

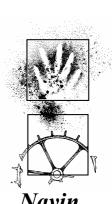
Readymix Regional Distribution Centre Rooty Hill, NSW

Archaeological Assessment

May 2005







Navin Officer

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EXECUTIVE SUMMARY

NECS was commissioned by Readymix to prepare an Environmental Impact Statement (EIS) for the proposed development of the company's site at Kellogg Road, Rooty Hill.

An archaeological survey of the development area at Rooty Hill was conducted in November 2002 (Navin Officer Heritage Consultants 2002). A portion of the Humes site has been included in the project to facilitate the construction of an office and laboratory complex which forms part of the proposed Regional Distribution Centre (RDC). Therefore a desktop archaeological assessment of the Humes site was conducted in June 2004 (Navin Officer Heritage Consultants 2004). The results of these previous assessments have been incorporated into the present investigation, which includes additional sections of the rail siding. This study has now completed archaeological investigations for the development area and allowed further consultation with representatives of local Aboriginal groups. The previous and current assessments include historical research, literature and register reviews, archaeological field survey and inspection and Aboriginal consultation

No previously recorded Aboriginal sites were known to exist in the study area prior to the 2002 assessment.

No Aboriginal sites have been identified in the study area. In 2002 Gordon Morton of the Darug Tribal Aboriginal Corporation indicated that an unrecorded site might have once existed in, or close to, the study area, on the creek margins near the western boundary of the study area. The site was most likely destroyed during construction of the nearby One Steel Plant.

It is recommended that:

- 1. There are no Aboriginal archaeological constraints to the proposed development at the Readymix site at Kellogg Road, Rooty Hill.
- 2. While recognising that this archaeological investigation consisted of a surface survey only and every effort has been made to assess the subsurface potential of the study area, the presence of subsurface archaeological deposits cannot be entirely discounted.

It is therefore recommended that:

 if during development operations Aboriginal relics or sites are encountered, then the NSW NPWS should immediately be informed. Work should cease in the area of the finds until their significance has been determined and appropriate management strategies, as necessary, have been determined.

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1. INTRODUCTION

NECS was commissioned by Readymix to prepare an Environmental Impact Statement (EIS) for the proposed development of the company's Regional Distribution Centre at Kellogg Road, Rooty Hill.

An archaeological assessment of the development area at Rooty Hill was conducted in three stages by Navin Officer Heritage Consultants over the past two and half years. (Figures 1.1 and 1.2).

In November 2002 Lot 5 DP 255515 and a corridor adjacent to the railway line were reviewed (Navin Officer Heritage Consultants 2002).

In June 2004 Readymix included the *Humes* site, located immediately to the north of the 2002 study area, in a Development Application (DA) for the Regional Distribution Centre. An office block and laboratory were to be located on the southwestern corner of the *Humes* site, adjacent to Kellogg Road. A desktop archaeological assessment was subsequently conducted of the Hume site (Navin Officer Heritage Consultants 2004).

In 2005 two additional sections of the rail siding, including one section between Philip Parkway and Rooty Hill Station, and one section on the eastern end of the siding adjacent to the Nurragingy Reserve, were subject to archaeological assessment.

This report collates the results of the archaeological assessments conducted for the Readymix Regional Distribution Centre. The report was commissioned by NECS.

1.1 Project Description

Readymix proposes to construct and operate a Regional Distribution Centre (RDC) at Kellogg Road, Rooty Hill. Construction materials such as sand and aggregate would be transported by rail to the RDC from quarries outside of the Sydney Basin. These materials would be blended by equipment at the RDC as required to suit customer requirements, and distributed by road to the Sydney market.

The proposed RDC would be capable of handling up to 4 million tonnes per annum (Mtpa) of product. It would commence operation handling by 2 to 2.5 Mtpa increasing to a projected full capacity of about 4 Mtpa as dictated by the construction materials market. The materials are typically used for the manufacture of Concrete and Asphalt. They also have a variety of other uses in civil and construction industries.

The RDC would be developed to include:

- A regional office building which incorporates a quarry materials and concrete testing laboratory;
- A rail siding with aggregate unloading facility;
- Storage bin area and load out facilities;
- · Ground storage and reclaim facilities;
- · Blending plant;
- A conveyor system linking the unloading station to the storage and truck load out facilities;
- Workshops, stores, and amenities facilities, truck washdown facilities, truck refuelling, weighbridges, truck and car parking;
- Concrete Batching Plant;
- bridges at two locations over Angus Creek; and
- Realignment of North Parade.



1.2 Report Outline

This report:

- Describes the methodology used in this study.
- Describes the environmental setting of the Rooty Hill study area and assesses the potential impact of landuse practices on the archaeological record in the subject area.
- Provides a summary of ethno-historic information and a review of Aboriginal archaeology relevant to the region and local area.
- Provides an assessment of the archaeological sensitivity of the RDC site.
- Describes the results of the field surveys of the subject area.
- Defines management issues as identified in the course of the study

2. ABORIGINAL PARTICIPATION

The study area falls within the boundaries of the Deerubbin Local Aboriginal Land Council, the Darug Tribal Aboriginal Corporation and the Darug Custodians Aboriginal Corporation.

The Darug Tribal Aboriginal Corporation and the Darug Custodians Aboriginal Corporation participated in the assessments of the Readymix lands at Rooty Hill.

The Deerubbin Local Aboriginal Land Council will visit the site in the near future.

Records of Aboriginal Participation are provided in Appendix 2.



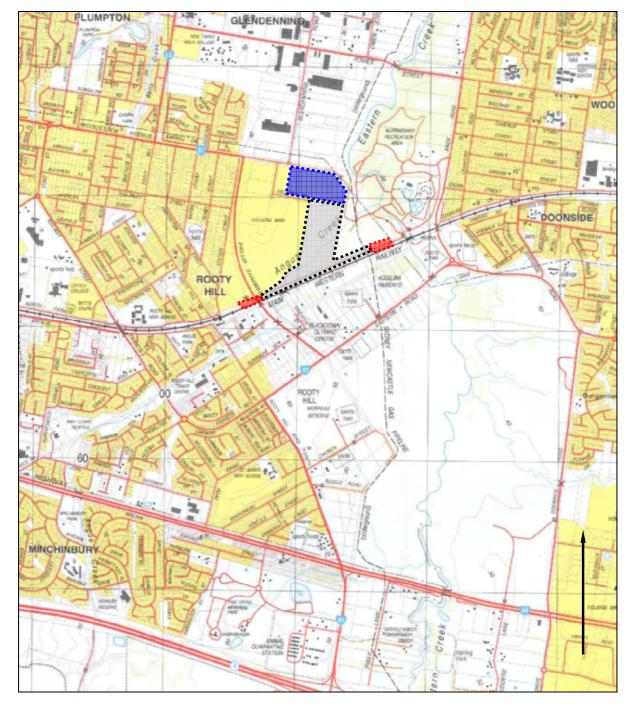


Figure 1.1 Location of the 2002 study area (shown in black/grey), the 'Hume' study area (shown in blue) and the 2005 study area (shown in red) (Prospect 1:25,000 topographic map 3rd Ed LIC 2001)



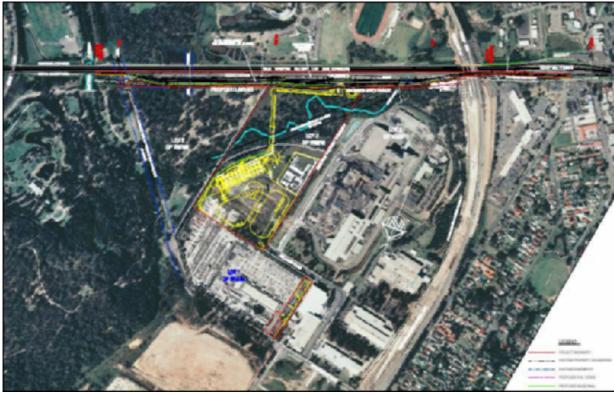


Figure 1. 2 Aerial photograph of the broader Readymix study area (photo supplied by NECS)



2. STUDY METHODOLOGY

2.1 Review of Existing Documentation

A range of documentation was used in assessing archaeological knowledge for the Rooty Hill area and the surrounding region.

Literature sources included the NSW Department of Environment and Conservation Register of Aboriginal Sites (Aboriginal Heritage Information Management System [AHIMS]), associated files and catalogue of archaeological reports, and academic theses.

This background research was used to determine if known Aboriginal sites were located within the area under investigation, to facilitate site prediction on the basis of known regional and local site location patterns, and to place the study area within a heritage and research management context.

2.2 Field Survey

Field survey #1was conducted over one day in October 2002. Survey involved the field team walking through the study area in systematic and opportunistic survey traverses. All areas of ground disturbance and surface visibility were inspected. Angus Creek was systematically surveyed. All old growth eucalypt trees were inspected for possible Aboriginal scars.

The second field survey was conducted over one day in March 2005. Survey involved the field team walking through the study area with Readymix and State Rail personnel. All areas of ground disturbance and surface visibility were inspected

2.3 Project Personnel

Archaeologist Charles Dearling and assistant Daniel Powell conducted the 2002 field survey. Gordon Morton of the Darug Tribal Aboriginal Corporation participated in the field survey.

Kerry Navin conducted the 2004 desktop assessment.

Archaeologist Kerry Navin and assistant Daniel Powell conducted the 2005 field survey. Leanne Wright of the Darug Custodians Aboriginal Corporation and Gordon Morton of the Darug Tribal Aboriginal Corporation participated in the field survey.



3. ENVIRONMENTAL CONTEXT

The Readymix property at Rooty Hill is situated within the Local Government Area of Blacktown in western Sydney.

The area is located within the Sydney Basin, a large sedimentary basin that dominates the NSW central coast and its fluvial catchments. The Basin consists of various, approximately horizontally-bedded sedimentary facies that accumulated during a marine transgression at the end of the Late Palaeozoic glaciation, and was subsequently followed by a marine regression during the Late Permian and Triassic. The geological division within the basin that is relevant to the Eastern Creek area is the Cumberland Plain.

The Cumberland Plain is a topographic unit within the Cumberland Basin that is typified by low undulating topography with a medium drainage line density. The Triassic Wianamatta Group of sedimentary rocks dominates the geology of the Cumberland Plain. These consist mostly of shales, laminites and claystones. The consistent and erodible nature of these sediments has created a lowlying plain with little outstanding relief and low-gradient streams. Soils derived from Wianamatta shale weather to relatively heavy clay and loamy soils.

The study area is drained by Angus Creek, an ephemeral creek that drains east to Eastern Creek. According to anecdotal evidence (Morton pers comm 2002) the study area was inundated in the past when the creek flooded. It is not known if this is still the case as some flood mitigation measures have been carried out and the presence of the Main West Railway Line nearby may also have affected the flow of water across the floodplain.

Vegetation in the study area comprises native and exotic grasses, especially to the south of the creek. There is also a thick covering of the exotic species 'Wandering Jew' (*Tradescantia fluminensis*) along the margins of the creek. This covering extends in places for approximately 10 to 15 metres. Remnant woodland, including some old growth trees, is present in the central part of the study area. The woodland is apparently similar in area to that occupied by woodland in the 1940s and 1950s (Morton pers comm 2002). The major difference between the earlier period and present is the density of the understorey vegetation and ground cover.

Past land use of the area has included clearance of native vegetation and grazing of cattle and horses, at least during the 1940s and 1950s. The southern edge of the study area has a sealed road along it which parallels the nearby railway line and boundary fence. Road metal and ballast from the railway has encroached across the study area as far as the margins of the woodlands. This area has also been disturbed by the installation of sewerage pipelines (c.10 metres north of road) and power lines (c.20 metres north of road).

Extensive disturbance has also occurred north and northwest of the creek. Disturbance near the western margin has resulted from the construction of the One Steel plant, associated road works and construction of an artificial moat along the boundary of the One Steel property. Where Angus Creek approaches the boundary the disturbance has extended as far as the creek. Mounds of fill extend to the northern boundary of the study area from about 40 m north of the creek, and right across the creek for its full width.

These levels of landscape disturbance and disruption will have prejudiced the survival of intact archaeological deposits and site types such as bora rings, stone arrangements, carved and scarred trees.



4. ARCHAEOLOGICAL CONTEXT

4.1 Tribal Boundaries

There have been numerous attempts at mapping the pre-contact and contact territories of Aboriginal people in the region around Sydney (eg: Capell 1970; Eades 1976; Mathews 1901a, 1901b; Ross 1988; Tindale 1974). The exact boundaries between Aboriginal people which existed at 1788 are, however, impossible to reconstruct because of the often fluid nature of the boundaries of clan estates and band ranges, and the lack of reliable data available from that period of time. The primary data is limited, as early observers did not document how Aboriginal people perceived their own groups, or how they differentiated themselves from one another.

Tindale (1974) places the Tharawal tribe in the area south from Botany Bay and Port Hacking to the Shoalhaven River and inland to Campbelltown, Picton and Camden. To the west of this tribal area, Tindale placed the Gandangara tribe, and to the north the Daruk tribe.

4.2 Ethnohistoric Information

References to the Aborigines of the region are found in the journals, diaries and general writings of the early colonists, explorers and settlers. Natives were one of the main subjects of interest to those who arrived in the new colony and 'all the journals contain frequent references to them' (Fitzhardinge 1961).

Accounts written by early visitors to Australia that documents the more obvious details of Aboriginal life include Bradley (1786-92), Collins (1798), Hunter (1968), Phillip (1789), Tench (1961) and White (1790). Although these early commentators were not trained in anthropology or linguistics some useful information is provided by them regarding the Aborigines around the Sydney region. Tench (1961) describes the equipment of the Aborigines as 'exclusive of their weapons of offence, and a few stone hatchets very rudely fashioned, their ingenuity is confined to manufacturing small nets, ... and to fish-hooks made of bone, neither of which are skilfully executed.' Tench also notes the use of bark canoes for fishing.

Comments were made on the types of Aboriginal shelters observed. These were described as consisting, 'only of pieces of bark laid together in the form of an oven, open at one end, and very low, though long enough for a man to lie at full length in ... they depend less on them for shelter, than on the caverns with which the rocks abound' (Tench 1961). Collins observed that the huts were 'often large enough to hold six to eight people' (Collins 1798). These shelters were often grouped together.

References from the early explorers indicate that there was little contact between coastal and inland tribes. Tench (1793) noted that coastal Aborigines had no knowledge of the region west of what is now known as Parramatta.

Within a short period of time after white settlement, the local Aboriginal population was greatly reduced as a result of two epidemics, most probably smallpox. The first occurred only a short time after settlement in 1789 and the second from 1829 to 1831 (Butlin 1983). The first outbreak of the disease is believed to have killed 50% of the Aboriginal population (Collins 1798; Ross 1988; Tench 1961; Turbet 1989). Loss of life on such a scale resulted in a major social reorganisation of Aborigines around the area (Ross 1988) with 'remnants of bands combining to form new groups' (Kohen 1986). Therefore the anthropological observations and other observations by chroniclers of the time do not depict the pre-settlement situation accurately.

The Dharug people came into conflict with the Europeans earlier than the Tharawal or the Gandangara people because of early competition for the same resources. The Dharug had been using the fertile banks of the Hawkesbury River to cultivate yams that were one of the staples of the inland tribes. Hunter (1793:150) describes the churned up banks of the Hawkesbury River where the Aborigines had been foraging for wild yams. After harvesting wild yams the Dharug replanted portions ensuring they did not deplete the resource for the following season. The Europeans also discovered this fertile land and began portioning it off for cultivation, coming into direct competition with the Dharug (Goodall 1996). By 1795 the majority of the yam beds had been replaced by crops



(Kohen 1993). Conflicts over land and resources then occurred throughout the 1790s, resulting in numerous deaths (Keating 1996).

The traditional food economy appears to have been predominantly replaced by the 1840s in the Sydney region, with most Aborigines being employed by whites on farms or selling their traditional food items for European goods (Hassell 1902; Jervis 1935, 1949).

4.3 Sydney Basin Regional Archaeology

The Rooty Hill study area is located within the Sydney-Bowen Sedimentary Basin. This Basin includes all of the topography formed on the approximately horizontally bedded sedimentary facies and dissected plateau lands of the central NSW coast, and extends inland to the Great Divide and the start of the Western Slopes.

The Sydney Basin has been the subject of intensive archaeological survey and assessment for many years. This research has resulted in the recording of thousands of Aboriginal sites and a wide range of site types and features. The most prevalent sites or features include open artefact scatters or camp sites, isolated finds (single stone artefacts), middens, rock shelters containing surface artefacts and/or occupation deposit and/or rock art, open grinding groove sites and open engraving sites. Uncommon site types include scarred trees and quarry and procurement sites. Rare sites include burials, stone arrangements, carved trees, and traditional story or other ceremonial places.

Archaeological studies in the Sydney Basin have generated hundreds of reports and monographs and a number of academic theses. Studies generally fall into four categories: those which have been carried out within a research-orientated academic framework; larger scale planning and management studies (for example, regional heritage studies); archaeological surveys carried out by interested amateurs, and impact assessment studies that have been carried out by professionals within a commercial contracting framework. The latter deal with specific localities subject to development proposals and constitute a large proportion of the archaeological research carried out to date.

This database has been used to propose varying models regarding regional occupation sequences, exploitation patterns, regional characteristics in site content and site location parameters.

It is known that Aborigines have lived in the Sydney region for at least 20,000 years (Stockton and Holland 1974). Late Pleistocene occupation sites have been identified around the fringes of the Sydney Basin at Shaws Creek (13,000 years BP (Before Present)), in the Blue Mountain foothills (Kohen 1984), and at Loggers Shelter at Mangrove Creek (11,000BP) (Attenbrow 1981). However, the majority of both open and rock shelter sites in southeastern NSW date to within the last 3,000 years.

A similar trend in occupation age occurs in dated deposits in NSW coastal sites. This has led many researchers to propose that population and occupation intensity increased from this period (Attenbrow 1987; Kohen, 1986; McDonald and Rich 1993; McDonald 1994). The increased use of rock shelters postdates the time when sea levels stabilised after the last ice age around 5,000 years ago (the Holocene Stillstand). Following the stabilisation of sea levels, the development of coastal estuaries, mangrove flats and sand barriers would have increased the resource diversity, predicability, and the potential productivity of coastal environments for Aborigines. In contrast, occupation during the late Pleistocene, prior to 10,000BP, may have been sporadic and the Aboriginal population relatively small.

4.4 The Cumberland Plain

The Rooty Hill study area is located in the western Cumberland Plain.

Larger scale projects undertaken on the Cumberland Plain include:

- Kohen's 1986 doctoral research on the western Plain (Kohen 1986),
- Smith's major compilation and analysis of data for the northern Cumberland Plain (Smith 1989),
- McDonald and Rich's investigations at Rouse Hill (McDonald and Rich 1993),



- Navin and Officer's surveys of Badgerys Creek for the proposed Second Sydney Airport (Navin Officer Heritage Consultants 1997), and
- McDonald's 1997 investigation of the ADI site at St Marys.

Several predictive models have been formulated to explain Aboriginal site location on the Plain. Haglund (1980) developed a predictive model of site location based on early survey work in the Blacktown area. She predicted that sites would most likely be located near watercourses such as creeks and soaks and on high ground near water.

Kohen (1986) postulated that the availability of water was the most important factor influencing the distribution of sites across the landscape. Other criteria that appear to play a role in site location are proximity to a diversity of economic resources such as food and lithic materials, and to a lesser extent, elevation. Smith (1989) supported the predictions made by Haglund (1980) and Kohen (1986) that sites will most commonly be found near water sources.

Smith (1989) concluded that sites would occur in all areas of the Cumberland Plain except where destroyed by European landuse, erosional processes and flooding. Sites will be located in all topographic units with site densities expected to be 10% higher in the northern section of the Plain because of the greater concentrations of stone resources in that area. Fifty percent of all sites will be found within 50 m of a water source, with sites tending to be more frequent around permanent water sources, and sites will be expected in relatively high frequencies on, or near, stone resources.

The results of test excavations at Rouse Hill (McDonald and Rich 1993) have confirmed that sites occur widely across the landscape including areas such as hilltops and slopes and near creeks. Larger sites with higher artefact densities are more likely to be located near permanent water. Excavations of a site at West Hoxton provided evidence of artefacts present up to 80 m from a creekline, extending onto adjacent lower slopes (Rich and McDonald 1995).

Prior to 1993 relatively few open sites had been excavated on the Cumberland Plain. Excavations at Plumpton Ridge, a major source of silcrete raw material, have provided evidence of extraction activity at this site at least 2,200 years ago (McDonald 1986). The stratified Power Street Bridge site on Eastern Creek at Doonside yielded a date of 5,957±74 (NZA-3112) which is the earliest occupation date for the Cumberland Plain (McDonald 1993). A deflated Aboriginal hearth site located on a sand dune at Randwick provides the earliest secure date, 7820±50 BP, (Beta 87211) for an open site in the Sydney Basin (Mary Dallas pers. comm. 1997).

Charcoal from two knapping floors located in sites in the Rouse Hill development area have provided Early Bondaian dates of 4,060±90BP (Beta 66450) and 4,690±80BP (Beta 66453) respectively (McDonald and Rich 1993). These dates are the earliest so far obtained for backed blade reduction

4.5 The Rooty Hill Study Area

No Aboriginal sites are listed on the AHIMS as occurring within the Rooty Hill Study area.



5. SURVEY RESULTS

5.1 Aboriginal Sites

No Aboriginal sites, objects or area of potential archaeological deposit or sensitivity were identified in the course of the field surveys of the Rooty Hill study area. Gordon Morton of the Darug Tribal Aboriginal Corporation indicated that an unrecorded site might have once existed in, or close to, the study area, on the creek margins near the western boundary of the study area. The site was most likely destroyed during construction of the nearby One Steel Plant.

5.2 Conclusions

No Aboriginal sites have previously been recorded as occurring in the Rooty Hill study area No Aboriginal sites, objects or areas of potential archaeological deposit or sensitivity have been recorded as occurring on the Readymix land that was assessed in 2002 and 2005.

Taking account of:

- known site locational parameters for the Cumberland Plain;
- the results of previous archaeological surveys in the local area around Rooty Hill and in areas immediately adjacent to the Humes site;
- the results of the current archaeological survey of the rail easement;
- the lack of foci for prehistoric Aboriginal activity within the study area; and
- the cleared and heavily disturbed nature of the landscape within the site;

it is considered that the archaeological sensitivity of the Rooty Hill study area is low.

5.3 Survey Coverage and Visibility Variables

The effectiveness of archaeological field survey is to a large degree related to the obtrusiveness of the sites being looked for and the incidence and quality of ground surface visibility. Visibility variables were estimated for all areas of comprehensive survey within the study area. These estimates provide a measure with which to gauge the effectiveness of the survey and level of sampling conducted. They can also be used to gauge the number and type of sites that may not have been detected by the survey.

Ground surface visibility is a measure of the bare ground visible to the archaeologist during the survey. There are two main variables used to assess ground surface visibility, the frequency of exposure encountered by the surveyor and the quality of visibility within those exposures. The predominant factors affecting the quality of ground surface visibility within an exposure are the extent of vegetation and ground litter, the depth and origin of exposure, the extent of recent sedimentary deposition, and the level of visual interference from surface gravels. Two variables of ground surface visibility were estimated during the survey:

- A percentage estimate of the total area of ground inspected which contained useable exposures
 of bare ground; and
- A percentage estimate of the average levels of ground surface visibility within those exposures.
 This is a net estimate and accounts for all impacting visual and physical variables including the archaeological potential of the sediment or rock exposed.

The obtrusiveness of different site types is also an important factor in assessing the impact of visibility levels. For example, artefacts made from locally occurring rock such as quartz may be more difficult to detect under usual field survey conditions than rock types that are foreign to the area. The impact of natural gravels on artefact detection was taken into account in the visibility variables estimates outlined above.



The natural incidence of sandstone platforms suitable for grinding grooves or engraving, together with the incidence of old growth trees, are important considerations in identifying both survey effectiveness and site location patterns outside of environmentally determined factors.

The following tables summarise estimates for the degree to which separate landforms within the study area were examined and also indicates the exposure incidence and average ground visibility present in each case.

The ESC calculation is defined and required by the NPWS and stated to be of use in assessing and cross comparing the adequacy of archaeological surface surveys. The actual utility of the ESC calculation however is challenged by many archaeologists. The limitations of the ESC calculation are emphasised by differences in the subjective assessment of exposure and visibility levels, variations in how survey units are defined and measured, and differences in how and which variables are estimated and combined. In reality, ESC results tend only to be meaningful when compared across surveys conducted by the same surveyors and ESC measurers.

Survey Landform division unit	Landform	Survey mode	Main exposure types	Unit area (ha)	Proportion of unit surveyed	Exposure incidence %	Average exposure visibility %	Net effective exposure (ha)	Effective survey coverage of survey unit %	Archaeological recordings
1 creek margin foot creek crossing animal paths	foot	creek crossi animal path	ng St	1.36	55	2	09	0.02	1.5	lin
2 floodplain foot vehicle tracks	foot	vehicle tracl	<s< td=""><td>4.5</td><td>40</td><td>3</td><td>22</td><td>0.03</td><td>0.7</td><td>Nii</td></s<>	4.5	40	3	22	0.03	0.7	Nii
3 land fill site	land fill site			5.0	10	0	0	0	0	
1 creek margin foot vehicle tracks erosion scours	foot	vehicle track erosion scoul	s rs	1.36	09	10	80	0.06	4.4	Nil
2 floodplain foot vehicle tracks animal tracks	foot	vehicle track animal track	S	5.5	40	5	40	0.04	0.7	Nil
				17.72					7.3	

Survey Survey division unit	Survey unit	Landform	Survey	Main exposure types	Unit area (ha)	Proportion of unit surveyed	Exposure incidence %	Average exposure visibility %	Net effective exposure (ha)	Effective survey coverage of survey unit %	Archaeological recordings
northern side	-	drainage channel	foot	creek crossing	0.127	09	2	5	0.0002	0.2	iiZ
	2	rail embankment	foot		0.27	09	5	2	0.0004	0.2	ΞZ
southern side	3	rail embankment	foot		0.405	09	5	5	9000:0	0.2	Nil
Totals					0.802				0.0012	0.2	





6. RECOMMENDATIONS

- 1. There are no Aboriginal archaeological constraints to the proposed development at the Readymix site at Kellogg Road, Rooty Hill.
- 2. While recognising that this archaeological investigation consisted of a surface survey only and every effort has been made to assess the subsurface potential of the study area, the presence of subsurface archaeological deposits cannot be entirely discounted.

It is therefore recommended that:

- if during development operations Aboriginal relics or sites are encountered, then the NSW DEC should immediately be informed. Work should cease in the area of the finds until their significance has been determined and appropriate management strategies, as necessary, have been determined.
- 3. Three copies of this report should be forwarded to the NSW DEC at the following address:

Ms Kathryn Przywolnik
Cultural Heritage Officer
Conservation Planning Unit
Metro EPRD
NSW Department of Environment and Conservation
PO Box 1967
HURSTVILLE NSW 2220

4. One copy of this report should be forwarded to each of the following groups:

Mr Gordon Morton and Ms Celestine Everingham Sites Officer Darug Tribal Aboriginal Corporation PO Box 441 Blacktown NSW 2184

Ms Leanne Wright Sites Officer Darug Custodians Corporation PO Box 36 Kellyville NSW 2153

Mr Phil Khan Sites Officer Deerubin Local Aboriginal Land Council PO Box 3184 MOUNT DRUITT VILLAGE NSW 2770

7. REFERENCES



- Attenbrow, V. 1981 Mangrove Creek Dam Salvage Excavation Project: a report prepared for the National Parks and Wildlife Service of NSW on behalf of the Department of Public Works.
- Attenbrow, V. 1987 The Upper Mangrove Creek Catchment: A Study of Quantitative Changes in the Archaeological Record. Unpublished PhD Thesis. University of Sydney
- Bradley, W. 1786-92 *A voyage to New South Wales; the journal of L. T. William Bradley RN of HMS Sirius*. Ms. A3631, Mitchell Library, Sydney. Published 1969 by William Dixon Foundation, Publication, Publication No. 11, Ure Smith Pty Ltd.
- Butlin, N. G. 1983 *Our Original Aggression: Aboriginal Populations of South-eastern Australia* 1788-1850. George Allen and Unwin, Sydney.
- Capell, A. 1970 "Aboriginal Languages in the South Central Coast, New South Wales: Fresh Discoveries" in *Oceania* 41(1) pp 20-27.
- Collins, D. 1798 An Account of the English Colony in New South Wales: With Remarks on the Dispositions, Customs, Manners, etc of the Native Inhabitants of that Country. Reprinted in 1975 by AH and AW Reed. Sydney.
- Eades, D. K. 1976 The Dharawal and Dhurga Languages of the New South Wales South Coast. AIAS. Canberra.
- Fitzhardinge, L. F. 1961 Notes to Expedition to Botany Bay (in) Sydney's First Four Years. Angus and Robertson.
- Goodall, H. 1996 *Invasion to Embassy: Land in Aboriginal Politics in New South Wales, 1770-1972.*Allen and Unwin, NSW.
- Haglund, L. 1980 Report on an Archaeological Survey in the City of Blacktown. Report to National Parks and Wildlife Service.
- Hassell, J. S. 1902 *In Old Australia records and reminiscences from 1794.* R. S. Hews and Co. Brisbane.
- Hunter, J. 1968 An Historical Journal of the Transactions at Port Jackson and Norfolk Island. Angus & Robertson.
- Jervis, J. 1935 Camden and the Cow Pastures. *Journal and Proceedings Royal Australian Historical Society* 21 (4): 240-255.
- Jervis, J. 1949 Notes on the early history of Campbelltown. *Journal and Proceedings Campbelltown and Airds Historical Society*.
- Keating, C. 1996 On the Frontier: A Social History of Liverpool. Hale and Iremonger, Sydney 1996.
- Kohen, J. 1984 Preliminary Report on Collections and Excavations of Aboriginal Artefacts in the Western Cumberland Plain. Report to NSW National Parks and Wildlife Service.
- Kohen, J. 1986 Prehistoric Settlement in the Western Cumberland Plain: Resources, Environment and Technology. Unpublished PhD Thesis Macquarie University.
- Kohen, J. 1993 *The Darug and their Neighbours: The Traditional Aboriginal Owners of the Sydney Region*. Darug Link in association with Blacktown and District Historical Society.



- Mathews, R. H. 1901a "The Thurrawal Language" in *Journal and Proceedings of the Royal Society of NSW* 35:127-160.
- Mathews, R. H. 1901b "Thurrawal Grammar Part 1" in *Languages No.* 3. Australian Institute of Aboriginal Studies.
- McDonald, J. 1986 Preliminary Reconnaissance of the Proposed Schofields Regional Depot, Plumpton, NSW. Report to MWDA.
- McDonald, J. 1993 Archaeological Survey of the Rouse Hill Infrastructure Project [Stage 1] Works along Caddies, Smalls and Second Ponds Creek, Rouse Hill, NSW. Report to the Rouse Hill Joint Venture.
- McDonald, J. 1994 Dreamtime Superhighway: An Analysis of Sydney Basin Rock Art and Prehistoric Information Exchange. Unpublished PhD thesis, Department of Prehistory and Anthropology, Australian National University, Canberra.
- McDonald, J. 1997 Interim Heritage Management Report ADI Site St Marys. Volumes 1 & 2. Report by Jo McDonald Cultural Heritage Management Pty Ltd to Lend Lease Joint Venture.
- McDonald, J. and E. Rich 1993 Archaeological Investigations for Rouse Hill Infrastructure Project [Stage 1] Works along Caddies, Smalls and Second Ponds Creek, Rouse Hill and Parklea, NSW. Final Report on Test Excavation Programme. Volumes I and II. Report to the Rouse Hill Joint Venture.
- Navin Officer Heritage Consultants 1997 Aboriginal Cultural Heritage Proposal for a Second Sydney Airport at Badgerys Creek or Holsworthy Military Area. *EIS Technical Paper 11*. PPK Environment & Infrastructure. Sydney.
- Navin Officer Heritage Consultants 2002 Proposed CSR Concrete Batching Plant Rooty Hill, NSW. Archaeological Survey for Aboriginal Sites. Report to NECS.
- Navin Officer Heritage Consultants 2004 Proposed CSR Regional Distribution Centre Rooty Hill, NSW. Desktop Archaeological Assessment of the Humes Site. Report to NECS.
- Phillip, A. 1789 The Voyage of Governor Phillip to Botany Bay: with Contributions from other Officers of the First Fleet and Observations on Affairs of the Time by Lord Auckland. John Stockdale, London. Reprinted 1970, Angus and Robertson, Sydney.
- Ross, A. 1988 "Tribal and Linguistic Boundaries: A Reassessment of the Evidence" in Aplin, G. (ed) (1988) *A Difficult Infant: Sydney before Macquarie*. pp 42-53. NSW Press, Australia
- Smith, L. J. 1989 Final Report: Site Survey and Site Analysis on the Northern Cumberland Plain. Report to National Parks and Wildlife Service.
- Stockton, E. D. and W. Holland 1974 "Cultural Sites and their Environment in the Blue Mountains" in *Archaeology and Physical Anthropology in Oceania* 9(1):36-65.
- Tench, W. (1961) 1789 1793 Sydney's First Four Years: being a reprint of A Narrative of the Expedition to Botany Bay and A Complete Account of the Settlement at Port Jackson. Reprinted in 1961 by Angus and Robertson. Sydney.
- Tindale, N. 1974 The Aboriginal Tribes of Australia. Australian National University Press.
- Turbet, P. 1989 The Aborigines of the Sydney District Before 1788. Kangaroo Press, Kenthurst.



APPENDIX 1

STATUTORY INFORMATION

A1. The National Parks and Wildlife Act 1974



The following summary is based on:

- the provisions of the current National Parks and Wildlife Act 1974 (as amended). It should be noted that amendments to this Act were passed by both houses of the NSW State Government in 2001 (no.130, assented 19/12/2001). Some of these amendments are yet to be proclaimed.
- Department of Environment and Conservation policy as presented in the 1997 Standards and Guidelines Kit for Aboriginal Cultural Heritage provided by the NSW NPWS, and as communicated orally to the consultants on a periodic basis. The 1997 Standards and Guidelines Kit is currently under review and subject to change in the near future.

The guideline documents presented in the 1997 Standards and Guidelines Kit were stated to be working drafts and subject to an 18 months performance review. The Standards Manual was defined not to be a draft and subject to periodic supplements.

The National Parks and Wildlife Act 1974 (as amended) provides the primary basis for the legal protection and management of Aboriginal sites within NSW. The implementation of the Aboriginal heritage provisions of the Act is the responsibility of the Department of Environment and Conservation (DEC).

The rationale behind the Act is the prevention of unnecessary or unwarranted destruction of relics, and the active protection and conservation of relics that are of high cultural significance.

With the exception of some artefacts in collections, or those specifically made for sale, the Act generally defines all Aboriginal artefacts to be 'Aboriginal Objects' and to be the property of the Crown. An Aboriginal object has a broad definition and is inclusive of most archaeological evidence The Act then provides various controls for the protection, management and disturbance of Aboriginal Objects.

An Aboriginal object is defined as:

'any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.' [Section 5(1)].

In practice, archaeologists use a methodology that groups 'Aboriginal Objects' into various site classifications according to the nature, occurrence and exposure of archaeological material evidence. The archaeological definition of a site may vary according to survey objectives, however a site is not recognised or defined as a legal entity in the Act. It should be noted that even single and isolated artefacts are protected as Aboriginal Objects under the Act.

Generally it is an offence to do any of the following without a Permit from the Director-General of the Department of Environment and Conservation under Section 87: disturb or excavate any land for the purpose of discovering an Aboriginal Object; disturbing or moving an Aboriginal Object; take possession of or removing an Aboriginal Object from certain lands; and erecting a building or structure to store Aboriginal Objects on certain land (Section 86). The maximum penalty is \$11,000 for individuals and \$22,000 for corporations. Section 175B outlines circumstances where corporation directors may be taken to have contravened these provisions, based on the acts or omissions of that Corporation.

Consents regarding the use or destruction of Aboriginal Objects are managed through a system of Permits and Consents under the provisions of Sections 87 and 90 of the Act. The processing and assessment of Permit and Consent applications is dependent upon adequate archaeological review and assessment, together with an appropriate level of Aboriginal community liaison and involvement (refer Standards for Archaeological Practice in Aboriginal Heritage Management in 1997 NPWS Standards and Guidelines Kit).



The Minister may declare any place which, in his or her opinion, is or was of special Aboriginal significance with respect to Aboriginal culture, to be an Aboriginal place (Section 84). The Director-General has responsibility for the preservation and protection of the Aboriginal place (Section 85). An area declared to be an Aboriginal place may remain in private ownership, or be acquired by the Crown by agreement or by a compulsory process (Section 145).

The Director General may make an interim protection order and order that an action cease where that action is, or is likely to, significantly affect an Aboriginal object of Aboriginal place. Such an order is current for 40 days (Section 91AA, Schedule 3[10]). Such an order does not apply to certain actions, such as where they are in accordance with development consents or emergency procedures.

A.1.1 General Management Constraints and Requirements

The Act, together with the policies of the Department of Environment and Conservation provide the following constraints and requirements on land owners and managers:

- It is an offence to knowingly disturb an Aboriginal Object (or site) without an appropriate permit or consent (Sections 87 and 90);
- Prior to instigating any action which may conceivably disturb an Aboriginal Object (this generally means land surface disturbance or felling of mature trees), archaeological survey and assessment is required (refer Standards for Archaeological Practice in Aboriginal Heritage Management in 1997 NPWS Standards and Guidelines Kit).
- When the archaeological resource of an area is known or can be reliably predicted, appropriate landuse practices should be adopted which will minimise the necessity for the destruction of sites/Aboriginal Objects, and prevent destruction to sites/Aboriginal Objects which warrant conservation (refer Standards for Archaeological Practice in Aboriginal Heritage Management in 1997 NPWS Standards and Guidelines Kit).
- Documented and appropriate consultation with relevant Aboriginal Community representatives is required by the Department of Environment and Conservation as part of the prerequisite information necessary for endorsement of consultant recommendations or the provision of Consents and Permits by the NPWS (refer Standards for Archaeological Practice in Aboriginal Heritage Management in 1997 NPWS Standards and Guidelines Kit).

A2. The National Parks and Wildlife Amendment Bill 2001

Although this Act was passed by both houses of the NSW parliament in 2001, a number of its provisions with regard to Aboriginal cultural heritage have yet to be gazetted and are not yet law. These include the following provisions:

- The requirement for a section 90 'Consent to Destroy' from the Director General will be replaced by a 'heritage impact permit' (Schedule 3[1], 3[3-8]).
- The offence under section 90 of the Principal Act of 'knowingly' destroying, defacing or damaging Aboriginal objects and Aboriginal Places without Consent will be changed so that the element of knowledge will be removed (Schedule 3 [2]). The amended section 90, subsection 1 will read:

'A person must not destroy, deface, damage or desecrate, or cause or permit the destruction, defacement, damage or desecration of, an Aboriginal object or Aboriginal place.'

 Section 90 subsection 1 will not apply when an Aboriginal object or Aboriginal place is dealt with in accordance with a heritage impact permit issued by the Director-General (Schedule 3[3], Section 90(1B) in amended Act).



- It will be a defence to a prosecution for an offence against subsection 1 if the defendant shows that:
 - (a) he or she took reasonable precautions and exercised due diligence to determine whether the action constituting the alleged offence would, or would be likely to, impact on the Aboriginal object of Aboriginal place concerned, and
 - (b) the person reasonably believed that the action would not destroy, deface, damage or desecrate the Aboriginal object or Aboriginal place.' (Schedule 3[3], Section 90(1C) in amended Act)
- A court will be able to direct a person to mitigate damage to or restore an Aboriginal object or an Aboriginal place in appropriate circumstances when finding the person guilty of an offence referred to in section 90 of the Principal Act (Schedule 3[9]).
- Schedule 4[8] of the Bill provides for the Director-General to withhold in the public interest specified documents in the possession of the NPWS which relate to the location of Aboriginal objects, or the cultural values of an Aboriginal place or Aboriginal object.

A3. Statutory constraints arising from artefacts which constitute background scatter

Background scatter is a term used generally by archaeologists to refer to artefacts that cannot be usefully related to a place or focus of past activity. There is no single concept for background 'scatter' or discard, and therefore no agreed definition. The recognition of background material within a particular study area is dependent on an appreciation of local contextual and taphonomic factors. Artefacts within a 'background' scatter can be found in most landscape types and may vary considerably in density.

Standard archaeological methodologies cannot effectively predict the location of individual background scatter artefacts. Surface survey may detect background material either as individual artefacts ('isolated finds'), or even as small, low-density 'sites'. Subsurface testing may sample, and through analysis, characterise background material. However, beyond the scope of archaeological sampling, the potential to encounter background artefacts within the context of development related ground disturbance will always remain.

Most previous cultural resource management archaeological methodologies have acknowledged that there is little scientific justification for the conduct of archaeological salvage or ground disturbance monitoring to effect the recovery of background artefacts. The intrinsic scientific value of any recovered artefacts does not, in general, outweigh the expense of conducting the monitoring. However, low-density distributions of artefacts are a current subject of interest by some heritage practitioners and DEC policy regarding this issue may change in the future. The monitoring of construction related ground works by Aboriginal groups is now increasingly practiced. The recovery of background scatter artefacts is often a probable outcome of such monitoring exercises.

Given the nature of statutory and DEC policy requirements in NSW (refer Section 9), the detection of background artefacts during monitoring can be problematic. Unless the Aboriginal object is covered by a current Consent or Permit (or Heritage Impact Permit (HIP)), from DEC, all further impact to the find, and the ground in its immediate vicinity, must cease until one is gained. It may take up to eight weeks for this to occur. In the past, however, DEC has not as a general rule granted Consents to cover artefacts within background scatters. This is because DEC only provide Consents where the significance and location of the Aboriginal Objects to be impacted can be reliably defined. By their very nature, this cannot be done for artefacts that constitute a background scatter.

The present policies of DEC do not provide an effective or proactive means of dealing with the statutory constraints posed by the detection of background scatter artefacts during development works. It should therefore be noted, that in the event that an Aboriginal artefact ('Aboriginal object') is detected during ground disturbance within a development study area, and that area is not covered by a Consent to Destroy (or Heritage Impact Permit), there may be considerable delays to development works while an application for a Consent to Destroy is processed.



APPENDIX 2

RECORD OF ABORIGINAL PARTICIPATION



Name(s) of Aboriginal Repre	sentative: Peak	e Wrig	ч.	
Name of Aboriginal Organisa	ation: Darry	Custodian	a Abong	and .
	Comp.			
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Archaeologist(s): name & ad	dress 12	"au - ,		
	Navin Officer Her 4/71 Leichhardt S			
Project Name: C-S R				
Client name & address: (please send your	cl- Ms Sue ?	Tos (-		
(please send your invoice to this address)	1. 2 .			
	Po Box 2	71, Ca-p2	ml - 14	50
Type of participation:	Guided inspection of stu	udy area and sites	3	
8	Accompanied/participat	ed in archaeologi	cal survey/salvage	
	Separate inspection or s	survey		
0	Accompanied/participat	ed in excavation p	orogram	
Period of participation:				7
	Date(s)	Start	Finish	
	31.3.05	10am	12.45	-
Issues raised:				
	11 6			
Signed (archaeologist):	14/1-			
Signed (Aboriginal representati	versi): Lwight			
 please note this form is not an the client name and address p 		e send an invoice fi	rom your organisatio	n to



DARUG CUSTODIAN ABORIGINAL CORPORATION

PO BOX 36 KELLYVILLE 2155 PH: 45775181 FAX: 45775098 MOB: 0415770163 ABN: 819 35 722 930

1st March 2005

Attention: Kerry Navin

SUBJECT: Rooty Hill Railway proposed works.

Dear Kerry

As a representative of the Darug Custodian Aboriginal Corporation I attended the site For the proposed upgrade along the train line from Rooty Hill Station to Eastern Creek.

The natural soil profiles have been completely disturbed along the edge of the train line therefore The Darug Custodian Aboriginal Corporation have no objections to the proposed upgrade.

Leanne Wright



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DANIES TRIBAL ADOLLS MAIL CORFORMATION

P.O BOX 441 BLACKTOWN NSW 2148 ABN: 77 184 151,969

Des Dyer.

Wednesday, March 09, 2005

Dear Kerry;

Thank you for the news letter as you will see by the enclosed letters Colin Gale is no longer the Chairperson.

The new committee would like to ask if and when the development starts that we be given the opportunity to carry out a Cultural Heritage Assessment at our normal rates of pay plus the GST.

We also have concerns about the amount of dust that will full over Nurragingy Reserve as it has cultural heritage values to the Darug people.

I hope to be able to call in to the Community Information office in the next few days.

If you require further information you can contact me on (02) 88 14 95 47 or 0408 360 814 e-mail destrond4552@yahoo.com.au

Respectfully yours,

D. De

Secretary Darug Tribal Aboriginal Corporation.