed activity areas. This could be purposively undertaken through a site induction, which would notify all involved of their obligations under the *National Parks and Wildlife Act 1974*.

V Prior to the commencement of future works on the site if approved, all planners and contractors involved should be made aware of their obligations and responsibilities under the NSW Heritage Act 1977.

VI It is recommended that the Aboriginal community groups consulted with for the project be provided the opportunity to inspect initial site works (should they express and interest in this course of action) in the find locations illustrated in **Figure 4.26** at such time when any future development plans are confirmed. A brief inspection of these localities at such time would expediently determine whether there is any possibility that as yet undetected Aboriginal archaeological items are present, in which case appropriate management procedures (such as additional monitoring) could be enacted in consultation with the Aboriginal community stakeholders.

VII In the (largely) unexpected circumstance that any Aboriginal objects are unearthed as a result of the above works in the future, it is recommended that activities should temporarily cease

within the immediate vicinity of the find locality, be relocated to other areas of the subject site (allowing for an appropriate buffer zone), and the *Department of Environment and Climate Change and Water* (DECCW) be contacted to advise on the appropriate course of action to allow the Aboriginal community organisations to record the identified item(s) in a timely fashion to ensure works schedules are maintained and balanced with statutory heritage requirements. Any such items would be collected and duly relocated according to advice sought from the DECCW.

VIII It is recommended that the former Federation period homestead (and its principal surrounding precinct elements) fronting Bakers Lane in the northwest corner of the LOGOS property should be subject to archival recording by a suitably qualified built heritage professional prior to the commencement of any future development works that may impact upon the now vacant dwelling and its associated landscape features. This archival documentation would be undertaken according to standard methods and levels endorsed by the *NSW Heritage Council.*

IX Should demolition of this structure be required (and approved by the DoP and Council), it is recommended that an inspection of the works in the locality should be undertaken by a suitably qualified archaeologist at a point where works reach existing ground levels with the objectives of expediently evaluating and recording any as yet undetected (buried) European archaeological features or deposits of significance that may potentially be associated with the use and occupation of the former residence and its surrounding curtilage.

X Two copies of this report should be forwarded to:

The Manager
Planning and Heritage Section – Metropolitan Region
Central Aboriginal Heritage Unit
NSW Department of Environment, Climate Change and Water
Level 7, 79 George Street
PARRAMATTA, NSW, 2150

XI Two copies of this report should be forwarded to:

The Manager
NSW Heritage Office
3 Marist Place

PARRAMATTA, NSW, 2150

XII A copy of this report should be forwarded to:

Ms Sandra Lee
Secretary
Darug Tribal Aboriginal Corporation
PO Box 441
BLACKTOWN, NSW, 2148

XIII A copy of this report should be forwarded to:

Ms Leanne Watson
Chairperson
Darug Custodian Aboriginal Corporation
PO Box 81
WINDSOR, NSW, 2756

XIV A copy of this report should be forwarded to:

Ms Celestine Everingham
Coordinator
Darug Aboriginal Cultural Heritage Assessments
90 Hermitage Road
KURRAJONG HILLS, NSW, 2758

XV A copy of this report should be forwarded to:

The Chairperson
Deerubbin Local Aboriginal Land Council
PO Box 3184
MOUNT DRUITT, NSW, 2770

XVI A copy of this report should be forwarded to:

Mr Scott Franks
Director & Aboriginal Heritage Manager
Yarrawalk
PO Box 76
CARRINGBAH, NSW, 1495

XVII A copy of this report should be forwarded to:

Mr Gordon Workman
Darug Land Observations
PO Box 571
PLUMPTON, NSW, 2761

XVIII Upon receipt, the *Aboriginal Community Cultural Heritage Statements* that have not been received to date for the project be forwarded directly to the DoP to accompany this report.

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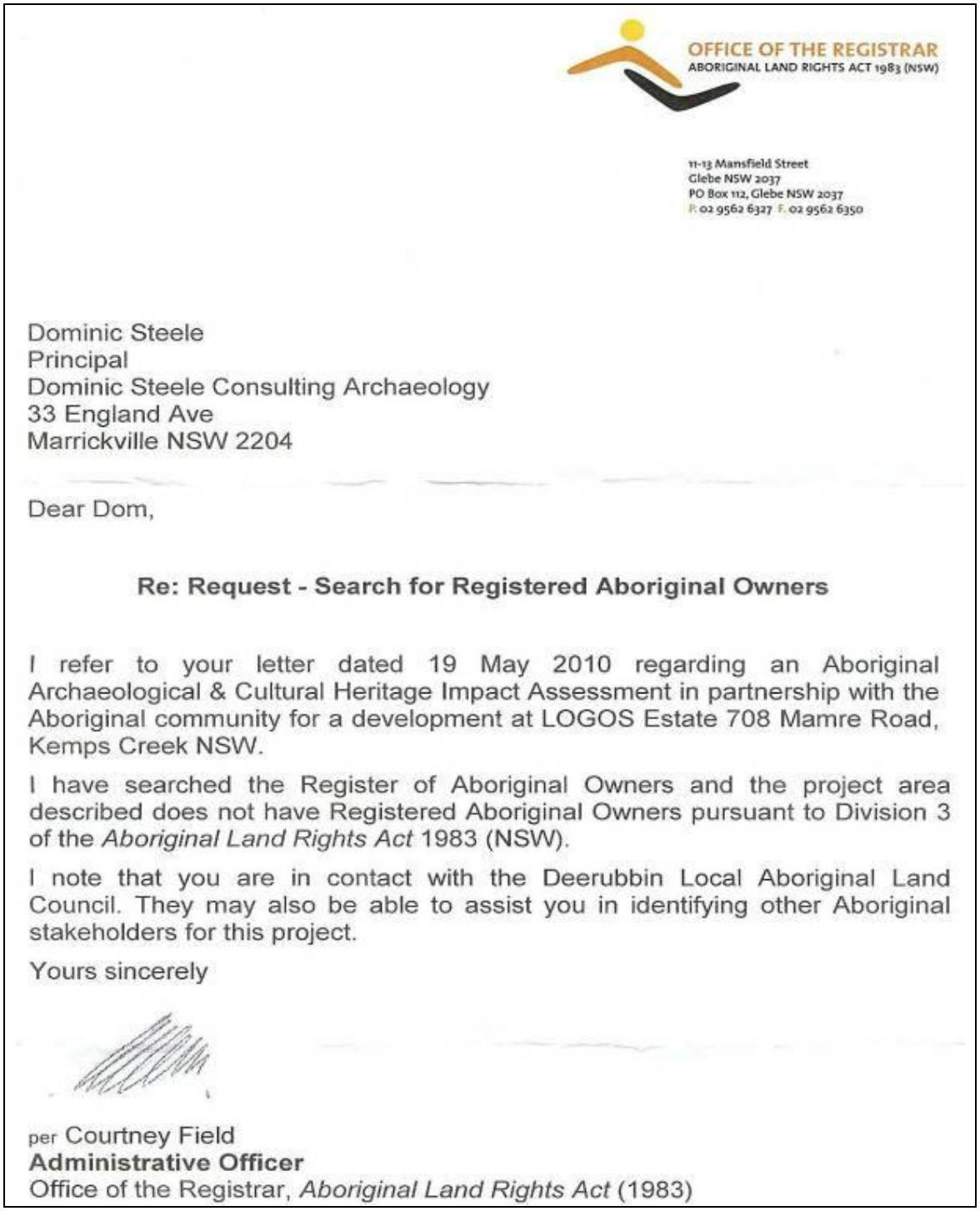
Attachments

Appendix 1

Department of Aboriginal Affairs Correspondence



OFFICE OF THE REGISTRAR
ABORIGINAL LAND RIGHTS ACT 1983 (NSW)

11-13 Mansfield Street
Glebe NSW 2037
PO Box 112, Glebe NSW 2037
P. 02 9562 6327 F. 02 9562 6350

Dominic Steele
Principal
Dominic Steele Consulting Archaeology
33 England Ave
Marrickville NSW 2204

Dear Dom,

Re: Request - Search for Registered Aboriginal Owners

I refer to your letter dated 19 May 2010 regarding an Aboriginal Archaeological & Cultural Heritage Impact Assessment in partnership with the Aboriginal community for a development at LOGOS Estate 708 Mamre Road, Kemps Creek NSW.

I have searched the Register of Aboriginal Owners and the project area described does not have Registered Aboriginal Owners pursuant to Division 3 of the *Aboriginal Land Rights Act* 1983 (NSW).

I note that you are in contact with the Deerubbin Local Aboriginal Land Council. They may also be able to assist you in identifying other Aboriginal stakeholders for this project.

Yours sincerely

per Courtney Field
Administrative Officer
Office of the Registrar, *Aboriginal Land Rights Act* (1983)

Appendix 2

Department of Environment, Climate Change and Water Correspondence

Attn: Dominic Steele
Dominic Steele Consulting Archaeology
33 England Avenue
MARRICKVILLE NSW 2204

Dear Mr Steele,

RE: DECCW ABORIGINAL CULTURAL HERITAGE CONSULTATION REQUIREMENTS FOR PROPONENTS 2010: LOGOS Estate, 708 Mamre Road, Kemps Creek

Thank you for your letter dated 19/5/2010 to the Department of Environment, Climate Change and Water (DECCW) regarding the above matter.

Please find attached the list of Aboriginal stakeholders known to DECCW that may have an interest in the project.

Further, receipt of this information does not remove the requirement of a proponent/consultant to advertise in local print media and contact other bodies seeking interested Aboriginal parties. Consultation with Aboriginal stakeholders must be in accordance with the *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* 2005. These guidelines need to be considered when assessing potential impacts on Aboriginal cultural heritage for development applications assessed under Part 3A of the *Environmental Planning and Assessment Act* 1979.

The consultation guidelines used for Part 3A projects requires that consultation is undertaken in line with DECCW's *Interim Community Consultation Requirements for Applicants 2004*. However, it is anticipated that, for future projects, the Department of Planning (DoP) will require applicants to follow DECCW's new requirements, the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*, which can be found on the DECCW public website by accessing the following link:

http://www.environment.nsw.gov.au/resources/cultureheritage/commconsultation/09781ACHconsultreq.pdf

Please note that these requirements replace the *Interim Community Consultation Requirements for Applicants, December 2004.*

PO Box 668 Parramatta NSW 2124
L7, 79 George St, Parramatta NSW 2150
Tel: (02) 9995 5500 Fax: (02) 9995 6902
TTY (02) 9211 4723
ABN 30 841 387 271
www.environment.nsw.gov.au

Department of **Environment and Climate Change** NSW

If you wish to discuss any of the above matters further please contact Miranda Morton, Aboriginal Heritage Planning Officer, on (02) 9995 6836.

Yours sincerely,

Lou Ewins 24/5/10

Lou Ewins
Manager
Planning and Aboriginal Heritage
Metropolitan Branch
Environmental Protection & Regulation

Liverpool LGA

Darug Custodial Aboriginal Corporation	Leanne Watson	02 4577 5181 / 0415 770 163	PO Box 81, Windsor NSW 2756
Darug Tribal Aboriginal Corporation	Sandra Lee	02 9622 4081	PO Box 441, Blacktown NSW 2148
Darug Aboriginal Cultural Heritage Assessments	Gordon Morton	02 4567 7421 or 0422 865 831	90 Hermitage Rd, Kurrajong Hills NSW 2758
Darug Land Observations	Gordon Workman	0415 663 763 / fax 02 9831 8868	PO Box 571, Plumpton, NSW 2761
Darug Aboriginal Land Care Inc	Des Dyer	0408 360 814	18a Perigee Close, Doonside 2767
Yarrawalk	Scott Franks (Wonnarua nation)	0404 171 544	PO Box 76, Caringbah NSW 1495
Cubbitch Barta	Glenda Chalker	0427 218 425	55 Nightingale Rd, Pheasants Nest NSW 2574
Gandangara LALC	Mark (Jack) Johnson	(02) 96025280	PO Box 1038 Liverpool NSW 2170

Appendix 3

Department of Environment, Climate Change and Water AHIMS Search Results

Dominic Steele Consulting Archaeology
33 England Avenue Marrickville NSW 2204 Phone (02) 9569 5801 Fax (02) 9569 0324 Mobile 0411 88 4232
Email: dsca@bigpond.net.au

AHIMS

List of Sites (List - Short)

Mamre Rd, Kemps Creek

Grid Reference Type = AGD (Australian Geodetic Datum), Zone = 56, Easting From = 294000, Easting to = 297000, Northing From = 6255000, Northing to = 6256000, Feature Search Type = AHIMS Features

Site ID	Site Name	Datum	Zone	Easting	Northing	Context	Site Features	Site Types	Recording (Person)	Reports (Catalogue Number)	State Arch. Box No (for office use only)
45-4-0970	EP1 - "Erskine Park 1"	AGD	56	291277	6254955	Open Site	AFT ; -	Open Camp Site (recorded prior to June 2001)	McDonald, Carding	97503, 98435	NRS/17795/1364
		Status Valid									
		Primary Contact							Permit(s)		
45-4-0971	EP3 - "Erskine Park 3"	AGD	56	295814	6254965	Open Site	AFT ; -	Open Camp Site	McDonald	97503	NRS/17795/1364
		Status Valid									
		Primary Contact							Permit(s)		
45-4-0972	EP4 - "Erskine Park 4"	AGD	56	293740	6254900	Open Site	AFT ; -	Open Camp Site	McDonald	97503, 98435	NRS/17795/1364
		Status Valid									
		Primary Contact							Permit(s)		
45-4-0973	EP5 - "Erskine Park 5"	AGD	56	295349	6254843	Open Site	AFT ; -	Isolated Find	McDonald	97503, 98435	NRS/17795/1364
		Status Valid									
		Primary Contact							Permit(s)		
45-4-0976	EP8 - "Erskine Park 8"	AGD	56	294857	6254870	Open Site	AFT ; -	Open Camp Site	McDonald	97503, 98435	NRS/17795/1365
		Status Valid									
		Primary Contact							Permit(s)		
45-4-0977	EP9 - "Erskine Park 9"	AGD	56	295440	6254955	Open Site	AFT ; -	Open Camp Site	McDonald	97503, 98435	NRS/17795/1365
		Status Valid									
		Primary Contact							Permit(s)		
45-4-0978	EP2 - "Erskine Park 2"	AGD	56	295816	6254962	Open Site	AFT ; -	Open Camp Site	McDonald	97503, 98435	NRS/17795/1365
		Status Valid									
		Primary Contact							Permit(s)		
45-4-3008	EPTA3	AGD	56	294160	6254370	Open Site	AFT ; -	None	Navin Officer Heritage Consultants Pty Ltd		
		Status Valid									
		Primary Contact							Permit(s) 2198		

Number of Sites: 19

Page 1 of 2

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27/08/2010 11:20:54

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List of Sites (List - Short)

Mamre Rd, Kemps Creek

Grid Reference Type = AGD (Australian Geodetic Datum), Zone = 56, Easting From = 294000, Easting to = 297000, Northing From = 6252000, Northing to = 6255000, Feature Search Type = AHIMS Features

Site ID	Site Name	Datum	Zone	Easting	Northing	Context	Site Features	Site Types (recorded prior to June 2001)	Recording (Primary)	Reports (Catalogue Number)	State Arch. Box No (for office use only)
45-5-3029	EPTA4	AGD	56	294850	6253540	Open Site	AFT : -	None	Navin Officer Heritage Consultants Pty Ltd		
		Status Valid									
		Primary Contact							Permit(s) 2188		
45-5-3030	EPTA5	AGD	56	295170	6253570	Open Site	AFT : -	None	Navin Officer Heritage Consultants Pty Ltd		
		Status Valid									
		Primary Contact							Permit(s) 2188		
45-5-3031	EPTA6	AGD	56	295210	6253410	Open Site	AFT : -	None	Navin Officer Heritage Consultants Pty Ltd		
		Status Valid									
		Primary Contact							Permit(s) 2188		
45-5-3034	EP-I 1	AGD	56	295260	6253400	Open Site	AFT : -	None	Navin Officer Heritage Consultants Pty Ltd		
		Status Valid									
		Primary Contact							Permit(s) 2188		
45-5-3035	EP-I 2	AGD	56	295190	6253500	Open Site	AFT : -	None	Navin Officer Heritage Consultants Pty Ltd		
		Status Valid									
		Primary Contact							Permit(s) 2188		
45-5-3036	EP-I 3	AGD	56	295240	6253710	Open Site	AFT : -	None	Navin Officer Heritage Consultants Pty Ltd		
		Status Valid									
		Primary Contact							Permit(s) 2188		
45-5-3058	EV1	AGD	56	295751	6254547	Open Site	AFT : -, PAD : -	None	Wheeler		NRS/17798/1/391
		Status Valid									
		Primary Contact							Permit(s)		
45-5-3059	EV2	AGD	56	295663	6254735	Open Site	AFT : -, PAD : -	None	Wheeler		NRS/17798/1/391
		Status Valid									
		Primary Contact							Permit(s) 2237		

Number of Sites :19 Page 2 of 3 Printed By Freeburn,Shannon 27/08/2010 11:39:84

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33 England Avenue Marrickville NSW 2204 Phone (02) 9569 5801 Fax (02) 9569 0324 Mobile 0411 88 4232
Email: dsca@bigpond.net.au

AHIMS
Aboriginal Heritage Information Management System

List of Sites (List - Short)

Mamre Rd, Kemps Creek

Grid Reference Type = AGD (Australian Geodetic Datum), Zone = 56, Easting From = 294600, Easting to = 297600, Northing From = 6252000, Northing to = 6256000, Feature Search Type = AHIMS Features

Site ID	Site Name	Datum	Zone	Easting	Northing	Context	Site Features	Site Types (recorded prior to June 2001)	Recording (Primary)	Reports (Catalogue Number)	State Arch. Box No (for office use only)
45-5-2960	EV3	AGD	56	295066	6254988	Open Site	AFT : -	None	Wheeler		NRS/17798/1/391
		Status Valid									
		Primary Contact							Permit(s) 2237, 2391		
45-5-3061	EV4	AGD	56	295822	6254837	Open Site	AFT : -	None	Wheatley		NRS/17798/1/391
		Status Valid									
		Primary Contact							Permit(s) 2391		
45-5-3385	Oakdale Campsite 4	AGD	56	296632	6254755	Open Site	AFT : 3	None	Dominic Steele Archaeological Consulting		
		Status Valid									
		Primary Contact							Permit(s)		

Number of Sites :19 Page 3 of 3 Printed By Freeburn,Shannon 27/06/2010 11:39:04

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Appendix 4

Koori Mail Public Notification Advertisement – Lodged 2 June 2010

Proposed Industrial Development - LOGOS Estate – Kemps Creek, NSW

Public Notice and Registration of Interest

NSW National Parks & Wildlife Act 1974
Environmental Planning & Assessment Act 1979
Development Application (10_0061 and 10_0062)

A development proposal has been lodged with the NSW Department of Planning for the future industrial redevelopment of a 52 hectare parcel of land at 708 Mamre Road (Lot 1 in DP 104958) in Kemps Creek under Part 3A of the Environment Planning & Assessment Act 1979.

In accordance with the NSW Department of Environment, Climate Change and Water's Aboriginal Cultural Heritage Consultation Requirements for Proponents (April 2010), individuals or groups are invited to register their interest in writing to participate in the Aboriginal cultural heritage assessment and consultation process for the proposal.

Contact details are as follows:

Mr Dominic Steele
c/- LOGOS Property
33 England Avenue, Marrickville, NSW, 2204

Phone Contact: (Office) 02 9569 5801 (M) 0411 88 4232
The registration period closes on: 16th June 2010
The consultation period closes on: 18th June 2010

Appendix 5

Deerubbin Local Aboriginal Land Council Cultural Heritage Statement

(To be Appended to this Report Upon Receipt)

Appendix 6

Darug Land Observations Cultural Heritage Statement

DARUG - LAND - OBSERVATIONS

ABN: 87239202455
E-MAIL: gordon51@bigpond.net.au
PO BOX: 571 Plumpton. NSW 2761
Phone: 029831 8868 or 0415 663 763

1-7-2010

Mr Dominic Steele

Dominic Steele Consulting Archaeology

Re: Kemps Creek Logistics Project 708 Mamre Road Kemps Creek NSW

A D.L.O rep did this walkover on the 19-6-2010 the area needs more work on it as artefacts were found on the north-eastern side along the dam, Were as we believe a scared tree is, up the slope we found more artefacts in the tree line.

Recommendation more work need

As always D.L.O would be involved in the monitoring of the top soil removal and all other form of works to be carried out on this site

Yours faithfully

Uncle
Gordon Workman
Darug Elder

Sites Officer

Appendix 7

Yarrawalk Cultural Heritage Statement

TOCOMWALL
Trading as YARRAWALK

Tocomwall
ACN 137 694 618
PO Box 76
CARINGBAH NSW 1495
yarrawalk@tpg.com.au

PROPOSED INDUSTRIAL DEVELOPMENT LOGOS ESTATE - KEMPS CREEK NSW

PRIVATE & CONFIDENTIAL
NOT TO BE RELEASED TO ANY OTHER GROUPS EXCEPT FOR:
DECCW, CONSULTING ARCHAEOLOGIST & THE DEVELOPER

Dominic Steele

Consulting Archaeology

Dear Dominic,

Please be advised that Gordon Workman and I from DLO conducted a field survey of the above mentioned property today.

Site 1
On arriving on site the first area we looked at was GDA Easting 6295324 and GDA Northing 6254170. Plates below are in our option a scared tree that has been used to produce a Coolamon. Plates 1, 2, 3 are below.

Plate 1

Plate 2

Plate 3

I have called this site TOC001 Scarred Tree. This area should be considered for protection and a sites card lodged. We would also like to consider this area for a PAD with a buffer zone of approximately 100 meters around it. This is Site 1 please refer to our recommendations below.

Site 2
At Locations 6293507E 62540942N we found 3 artefacts (see below) 2 Mud stone and 1 Quartz. This area was heavily disturbed and all were located on the dam bank.

Creating Quantum Change

TOCOMWALL
Trading as YARRAWALK

Tocomwall
ACN 137 694 618
PO Box 76
CARINGBAH NSW 1495
yarrawalk@tpg.com.au

Plate 4

Plate 5

Plate 6

Plate 7

Site 3

At Locations 6295265E 6254066N we found 5 Silcrete Artefacts the area was a small woodlands patch area on a crest. See plates 8, 9, 10, 11.

Plate 8

Plate 9

Plate 10

Creating Quantum Change

TOCOMWALL
Trading as YARRAWALK

Tocomwall
ACN 137 694 618
PO Box 76
CARINGBAH NSW 1495
yarrawalk@tpg.com.au

Plate 11
Site 4

At Locations 6294737E 6254040N we found 1 Item. See plate 12 below.

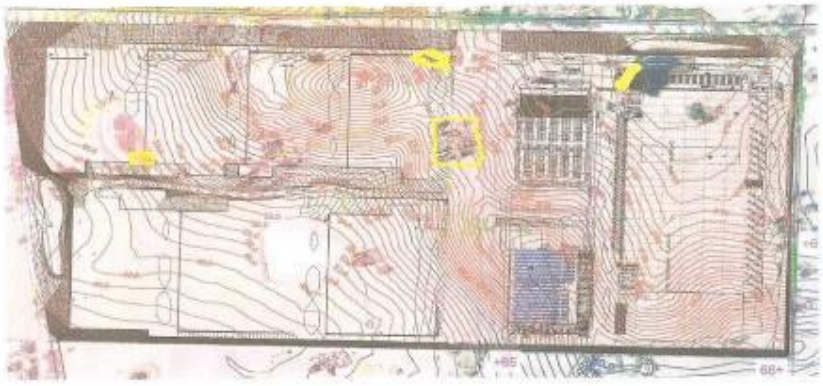
Plate 12

Creating Quantum Change

TOCOMWALL
Trading as YARRAWALK

Tocomwall
ACN 137 694 618
PO Box 76
CARINGBAH NSW 1495
yarrawalk@tpg.com.au

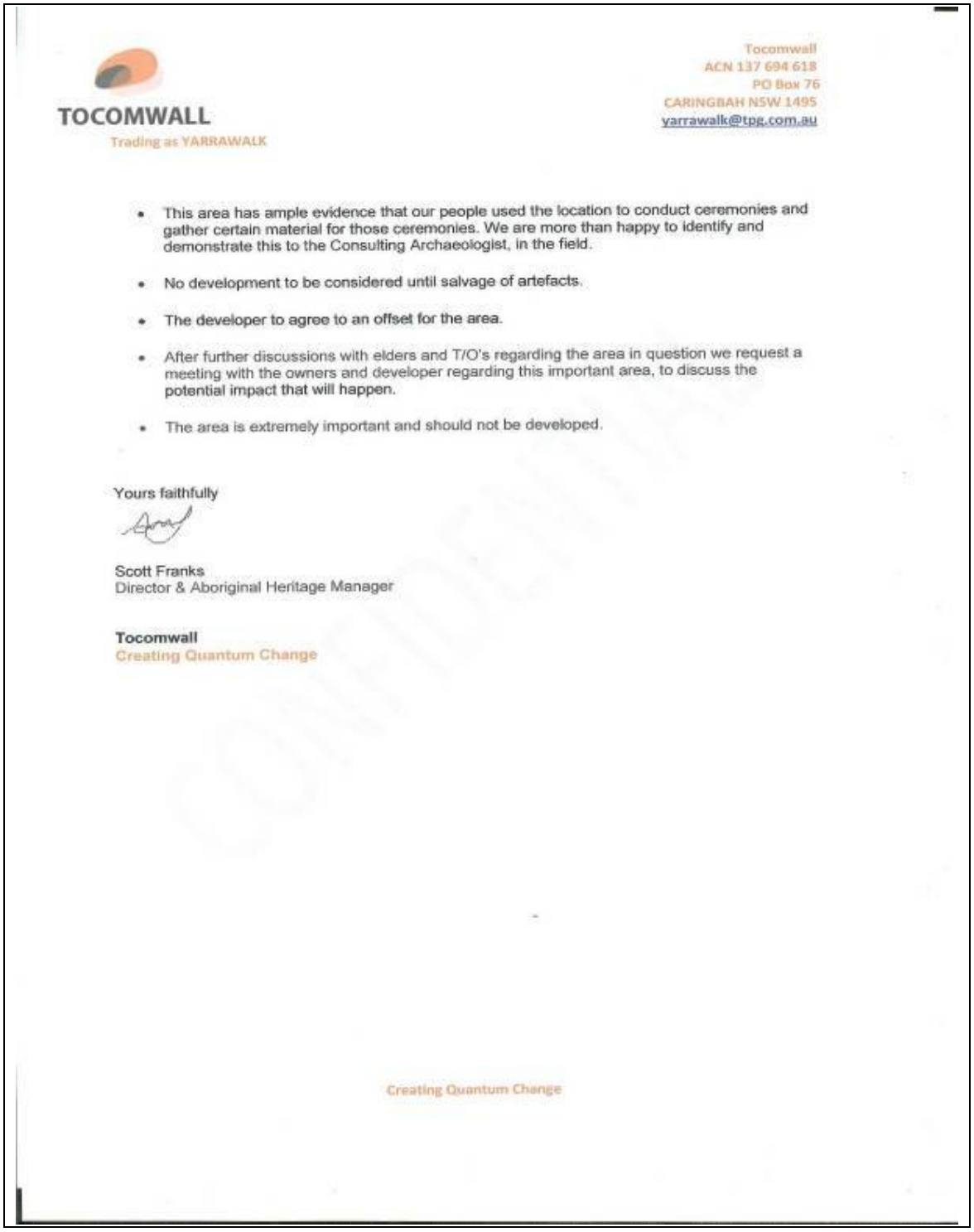
Below is a map of the survay area. Coloured in yellow are areas were we found artifacts and areas of interest.



Recommendations:

- The developers comply with the current DECCW Guidelines, 2010 and apply for a section 87/90.
- The areas marked in Yellow on the above map should have a series of test pits done to recover the artefacts.
- Site 1. The tree in plate 1, 2, 3 be recorded and a sites card submitted to ensure that it is not disturbed or impacted on.
- A more in-depth study of the area to be conducted with Tocomwall, DLO and Mr Dominic Steele, Consulting Archaeologist before any approvals are granted, to ensure that all material located by Tocomwall and DLO are properly recorded.

Creating Quantum Change



TOCOMWALL
Trading as YARRAWALK

Tocomwall
ACN 137 694 618
PO Box 76
CARINGBAH NSW 1495
yarrawalk@tpg.com.au

- This area has ample evidence that our people used the location to conduct ceremonies and gather certain material for those ceremonies. We are more than happy to identify and demonstrate this to the Consulting Archaeologist, in the field.
- No development to be considered until salvage of artefacts.
- The developer to agree to an offset for the area.
- After further discussions with elders and T/O's regarding the area in question we request a meeting with the owners and developer regarding this important area, to discuss the potential impact that will happen.
- The area is extremely important and should not be developed.

Yours faithfully

Scott Franks
Director & Aboriginal Heritage Manager

Tocomwall
Creating Quantum Change

Creating Quantum Change

Appendix 8

Darug Custodian Aboriginal Corporation Cultural Heritage Statement

DARUG CUSTODIAN ABORIGINAL

CORPORATION

PO BOX 81 WINDSOR 2756

PH: 45775181 FAX: 45775098 MOB: 0415770163

ABN: 81935722930

mulgokiwi@bigpond.com

14th July 2010.

Attention: Dominic Steele.

Subject: Kemps Creek Logistiscs Project – 708 Mamre Road, Kemps Creek, NSW – Aboriginal and non Aboriginal Archaeological and Cultural Heritage Assessment .

Dear Dominic,

The Darug Custodian Aboriginal Corporation's representative visited 708 Mamre Road, Kemps Creek to assess the area for Darug Cultural Heritage. This area looks to have been moderately disturbed with land clearance in the past, there is also disturbance with damning the natural waterways.

There is still materials of Cultural Heritage present within the property we recommend that all materials are cared for appropriately within a AHIP (Aboriginal Heritage Impact Plan).

Our group will respond to the recommendations set out within the Draft report in conjunction with the Archaeological recommendations. One of our groups main aims is the promotion and education of Darug Cultural Heritage we would recommend that where appropriate this be included within the development with signage, public art and names.

Please contact us with any further enquiries on 0245775181 or 0415770163.

Regards

Leanne Watson

Appendix 9

Darug Aboriginal Cultural Heritage Assessments Cultural Heritage Statement

Darug Aboriginal Cultural Heritage Assessments

ABN 51734106483

Gordon Morton & Associates

Mob: 0422 865 831
Fax: 45 677 421

Celestine Everingham
90 Hermitage Rd., Kurrajong Hills, 2758
Ph/Fax: 45677 421
Mob: 0432 528 896

21. 6. 10

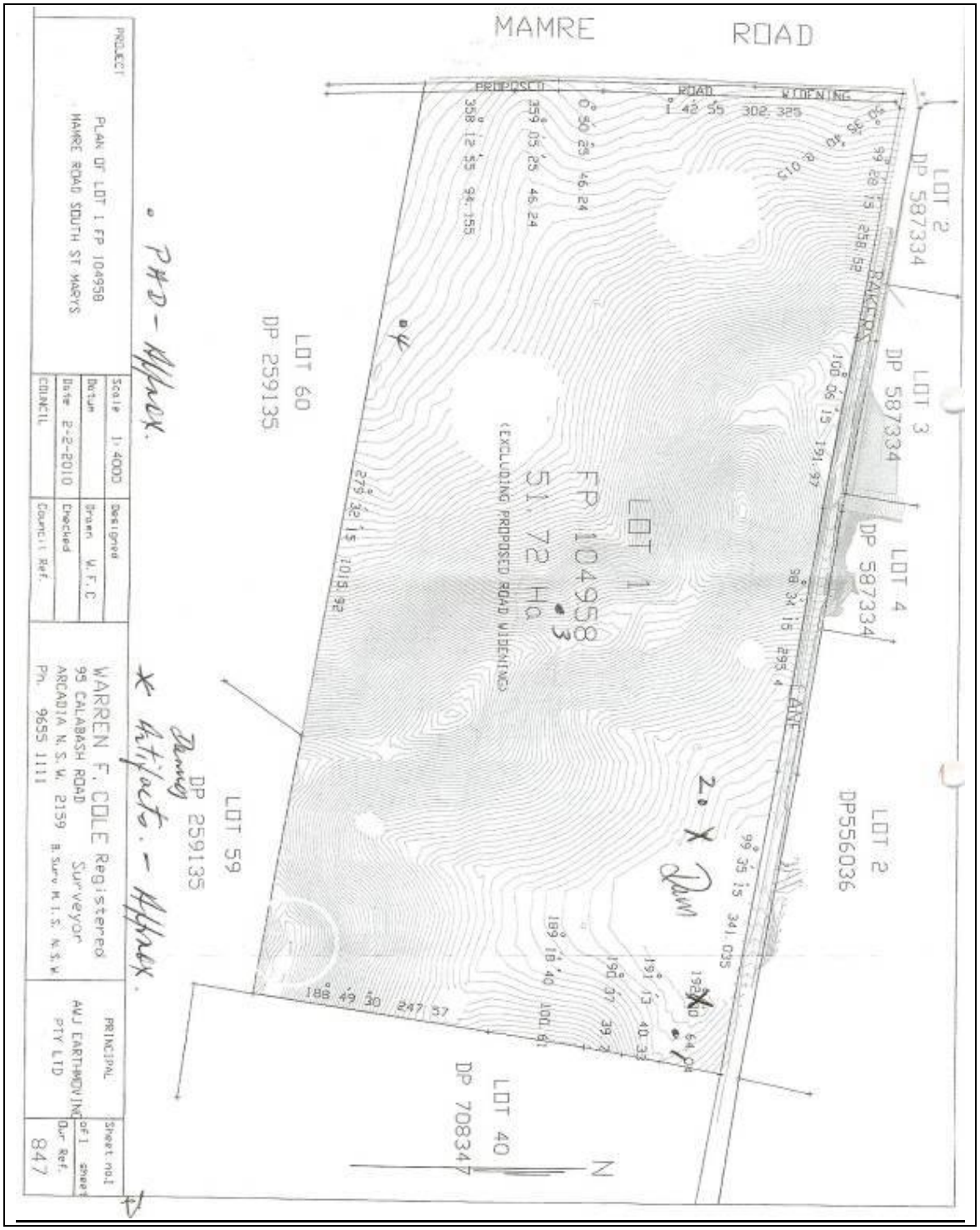
Attention
Dom Steele
&
Craig Timbeli

re 708 Mamre Road, Kemps Creek, N.S.W.
Darug Cultural Heritage Impact Assessment.

Gordon Morton and Celestine Everingham were shown around the above property on the 18.6.10 by Craig Timbeli. The Property was very hilly, & covered in grass. Several large dams had been constructed along drainage lines. The dam on the N-E section was located near a PAD - and several Darug artifacts were located, three on the east side of the dam and one on the west. The whole property was thickly grassed and ground visibility was almost zero. We located several areas we felt were PADs but are most interested in PAD 1 & 2 and we wish to see further investigation in both these areas.

Yours Sincerely
G. M. Morton &
C. Everingham

Cultural Heritage – Building respect for the past and Conservation for the future


MAMRE ROAD
PROPOSED ROAD WIDENING
LOT 2 DP 587334
LOT 3 DP 587334
LOT 4 DP 587334
LOT 2 DP556036
LOT 60 DP 259135
LOT 59 DP 259135
LOT 40 DP 708347
LOT 1 FP 104958
51.72 Ha
(EXCLUDING PROPOSED ROAD WIDENING)
RAILCORP
EASE
N
PROJECT
PLAN OF LOT 1 FP 104958
MAMRE ROAD SOUTH ST MARYS
Scale 1:4000
Datum
Date 2-2-2010
Checked
Council Ref.
Designed
Drawn W.F.C
COUNCIL
WARREN F. COLE Registered Surveyor
95 CALABASH ROAD
ARCADIA N.S.W. 2159
Ph. 9655 1111
PRINCIPAL
AWJ EARTHMOVING PTY LTD
Sheet no.1 of 1 sheet
Our Ref. 847

Appendix 10

Darug Tribal Aboriginal Corporation Cultural Heritage Statement

(To be Appended to this Report Upon Receipt)

Appendix 11

The Aborist Network Statement – 23 July 2010

The Arborist Network
58 South Creek Road
Shanes Park NSW 2747
Phone: (02) 9835 1234 Fax: (02) 9835 1238
Email: reports@arboristnetwork.com.au

Field Notes For: Dominic Steel
Dominic Steel Consulting

Inspection Date: 23rd July 2010

Site Address: CNR Mamre Rd and Bakers Lane
KEMPS CREEK

File Number: C12648

Trees Inspected: Eucalyptus tereticornis

The tree is a large Eucalyptus tereticornis (Forrest Red Gum) growing approximately 660 metres along Bakers Lane, Kemps Creek and approximately 40 metres from the edge of the road. The tree has a trunk diameter of approximately 120cm. There is a large basal wound and a number of other wounds present in the tree. The tree is otherwise in fair condition and is producing vigorous wound wood.

Questions have been raised about the possibility of this tree being a scar tree and in particular this relates to a scar contained about 10 metres off the ground on the eastern side of the tree.

The base of the tree. Note the shape of the wound

The scar that was pointed out as being of greatest interest

Discussion

The branched and multi-stemmed form of the tree demonstrates that the tree has grown in an open woodland or cleared environment. A tree of this size growing in this environment would typically be somewhere between 60 and 120 years of age[1]. This is based upon similar sized Forrest Red Gums of a known age.

The scar would indicate that the injury occurred approximately 80% of the way through the life of that portion of the tree. (For ease of the discussion let us assume that this portion of the tree is the same age as the tree itself even though this is strictly not the case). If we assume the tree as 120 years old then the scar is no more than 25 years old. Even if we allow an error of 100% the scar is less than 50 year old and as such does not coincide with indigenous land use in the area.

It must be understood that the way that trees respond to wounding is reasonably predictable. Because of their anatomy and the way that wound wood forms trees frequently produce elliptical or pointed elliptical (mandorla) shaped scars. In fact the frequency of this shape resulted in earlier arborists adopting the practice of dressing and scribing wounds to form an elliptical shape because it was believed to emulate the trees behaviour and thus would accelerate wound closure.

Based on the age of the tree and the maximum age of the tree and the frequency of wounds of this shape there is no merit undertaking any further testing of the tree.

Arborist: **Mark Hartley**

Senior Consulting Arborist
Dip Hort (Arboriculture) with Distinction
LMNAAA; LMISA; LMIPS; MASCA
ISA Certified Arborist WC-0624 (since 1990)
NAAA Consulting Arborist # 6222-01

[1] Two large *E. tereticornis* are growing in the front yard 28 Martin Street, Regentville and these trees were not present in the 1943 aerial image. A similar sized E tereticornis is growing at the entrance of 42 Addison Rd Marrickville and was a small tree less than 8 metres high in the 1943 aerial image.

Appendix 12

DSCA Field Notes – 15 July 2010

Site Descriptions (15 July 2010)

Name	Description	Notes
LOGOS IF1	Isolated Find	DSCA isolated find located on dam wall at the eastern boundary of the site.
TOC001	Possible Scarred Tree	Possible scarred tree recorded by Yarrawalk and DLO suggested to have been used to make a coolamon. It was recommended it should be 'considered as a PAD with a buffer zone of approximately 100 meters around it'. The tree and its surrounds was inspected on 15/7/10 by DSCA. Several other clearly natural scars are present on this tree. The upper scar is about 10m or so above the ground. The top right corner of the scar is irregular in form and suggests it is natural. The tree is unlikely to be of sufficient age to have been scarred traditionally. PAD 'TOCPAD1' on the map provided by Yarrawalk and DLO is in wrong position. There is no subsurface potential associated with the tree and therefore the proposed excavation around it is not appropriate or possible. If it was a scarred tree then a buffer zone would be appropriate but an arborist should be asked to appraise the likely age of the tree. Unless at least 150-200 years old, a tree is not likely to be scarred by Aboriginal people in this landscape in a traditional way.
LOGOS OC1	Open Campsite	This site consists of artefacts found around the main dam in the northeast corner of the subject land. It consists of 3 artefacts on the western dam wall recorded by Yarrawalk and DLO. An isolated find on the western wall was recorded by Steve Randall (DLALC), and an unknown number of artefacts on the western side of thee dam were recorded by DACHA, probably comprising components of the same site. Two further artefacts were recorded both by Steve Randall and DACHA on the eastern side of the dam. In addition an area of PAD was identified (without description) by Yarrawalk, DLO and DACHA. A re-inspection of site on 15/7/10 by DSCA relocated two artefacts on the eastern side of the dam and an isolated find recorded by Steve Randall on the western side of the dam. The artefacts recorded by Yarrawalk and DLO were not all relocated by DSCA but one piece of unmodified quartz (recorded by these groups as an artefact) was, as well as a possibly modified piece of silcrete. There is no remaining subsurface potential around this site, which has been extensively landscaped for the creation of the dam. It could be expected that further artefacts might occur but these would not be intact or in situ but rather eroding out of the site. There would be no reason to excavate as advocated by Yarrawalk, DLO and DACHA.
LOGOS OC2	Open Campsite	5 artefacts were recorded by Yarrawalk and DLO in a small area of re-growth woodland. An area of PAD around this identified site was highlighted by Yarrawalk, DLO and DACHA, and test excavation was recommended. The locality was re-inspected by DSCA on 15/7/10 and two artefacts were relocated. These were found in a disturbed context on lag gravels. There is no remaining topsoil in this area, clearly confirmed by a cutting immediately to the west, and a 1940s aerial photo showing scraping of this area. Further artefacts may exist in low numbers but there would be no point in further excavation
LOGOS IF2	Isolated Find and PAD	Isolated silcrete artefact located by Yarrawalk and DLO. On the map provided it is shown to be on another dam but this is clearly incorrectly plotted. It is assessed that no notable archaeological potential is associated with this isolated artefact
DACHA PAD1	PAD	No description of this PAD is given. The area was re-inspected by DSCA on 15/7/10 and is historically disturbed and does not retain any subsurface potential.

Artefact Descriptions (15 July 2010)

Site Name	Artefact #	Raw Mat	Type	Length (mm)	Width (mm)	Thick (mm)	Comment
LOGOS IF1	Artefact 1	Grey Quartzite	Flaked Piece	16	8	4	
TOC001	n/a						
LOGOS OC1	Artefact 1	Mudstone	Flake	28	32	12	60% Cortex.
	Artefact 2	Mudstone	Flake	50	22	19	25% Cortex
	Artefact 3	Red Silcrete	Flaked Piece	21	15	6	
	Artefact 4	Quartz	Non Artefact				Pictured by Yarrawalk and DLO but not modified
	Artefact 5	Red Silcrete	Flaked Piece				No measurements provided. Appears to be a red silcrete flaked piece
	Artefact 6	Red Silcrete	Flaked Piece				No measurements provided. Appears to be a red silcrete flaked piece
LOGOS OC2	Artefact 1	Red Silcrete	Flaked Piece	16	8	4	
	Artefact 2	Red Silcrete	Flaked Piece	23	15	18	
	Artefact 3	Red Silcrete	Flaked Piece				No measurements provided. Appears to be a red silcrete flaked piece
	Artefact 4	Red Silcrete	Flaked Piece				No measurements provided. Appears to be a red silcrete flaked piece
	Artefact 5	Red Silcrete	Flaked Piece				No measurements provided. Appears to be a red silcrete flaked piece
LOGOS IF2	Artefact 1	Red Silcrete	Flaked Piece				No measurements provided. Appears to be a red silcrete flaked piece
DACHA PAD1	N/A						

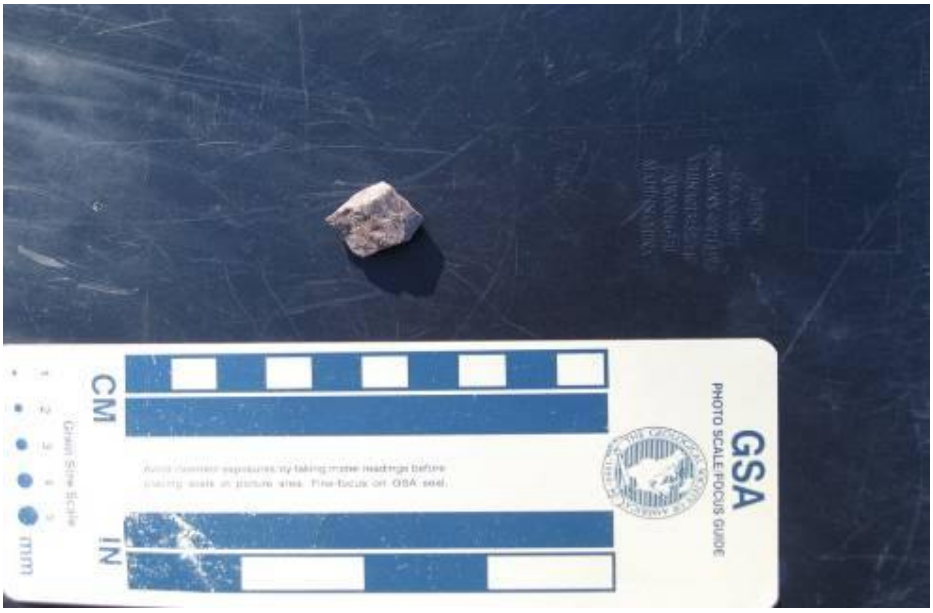
Selected Aboriginal Artefact Illustrations (15 July 2010)

LOGOS OC1 Artefacts 1 and 2 (DSCA July 2010).

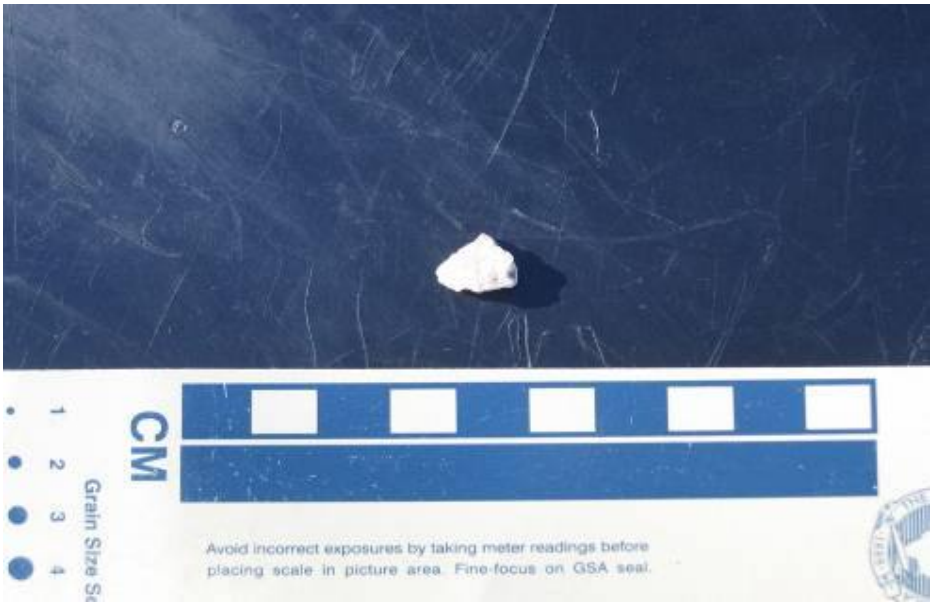
LOGOS OC1 Artefacts 1 and 2 (DSCA July 2010).

LOGOS OC1 Location of Artefact 3 (DSCA July 2010).

LOGOS OC1 Artefact 3 (DSCA July 2010).



LOGOS OC1. Possible Worked Red Silcrete Fragment.



LOGOS OC1. Un-worked Quartz Piece. Recorded as an Artefact by Yarrawalk.

LOGOS OC2 Location (Note No Other Artefacts Found in this Woodland).

LOGOS OC2 Artefacts 1 and 2.

Natural Scar on Tree.

Detail of Possible Aboriginal Scar.