

6 September 2021

Andrew Formica
7 Crown Rd, Queenscliff
c/o Brad Dorn
Director
Dorn Design

Dear Mr Dorn,

#### RE: FINAL: 7 Crown Road Queenscliff, Aboriginal Heritage Due Diligence Assessment

Dorn Design has requested Artefact Heritage prepare an Aboriginal Heritage Due Diligence assessment in relation to the proposed development of Lot 2 DP 514296, 7 Crown Road, Queenscliff (the study area). The study area falls within the boundaries of the Northern Beaches Council Local Government Area (LGA). The Northern Beaches LGA recognises that the area is rich in Aboriginal heritage and that a precautionary approach should be taken during any proposed development.

This report outlines the results of an Aboriginal heritage due diligence assessment which meets the requirements of the Department of Environment, Climate Change and Water (DECCW) 2010 *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (Due Diligence Code of Practice) (DECCW 2010a), and includes recommendations as to whether further archaeological investigation may be required for future stages.

The report was written by Brye Marshall (Heritage Consultant, Artefact Heritage) with management input and review provided by Dr Sandra Wallace (Managing Director, Artefact Heritage).

## 1.1 Legislative context

The *National Parks & Wildlife Act 1974* (the NPW Act) provides statutory protection for all Aboriginal 'objects' (consisting of any material evidence of the Aboriginal occupation of NSW) and for 'Aboriginal Places' (areas of cultural significance to the Aboriginal community).

The aim of the Due Diligence Code of Practice is to assist individuals and organisations to exercise due diligence when carrying out activities that may harm Aboriginal objects and to determine whether they should apply for consent in the form of an Aboriginal Heritage Impact Permit (AHIP). An AHIP can only be issued by Heritage NSW, Department of Premier Cabinet (DPC).

A due diligence assessment should take reasonable and practicable steps to ascertain whether there is a likelihood that Aboriginal sites will be disturbed or impacted during the proposed activity. If it is assessed that sites exist, or have a likelihood of existing, within the activity area and may be impacted by the proposed activity, further archaeological investigations may be required along with an AHIP. If it is found to be unlikely that Aboriginal sites exist within the study area and the due diligence assessment has been conducted according to the due diligence guidelines, work may proceed without an AHIP.

The Native Title Act 1994 was introduced to work in conjunction with the Commonwealth Native Title Act 1993. Native Title claims, registers and Indigenous Land Use Agreements are administered under the Act. There are no Native Title claims currently registered within the study area.

The *Environmental Planning and Assessment Act 1979* (EP&A Act) establishes the framework for cultural heritage values to be formally assessed in the land use planning and development consent process. The EP&A Act requires that environmental impacts are considered prior to land development: this includes impacts on cultural heritage items and places as well as archaeological sites and deposits. The EP&A Act also requires that local governments prepare planning instruments, such as LEPs and Development Control Plans (DCPs) in accordance with the Act to provide guidance on the level of environmental assessment required.

# 1.2 The study area

The study area is approximately 970 square metres and located within Lot 2 DP514296 within the Northern Beaches LGA, Parish of Manly Cove, County of Cumberland. The study area is located within the Sydney Metropolitan Local Aboriginal Land Council boundary and the Gameraygal people are its custodians. The study area is bounded on the west and east by residential premises, by Crown Road on the south side and by Freshwater Beach to the north (Figure 1).

Figure 1. Study area

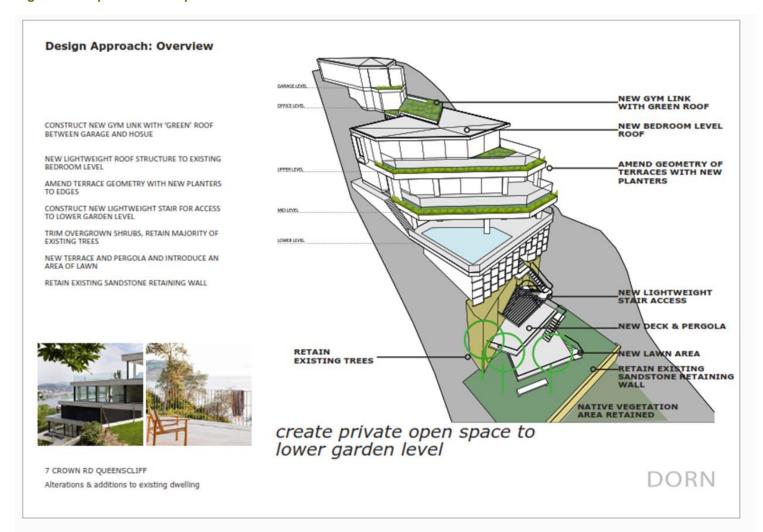


# 1.3 The proposal

The proposed works are shown schematically in Figure 2, and include the following alterations to the premises:

- 1. New planters to the existing garage roof
- 2. Extension northwards of existing garage towards existing residence
- 3. Lifting of existing bedroom and gym ceilings by 300mm
- 4. New stone steps from garage to residence
- 5. New stone steps along eastern and western boundaries.
- 6. Extension of bedroom and bedroom terrace northwards
- 7. Extension of residence terrace northwards
- 8. Fitting of new windows and louvres
- 9. New lightweight stairs to lower garden level
- 10. Formation of a new pergola at the lower deck.
- 11. Selective removal of vegetation below the pergola level to form an open lawn.

**Figure 2: Proposed Developments to Premises** 



# 1.4 Background

#### 1.4.1 Environmental context

The geology of the study area is characterised by the Triassic Hawkesbury formation comprised of sandstone, quartz and some shale (Bryan 1966). The study area is located on the Hawkesbury sandstone overlying the Narrabeen sandstone.

There are numerous sandstone outcrops in the area and as a result there are numerous sandstone shelters and overhangs. These features are commonly found across the northern beaches. These sandstone units are overlain by elevated undulating dune swales consisting of conglomerate, sandstone and shale (Sydney 1:250 000 Geological Map).

## 1.4.2 Aboriginal history of the locality

The Sydney Basin has a rich source of Aboriginal archaeological sites, with over 4,500 registered sites across the north shore area alone (Northern Beaches Council). This Aboriginal history and connection to the land was informally acknowledged in the preceding name of the suburb: Curl Curl, was the original Aboriginal name for the area which has now been renamed Queenscliff (<a href="https://www.visitsydneyaustralia.com.au/queenscliff.html">https://www.visitsydneyaustralia.com.au/queenscliff.html</a>) (accessed 1/07/2021).

The Northern Beaches have been the traditional lands of the Gayemalgal people for thousands of years and they were seen by colonial settlers as powerful warriors. This attribute is thought to have been the reason for assigning the name Manly to the north shore's most well known suburb: in 1788 Arthur Phillip noted "...the 'confidence and manly behaviour' of the Aboriginal people encountered on the northern side of the entrance to Sydney Harbour" (Paul Ashton – The Dictionary of Sydney <a href="https://dictionaryofsydney.org/entry/manly">https://dictionaryofsydney.org/entry/manly</a>) (accessed 1/07/2021).

Early recordings of the peoples of the northern shores of Port Jackson noted that Aboriginal people lived in or around rock shelters, and had a rich marine diet (Tench 1961). These early accounts described Aboriginal people eating snapper, bream and mullet. The archaeological evidence also shows that there was a more complex and subsistence pattern with seasonal variations which avoided over exploitation of the resources (*Australian Museum Exhibition 'Catching Sydney Harbour'* – in Mary Dallas Consulting Archaeology 2011). In addition, Val Attenbrow has been able to show that by using historical evidence and archaeological data from the excavation of Aboriginal shell middens across the Port Jackson catchment area, the Gayemalgal people had a wide array of foods which could be caught with little effort (Attenbrow 2002).

Early accounts by colonists also mentioned numerous rock carvings throughout the Warringah sandstone plateau (Wing 1992). For example:

We saw...some proofs of their ingenuity in various figures cut on the smooth surface of some large stones. They consisted chiefly of representations of themselves in different attitudes, of their canoes, of several sorts of fish and animals; and, considering the rudeness of the instruments with which the figures must have been executed, they seemed to exhibit tolerably strong likenesses (in J. Wing 1992: 11).



British colonisation has had a profound and devastating effect on the Aboriginal population of Sydney including the Manly/Warringah area. What is left is the existing archaeological remnants of that culture and community.

### 1.4.3 Previous archaeological assessments

Archaeological material does not survive well in coastal environments which are naturally harsh in terms of preservation. Together with the expansion of modern Australian lifestyle which has embraced coastal habitation, coupled land clearing and modification of sensitive sand dunes much Aboriginal material has been lost. One site type that has better rates of survival on the northern beaches it is the sandstone outcrops that are important repositories that record and document the existence and occupation of these local areas by Aboriginal people over thousands of years.

Several archaeological investigations which have been conducted in proximity of the study area and are summarised below.

McCardle Cultural Heritage Pty Ltd 2008. Proposed Redevelopment at the Australian Institute of Police Management at North Head, Manly. Indigenous Archaeological Assessment.

In 2008, McCardle Cultural Heritage Pty Ltd was engaged by Brewster Hjorth Architects to prepare an Indigenous Archaeological Assessment. The proposed development and upgrades would see an increase of 54 residential accommodation suites, new buildings for teaching, administration, dining facilities, library and commons room. Previous studies across the site indicated archaeologically sensitive material in the east and west sections. These archaeologically sensitive areas were outside of the impact areas zoned for development. The sensitive areas on the western aspect were rock shelters and considered to be of cultural and archaeological importance to the history of the north shore.

No archaeological surface material or associated sandstone outcrops were within the impact zone for this site. It was recommended that the known rock shelters be monitored regularly and consultation with the local Aboriginal community be initiated to ensure the continued protection of the rock shelters.

Mary Dallas Consulting Archaeologists 2011. Royal Far West Manly Beach NSW. Cultural Heritage Assessment and Aboriginal Archaeological Assessment.

In 2011 Mary Dallas Consulting was engaged by Urbis to prepare a Cultural Heritage Assessment and Aboriginal Archaeological Assessment for the Royal Far West properties at Wentworth & South Steyne Streets Manly, which had been proposed for assessment as State Significant Developments. The Royal Far West site was historically important to many Indigenous children and parents who used the health care facilities. The site was also in close proximity to Manly Beach, where there was high potential for finding shell middens and or sandstone engraving sites. The site is approximately 1.5km from the study area.

A physical inspection of the study area did not indicate any potential archaeological sites. The site had been disturbed by the construction of modern residences and outdoor facilities had been concreted into place or had covered with introduced vegetation and fill. No sandstone outcrops were within the site. Mary Dallas Consulting did note that contemporary Aboriginal Historical importance should be recorded for this site because numerous Aboriginal children had utilised the facilities since the 1930s.

# Oliver Brown Consulting Archaeology 2011. 28 Rodborough Road, Frenchs Forest, Due Diligence Aboriginal Heritage Impact Assessment.

In 2011 Oliver Brown Consulting Archaeology were engaged by Platino Properties to undertake a Due Diligence assessment at 28 Rodborough Road, Frenchs Forest. This site is approximately 6.9km from the study area.

The assessment was to establish the potential for Aboriginal rock art across the site. Rock art was first recorded on the property in 1977 by National Parks and Wildlife Services (NPWS) and a second inspection was made in 1983 to ascertain the conditions of the rock art. The engravings of a kangaroo and a partial fish were registered on the Aboriginal Heritage Management System (AHIMS) as site number ID 45-6-0668.

A consent order to authorise the destruction of the partial fish engraving was applied in 1983, to allow development across the site. Oliver Brown Consulting Archaeology's inspection in 2011 was to assess the impact and potential damage to the kangaroo engraving because additional works had been undertaken near the engraving. Inspection of the kangaroo engraving, located on a relatively smooth section of sandstone, was revealed to be in good condition. The fish engraving was unable to be located.

# Oliver Brown Consulting Archaeology 2011. 50 Greycliffe Street, Queenscliff. Due Diligence Aboriginal Heritage Impact Assessment.

In 2011, Oliver Brown Consulting Archaeology were engaged by Simon Rosewell Pty Ltd to undertake a Due Diligence at 50 Greycliffe Street, Queenscliff. This site is approximately 350m from the study area. The Due Diligence assessment was required as the client was proposing to construct a new dwelling at the premises. Council required an inspection due to the sandstone overhangs adjacent to the site and the potential there for archaeologically sensitive material. A rock overhang –a potential rock shelter– was located at the lower end of the property, near the shore. Sandstone outcrops such as these have potential have cultural and historical significance. They may hold records the past lives of Aboriginal people and communities and are sometimes the only remaining records of this activity in local areas.

An investigation was undertaken to look for potential archaeological deposits commonly associated with rock shelters. The rock overhang was approximately 5m deep, 2m high and 8m wide. The overhang was noted as being quite damp and water was percolating at the rear. A probe was inserted at the location (at 60cm depth) where a deposit of sand was located. It was determined to be of minor archaeological sensitivity. Surrounding the front of the overhang was darker soil which upon inspection was determined to be imported fill.

Oliver Brown Consulting was uncertain as to whether the shelter was used by Aboriginal people in the past due to the level of associated disturbance. That said, Oliver Brown Consulting Archaeology believe that due care should be taken to ensure that the shelter would not be disturbed or impacted as a result of future construction across the site, in case any subsurface archaeological remains were present.

## 1.5 Aboriginal Heritage Information Management System (AHIMS) Search

NOTE: The location of Aboriginal sites is considered culturally sensitive information. It is advised that this information, including the AHIMS data appearing on the heritage map for the proposal be removed from this report if it is to enter the public domain.

An extensive search of the Aboriginal Heritage Information System (AHIMS) was undertaken on 22 June 2021 (Client Service ID 600422) to determine the location of Aboriginal sites in relation to the current study area. The search covered an area approximately 1000m by 1000m, centred upon the study area. The parameters of the search were as follows:

GDA 1994 MGA 56 341014 - 341754,

6259750 - 6261180

Buffer 0 m Number of sites 3

The search determined that there are 3 registered Aboriginal sites within the search area. There are no registered archaeological sites within the study area. The AHIMS database records sites using a list of twenty standard site types, of which three were found within the extensive search (OEH 2012):

- Artefacts: Objects such as stone tools, modified glass or shell showing evidence of use by aboriginal people.
- Modified Tree (Carved or Scarred): Trees which show marks of modification as a result of cutting of the bark, or intentionally carving the heartwood.
- PAD: An area where Aboriginal objects may exist below the ground surface.

Of the three sites identified in the search, one was an isolated Rock Shelter with Art, one a Shelter (with associated art and archaeological deposit) and the last was a Rock Shelter - PAD. The results of the search are summarised in Table 1 and a copy of the extensive search is provided in Appendix A. The distribution of recorded sites within the AHIMS extensive search area is shown in Figure 3.

Table 1: Frequency of site features in AHIMS search results

Site Types	Frequency	Percentage
Rock Shelter - Art	1	33.33%
Rock Shelter - PAD	1	33.33%
Shelter (with Art and Deposit)	1	33.33%
Total	3	100%

The three site types located within the AHIMS search area are discussed below.

## Ronald Reserve Shelter WARR 194 (AHIMS ID 45-6-3048)

Ronald Reserve Shelter WARR-199 (AHIMS ID 45-6-3048) comprises a rock shelter with associated shells and art. The site is approximately 2km away from the study area. The rock shelter is located



within the SE corner of Ronald Reserve, near Ronald and Lodge Roads. The rock shelter faces an east west direction. The site highlights the use of sandstone outcrops/shelters which by the local Aboriginal people.

### Undercliffe Road RS & Midden (AHIMS ID 45-6-2958)

Undercliffe Road Rock Shelter & Midden PAD (AHIMS ID 45-6-2958) is a Rock Shelter with midden. The site is located approximately 280m from the study area. The site is situated near a steep sandstone cliff, with a large overhang.

The site has been modified and was registered as a PAD. The shelter faces a northerly direction and is quite weathered. It is approximately 1.8m high, 0.9m wide and has between 10-15m of floor space. Inspection of the associated deposit revealed shells including limpets (*Cellana tramoservia*), trumpet shells (Turbinella sp.) and Sydney cockles (*Trapazia anadara*). It was noted that the shells did not exhibit any cut marks. The site is approximately 400m from Manly Lagoon which is a permanent water source. The site has been recorded as a PAD because the shelter has shells at the rear of the floor. This site highlights the use of sandstone outcrops as temporary shelters as ideal locations to consume foods from the local area.

#### Manly (AHIMS ID 45-6-0721)

Manly (AHIMS ID 45-6-0721) is approximately 1.2km from the study area. The site was recorded as a Rock Shelter with Artwork. Red ochre drawings include depictions of fish, boomerangs, and a man with a possum. This site has very limited information recorded with it: there is no information pertaining to the size of the artwork or its condition.

This site highlights the interpretation of sandstone outcrops as records of the daily life and culture Aboriginal across the northern beaches in the past.

Figure 3: Extensive AHIMS search results



## 1.6 Site inspection

The site inspection was conducted by Brye Marshall (Heritage Consultant, Artefact Heritage) and Michael Lever (Heritage Consultant, Artefact Heritage) on 28 June 2021. The main aims of the site inspection were to assess the degree to which the ground surface remained intact across the study area and identify whether Aboriginal objects occur, or are likely to occur, beneath the ground surface. The site inspection was undertaken on foot. Photographs were taken to record the landform within the study area, vegetation, and levels of disturbance. A photographic record has been kept.

The study area measures approximately 970 metres<sup>2</sup>. It is bounded by Crown Street to the south and Freshwater Bay to the north. The study area's highest point is the terraced section where the residence is located on the south. The residence is partially built over a sheer sandstone cliff face, that drops away considerably as towards Freshwater Bay in the north (Figure 4). This northern section of the study area was inspected for potential archaeological sensitivity.

Ground surface visibility was poor due to thick vegetation growth (Figure 5). Shrubs, vines, weeds as well as leaf litter limited ground surface visibility and access to some sections of the sandstone outcrops. The house is constructed directly upon the sandstone and over time vegetation has grown unchecked around it. The northern section of the study area (abutting the sandstone) has a manufactured retaining wall, built-up to provide access to Freshwater Bay and some form of landscaping. This section appeared to contain introduced fill.

Various varieties of vegetation have been able to successful grow within cracks/fissures of the sandstone (Figure 6). This has resulted in sections of the sandstone outcrop being obscured. Only one small section of sandstone (approximately 6m long) was clear and could be inspected (Figure 7).

Access to clear sandstone outcrops was difficult, the sandstone walls form a cliff face with a vertical drop. Access to inspect these areas could only be undertaken where retaining walls were built in order to landscape the area and provide access to the Freshwater Bay. Consequently, only a small section of the sandstone could be inspected (Figure 7). Safe access to the northern section of the study area was undertaken via a footpath built into a section of the sandstone outcrop, to travel up and down from Crown Street to Freshwater Bay.

Figure 4: Premises sitting on top of sandstone outcrop – top right corner (view from the south).

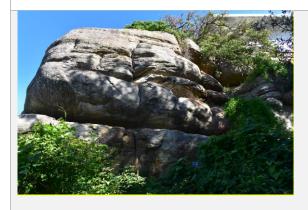


Figure 5: Vegetation growth across northern section of study area (view from the south).



Figure 6: Vegetation growth against Sandstone wall (view west).



Figure 7: Inspection of sandstone wall (view west).



# 1.7 Assessment of archaeological potential

This due diligence assessment provides a preliminary assessment of archaeological potential of the study area in line with the Due Diligence Code of Practice. The assessment seeks to determine if there are, or are likely to be, Aboriginal objects in the study area. A more comprehensive and detailed investigation of the extent and nature of archaeological potential would form a second stage, where required, under the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (the Code of Practice) (DECCW 2010b).

Archaeological potential is closely related to levels of ground disturbance. However, other factors are also taken into account when assessing archaeological potential, such as whether artefacts were located on the surface, and whether the area is within a sensitive landform unit according to the predictive statements.

The study area covers a sheer sandstone cliff face which is level from Crown St, but drops sharply underneath the residence, in a northerly direction towards Freshwater Bay. Access and inspection of the sandstone outcrops was limited due to the rugged nature of the terrain. Inspection was achievable, due to the construction of retaining walls and footpaths being built to enable access to the bay. The terracing and use of retaining walls were used for landscaping, and overtime the area was left unattended. The sandstone which the residence is built on, is a cliff face with remnant boulders on the beach, parts which have broken off.

### 1.7.1 Likely archaeological sensitivity

The Due Diligence Code of Practice identifies five landscape features that indicate the likely existence of Aboriginal objects these include:

- Within 200m of waters, or
- Located within a sand dune system, or
- Located on a ridge top, ridge line or headland, or
- Located within 200m below of above a cliff face, or
- Within 20m of or in a cave, rock shelter or a cave mouth(Environment 2010)

The study area lies within a landscape feature listed by the Code of Practice as having archaeological sensitivity: it lies within 200m of a cliff face and 200m of water. The study area has significant sandstone outcrops and overhangs and three registered AHIMS sites are located in the locality, the closest being 280m away.

Inspection of the sandstone outcrops in the study area was undertaken where physically possible. The majority of the sandstone outcrops could not be inspected because the surrounding vegetation impaired visibility, or the outcrops were physically inaccessible or even too dangerous to reach. Therefore a small section of the rock face (approximately 6m) was inspected. The surfaces that could be inspected were found to be course and heavily encrusted with salt. This is consistent with the northerly exposure of the sandstone outcrops to the wind and water erosion.

Together with the drop off of the land on the northern section of the study area towards Freshwater Beach, and the exposed nature of the site with steep slopes, the landform of the study area along



this northern section was assessed to be inhospitable for habitation and unlikely to contain useable rock shelters, platforms fit for engraving or areas of insitu deposit with the potential to contain Aboriginal objects.

No Aboriginal objects or sites were found in the study area.

#### 1.7.2 Ground disturbance

This due diligence assessment has identified that the majority of the study area has been subject to past ground disturbance through the clearing of vegetation, and the construction of the current residence. The Due Diligence Code of Practice defines disturbed land:

Sec 7.5 (4) For the purposes of this clause, land is disturbed if it has been the subject of human activity that has changed the lands surface, being changes that remain clear and observable.

#### This includes disturbed land via:

- (a) soil ploughing
- (b) construction of rural infrastructure
- (c) clearing of vegetation
- (e) construction of buildings and the erection of other structures
- (f) construction or installation of utilities and other similar services (such as above or below ground electrical infrastructure, water or sewerage pipelines, stormwater drainage and other similar infrastructure)

The original vegetation of the study area has been subject to disturbance through extensive clearance to accommodate the construction of the premises. Areas where sandstone had been cleared of vegetation or soil was inspected (Figure 8) within the study area (Figure 9, Figure 10). A grotto feature has been partially filled and used a landscape feature (Figure 11) further illustrating modification of the ground surface.

The ground surface was assessed to be disturbed by the construction, clearing and landscaping.

Figure 8: Inspection of sandstone wall (view south).





Figure 10: Sandstone steps (view south).

Figure 11: Modified sandstone blocks for internal garden (view south).





## 1.8 Conclusions and recommendations

The following recommendations regarding Aboriginal heritage are based on consideration of:

- Statutory requirements under the National Parks and Wildlife Act 1974 as amended
- DECCW Due Diligence Code of Practice
- The results of the background research, site survey and assessment
- The likely impacts of the proposed development

#### It was found that:

- The southern section of the study area has been significantly disturbed by construction and landscaping.
- The northern section of the study area contained significant sandstone outcrops and overhangs although they were degraded with sheer faces and not conducive to habitation.
- The area closest to Freshwater Beach, was partially obscured by vegetation and ground surface visibility was poor.

The following recommendations are therefore made:

- The study area has low archaeological potential and significance.
- If suspected Aboriginal objects are located during construction, works should cease, and an Aboriginal heritage consultant contacted to assess the finds and make necessary recommendations if further investigation or permits are required.
- If human remains, or suspected human remains, are found in the course of the activity, all
  work in the vicinity should cease, the site should be secured and the NSW Police and the
  Office of Environment and Heritage should be notified.

Kind regards,

Brye Marshall

Heritage Consultant Artefact Heritage 0437 160 479 Brye.marshall@artefact.net.au



## REFERENCES

Attenbrow, V. 2010 Sydney's Aboriginal Past: Investigating the Archaeological and Historical Records. 2nd ed. Sydney, UNSW Press.

Ashton, P. Manly, Dictionary of Sydney, 2008. <a href="https://dictionaryofsydney.org/entry/manly">https://dictionaryofsydney.org/entry/manly</a> (Accessed 1/07/2021).

Bryan, J.H. 1966. Sydney 1:250 000 Geological Sheet SI/56-05, 3<sup>rd</sup> Ed, Geological Survey of New South Wales. Sydney.

DECCW 2010a Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW.

DECCW 2010b Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW.

Environment, C.C. and W. 2010 Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales. Sydney, Department of Environment, Climate Change and Water.

Mary Dallas Consulting Archaeologists 2011. Royal Far West Manly Beach NSW. Cultural Heritage Assessment and Aboriginal Archaeological Assessment.

McCardle Cultural Heritage Pty Ltd 2008. Proposed Redevelopment at the Australian Institute of Police Management at North Head, Manly. Indigenous Archaeological Assessment

Northern Beaches Council. Aboriginal Sites Awareness.

https://files.northernbeaches.nsw.gov.au/sites/default/files/documents/general-information/aboriginal-heritage/aboriginal-sites-awareness7.pdf (Accessed 01/07/2021)

OEH 2012 Guide to completing the AHIMS Site Recording Form.

Oliver Brown Consulting Archaeology 2011. 50 Greycliffe Street, Queenscliff. Due Diligence Aboriginal Heritage Impact Assessment.

Oliver Brown Consulting Archaeology 2011. 28 Rodborough Road, Frenchs Forest, Due Diligence Aboriginal Heritage Impact Assessment.

Pocket Oz. Queenscliff, Pocket Guide to Sydney.

https://www.visitsydneyaustralia.com.au/queenscliff.html (Accessed 1/07/2021).

Warringah Shire Council 1985. Coastal Management Strategy Warringah Shire.

Wing J. 1992. Warringah Heritage Study, Historical Context Report. Warringah Shire Council.

