

APPENDIX S

KML Joint Venture

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Proposed Residential and Retail Mixed Use Development, Belmont

LGA: Lake Macquarie

Aboriginal Heritage Due Diligence Assessment

27 March 2017

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This report has been prepared in accordance with the scope of services described in the contract or agreement between McCardle Cultural Heritage Pty Ltd (MCH), ACN: 104 590 141, ABN: 89 104 590 141, and KML Joint Venture. The report relies upon data, surveys, measurements and specific times and conditions specified herein. Any findings, conclusions or recommendations only apply to the aforementioned circumstances and no greater reliance should be assumed or drawn by and KML Joint Venture. Furthermore, the report has been prepared solely for use by and KML Joint Venture and MCH accepts no responsibility for its use by other parties.

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EXECUTIVE SUMMARY

McCardle Cultural Heritage Pty Ltd (MCH) was commissioned by KML Joint Venture to undertake an Archaeological Due Diligence Assessment for the proposed a residential and retail mixed use development including the demolition of the existing buildings at 32-42 Brooks parade, 2-10 Sharp Street and 5-11 Edgar Street, Belmont. The project entails the proposed a residential and retail mixed use development including the demolition of the existing buildings at 32-42 Brooks parade, 2-10 Sharp Street & 5-11 Edgar Street, Belmont.

The project area is situated on the banks of Lake Macquarie which would have provided a range of subsistence resources for past Aboriginal people and hance camping in the local area. However, land uses include residential development and retail business throughout the entire project area, resulting in a highly disturbed landscape.

A search of the OEH AHIMS register (Annex A) indicate there are has shown that 20 known Aboriginal sites are currently recorded within five kilometres of the project area including 13 artefact sites, three shell/artefact sites and one each of scar tree, shell, PAD, and shell/artefact/stone arrangement.

Due to the significant disturbances across the entire project area for residential development, no sites were predicted to be present within the project area. Sites types that may have occurred prior to development were likely to have included artefact scatters, isolated finds and/or shell middens.

The results of the survey indicated high visibility (50%) and exposures (100%) resulting in an effective coverage of 50%. No sites or PADs were identified and this was likely due to the high levels of disturbances and impacts for past residential development across the project area. The following recommendations were made:

- 1) The persons responsible for the management of onsite works will ensure that all staff, contractors and others involved in construction and maintenance related activities 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) If any Aboriginal objects are uncovered during construction works, works must cease in that location immediately and the Environmental Line notified (131 555).

GLOSSARY

Aboriginal Site: an Aboriginal site is the location of one or more Aboriginal archaeological objects, including flaked stone artefacts, midden shell, grinding grooves, archaeological deposits, scarred trees etc.

Artefact: any object that is physically modified by humans.

Artefact scatter: a collection of artefacts scattered across the surface of the ground (also referred to as open camp sites).

Assemblage: a collection of artefacts associated by a particular place or time, assumed generated by a single group of people, and can comprise different artefact types.

Background scatter: a term used to describe low density scatter of isolated finds that are distributed across the landscape without any obvious focal point.

Contact site: a site that displays interaction between early colonists and Aboriginal Australians.

Debitage: small pieces of stone debris that break off during the manufacturing of stone tools. These are usually considered waste and are the by product of production (also referred to as flake piece).

Formation processes: human caused (land uses etc) or natural processes (geological, animal, plant growth etc) by which an archaeological site is modified during or after occupation and abandonment. These processes have a large effect on the provenience of artefacts or features.

Harm: is defined as an act that may destroy, deface or damage an Aboriginal object or place. In relation to an object, this means the movement or removal of an object from the land in which it has been situated

Stratified Archaeological Deposits: layers detected within the soil or sediments that are attributable to separate depositional events in the past, the deposit is said to be stratified. The integrity of sediments and soils are usually affected by 200 years of European settlement and activities such as land clearing, cultivation and construction of industrial, commercial and residential developments.

Taphonomy: the study of processes which have affected organic materials such as bone after death; it also involves the microscopic analysis of tooth-marks or cut marks to assess the effects of butchery or scavenging activities.

Typology: the systematic organization of artefacts into types on the basis of shared attributes.

ACRONYMS

ACHMP	Aboriginal Cultural Heritage Management Plan
AHIMS	Aboriginal Heritage Information Management System. Data base of recorded sites across NSW managed by OEH
OEH	Office of Environment and Heritage

OEH AHIMS SITE ACRONYMS

ACD	Aboriginal ceremonial and dreaming
AFT	Artefact (stone, bone, shell, glass, ceramic and metal)
ARG	Aboriginal resource and gathering
ART	Art (pigment or engraving)
BOM	Non-human bone and organic material
BUR	Burial
CFT	Conflict site
CMR	Ceremonial ring (stone or earth)
ETM	Earth mound
FSH	Fish trap
GDG	Grinding groove
HAB	Habitation structure
HTH	Hearth
OCQ	Ochre quarry
PAD	Potential archaeological deposit.
SHL	Shell
STA	Stone arrangement
STQ	Stone quarry
TRE	Modified tree (carved or scarred)
WTR	Water hole

Figure 1.2 Local location of the project area



Figure 1.3 Aerial location of the project area



1.3 DESCRIPTION OF THE PROPOSED DEVELOPMENT

The project entails the proposed a residential and retail mixed use development including the demolition of the existing buildings at 32-42 Brooks parade, 2-10 Sharp Street & 5-11 Edgar Street, Belmont.

1.4 OBJECTIVES OF THE DUE DILIGENCE ASSESSMENT

The objectives and primary tasks of this due diligence assessment were to:

- Undertake a search of the OEH Aboriginal Heritage Management System (AHIMS) and other relative registers;
- Undertake preliminary research into the environmental and archaeological contexts of the project area;
- Develop a predictive model of site location for the project area;
- Undertake a field survey of the project area;
- Assess the potential impacts of the proposed development on any identified Aboriginal sites or potential archaeological deposits (PADs) identified within the project area;
- Assess the scientific significance of any identified Aboriginal objects or sites identified within the project area;
- Complete and submit site cards to the OEH for any Aboriginal sites identified; and
- Provide appropriate recommendations.

1.5 LEGISLATIVE CONTEXT

The following overview of the legislative framework, is provided solely for information purposes for the client, and should not be interpreted as legal advice. MCH will not be liable for any actions taken by any person, body or group as a result of this general overview and MCH recommends that specific legal advice be obtained from a qualified legal practitioner prior to any action being taken as a result of the general summary below.

Land managers are required to consider the affects of their activities or proposed development on the environment under several pieces of legislation. Although there are a number of Acts and regulations protecting Aboriginal heritage, including places, sites and objects, within NSW, the three main ones include:

- National Parks and Wildlife Act (1974, as amended)
- National Parks and Wildlife Regulation (2009)
- Environmental Planning and Assessment Act (1979)

1.5.1 NATIONAL PARKS AND WILDLIFE ACT (1974, AS AMENDED)

The National Parks and Wildlife Act (1974), Amended 2010, is the primary legislation for the protection of Aboriginal cultural heritage in New South Wales. The NPW Act protects Aboriginal heritage (places, sites and objects) within NSW and the Protection of Aboriginal heritage is outlined in s86 of the Act, as follows:

- “A person must not harm or desecrate an object that the person knows is an Aboriginal object” s86(1)
- “A person must not harm an Aboriginal object” s86(2)

- “A person must not harm or desecrate an Aboriginal place” s86(4)

Penalties apply for harming an Aboriginal object, site or place. The penalty for knowingly harming an Aboriginal object (s86[1]) and/or an Aboriginal place (s86[4]) is up to \$550,000 for an individual and/or imprisonment for 2 years; and in the case of a corporation the penalty is up to \$1.1 million. The penalty for a strict liability offence (s86[2]) is up to \$110,000 for an individual and \$220,000 for a corporation.

Harm under the National Parks and Wildlife Act (1974, as amended) is defined as any act that; destroys defaces or damages the object, moves the object from the land on which it has been situated, causes or permits the object to be harmed. However, it is a defence from prosecution if the proponent can demonstrate that;

- 1) harm was authorised under an Aboriginal Heritage Impact Permit (AHIP) (and the permit was properly followed), or
- 2) the proponent exercised due diligence in respect to Aboriginal heritage.

The ‘due diligence’ defence (s87[2]), states that if a person or company has applied due diligence to determine that no Aboriginal object, site or place was likely to be harmed as a result of the activities proposed for the Project Area, then liability from prosecution under the NPW Act 1974 will be removed or mitigated if it later transpires that an Aboriginal object, site or place was harmed. If any Aboriginal objects are identified during the activity, then works should cease in that area and OEH notified (DECCW 2010:13). The due diligence defence does not authorise continuing harm.

The archaeological due diligence assessment and report has been carried out in compliance with the NSW OEH 2010 Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW.

1.5.2 NATIONAL PARKS AND WILDLIFE REGULATION (2009)

The National Parks and Wildlife Regulation 2009 provides a framework for undertaking activities and exercising due diligence in respect to Aboriginal heritage. The Regulation (2009) recognises various due diligence codes of practice, including the Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW which is pertinent to this report, but it also outlines procedures for Aboriginal Heritage Impact Permit (AHIP) applications and Aboriginal Cultural Heritage Consultation Requirements (ACHCRs); amongst other regulatory processes.

1.5.3 ENVIRONMENTAL PLANNING & ASSESSMENT ACT 1979 (EP&A ACT)

EP&A Act establishes the statutory framework for planning and environmental assessment in NSW and the implementation of the EP&A Act is the responsibility of the Minister for Planning, statutory authorities and local councils. The EP&A Act contains three parts which impose requirements for planning approval:

- Part 3 of the EP&A Act relates to the preparation and making of Environmental Planning Instruments (EPIs), State Environmental Planning Policies (SEPPs) and Local Environmental Plans (LEPs).
- Part 4 of the EP&A Act establishes the framework for assessing development under an environmental planning instrument (EPI). The consent authority for Part 4 development is generally the local council, however the consent authority may be the Minister, the

Planning Assessment Commission or a joint regional planning panel depending upon the nature of the development.

- Part 4, Division 4.1 of the EP&A Act establishes the assessment pathway for State significant development (SSD) declared by the State Environmental Planning Policy (State and Regional Development) 2011 (NSW). Once a development is declared as SSD, the Director-General will issue Director-General Requirements (DGRs) outlining what issues must be considered in the EIS.
- Part 5 of the EP&A Act provides for the control of 'activities' that do not require development consent and are undertaken or approved by a determining authority. Development under Part 5 that are likely to significantly affect the environment is required to have an EIS prepared for the proposed activity.
- Part 5.1 of the EP&A Act establishes the assessment pathways for State significant infrastructure (SSI). Development applications made for SSI can only be approved by the Minister. Once a development is declared as SSI, the Director-General will issue DGRs outlining what issues must be addressed in the Environmental Impact Statement (EIS).

The applicable approval process is determined by reference to the relevant environmental planning instruments and other controls, LEPs and State Environmental Planning Policies (SEPPs). This project falls under Part 4.

1.6 ABORIGINAL COMMUNITY CONSULTATION

A due diligence assessment relates to the physical identification of Aboriginal objects, sites and places. Community consultation is only required once Aboriginal objects, sites or places have been identified and an Aboriginal Heritage Impact Permit (AHIP) is deemed necessary. Section 5.2 of the 2010 Due Diligence Code of Practice for the protection of Aboriginal Objects in NSW specifically states that;

'consultation with the Aboriginal community is not a formal requirement of the due diligence process' (2010:8).

1.7 QUALIFICATIONS OF THE INVESTIGATOR

Penny McCardle: Principal Archaeologist/Forensic Anthropologist has 15 years experience in Indigenous archaeological assessments, excavation, research, reporting, analysis and consultation. Twelve years in skeletal identification, biological profiling and skeletal trauma identification.

- BA (Archaeology and Palaeoanthropology, University of New England 1999
- Hons (Archaeology and Palaeoanthropology): Physical Anthropology), University of New England 2001
- Forensic Anthropology Course, University of New England 2003
- Armed Forces Institute of Pathology Forensic Anthropology Course, Ashburn, VA 2008
- Analysis of Bone trauma and Pseudo-Trauma in Suspected Violent Death Course, Erie College, Pennsylvania, 2009
- Currently undertaking a PhD, University of Newcastle, 2017

1.8 REPORT STRUCTURE

The report includes Section 1 which outlines the project, Section 2 presents the environmental and archaeological context, Section 3 provides the results and discussion, Section 4 presents the Impact Assessment, Section 5 discusses the mitigation measures and Section 6 provides the management recommendations.

2 ENVIROMNEMATLAND ARCHAEOLOGICAL CONTEXT

The archaeological due diligence process and assessment requires that the available knowledge and information in relation to the environmental and archaeological contexts is considered. The purpose of this is to assist in identifying whether Aboriginal objects, sites or places are likely to be present within the project area based on archaeological predictive modelling and in what condition they may be found in given the environmental impacts.

2.1 LOCAL ENVIRONMENT

Past site location and land use are closely linked to the environment including the landform, geology, geomorphology, soils, waterways and associated resources. The environmental context is important to identify potential factors relating to past Aboriginal land use patterns. The project area is situated on the banks of Lake Macquarie, specifically Belmont Bay and its available subsistence resources.

European settlers extensively cleared the original native vegetation in the 1800's and since then the investigation area has been subject to significant works associated with residential development, drainage works, road works and associated utilities and infrastructure which would have significantly impacted on any cultural materials that may have been present. Additional disturbances would have derived from natural processes including flooding and erosion. Additionally, bioturbation processes such as the redistribution and mixing of cultural deposits occurs as a result of burrowing and mounding by earthworms, ants and other species of burrowing animals. Artefacts can move downwards through root holes as well as through sorting and settling due to gravity, and translocation can also occur as a result of tree falls (Balek 2002; Peacock and Fant 2002:92).

The project area is located within an environment that provided subsistence resources, including sea food, fauna, flora and water that would have allowed for sustainable occupation of the area. However, in relation to modern alterations to the landscape, the use of the project area for residential development can be expected to have had significantly high impacts upon the archaeological record.

2.2 ARCHAEOLOGICAL CONTEXT

A review of the archaeological literature of the region, and more specifically the Lake Macquarie area and the results of a OEH AHIMS search provide essential contextual information for the current assessment.

2.2.1 OEH ABORIGINAL HERITAGE INFORMATION MANAGEMENT SYSTEM (AHIMS)

It must be noted that there are many limitation with an AHIMS search including incorrect site coordinates due to errors and changing of computer systems at OEH over the years that failed to correctly translate old coordinate systems to new systems. Secondly, OEH will only provide up to 110 sites per search, thus limiting the search area surrounding the project area and enabling a more comprehensive analysis and finally, few sites have been updated on the OEH AHIMS register to notify if they have been subject to a s87 or s90 and as such what sites remain in the local area and what sites have been destroyed, to assist in determining the cumulative impacts, is unknown. In addition to this, other limitations include the number of studies in the local area, high levels of erosion have proven to disturb sites, site contents, and the extent of those disturbances is

unknown. Thus the OEH AHIMS search is limited and provides a basis only that aids in predictive modelling.

A search of the OEH AHIMS register (Annex A) indicate there are has shown that 20 known Aboriginal sites are currently recorded within five kilometres of the project area (Table 2.1 and Figure 2.1). There are no Aboriginal Places that have been declared within the 3km radius search area and there are no sites registered within the project area.

Table 2.1 Summary of AHIMS results

Site Type	Frequency	Percent
AFT	13	65%
TRE	1	.5%
SHL	1	.5%
PAD	1	.5%
SHL/AFT	3	15%
SHL/AFT/STA	1	.5%
Total	20	100%

Figure 2.1 Known sites



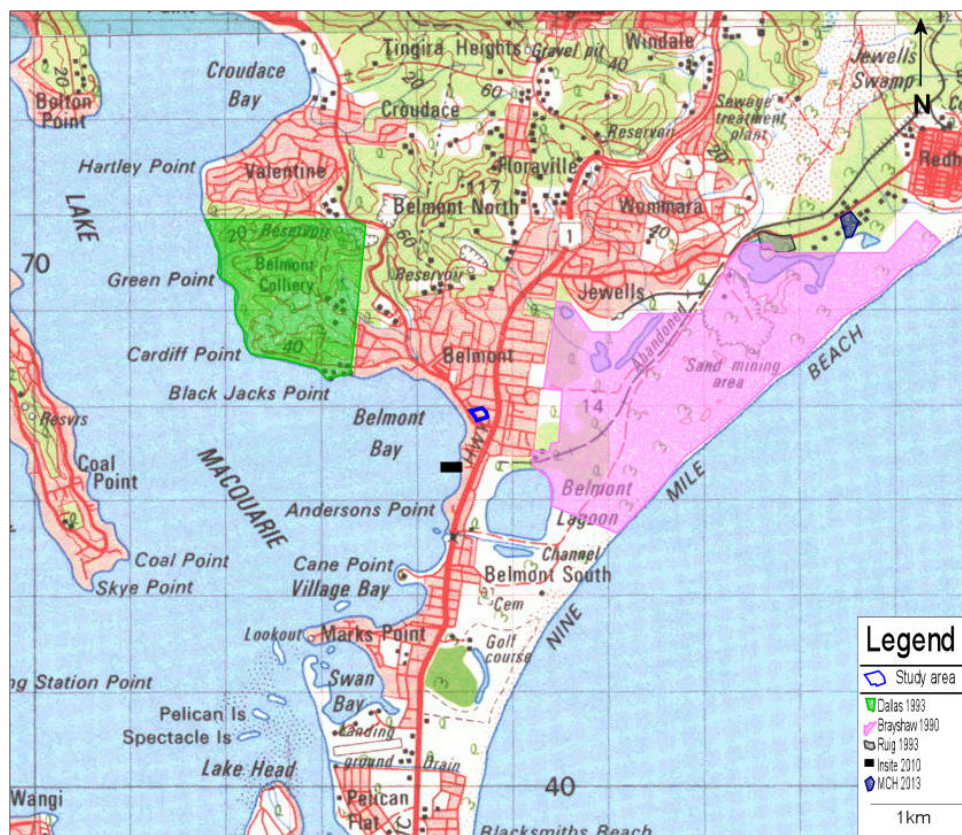
2.2.2 HERITAGE REGISTER LISTINGS

The State Heritage Register and Inventory, the national heritage List, The National Trust Register, the Commonwealth Heritage List and the Lake Macquarie Local Environmental Plan have no Aboriginal objects, sites or places listed.

2.2.3 SUMMARY OF THE ARCHAEOLOGICAL CONTEXT

The most relevant investigations from across the Lake Macquarie area indicate differing results and observations based on surface visibility and exposure, alterations to the landscape (including mining, industrial and residential development), proximity to water sources and geomorphology. The following summary, is derived from a review of the investigations available from OEH and provides the archaeological context in terms of site location and distribution. These investigations were identified through the AHIMS search and include Dallas (1993), Brayshaw (1990), Ruig (1993), Insite (2010) and MCH (2013). A detailed summary of these assessments is provided in Annex B and their location in Figure 2.2.

Figure 2.2 Previous studies



By far, the highest numbers of sites are located within 50 metres of a water source, in particular Lake Macquarie. These sites, shell middens, indicate a wide use of the Lake. The surrounding area includes sites such as artefact scatters, isolated finds, grinding grooves and art and a number of sites in reduced numbers and densities. Raw materials are predominantly chert, tuff (also called indurated mudstone by some), silcrete and quartz. Stone artefacts are predominantly flake pieces, broken flakes, flakes, cores and reduced numbers of tools. Shell types typically identified in shell middens include cockle and oyster with reduced numbers of other species. The vast majority of artefactual material in the region was observed on exposures with good to excellent ground surface visibility. The likelihood of finding artefacts surrounding these exposures is reduced due to poor visibility. The Lake Macquarie regional archaeology of the area can be summarised as follows:

- the likelihood of locating sites increases with proximity to water;
- the likelihood of finding large sites increases markedly with proximity to water;
- a variety of raw materials will be represented though the majority of sites will include tuff/mudstone, chert, silcrete and quartz;
- a variety of artefact types will be located though the majority will be flakes, flaked pieces and debitage;
- grinding grooves will be located along or near water sources;
- shell middens will be present along the fore shore;
- the likelihood of finding scarred trees is dependent on the level of clearing in an area' and
- the majority of sites will be subject to disturbances including human and natural.

2.3 SYNTHESIS OF ENVIRONMENTAL AND ARCHAEOLOGICAL CONTEXTS

The site types identified throughout the area appear to be either low density/small occupation activities or sites that were associated with more secular activities. The broader landform assessment also suggests that larger sites indicative of larger camping groups may be located along Lake Macquarie fore shore due to available room and proximity to readily available resources of the lake. Other unsuitable locations, such as steep slopes, would have been limited in space and have uneven surfaces where by large scale habitation is not possible, but may have been utilised as activity areas away from the main camp. Based on information gained from previous studies, both regionally and locally, within a five kilometre radius of the project area, it can be expected that:

- the likelihood of locating sites increases with proximity to available water; either creeks/rivers or Lake Macquarie;
- the likelihood of finding large sites increases markedly with proximity to reliable water;
- grinding grooves will be located along or near water sources;
- a variety of stone artefact types will be located though the majority will be flakes, flaked pieces and debitage;
- a variety of raw materials utilised in stone tool manufacture will be represented, though the majority of sites will be predominated by tuff/mudstone, chert and silcrete;
- the likelihood of finding scarred trees is dependent on the level of clearing in an area; and
- the majority of sites will be subject to disturbances including human and natural.

Relating specifically to the project are, the level of clearing and historic use of the area limits the potential for Aboriginal sites to be located within the project area.

2.4 PREDICTIVE MODEL FOR THE PROJECT AREA

An archaeological predictive model is established to identify areas of archaeological sensitivity so it can be used as a basis for the planning and management of Aboriginal heritage. It involves reviewing existing literature to identify basic site distribution patterns. These patterns are then modified according to the specific environment of the project area to form a predictive model for site location within the specific project area. A sampling strategy is then used to test the model and the results of the survey used to confirm, refute or modify the model.

Land systems and environmental factors are commonly used factors in predictive modelling based on the assumption that they provide distinctive sets of constraints and opportunities that influenced past Aboriginal land use patterns. As land use patterns may differ between zones (due to different environmental conditions), this may result in the physical manifestation of different spatial distributions and forms of archaeological evidence. The predictive model presented here is based on the following information;

- Landform units;
- Previous archaeological assessments conducted within the region;
- Distribution of known sites and site densities; and
- Traditional Aboriginal land use patterns.

Also taken into consideration are land use impacts (both natural and anthropomorphic) that may have resulted in a disturbed landscape and associated archaeological record. However, these assumptions may only be clarified during survey and the model updated accordingly if needed.

No sites are predicted to be present within the project area due to the high impacts from previous land uses.

Brief descriptions of the site types that may have occurred occur in the project prior to land uses are presented below.

- **Artefact scatters**

Also described as open campsites, artefact scatters and open sites, these deposits have been defined at two or more stone artefacts within 50 metres of each other and will include archaeological remains such as stone artefacts and may be found in association with camping where other evidence may be present such as shell, hearths, stone lined fire places and/or heat treatment pits. These sites are usually identified as surface scatters of artefacts in areas where ground surface visibility is increased due to lack of vegetation. Erosion, agricultural activities (such as ploughing, grazing) and access ways can also expose surface campsites. Artefact scatters may represent evidence of;

- Large camp sites, where everyday activities such as habitation, maintenance of stone or wooden tools, manufacturing of such tools, management of raw materials, preparation and consumption of food and storage of tools has occurred;
- Medium/small camp sites, where activities such as minimal tool manufacturing occurred;
- Hunting and/or gathering events;
- Other events spatially separated from a camp site, or
- Transitory movement through the landscape.

Artefact scatters are a common site type in the local locality and the boarder region. However, due to the significant landuses and associated impacts across the project area from development and infrastructure, there is low to no potential for artefact scatters to occur within the project area.

- **Isolated finds**

Isolated artefacts are usually identified in areas where ground surface visibility is increased due to lack of vegetation. Erosion, agricultural activities and access ways can also expose surface artefacts. Isolated finds may represent evidence of;

- Hunting and/or gathering events; or
- Transitory movement through the landscape.

Isolated finds are a common site type in the local locality and the boarder region. However, due to the significant landuses and associated impacts across the project area from development and infrastructure, there is low to no potential for artefact scatters to occur within the project area.

- **Shell middens**

Middens result from seasonal camping and exploitation of oysters and freshwater mussels. Extended camping results in the deposition of a feature that is distinguishable from a natural shell layer. This includes the inclusion of burnt or blackened shell, non-molluscan fauna, dis-articulated bivalves, charcoal, burnt wood, hearth stones, stone artefacts and stratification. Middens are usually found on the coast and on the shorelines of estuaries, lakes and inland rivers. Although sometimes identified on ridges, these middens tend to be less extensive than those close to the resource base. Smaller lenses of shell deposition also occur close to water. Shell middens may represent evidence of;

- Large camp sites, where everyday activities such as habitation, maintenance of stone or wooden tools, manufacturing of such tools, management of raw materials, preparation and consumption of food and storage of tools has occurred;
- Medium/small camp sites, where activities such as a small meal was cooked and/or consumed;
- Hunting and/or gathering events;
- Other events spatially separated from a camp site, or
- Transitory movement through the landscape.

Shell middens are a common site type in the local locality and the boarder region. However, due to the significant landuses and associated impacts across the project area from development and infrastructure, there is low to no potential for artefact scatters to occur within the project area.

3 RESULTS AND DISCUSSION

To comply with the due diligence requirement that a visual inspection of the project area was undertaken, an archaeological survey across the project area was undertaken by MCH archaeologist Penny McCardle on 17 March 2017. The survey focused on areas of high ground surface visibility and exposures (erosional features and cleared areas).

The project, surveyed in its entirety, included one survey unit (SU) that was based on the disturbed landform that encompassed the entire project area. The project area is currently residential and retail (coffee shop). Being highly disturbed through construction works associated with such developments, the project area consisted of numerous buildings, driveways and associated infrastructure. Exposures were high (100%) due to the residential development across the entire project area and visibility was also high (40%) due to erosion and gardening throughout the residential front and back yards. The effective coverage for the project area was 50% with grass being the limiting factor. Figures 3.1 and 3.2 provide examples of the survey unit.

Figure 3.1 8 Sharp St, backyard facing north



Figure 3.2 9 Edgar St, yard



The level and nature of the effective survey coverage is considered satisfactory to provide an effective assessment of the Aboriginal sites identified and those potentially present within the investigation area. The coverage was comprehensive for obtrusive site types (e.g. grinding grooves and scarred trees) and less obtrusive surface stone artefact sites.

No archaeological sites or Potential Archaeological Deposits (PADs) were identified. This is likely due to the high levels of impacts from previous excavation/fill construction works associated with residential building and associated infrastructure.

As no sites were identified it is not possible to discuss the local and regional archaeological patterning, not reassess the predictive model.

3.1 CONCLUSION

Sites provide valuable information about past occupation, use of the environment and its specific resources including diet, raw material transportation, stone tool manufacture, and movement of groups throughout the landscape.

Proximity to water was an important factor in past occupation of the area, with sites reducing in number significantly away from water with most sites located within 50 metres of water. The surrounding area contains no raw materials that are typically used in the manufacture of stone tools, and as such it can be assumed that any artefacts identified would be of materials traded and/or transported from other locations. The access to water close by would have provided the necessary resources for sustained occupation of the area.

Whilst the project area is located within an environment that provided resources, including fauna, flora and water, that would have allowed for sustainable occupation of the area, construction works across the entire project area would have displaced and/or destroyed any cultural materials that may have been present.

4 ASSESSMENT OF IMPACTS

The archaeological record is a non-renewable resource that is affected by many processes and activities. As outlined in Section 2 and Section 3, the various natural processes and human activities have impacted on archaeological deposits through both site formation and taphonomic processes.

4.1 IMPACTS

The OEH Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (2010:21) describes impacts to be rated as follows:

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

As no sites or PADs were identified due to the highly disturbed nature of the project area there are no impacts to the archaeological record.

4.2 CUMULATIVE IMPACTS

The cumulative impact to Aboriginal heritage in the area is nil given that:

- The net development footprint (i.e. the area of direct impact) is small and does not affect a high proportion of any particular landform present within the region;
- A comparable suite of landforms that are expected to, and do contain a similar archaeological resource occur in multiple contexts both within the local area and throughout the Lake Macquarie area;
- The high density deposits identified to date occur outside the development footprint;
- The placement of the development within this area, in particular within the disturbed context, ensures the cumulative impacts are focused in the areas of no archaeological potential and therefore are kept to a minimum.

Mitigation measures to minimise these impacts are outlined in the following chapter.

5 MITIGATION AND MANAGEMENT STRATEGIES

Specific strategies, as outlined through the DECCW (2010b) 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), are considered below for the management of the identified site within the project area.

5.1 CONSERVATION/PROTECTION

Conservation is the first avenue and is suitable for all sites, especially those considered high archaeological significance and/or cultural significance. Conservation includes the processes of looking after an indigenous site or place so as to retain its significance and are managed in a way that is consistent with the nature of peoples' attachment to them.

No sites or PADs were identified and as such conservation/protection is not required.

5.2 FURTHER INVESTIGATION

An Aboriginal Heritage Impact Permit (AHIP) is no longer required to undertake test excavations (providing the excavations are in accordance with the Code of Practice for Archaeological Investigations in NSW). Subsurface testing is appropriate when a PAD has been identified, and it can be demonstrated that sub-surface Aboriginal objects with potential conservation value have a high probability of being present, and that the area cannot be substantially avoided by the proposed activity.

No sites or PADs were identified and the project is highly disturbed with low to no potential for in situ archaeological deposits and as such further investigations are not justified.

5.3 AHIP

If harm will occur to an Aboriginal object or Place, then an AHIP is required from the OEH. If a systematic excavation of the known site could provide benefits and information for the Aboriginal community and/or archaeological study of past Aboriginal occupation, a salvage program may be an appropriate strategy to enable the salvage of cultural objects. The AHIP may also include surface collection of artefacts.

No sites or PADs were identified and as such an AHIP is not required.

6 RECOMMENDATIONS

- 1) The persons responsible for the management of onsite works will ensure that all staff, contractors and others involved in construction and maintenance related activities 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) If any Aboriginal objects are uncovered during construction works, works must cease in that location immediately and the Environmental Line notified (131 555).

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APPENDIX A

AHIMS Search Results

Penny Mccardle

Date: 16 February 2017

Po Box 166
Adamstown New South Wales 2289
Attention: Penny Mccardle
Email: mcheritage@iprimus.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 56, Eastings : 371500 - 377500, Northings : 6341100 - 6347100 with a Buffer of 50 meters. Additional Info : assessment, conducted by Penny Mccardle on 16 February 2017.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

20	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the [NSW Government Gazette \(http://www.nsw.gov.au/gazette\)](http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date .Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Belmont 2

Client Service ID : 266969

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-7-0130	Belmont STW Camp Site; Contact	AGD	56	376400	6343000	Open site	Valid	Artefact : -	Open Camp Site	224
45-7-0148	Canoe tree;CT; Contact	AGD	56	371830	6345900	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	2592
45-7-0041	Mark's Point Nine Mile Beach Contact	AGD	56	375251	6341618	Open site	Valid	Artefact : -	Open Camp Site	
45-7-0042	Nine Mile Beach; Contact	AGD	56	375610	6341991	Open site	Valid	Artefact : -	Open Camp Site	
45-7-0204	BSAS-2 Contact	AGD	56	377330	6345400	Open site	Valid	Artefact : -	Open Camp Site	3203
45-7-0092	Lake Macquarie (Hartley Point) Contact	AGD	56	372591	6346871	Open site	Valid	Shell : -, Artefact : -	Midden	
45-7-0096	Belmont;Eleebana; Contact	AGD	56	374014	6344155	Open site	Valid	Shell : -, Artefact : -	Midden	
45-7-0100	Black Jack's Site;Belmont; Contact	AGD	56	373120	6344310	Closed site	Valid	Artefact : -	Shelter with Deposit	255
45-7-0284	Anderson Pde Contact	GDA	56	374585	6343273	Open site	Valid	Shell : -		101911
45-7-0030	Belmont; Contact	AGD	56	374488	6343249	Open site	Valid	Shell : -, Artefact : -, Stone Arrangement : 1	Midden	
45-7-0046	Dudley-Jewells Swamp Area;Redhead South; Contact	AGD	56	377080	6346408	Open site	Valid	Artefact : -	Open Camp Site	
45-7-0047	Dudley-Jewells Swamp (Redhead South) Contact	AGD	56	377178	6346044	Open site	Valid	Artefact : -	Open Camp Site	
45-7-0048	Dudley-Jewells Swamp Area;Site 2; Contact	AGD	56	377278	6345588	Open site	Valid	Artefact : -	Open Camp Site	
45-7-0049	Dudley-Jewells Swamp Area; Contact	AGD	56	377278	6345588	Open site	Valid	Artefact : -	Open Camp Site	
45-7-0011	Belmont Midden;Green Point Estate; Contact	AGD	56	371860	6346140	Open site	Valid	Shell : -, Artefact : -	Midden	255
45-7-0345	BHW01	GDA	56	374393	6344461	Open site	Destroyed	Artefact : -		

Report generated by AHIMS Web Service on 16/02/2017 for Penny Mccardle for the following area at Datum :GDA, Zone : 56, Eastings : 371500 - 377500, Northings : 6341100 - 6347100 with a Buffer of 50 meters. Additional Info : assessment. Number of Aboriginal sites and Aboriginal objects found is 20

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.



AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Belmont 2

Client Service ID : 266969

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	<u>Contact</u> Mr.Shane Frost	<u>Recorders</u>	Mrs.Angela Besant, Miss.Nicola Roche							
45-7-0346	BHW02	GDA	56	374506	6344341	Open site	Destroyed	Artefact : -	<u>Permits</u> 3730	
	<u>Contact</u>	<u>Recorders</u>	Mrs.Angela Besant, Miss.Nicola Roche							
45-7-0347	BHW03	GDA	56	375267	6344012	Open site	Valid	Artefact : -	<u>Permits</u> 3730	
	<u>Contact</u>	<u>Recorders</u>	Mrs.Angela Besant							
45-7-0348	BHW04	GDA	56	375185	6343750	Open site	Valid	Artefact : -	<u>Permits</u>	
	<u>Contact</u>	<u>Recorders</u>	Mrs.Angela Besant							
45-7-0364	Bahtabah Mission Site PAD	GDA	56	374714	6343688	Open site	Valid	Potential Archaeological Deposit (PAD) : 1	<u>Permits</u> 4030	
	<u>Contact</u>	<u>Recorders</u>	Ms.Mary-Jean Sutton							

Report generated by AHIMS Web Service on 16/02/2017 for Penny Mccardle for the following area at Datum :GDA, Zone : 56, Eastings : 371500 - 377500, Northings : 6341100 - 6347100 with a Buffer of 50 meters. Additional Info : assessment. Number of Aboriginal sites and Aboriginal objects found is 20

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APPENDIX B

Archaeological Summary

Dallas (1983) undertook an archaeological survey of Green Point Estate at Belmont, NSW. The study area included part of the foreshore at Green Point on Lake Macquarie that was proposed for development. The development works proposed to conserve the remaining foreshore as a nature reserve, while developing the rest of the study area into a hotel-marina complex. The proposed works would involve surface and subsurface disturbance within the study area. Previous disturbance within the study area was extensive, including such activities as vegetation clearance, logging, dirt tracks, bike trails, 4WD tracks, gravel and sand quarries, sand mining, coal mining, washing, preparing, garbage dumping, boat building/repair, as well as house, road and boat ramp construction and use. The study area was situated in parts of the hinterland area between Hartley Point and Black Jack's Point as well as the adjacent foreshore. Creeks in the area were mostly seasonal, with some now draining into areas disturbed by quarrying. The topography of the area included rolling hills in the hinterland and sand dunes along the foreshore. Vegetation included mature trees suitable for scarred trees, as well as noxious species such as lantana and creeper. A review of past surveys and site recordings noted that shell middens and open campsites occurred in the vicinity, but nothing was specifically identified as within the bounds of the study area. It was noted that none of the sites previously recorded along the foreshore of Lake Macquarie had been recorded or assessed in detail and that no systematic site survey work had been undertaken for the Lake Macquarie foreshore. However, Dallas noted that estuarine shell middens were expected to occur within the study area and axe grinding groove sites were not common in the area, but could occur where suitable sandstone was exposed adjacent to creeks. Also, occupation sites were likely to occur on dry, flat landforms, burials may be found in soft sediments such as sand or sandy loam and scarred trees were possible where vegetation clearance had not destroyed all mature trees in the area. The survey across the entire study area revealed that surface visibility was limited in some areas by ground cover vegetation.

Two sites were located within the study area, both along the foreshore. Shell midden site 45-3A-11 was a relocated site that had been recorded previously, included both shell and stone artefacts (cockle and oyster shell, flake/core artefacts of chert and quartz), was moderately disturbed with subsurface potential. The second site, Black Jack's Point Site was also a shell midden with stone artefacts (shell, siltstone and quartzite cores) and was highly disturbed with no potential for subsurface cultural materials. The sites were consistent with the site types and locations discussed based on past surveys of the area, making the predictive model accurate in its assessment. It was recommended that site 45-3A-11 be preserved with appropriate conservation methods, but no signs or indicators be erected to draw attention to the midden's location. The proposed location for development did not impact on either of the sites, but it was recommended that test excavations be carried out in the proposed area prior to works commencing. It was also recommended that a Permit to Collect be applied for to allow for the salvage of the Black Jack's Point Site and consultation with the Aboriginal stakeholders continue.

Dyall (1972) undertook a study of Aboriginal occupation in the Dudley-Jewells Swamp Area in the Hunter region of NSW. Dyall described the area as having geographic unity, with the landscape consisting of hills, sandy heaths, dunes and creeks. Water sources in the area included Freshwater Creek, Dudley-Redhead Creek and Dudley Lagoon with the creek system draining into the swamp. The creeks generally flowed over clay, gravels and coarse conglomerates, with fine grained sandstone also noted in some areas. Dense prickly scrub was noted covering the sandy slopes near the sea cliffs. Past impacts in the area included heavy weathering and rutile mining at the dunes at Redhead. Dyall hypothesised that the large camp areas identified in his study were located in this landscape as they allowed for foraging across a wide variety of habitats. This was noted with coastal heath camps, which had access to the marshes to the south, the lagoon to the west and the rocky ocean shore at the bottom of the cliff. He identified minor camp sites along the margins of the swamp, one having a thin scatter of artefacts spread across a one acre area. Chert

was the predominant raw material type, with others including tuff, quartzite and quartz. Flaked glass implements were also noted in the Redhead Dunes. Dyll noted that he was only aware of two edge-ground stone implements from the area. Artefact types identified in the area included cores, flakes, Bondi points, geometrics and waste flakes. Shell evidence suggested that turban and whelk shellfish were a food resource in this area. Dyll also argued that an identified lump of quartz demonstrating lustrous crystals may have been of ceremonial value as a “magic stone” imported to the area by Aboriginal people, arguing that its provenance was at least 30 miles away. Dyll’s report does not contain detailed information about the individual sites that he identified during this survey. He notes that further data on the individual sites was lodged with the Australian Museum.

Brayshaw (1990) completed an archaeological assessment of approximately 500 ha for a proposed resort at Belmont, NSW. The investigation area had previously been utilised as the location for the John Darling Colliery and disturbed by sand extraction activity. Proposed works included the development of a golf course and club, hotels, conference and retail centres, condominiums and boardwalks along with associated infrastructure.

Landforms included an extensive dune and wetland system and the deposits were of Quaternary coastal sand and silt with underlying deposits of Permian Newcastle Coal Measures including shale, sandstone, conglomerate, tuff, chert and coal. The closest major water source was Nine Mile Creek and vegetation included melaleuca, acacia, banksia, bittou bush and lantana. A search of the NPWS database identified two previously recorded sites within the study area. These included a midden site 45-7-0051 and artefact scatter site 45-7-0130. Previously recorded sites located outside the study area were of the same site types (midden and artefact scatter). No additional sites were identified during an inspection of the study area, which confirmed that the location was highly disturbed. It was recommended that further investigation be undertaken in areas not covered by this assessment and that the proposed works proceed in the disturbed areas, stopping if any new finds were located. It was further recommended that the two previously recorded sites be preserved and that interpretative signs and artefact displays be incorporated into the development design.

Ruig (1993) undertook an archaeological assessment of Lots 57, 58 and 59 (DP10262) in the City of Lake Macquarie in the Parish of Kahibah, approximately 17 kilometres to the south of Newcastle. The proposed development was for a golfing facility for the use of park residents on three lots adjacent to the southern boundary of an existing mobile home village. The study area was approximately eight hectares in size. Past impacts included vegetation clearance, mining and rubbish dumping. Landforms of the investigation area included dunes and swamp. The deposits were Quaternary coastal sands and silts underlain by the Permian system of the Newcastle Coal Measures group. The closest water source was Jewells Swamp. Vegetation in the study area included *Melaleuca quinquenervia*, *Melaleuca ericifolia*, *Casuarina glauca*, *Persoonia* spp., *Banksia serata*, *pteridium esculentum*, lantana and Bittou bush. A search of the NPWS database did not identify any sites within the investigation area and previously identified sites in the surrounding area included middens, artefact scatters and isolated artefacts. It was predicted that any of these three sites types could occur in the study area. The study area was found to be highly disturbed and the one identified artefact scatter identified on a sand dune and included two artefacts in a highly disturbed area (vehicle track) and was assessed as having low archaeological significance. Ruig recommended that the developer apply to the Director of National Parks and Wildlife Service for a Consent to Destroy and that the application be granted. No further archaeological investigation work was recommended for the study area.

Insite Heritage (2010) undertook a heritage and archaeological assessment of an area proposed for development as part of an upgrade to the Lake Macquarie Yacht Club. The proposed works

included upgrading the building and extending the marina. Landforms of the investigation area consisted of slopes, headland and foreshore on a small lens of the Norah Head Soil Landscape. The area had been cleared of vegetation, which was originally heathland and the nearest water sources were Cockle Creek and Jewells Swamp. A search of the AHIMS database identified one previously recorded site within the study area. This was a midden site located in Cullen Park. It was identified that the proposed works would not impact on this site. Site types predicted as possible to occur in the study area included artefact scatters, isolated artefacts, middens, burials, scarred trees and grinding grooves. Of these types, only middens were located during survey. Shell fragments and a section of fragmented shell midden were identified outside the proposed upgrade area (see below in Table 1.1). It was recommended that the proposed works proceed without constraint.

Table 6.1 Summary of sites (Insite Heritage 2010)

Site	Site type	Landform	Distance to water	Stream order	Artefacts /features	Disturbance	Subsurface potential
45-7-0284	midden	dune	not provided	Jewells Swamp	not provided	clearance & development	not provided
Transect 2 site	midden	not provided	not provided	Jewells Swamp	not provided	clearance & development	not provided

McCardle Cultural Heritage Pty Ltd (2013) undertook an Aboriginal Heritage Impact Assessment for the proposed manufactured home estate (11 Staged Development) at Redhead. The proposed development involved the staged construction of a one hundred and thirty seven (137) site manufactured home estate (MHE) on the land, inclusive of a two storey community facilities building, pool, landscaping, communal open space, stormwater quality facilities and rehabilitation of the degraded section of Crokers Creek which forms the southern boundary of the site. The study area was located approximately 800 metres south of Redhead, including Lot 36 DP10262 and Lot 62 DP 102626, the southern boundary backed onto Crokers Creek which flows into Jewells Swamp. The study area had no remaining original topography remaining as the site had been filled. The specific study area has been cleared and primarily used for pastoral purposes (grazing), involving the wholesale clearance of native vegetation, the introduction of pasture grass, , housing, fencing, numerous tracks and associated infrastructure (water, electricity, telephone). The study area was filled and also used as a transport facility. Crokers Creek is vary badly degraded for the majority of its length, eroded and blocked or constricted in some locations by large concrete blocks and other debris (including the remains of disused crossing previously used for sand mining on Crown Land to the south). The elevated slope above Crokers Creek in the south of the study area may be considred ideal for past occupation. The area is considered suitable for hunting and/or gatheirng as the swamp would have provided resourses for occupation and evidence of such occupation is expected to be located on elevated landforms overlooking the swamp. It was predicted that there is potential for evidence of past occupation in particular stone artefacts as these are typically identified in areas more suitable for occupation such as elevated landforms. However, due to past and present landuses and impacts, the sites are expected to be under the fill material and the upper sections disturbed and not in situ.

The results of the assessment showed that no sites were identified and as such no sites will be impacted upon by the development. In relation to the potential original landform under the existing fill materials and any poissible sites being present, with the exception of some possible intrusion below the fill where the fill is shallow at the front of the site, the development will not be excavating below the fill materials and as such there are no imopacts expected to any of the origoinal landform remaining under the existing fill. MCH recommended that the persons

responsible for the management of an onsite will ensure that all staff, contractors and others involved in construction and maintenance related activities 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; and if the development will impact below the existing fill materials further archaeological investigations will be required to determine if the original landform is present and if any sites are present within that landform prior to work.