

Aboriginal Cultural Heritage Assessment Report

437 Wards Hill Road Empire Bay NSW

20223421

8 March 2022



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Kleinfelder Project: 20223421

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1 INTRODUCTION

1.1 PURPOSE OF REPORT

Kleinfelder Australia Pty Ltd (Kleinfelder) was engaged to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) for 437 Wards Hill Road, Empire Bay for the purposes of a potential Caravan Park.

1.2 THE PROPOSED ACTIVITY

A rezoning proposal has been prepared which will seek amend Council's Local Environmental Plan (LEP) on Lot 1 DP 610629, 437 Wards Hill Road, Empire Bay. The proposal seeks to amend the current 7(c2) Conservation and Scenic Protection (Rural Small Holdings) zone under Interim Development Order No. 122 – Gosford (IDO 122) to E3 Environmental Management under the Local Environmental Plan, and include an Additional Permitted Use for the purposes of a Caravan Park on the same land. Appendix D provides a copy of the masterplan for the planning proposal.

The scope for the ACHAR will address:

- Desktop research including environmental context, heritage searches, cultural and archaeological context
- Community consultation
- Field survey of project area
- Analysis of results with mitigation measures and recommendations.

1.3 INVESTIGATORS AND CONTRIBUTORS

Jake Brown is the author of this report. Jake has five years' experience in archaeology including consulting projects in NSW, Qld and ACT. He has undertaken Aboriginal and historic heritage assessments, inclusive of full scale Aboriginal Cultural Heritage Assessments, Aboriginal Heritage Impact Permits, test excavations and Preliminary European Assessments. The report has been reviewed internally by Kleinfelder with a technical and a quality reviewer.

1.4 LEGISLATION AND STATUTORY OBLIGATIONS

All work described in this report was carried out in accordance with the following legislation:

- National Parks and Wildlife Act, 1974 (NPW Act)
- National Parks and Wildlife Amendment Regulation, 2009 (NPW Regulation)
- Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW 2010a)
- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010b) insofar as this relates to the assessment
- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011) insofar as this relates to the assessment.





Under the NPW Act, it is an offence to harm an Aboriginal object whether or not a person knows it is an Aboriginal object. Property owners, developers and land managers are required to consider their proposed activities, and whether any harm may occur to Aboriginal objects and places under several pieces of legislation. The NPW Act is administered by the Department of Planning, Industry and Environment (DPIE) and is the primary legislation for the protection of Aboriginal cultural heritage in New South Wales. Under Part 6 of the Act, it is an offence to knowingly harm or desecrate an Aboriginal object or Aboriginal place. If harm to an object or place is anticipated, an Aboriginal Heritage Impact Permit (AHIP) must be applied for and DPIE may issue an AHIP under s90 of the Act.

The following legislation also relates to the protection of Aboriginal Heritage:

Environmental Planning and Assessment Act 1979 (EPA Act)

The potential impacts of a development on Aboriginal heritage are a key component of the environmental impact assessment process under the EPA Act. In NSW, the EPA Act is the principal law overseeing the assessment and determination of development proposals which are considered under the Act.

Heritage Act 1977 (NSW) (the Heritage Act)

The Heritage Act protects the natural and cultural history of NSW with emphasis on non-indigenous cultural heritage through protection provisions and the establishment of a Heritage Council. While Aboriginal heritage sites and objects are protected primarily by the NPW Act 1974, if an Aboriginal site, object or place is of great significance it can be protected by a heritage order issued by the Minister on the advice of the Heritage Council.

The Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (as amended 1987) (Commonwealth)

The Aboriginal and Torres Strait Islander Heritage Protection Act 1984 protects areas and/or objects which are of significance to Aboriginal people and which are under threat of destruction. A significant area or object is defined as one that is of particular importance to Aboriginal people according to Aboriginal tradition.

The Aboriginal Land Rights Act 1983 (NSW)

The NSW Aboriginal Land Rights Act 1983 is administered by the Department of Human Services: Aboriginal Affairs NSW and establishes the NSW Aboriginal Land Council and local Aboriginal land councils. The Act requires these bodies to take action to protect the culture and heritage of Aboriginal persons in the council's area and promote awareness in the community of the culture and heritage of Aboriginal persons in the council's area.

The Native Title Act 1993 (Commonwealth)

The Native Title Act 1993 provides the legislative framework to recognise and protect native title, establishes ways in which future dealings affecting native title may proceed and to set standards for those dealings, including providing certain procedural rights for registered native title claimants and native title holders in relation to acts which affect native title.

The Australian Heritage Commission Act 1975 (Commonwealth)

The Australian Heritage Commission Act 1975 established the Australian Heritage Commission, which assesses places to be included in the National Estate and maintains a register of these places, which are significant in terms of their association with particular community or social groups for social, cultural or spiritual reasons. The Act does not include specific protective clauses.

State Environmental Planning Policy (Aboriginal Land) 2019 (SEPP)

SEPP 2019 Aboriginal Land provides for the making of development delivery plans (DPPs) for land owned by a LALC that must be considered when determining a DA for that land. The SEPP also allows for specified development carried out on land owned by a LALC to be declared regionally significant development. Presently the SEPP only pertains to certain land owned by the Darkinjung LALC (DLALC). The project site is not on Darkinjung owned land.



2 CONSULTATION

2.1 STAGE 1: NOTIFICATION OF PROJECT PROPOSAL & REGISTRATION OF INTEREST

As per the NSW consultation guidelines initial letters were sent to the required seven (7) parties on 3 November 2021 to request names of potential parties to contact who might have an interest in this project. An ad was also placed in the 1 December 2021 edition of the Koori Mail.

Letters to Potential Registered Aboriginal Parties (RAPs) were sent on the 29 November 2021 to ask if they had an interest in the project. Parties who registered are noted in Table 1. The consultation log is in Appendix B.

Table 1: Registration of RAPs

Party	Contact	Date Registered
Awabakal and Guringai Pty Ltd	Tracey	10 November 2021
Didge Ngunawal Clan	Paul Boyd and Lilly Carroll	29 November 2021
Yinarr Cultural services	Kathie	30 November 2021
Hunters 1	Trudy	30 November 2021
A1 Indigenous Services	Carolyn	1 December 2021
Philip Pulbrook		3 December 2021
Kamilaroi Yankuntjatjara Working Group	Philip Khan	14 December 2021
Darkinjung LALC	Brendan Moyle	14 December 2021
Gugiyin Balun Aboriginal Corporation	Brett Duroux	15 January 2021 (Late registration)

2.2 STAGE 2: PRESENTATION OF INFORMATION / METHODOLOGY

The research methodology was sent for review by the RAPs on the 20 December 2021. RAP responses are recorded on Table 2.

Table 2: Review of Methodology

Party	Response	Date Received
Kamilaroi Yankuntjatjara Working Group	Agreed with methodology	5 January 2022
Gugiyin Balun Aboriginal Corporation	Acknowledged receipt.	20 January 2022

2.3 STAGE 3: GATHERING INFORMATION ABOUT CULTURAL SIGNIFICANCE

As part of the methodology review and the ACHAR process registered parties are given the opportunity to provide any cultural information they wish to share. Responses are recorded in Table 3.

**Table 3: Information provided**

Party	Response	Date Received
Kamilaroi Yankuntjatjara Working Group	The whole study area is significant to our people as there are creation stories that shape the land, sky, and water ways, we as Aboriginal people have a spiritual connection to the land water and sky. We highly recommend a cultural interpretation plan for the project to acknowledge the traditional owners of the land the Aboriginal people. This can be achieved through native landscaping, edible gardens, art, digital displays, design, apps and much more.	5 January 2022
Kamilaroi Yankuntjatjara Working Group	<p>Aboriginal people pass on their knowledge through generation-to-generation, through word of mouth and story. Aboriginal people followed a system of lore and have a kinship way of life; there is men's and woman's business. This way of life was about the land and spiritual connection to the land knowing how to find resources and surviving living a nomadic lifestyle, having an understanding for the land and the flora and fauna around them caring for mother earth.</p> <p>Fire played a big part in the Aboriginal lifestyle as the flora needs to be burnt to rejuvenate, this was known by the Aboriginal people and was carried out seasonally. The Aboriginal people moved around seasonally and knew the land very well, in fact they could read the land navigating them around, like they used the sky to navigate around and to understand the weather from reading the sky and stars at night. We Aboriginal people hold a connection to the sky and many of our dreaming stories are told through the stars and constellations along with the land and wildlife.</p> <p>The water ways are of high significant to our people, as they provide a source of fresh water and natural resources. We use water ways for birthing, bathing, stone tool manufacturing and many other activities, without water we would not be here. Aboriginal people would perform ceremonies and dance in hope of rain or water to be flowing regularly. Water ways are used to guide us, marking tribal boundaries, but was shared with all owned by none.</p> <p>According to the dreaming creation stories these water ways were made by the rainbow serpent and utilised by the Aboriginal people for tens of thousands of years as fresh water source and for resources. This is highly significant to the remains that are unearthed within the site telling us a story of the occupation within the area. The ocean is highly significant to us as it is an abundance of resources, the shore and land that the waters meet are of significance to us also.</p> <p>In the Aboriginal culture each clan has a totem this was our spirit animal or plant, our totem is the dingo for instance, and we must take care of our sacred totem. It was given to us by the lora, and we must follow this kingship. We must not eat our totem this is a way Aboriginal people achieved conservation. We continue to have this deep connection to the flora and fauna, and we continue to care for our mother earth. We Aboriginal people have a beautiful continuing culture, we practice dance, song, ceremonies and sacred men's and women's business.</p>	25 February 2022

2.4 STAGE 4: REVIEW OF DRAFT CULTURAL HERITAGE ASSESSMENT REPORT

A draft report was sent to RAPs on the 4 February 2022 for review with a 28 day review period.



Table 4: Review responses

Party	Response	Date Received	Response from Kleinfelder
Gugiyn Balun Aboriginal Corporation	Any comments on this? Because we've got some things to say about the survey.	4 February 2022	No comments so far. If you wish to detail your comment further, I would be happy to provide a response.
Awabakal and Guringai	Thank you for the attachment however I strongly request that the pedestrian survey be conducted again due to the absence of a Representative Aboriginal Party. This area is of extremely high cultural significance and I am not confident that all aspects of our cultural heritage and cultural significance have been addressed. This area is not one that can be assessed via desktop study. One must stand on the earth and take in the surrounds. I formally request for this assessment to be reassessed. Looking forward to hearing from you in regards to this extremely sensitive and important issue.	4 February 2022	<p>Thank you for your email. As noted in the report I endeavoured to engage the Local Aboriginal Land Council to attend the survey. Thank you for providing that the area is of high cultural significance and I have noted that art and shelters have been recorded in the surrounding areas based on AHIMS. The site is extremely disturbed with buildings on a least half the site as well as roads and other landscaped areas.</p> <p>If it will assist you in providing an opinion for the project I can arrange for you to inspect the site later in the week. This would however be a voluntary inspection / arrangement. I would meet you at site at a mutually agreed time. Kleinfelder would also require some paperwork prior to the visit, for WHS reasons. If this is agreeable please let me know.</p>



Party	Response	Date Received	Response from Kleinfelder
Kamilaroi Yankuntjatjara Working Group	<p>If the project goes ahead interpretation of the study area is the next step to a better future an educated future, we now need to promote and highlight Aboriginal culture and heritage as it has not been achieved in the past to its full potential. This can be done in many ways even 3D imagery of the sites that have been identified and or going to be impacted. If this project goes ahead more of our sites will be destroyed, it is key to protect and preserve them it is our lora the first peoples lora. These sites are so important to us Aboriginal people it holds our history. Other interpretation ideas are native gardens, artwork, digital displays, and design within in the development. If artifacts are unearthed, there should be a keeping place on country used as a path of knowledge for future generations to educate the wider community.</p> <p>We Aboriginal people have a spiritual connection to the areas to the land and this needs to be recognized in the interpretation. We are one of the oldest continuing cultures in the world It is important to educate the wider community about our culture and our history before and after colonisation and assimilation. It is important to acknowledge the wars or battles between the Aboriginal people and the first fleet and how that has affected us today. We need to recognise all the achievements Aboriginal people have made after colonisation as we continue to thrive and succeed as the minority.</p> <p>We recommend further investigation of the whole study area before works permit if the projected is passed we recommend monitoring by a Aboriginal RAP, along with test excavations.</p>	25 February 2022	Noted and comments included in ACHAR



3 LANDSCAPE AND ENVIRONMENTAL CONTEXT

3.1 TOPOGRAPHY AND GEOMORPHOLOGY

The site is classified as the Cockle Bay soil landscape (DPIE n.d.). The description of the topography is:

Level to very gently inclined plains on aeolian/marine deposits with local relief to 10 m and slope gradients <5%. The following landform elements are present: relict beaches, dunes, swamps and drainage depressions. Sub-surface flow drainage is also common with watertables often present within 1 m of the surface. Channels have been constructed to improve site drainage in many areas.

NSW bioregion (NSW NPWS 2003, p.14) data details that three events can be related to landscape formation in NSW including:

- The Great Dividing Range
- Far West Uplands
- West Plains.

In regard to the Sydney Basin landscape it is elevated sandstone plateau, with the exceptions being the Hunter Valley and the low-lying Cumberland Plain (NSW NPWS 2003, p.186).

3.2 HYDROLOGY

Empire Bay catchments are sub-catchments of Brisbane Water, which connects to Broken Bay (Rheim 2021 p.2). Cockle Channel and Cockle Bay are the waterbodies situated on the northern side of the catchment. Empire Bay residential area is relatively flat with an elevation down to approximately 1.0 m AHD at the foreshore. The area around Cockle Bay Nature Reserve has pit and piped drainage infrastructure for stormwater runoff through the main residential areas of Empire Bay and Bensville to the foreshore. (Rheim 2021 p.3). Several drainage depressions and natural channels convey runoff from the bushland areas to piped systems crossing Empire Bay Drive. An unnamed drainage line runs to the approximately 85m to the north of the project area (NSW Government 2018).

3.3 GEOLOGY AND SOILS

The geology of the landscape of Cockle Bay (DPIE n.d) includes alluvial and marine quartz sand, clay and some silt with ferruginous and humic cementation in places and common shell layers. Dominant soils of the Cockle Bay soil landscape (DPIE n.d) are:

- cb1—Brownish-black, friable sandy loam. This is a friable, sandy loam to loam-fine-sandy with apedal massive structure and earthy fabric. It generally occurs as topsoil (A1 horizon)
- nr2—Bleached loose sand. Bleached sand with apedal single-grained structure and porous sandy fabric. It occurs as shallow subsoil (A2 horizon)
- cb3—Mottled yellowish-brown sandy clay loam. This is mottled yellowish-brown light sandy clay loam to sandy clay with moderately to strongly pedal structure and rough faced ped fabric. It occurs as subsoil (B horizon)
- cb4—Saturated grey massive sandy clay. This is commonly saturated grey light sandy clay loam to a medium clay with apedal massive structure and dense fabric. This material occurs as subsoil.

3.4 FLORA AND FAUNA

The soil landscape of Cockle Bay (DPIE n.d.) notes that slope and location affect vegetation types in the area:

(The landscape is) partially cleared, paperbark open-woodland and closed-heathland in poorly drained areas, open-heathland in seasonally waterlogged areas and extensively cleared open-woodland (dry sclerophyll forest) in drier areas. Vegetation on the upper sandy slopes consists of a eucalypt woodland dominated by bastard mahogany, Sydney blue gum and forest oak. The understorey is dominated by



bracken Pteridium esculentum. Poorly drained lower slopes are dominated by swamp mahogany with a dense understorey of the rainbow fern. Seasonally waterlogged mid to lower slopes of open-heathland contain swamp banksia, prickly moses, rice flower, common red bottlebrush and woollsia. Occasional stands of swamp mahogany are also present. On very poorly drained lower slopes, there are dense stands of swamp oak and broad-leaved paperbark.

The Greater Hunter Vegetation mapping shows the site as being non native vegetation for the majority with a very small portion mapped in the north east section as *Blackbutt/ Turpentine/ Sydney Blue Gum mesic tall open forest on ranges of the Central Coast* (SEED n.d.).

Bird life was observed with a range of species noted on site. Water dragons were also observed whilst Kleinfelder was on site undertaking fieldwork.

3.5 LANDSCAPE HISTORY, DISTURBANCES AND IMPACTS

The area around Empire Bay has seen land uses such as grazing, uncleared swampland on poorly drained lower slopes, and minimal residential development. Portions of the area around Empire Bay and the surrounding vicinity are national parks and nature reserves. Historical aerial imagery (NSW Government n.d.) for 1961 and 1986 show disturbance and in 1986 the caravan park being established. The vicinity shows that land clearing by 1961 was well established and development as well as roads established. Heritage NSW has documented evidence available through the state heritage inventory that the area of Empire Bay and the surrounding peninsula was in use during the 1800s with Rickards Wharf at Killcare constructed from 1880 (State Heritage Inventory n.d). The name of Empire Bay comes from the 152 acre subdivision in 1905 with the name originally Sorrento but later changed due to another town of the same name in Victoria.

Given the slope of the study area (relatively flat with flood plain character), this would affect the distribution rate. Rick (1976, pp. 141-144) discusses that morphology and ground cover influences the dispersal of items, with heavier and denser items more prone to downward slope movements. Balek (2002, pp. 48-49) also warns that a stable geomorphic surface does not mean that the soil is static, with biomechanical processes creating the potential for artefact movement. The grass ground cover would provide limited resistant to item movement depending upon the size of the item.

The level of impact can also depend upon the type of land use and movement patterns such as pedestrian, vehicle and animal. Weaver and Dale (1978, pp. 453-456) researched the impact of different movements on an area and determined slopes are more impacted than flat sites. This would relate to any slope close to the bank, especially before sealing occurred. Additionally, they also documented whilst horses and pedestrians have greater impact on vegetation and soil downhill, motorbikes have a greater effect when travelling uphill.

Given the nature of the locality with long-term use evident (200 years approximately), disturbance will have affected the distribution of any potential heritage items on the surface and to a relevant depth. When considering the discussion about bioturbation, human and animal influence on environment, discussions such as Laurent (2011) with consideration of human activities influencing urban soil through socio-spatial elements and urban space (town development and continued evolution), and Anichini et al (2011) become important in the consideration of modelling deposits and their origin. Anichini et al (2011) notes that depth of deposit, type of settlement, movability of the deposit (human or natural) as well as any potential layering of deposits all influence the predictive nature of Potential Archaeological Deposits (PADs).

Flooding is also considered for potential impact. Any potential flooding events would also affect distribution, with alluvial deposits potentially occurring as well as scouring/erosion redistributing material (Lawrence, Davies, and Turnbull 2016, pp.1356-1357). Based on the information available, and physical site inspection the area is disturbed and unlikely to hold PADs.

3.6 ENVIRONMENTAL CONTEXT SUMMARY

The environmental context is one of a disturbed landscape. The area has been disturbed through development and occupation. Landscaping such as gardens, construction including buildings, roads and infrastructure are primary disturbance sources. General disturbance such as parking/driving on unsealed/grass areas and



maintenance also add to disturbance. The surface and a representative subsurface depth has a lower chance of containing Aboriginal heritage due to the level of disturbance at the site in recent to medium term history.

In general, this means that the trees are unlikely to be old enough to have cultural modification and subsurface deposits are also unlikely or to be displaced from their original context.



4 CULTURAL CONTEXT

The way that perceptions, beliefs, stories, experiences and practices give shape, form and meaning to a landscape is termed a cultural landscape. An Aboriginal cultural landscape is 'a place or area valued by an Aboriginal group (or groups) because of their long and complex relationship with that land. It expresses their unity with the natural and spiritual environment and embodies their traditional knowledge of spirits, places, land uses, and ecology'. Material remains of the association may be prominent, but will often be minimal or absent (DECCW, 2010). The physical evidence of Aboriginal use of the landscape (such as campsites and art sites), stories and mythology, cultural resources and the landscape itself provide strong cultural links with the past for the present-day Aboriginal community (OEH, 2015). Just as there is connectivity between all parts of natural ecosystems (plants, animals, soils and water), there is connectivity between cultural objects and places through past human behaviour patterns. The cultural landscape concept emphasises the landscape scale of history and the connectivity between people, places and heritage items. It recognises that the present landscape is the product of long term and complex relationships between people and the environment. Aboriginal cultural landscapes are comprised of:

- Significant biodiversity and a diverse range of ecological systems and associations, all of which contributed to the continuing existence of Aboriginal peoples in the region over many thousands of years, and which are valued in different ways by Aboriginal communities today
- Material remains of this continuing occupation in the form of a diverse array of Aboriginal sites and places known to the Aboriginal communities, some of which will be recorded on the Aboriginal Heritage Information Management System
- Extensive historical records from 1788 through to today which record observations of Aboriginal people and lifestyles, wars, massacres, social and cultural events, population census, social interactions, language, and which influence Aboriginal community values today
- An Aboriginal population made up of people who have traditional association and knowledge of the region, as well as others who live, work and play within the region, all of whom may attribute various values with the area, derived from the distant and recent past, through to the present day.

For Aboriginal people, the significance of individual landscape features is derived from their interrelatedness within the cultural landscape. This means features cannot be assessed in isolation and any assessment must consider the feature and its associations in a holistic manner (DECCW, 2010). Landscapes had social and symbolic dimensions for people and some locations with unusually high or low artefact densities may represent the influence of non-environmental (social and or symbolic) factors (White and McDonald 2010). Aboriginal people have cultural associations with the landscape of Australia deriving from a long pre-contact history, historical interactions during settlement and contemporary attachments.

The following is extracted from 'What is an Aboriginal Cultural Landscape?' (DECCW 2010):

All landscapes contain evidence of human use. The way that perceptions, beliefs, stories, experiences and practices give shape, form and meaning to a landscape is termed a cultural landscape (ACH 1998). An Aboriginal cultural landscape is 'a place or area valued by an Aboriginal group (or groups) because of their long and complex relationship with that land. It expresses their unity with the natural and spiritual environment and embodies their traditional knowledge of spirits, places, land uses, and ecology. Material remains of the association may be prominent but will often be minimal or absent.

The landscape scale of cultural heritage is similar to the concept of 'whole-of-landscape' in ecosystem conservation – just as there is connectivity between all parts of natural ecosystems (e.g. plants, animals, soils and water) there is connectivity between cultural objects and places through past human behaviour patterns. The cultural landscape concept emphasises the landscape-scale of history and the connectivity between people, places and heritage items. It recognises that the present landscape is the product of long-term and complex relationships between people and the environment.

Aboriginal cultural landscapes are comprised of:



Significant biodiversity and a diverse range of ecological systems and associations, all of which contributed to the continuing existence of Aboriginal peoples in the region over many thousands of years, and which are valued in different ways by Aboriginal communities today;

- *Material remains of this continuing occupation in the form of a diverse array of Aboriginal sites and places known to the Aboriginal communities, some of which will be recorded on the Department of Environment, Climate Change and Water's Aboriginal Heritage Information Management System.*
- *Extensive historical records from 1788 through to today which record observations of Aboriginal people and lifestyles, wars, massacres, social and cultural events, population census, social interactions, language etc, and which influence Aboriginal community values today.*
- *An Aboriginal population made up of people who have traditional association and knowledge of the region, as well as others who live, work and play within the region, all of whom may attribute various values with the area, derived from the distant and recent past, through to the present day.*

For Aboriginal people, the significance of individual landscape features is derived from their inter-relatedness within the cultural landscape. This means features cannot be assessed in isolation and any assessment must consider the feature and its associations in a holistic manner (DECCW 2010).

Ethnohistorical descriptions from the late nineteenth century of various Aboriginal tribes identify who populated the surrounding area. Threlkeld (1892) depicts the hunting grounds (taurai) or territory of the Kuringgai extending from the Hawkesbury in the south to the Macleay River in the north. He also believed that the area around Sydney was occupied by sub tribes of the Kuringgai (Guringai tribal peoples). Therefore, the Guringai probably occupied an area from the Port Jackson area (Sydney Harbour) to Lake Macquarie near Newcastle, whereas the Darkinjung people probably occupied the area from the west of Mangrove Creek to Rylstone and to the north to Cessnock and Wollombi (RPS 2009, pp. 11-12). According to Tindale (1974), the Kuringgai was divided into several other tribes, which included the Awabakal, Birpai, Darkinjang, Dharuk, Eora, Ngamba, Tharawal and Worimi; there were probably three different linguistic groups; the Darkinjung, the Guringai and Awabakal speakers.



5 ARCHAEOLOGICAL CONTEXT

5.1 AHIMS SITES AND DESKTOP SEARCHES

An extensive AHIMS search was done on the 22 December 2021. A copy is attached as Appendix A. The search returned a result of 34 sites. No sites are within the project area.

In the case of this assessment little reliance should be placed on the archaeological context due to the lack of information available by way of comparable studies in the locality and on the same landforms. However, some modelling of past Aboriginal use can be derived from the surrounding registered Aboriginal sites and studies. Variables such as the Aboriginal Heritage Information System (AHIMS) including site coordinates and descriptions as well as variation in the classificatory definitions employed by archaeologists should be considered.

Additional searches were conducted from heritage registers. The details are listed below in Table 5.

Table 5: Desktop Search Results

Database	Results	Date of search
State Heritage Inventory	None within study area.	22 December 2021
Local Environmental Plan	None within study area.	22 December 2021
EPBC	None within study area.	22 December 2021
Australian Heritage Register	None within study area.	22 December 2021

5.2 LOCAL AND REGIONAL CONTEXT

A review of the context of local and regional archaeological assessments, when combined with environmental factors, provides the broad basis of a predictive archaeological model for the study area. The broader cultural landscape is highlighted when there is a modelling of expected site types, frequency of their occurrence and spatial distribution patterns across the wider area. However, previous archaeological investigations are somewhat limited in their utility regarding site locations quantities and type. These limitations arise from the variable way archaeologists have previously identified, classified and recorded Aboriginal objects, particularly lithic materials, and Aboriginal sites.

Owing to these variations in the amount of data that is included in reports and the terms different archaeologists use to describe artefact types, a comparison of objects and tool types from each site is not considered to be representative or reliable for the purposes of predictive modelling other than on a broad and generalised basis. Nonetheless, there is a moderate amount of substantial archaeological data for the region. The data available consists of projects relating to infrastructure or development projects and does not necessarily represent the same landscape and/or level of existing disturbance. Assessments from the local and regional area are summarised below:



Kuskie, P and Webster, V 2003, Aboriginal heritage assessment and survey, Watanobbi to Warnervale, NSW

An assessment of an arterial road linking Watanobbi and Warnervale was undertaken in 2003. The study area was divided into 35 survey areas and inspected. The landscape had been disturbed or modified from vegetation clearance, pasture grazing, roads and fences. The landforms varied across the study area from moderate to steep elevation, to gently undulating plains. The survey resulted in the identification of two Aboriginal objects, an artefact scatter and an isolated artefact in association with low-to-mid elevations above ephemeral creek lines. The archaeological inspection identified low to moderate levels of ground disturbance resulting in low archaeological potential.

Archaeological Surveys and Reports 2009, Archaeological Investigations for Indigenous Sites, Precinct 7A, Warnervale

Wyong Shire Council engaged Archaeological Surveys and Reports to undertake an Indigenous sites investigation as part of a strategy for developing Precinct 7A between Warnervale and Hamlyn Terrace on the Central Coast. The study area was located north of the Wadalba neighbourhood centre, bounded by Warnervale Aerodrome to the west, Sparks Road to the north and the Pacific Highway to the south. To the north-east and south-east respectively, the site was bounded by Warnervale and Minnesota Roads. Eighteen sites containing stone artefactual material were recorded during the investigation. Three other sites previously recorded in the survey area by other investigators were unable to be relocated. Site Recording Forms for each of the 18 new sites were lodged and listed on the AHIMS Sites Register. Their location illustrates the relationship between Aboriginal objects and places and elevations in close proximity to watercourses.

RPS Harpers Somers O'Sullivan 2009, Aboriginal and European cultural heritage assessment, Somersby Falls Road, Somersby, NSW

RPS Harpers Somers O'Sullivan (RPS HSO) was commissioned by Hunter Land to undertake a cultural heritage survey and assessment for a proposed rezoning of a parcel of land at Somersby, NSW. The study area was located on the Somersby Plateau seven kilometres north west of Gosford, NSW. The locality is comprised of gently undulating to rolling rises on deeply weathered Hawkesbury sandstone plateau with similar flora resources as the Woongarrah area, such as silvertop ash, eucalypts and geebung shrubs. The study area was located in a rural zoned property which was partially cleared for stock grazing and was bordered by native bushland. The report concluded that much of the study area had been cleared and extensive past land use would have greatly impacted upon any evidence of past Aboriginal occupation. No sites were identified within the immediate study area. The report concluded that the area had low potential for Aboriginal objects to occur in areas covered by vegetation and dense ground cover.

RPS Harpers Somers O'Sullivan 2009, Cultural heritage survey and assessment for Ramsgate Estate, Wyee Point, NSW

RPS HSO was commissioned by Lake Macquarie City Council (LMCC) to assess the potential Aboriginal and European cultural heritage of an area known as Ramsgate Estate, Wyee Point in the LMCC Local Government Area (LGA) to support a Stage 1 Local Environment Study (LES). The study area was located in close proximity to a lake and the Pacific Ocean coastline. An unnamed creek also extended across the study area. A shell midden site was recorded close to the shoreline of Lake Macquarie, but no other Aboriginal objects were located across the study area. The report concluded that the lack of fresh water available in the immediate study area indicated a low potential for stone artefacts.

Extent Heritage Advisors 2018, 15-41 Warnervale Road, Warnervale NSW Central Coast LGA – Rezoning and Redevelopment. Aboriginal Cultural Heritage Assessment Report.

In 2018, Extent Heritage Advisors (Extent) were commissioned by ADW Johnson to undertake an Aboriginal Cultural Heritage Assessment Report (ACHAR) of 15-41 Warnervale Road, Warnervale. Previous archaeological investigations of Precinct 7A identified 18 Aboriginal objects within the precinct, 11 of which were within this study area. An ACHAR was undertaken to identify whether any Aboriginal sites, objects or cultural values may be affected by the proposed development. A preliminary archaeological survey of the subject area identified four previously unidentified sites in addition to the 11 previously identified sites within the study area. All new finds were located along the southern ridgeline and slope on the properties. Test excavation was then undertaken to



investigate the spatial distribution and characteristics of the identified Aboriginal sites, and the areas of low, moderate and high archaeological sensitivity. A total of 117 test pits were undertaken, the majority of which comprised soils consistent with the Gorokan soil landscape. Twelve (12) Aboriginal objects were recovered from the excavation. Silcrete was the dominant material followed by indurated mudstone tuff (IMT) and fine grained siliceous (FGS) material. Also recovered was one piece of quartzite. Overall artefact density was calculated at 0.34 artefacts per square metre. The assessment identified that of the 15 discrete recordings or artefact sites, based on the survey and test excavation these Aboriginal objects reflected two low density surface and subsurface scatters along the crest and southern slopes of the ridgeline in the southern area of the subject site. These were split into two discrete areas, 'Warnervale Residential Isolated Find 1' (#45-3-4055) of low heritage significance, and 'Warnervale Residential Artefact Scatter 1' (#45-3-4054) of moderate to high significance comprising the remaining previously identified sites. The test pitting undertaken for the project included a portion of land directly south of the subject site. Within these test pits, no Aboriginal archaeological material was uncovered. These areas were not considered to have further heritage constraints. It was concluded that an AHIP was required for the area in the south of the subject area characterised by crests and southern slopes of the ridgeline, and in which archaeological material was uncovered throughout the course of the test excavation.

AMAC Group 2016, Test Excavation – 38 Mann Street, Gosford, Report to BLOC Pty Ltd

Test excavation was conducted by AMAC group in 2016 at 38 Mann Street, Gosford. A total of 10 pits were excavated of which two Aboriginal artefacts were located. A layer of fill was found to encompass the site from past filling events. The depths of fill varied along the landscape of the site. Below this fill, intact natural soil profiles were present including the A horizon. The soil landscape although initially identified as disturbed, contained soils of the Erina soil landscape.

AMAC Group 2017, Test Excavation – 32 Mann Street, Gosford to BLOC Pty Ltd

Test excavation was conducted by AMAC Group in 2017 towards the north and east as part of the initial 32 Mann Street, Gosford development. A total of 10 test pits were excavated resulting in no Aboriginal objects and/or features of archaeological and/or cultural significance. It was demonstrated that a significant amount of fill covered the western end of the site. This was found to extend >1.5m as part of the reclamation works of what would have been the intertidal zone of the original Brisbane Waters foreshore. An intact A horizon was located towards the eastern end of the site. The practical ramifications of the results of the previously mentioned archaeological assessments and excavations, infers that there is a potential for Aboriginal archaeological objects and/or deposits to be present within any intact original soil profiles located within study area. Higher order streams are located in the landscape units represented in the study area, chiefly Brisbane Waters. The lack of archaeological assessments near the study area is not a reflection of the archaeology present but a reflection of the development within the area where investigation has not been required.

Mills, 2000, An Assessment of Impact to Indigenous Heritage Items from the Installation of Power Devices and Cabling along the F3 from Berowra to Mount White.

The survey area included locations along the M1 Motorway and the Pacific Highway and areas linking Berowra to Mooney and Mooney to Mount White. The survey found no Aboriginal sites or areas of potential archaeological deposits (PADs) although the surface visibility during the survey was greater than 50%.

Heritage Now 2020, Woy Woy Road Kariong Aboriginal Cultural Heritage Assessment Report. Report to Darkinjung Local Aboriginal Land Council.

Heritage Now was engaged by Darkinjung Local Aboriginal Land Council to conduct an Aboriginal Cultural Heritage Assessment at Lot 512 and 513, DP727686, Woy Woy Road, Kariong. Only the northern portion of the Project Area was planned for residential development. There are no Aboriginal sites within the impact area of the Project, however, archaeologically sensitive sandstone sheets were identified. Aboriginal sites (AHIMS#45-3-3052, HN-WW-E02 and WWR4) were within 20 metres of the impact area and thus fencing during construction is required to ensure there are no inadvertent impacts to these sites. AHIMS#45-3044, HN-WW-E01, WWR3, WWR5 and WWR7 are to be marked on construction maps as no-go areas along with AHIMS#45-3-3052 and WWR4. Recommendations include verifying if sandstone contains engravings or grooves once vegetation is removed but prior to construction.



Insite Heritage 2011, Aboriginal Cultural Heritage & Historical Archaeological Assessment Proposed Koolewong Marina Koolewong, Central Coast, NSW. ADW Johnson on behalf of Gemsted Pty Ltd

Insite Heritage were commissioned by ADW Johnson Pty Ltd to assess the archaeological impacts of a proposed 50 berth marina and associated amendments to a carpark on Murphy's Bay, Koolewong, located on the Central Coast of NSW. The project is for a 50 berth marina extension to an existing jetty and a redesign of the existing carpark to allow for patronage parking. The location of the marina proposal is not within any land subject to Native Title. The report finds that there are no indigenous or non indigenous heritage constraints to the proposed marina project and its associated infrastructure.

Artefact 2020, Northside Private Hospital, Gosford Aboriginal Cultural Heritage Assessment Report. Report to AA Crown Holdings Pty Ltd

AA Crown Holdings Pty Ltd are proposing to develop the Northside Private Hospital, West Gosford within a property identified as Lot 2 DP 1226923. The proposal will be approved as a State Significant Development (SSD). No Aboriginal sites or areas of PAD were identified within the study area.

Heritage Concepts Pty Ltd 2005, Proposed Gas Turbine Facility Munmorah Power Station. Aboriginal Archaeological Assessment & Statement of Heritage Impact. by Parsons Brinkerhoff on behalf of Delta Electricity.

An archaeological assessment of Aboriginal cultural heritage values for the proposed gas-fired power generation facility at Munmorah Power Station was conducted. Munmorah Power Station is on the Central Coast of New South Wales, approximately 10 km north-east of Wyong. Two artefact scatters that had previously been recorded on the AHIMS database were relocated within the study area. A further three isolated artefacts were also located within the study area during the survey. The study area has previously been subjected to disturbance in the form of clearance and the erection of pylons along the route of the easement as well as the construction of the power station. The construction of, and subsequent modifications, to the power station are likely to have disturbed or destroyed Aboriginal archaeological deposits in this area. A S90 permit was recommended where impacts could not be avoided to sites.

Archaeological and Heritage Management Solutions Pty Ltd (AHMS) 2011, Aboriginal and Historical Heritage Impact Assessment 5 Lands Coastal Walkway. Report to Andrews Neil Urban Design Group.

Archaeological and Heritage Management Solutions Pty Ltd (AHMS), was commissioned by Andrews Neil Urban Design Group to undertake an Aboriginal and Historical Heritage Impact Assessment of the existing route of the 5 Lands Coastal Walkway, running from MacMasters Beach to Terrigal. In addition, a series of alternate routes for the Walkway were also explored. Aboriginal heritage items such as middens were located in the assessment and a number of recommendations were included in the report.

Artefact Heritage 2012, Pacific Highway / Wyong Road Intersection Upgrade, Tuggerah Aboriginal Archaeological Survey Report. Report to SKM and RMS.

Artefact Heritage undertook an Aboriginal cultural heritage assessment as part of a Review of Environmental Factors (REF). The project included road widening, replacement of a roundabout with traffic lights and a new additional road bridge. No Aboriginal sites were located during the site survey and the study area was considered to have low archaeological potential due to high levels of disturbance.

Biosis Research 2010, Mardi to Mangrove, NSW: s90 Compliance Report Water Pipeline. Report to John Holland Group.

Following previous investigations by South East Archaeology (2009) and Therin (2006) for the project a permit to destroy was sought. A sub-surface investigation was undertaken of 3 sites and 14 artefacts were recovered from 2 sites.

Biosis 2018b, Kariong Sand and Soil Supplies (Lot 4 DP 227279) Aboriginal Archaeological Assessment. Report to Jackson Environment and Planning on behalf of Mr and Mrs Davis.

The Aboriginal heritage assessment was undertaken near Somersby. The desktop AHIMS assessment located 35 sites within a 5km x 5km search area with no sites within the study area. The survey was conducted with two



representatives from Darkinjung LALC. The results of the survey identified the study area had low archaeological potential. Recommendations include an unexpected finds procedure were implemented.

Jacobs 2017, Vales Point Solar Project Aboriginal Heritage Impact Assessment. Report to Sunset Power International (Trading as Delta Electricity).

Jacobs conducted an assessment of the proposed solar site in the local government areas of Lake Macquarie and Central Coast. The site had high levels of disturbance and no evidence of past Aboriginal occupation were located. Community consultation was undertaken with Darkinjung Local Aboriginal Land Council and Guringai Tribal Link Aboriginal Corporation.

McCardle Cultural Heritage 2014, M1 Motorway, 2.7km to 2.9km from On-ramp from Old Pacific Hwy, Mooney Mooney: Installation of Concrete Barrier (Type F) Archaeological Due Diligence Assessment. Report to Roads and Maritime Services.

The assessment was undertaken 2.7km to 2.9km from the On-Ramp of the Old Pacific Highway, Mooney Mooney. The project aimed to install concrete barriers. The heritage recommendations include cultural awareness training and care when working, not to dislodge sandstone platforms and outcrops on the upper slopes and ridge above the study area.

South East Archaeology Pty Limited 2009, Mardi to Mangrove Link Project: Aboriginal Heritage Impact Assessment. Report to GHD Pty Limited on behalf of Gosford Wyong Council's Joint Water Authority.

The project included the transfer raw water from the lower Wyong River to the Mangrove Creek Dam. The length of the two pipelines totals 21.1km. Community consultation was undertaken with the Darkinjung Local Aboriginal Land Council and Guringai Tribal Link Aboriginal Corporation. During the survey 2 sites were located including an isolated artefact and artefact scatter. Recommendations include salvage of heritage items that will be impacted by the project and obtaining the correct permits for project continuation. A 2010 preliminary report on disturbance to Aboriginal heritage site is available, which includes site cards, project plan and background information.

Therin Archaeological Consulting 2006, Aboriginal heritage Assessment of the Proposed Wyong River to Mardi Dam Pipeline, Mardi. Report to Andrews Neil Pty Ltd.

The proposed pipeline survey area was 1.9km long. The work involved subsurface installation of the pipe. The proposed width of disturbance for the pipeline was between 1.5m-2m. The assessment was undertaken with community consultation from Darkinjung Local Aboriginal Land Council and Guringai Tribal Link Aboriginal Corporation. An isolated flake was located near the proposed pipeline. The entire pipeline was considered a Potential Archaeological Deposit. A Consent to Destroy permit was being sought for the project to continue along with a salvage of any uncovered artefacts.

Ozark 2012, Aboriginal Cultural Heritage Assessment Wallarah 2 Coal Project Wyong NSW. Report to Hansen Bailey on behalf of Wyong Areas Coal Joint Venture

Ozark conducted an assessment for the project area which in previous years had several studies done. Eight (8) sites had been recorded from those studies, as well as 3 previously recorded sites. The assessment recommendations included management of potential impacts and an Aboriginal Cultural Heritage Management Plan be developed in consultation with Registered Aboriginal Parties.

5.2.1 Local and Regional Character of Aboriginal Land Use and its Material Traces

Environmental factors strongly influence the suitability of a place for human occupation as well as the duration of that use. The known nature and distribution of cultural materials and resources derived from historical studies and existing known sites, combined with the environmental factors and contemporary cultural accounts, assist in forming a local and regional character of Aboriginal use.

Academic investigation and research have expounded a variety of theories regarding the immigration route and timing of Aboriginal people's arrival in Australia (Bowdler, 1977; Horton, 1981, Smith, 1987). Archaeological investigation in the wider region has provided evidence of occupation at Burrill Lake 20,000 years BP, in the southern Tablelands, 10,000 years BP, in Birragai, 21,000 years BP and in the lower Blue Mountains, 17,000 years BP (Rich, 1988). Bowdler (1981) and Koettig (1985) submit that sites south of Sydney increased around 2,500 years ago and that this was indicative of changes in stone tool technology. About 19,000 years ago, after



the Last Glacial Maximum, global temperatures began to warm. Approximately 10,000 years ago the climate is likely to have become broadly similar to that of today. While the fluctuations in the climate during the last 10,000 years is likely to have been complex, the sea reached its present level around 7,000 years ago and environmental changes after that time are likely to have been relatively minor when they are compared with those during the preceding Aboriginal occupation of the region.

It is likely that, during this time, Aboriginal populations were small and use of the local area was transient, especially during the severe winter conditions that would have prevailed. Populations may have preferred to live near the coast, where the year-round climate would possibly have been more temperate, although occupation in the interior landscapes is not discounted and was also probable at different times and in different places over this long geomorphic time period. Archaeologists, historians and ethnographers have regularly considered why Aboriginal people chose specific locations for camps. Predominantly it is considered that camp sites were chosen for:

- Proximity to fresh water
- Available vantage ground
- Spiritual reasons and proximity to areas of ceremony and tribal gatherings
- Movement between resource zones (food, etc.), as well as territory and rights of access by and to such resources.

Other uses of the local landscape by Aboriginal people may have included ceremonial sites, corroboree sites, rock shelters (which may have been used for habitation, ceremony, signage and teaching), rock and ochre extraction quarries, fish traps within streams and rivers, trade routes, walking lines and burials.

5.3 MODELS OF OCCUPATION

A general model of forager settlement patterning in the archaeological record has been established by Foley (1981). Foley's model distinguishes the 'home base' site with peripheral 'activity locations'. Home base sites generally occur in areas with good access to a wide range of resources (reliable water, raw materials, and so on).

The degree of environmental reliability of these resources may influence the rate of return and length of occupation of sites. Foley (1981) suggests that home base sites generally show a greater diversity of artefacts and raw material types reflecting that they are representative of a greater array of activities performed at both the site and immediate area. Activity locations occur within the foraging radius (approximately 10 km) of a home base camp and served as a focus of a specific activity (Renfrew and Bahn, 1991). Activity locations will show a low diversity in artefacts and are not likely to contain features reflecting a base camp (such as hearths).

Kuskie and Kamminga (2000) established a general model of occupation strategies based primarily upon ethnographic research (see Table 5). The model distinguishes between short-term or extended long-term occupation and makes some predictions about the likely location of different foraging and settlement activities. For example, the presence of features that required a considerable amount of labour investment, such as stone-lined ovens, heat-treatment pits or grinding grooves, are likely to occur at places where occupation occurred for extended periods of time. Where band mobility was high and campsites frequently shifted throughout the landscape, artefact assemblages are not expected to contain elements such as grindstones, heat-treatment pits, ovens and the diversity of implements frequently discarded at places of extended residential occupation. Table 6 has been adapted from Kuskie and Kamminga (2000).



Table 6: Site Descriptions (adapted from Kuskie & Kamminga 2000)

Occupation Pattern	Activity Location	Proximity to water	Proximity to food	Archaeological expectations
Transitory movement	All landscape zones	Not important	Not important	<ul style="list-style-type: none">▪ Assemblages of low density & diversity▪ Evidence of tool maintenance & repair▪ Evidence for stone knapping
Hunting &/or gathering without camping	All landscape zones	Not important	Near food resources	<ul style="list-style-type: none">▪ Assemblages of low density & diversity▪ Evidence of tool maintenance & repair▪ Evidence for stone knapping▪ High frequency of used tools
Camping by small groups	Associated with permanent & temporary water	Near (within 100m)	Near food resources	<ul style="list-style-type: none">▪ Assemblages of moderate density & diversity▪ Evidence of tool maintenance & repair▪ Evidence for stone knapping & hearths
Nuclear family base camp	Level or gently undulating ground	Near reliable source (within 50m)	Near food resources	<ul style="list-style-type: none">▪ Assemblages of high density & diversity▪ Evidence of tool maintenance & repair & casual knapping▪ Evidence for stone knapping▪ Heat treatment pits, stone lined ovens▪ grindstones



Occupation Pattern	Activity Location	Proximity to water	Proximity to food	Archaeological expectations
Community base camp	Level or gently undulating ground	Near reliable source (within 50m)	Near food resources	<ul style="list-style-type: none"> Assemblages of high density & diversity Evidence of tool maintenance & repair & casual knapping Evidence for stone knapping Heat treatment pits, stone lined ovens Grindstones & ochre Large area >100sqm with isolated camp sites

Hunting would have comprised the major economic role of the men (Kohen 1986). Along the rivers, traps and snares would have been set for bandicoots and wallabies, while decoys for snaring birds were also a commonly employed technique. Hunting methods included smoking out the animal by lighting a fire in the base of a hollow tree, burning large tracts of land and gathering the stranded animals, as well as cutting toe-holds in trees (Tench 1793).

Consideration of the level of disturbance at the project site also needs to occur. The Australian Soil and Land Survey Field Handbook (CSIRO 2009, p.128) provides broad categories of disturbance. These can be used to classify and predict potential impact on the archaeology of the project area. The categories are detailed in Table 7.

Table 7: Broad Categories of Disturbance

Minor Disturbance		Moderate Disturbance		Major Disturbance	
0	No effective disturbance; natural	3	Extensive clearing (e.g.: poisoning and ringbarking)	6	Cultivation; grain fed
1	No effective disturbance other than grazing by hoofed animals	4	Complete clearing; pasture native or improved, but never cultivated	7	Cultivation; irrigated, past or present
2	Limited clearing (e.g.: selected logging)	5	Complete clearing; pasture native or improved, cultivated at some stage	8	Highly disturbed (quarrying, road works, mining, landfill, urban)

5.4 PREDICTIVE MODEL FOR THE PROJECT AREA

A predictive model of site types and site patterning for the study area is generally achieved through a review of previous archaeological studies undertaken throughout the locality and the region, the AHIMS register, and the environmental context of the study area. The aim of a predictive model is to understand the nature of previous Aboriginal occupation and determine the nature of land use. This theme often aims to identify and explain archaeological patterning in site type, content and distribution. General archaeological theories have been developed outlining the relationship between land use patterns and the resulting archaeological evidence.



Overall, based on the environmental and archaeological context and using Kuskie and Kaminga's (2000) model, it is considered that the study area would have been most likely suitable for occupation, transitory hunting and foraging. Proximity to water and relatively flat ground would have affected occupation patterns, though in the case of the site the location would be beneficial. Using this predictive model with an adapted regional model based on the University of Queensland Cultural Heritage Unit (UQCHU) (2017) which details that sites are more likely to occur within:

- 200m of a named watercourse
- 100m of a mapped drainage line
- 50m of a known Aboriginal cultural heritage site
- On landforms with a slope no greater than 30 degrees, except where sandstone bedrock or limestone outcrops are present.

In summary, the study area provides some suitable resources and landscape features such as proximity to a mapped drainage line to allow for occupation, foraging and hunting. Permanent potable water would have been favourable for occupation.

Limitations should be noted with the predictive model when attempting to predict past human actions and behaviour, including:

- Biases due to differential sampling of landforms based on decisions made by archaeologists
- Aboriginal people involved in previous studies or surveys may not have disclosed the existence of places with cultural heritage values as they may not have been under immediate threat when the earlier study was undertaken
- Variation in the classificatory definitions employed by archaeologists will significantly influence the range of artefact types identified within a study area. For example, the distinction between a waste flake, a debitage flake and a flaked piece may be heavily subject to the perspective of the recorder. Thus, it is not productive to attempt to quantify the proportionate representation of artefact types identified in previous studies
- Levels of exposure of different landforms.

f



6 SURVEY SAMPLING STRATEGY

The survey will be conducted using a systematic random sampling strategy. The systematic random sampling strategy (Burke and Smith 2004, p. 65-69) was chosen so a portion of every area is covered in the survey for this assessment. The following methods in Table 7 have been adapted from Burke and Smith (2004).

Table 8: Example of Recording Techniques

Item	Recording Action
Isolated Artefact/s (up to 5 within 1m ²)	<ul style="list-style-type: none">• Photos of multiple sides with scale card (e.g. flake ventral and dorsal)• GPS location• Field notes including measurements, material and artefact type
Open scatter (5+artefacts within 1m ²)	<ul style="list-style-type: none">• Photos of individual artefacts, extent of scatter• GPS location• Field notes including measurements, number of artefacts, material and artefacts type
Scar tree	<ul style="list-style-type: none">• Photos of scar and tree• GPS location• Field notes including measurements, species, direction and condition of scar/s
Stone arrangement	<ul style="list-style-type: none">• Photos of individual stones and pattern• GPS location• Sketch of pattern• Field notes including type and size of stone



7 RESULTS AND DISCUSSION

The subject site was surveyed on the 24 January 2022. The conditions were clear skies and mild conditions. As per section 3.4 of the consultation guidelines consultation aims to collect the views of, and information from, Aboriginal people and report on these regardless of field opportunities. An invitation was extended to Darkinjung LALC however they did not attend (Appendix B – consultation log).

Transect 1

Transect 1 covers the project area with one GPS track (see Figure 2). The caravan park has many forms of disturbance. Older forms of disturbance include land clearing. More recent disturbances include internal roads, buildings, mobile homes (caravans, RVs) as well as landscaping and general residential/commercial activity. Infrastructure such as pipes for water and waste were subsurface with culvert and drainage also evident at the site. Most of the northern part of the site is sealed from roads or covered from buildings and / or residences.

Two dams also exist on the site on the northern boundary. The drainage channel and culvert through the middle of the site is rock lined and heavily modified/artificial. Most of the gardens appeared to be introduced species. See Appendix B for site photographs.

AHIMS

An extensive AHIMS in the vicinity of the subject site returned 34 results, none of which are located on site. The predominant results were shell and art (engraving). The project area is in close proximity to a natural waterway (90m from northern boundary), though disturbance levels of the area reduce the potential for shell. Art is predicted to be unlikely to occur as mature native trees are few and no natural shelter areas exist.

Survey units

One survey unit was documented during the field work and is recorded in Table 9, 10, and 11.

Table 9: Survey Unit

Survey Unit	Start Easting	Start Northing	End Easting	End Northing
Survey Unit 1	348904.22	6291248.189	349006.985	6291226.916

Table 10: Survey effective coverage

SU	Landform	Area (sq m)	Vis. %	Exp. %	Exposure type	Previous disturbances	Effective coverage (sq m)	Effective Coverage %
1	Flat	37046	30%	30%	General use, commercial, residential, erosion	Land clearing, urban development, residential	3334.14	9%

Table 11: Landform

Landform	Landform area (sq m)	Area effectively surveyed (sq m)	% of landform surveyed	Number of Sites	Number of Artefacts or features
Flat	37046	3334.14	9%	0	0

7.1 EFFECTIVE SURVEY COVERAGE

The survey coverage was affected by vegetation cover in general. Some areas have higher exposure and visibility. Overall, the combined effective coverage was 9%.



7.2 SUMMARY

The area has been disturbed through development and occupation. Given the landscaping such as gardens, construction including buildings, roads and infrastructure as well as general disturbance such as parking/driving on unsealed/grass areas and maintenance, the surface, and a representative subsurface depth, has a lower chance of containing Aboriginal heritage.

The environment would also impact the potential for heritage item discovery with the terrain in the study area affecting the distribution rate, as well as elements of development as discussed in Section 3. The level of impact can also depend upon the type of land use and movement patterns such as pedestrian, vehicle and animal movements.

Vegetation

Clearing would have been a major factor for the area. The 1900s development of the area would have effectively altered the vegetation in the area. Crow (2004) discusses that trees can greatly impact archaeological sites through disturbance/displacement of artefacts through roots, whilst tree removal can also displace or damage artefacts as well as alter landscape features. Howard (2016) also notes that human interference such as ploughing for agriculture, machinery and general activity can alter distribution patterns with bioturbation also affecting artefacts. In addition, vegetation growth can obscure, and as highlighted with Crow (2004), can alter placement.

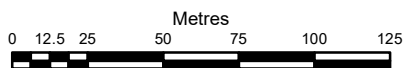
Potential Archaeological Deposits (PADs)

For PADs, consideration of the effects on the area historically need to be considered. When considering the discussion about bioturbation, human and animal influence on environment in Section 3, discussions such as Laurent (2008) which consider of human activities influencing urban soil through socio-spatial elements and urban space (town development and continued evolution), and Anichini et al (2011) become important in the consideration of modelling deposits and their origin, influence current state. Anichini et al (2011) notes that depth of deposit, type of settlement, movability of the deposit (human or natural) as well as any potential layering of deposits all influence the predictive nature of PADs.

Legend

- Project Area
- Arterial Road
- Named Watercourse
- Sub-arterial Road
- Unnamed Watercourse
- Local Road
- GPS TRACKS
- Track

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PROJECT REFERENCE: 20223421

DATE DRAWN: 1/27/2022 13:07 Version 1

DRAWN BY: JCBrown

DATA SOURCE:
NSW Government - 2022
Nearmap - 2022

GPS Tracks from Survey

Progressive Property Solutions
Empire Bay Caravan Park
Aboriginal Cultural Heritage Assessment
437 Wards Hill Road Empire Bay

FIGURE:

2



8 CULTURAL HERITAGE VALUES AND STATEMENT OF SIGNIFICANCE

8.1 CULTURAL SIGNIFICANCE

The Burra Charter (2013) defines 'cultural significance' very broadly to include 'aesthetic, historical, scientific, social or spiritual value for past, present or future generations'. This definition captures places of cultural significance to Indigenous cultures. It also includes places that provide a physical location that is integral to the existence, observation and practice of intangible heritage. The Burra Charter definition of cultural significance encompasses all forms of spirituality, regardless of the culture from which it emanates. Similarly, aesthetic value is not limited to a 'western' perception of aesthetics (taken from ICOMOS Practice Note: The Burra Charter and Indigenous Cultural Heritage Management).

8.1.1 *Aesthetic Significance*

The survey led to no finds and given the disturbance that has occurred across the study area, it can be assumed that the area lacks physical evidence of Aboriginal heritage.

8.1.2 *Historic Significance*

The survey led to no finds and given the disturbance that has occurred across the study area, it can be assumed that the area lacks physical evidence of Aboriginal heritage.

8.1.3 *Scientific Significance*

The survey led to no finds and given the disturbance that has occurred across the study area, it can be assumed that the area lacks physical evidence of Aboriginal heritage.

8.1.4 *Social/Spiritual Significance*

The survey led to no finds and given the disturbance that has occurred across the study area, it can be assumed that the area lacks physical evidence of Aboriginal heritage.

Consultation with RAPs has noted that the general area is culturally significant. See Section 2 and Appendix B for responses from RAPs.

The significance of the scientific and cultural values that have been explored at the project site using pedestrian survey. The survey has provided a level of certainty that the study area has not produced scientific data which could lead to a conclusion of significant cultural values being in the area. Cultural significance of the study area is limited, and it is hypothesised that the area would have had some value, though within the project footprint evidence would be reduced due to high disturbance.



9 ASSESSMENT OF IMPACTS

9.1 IMPACTS

As no sites or PADs were identified in the project area, there are no impacts to the archaeological record.

The Heritage NSW (formerly DECCW) Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (2010b, p. 21) describes impacts to be rated as follows:

- Type of harm: is either direct, indirect or none
- Degree of harm is defined as either total, partial or none
- Consequence of harm is defined as either total loss, partial loss, or no loss of value.

Based on the information available and this assessment it is expected no impact to heritage will occur.



10 MITIGATION AND MANAGEMENT STRATEGIES

Specific strategies considered below for the management of the study area relate to the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010b), the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011), and the Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW (DECCW 2010c).

10.1 CONSERVATION/PROTECTION

Conservation is the first option considered and can be suitable for all sites, including high archaeological significance and/or cultural significance. Conservation considers the care required for an indigenous site or place so to retain its significance, whilst also managing the site in a way that considers the attachment that people have.

As no sites or PADs were identified and as such conservation/protection is not required. Relevant cultural heritage inductions and unexpected finds procedure should be implemented.

As per the responses from RAPs, cultural interpretation is a method of conservation and education about Aboriginal culture. This is a method available to the proponent if they wish to incorporate such details, though not compulsory from the view of the report. A suggestion from a RAP included ideas such as native gardens, artwork, digital displays, and design within in the development.

10.2 FURTHER INVESTIGATION

If an excavation is conducted in accordance with the Code of Practice for Archaeological Investigations in NSW than an Aboriginal Heritage Impact Permit (AHIP) will not be required. Subsurface testing is appropriate when a PAD with sub-surface Aboriginal objects that have potential conservation value has been identified and the area cannot be avoided.

As no sites or PADs were identified in this study, no further investigations are recommended.

10.3 AHIP

If the project cannot avoid harm to an Aboriginal object or Place, then an AHIP is required. This can allow for an appropriate strategy to be undertaken such as salvage excavation or surface collection that must be approved by Heritage NSW.

As no sites or PADs were identified in this study, no further investigations are recommended.



11 RECOMMENDATIONS

11.1 GENERAL

1. The individual or persons responsible for the management of onsite works will ensure that all site personnel are made aware of the statutory legislation protecting sites and places of significance. Of particular importance is the National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2010, under the National Parks and Wildlife Act 1974
2. Should any Aboriginal objects be uncovered during works, activities should halt in that location and the Environmental Line contacted on 131 555 to report the discovery.

11.2 SITE SPECIFIC

No site-specific recommendations are advised at present.



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APPENDIX A - AHIMS



APPENDIX B - CONSULTATION LOG

Date	Method of contact	Sender	Recipient	Message	Response (if required)
10/11/2021	Email	Awabakal and Guringai pty ltd	Jake	Wish to register interest	Responded confirming registration and that contact will be made at next stage.
29/11/2021	Email	Jake	Potential Raps	Sent letter to potential RAPS	
29/11/2021	Email	DNC Paul Boyd and Lilly Carroll	Jake	Wish to register interest following letter received. Called and asked about location. Called back after further investigation and declined registration due to not being on LALC land.	
30/11/2021	Phone	Rowena Metro LALC	Jake	Registered interest and sent documents	Confirmed registration
30/11/2021	Email	Kathie Yinarr Cultural services	Jake	Registered interest	Confirmed registration
30/11/2021	Email	Trudy Hunters 1	Jake	Registered interest and sent documents	
1/12/2021	Email	Carolyn A1 Indigenous Services	Jake	Follow up to conversation with Rowena. Confirmed pass and cc'd Darkinjug as the people to talk to.	
1/12/2021	Email	Nathan Metro LALC	Jake	Responded/ confirmed interest	Called Philip to collect email address.
3/12/2021	Email	Philip Pulbrook Philip Khan Kamilaroi	Jake	Registered interest and sent documents	Confirmed registration
14/12/2021	Email	Yankuntjatjara Working Group	Jake	Registered interest and sent documents	Confirmed registration
14/12/2021	Email	Brendan Moyle Darkinjug LALC	Jake	Sent methodology for review	Confirmed registration
20/12/2021	Email	Jake	All RAPS	Sent email requesting quote for fieldwork approximately 20 or 21 January 2022	
21/12/2021	Email	Jake	Brendan Moyle Darkinjug LALC	Brendan replied to request with Barry to do a quote for service when he returns to work on 10 January (CC of Barry Williams and Adina Duncan)	
22/12/2021	Email	Brendan Moyle Darkinjug LALC	Jake	Thank you for your methodology for 437 Wards Hill Road Empire Bay. The whole study area is significant to our people as there are creation stories that shape the land, sky, and water ways, we as Aboriginal people have a spiritual connection to the land water and sky. We highly recommend a cultural interpretation plan for the project to acknowledge the traditional owners of the land the Aboriginal people. This can be achieved through native landscaping, edible gardens, art, digital displays, design, apps and much more. We would like to agree to your methodology, and we support your report, we look forward to working along side you on this project.	
5/1/2021	Email	Philip Khan Kamilaroi Yankuntjatjara Working Group	Jake		Sent email to say that registration ended on 16 december. Review of methodology also finished on 17 (when response sent). Asked if they would like a copy of methodology and ACHAR.
15/1/2022	Email	Brett Duroux Gugiyn Balun Aboriginal Corporation	Jake	Registered interest	
17/1/2022	Email	Jake	Brendan Moyle Darkinjug LALC	Requested update on quote for fieldwork. CC of Barry Williams and Adina Duncan.	
18/1/2022	Phone	Jake	Brendan Moyle Darkinjug LALC	Called Brendan about quote at 3:16 pm. Brendan said to call later he was busy.	

18/1/2022	Email	Brett Duroux Gugiyn Balun Aboriginal Corporation	Jake	Requested methodology	Sent 19/1/22
				Many thanks. If you have any questions or would like more information please let me know we can help with training and in the cultural site Identification process of the aboriginal cultural heritage sites and I'm registered with aims as well we can update the information aswell just asking as training for traditional owners and White people who want to can get the best possible results for the people of the land	
18/1/2022	Email	Brett Duroux Gugiyn Balun Aboriginal Corporation	Jake		
4/2/2022	Email	Jake	All RAPs	Sent Draft ACHAR for 28 day review	
				Any comments on this? Because we've got some things to say about the survey.	Replied - I haven't received any comments so far. If you wish to detail your comment further I would be happy to provide a response.
4/2/2022	Email	Brett Duroux Gugiyn Balun Aboriginal Corporation	Jake and other RAPs		
				Thank you for the attachment however I strongly request that the pedestrian survey be conducted again due to the absence of a Representative Aboriginal Party. This area is of extremely high cultural significance and I am not confident that all aspects of our cultural heritage and cultural significance have been addressed. This area is not one that can assessed via desktop study. One must stand on the earth and take in the surrounds. I formally request for this assessment to be reassessed. Looking forward to hearing from you in regards to this extremely sensitive and important issue.	Response sent - Hello Tracey, Thank you for your email. As noted in the report I endeavoured to engage the Local Aboriginal Land Council to attend the survey. Thank you for providing that the area is of high cultural significance and I have noted that art and shelters have been recorded in the surrounding areas based on AHIMS. The site is extremely disturbed with buildings on a least half the site as well as roads and other landscaped areas. If it will assist you in providing an opinion for the project I can arrange for you to inspect the site later in the week. This would however be a voluntary inspection / arrangement. I would meet you at site at a mutually agreed time. Kleinfelder would also require some paperwork prior to the visit, for WHS reasons. If this is agreeable please let me know.
4/2/2022	Email	Tracey Howie Awabakal and Guringai	Jake		
				Provided cultural information and some recommendations for project.	
25/2/2022	Email	Philip Khan Kamilaroi Yankuntjatjara Working Group	Jake		Noted and included in report body



APPENDIX C - SITE PHOTOGRAPHS



Photo 1:



Photo 2:



Photo 3:



Photo 4:



Photo 5:



Photo 6:



Project No: 20223421

Date: 3 February 2022

Suite 3, 240-244 Pacific Highway, Charlestown, NSW 2290

Phone: +61 2 4949 5200

SITE PHOTOGRAPHS

Progressive Property Solutions

437 Wards Hill Road Empire Bay



Photo 7:



Photo 8:



Photo 9:



Photo 10:



Photo 11:



Photo 12:



Project No: 20223421	<div>SITE PHOTOGRAPHS</div> <div>Progressive Property Solutions</div> <div>437 Wards Hill Road Empire Bay</div>
Date: 3 February 2022	
Suite 3, 240-244 Pacific Highway, Charlestown, NSW 2290	
Phone: +61 2 4949 5200	



Photo 13:



Photo 14:

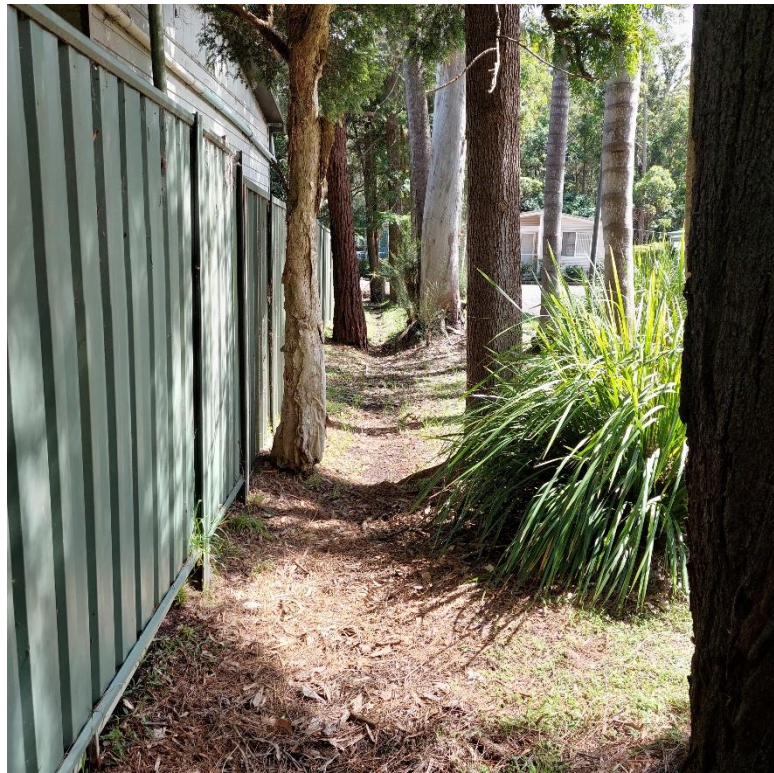


Photo 15:



Photo 16:

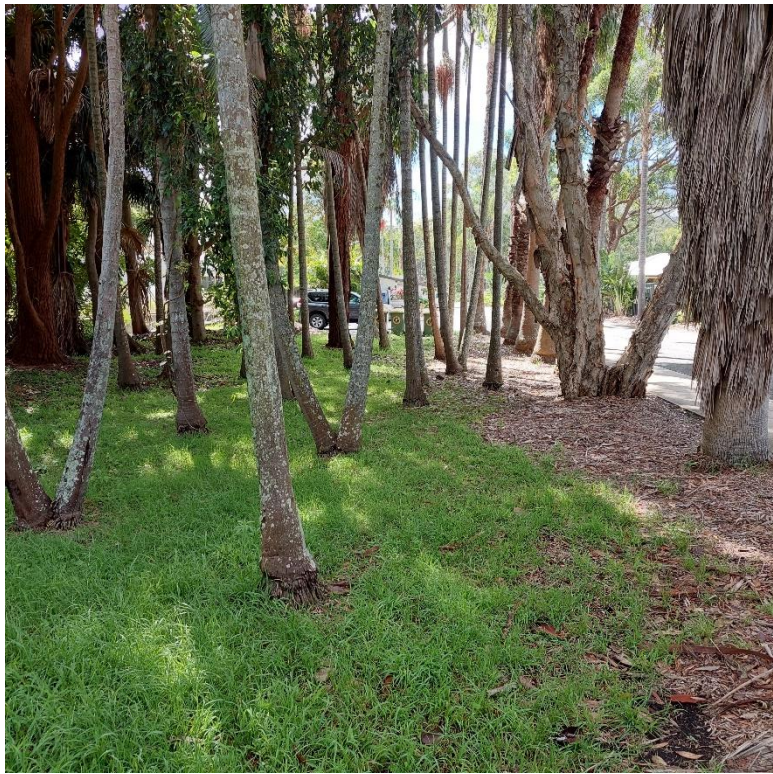


Photo 17:



Photo 18:



Project No: 20223421	SITE PHOTOGRAPHS
Date: 3 February 2022	
Suite 3, 240-244 Pacific Highway, Charlestown, NSW 2290	
Phone: +61 2 4949 5200	
	Progressive Property Solutions
	437 Wards Hill Road Empire Bay



Photo 19:



Photo 20:



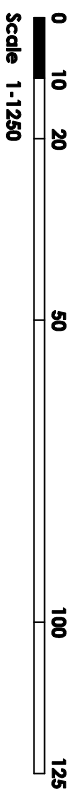
Photo 21:



Project No: 20223421	SITE PHOTOGRAPHS	
Date: 3 February 2022	Progressive Property Solutions	
Suite 3, 240-244 Pacific Highway, Charlestown, NSW 2290	437 Wards Hill Road Empire Bay	
Phone: +61 2 4949 5200		



APPENDIX D – MASTERPLAN FOR PLANNING PROPOSAL



WARDS HILL ROAD



architectural cad design + presentation

02 4362 3556

243 Peach Orchard Road, Fountaindale NSW 2258
craig@cearch.com.au www.cearch.com.au

craig@ceosarch.com.au www.ceosarch.com.au

CLIENT

**BAYSIDE GARDENS
CARAVAN PARK**

CARAVAN PARK

PROJECT

MASTERPLAN for PLANNING PROPOSAL

PLANNING PROPOSAL

LOCATION

LOT 1 - DP 610629

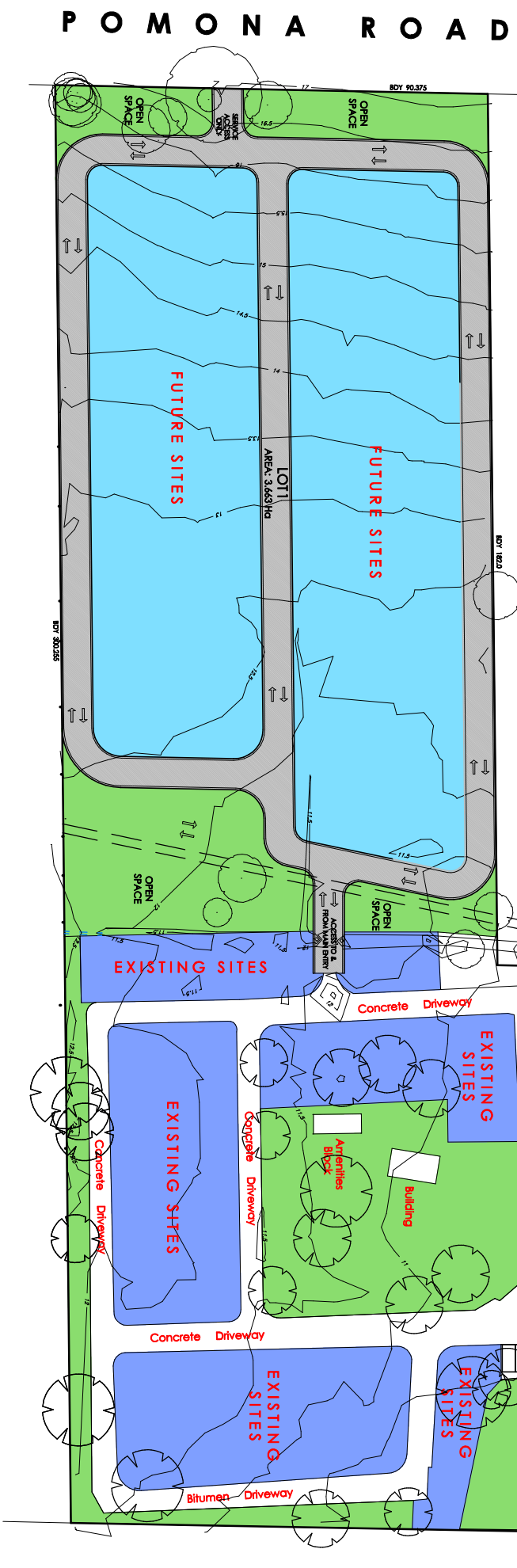
7 POMONA ROAD

EMPIRE BAY NSW 2257



OVERALL SITE PLAN

SCALE 1:1250



GENERAL NOTES

Figured dimensions take preference, do not scale from plans. If IN DOLBIT, ASK. Contractors are responsible to check and verify all information prior to tendering and shall report any discrepancies or omissions.

Incorrect inclusions or omissions of topographical errors are not to be used in the interpretation of any information in these drawings. No can they be used to claim any additional or alternate items or services as a result of such errors. The incorrect or omitted details shall be subject to subsequent correction by CSD and the documentation re-issued.

These drawings are to be read in conjunction with the relevant client-builder contract. The contract is to take precedence over these drawings in all matters including but not limited to: finishes, inclusions, upgrades, exclusions, additional costs and works by owner/builder.

All work to be carried out in a tradesman like manner, and in accordance with local codes, the BCA, Australian Standards and any relevant authority requirements. All concrete and structural details to engineer's specification.

Engineers details and specifications take precedence over these plans. Finished ground levels are approximate only and should be confirmed onsite.

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[illegible]

SHEET TITLE

OVERALL SITE PLAN

SHEET No.

A02

JOB No.

C2816