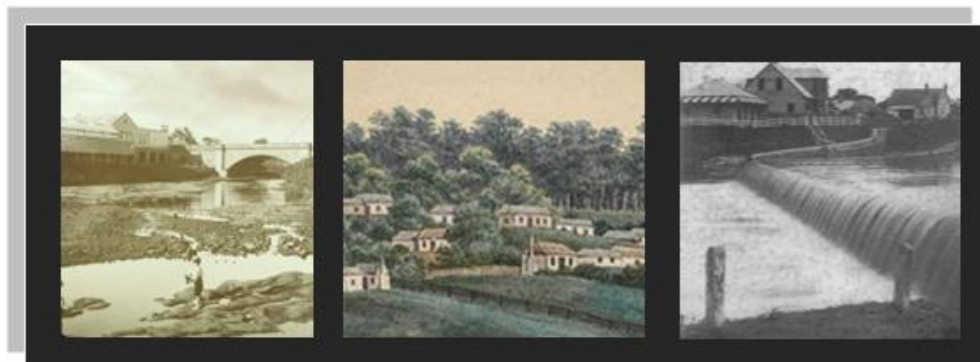


'RIVERSIDE' Parramatta Development Project 12-14 Phillip Street and 333-339 Church Street Parramatta

Aboriginal archaeological assessment

Report to PCC DevCo1 Pty Ltd

January 2014



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Executive summary

Artefact Heritage was commissioned by PCC DevCo1 Pty Ltd to undertake an Aboriginal archaeological assessment for the site of the proposed 'RIVERSIDE' development project in the Parramatta CBD. The assessment will accompany a Development Application (DA) for the development.

The subject site is located on the south bank of Parramatta River and is contained by Church, Marsden and Phillip Streets. The site includes an irregular area covering 5993m², fronting the river between Bernie Banton Bridge and Lennox Bridge.

The subject site is listed as highly sensitive in the Parramatta Aboriginal Heritage Study and the majority of the subject site listed as highly sensitive in the Parramatta DCP.

The majority of the subject site is within the mapped extent of the Parramatta Sand Body which is of high Aboriginal archaeological sensitivity. Geotechnical investigations confirmed the presence of the Sand Body within the southern section of the subject site.

Overall there has been a moderate level of ground disturbance within the subject site related to previous development, and erosion as a result of major flooding events.

The archaeological potential of the sections of the subject site adjacent to the Parramatta River were found to be low with the archaeological potential of the remainder of the subject site found to be high. The archaeological significance of the subject site cannot be accurately determined until the results of further archaeological investigations are known.

On the basis of these findings, the Aboriginal archaeological assessment recommends the following:

- An Aboriginal Heritage Impact Permit (AHIP) is sought for test and or salvage excavations within areas of high potential within the subject site. The timing of the excavations would be discussed with the context of the project's delivery plan.
- A research design for archaeological excavation would be prepared by a suitably qualified archaeologist and would be included in the AHIP application.
- Prior to the application for an AHIP comprehensive Aboriginal consultation would be undertaken in accordance with the Office of Environment and Heritage (OEH) consultation guidelines.
- A Cultural Heritage Assessment Report would be prepared as part of this Aboriginal consultation.
- A meeting with OEH and the Heritage Division should be organised as early as possible in the planning process in order to discuss the application for an AHIP in relation to any non-Indigenous heritage excavation works that may be required under the NSW *Heritage Act 1977*.
- If human remains are located at any stage of the development, work must stop immediately, the site should be secured and the NSW Police notified. If the remains are found to be Aboriginal, the OEH,

Deerubbin Local Aboriginal Land Council and a heritage consultant should be notified. Further archaeological investigations may be required before work can continue. If human remains are uncovered, an additional AHIP will be required.

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1.0 Introduction

1.1 Background

Artefact Heritage was commissioned by PCC DevCo1 Pty Ltd to undertake an Aboriginal archaeological assessment for the site of the proposed 'RIVERSIDE' development in the Parramatta CBD. The assessment will accompany a Development Application (DA) for the development.

This study aims to assess the impact of the proposed development on Aboriginal objects and areas of archaeological potential within the study area, to outline the opportunities and constraints on the proposed development and to recommend if further archaeological investigations are required to fulfil legislative obligations.

1.2 The subject site

The subject site is located on the south bank of Parramatta River between the Bernie Banton Bridge on Marsden Street and Lennox Bridge on Church Street (Figure 1). The site includes an irregular area covering 5993m², with frontages on Church Street to the east, Marsden Street to the west, Phillip Street to the south, and Parramatta River to the north (Figure 2). The properties included within the site are as follows:

- Lennox Street Car Park: 12-14 Phillip Street and 331A Church Street
 - Lot 1, DP 791693
 - Lot 2, DP 791693
- 333 Church Street
 - Lot 3, DP 825045
- 339 Church Street
 - Lot A, DP 333263

The site is currently occupied by a car park and a two storey building at 333 Church Street. Other retail and commercial structures are located on lots that immediately surround the subject site.

1.3 The proposed development

It is proposed that the subject site be developed for residential and commercial purposes (Figures 3 and 4). The development will comprise the following elements:

- A design excellence standard building interfacing with and activating Parramatta River's edge.

'RIVERSIDE' Parramatta Development Project – 12-14 Phillip Street and 333 and 339 Church Street,
Parramatta

- Six levels of residential basement car parking.
- A three level podium set back from the Parramatta River foreshore accommodating a range of uses including a ground floor shared loading dock and retail colonnade of cafés and restaurants, Councils Green Star Discovery Centre on level 1 designed and integrated with a Green Star Conference Centre on level 2 and building plant and residential amenities on level 3.
- Above the podium a 37 storey premium residential tower delivering approximately 413 residential apartments in close proximity to existing transport and services.

The development will have a maximum building height limit of RL 156.2 equivalent to a height of 147.65 metres above ground, and a maximum ground floor area (GFA) of 46,220 square metres. The podium will have a maximum height of RL34 equivalent to approximately 26 metres.

The basement level will extend to a depth of around 17.7 metres below ground level.

The river bank would be terraced, with its lowest level at the same level as the uppermost basement space. The extant buildings at 333-337A Church Street would be demolished to accommodate the landscaped public area overlooking the river.

RIVERSIDE Parramatta aims to transform this currently under-utilised site into a First Class facility creating many benefits for Parramatta's community.

Figure 1: Location of the subject site (base map © LPI- Department of Finance and Services)

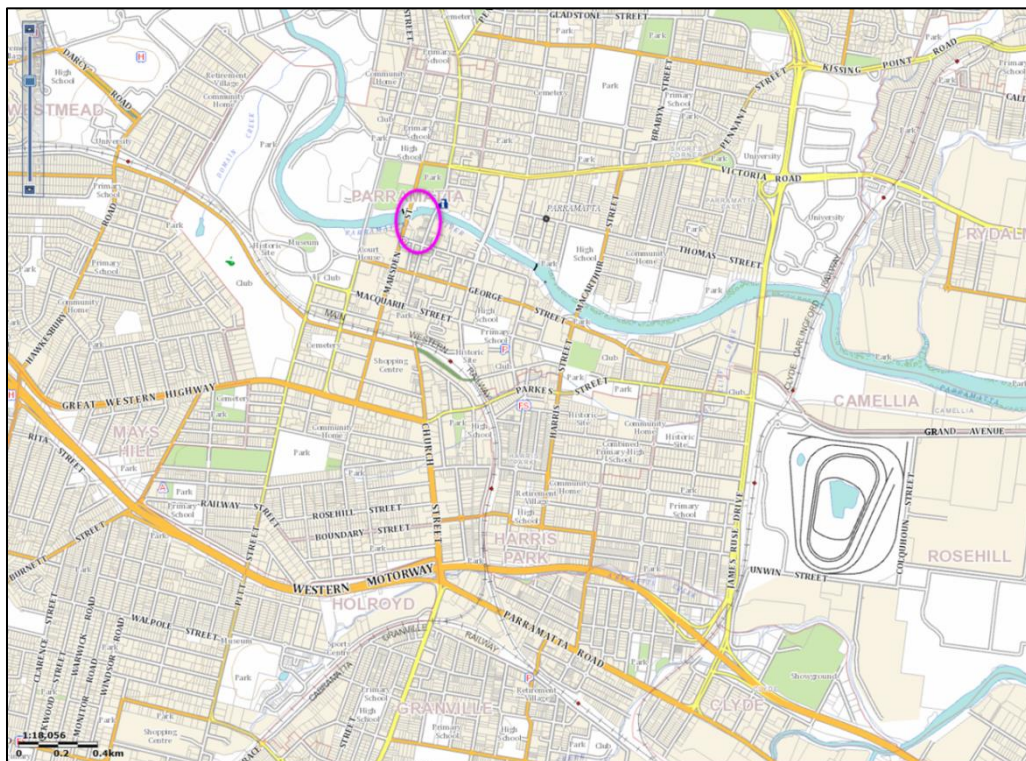


Figure 2: The subject site (base map © LPI – Department of Finance and Services)



Figure 3: Proposed development site plan.

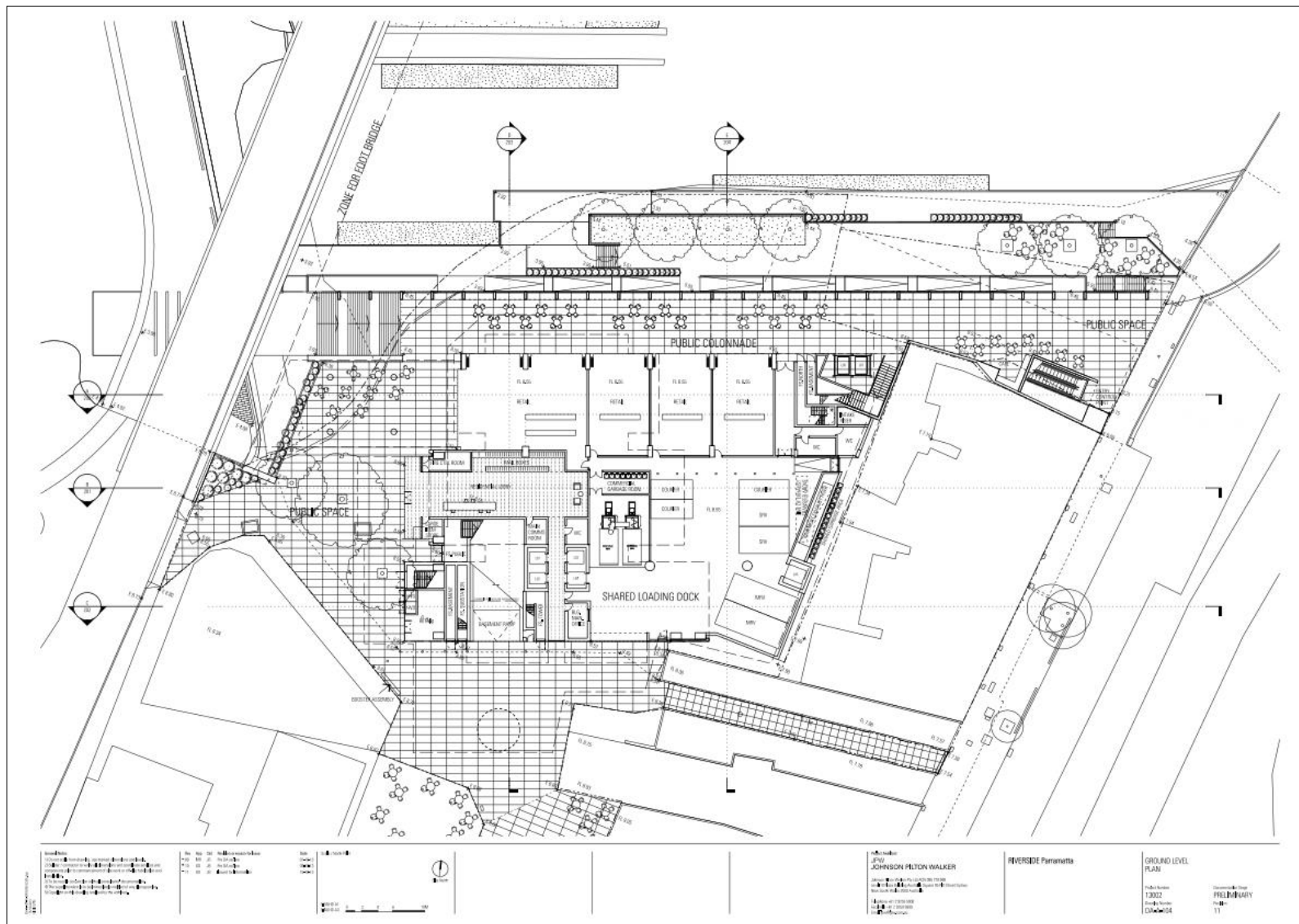
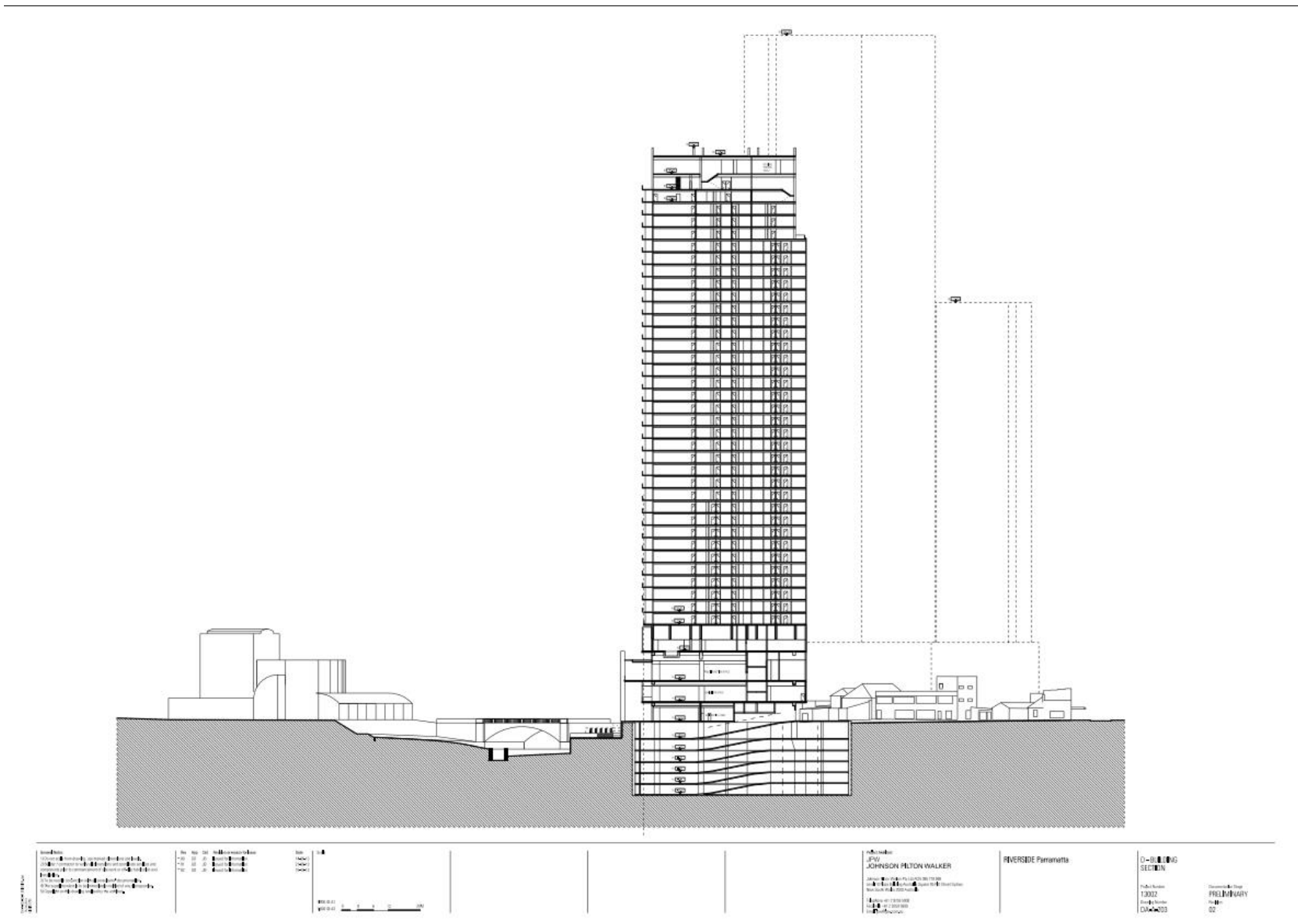


Figure 4: Proposed development elevations.



1.4 Previous studies

This study is informed by an earlier report, *Heritage Investigations and Advice: 12-14 Phillip Street and 333 Church Street, Parramatta, NSW* (AHMS 2011a). The earlier report outlined the landscape and archaeological context of the subject site and provided an assessment of archaeological potential. The AHMS (2011a) study included much of the current subject site.

The landscape and archaeological context and assessment of archaeological potential discussed in the AHMS report forms the basis of the current assessment, while additional research has been carried out to address the Aboriginal archaeological values of the parcels of land that were not included in the 2011 study area.

1.5 Objectives of the assessment

This assessment complies with the Office of Environment and Heritage's (OEH) *Code of Practice for Archaeological Investigation of Aboriginal Objects* in NSW (2010). The objectives of this assessment are therefore, to:

- Describe the proposed development.
- Outline Aboriginal community involvement and consultation.
- Discuss the Aboriginal historical context of the subject land.
- Discuss the archaeological context of the subject land, which includes previous archaeological investigations in the local area.
- Discuss the environmental context of the subject land.
- Develop an archaeological predictive model.
- Describe and analyse Aboriginal sites located within the subject land.
- Develop a significance assessment for these sites and areas of Potential Archaeological Deposit (PAD) that addresses archaeological values.
- Impact assessment for Aboriginal sites and areas of PAD in the subject land.
- Recommend management and mitigation measures for Aboriginal sites and areas of PAD in light of the proposed development.

A site survey was not undertaken for this assessment as the subject site is developed and natural ground surface would not have been visible.

1.6 Investigators and Contributors

This report has been prepared by Principal Archaeologist Dr Sandra Wallace and Archaeologist Georgia Wright.

1.7 Aboriginal community involvement

Consultation with the DLALC and other Aboriginal stakeholder groups should continue throughout the project.

2.0 Aboriginal historical and archaeological context

2.1 Aboriginal historical context

The word Parramatta is thought to be a Darug in origin. Collins noted “Pa-ra-mat-ta is the name by which the natives distinguished the part of the country on which the town stood” (Collins 1798 (1975): 137). The Darug, or Dharruk, language was spoken across the Cumberland Plain, from Appin in the south to the Hawkesbury River in the north, and west of the Georges River, Parramatta and Berowra Creek (Attenbrow 2010: 34). Those that lived in and around Parramatta were known as the Barramatagal, or Booramedigal.

In 1788, on their first trip up the Parramatta River, Surgeon White described the point at which “the tide ceased to flow”, now Parramatta Park:

The banks of it were now pleasant, the trees, immensely large, and at a considerable distance from each other; and the land around us flat and rather low, but well covered with the kind of grass just mentioned (which was ‘tolerably rich and succulent and in height nearly up to the middle’)(Cited in Attenbrow 2010: 41).

Parramatta was a focal point for Aboriginal occupation as the natural landscape was rich in resources. In 1788 Governor Arthur Phillip reported that bark huts, fire places, collected fern root and shells, hunted animals bones and the fur of a ‘flying squirrel’ or possum were seen at a campsite at Parramatta (then Rose Hill) (Attenbrow 2010: 48). On another instance he also noted that “...these parts are frequented by the natives... undeniably proved by the temporary huts which were seen in several places. Near one of these huts, the bones of kangaroo were found...” (Stockdale 1789).

The traditional land of the Barramatagal people was appropriated by colonists who claimed areas for settlement and agriculture. Natural resources such as water and timber were exploited by colonists, at the expense of the Barramatagal people. The introduction of diseases such as smallpox also devastated the local population. In 1789 over half of the Aboriginal population in the Sydney region are believed to have died of smallpox, which had spread across the Cumberland Plain and over the Blue Mountains (Butlin 1983).

The relationships between colonists and the Barramatagal people were mixed. There are instances where conflict arose, in particular as the settlement expanded and numerous incidents of theft were reported (Collins 1798: 77; 178). There are also examples of amicable interactions such as when soldiers at Parramatta exchanged their rations of salted meat for fish (Collins 1798: 139).

In January 1815 Governor Lachlan Macquarie opened the Native Institution at Parramatta, which aimed to prepare Aboriginal children for a British life. The children learnt Christian religion, reading, writing and arithmetic. The boys were also taught agricultural principles and practices, while the girls were taught needlework. The children demonstrated their new skills at the Annual Feast (Attenbrow 2010: 84).

This annual 'Native Feast' was held by Governor Macquarie behind St Johns Church to encourage Aboriginal people to leave their children at the school (Figure 5). The first feast took place on 28 December 1816 and was attended by 179 Aboriginal people. Attendance rose each year, in 1818 reaching about 300, which included people who had travelled from beyond the Blue Mountains (Attenbrow 2010: 22). It was tradition that those who came from the west camped near Clay Cliff Creek for the duration of their stay (Kass et al 1996: 105). At the annual feast Governor Macquarie presented an engraved brass breastplate to 'chiefs', individuals who were not necessarily recognised as leaders in their own communities but who the Governor felt deserved this honour.

Aboriginal people continued and continue to live in Parramatta although historical records of their culture and customs are scarce after the Native Institution was closed and the annual feast came to an end in 1823 and 1835 respectively.

Figure 5: Augustus Earle, The annual meeting of the native tribes at Parramatta, NSW (NLA, Rex Nan Kivell Collection NK 12/57)



2.2 Aboriginal material culture

The existing archaeological record is limited to certain materials and objects that were able to withstand degradation and decay. As a result the most common type of Aboriginal objects remaining in the archaeological record are stone artefacts. Archaeological analyses of these artefacts in their contexts have provided the basis for the interpretation of change in material culture over time. Technologies used for making tools changed, along with preference of raw material. Different types of tools appeared at certain times, for example ground stone hatchets are first observed in the archaeological record around 4000 years before present (yBP) in the Sydney region (Attenbrow 2010:102). It is argued that these changes in material culture were an indication of changes in social organisation and behaviour.

The Eastern Regional Sequence was first developed by McCarthy in 1948 to explain the typological differences he was seeing in stone tool technology in different stratigraphic levels during excavations such as Lapstone Creek near the foot of the Blue Mountains (McCarthy 1948). The sequence had three phases that corresponded to different technologies and tool types (the Capertian, Bondaian and Eloueran). The categories have been refined through the interpretation of further excavation data and radiocarbon dates (Hiscock & Attenbrow 2005, JMcDCHM 2005a). It is now thought that prior to 8500 years yBP tool technology remained fairly static with a preference for silicified tuff, quartz and some unheated silcrete. Bipolar flaking was rare with unifacial flaking predominant. No backed artefacts have been found of this antiquity. After 8500 years yBP silcrete was more dominant as a raw material, and bifacial flaking became the most common technique for tool manufacture. From about 4000 years yBP to 1000 years yBP backed artefacts appear more frequently. Tool manufacture techniques become more complex and bipolar flaking increases (JMcDCHM 2006). It has been argued that from 1400 to 1000 years before contact there is evidence of a decline in tool manufacture. This reduction may be the result of decreased tool making, an increase in the use of organic materials, changes in the way tools were made, or changes in what types of tools were preferred (Attenbrow 2010:102). The reduction in evidence coincides with the reduction in frequency of backed blades as a percentage of the assemblage.

After European colonisation Aboriginal people of the Cumberland Plain often continued to manufacture tools, sometimes with new materials such as bottle glass or ceramics. There are a number of sites in the Sydney basin where flaked glass has been recorded, for example at Prospect (Ngara Consulting 2003) and Oran Park (JMcDCHM 2006).

2.3 Site types

Material traces of Aboriginal occupation found throughout the landscape are identified in legislation and in literature as Aboriginal sites. The main site types found in the Sydney region are:

- **Stone artefacts:** Flaked and ground stone artefacts are the most common trace of Aboriginal occupation in the Sydney region. Aboriginal people used particular techniques to flake stone and these changed over time. The approximate age of a tool can often be diagnosed by the way that it was made. Stone artefacts are most often found in scatters that may indicate an Aboriginal campsite was once present. Stone artefacts may also be found as isolated finds. Stone tools in the Sydney region are most often made from raw materials known as silcrete, tuff and quartz. These are all easily flaked and form sharp edges, which can be used for cutting or barbing spears. It is likely that stone artefacts, either on the surface or buried, exist within the study area.
- **Rock shelters with deposit:** Rock shelters were used by Aboriginal people for habitation, rest places and as art or ceremonial sites. Deposits can build up on the floor of these shelters over time and bury traces of Aboriginal occupation. If these deposits are not disturbed, rock shelters can provide an intact stratigraphy that can tell us about the way Aboriginal occupation changed through time. It is unlikely that rock shelters exist on the study area due to the lack of suitable sandstone formations.
- **Shell middens:** Shell middens are remains of campsites in which the primary traces are shell and/or bones of fish. Shell middens are often found close to rivers or streams and are either along banks or within enclosed shelters. The majority of shell middens in the Sydney region were destroyed when they were mined for lime in the early days of the colony. It is possible that shell midden material may be found within the study area due to its proximity to the Parramatta River.
- **Rock engravings/Rock art:** Rock engravings are often found in Hawkesbury geologies on flat sandstone platforms. Shapes of animals, ancestor figures or other symbols were carved into the sandstone. Weathering has affected the visibility of many rock engravings. Other rock art of various forms has also been recorded in the Sydney basin. Stencils, charcoal drawings and paintings are examples of the techniques used by Aboriginal people. Rock art is relatively rare, but is more common on sandstone geologies than on the plains of western Sydney. It is unlikely that engravings exist on the study area as there are no suitable horizontal stone platforms or rock shelters.
- **Axe grinding grooves:** Axe grinding grooves are created when axe blanks (often basalt cobbles) are shaped by rubbing the stone across an abrasive rock such as sandstone, often using water. Sharpening axes and other tools also forms them. Axe grinding grooves are often found on the banks of streams or rock pools. It is unlikely that axe grinding grooves exist within the study area as no suitable sandstone platforms exist.
- **Scarred trees:** Aboriginal people practiced tree marking or scarring for a variety of reasons. Large scars are often the result of a tree being debarked for a canoe blank and smaller scars may have been the result of making shields or coolamons (storage vessels). Tree marking may have been the result of ritual practices, or associated with burial. Scarred trees that remain today would be over 150 years old and the scar would retain certain characteristics that enable its identification as cultural. It is unlikely that a scarred tree will be located on the study area as there are no suitable old growth trees remaining. .

- Post-contact sites: Sites which provide evidence of early interaction between Aboriginal people and colonists are known as contact sites. Artefacts found at contact sites may include flaked glass or ceramic. It is possible that a contact site will be located within the study area as Aboriginal people lived in the area after colonisation.
- PAD: An area of PAD is identified if there is a chance that archaeological material exists below the surface or on the surface but obscured from view. An Aboriginal object does not need to be recorded for an area of PAD to be specified. It is likely that an area of PAD will be identified in the study area.

2.4 Registered Aboriginal sites in the local area

An extensive search of the Aboriginal Heritage Information System (AHIMS) was conducted on 8 August 2013 to identify recorded Aboriginal sites in and around the study area. The search area extended about one kilometre around the study area.

Thirty-eight Aboriginal sites were identified within the search area (Table 1). No Aboriginal sites are located within the study area.

Table 1: Frequency of site features from AHIMS data

Site Feature	Frequency	Percentage
Artefact	10	27
Modified Tree (Carved or Scarred)	2	5
Artefact and Modified Tree (Carved or Scarred)	2	5
PAD	21	55
Artefact and PAD	3	8

The study area is within the mapped extent of the Parramatta Sand Body (see Section 3.3 for detail). Figure 11 shows the approximate extent of the Sand Body. Archaeological investigations of the Sand Body have uncovered evidence of long term Aboriginal occupation that may date to 30,000 years ago (JMcDCHM 2005a). These investigations have contributed to understandings of Aboriginal land use, raw material preference and technologies and how these changed over time. The Sand Body is also of cultural significance to the local Aboriginal community. A section of the Sand Body at Robin Thomas Reserve, Harris Park has been listed on the State Heritage Register under Ancient Aboriginal and Early Colonial Landscape and is a dedicated conservation area.

2.5 Parramatta Aboriginal Heritage Study

The entire study area has been identified in the Parramatta Aboriginal Heritage Study as being of high archaeological sensitivity (MCDA 2004) (Figure 6). Areas of high archaeological sensitivity were identified within a 50 metre radius of a recorded Aboriginal site and where the natural landscape appeared not to have been disturbed.

2.6 Parramatta DCP 2011 Aboriginal Sensitivity Map

With the exception of a small portion of the study area on the northern bank of the Parramatta River, the study area is identified on the Parramatta DCP as being of high archaeological sensitivity (Figure 7).

Figure 6: Parramatta Aboriginal Heritage Study (Parramatta River Foreshore Plan 2009: 18). Areas of high sensitivity hashed in blue. Subject site outlined in red.

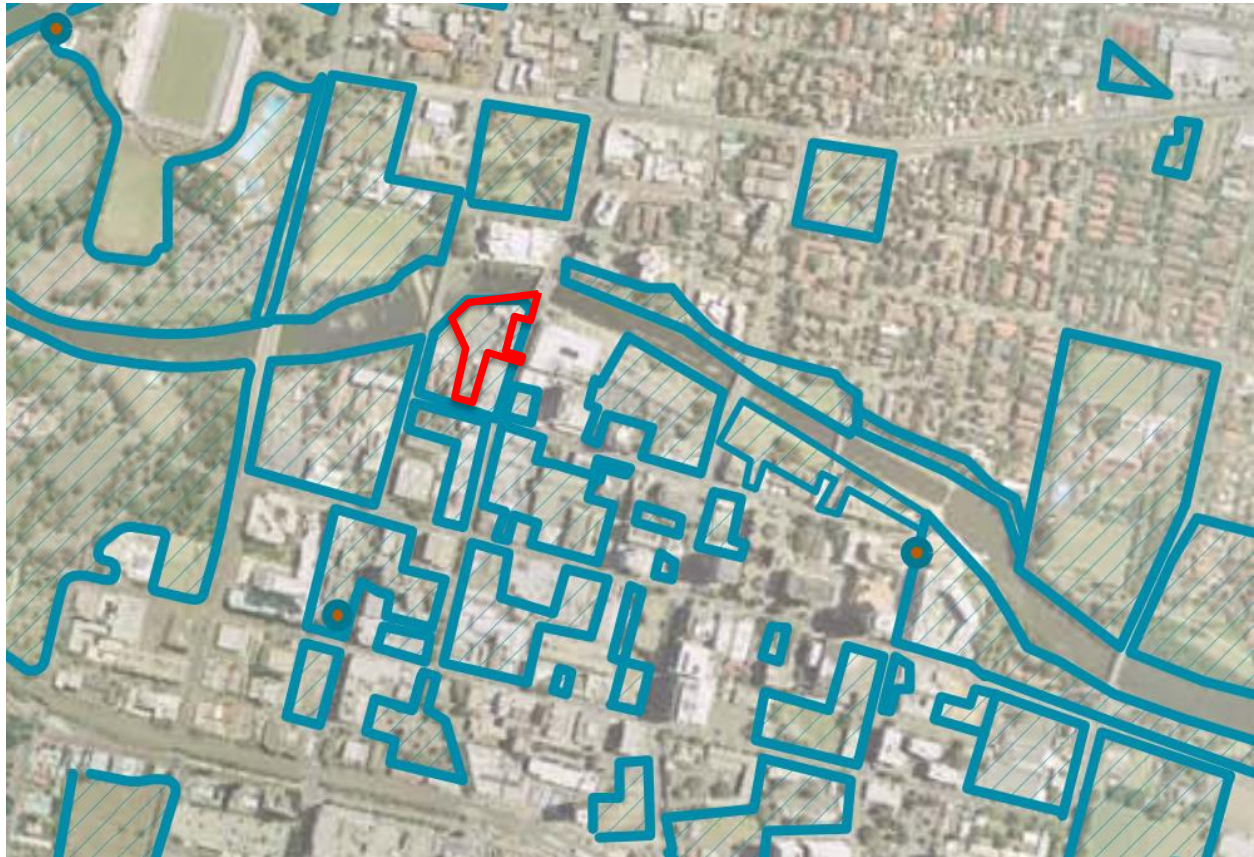


Figure 7: Aboriginal sensitivity map (Parramatta DCP 2011). Areas of high archaeological sensitivity shaded red. The entire block on which the subject site is located is designated high (arrowed).



2.7 Previous archaeological investigations

A number of Aboriginal archaeological investigations have been conducted in Parramatta. Of most relevance are investigations undertaken at 330 Church Street (20 metres east of the subject site), at the Parramatta Justice Precinct (100 metres west of the subject site), as well as those that investigated the Parramatta Sand Body.

330 Church Street (AHMS 2011b)

In 2011 AHMS conducted a preliminary Aboriginal archaeological due diligence assessment of 330 Church Street. The site was found to be located within the curtilage of the Parramatta Sand Body and to also contain a portion of a low-lying Holocene (<10,000 years BP) floodplain of the Parramatta River. Despite a high level of disturbance it was found that there was potential for Aboriginal archaeological materials to exist within the northeast, east and southeast quadrants of the site.

Parramatta Justice Precinct (Haglund and Associates 2007)

In 2007, prior to the construction of the Parramatta Justice Precinct, Haglund and Associates conducted an archaeological investigation of the area bounded by Parramatta River to the north, Marsden Street to the east, a car park to the west, and a line of buildings that front George Street to the south. The archaeological deposit was found to have been heavily disturbed by colonial construction activities and wind and sheet erosion. The site was found to contain an assemblage that represented a number of events separated in time but that had been mixed together by subsequent disturbances. The wide range

of material recovered however, indicated that the area was used for several millennia although "...never as a major campsite. It was visited from time to time by small groups or individuals who chose to stop here and to manufacture some artefacts whilst here. Most tools and usable flakes were apparently taken away for use elsewhere; there is little evidence of artefact use on site" (Haglund and Associates 2007: 36).

Silcrete and tuff artefacts, such as cores and flakes were recovered along with cobble artefacts such as anvils. Some silcrete artefacts showed evidence of heat treatment, which indicate that this process was used in the manufacture of stone tools at this site. It was also determined that the raw material used in the manufacture of tools had, in the most part, been partially prepared before being brought to the site as no manuports or traces of cortex were identified on flakes and cores. In addition, if the initial reduction of the raw material had commenced at this site it would be expected that flakes with a cortical dorsal faces would have been found. The main core reduction technique used on the site was unifacial, that is, flakes were struck in a sequence in the same direction from a platform or platforms. Little evidence of bipolar reduction was found.

109 – 113 George Street (JMcDCHM 2005b)

In 2005 JMcDCHM conducted an excavation at 109 – 113 George Street prior to the construction of a high rise residential apartment block and underground car park. This site was situated on the Parramatta Sand Body and in which phases of prehistoric occupation (Pleistocene) and more recent occupation (Holocene) were revealed. Low to moderate densities of stone artefacts were recovered in all areas excavated. The stone artefact assemblage is unique in that it shows changes in raw material preference and stone reduction strategies over time. The assemblage consists of 4,775 artefacts, the dominant raw material of which is silcrete. Seventy-five per cent of artefacts were recovered within the first 40 centimetres of the deposit, 16 per cent within 40 to 60 centimetres and 8 per cent between 60 and 80 centimetres. Other raw materials in the assemblage, in order of frequency, include silicified tuff, quartz and volcanic and other igneous materials.

This site (RTA-G1) was assessed to be of high archaeological significance. At the time at which the report was written it was the oldest site of Aboriginal occupation in Sydney and on the south eastern coastline of Australia, with a date of 30,000 years BP. This date represented the maximum basal date for occupation, and was taken from a sterile layer beneath the lowest artefacts (JMcDCHM 2005b:135).

1 Smith Street (JMcDCHM 2004)

JMcDCHM conducted an excavation at 1 Smith Street prior to the construction of Sydney Water's office on the corner of Smith and Darcy Streets. The existing building was demolished and its concrete slab removed in sections to be excavated. Seventy-nine test pits, located across the site, were excavated by hand. Forty-nine contained artefacts, which accounted to a total of 198. Artefact densities across the site

were generally low, with only two artefacts per square metre. In Area A however, a knapping event was identified.

Despite a high level of disturbance across the site, areas of intact archaeological deposit were found. It proved that other sites in Parramatta that have been subject to a high level of disturbance also have the potential to contain an intact archaeological deposit.

2.8 Predictive models

Beth White and Jo McDonald (2010) developed a predictive model for site location on the Cumberland Plain based on archaeological excavations in the Rouse Hill Development Area (RHDA). It draws on and supports earlier models that predicted a correlation between site location and proximity to permanent water sources but also stressed the relationship between topographical unit and Aboriginal occupation. It was found that artefact densities were highest on terraces and lower slopes within 100 metres of water. A stream order model was used to differentiate between artefact densities associated with intermittent streams as opposed to permanent water. It was found that artefacts were most likely within 50 to 100 metres of higher (fourth) order streams, within 50 metres of second order streams, and that artefact distribution around first order streams was not significantly affected by distance from the watercourse (White and McDonald 2010: 33). Landscapes associated therefore, with higher order streams (second order or greater) were found to have higher artefact densities and more continuous distribution than lower order intermittent streams.

Based on earlier stream models and the results of excavations in Parramatta, JMcDCHM (2005a) developed a predictive model for the local area. It was determined that:

- The Parramatta Sand Body has the potential to contain a stratified deposit that documents long term Aboriginal occupation and changes in climatic and other environmental conditions. JMcDCHM (2005a: 36) noted that “the depth of the sand on the terrace back plain (Parramatta Sand Body), the original deposition of which pre-dates human occupation of the Australian continent...provides an ideal matrix for the preservation of archaeological evidence from the earliest prehistoric occupation of the Sydney region.”
- The location of Parramatta, adjacent to a permanent watercourse, and with access to a wide range of natural resources, means that archaeological evidence of Aboriginal occupation could be extensive.
- In the absence of preferred stone raw materials such as silcrete and mudstone in the immediate area it is possible that evidence of use of local stones such as ironstone and sandstone will be found. In addition the incidence of cortical surfaces on imported stones such as silcrete, chert or silicified tuff should be small as there is some distance between Parramatta and the source of these stones.

JMcDCHM also noted that the likelihood of archaeological material being found is determined by the soil profile, the landform and geomorphology of the area and the extent of previous land use disturbance.

JMcDCHM predicted that evidence of prehistoric and long term Aboriginal occupation will be found on the Parramatta Sand Body, in close proximity to permanent freshwater sources, such as the Parramatta River, and a wide range of natural resources. JMcDCHM (2005a:36) stated that such areas are “likely to contain archaeological evidence for repeated use, of both short and long term duration, by small and large groups of people.”

2.9 Archaeological implications for the subject site

Evidence of the long term occupation in Parramatta has been recovered from the Parramatta Sand Body and has been dated as far back as the late Pleistocene to the more recent past. Several portions of the study area are included within the mapped extent of the Parramatta Sand Body. These portions have the potential to contain evidence of the long term Aboriginal occupation and to show how culture, customs and technologies changed over time. Archaeological material has also been recovered from outside the Sand Body at a number of sites in in Parramatta.

Observations of the Burramatagal people at the time of colonisation indicate that Parramatta was a focal point of occupation and evidence recovered in previous archaeological investigations indicate that particular areas were used to manufacture stone tools and to camp and other areas were used to hunt animals or to collect plants. The study area has the potential to provide information about Aboriginal land use and if and how it changed over time.

Figure 8: Parramatta Sand Body (Dr Peter Mitchell, approximate extent of Sand Body). Location of the subject site shown with a red circle.



3.0 Landscape context

3.1 Landform

To the south of the river, the subject site is mainly occupied by a sealed car park which slopes toward the river, with a fall of about two metres across most of the area and a steeper fall of about 4-6 metres between the car park level and the banks of the river (Douglas Partners 2011:2).

The portion of the subject site to the north of the river includes the car park to the west of the Riverside Theatre and the northern river bank from Lennox Bridge to the west of the Marsden Street weir. The area covered by the car park is flat, while the river bank which slopes steeply until it meets the stone retaining wall along the riverside.

3.2 Hydrology

The study area is divided into two by the Parramatta River. In the past the Parramatta River was a freshwater stream that extended to the coastline. Ten thousand years ago the coastline would have been 15 kilometres further east than it is today (Attenbrow 2010). As sea levels raised the lower reaches of the Parramatta River, now Sydney Harbour filled.

3.3 Geomorphology

The subject site is underlain by Ashfield Shale, a Triassic Wianamatta Group geological unit and at depth by the Mittagong Formation and Hawkesbury Sandstone (Herbert 1983).

Geotechnical testing at the site has confirmed the presence of the Parramatta Sand Body (Figure 9). The Parramatta Sand Body exists to a depth of 7 metres and is overlain by 200 to 500 millimetres of fill underneath the car park with deeper levels (between one and 2.5 metres) behind the Church Street commercial strip (AHMS 2011a: 62). It should be noted that the northern portion of the site has been subject to severe erosion over a series of flood events. In particular, the 1889 flood event resulted in severe erosion of either side of the Parramatta River extending as far south as the break in slope in the northern portion of the site.

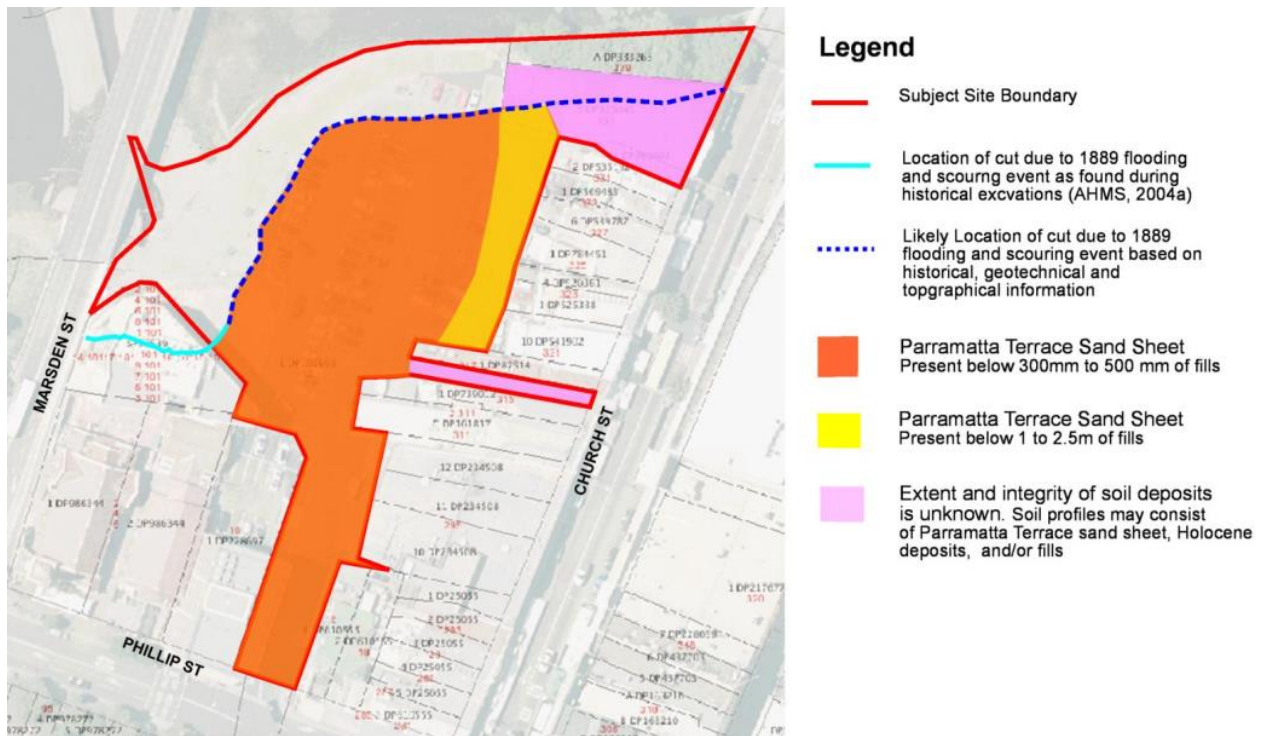
The Parramatta Sand Body is thought to have been deposited as a terrace four to six meters above the normal water level over a series of floods of the Parramatta River. It extends either side of the Parramatta River between Charles and Alfred Streets and in the eastern margin of Parramatta Park. The Sand Body has a well-developed but varied soil profile. The topsoil has most often been disturbed by construction

activities and the subsoil typically consists of yellow orange or yellow brown sandy clay with a porous fabric that becomes paler and slightly mottled at depth (SHR Ancient Aboriginal and Early Colonial Landscape). The following geomorphological description of the sand body is taken from the State Heritage Register listing for Robin Thomas Reserve (and surrounds), to the southwest of the current study area. The listing is in part aimed at preserving a representative sample of the highly significant sand body which is thought to extend into the current study area.

'The geomorphic origin of the sand body is uncertain but the present interpretation is that the Sand Body was deposited by the Parramatta River on a terrace 4 to 6 metres above normal water level, on either side of the river between Charles and Alfred Streets and in the eastern margin of Parramatta Park. The Sand Body was deposited as a terrace (abandoned flood plain) over time during floods. The bulk of the Sand Body forms a levee located on the south side (right bank) of Parramatta River just above the 1:100 average recurrence interval flood level. The Sand Body has a well-developed, but varied, soil profile. Topsoil materials are generally disturbed by European activities. Where subsoils are intact they typically consist of yellow orange or yellow brown sandy clay with an earthy (pourous) fabric that becomes paler and slightly mottled with depth. The upper parts of the soil profile are usually heavily mixed. The profile of the sand suggests that the main body of sand is of late Pleistocene age and recent thermoluminescence dates obtained from an excavation undertaken at 140 Macquarie Street by Comber Consultants in 2010, have shown that the top of the undisturbed sand (below the level of Aboriginal occupation) is between 50,000 to 58,000 years old' (SHR nominated site listing for 'Parramatta Sand Body Conservation Area and Military Barracks Archaeology site').

The Sand Body is therefore significant in a number of ways. It is an important cultural landscape, in that archaeological evidence that may be buried within it may inform us about the changing culture of Aboriginal people potentially over large time scales. There are few landscapes in Sydney that have allowed the preservation of this kind of information. The Sand Body also has cultural and social significance to local Aboriginal people and Aboriginal people should therefore be involved in decision making regarding the impact of the sand body and its potential archaeological deposits.

Figure 9: Geomorphology of the site (AHMS 2011:64)



3.4 Natural resources

The study area would originally have been vegetated by alluvial woodland which occurs on floodplains and margins of creeks and rivers. Tree species would have included Forest Red Gum (*Eucalyptus tereticornis*), Cabbage Gum (*Eucalyptus amplifolia*) and Gossamer Wattle (*Acacia floribunda*). The understory would have primarily consisted of shrubs such as Blackthorn (*Bursaria spinosa*) and herb and grass species (Benson and Howell 1990).

Aboriginal people were highly mobile hunter-gathers. They used a range of resources, some of which were only available seasonally. This necessitated movement and/or trade in such resources. Particular ceremonial or ritual events also prompted people to move (Attenbrow 2010: 78). Aboriginal people hunted kangaroo and wallaby and snared possums for food and skins (Bradley 1788) and caught fish and collected shellfish in marine or estuarine environments.

Plants were an important source of nutrition and were also used in the manufacture of tools. Gum and sap were used for binding or for hafting, such as in the manufacture of stone hatchets and plant fibres were used to make baskets, nets, ropes and hammocks. Plant products were also used in the manufacture of shelters, shields and other weapons, coolamons, used to carry food and water, and digging sticks.

Sources of stone used in the manufacture of tools were available in and around Parramatta. Areas of Quaternary alluvium and Tertiary laterites have been identified near Duck River, about four kilometres south east of the subject land, and silcrete and other fine grained siliceous materials were available at Homebush Bay, about five kilometres east of the subject land. Silcrete might also have been used from the St Mary's Formation, near Blacktown.

3.5 Land use history

The subject site has been developed since the earliest settlement of Parramatta, with the first hospital having been built on a portion of the site in c. 1790. The subject site was later developed for residential and commercial purposes with several cottages, outbuildings and commercial enterprises erected. These have resulted in area of relatively shallow disturbance within the subject site.

Further information about historical land use can be found in the accompanying non-Aboriginal archaeological assessment.

4.0 Predictions

4.1 Aboriginal land use

The exact nature and extent of Aboriginal land use in the study area is unknown. Assumptions about Aboriginal land use are based on archaeological data collected in previous investigations, information about what natural resources were available in the local landscape and observations made by colonists in their exploration and settlement of the area.

As Aboriginal people were mobile hunter-gatherers it is assumed that they moved across the landscape between natural resources and for social and cultural purposes. It is difficult to ascertain if a campsite existed at a given location as evidence of the bark huts described by Governor Phillip would not have survived. Correlations between stone artefact densities and campsites are instead assumed. It is probable that stone tool manufacture occurred at campsites, but it is also probable that tools were prepared or repaired while hunting animals or collecting plants, shellfish or other resources.

4.2 Predictive model

This predictive model comprises a series of statements about the nature and distribution of evidence of Aboriginal land use that is expected in the study area. These statements are based on the following information:

- Landscape context and landform units.
- Ethno historical evidence of Aboriginal land use.
- Distribution of natural resources.
- Results of previous archaeological investigations the vicinity of the study area.
- Predictive models proposed in other archaeological investigations.

Predictive statements are as follows:

- The subject site is located within the mapped extent of the Parramatta Sand Body and has the potential to contain a stratified deposit that documents the long term Aboriginal occupation of the subject site.
- Artefact densities across the study area will vary. Artefact densities are likely to be highest within the Parramatta Sand Body, with low to moderate artefact densities elsewhere.
- A range of raw materials such as silcrete, siliceous tuff, quartzite and volcanic and other igneous materials will be recovered.

5.0 Archaeological potential

The archaeological potential of an area is determined by its landform, its location and the level of disturbance. Certain landforms, such as gentle slopes, are conducive to Aboriginal occupation while others, such as steep slopes, are not. The location of appropriate landforms in relation to natural resources increases the level of potential. For example, an appropriate landform located in close proximity to a permanent water source would be of high archaeological potential. Correlations between site location and proximity to permanent water sources have been proven in previous archaeological investigations where the number of sites and their densities is highest in close proximity to a water source. In Parramatta the existence of the Sand Body impacts on assessments of archaeological potential. All areas within the Sand Body have the potential to retain stratified deposits (JMcDCHM 2005a).

In areas where there is high level of disturbance however, the archaeological potential is lowered. It is unlikely that surface finds in these areas are in their original context and it is unlikely that sub-surface archaeological deposits are intact. The archaeological potential of an area is rated high, moderate or low, based on all of the above considerations.

- High: Intact archaeological material is likely to be found in this area.
- Moderate: Intact archaeological material may be found in this area.
- Low: It is unlikely that intact archaeological material will be found in this area.

Much of the subject site is located within the mapped extent of the Parramatta Sand Body. Where the Parramatta Sand Body is present there is high potential for Aboriginal archaeological material to be present.

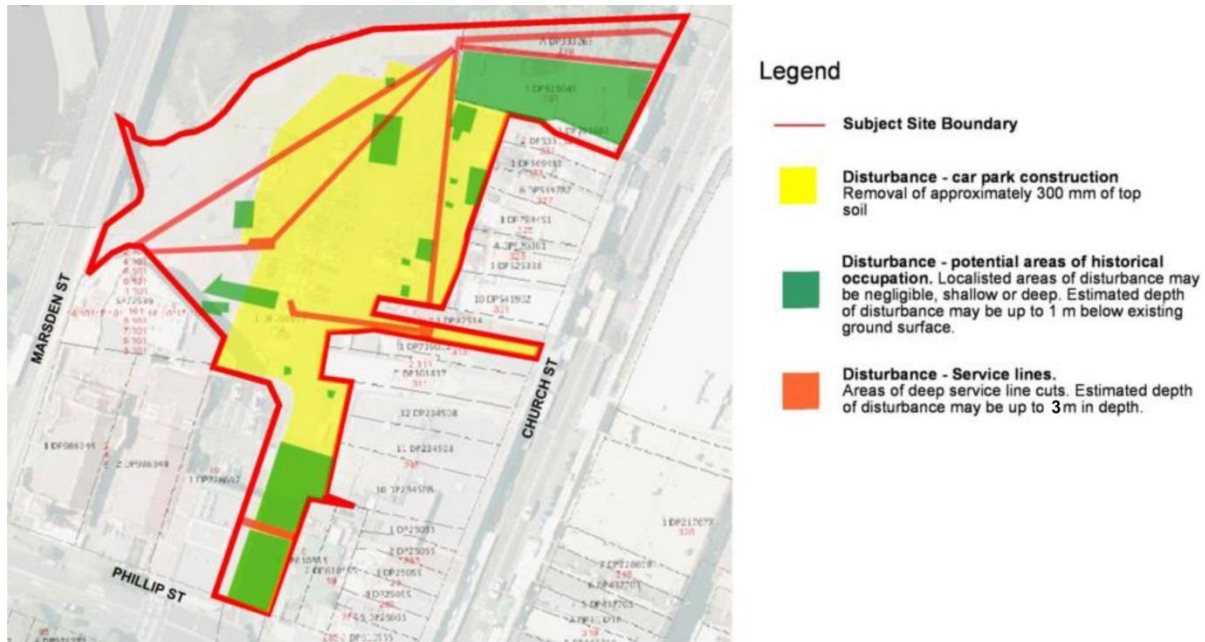
5.1 Disturbance levels

The archaeological potential of the subject site is varied as a result of varied levels of disturbance. The level of disturbance within the subject site varies based on the extent of past flood events, impacts of developments dating to the eighteenth and nineteenth centuries and impacts from the more recent installation of services such as wastewater lines.

There is a moderate level of disturbance within the subject site as a result of development in the eighteenth, nineteenth and twentieth centuries and installation of services. Impacts associated with these developments are unlikely to be more than one to three metres below the ground surface and in some

cases may have been built upon fill layers. Natural flood events have also had an impact on the southern portion of the subject site with riverside areas subject to severe erosion (Figure 10).

Figure 10: Disturbance map (AHMS 2011a:40).



5.2 Previous archaeological investigations

In their 2011 assessment of the southern section of the subject site AHMS considered there to be potential for Aboriginal archaeological material to be present across much of the site (2011a: 66).

AHMS note that previous archaeological investigations of the Parramatta Sand Body have revealed extensive archaeological deposits that document the long term Aboriginal occupation of Parramatta and which are of high archaeological and cultural significance (2011a: 58). Such deposits have been found at sites located within 200 metres of the Parramatta River, where the Parramatta Sand Body has not been subject to a high level of disturbance and where the Parramatta Sand Body is of a significant depth. AHMS also note the potential for Aboriginal archaeological material to be present within portions of the site containing a Holocene floodplain deposit (2011a: 58). AHMS predicted that a Holocene floodplain deposit would be present beneath 333 Church Street (2011a: 58) but assessed there to be little potential for a Holocene floodplain deposit to exist on the riverbank as a result of severe erosion resulting from flood events (2011a: 59).

AHMS identified the location and approximate depth of isolated disturbances within their subject site (2011a: 68). The depth of disturbance is expected to range from 0.5 to two metres. AHMS note that in

areas where the Parramatta Sand Body is present, there remains potential for Aboriginal archaeological materials to exist as the depth of the sand deposit is greater than that of isolated disturbances.

5.3 Archaeological potential

Based on the results of previous archaeological investigations and the current study there is high potential for Aboriginal archaeological material to be present within the Parramatta Sand Body despite developments in the eighteenth and nineteenth centuries.

Based on the results of geotechnical and previous archaeological investigations there is high potential for Aboriginal archaeological deposits to exist at depth within the southern portion of the site below identified subsurface disturbances. There is little potential for Aboriginal archaeological material within riverside areas as a result an 1889 flood event and other erosion due to flooding.

Figure 11: Archaeological potential



The potential for Aboriginal archaeological material beneath 333 Church Street or the laneway between Church Street and the car park is unknown as geotechnical testing has not been conducted within these areas. If the Parramatta Sand Body is found to extend into these areas the potential for Aboriginal archaeological material would be high.

6.0 Significance Assessment

6.1 Assessment criteria

Archaeological significance refers to the archaeological or scientific importance of a landscape or area. This is characterised by using archaeological criteria such as archaeological research potential, representativeness and rarity of the archaeological resource and potential for educational values. These are outlined below:

- Research potential: Does the evidence suggest any potential to contribute to an understanding of the area and/or region and/or state's natural and cultural history?
- Representativeness: How much variability (outside and/or inside the subject area) exists, what is already conserved, how much connectivity is there?
- Rarity: Is the subject area important in demonstrating a distinctive way of life, custom, process, land-use, function or design no longer practised? Is it in danger of being lost or of exceptional interest?
- Education potential: Does the subject area contain teaching sites or sites that might have teaching potential?

The cultural significance of this area would be assessed by the local Aboriginal community during ongoing consultation.

6.2 Archaeological significance assessment

The archaeological significance of the subject site cannot be accurately assessed until the results of further archaeological investigations are known.

The subject site was found to be of high research potential. The site is located within the mapped extent of the Parramatta Sand Body. The subject site therefore, has the potential to provide information about the long term Aboriginal occupation of Parramatta and how it changed over time. The subject site also has the potential to contribute knowledge about Aboriginal land use off the Parramatta Sand Body with the potential for Holocene floodplain deposits beneath 333 Church Street.

7.0 Legislative context

This study has been undertaken in the context of several items of legislation that relate to Aboriginal heritage and its protection in New South Wales.

National Parks and Wildlife Act (1974)

The *National Parks & Wildlife Act 1974*, administered by the OEH provides statutory protection for all Aboriginal 'objects' (consisting of any material evidence of the Aboriginal occupation of NSW) under Section 90 of the Act, and for 'Aboriginal Places' (areas of cultural significance to the Aboriginal community) under Section 84.

The protection provided to Aboriginal objects applies irrespective of the level of their significance or issues of land tenure. However, areas are only gazetted as Aboriginal Places if the Minister is satisfied that sufficient evidence exists to demonstrate that the location was and/or is, of special significance to Aboriginal culture.

A Section 90 Aboriginal heritage impact permit (AHIP) is required if impacts are to occur to Aboriginal objects, or Places. Various factors are considered by OEH in the AHIP application process, such as site significance, Aboriginal consultation requirements, ESD principles, project justification and consideration of alternatives. The penalties and fines for damaging or defacing an Aboriginal object have also increased.

As part of the administration of Part 6 of the Act OEH has developed regulatory guidelines on Aboriginal consultation, which are outlined in *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (2010). Guidelines have also been developed for the processes of due diligence - *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (2010), and for investigation of Aboriginal objects - *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (2010) in accordance with the 2010 amendment to the Act.

There are no recorded Aboriginal objects within the subject site.

Heritage Act (1977)

The *Heritage Act 1977* is administered by the Department of Premier and Cabinet and protects the natural and cultural heritage of NSW. Generally this Act only pertains to Aboriginal heritage if it is listed on the SHR, or subject to an interim heritage order.

A section of the Parramatta Sand Body is listed on the SHR but is not included within the subject site.

Aboriginal Land Rights Act (1983)

The *Aboriginal Land Rights Act 1983* is administered by the NSW Department of Human Services - Aboriginal Affairs. This Act established Aboriginal Land Councils (at State and Local levels). These bodies have a statutory obligation under the Act to; (a) take action to protect the culture and heritage of Aboriginal persons in the council's area, subject to any other law, and (b) promote awareness in the community of the culture and heritage of Aboriginal persons in the council's area.

There are no current Aboriginal land claims for the subject site. The subject site is located within the boundaries of the DLALC.

Native Title Act (1994)

The *Native Title Act 1994* was introduced to work in conjunction with the Commonwealth Native Title Act. Native Title claims, registers and Indigenous Land Use Agreements are administered under the Act.

There are no native title claims for the subject site.

Aboriginal and Torres Strait Islander Heritage Protection Act (1984)

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* enables the Australian Government to respond to requests to protect traditionally important areas and objects that are under threat, if it appears that state or territory laws have not provided effective protection. The government can make declarations to protect significant Aboriginal areas, objects and classes of objects from threats of injury or desecration, if an Aboriginal or Torres Strait Islander person (or a person representing an Aboriginal or Torres Strait Islander person) has requested it and has provided satisfactory evidence that explains why there is a threat of injury or desecration and why the area, object or class of objects is of particular significance to Aboriginal or Torres Strait Islander people. The power to make declarations is intended to be used as a last resort, after the relevant processes of the state or territory have been exhausted.

It is unlikely that the provisions of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* would apply to the proposal, as the relevant State processes are expected to be adequate.

Environmental Planning and Assessment Act (1979)

The *Environmental Planning and Assessment Act 1979* (EP&A Act) establishes a 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 Local Environmental Plans [LEPs] and Development Control Plans [DCPs]) in accordance with the Act to provide guidance on the

level of environmental assessment required. The study area is located within the Parramatta City Council. The Parramatta LEP and DCP apply to this area.

Aboriginal heritage is protected under the Parramatta LEP 2011. The LEP requires the Council to consider the impact of development on known or potential Aboriginal archaeological sites or sites of cultural or historical significance to Aboriginal people.

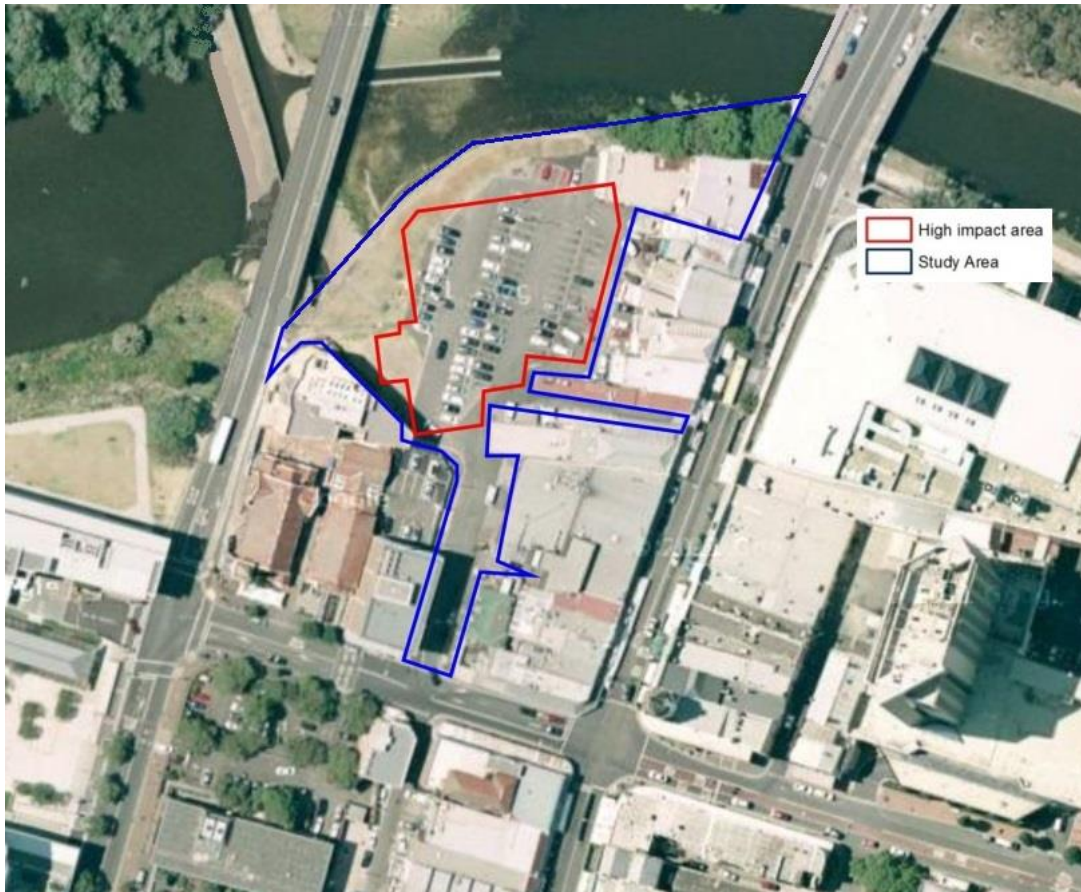
The Parramatta DCP requires that the Aboriginal Sensitivity map (Figure 8), which shows known Aboriginal sites and potential heritage sensitivity, be consulted prior to a development application. It recommends that properties identified to be of medium or high sensitivity, or that are within 50 metres of a site registered on AHIMS, that an Aboriginal Heritage Assessment is conducted.

8.0 Impact assessment

The proposal would involve deep excavation across large areas of the subject site for the creation of basements. Figure 12 shows the location of the proposed basement. This excavation would certainly remove all trace of any archaeological material surviving within those areas and would impact on the majority of the area designated as high archaeological potential: The entire depth of the Sand Body would be removed in these areas along with any artefact bearing deposits.

Outside of the proposed basement areas, the degree of excavation or subsurface disturbance that would be involved is currently thought to be moderate, involving landscaping and ground surface modification without the removal of the entire Sand Body deposit.

Figure 12: Levels of impact



9.0 Mitigation and management measures

The mitigation measures that are recommended vary depending on the assessment of a sites archaeological and cultural significance. Sites of the following levels of significance would require the following mitigation measures:

- Low archaeological significance: No further archaeological investigations required.
- Moderate archaeological significance: Conservation of sites or areas of potential where possible. Further archaeological investigation may be required if sites or areas of archaeological potential were to be impacted.
- High archaeological significance: Conservation of sites or areas of potential is a priority. Further archaeological investigations, such as comprehensive salvage excavation is required only when all practical alternatives have been discounted.

The subject site has been assessed as having high research potential so archaeological significance would be determined during further archaeological investigation. Geotechnical testing has confirmed the existence of the Parramatta Sand Body within the site. The subject site has the potential to provide information about long term Aboriginal occupation in Parramatta and how it changed over time.

It is therefore recommended that an archaeological test and/or salvage excavation programme is conducted under an Aboriginal Heritage Impact Permit (AHIP). The Aboriginal archaeological excavations would be conducted in conjunction with the non-Aboriginal archaeological test excavations.

Excavation under an AHIP is recommended for the subject site as excavations could not be conducted according to the requirements for archaeological excavation under the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW*. It is not practical for the deep sand deposits associated with the Parramatta Sand Body to be excavated in accordance with the requirements of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW*.

Prior to an application for excavations under an AHIP, comprehensive consultation with the local Aboriginal community must be carried out in accordance with the OEH (2010) *Aboriginal cultural heritage consultation requirements for proponents*. The process of Aboriginal stakeholder registration would take a minimum of 28 days. The registered stakeholders would then be given the opportunity to comment on a test excavation methodology which would be prepared by the archaeologist. The results of this consultation would be discussed in the Aboriginal Cultural Heritage Assessment Report (CHAR). A CHAR is required to support an AHIP application under the OEH (2010) *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW*. At least 10 weeks should be allowed for consultation

and preparation of the CHAR prior to submission of the AHIP application to OEH. A period of 8 weeks should be allowed for OEH to process the AHIP application.

If human remains are located at any stage of the development, work must stop immediately, the site should be secured and the NSW Police notified. If the remains are found to be Aboriginal, the OEH, DLALC and a heritage consultant should be notified. Further archaeological investigations may be required before work can continue. Impacts to human remains will not be covered under an AHIP for test excavation. If human remains are uncovered, another AHIP will be required.

10.0 Recommendations

These recommendations are based on consideration of:

- Statutory requirements under the *National Parks and Wildlife Act 1974* as amended.
- The landscape context of the subject land.
- The historical and archaeological context of the subject land.
- The impacts of the proposed re-development of the subject land.

It was determined that:

- There are no recorded Aboriginal sites in the subject land.
- The majority of the subject site is included in the mapped extent of the Parramatta Sand Body.
- The majority of the subject site has been assessed to be of high archaeological sensitivity in the Parramatta Aboriginal Heritage Study.
- The subject site is shown to be of high archaeological sensitivity on the Aboriginal Sensitivity map in the Parramatta DCP.
- The landscape context of the subject site would have been conducive to Aboriginal occupation.
- Overall there has been a moderate level of disturbance to the subject land.
- The archaeological potential of the sections of the subject site adjacent to the river are low. The archaeological potential of the remainder of the subject site is high.

It is recommended that:

- An Aboriginal Heritage Impact Permit (AHIP) is sought for test and or salvage excavations within areas of high potential within the subject site. The timing of the excavations would be discussed with the context of the project's delivery plan.
- A research design for archaeological excavation would be prepared by a suitably qualified archaeologist and would be included in the AHIP application.
- Prior to the application for an AHIP comprehensive Aboriginal consultation would be undertaken in accordance with the Office of Environment and Heritage (OEH) consultation guidelines.
- A Cultural Heritage Assessment Report would be prepared as part of this Aboriginal consultation.
- A meeting with OEH and the Heritage Division should be organised as early as possible in the planning process in order to discuss the application for an AHIP in relation to any non-Indigenous heritage excavation works that may be required under the NSW *Heritage Act 1977*.
- If human remains are located at any stage of the development, work must stop immediately, the site should be secured and the NSW Police notified. If the remains are found to be Aboriginal, the OEH, Deerubbin Local Aboriginal Land Council and a heritage consultant should be notified. Further

archaeological investigations may be required before work can continue. If human remains are uncovered, an additional AHIP will be required.

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