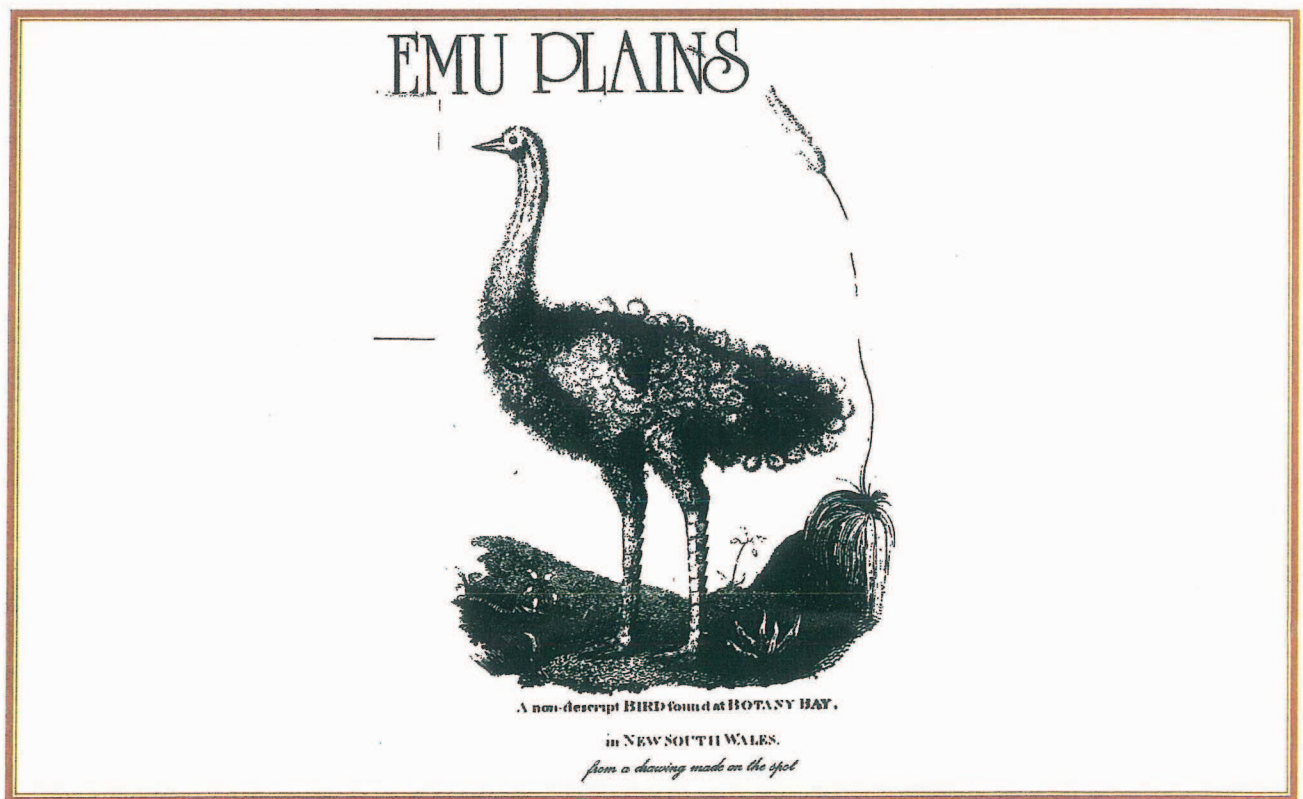

1.8 Appendix 8 – Aboriginal & Non Aboriginal Archaeological Survey

Aboriginal & Non-Aboriginal Archaeological Survey

Lot 4, DP 574650

Cnr Russell Street & Old Bathurst Road, Emu Plains



A non-descript Bird found at Botany Bay, from a Drawing Made on the Spot.
Published by J Johnson, London, Feb 1791 (source: "Emu Plains", Joan Steege, 1974)

The area was named "Emu Plains" because of the many emus observed during the first explorations in 1788-89 (Stacker 2000:2)

Report to The Virtus Group

January 2006



EXECUTIVE SUMMARY

This report was prepared for the Virtus Group on behalf of Bernard & Linna LeBoursicot. The proponent wishes to submit a rezoning application to enable an industrial subdivision to be undertaken.

The archaeological survey and cultural heritage assessment was commissioned to ensure that there will be no adverse impact upon either the Aboriginal or non-Aboriginal (historic) archaeological heritage which may exist on the subject site.

An archaeological survey was undertaken over two days in December 2006 in consultation with the Deerubbin Local Aboriginal Land Council, Darug Tribal Aboriginal Corporation, Darug Aboriginal Custodian Organisation.

No Aboriginal archaeological sites or objects were located on the subject land. However, this was due to the dense vegetation cover which precluded the possibility of detecting any Aboriginal artefacts or sites. Therefore it is recommended that a program of sub-surface testing be undertaken prior to any development on the subject land. The aim of the sub-surface testing program will be to determine the presence or otherwise of Aboriginal artefacts, objects or sites on the subject land. If such objects, artefacts or sites are located further recommendations will need to be formulated in respect of any Aboriginal object located.

In respect of the non-Aboriginal (historic) archaeological heritage of the subject site, no historic archaeological sites were located. The historic research undertaken in respect of this report, indicates that it is highly unlikely that any historic relics will be located on the subject site. Therefore, no further assessment is required in respect of historic archaeological relics.

It should be noted that this report is prepared in four sections as follows:

Section A: Background

This section contains the background information which includes details on the aims of the project and the methodology employed to comply with these aims.

Section B: Aboriginal Archaeology

This section provides all details relating to the Aboriginal archaeological component of this project. This includes details of the consultation with the relevant Aboriginal organisations, the environmental and archaeological background, survey results and recommendations relating to same.

Section C: Historical Archaeology

This section provides all details relating to the non-Aboriginal (historic) archaeological component of this project. This includes the historical and archaeological background, survey results, and recommendations relating to same.

Section D: Combined Summary

This section provides a summary of both the Aboriginal and non-Aboriginal archaeological survey, including the results and final recommendations.

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ACKNOWLEDGEMENTS

This report was prepared by Comber Consultants Pty Ltd.

Jillian Comber BA, Litt B., researched and wrote Sections A, B and D and 10, 11 & 12 of Section C and edited the whole report.

Caroline Plim, BA., Assoc Dip Loc & App History, researched and wrote 9 of Section C (the history of Emu Plains and the study area).

SECTION A: BACKGROUND

1.0 INTRODUCTION

1.1 Background

This report was commissioned by the Virtus Group Pty Ltd who propose to submit a Rezoning Application on behalf of Bernard & Linna LeBoursicot to Penrith City Council. The land is presently zoned 1(d) Rural (Future Urban), pursuant to the provisions of Interim Development Order No. 93. The proponent will be applying to have the land rezoned industrial 4a to enable an industrial subdivision to be undertaken.

To ensure that there is no adverse impact upon either the Aboriginal or non-Aboriginal cultural heritage, the Virtus Group commissioned this Archaeological Survey and Cultural Heritage Assessment.

1.2 Location

The study area is located on the north eastern corner of Old Bathurst Road and Russell Street, Emu Plains and is known as Lot 4, DP 5746500 and is approximately 20.23ha (50 acres).

It is located within the Penrith LGA and is approximately 60kms west of Sydney and approximately 2kms north-west of Penrith.

Figure 1 shows the location of Emu Plains on the 1:250,000 topographic map, Figure 2, shows the location of the study area on the 1:25,000 topographic map whilst Figure 3 shows the study area on the street directory.

Figure 4 shows the subject land. It provides topographic detail and shows the location of buildings and other structures on the subject land.

1.3 Aims of the project

The consultant was commissioned to:

- (a) Undertake a survey of the subject land to locate and record sites or objects of Aboriginal heritage significance.
- (b) Undertake a survey of the subject land to locate and record sites or objects of non-Aboriginal (historic) heritage significance

- (c) Undertake consultation with the Deerubbin Local Aboriginal Land Council, Darug Tribal Aboriginal Corporation and Darug Aboriginal Custodian Organisation to ascertain Aboriginal concerns and interests in respect of the subject area.
- (d) Assess the impact of the proposed rezoning and any possible future development on any sites or places located (either Aboriginal or non-Aboriginal) and to provide management recommendations taking into account Aboriginal concerns and interests.

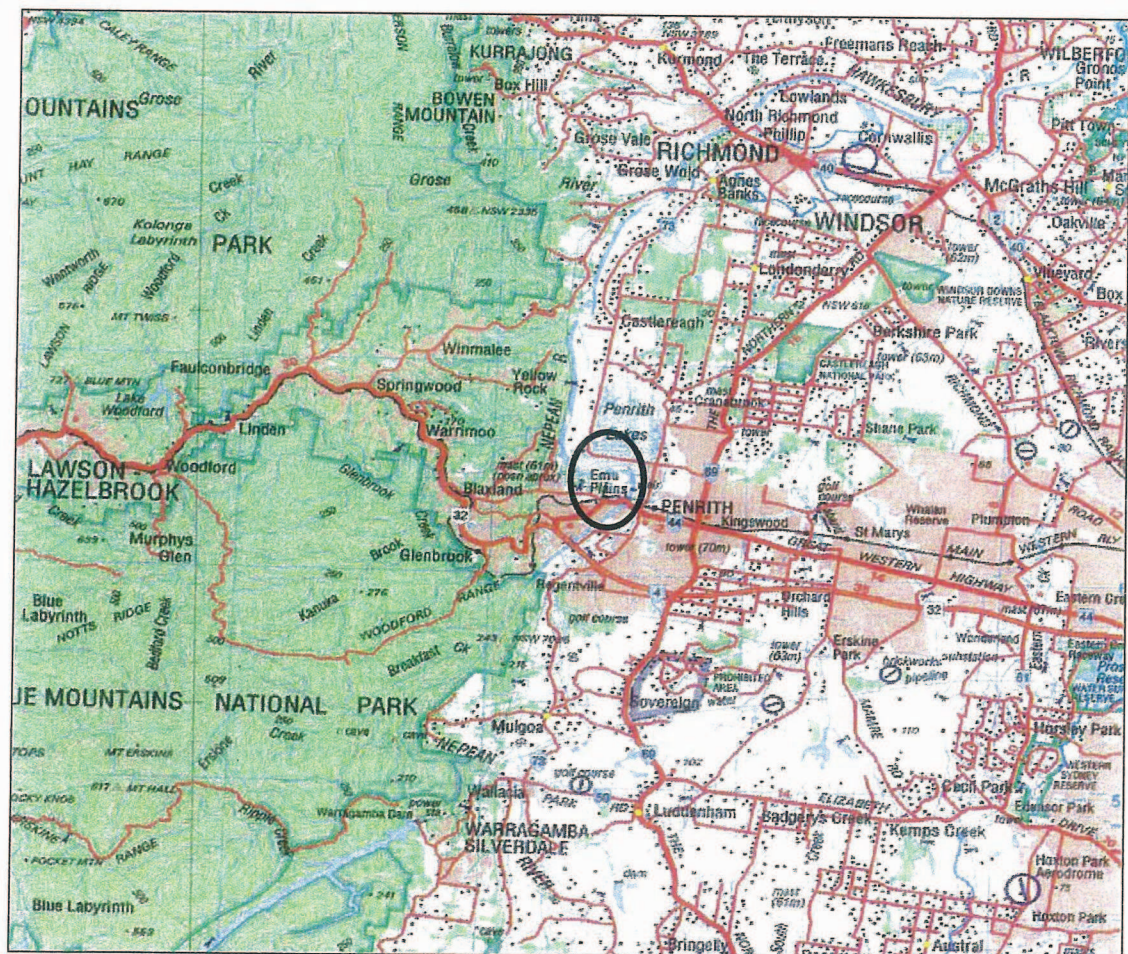


Figure 1: Location of Emu Plains (circled)
 Sydney Special 1:250,000 topographic map
 ED2-1998 S156-05

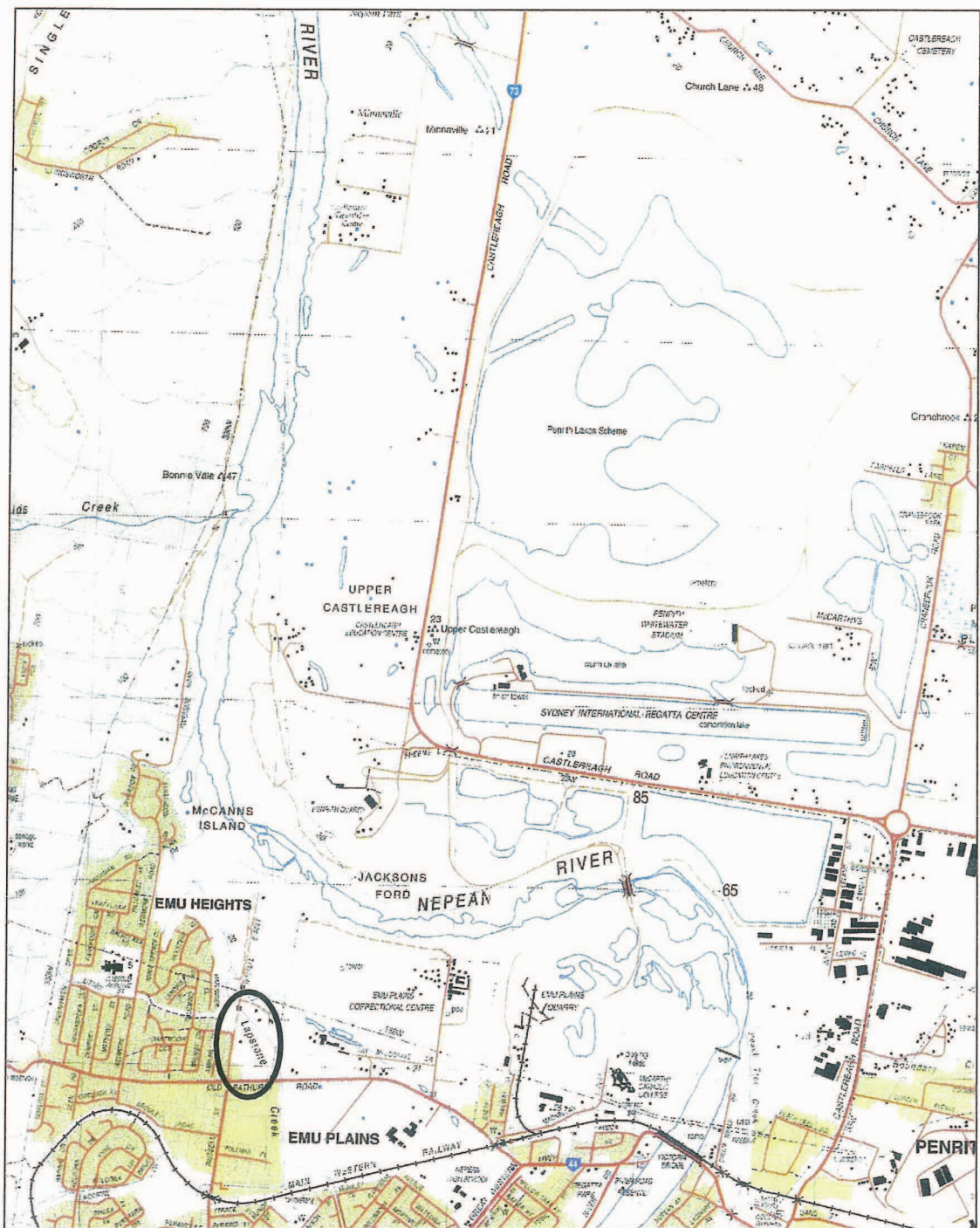


Figure 2: Location of Study area (circled)
 Springwood 1:25,000 topographic map
 9030-4S Third Edition



Figure 3: Location of study area
 Cnr Old Bathurst Road & Russell Street, Emu Plains
 (UBD 2006 Sydney map 162)

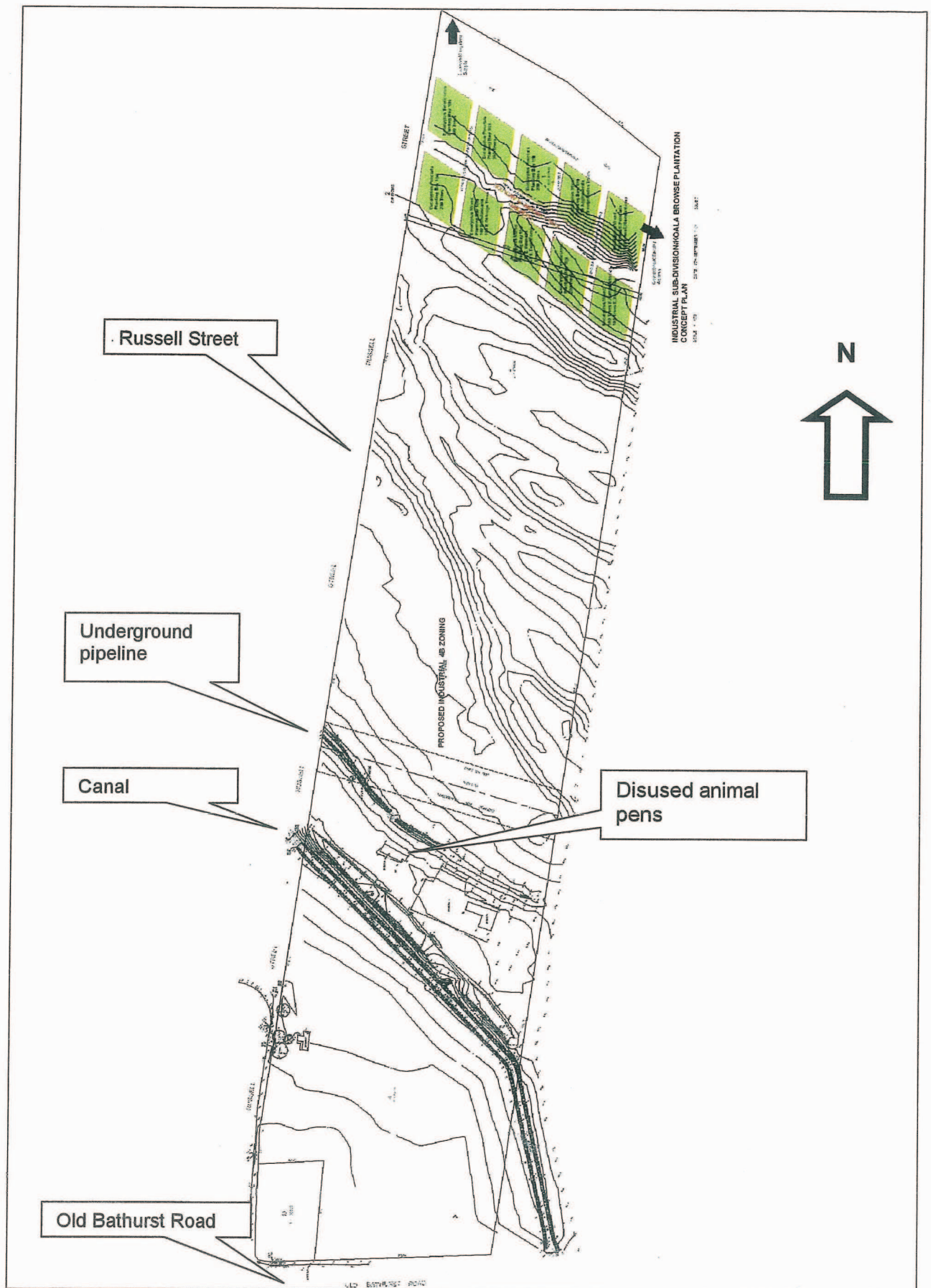


Figure 4: The Study area
Map provided by Virtus Group Pty Ltd

1.4 Organisation of this Report

This report is organised in four sections as follows:

Section A: Background

This section contains the background information which includes details on the aims of the project and the methodology employed to comply with these aims.

Section B: Aboriginal Archaeology

This section provides all details relating to the Aboriginal archaeological component of this project. This includes details of the consultation with the relevant Local Aboriginal Land Council and organisations, the environmental and archaeological background, survey results and recommendations relating to same.

Section C: Historical Archaeology

This section provides all details relating to the non-Aboriginal (historic) archaeological component of this project. This includes the historical and archaeological background, survey results, and recommendations relating to same.

Section D: Combined Summary

This section provides a summary of both the Aboriginal and non-Aboriginal archaeological survey, including the results and final recommendations.

2.0 METHODOLOGY

This project was conducted in three stages, being background research, field survey and report production, as detailed below:

Stage 1: Background Research

Prior to the field component of this project the Aboriginal Heritage Information Management System of the Department of Environment and Conservation was consulted. Site data, associated documents and archaeological survey reports held by them were reviewed. Environmental information relating to Aboriginal land use was also researched. Such research facilitated an understanding of the potential nature of the sites and site patterning in the region, to enable predictive statements to be made. It also provided an archaeological and environmental context within which significance assessment could be made for any Aboriginal sites located during the field survey.

Stage 2: Field Survey

The archaeological survey was undertaken on Tuesday 20 and Wednesday 21 December 2005. Present were:

Tuesday 20 December 2005

Jillian Comber, Archaeologist

Phil Khan, Deerubbin Local Aboriginal Land Council

Wednesday 21 December 2005

Jillian Comber, Archaeologist

Celestine Everingham, Darug Tribal Aboriginal Corporation

Leanne Wright, Darug Aboriginal Custodian Organisation

Eight transects were walked in a north south direction on Day 1 (20 December). Due to the dense grass cover the area was particularly searched for any areas of ground visibility. Such areas of ground visibility were not located.

On Day 2 only a brief inspection was undertaken which confirmed the poor visibility.

The results of the field survey and proposed management recommendations were discussed in the field with the representatives of each organisation.

Maps used in the field were the Springwood 1:25,000 topographic map (shown at Figure 2) and the map of the study area provided by Virtus Group (shown at Figure 4).

Stage 3: Report Preparation

Further archaeological research (both primary and secondary) was conducted where necessary, to clarify the results of the survey. The final report was then prepared and provided to the Virtus Group and the three Aboriginal organisations

SECTION B:

ABORIGINAL ARCHAEOLOGY & HERITAGE

3.0 ABORIGINAL COMMUNITY INVOLVEMENT

The Mulgoa clan of the Darug are thought to have been the traditional owners of the land around the Penrith area. Knowledge of the names and boundaries of language groups and bands in Sydney is incomplete due to the scarcity of reliable data. The population of the Darug was probably 500-600 people who divided into smaller communities of from 35 to 60 people, who camped, travelled, foraged, fished and hunted together (Hinkson 2001:xix-xxv; Barani 2003). In April these communities would congregate around the swamps to catch eels whilst in summer when food was plentiful several of these communities would gather along the Nepean River. In winter these communities split into smaller extended family groups (Kohen 1997:3)

After British settlement Aboriginal communities were dislocated. Forced movement of people occurred across NSW and caused the loss of many aspects of Aboriginal culture resulting in the emergence of new groups incorporating people from diverse areas. Reorganisation ensured the preservation of some of the core cultural practices and knowledge in Aboriginal communities (Hinkson 2001: xxiv-xxv) The organisations now representing the Penrith/Emu Plains area are:

Deerubbin Local Aboriginal Land Council
Darug Tribal Aboriginal Corporation
Darug Aboriginal Custodian Organisation

Each of the organisations were contacted prior to the field survey. They were contacted by telephone and then a fax was forwarded providing details of the survey and including the map provided by the Virtus Group.

Mr Phil Khan representing the Deerubbin Local Aboriginal Land Council attended on Tuesday 20 December and Celestine Everingham representing the Darug Tribal Aboriginal Corporation and Leanne Wright representing the Darug Aboriginal Custodian Organisation attended on Wednesday 21 December and inspected the subject area, with Jillian Comber.

The project was discussed in detail with each representative during the field survey and the proposed management recommendations discussed. As this report was prepared in January when each organisation was closed a draft report was not provided to them, prior to finalisation of this report. However, each organisation provided their written comments to be included in this report. These are attached at Appendix A.

The Deerubbin Local Aboriginal Land Council state that due to poor ground visibility they recommend "a program of test excavations across the study area".

The Darug Custodian Aboriginal Corporation also recommend archaeological test excavation stating "the area is of high Aboriginal cultural heritage significance due to the close proximity of known sites and the intact soil profiles on this land".

The Darug Tribal Aboriginal Corporation also confirm that a program of sub-surface testing is required "...as ground visibility was almost zero and it is close to many known and important sites".

This final report will be provided to the Deerubbin Local Aboriginal Land Council, to the Darug Tribal Aboriginal Corporation and Darug Aboriginal Custodian Organisation.

4.0 ENVIRONMENTAL CONTEXT

4.1 Physiography

The survey area is located within the Cumberland Plain which is characterised by low gently undulating slopes. The Cumberland Plain covers approximately 600 square kilometres. It is bordered on the west by the Blue Mountains and on the east by the Georges River and headwaters of the Parramatta Rivers. To the north is the Hornsby Plateau and to the south is the Woronora Plateau (Smith 1989a:8).

The survey area itself is located to the south and west of the Nepean River and south of Cranebrook Creek and the Upper Castlereagh area. It is approximately 20ha and contains a series of very low ridgelines. It slopes gently down to an unnamed creek in the northern portion of the study area. A canal runs in an east-west direction through the southern portion of the study area. The canal contains sloping concrete walls. The top of the wall is built up and contains an area wide enough for vehicles to drive along. The southern wall is planted with native vegetation whilst the northern wall is grassed. An underground pipeline also runs east west across the study area to the north of the canal. Its location is indicated by a depression in the landscape plus the stop valve can be observed. The southern portion of the study area to the south of the canal is flat land.

Figure 4 provides detail of the contours of the landscape and the location of the canal and pipeline, whilst photographs 1-10 show the landscape and photographs 11-13 show the canal

The study area is located within a semi-urban landscape. Directly to the west and south is residential development whilst to the north is the Penrith Lakes Scheme and to the east is the Emu Plains Correctional Centre for women (see Figures 1-3).

4.2 Geology

The Cumberland Plain, generally overlies the Wianamatta Group of Shales. The survey area consists of the Ashfield Shale sub-group of Wianamatta Shales. This sub-group is comprised of shales, carbonaceous claystones, claystones laminate, fine to medium grained lithic sandstone, tuff and some coal. The Cranebrook Formation disconformably overlies the Ashfield Shales. The Cranebrook Formation contains pebbles and cobbles of quartz, quartzite, chert, porphyry, granite, hornfels, sandstone and silcrete. (Penrith 1:100,000 geological map; Jones & Clark 1991:43-49). The tuff from the Ashfield shales and the cobbles from the Cranebrook Formation would have provided suitable material for small tool production for the Darug whilst the sandstone would have been suitable for the manufacture of ground edge axes.

Other locations on the Cumberland Plain which contain suitable material for stone tool manufacture, such as silcrete are located nearby. Silcrete outcrops are located at Luddenham approximately 20kms to the south, Plumpton approximately 15kms to the west, St Clair approximately 15km to the south-east and Erskine Park approximately 20km to the south-east. Other material used in the manufacture of stone tools on the Cumberland Plain, such as chert, tuff, quartz, basalt and quartzite, are located within the Rickabys Creek

Formation, which is located between Cranebrook and Windsor, to the north of the survey area with some outcrops just to the west of the survey area (Jones & Clark 1991:32-33; Smith 1989a:9-11 & 1989b:6-7).

Such outcrops indicate the richness of the area in providing abundant material for stone tool manufacture.

4.3 Vegetation

The vegetation of the study area was mapped by Benson (1989, 1981 & 2002) and the NSW National Parks & Wildlife Service (2002). Historically, the undulating slopes of Western Sydney would have supported a tall open-forest of Cumberland Plain Woodland. The area immediately around the Nepean River would have supported an Alluvial Woodland characterised by *Eucalyptus moluccana* (Grey Box) in association with *Eucalyptus tereticornis* (Forest Red Gum). The understorey would have consisted of *Acacia parramattensis*, *Acacia floribunda* and other acacia sp., *Casuarina cunninghamiana* (River Oak) and *Bursaria spinosa* (Sweet Bursaria, Blackthorn) with grasses of *Themeda australis* (Kangaroo Grass) and *Lomandra longifolia*.

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

4.4 Current land use and disturbance

The present nature and composition of the study area has been altered by past clearance and European land management activities. The study area has been used for grazing for many years and has been cleared of all indigenous vegetation. It has been planted with introduced pasture and other grasses including, couch, kikuyu and clover and invaded by weeds such as dandelions, thistle, African love grass and paspalum.

In the northern section of the study area prickly pear and lantana have invaded the sloping gully and a disused domestic garden and orchard were also observed in the northern section of the study area.

Various Eucalypts and other native species have recently been planted along the southern side of the canal which runs east west through the study area.

Cattle were observed grazing the land during the archaeological survey.

There is one house within the study area, and the remnants of animal enclosures (see Figure 4).

The photographs at the end of the report show the nature of the study area.

4.5 Effective Survey Coverage

Ground surface visibility, which refers to the amount of bare ground visible during the field survey was nil over the whole site. The introduced grasses, weeds and other introduced plants covered the total ground surface.

The visibility of some site types such as open artefact scatters is dependent upon ground visibility and exposure. The National Parks & Wildlife Service's guidelines suggests that this information be presented in a table which quantifies and details the local detectability (NPWS:1997:17). However, given that there was zero visibility over the whole site, and it was therefore not possible to determine whether artefacts were located on the subject site there is no need to use that table.



Photograph 1: Panorama across study area looking from north to south showing the low rolling ridgelines and heavily vegetated landscape

5.0 ARCHAEOLOGICAL CONTEXT

5.1 Cumberland Plain

The information summarised in this section will facilitate an understanding of Aboriginal site patterning in the region and thereby provide a context within which any sites located in the study area may be archaeologically assessed.

Many archaeological surveys have been conducted on the Cumberland Plain in relation to Environmental Impact Statements. As a result of these studies, which were occasioned by the burgeoning urban expansion extending onto the Cumberland Plain, the NPWS recognised the need for a coherent study of the area to fully assess the impact of urbanisation on the natural and cultural heritage of the Cumberland Plain. Smith (1989b) was commissioned by the NPWS to undertake an Aboriginal Site Planning Study to be utilised in the management of Aboriginal sites on the Cumberland Plain.

Prior to her study, 307 sites had been recorded on the Cumberland Plain, mainly open artefact scatters (297) with four scarred trees, one carved tree and four axe-grinding grooves and a Mission site (the Blacktown Institute). Smith (1989b:2) added 79 open sites and 29 isolated finds from field surveys related to her study.

Smith's (1989b:3) analysis indicated that site location and site densities were influenced by the availability of water and raw materials. She concluded that other factors such as topography, natural vegetation and soil types did not influence site location.

She also indicated that the majority of sites recorded have been in the northern sector of the Cumberland Plain, during site surveys of areas threatened by development (Smith 1989b:21). Her field studies (1989a & 1989b:10) confirmed that site densities in the southern Cumberland Plain appear to be lower overall to site densities on the northern Plain.

Since Smith's study there has been a dramatic increase in development in Western Sydney resulting in a great deal more archaeological survey and excavation (McDonald 1997 & 2002). This further work has indicated the complexity in the archaeological record of the area that was not previously recognised.

5.2 Penrith Lakes

The Penrith Lakes Scheme which is located directly to the north of the study area (Figure 2) has been in operation for approximately 20 years. It is the largest construction materials quarry in Australia supplying 75% of Sydney's sand and gravel requirements. The quarry will cease production in approximately 2010 (www.penrithlakes.com.au).

It is planned to develop the disused quarries into an urban residential and recreational facility. The Sydney International Regatta Centre and Penrith Whitewater Stadium were the first stage in the development of the recreational facilities which now include cycling and walking tracks plus picnic facilities. The planned future development will include 400 hectares of

residential/commercial development, 900 hectares of open space and 700 hectares of lakes (www.penrithlakes.com.au).

Archaeological surveys, monitoring and assessment has been and continues to be undertaken in respect of this project. The majority of the work has been undertaken by Jim Kohen who has produced a large volume of work which has been summarised in Kohen 1998. The monitoring and archaeological work is continuing. In respect of the recent monitoring at Penrith Lakes, reports are not available, so the following is only a very brief and incomplete summary. However, it serves to demonstrate the high density of Aboriginal sites in the area.

Archaeological surveys conducted by Kohen as part of the Penrith Lakes Regional Environmental Study identified 31 sites within and around the Penrith Lakes area. Since that time many additional sites have been identified. Following is a table of sites identified prior to Kohen's work and sites identified by Kohen in the area. However, please note that this list may not be complete. Not all of the relevant reports and site cards were available from AHIMS at the time of preparing this report.

AHIM No.	SITE NAME	SITE TYPE
45-1-0219	Penrith Lakes 39	Open camp site
45-5-0054	Shaws Creek K1 Hawkesbury Lookout	Rock engraving and shelter with deposit
45-5-0056	Upper Castlereagh	Axe grinding groove
45-5-0206	Shaws Creek K1	Axe grinding groove and shelter with deposit
45-5-0278	Shaws Creek K1	Open camp site
45-5-0279	Shaws Creek K2	Open camp site
45-5-0280	Castlereagh South	Axe grinding groove and open camp site
45-5-0281	Cranebrook Creek 1	Contact, Mission, open camps site
45-5-0282	Upper Castlereagh	Open camp site
45-5-0284	Castlereagh 2	Open camp site
45-5-0314	Penrith Lakes 28	Open camp site
45-5-0315	Penrith Lakes 1	Open camp site
45-5-0316	Penrith Lakes 2	Open camp site
45-5-0317	Penrith Lakes 3	Open camp site
45-5-0318	Penrith Lakes 4	Open camp site
45-5-0319	Penrith Lakes 5	Open camp site
45-5-0320	Penrith Lakes 6	Open camp site
45-5-0321	Penrith Lakes 7	Open camp site
45-5-0322	Penrith Lakes 8	Open camp site
45-5-0323	Penrith Lakes 10	Open camp site
45-5-0324	Penrith Lakes 11	Open camp site
45-5-0325	Penrith Lakes 12	Open camp site
45-5-0326	Penrith Lakes 15	Open camp site
45-5-0327	Penrith Lakes 16	Open camp site
45-5-0328	Penrith Lakes 17	Open camp site
45-5-0329	Penrith Lakes 18	Open camp site

45-5-0330	Penrith Lakes 19	Open camp site
45-5-0331	Penrith Lakes 20	Open camp site
45-5-0332	Penrith Lakes 21	Open camp site
45-5-0333	Penrith Lakes 23	Open camp site
45-5-0334	Penrith Lakes 24	Open camp site
45-5-0335	Penrith Lakes 26	Open camp site
45-5-0366	Emu Plains 4	Open camp site
45-5-0371	Fire Trail 1	Open camp site
45-5-0372	Black Falls 1-6	Open camp site
45-5-0518	Shaws Creek K2 area, Springwood	Open camp site
45-5-0520	Castlereagh South 1, Springwood	Axe grinding groove; open camp site
45-5-0530	Upper Castlereagh 1, Penrith	Open camp site
45-5-0589	Penrith Lakes 29	Open camp site
45-5-0590	Penrith Lakes 30	Open camp site
45-5-0591	Penrith Lakes 31	Open camp site
45-5-0592	Penrith Lakes 32	Open camp site
45-5-0593	Penrith Lakes 33	Open camp site
45-5-2414	Penrith Lakeside Village L1	Open camp site
45-5-2416	Penrith Lakeside Village	Open camp site

The most recent available report by Kohen (1997:7) states that sites which occur throughout the Penrith Lakes area "are particularly likely to occur adjacent to the rivers and creeks. The distribution of the raw materials associated with the manufacture of stone tools suggests that chert and basalt were carried or traded east from the river gravels, and that silcrete was traded or carried from sources near South Creek and Eastern Creek west towards the Nepean flood plain". This confirms the Smith's (1989a) analysis.

In addition Kohen (1997:7) stated that "all artefacts located within the Penrith Lakes Development are significantly younger than 40,000 years old, and the vast majority are less than 4,000 years old. Most of the sites are likely to belong to the most recent lithic cultural tradition, commonly referred to as the Australian Small Tool Tradition, and locally known as the Bondian phase. These recent stone industries are characterised by the production of small blades and points, the use of a bipolar reduction technique resulting in bipolar cores, and the use of edge-ground hatchet heads. The nature of the assemblages identified in the 1997 study at Cranebrook Creek and the Palaeochannel strongly supports Hiscock's model of primary modification at sites close to the source of the gravels and subsequent lithic reduction at other specialised sites".

5.3 The Study area

A search of DEC's AHIMS Register indicates that there are no known sites on the subject site. However, it did indicate that in addition to the sites detailed above that the Lower Blue Mountains and Penrith area are rich in sites.