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600-660 Elizabeth Street, Redfern Heritage Study (LAHC 2018/064)

Aboriginal Cultural Heritage Assessment

Prepared for NSW Land and Hosing Corporation

February 2020 - Final

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Executive summary

NSW Land and Housing Corporation intends to rezone 600-660 Elizabeth Street, Redfern via a Planning Proposal, which will enable the site to be renewed for a mixed tenure project under the Communities Plus Program. The proposed development on the study area is yet to be finalised, but will likely include bulk earthworks, residential and mixed-use development, environmental works and landscaping. As part of this project, Extent Heritage Pty Ltd (Extent Heritage) has been commissioned by LAHC to prepare a preliminary Aboriginal Cultural Heritage Assessment report (ACHAR) for the study area.

This report is a preliminary version of the ACHAR, developed to contribute to the wider planning and assessment for the project. While the preliminary document includes extensive desktop assessment, and the initiation of Aboriginal consultation in accordance with Department of Planning, Industry and Environment (DPIE) guidelines, it should be noted that the results and recommendations in this report are preliminary in nature only, and will be updated in the final ACHAR. In particular, the impact assessments, significance assessments and management recommendations may change based on updated results of proposed fieldwork yet to be implemented.

Rezoning of the study area in itself would not result in impacts to any known or potential Aboriginal archaeological sites or deposits, or Aboriginal cultural values areas.

While no Aboriginal sites, objects, sandstone rock outcrops or culturally modified trees were identified within the study area during this assessment, current information suggests that a vast, but poorly defined area of moderate archaeological potential exists across the study area, and that the study area may have contemporary and historical Aboriginal cultural value.

Further archaeological investigation of the study area is therefore required to define the nature, extent and significance of the Aboriginal archaeological and cultural resource, and to accurately identify the potential impacts that may result from the development. Such investigation should be undertaken prior to, and as supporting documentation to accompany any development application for the study area.

Further archaeological investigation should take the form of a formal Aboriginal Cultural Heritage Assessment Report (ACHAR), prepared in accordance with Office of Environment and Heritage policies and guidelines. Currently, this report requires the following additional tasks to become an ACHAR:

- Conclusion of the Aboriginal community consultation process (ongoing).
- Distribution of a proposed assessment and fieldwork methodology to Registered Aboriginal Parties.
- Fieldwork comprising archaeological test excavation, and post-fieldwork analysis.
- Finalisation of the Aboriginal heritage impact assessment, development of recommendations for the management of any identified archaeological and/or cultural resource, and review of the ACHAR by Registered Aboriginal Parties.

Based on current evidence, it would seem unlikely that the cultural heritage as documented across the site would require major changes to the proposed development. However, there may potentially be requirements for minor development re-design and/or mitigation measures (e.g. salvage excavation, surface collection, interpretation, etc) in areas where significant cultural material is identified as part of the ACHAR process. Based on regional models and previous studies, such deposits (if present) are most likely to be constrained to elevated areas within the study area.

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1. Introduction

The *Future Directions for Social Housing in NSW* (NSW Government 2016) document sets out the NSW Government's vision for delivering new social housing up to 2026. It encourages greater involvement of private developers and non-government partners in financing, owning and managing a significantly expanded stock of social and affordable housing assets, promotes expanded support in the private rental market, and advocates for the transfer of significant tenancy management responsibilities to non-government housing providers.

In response to this action, the NSW Land and Housing Corporation (LAHC) initiated a housing development program, Communities Plus. The program involves the redevelopment of existing LAHC sites for a mix of social, affordable and private housing. LAHC is seeking to rezone 600-660 Elizabeth Street, Redfern via a Planning Proposal, which will enable the site to be renewed for a mixed tenure project under the Communities Plus Program.

1.1 Purpose

This Aboriginal archaeological assessment has been prepared on behalf of NSW Land and Housing Corporation (LaHC) to accompany a Planning Proposal to be lodged with the City of Sydney (CoS).

This Planning Proposal relates to land at 600-660 Elizabeth Street (hereafter 'the study area'). The Planning Proposal seeks to rezone the study area to allow redevelopment for a mix of social, affordable and private housing in an integrated residential community. The aims of the Planning Proposal are to rezone the study area to B4 Mixed Use.

An indicative reference scheme and urban design report has been prepared by Architectus, Silvester Fuller and Tyrell (the Project Team) to support the Planning Proposal and demonstrates how the Site may be redeveloped. The indicative reference scheme comprises:

- approximately 327 dwellings, with building heights ranging between 6 and 14 storeys;
- a mixed-use development, with over 1,500m^2 of non-residential floor space for local shops, cafes, community space and other services; and
- three ground floor communal courtyard spaces.

This report assesses the potential for Aboriginal archaeological resources to be present at the Site and evaluates significance of such resources. It also identifies constraints and opportunities associated with the impact of the proposed development. The principle objectives of this report are to:

- Compile a review of existing documentation and listings within the study area and its immediate surrounds, by identifying and summarising known and previously recorded Aboriginal sites and cultural values places;

- Determine if any Aboriginal objects, places, areas of archaeological potential or cultural values areas are present (or likely to be present) within the study area, as well as areas of existing disturbance, through brief site inspection;
- Identify areas of key Aboriginal interest and/or significance, and legislative requirements for their management and protection; and
- Propose appropriate future direction for subsequent investigation should the study area be rezoned as a State Significant Precinct redevelopment project.

The preliminary ACHAR has been developed with consideration to heritage guidelines prepared by the Office of Environment and Heritage, namely the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW 2010), the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011) and the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010).

1.2 Legislative context

There are several Commonwealth and State Acts (and associated regulations) that manage and protect Aboriginal cultural heritage. These are outlined in detail in Appendix 1 and summarised in Table 1.

Table 1. Summary of legislative context for the project

Legislation	Description	Relevance to Study Area?	Details
Commonwealth			
Environment Protection and Biodiversity Conservation Act 1999	Recognises sites with universal value on the World Heritage List (WHL). Protects Indigenous heritage places with outstanding heritage value to the nation on the National Heritage List (NHL), and significant heritage value on the Commonwealth Heritage List (CHL).	No	There are no Indigenous heritage places within the study area listed on the World Heritage List, National Heritage List or the Commonwealth Heritage List.
Native Title Act 1993	Administers rights and interests over lands and waters by Aboriginal people. Provides for negotiation and registration of Indigenous Land Use Agreements (ILUAs). Often used in NSW to identify relevant stakeholders for consultation.	No	The study area, whilst owned by the NSW Land and Housing Corporation, is not considered Non-freehold land, and therefore cannot be subject to a claim under this Act. There are no relevant entries for the study area on the National Native Title Register, Register of Native Title Claims, or Register of Indigenous Land Use Agreements.

Aboriginal and Torres Strait Islander Heritage Protection Act 1984	Preserves and protects areas and objects of particular significance to Aboriginal people that are under threat from injury or desecration.	No	There are no areas or objects within the study area subject to a Declaration under the Act.
State (NSW)			
Environmental Planning and Assessment Act 1979	Requires environmental impacts, including Aboriginal heritage, to be considered in land use planning.	Yes	Development within the study area is being carried out under Part 4 of this Act. See Appendix 1.2 for details.
National Parks and Wildlife Act 1974	Provides blanket protection for all Aboriginal objects and declared Aboriginal places. Includes process and mechanisms for development where Aboriginal objects are present, or where Aboriginal Places are proposed for harm.	Yes	Depending on the assessment and approval framework adopted by DPE, an AHIP must be obtained from the Chief Executive of OEH under Section 90 of the Act where harm to an Aboriginal object or Aboriginal Place cannot be avoided.
Aboriginal Land Rights Act 1983	Establishes Local Aboriginal Land Councils (LALCs). Allows for the transfer of ownership of vacant crown land to a Local Aboriginal Land Council. The Office of the Registrar, Aboriginal Land Rights Act 1983 (ORALRA), registers Aboriginal land claims and maintains the Register of Aboriginal Owners. Often used in NSW to identify relevant stakeholders for consultation.	No	The study area, whilst owned by the NSW Land and Housing Corporation, is not considered Non-freehold land, and therefore cannot be subject to a claim under this Act. A request to search the Register of Aboriginal Owners has not been made for this assessment.
Environmental Planning Instruments			
Sydney Local Environmental Plan 2012	Conserves Aboriginal objects and Aboriginal places of heritage significance.	Yes	Development consent is required for subdividing, excavating, developing and disturbing land on which an Aboriginal object is located, is within an Aboriginal place of heritage significance, or on land that contains an archaeological site. Immediately adjacent to the study area, "Redfern Park including low sandstone perimeter walls, entrance gates, fountain and war memorials and landscaping" is listed as a Local Heritage Item (Sydney LEP 2012 Item I1347). Redfern Park has strong Aboriginal associations, as the home ground for the South Sydney Rabbitohs

			football club (with a strong Aboriginal player and spectator affiliation), and as the site of Prime Minister Keating's famous "Redfern Speech", launching the 1992 "International Year of the World's Indigenous People". Within the study area itself, there are no items or places of Aboriginal heritage significance listed in the Sydney LEP.

1.3 Study area

The study area is a NSW Land and Housing Corporation owned and managed property comprising Lot 1 DP1249145, and encompassing an area of approximately 1.1ha. It is located within the City of Sydney Local Government Area, in the Parish of Alexandria, and the County of Cumberland. The study area is located 4km southwest of the Sydney CBD and is bound to the north by Kettle Street, to the east by Walker Street, to the south by Phillip Street and to the west by Elizabeth Street. The study area is largely vacant except for a single storey building and outdoor basketball court in the southern portion of the site, which is currently leased by the Police Citizens Youth Club (PCYC).

1.4 The proposal

LAHC is proposing to amend the Sydney LEP 2012 to rezone 600-660 Elizabeth Street, Redfern via a Planning Proposal, for a mixed tenure development under the Communities Plus Program.

A reference scheme has been developed for the site, to demonstrate the likely development that could occur if the proposal was gazetted (Figure 2). The reference scheme includes provision for multi-storey, mixed-density housing, communal facilities, and open recreation areas.

Detailed information on the proposed reference scheme is provided below in Section 8

1.5 Limitations

This report is based on existing and publicly available environmental and archaeological information and reports about the study area. The background research did not include any independent verification of the results and interpretations of externally sourced existing reports (except where the fieldwork indicated inconsistencies).

Information from the Aboriginal Heritage Information Management System (AHIMS) database was obtained from DPIE. Information in the assessment reflects the scope and the accuracy of the AHIMS site data, which in some instances is limited.

Due to timing constraints and the preliminary nature of this report, formal Aboriginal consultation in accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents

2010 (DECCW 2010) is ongoing. It has therefore not been possible to collect or obtain any intangible/cultural values associated with the study area from the Aboriginal community at present.

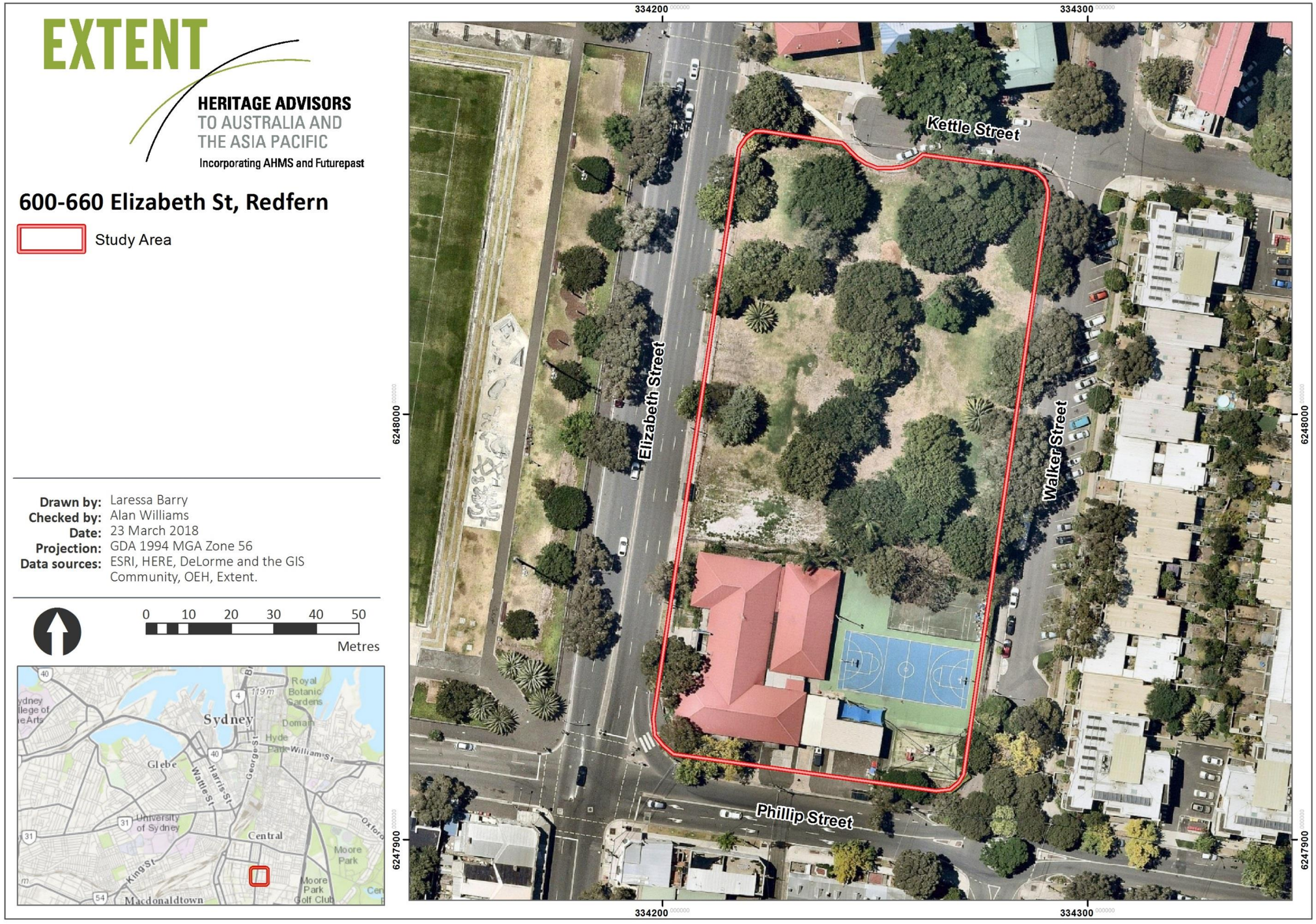


Figure 1. 600-660 Elizabeth Street Redfern study area.

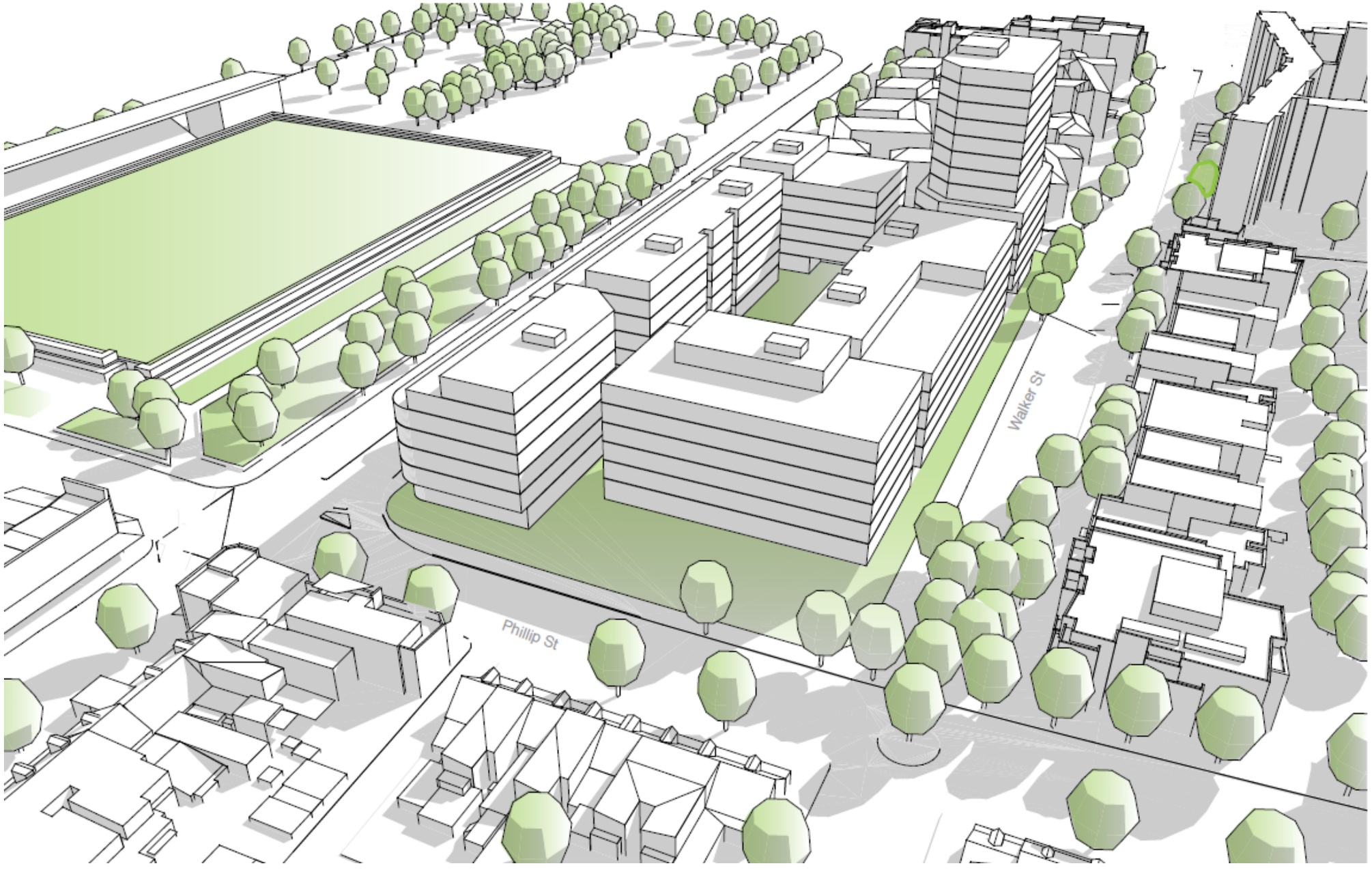


Figure 2. 600-660 Elizabeth St, Redfern Reference Scheme (Source: LAHC, 2019).

2. Aboriginal consultation

Aboriginal community consultation for this project, as part of a broader Aboriginal Cultural Heritage Assessment of the site, is ongoing.

2.1 The process

[Placeholder for description of the process of formal community consultation as outlined in the Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW, 2010)].

2.2 This project

[Placeholder for description of actions undertaken, and correspondence regarding community consultation specifically for this project.]

2.3 Aboriginal stakeholder feedback

[Placeholder for summary of feedback received throughout consultation process]

3. Existing environment

3.1 Key findings

Examination of the study area's environmental context is essential in order to characterise and predict the type and nature of Aboriginal occupation across the land. Factors typically include the presence or absence of water, animal and plant resources, stone and other resources, the nature of the terrain, and other geomorphological or anthropomorphic processes, which influence the degree to which archaeological sites may be visible and/or conserved. Key aspects of the study area's environmental context are summarised below:

- The study area is within the Botany Lowlands physiographic region, and is characterised by gently undulating to rolling, deep coastal dunefields of the Tuggerah soil landscape. Sand dune systems and land within 200m of water in general have been identified by DPIE as having potential to indicate the presence of Aboriginal objects. Aboriginal sites including middens, campsites and burials are known to occur on these landforms in the local area.

- Historical maps of the region in the 1870s reveal that a series of lagoons and large swampy areas were available to local inhabitants and would likely have been used as key resources by Aboriginal people to the west, east and south of the study area. This included Boxley's Lagoon, which appears to have encompassed a large portion of the study area and the adjacent Redfern Oval.

- Geotechnical investigation of the study area by ERM in 2001 demonstrated the presence of deep Tuggerah soils beneath varying levels of fill material. These soils are characterised by 60-200cm of "fill" comprising gravelly sand, sand and clayey sand with brick inclusions, overlying peaty sand and sand, to depths of at least 400cm below ground surface. For the purposes of Aboriginal heritage, the natural sand between 60 and ~400cm below ground surface is of interest.

- The study area has been extensively cleared of its native dry sclerophyll tall open-woodland and forest communities, and much of the vegetation within the study area is recent regrowth.

- An analysis of past land use indicates that localised excavation would have been undertaken for building footings and services and for the construction of internal roads in the 1880s and again in the 1940s, but there is no indication of substantial excavations across the study area. In contrast, the results of the soil chemical investigation of nearby Redfern Park and Oval indicate that a large amount of sandy fill has been introduced to that site to reclaim a swamp, and this may equally have been the case within the study area – especially for the construction of the Albert Cricket Grounds. This may have tended to preserve the underlying soil profile, and any associated cultural deposit, in the areas subject to fill.

3.2 Geology, topography and soils

The study area is located within a deep sand unit known as the Tuggerah soil landscape, within the Botany Lowlands physiographic region (Chapman and Murphy 1989:112) (Figure 4). It is described as Quaternary (Holocene and Pleistocene) windblown, medium to fine-grained

'marine' quartz sand with Podzols and Humus Podzol integrades (Dept Mineral Resources 1983). On dunes, Tuggerah soils comprise 30cm of loose, speckled, grey-brown loamy sand, overlying >100cm of bleached loose sand with intermixed black and brown soft sandy organic and iron pans, and >200cm yellow massive sand subsoils. In swales, soils comprise up to 25cm grey-brown loamy sand overlying >30cm of bleached loose sand and yellow massive sand. Occasionally, grey-brown mottled sand and black soft sandy organic pans underlay bleached loose sands in swales, and these are associated with the water-table (Chapman & Murphy 1989:113-114). Total soil depths exceed 300cm.

Topographically, the Tuggerah soil landscape is characterised by gently undulating plains and rolling undulating rises of broad, level to very gently inclined swales and dunes, with elevations of up to 20m. Dune side-slopes are gently to moderately inclined with slope gradients of 1-10%, though isolated steep rises with slopes up to 35% occur. These dunes are oriented north-south, with narrow crests, and broad gently inclined concave swales. Run off, when present, collects in a series of depressions, lagoons and swamps (Chapman and Murphy 1989:113).

This type of landscape limits the potential for the presence of a number of archaeological site types, such as rockshelters and rock engravings, which require sharp exposed sandstone relief that is not common in these areas. Conversely, surface artefact scatters and buried cultural material are likely to be more prevalent, and have been frequently found to contain recent and Pleistocene (>10,000 years BP) cultural materials (see Section 5.3 below). Archaeological finds below 2m are not uncommon in this type of environment. A notable example of the latter in this soil landscape includes the recent discovery of dense and significant cultural materials as part of the construction of the Randwick light rail stabling yards (*Sydney Morning Herald*, 30 March 2016).

Geotechnical investigation of the study area by ERM in 2001 demonstrated the presence of deep Tuggerah soils beneath varying levels of fill material (ERM, cited in AECOM 2018:4-5). Five boreholes were excavated across the study area, and demonstrated that fill material was present to varying degrees across the study area. Soils in the study area are characterised by 60-200cm of "fill" comprising gravelly sand, sand and clayey sand with brick inclusions, overlying peaty sand and sand, to depths of at least 400cm below ground surface. At the former Rachel Forster Hospital site at 134-144 Pitt Street, some 500m west of the study area, geotechnical investigations identified the presence of natural brown to light grey silty sand overlying yellow brown fine grained sand with some brown, slightly cemented bands (coffee rock), between depths of 0.3 and 2.5 (and up to 5m) below ground surface (Douglas Partners 2007: Appendix B). The depth of the sand in the western part of the Rachel Forster hospital site was deeper than the eastern part, and may represent the under-lying undulations within the dune field. Similarly, geotechnical investigations of the Alexandria Park Community School site at 7-11 Park Road, some 1.25km southwest of the study area, identified natural fine-grained grey and brown sand below depths of 40-340cm (GeoEnviro Consultancy 2016: Appendix A). For the purposes of Aboriginal heritage, the natural sand within the study area between 60 and ~400cm below ground surface is of interest. This sand unit probably reflects part of the under-lying dune system common in this region and has been demonstrated to be a deposit with potential to contain buried Aboriginal objects in the form of discrete Aboriginal artefacts, shell midden deposits and/or human burials.

The Tuggerah sand dune landform unit identified throughout the study area is consistent with one of five landscape features specified by the Department of Planning, Industry and Environment (DPIE) as having potential to contain Aboriginal objects (DECCW 2010:12). Specifically, all areas within a sand dune system are considered archaeological landforms of interest under DPIE guidelines. The former Boxley's Lagoon is also a landscape feature specified by DPIE as being likely to indicate the presence of Aboriginal objects. All areas within 200m of the water's edge are considered archaeological landforms of interest under DPIE guidelines. The remaining three landscape features listed by DPIE do not apply to the study area.

3.3 Hydrology

Today, the study area is situated on a well-drained dune formation in a highly urbanised area; though the southern portion is subject to significant waterlogging from a high water-table in this area. However, the hydrological context of the wider landscape was vastly different prior to European settlement. Within neighbouring Redfern, Alexandria, Waterloo and Randwick the landscape elevation declined markedly, and the area was characterised by a large network of swamps, creeks and lagoons and their associated marshlands, which extended from Botany Bay to Centennial Park and westwards to Redfern and south to the Cooks River. These water systems were part tidal and part free-flowing and were fed by inland streams. According to historian Ron Ringer, descriptions of the country along the Cooks River by early explorers were not optimistic about the potential for food production, but describe the shallowness of the water and the large swamps nearby (Ringer 2013).

Historical maps of the region in the 1870s reveal that a series of lagoons and large swampy areas were available to local inhabitants and would likely have been used by Aboriginal people to the west, east and south of the study area (Figure 5). This included Boxley's Lagoon, which appears to have encompassed a large portion of the study area and the adjacent Redfern Oval. According to the memoirs of Obed West, a local inhabitant of Sydney from the 1810s, Boxley's Lagoon covered "the portion of Redfern known as the Albert Ground and Victoria Town, as well as the vacant paddocks opposite Elizabeth-street [Redfern Park]" (Marriott 1988:46). In 1822, Captain Piper organised a day's race around the Boxley's Lagoon:

> The horses started from near Mount Carmel *[corner Kellick and Elizabeth Streets]* and ran round the edge of the swamp to the winning post on Boxley's Clear, at about the site of the present Redfern Courthouse… *[Redfern-street, between George and Pitt streets] (Marriott 1988:46;* The Sydney Morning Herald *7 February 1883, p.5).*

Soil chemical analysis of the adjacent Redfern Oval was undertaken by the NSW Department of Agriculture on behalf of the City of South Sydney in 1993. The 1993 report indicated that Redfern Park was "once a large swamp that had been subjected to considerable in-filling. The soil profile was buried at least 1.5m below the surface, with the thickest fill located beneath the spectator area of Redfern Oval" (City of Sydney 2006:6). Though Boxley's Lagoon does not appear on historic maps of the time, it was considered to be quite a substantial lagoon, and may have been associated with the Lachlan Swamp and/or Waterloo Dam to the south of the study area. Its approximate area, on the basis of known topographic records and anecdotal evidence, is illustrated in Figure 5.

Prior to European settlement, the study area would have been characterised as a well-watered but partly swampy area that would have been able to support Aboriginal populations, particularly those parts of the study area that were elevated above the water line. As well as providing fresh water for cooking and drinking, Boxley's Lagoon would have supported a diverse range of plant, marine and animal resources within open forest, woodland and environments – environmental conditions that were conducive to prolonged occupation year-round.

3.4 Past vegetation

In areas such as Redfern, the original sclerophyll forest and coastal heathland has been extensively cleared. According to David Keith, this region is characterised by extensive deposits of coastal sands that were laid down by wave action as long as 140,000 years ago; and have since been redistributed by the wind into new dunes. Though these sands are occupied by stunted heathlands of emergent banksias and mallee Eucalypts, they contain a high diversity of sclerophyll shrubs and sedges (Keith 2006:176-177).

Prior to vegetation clearance, dominant open forest tree species would have included smooth barked apple (*Angophora costata*), Sydney peppermint (*Eucalyptus piperita*), silvertop ash (*Eucalyptus siberi*), scribbly gum (*Eucalyptus sclerophylla*), and old man banksia (*Banksia aemula*). The species of the shrubby understorey included bracken (*Pteridium esculentum*), Christmas bush (*Ceratopetalum gummiferum*), woody pear (*Xylomelum pyriforme*), prickly moses (*Acacia ulicifolia*) and various species of Acacia. Flowering shrubs would have included waratah (*Telopea speciosissima*) and native rose (*Boronia serrulate*), whilst groundcover species would have included *Grevillea laurifolia* and *Persoonia chamaepitys*. Sedge, rush, reed and grass species such as tassel rope-rush (*Hypolaena fastigiata*), pale mat-rush (*Lepidosperma concavum*, *Lomandra glauca*), heath bog-rush (*Schoenus ericetorum*) and kangaroo grass (*Themeda australis*) were also prevalent, and may have formed key resources for Aboriginal occupation (Figure 3; Keith 2006:177). Extensive clearing has occurred within the study area were it ever present, and much of the vegetation within the study area is recent regrowth or exotic European plantings.

Figure 3. A sketch of typical coastal sand heath vegetation by William Leigh in 1853, 'Near Botany Bay looking towards Sydney' (Source: State Library NSW, PXA 1988, FL1149289, Image 22, http://archival.sl.nsw.gov.au/Details/archive/110329202).

3.5 Existing disturbances

A detailed history of the study area is provided in Extent's Historical Archaeological Assessment (2019) and is summarised here with respect to historical disturbance of the ground surface.

Historical plans from the State Library of NSW suggest that, during the initial settlement of the Colony, the study area formed part of a large tract of land between Port Jackson and Port Botany that comprised "barren sands". This description more likely refers to the poor fertility of the land for cultivation purposes, rather than for its landscape appearance – in fact, the area beyond the initial settlement was characterised by tracts of uncleared blackbutt, tea-tree and scrub, and swampy marshes, lagoons and creeks (Marriott 1988:44).

Early settlers like Samuel Terry, William Hutchinson and Daniel Cooper made good use of these swampy areas in neighbouring Waterloo, Randwick and Moore Park, by establishing mills for grinding flour and wool washing on the Lachlan and Waterloo Swamps (Marriott 1988:45). A large swampy lagoon known as Boxley's Lagoon encompassed much of the study area including Redfern Park and Oval, however this lagoon appears not to have been utilised for industrial pursuits at this time. In 1843, the area was described as "lying waste and unproductive" and "a pestiferous bog of an actually dangerous nature" in 1843 (Thorp 1994).

Local resident Obed West recalled that the water from Boxley's Lagoon was "drawn off by means of a large drain" to reclaim the swampland and draw away surface water, and in 1864 a private cricket ground known as the Albert Cricket Ground was opened (Marriott 1988:46). This 10-acre pitch had a masonry grandstand in the north western corner of the site, as well as a pavilion that ran around three sides of the ground, and a drainage system installed for the field (Figure 6 and Figure 7). Sand was imported to level the ground after the drainage system had been put in place then turfed for cricket. The Albert Cricket Ground played host to a number of

important cricket matches throughout its short life, as well as various athletic events, and even a cycling steeplechase (*Sydney Punch*, 22 September 1866, page 137; *The Illustrated Sydney News*, 17 February 1870, page 344).

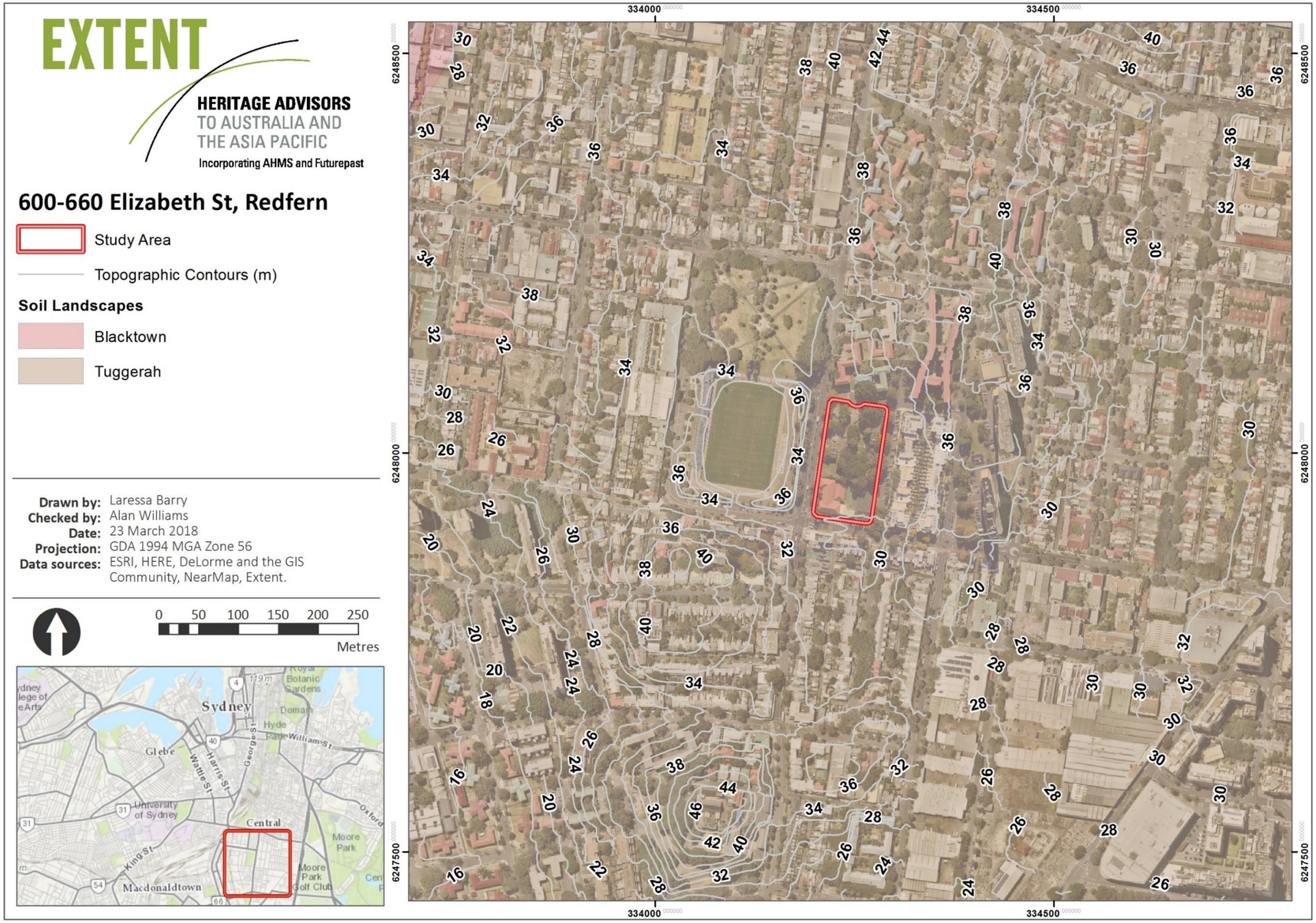


Figure 4. Soil landscapes and topographical context of the Redfern area. The hill depicted by topographic contours, along the southern boundary of the map, is the historic Mount Carmel.

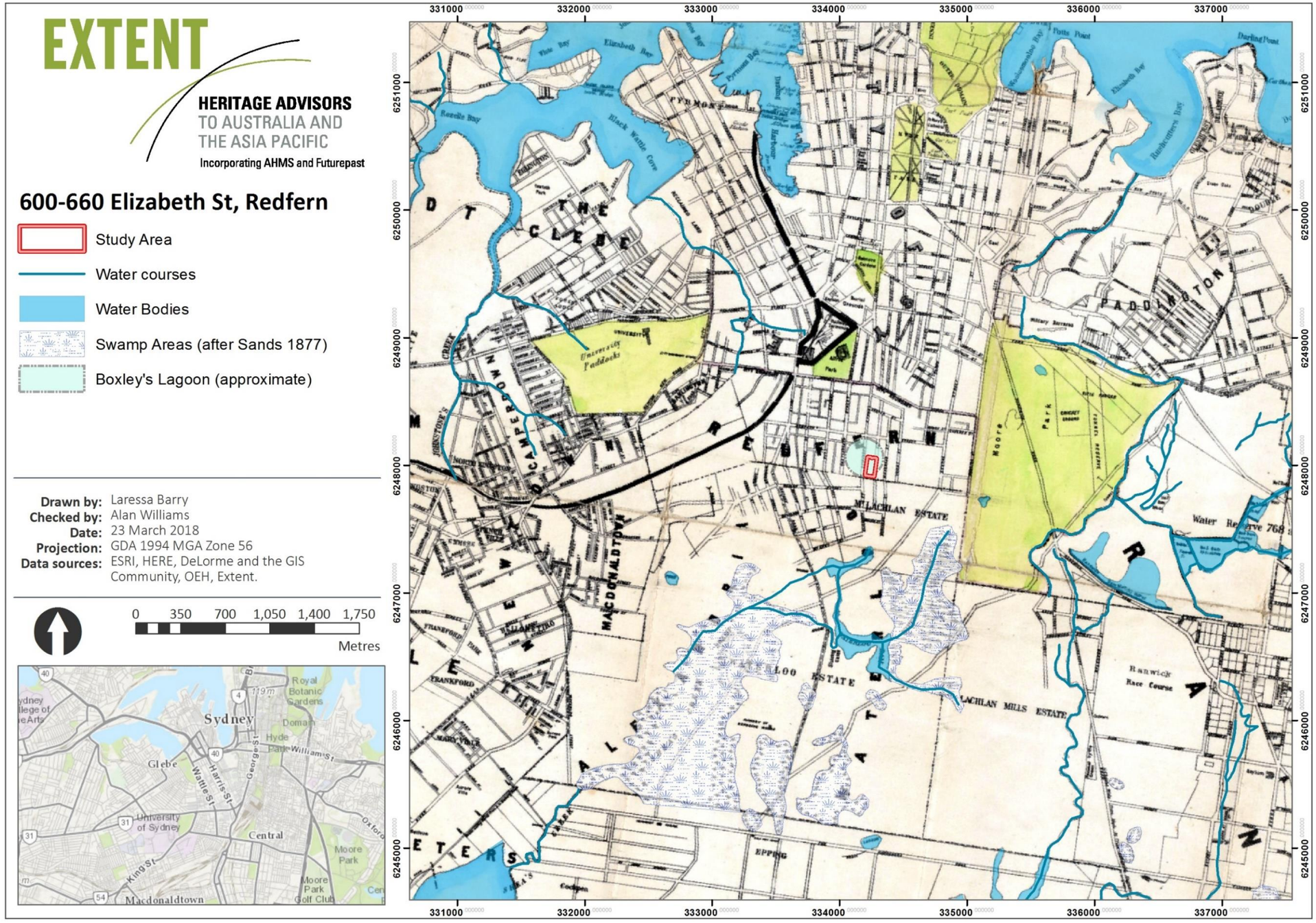


Figure 5. Waterbodies, creeks and lagoons in the vicinity of the study area in the 1870s. Note, Boxley's Lagoon was filled by this time, and its approximate area, based on the available literature, is shown as a dashed circle (Source: Six mile circuit map of the city and suburbs by John Sands, National Library of Australia, Bib ID3602706, http://nla.gov.au/nla.obj-231444908/view)..

The cricket ground closed in 1879, and by 1887 formal streets had been laid and the study area had been entirely subdivided and developed into three rows of terrace housing. Historical plans and photographs of the site reveal that these terrace row structures were constructed of brick and had flat iron roofs, often with small front balconies, two rooms and a rear kitchen, small rear yards and small external water-closets along rear timber fencelines (Figure 8 and Figure 9). These houses were typical worker's terraces, and were often leased by people who worked in the nearby areas of Waterloo and Alexandria.

By the turn of the twentieth century, the government was becoming increasingly concerned with the poor living and sanitary conditions of the 'slums' in the inner city, Surry Hills and Redfern areas. Existing dwellings in these suburbs were often overcrowded and located in or near industrial areas, and were becoming increasingly dilapidated, unhealthy and unfit for human habitation. In the 1940s, the NSW Housing Commission was established to demolish slum areas, and to redevelop these suburbs with public affordable housing. Between 1948 and 1949 the existing terrace houses on the Elizabeth Street, Redfern site were demolished, internal laneways were torn up, the entire study area was levelled and a series of nine double-storey housing units were constructed on large blocks in the northern two-thirds of the site. In 1953, a new brick structure and sports facilities were constructed for the Police-Citizens Youth Club (PCYC) in the southern third of the site. These housing units were demolished in 2013, and the northern portion of the site has remained unchanged since this time.

In summary, the known historical development has affected the entirety of the study area, and is likely to have involved removal of any culturally modified (scarred) trees and surface archaeological sites, were they ever present. Localised excavation would have been undertaken for building footings and services and for the construction of internal roads in the 1880s and again in the 1940s, however, there is no indication that substantial excavations had occurred across the study area. In contrast, the results of the geotechnical investigation of the study area in 2001 indicate the presence of "fill" material at depths between 60 and 200cm. Furthermore, soil chemical investigation of nearby Redfern Park and Oval indicate that a large amount of sandy fill has been introduced to that site to reclaim a swamp, and this may equally have been the case within the study area – especially for the construction of the Albert Cricket Grounds. This may have tended to preserve the underlying soil profile, and any associated cultural deposit (if present), in the areas subject to fill.

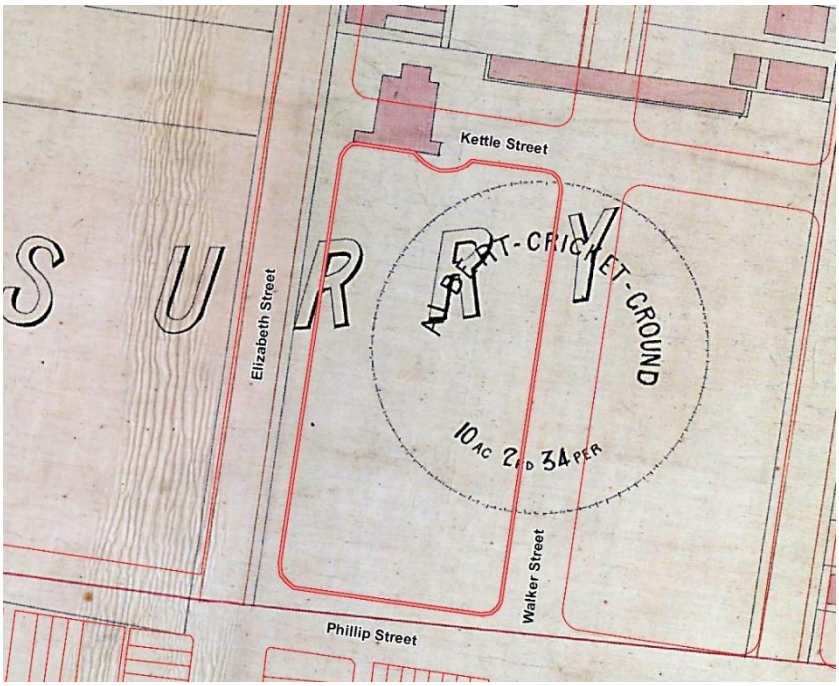


Figure 6. 'Block 152, Map 50 – The Redfern Municipality' of the Trigonometric survey of Sydney, c. 1864, overlain by modern cadastral boundaries in red. The Albert Cricket Ground encompassed a large part of the study area (Source: City of Sydney, Historical Atlas of Sydney, Block 152, Map 50).

Figure 7. Panoramic photograph of the Albert Cricket Ground, Redfern in 1877. The grandstand and pavilion are visible in the background of the image (Source: City of Sydney Archives, ArchivePix, SRC 19815, File 064/064816).

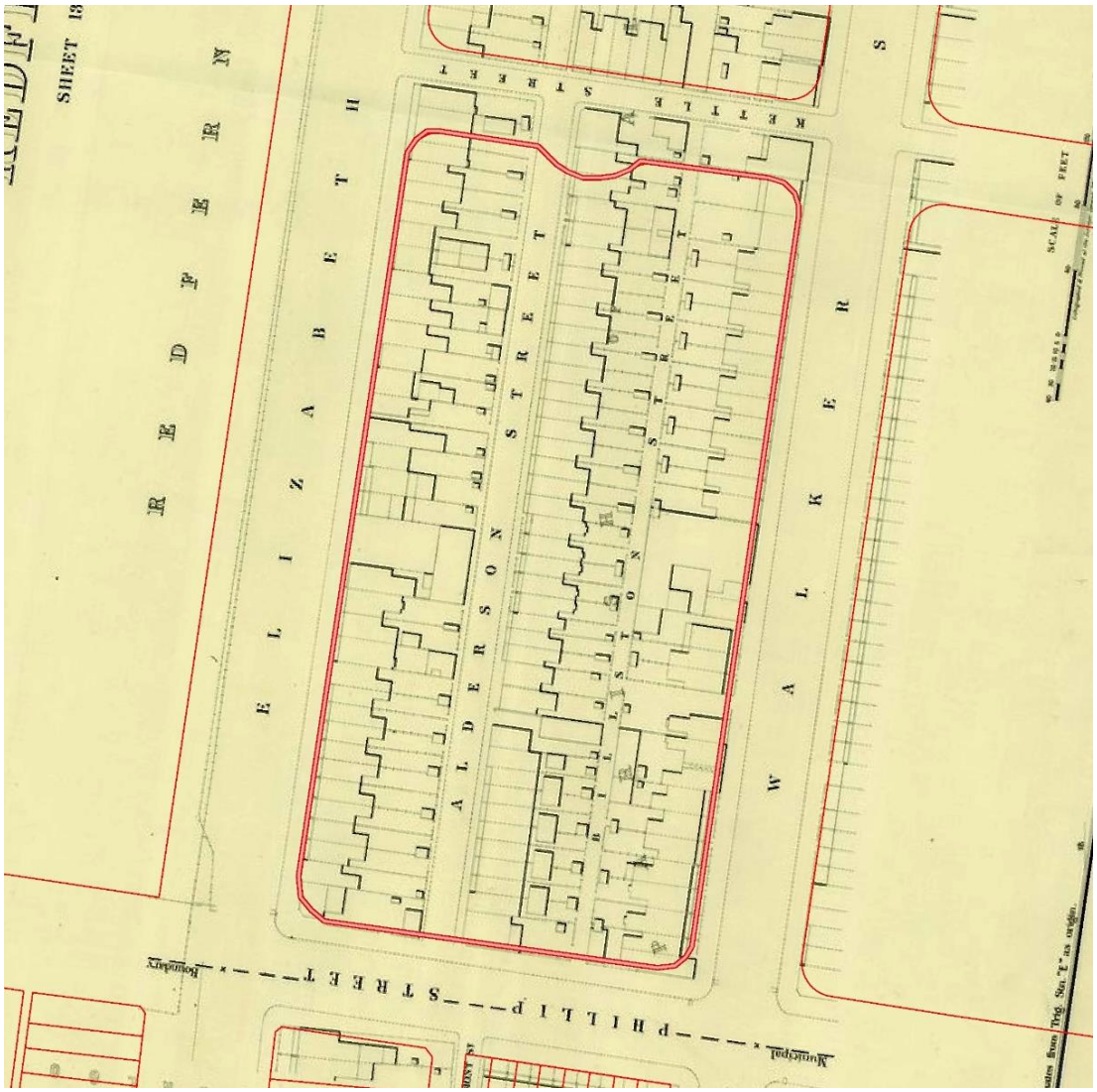


Figure 8. Sheet 13 ‘Redfern’ of the Sydney Metropolitan Detail Series in 1887, showing rows of brick terraces and internal roads within the study area. Modern cadastral boundaries are shown in red (Source: State Library of NSW, Map ZM Ser 4 811.17/1 http://acms.sl.nsw.gov.au/_zoomify/2008/D00663/a1367380.html).

Figure 9. Rear of Alderson Street, Sydney (Redfern), about 1900 (Source: State Records of NSW, NRS 12487, Digital ID: 12478_a021_a021000048).

Figure 10. A 1930 aerial photograph of the study area (Source: Land and Property Information, Sydney Survey Run 16, 20.02.1930, Map 3428).

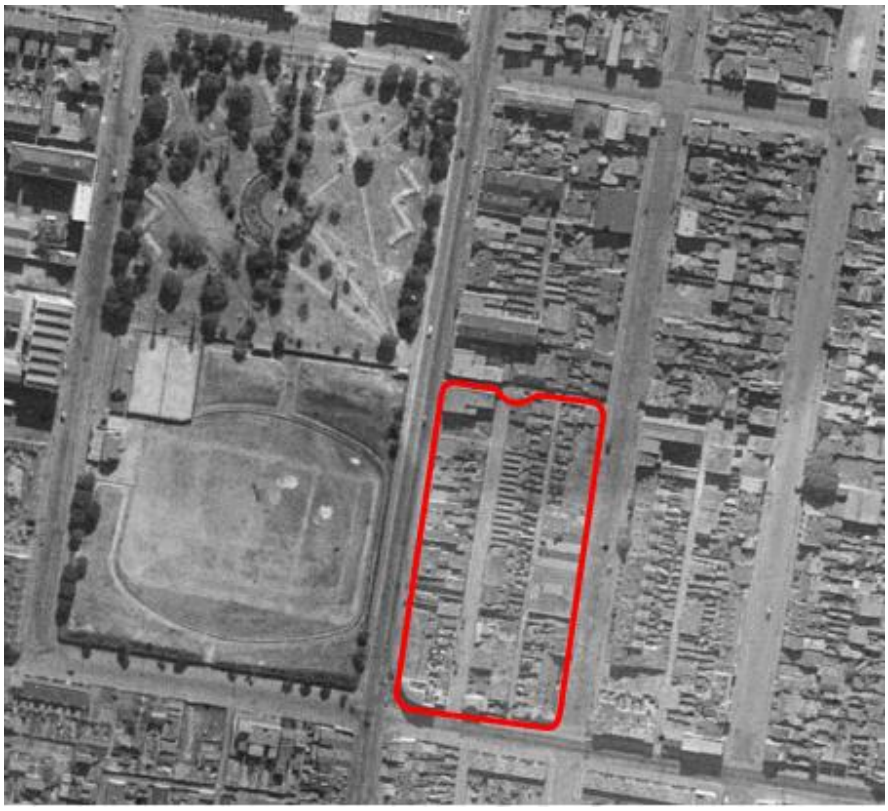


Figure 11. A 1943 aerial photograph of the study area (Source: NSW Government Six Maps Viewer, Land and Property Information and Sinclair Knight Mertz).

Figure 12. A 1949 aerial photograph of the study area, shortly after demolition (Source: City of Sydney Historical Atlas of Sydney, LPI, Sydney Survey Run 7, 15.12.1949).

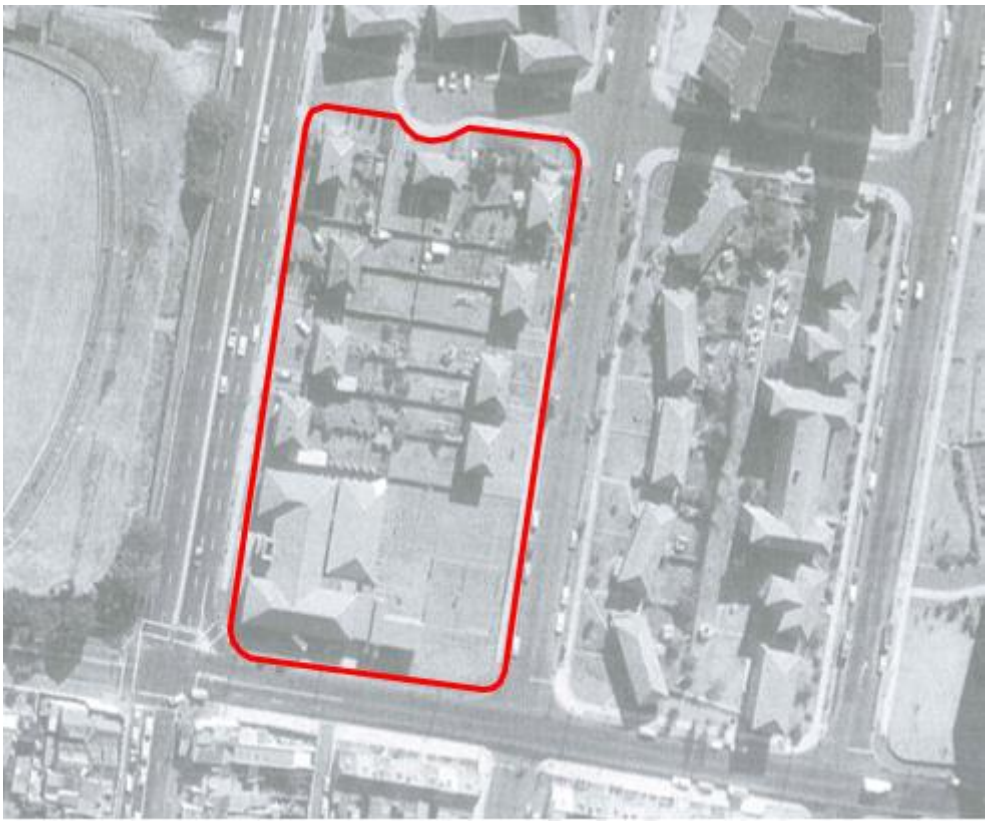


Figure 13. A 1970 aerial photograph of the study area (Source: Land and Property Information, Cumberland Survey Run 18, 07.07.1970, Map 1909_5102).

Figure 14. Oblique photograph of Redfern Oval, with the study area to the left (Source: Dictionary of Sydney Redfern to Waterloo 2005, https://dictionaryofsydney.org/media/2113).

Figure 15. A 2013 aerial photograph of the study area mid demolition (Source: Nearmap).

Figure 16. Phases of historical development across the study area.

4. Ethnographic record

4.1 Key Findings

- Aboriginal people of the Redfern area (and encompassing the study area) were the Cadigal people, and spoke a variant of the Darug language. Their traditional land encompassed southern Sydney; extending from the entrance of the Port Jackson Harbour to Cockle Bay, down south to South Head, and as far inland as Petersham.

- The Botany swamps, including Boxley's Lagoon, Lachlan Swamp and Waterloo Swamp formed critical resources for local Gadigal people. Boxley's Lagoon provided a reliable supply of fresh water as well eels, and terrestrial animals from the surrounding open forest were likely drawn to the water and were hunted for food. Important plants and animals were also found in wetlands, fertile floodplains and along estuaries and lagoons, providing medicines, fibres, vitamin and food sources.

- Boxley's Clear (near modern day Redfern) was described in the 1820s as an Aboriginal feasting and camping ground, a meeting place, a battle ground, and a place where tribal law was enacted.

- In 1867, the Australian Native XI team, an Aboriginal side from Victoria under the captaincy of Tom Wills, played on the Albert Cricket Ground during a four-month tour of New South Wales.

- The study area is immediately adjacent to Redfern Park and Oval – an important Aboriginal place for political, social and cultural reasons. From the 1940s, the Redfern All Blacks and the South Sydney Rugby League Club have played at this venue. Redfern Park was also the site of Prime Minister Paul Keating's iconic speech on dispossession on 10 December 1992 for the United Nation's Year for the World's Indigenous Peoples.

4.2 The study area

An Aboriginal ethnographic history of the Sydney region is provided in Appendix 2 of this report.

The Redfern area appears to have been part of traditional Cadigal land. The traditional Cadigal custodians spoke a coastal variant of the Darug language, and were considered part of the coastal 'salt water' Aboriginal people. Their traditional land encompassed southern Sydney; extending from the entrance of the Port Jackson Harbour to Cockle Bay, down south to South Head, and as far inland as Petersham (Phillip 1790 [1792]:309; King in Hunter 1793 [1968]:411).

Movement into and away from the local area, however, was not restricted; in fact many of Sydney's earliest roads followed well-known Aboriginal trackways. In May 1788, Governor Arthur Phillip led a party to investigate the murders of two convict men on the Cockle Bay foreshore, following an Aboriginal track from today's Haymarket area all the way to Botany Bay (Bradley 1788 [1969]). This track, often referred to in primary sources, roughly followed the route of today's Botany Bay Road and was an important corridor for trade and movement for

Aboriginal people in early Sydney (e.g. Tench 1793; Hunter 1793: Sept 1789). Many of the main thoroughfares such as George Street, Oxford Street and King Street, Newtown were Aboriginal trading routes and tracks to grasslands or bountiful fishing areas (Heiss 2002:8; Davis 2012).

At the time of arrival of Europeans in the Sydney region, the area between Redfern and Botany Bay provided a diverse landscape characterised by series of low ridgelines interspersed with relatively open valley drainage lines, freshwater swamps, tea tree country and sand dunes (Jo McDonald Cultural Heritage Management Pty Ltd 2004:7). Boxley's Lagoon (at the site of Redfern Park, and likely encompassing a large part of the study area) was noted as a resource-rich area in the historic period and was likely a focus for Aboriginal occupation prior to 1788:

> When known as Boxley's Lagoon, it was the home of vast quantities of red-bills, wild ducks, snipe, landrail, and other game now rarely seen anywhere near Sydney, while large numbers of eels were to be found in the water. In the vicinity of Mount Carmel, and along the ridge as far as… Surry Hills, bronze-wing pigeons, quail, and such like were found in abundance… while parrots and gill-birds were so plentiful that they were not deemed worth the powder expended in shooting them… the cover round about Redfern furnished plenty of bandicoots, 'possums, native cats, &c., which the youths of the time used to chase with dogs whenever the nights were favourable… (Obed West, cited in Marriott 1988:45-46).

Generally, European occupation of traditional hunting lands deprived Aboriginal groups of sources of food and access to camping and ceremonial sites; however, in areas where settlement was sparse, at least initially, traditional Aboriginal subsistence practices could continue. The diaries of early colonial settlers reveal that at least some traditional practices, such as fishing, continued along the Cooks River and its tributaries into the early nineteenth century (Backhouse 1843:288). Similarly, the area known as Boxley's Clear (modern day Redfern) was described in the 1820s as an Aboriginal feasting ground, a meeting place, 'the scene of many a hard-fought battle' and the 'spot where [Aboriginal people] were punished by their comrades for breaches of their tribal laws' (Marriott 1988:45-46). Aboriginal camps were also set up on the edges of the clear.

Eventually, the spread of European settlement, coupled with the spread of small pox and other infectious diseases, forced some Aboriginal inhabitants to either relocate into the potentially hostile lands of neighbouring Aboriginal groups, to partially integrate into colonial society as fringe dwellers, or to resist. Resistance by Aboriginal groups was often met with retaliatory action by white settlers and the colonial administration. A combination of these factors led to the demise of traditional lifestyles and a decrease in the Aboriginal population, particularly in and around the early centres of colonial settlement.

Aboriginal people who stayed in the area in the early to mid-1800s tended to live on the fringes of white society and became increasingly dependent on welfare. Historical records of blanket distribution lists of the 1830s show that apart from a group living in government boatsheds at Circular Quay, few people identified as Aboriginal were living in Sydney. Such was the decline in population that by 1858, George Thornton reported in a letter to the Colonial Secretary that there were only two Sydney Aboriginal people remaining (Ellmoos 2013). Many had moved to places such as La Perouse on Botany Bay, south of the CBD.

4.2.1 The Albert Cricket Ground

The Albert Cricket Ground, which opened on a large portion of the study area in 1864, played host to a number of important sporting matches throughout its short life. In 1867, the Australian Native XI team, an Aboriginal side from Victoria under the captaincy of Tom Wills, played on the ground during a four-month tour of New South Wales (Figure 17). Two players, Sugar and Watty, died whilst on tour; and a further two, Jellico and Paddy, died shortly thereafter.

In the following year the Australian Native XI team, coached by former Surrey professional cricketer and Albert Club member, Charles Lawrence, toured England. The team played a total of 47 matches throughout England over a period of six months, winning 14, losing 14 and drawing 19. Their skills were said to range from individuals who were exceptional athletes, down to two or three other team members who hardly contributed at all. The outstanding player was Johnny Mullagh, who scored 1,698 runs and took 245 wickets. In addition to playing cricket, the Aboriginal team frequently held boomerang and spear-throwing demonstrations. They returned to Sydney in February 1869.

Figure 17. The Australian Native XI team at the Melbourne Cricket Ground, late 1866. It is probable that many of the same pictured men played at the Albert Cricket Ground in the following year (Source: de Moore 2008:169).

5. Archaeological record

5.1 Key findings

- Aboriginal sites in the Port Jackson catchment area typically include shell midden sites in rockshelters and in open contexts, as well as archaeological deposits (comprising bone, stone or organic material). The range and predominance of shellfish species varies according to distance from the harbour mouth; with rock platform and ocean species dominating midden assemblages near the mouth of Sydney Harbour, while middens further up the estuary contained fewer species and no ocean species. Aboriginal burials in rockshelters and open middens were also found.

- The vast majority of sites in the Sydney CBD and surrounds, however, are artefact scatter sites and/or isolated finds, as well as potential archaeological deposits. Proximity to water and a range of natural resources is an important factor in site patterning in the area.

- European development has destroyed a significant number of Aboriginal sites that would have originally existed along the shores of Sydney Harbour, its bays, and its associated streams and swampy lagoons. In spite of this, previous archaeological investigations clearly indicate the potential for Aboriginal cultural material to survive within deposits underlying buildings and below filled ground – on urban sites, where remnant portions of the original soil profile still exist.

- Of particular relevance to the study area has been the identification of Aboriginal stone objects, shell midden material and human remains associated with aeolian sand dune contexts of the Tuggerah soil landscape – the landscape that encompasses the study area - at the Royal Sydney Golf Club, Centennial Park, Sheas Creek/Alexandra Canal, Moore Park and Randwick.

- Since 2010, no Aboriginal Heritage Impact Permits (AHIPs) have previously been issued within the study area.

5.2 Regional background

Aboriginal occupation of NSW spans at least 40,000 years (Stockton and Holland 1974; Nanson et al. 1987), although dates of more than 40,000 years have been claimed for artefacts and human remains found in barrier sands of Lake Mungo, in the Willandra Lakes Region (Shawcross 1998; Bowler et al. 2003). The dates of these sites fall at about the beginning of the Last Glacial Maximum, a period from about 30,000 to 18,000 BP, when temperatures were between 6 °C and 10 °C cooler than they are today and rainfall was less frequent. At the height of the Last Glacial Period, about 21,000 BP, areas of rainforest and tall open forest contracted and areas of woodland became more extensive than in the periods before 44,000 BP and after 11,000 BP (Attenbrow 2010:37).

Aboriginal occupation in the Sydney region dates back well into the Pleistocene period. This evidence comes from radiocarbon dating of charcoal retrieved from excavated sites on the city's fringes; at Burrill Lake (c 20,000 years before present [BP]), Bass Point (c 17,000 BP), and

Loggers Shelter in Mangrove Creek (c 11,000 BP) (Bowdler 1970; Lampert 1971; Attenbrow 1981, 2004).

Archaeological sites dating to the Holocene period, and particularly the late Holocene (the last 5000 years), are more frequently identified in the Sydney region. This is thought to reflect an intensification of the occupation of the area in this period, but also greater survivability of these sites (McDonald 1994). There appears to have been a preference for the occupation of the coastal zone in this period, possibly due to a greater reliance on marine resources through increasing populations, territoriality and greater climatic variability. Excavation of sites at Sheas Creek (Haworth et al. 2004) Quibray Bay (Roy and Crawford 1981), Kurnell (McDonald 2008 and Dallas 2005) and the Botany Cone Swamp 5 site (Smith et al. 1990) identified shell, bone and organic materials with dates of up to c. 4 ka (Attenbrow 2010:18-19).

5.2.1 Spatial Patterns of Archaeology

Regional studies of the Sydney region have revealed that Aboriginal sites are distributed across the whole range of physiographic units and environmental zones, although certain types of sites may be more frequently associated with certain parts of the landscape (for example, shelter site are particularly common in areas of Hawkesbury Sandstone), and different parts of the landscape contain different resources, which may be seasonally available or highly localised (AMBS 2010:15; Koettig 1996). Accordingly, the Port Jackson archaeological record differs from that of the Cumberland Plain of Sydney, partly due to resource availability (Attenbrow 1990:30).

A study of the regional archaeology of the Port Jackson catchment was undertaken by Val Attenbrow in 1989 and 1990. The project involved documentary research on previous archaeological work in the catchment, detailed recording and verification of registered sites and targeted field survey in areas where no sites had previously been identified. A total of 369 sites were identified; comprising 126 open middens, 203 middens in rockshelters, 6 open middens associated with small rockshelters, 27 deposits in rockshelters, and 7 open deposits (Attenbrow 1990:42). Surface evidence from middens indicated that the range and predominance of shellfish species varied according to distance from the harbour mouth, with rock platform and ocean species dominating midden assemblages near the mouth of Sydney Harbour. Middens further up the estuary contained fewer species and no ocean species (Attenbrow 1990:49). Evidence from some excavated sites suggested Aboriginal people have been occupying the harbour foreshores and collecting shellfish for at least 4,500 years, and indicated a change in the predominance of particular shellfish species over time (Attenbrow 1990:61). She also found that most middens were located within 10m of the high-water level; and burials were placed in open middens as well as within deposits within rockshelters.

Attenbrow noted a range of factors which may affect site distribution patterns, including greater visibility of shell in estuarine zones (compared to stone artefacts), greater visibility of rockshelters and rock platforms on Hawkesbury sandstone compared to artefact bearing sediment on Wianamatta shales, and recording bias in estuarine and sandstone areas compared to the western half of the Port Jackson catchment where development has been concentrated, including the southern side of Sydney Harbour and the Parramatta River (Attenbrow 1990:43-45).

5.3 Local information

A limited number of Aboriginal sites have been identified and recorded in urban Sydney contexts. The majority of Aboriginal sites identified within the Sydney CBD, Botany and surrounding suburbs were recorded during the course of historical archaeological excavations associated with development projects. Aboriginal sites and objects were identified in pockets of remnant topsoil either beneath or between historical archaeological contexts; or within remnant aeolian dunes of the Tuggerah soil landscape. Recorded site types include open campsites (for example, at the KENS site (Steele & Czastka 2005), on William Street, at Angel Place (Steele & Barton 1998) and Moore's Wharf), shell middens (at Sheas Creek, Bennelong Point, Lilyvale and Goat Island), rock engravings (at Dawes Point Park and the MSB Tower), rock shelters (Goat Island Cave) and, occasionally, burials (First Government House and the Royal Sydney Golf Club (JMCHM 2010)).

The limited number of recorded sites within the Sydney area is directly related to the long and intensive history of development. More than 200 years of European development has destroyed the majority of Aboriginal sites that would have originally existed along the shores of Sydney Harbour, its bays, and its associated streams and swampy lagoons. Of particular note was the early colonial practice of excavating Aboriginal shell middens to extract shells for lime burning for use in the production of mortar. Archaeological test excavation of the Grace Brothers site, Broadway revealed evidence for extensive historic disturbance dating from the first use of the site in the 1840s, such that no Aboriginal artefacts were recovered. As a result, it was considered that any potential archaeological deposits had been removed, extensively truncated and/or disturbed (Dominic Steele Heritage Consulting 1997: 14-15). A similarly disturbed soil profile was observed at sites across the Sydney area; for example, during archaeological test excavations at the University of Sydney Central Site, Darlington Campus (JMCHM 2006:4), at the Redfern Courthouse and Police Station (Austral Archaeology 2007), the National Centre of Indigenous Excellence at 180 George Street, Redfern (AHMS 2007b), at Cleveland and Woodburn Streets, Redfern (AHMS 2014), at 60-78 Regent Street, Redfern (Artefact Heritage 2014) and at 100-110 Euston Road, Alexandria (AMBS 2010).

In spite of this, previous archaeological investigations clearly indicate the potential for Aboriginal cultural material to survive within deposits underlying buildings and below filled ground in the Sydney CBD. Evidence of Aboriginal occupation prior to the arrival of European people clearly exists on some urban sites, where remnant portions of the original soil profile still exist. The 1997 excavations at Angel Place, along the margins of the former Tank Stream, are an excellent case in point. During an historical archaeological investigation, 54 Aboriginal artefacts were recovered from remnant topsoils immediately below the earliest historical levels on site (Steele & Barton, 1998). The results from Angel Place demonstrated that even in areas of earliest European settlement, Aboriginal objects and sites may still survive, buried at depth within remnant soils. Although the evidence from Angel Place was recovered from isolated pockets of surviving remnant soils, the range of artefact types (core reduction, small flakes and heat affected debitage) and raw materials (silcrete, indurated mudstone and chert) suggests the site was originally a continuous complex occupation site along the margins of the Tank Stream. Excavation of the Quadrant development on Broadway in 2003 (Steele & Czastka 2003) also identified 20 undiagnostic Aboriginal flaked stone artefacts in a discrete pocket of remnant A-horizon topsoil.

Of particular relevance to the study area has been the identification of Aboriginal objects, shell midden material and human remains within aeolian sand dune contexts of the Tuggerah soil landscape. Excavation at Sheas Creek [now Alexandra Canal] in the 1890s revealed the presence of two shell horizons. Archaeological evidence in these horizons included stone axes and butchered bone. The finds were made in two locations, 232 and 824m to the north of Ricketty Street, Alexandria (Attenbrow 1984); that is, along the stretch of the Canal about 3.6km to the south-west of the study area. A sample of the bone was later dated to 5,520 ± 70 BP (conventional age) (Haworth et al., 2004: 46).

Similarly, excavation at the Royal Sydney Golf Club recovered several human remains (at least three individuals) and over 5,700 artefacts (to depths of up to 1m), within a disturbed and truncated dune deposit of the Tuggerah soil landscape, some 6km to the north east of the study area. The assemblage was of middle to late Bondaian age and was dominated by quartz with lesser proportions of silcrete, silicified tuff, silicified wood, quartzite and other fine-grained siliceous material. Several backed blades and bipolar flakes and cores were recovered (JMCHM 2010). More recently, work within the Botany Lowlands physiographic region at the Randwick Stabling Yard has reportedly recovered some 32,000 stone 'items' (including complete and broken tools, as well as flaked debitage and unworked stone/manuports), though the results of this study have yet to be published or verified (Sydney Morning Herald, 30 March 2016; Transport for NSW 2017).

Areas of potential archaeological deposit have also been identified in relatively undisturbed sand dunes and swampy contexts, at the Redfern RSL site (Cultural Resources Management 2009), at 157-163 Cleveland Street, Redfern (Cultural Resources Management and Biosis Research 2011), and the former Rachel Forster Hospital at 134-150 Pitt Street, Redfern (AHMS 2007a).

A desktop Aboriginal heritage assessment was undertaken for the Redfern URS (which encompassed the study area) by Archaeological and Heritage Management Solutions (AHMS) in 2014. In their assessment of the Elizabeth Street study area in particular, they considered that much of the site had potential for intact and complex cultural material, as it would have been in close proximity to Boxley's Lagoon and was subjected to relatively low disturbance. It was likely to have been a significant Aboriginal place due to its proximity to a well-documented post-contact site, at Boxley's Clear (present day Redfern). The assessment recommended that sub-surface investigations of the study area (excluding the PCYC building) be undertaken to determine the extent, nature and significance of any buried archaeological deposits within the site (AHMS 2014:45-46).

5.4 AHIMS data

The Aboriginal Heritage Information Management System (AHIMS) database is managed by Department of Planning, Industry and Environment (DPIE), and includes the location and description of Aboriginal objects and sites previously recorded through academic research and cultural resource management (see Appendix 3.1 for further explanation of site types). An extensive search of the AHIMS database was carried out on 29 March 2018 (AHIMS Client Service ID: 336591) encompassing a 6km^2 area centred on the Elizabeth Street site (Appendix 3.2).

The search identified 30 Aboriginal sites within the search area. Of these 30 Aboriginal sites, 27 are listed as valid sites; one site 'Moore Park AS1' (#45-6-3155) is listed as being destroyed, and two sites '420 George St PAD' (#45-6-2838) and '168-190 Day Street, Sydney PAD' (45-6-3152) have been determined not to be sites. There are no registered Aboriginal sites or registered Aboriginal Places within the study area.

The most frequently recorded sites in the area are potential archaeological deposits and artefact sites (comprising both isolated finds and artefact scatters). A pigmented/engraved art site, a pigmented/engraved art and artefact site, an Aboriginal resource and gathering site, a shell midden site, a shell midden and burial site, and a shell, artefact and Aboriginal ceremonial and Dreaming site have also been identified (Table 2, Figure 18).

Table 2. Aboriginal sites in the vicinity of the study area summarised by site feature.

Site Feature	Site Count	Total (%)
Potential Archaeological Deposit	15	50.00
Artefact	7	23.33
Artefact; Potential Archaeological Deposit	2	6.67
Art (Pigment or Engraved)	1	3.33
Art (Pigment or Engraved); Artefact	1	3.33
Aboriginal Resource and Gathering	1	3.33
Shell	1	3.33
Shell; Burial	1	3.33
Shell; Artefact; Aboriginal Ceremony and Dreaming	1	3.33
Total	**30**	**100**

Most of the registered sites have been identified during archaeological survey and test excavation within the Sydney University Grounds or for the Randwick Light Rail, or for small-scale developments in Chippendale, Ultimo and the CBD itself. Interestingly, it appears as though few sites have been registered within deep Tuggerah soils; namely an artefact scatter ('Moore Park AS1 #45-6-3155) along Anzac Parade; an artefact scatter and PAD ('Doncaster Ave PAD' #45-6-3245) and artefact scatter ('RSY 1' #45-6-2346) at the Randwick stabling yards; a rock engraving site ('Centennial Park'#45-6-0647) at Centennial Park; and a shell midden ('Wynyard St Midden' #45-6-0297) on Wyndham Street, Redfern. There appears to be anomalies with the site recording and location of the latter of these sites, given that there is no 'Wynyard Street' in Redfern and the site card refers to the site as being '100m south of Redfern Station' in 'a park on [the] west side of the street. The coordinates provided on the AHIMS site card place the midden between Botany Road and Wyndham Street, Redfern. It is considered that the site is located on Wyndham Street, Redfern, approximately 700 m to the west of the present study area, not in Wynyard Street, Sydney. No further details are provided.

The spatial patterning and nature of these registered AHIMS sites is partly due to the developed nature of the local area: modified trees are unlikely to remain given that the pre-contact vegetation has been cleared; and where the ground surface is not visible it is unlikely that artefacts will be identified. Furthermore, the distribution of previously identified sites in the vicinity of the study area is likely to reflect the location and intensity of previous Aboriginal heritage investigations, rather than accurately represent patterns of past Aboriginal occupation of the landscape.

Due to the age of the previous AHIMS search, a basic search of the study area was undertaken again in June 2019, and found no registered Aboriginal sites within the study area (Client Service ID: 428442-428444).

A search of the DPIE public and archived Aboriginal Heritage Impact Permit (AHIP) Register reveals that no AHIPs have previously been issued within the study area since 2010.

EXTENT

HERITAGE ADVISORS
TO AUSTRALIA AND
THE ASIA PACIFIC
Incorporating AHMS and Futurepast

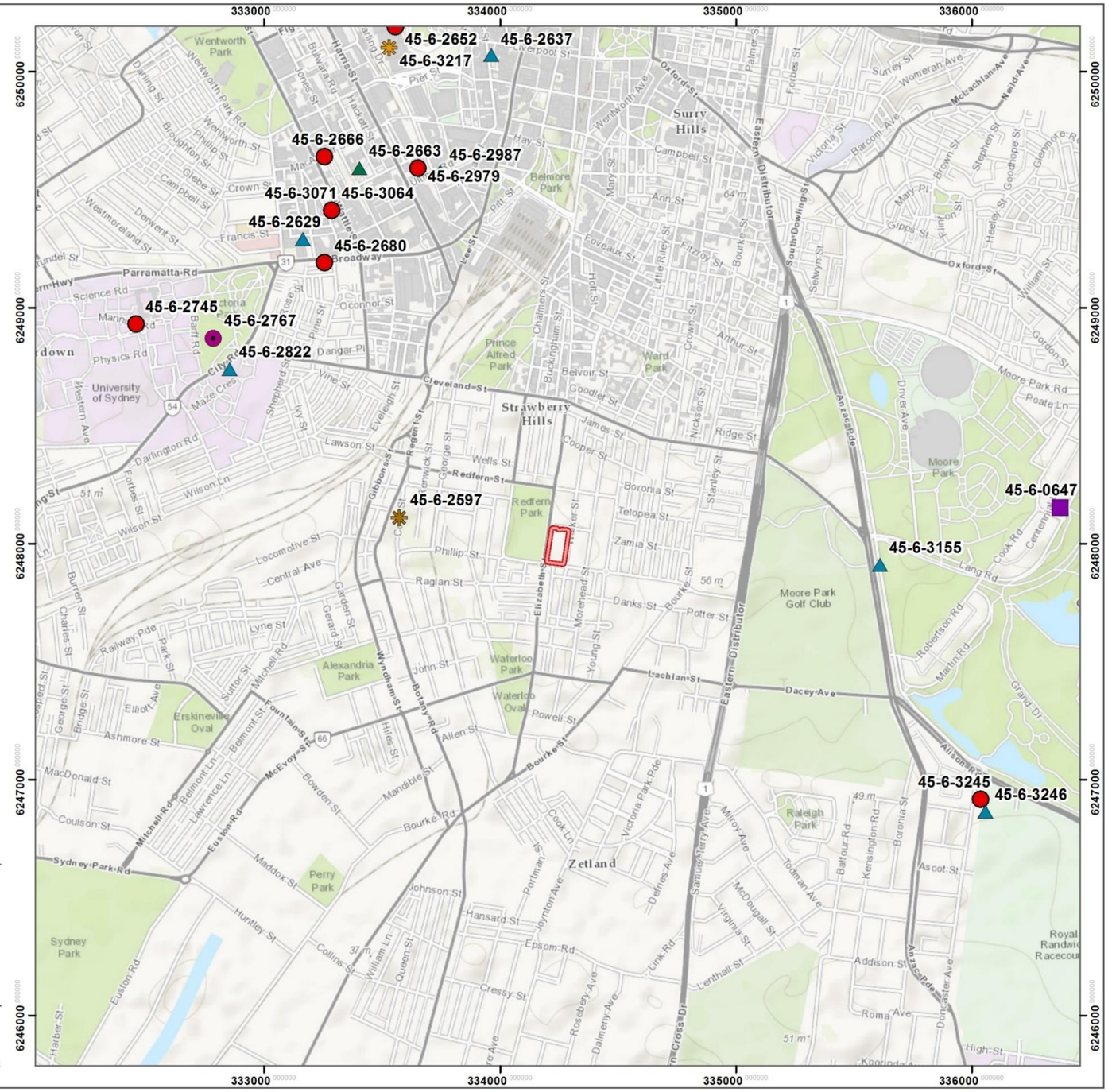
600-660 Elizabeth St, Redfern

Study Area

Registered AHIMS Sites

Site Types

- Aboriginal Resource and Gathering
- Art (Pigment or Engraved)
- Art (Pigment or Engraved); Artefact
- Artefact
- Artefact; Potential Archaeological Deposit
- Shell
- Shell; Artefact; Aboriginal Ceremony and Dreaming
- Shell; Burial
- Potential Archaeological Deposit



Drawn by: Laressa Barry
Checked by: Alan Williams
Date: 23 March 2018
Projection: GDA 1994 MGA Zone 56
Data sources: ESRI, HERE, DeLorme and the GIS Community, OEH, Extent.

0 225 450 675 900 1,125
Metres

Figure 18. Registered AHIMS sites in close proximity to the study area.

6. Field investigation

Field inspections of the study area were undertaken on 16 March 2018 by Extent Heritage archaeologists and heritage advisors Laressa Barry, Lorna Cooper and Vidhu Gandhi, together with Dylan McCallum and Lindsey Noble of LAHC. The main aims of the field investigation were to:

- Verify the desktop review outlined in preceding sections;
- Identify any extant Aboriginal objects or sites present within the study area through visual observation;
- Identify any potential deposits or landforms of archaeological interest that may be present within the study area; and
- Identify evidence of previous and existing disturbance that may have had a detrimental impact to any Aboriginal objects that may have been present.

6.1 Results

Topographically, the study area is characterised by a broad, low and relatively flat plain that slopes slightly down from Elizabeth Street and Walker Street to the centre of the site (Plate 1). Prior to European settlement, the site would have had a more undulating topography of sand dune crests and swales, with low-lying parts likely inundated by water from Boxley's Lagoon. It is probable that those slightly elevated parts of the study area would have afforded significant views across Boxley's Lagoon and to the Botany Swamps beyond, and towards Mount Carmel in the south. Based on its proximity to nearby swampy resources, the site is likely to have been an attractive location for Aboriginal visitation and/or occupation.

The study area is currently used as a premise for the PCYC in its southern quadrant, while the remainder is vacant and fenced land. The southern portion of the study area comprises a single-storey brick building on a concrete slab foundation, with external basketball and tennis courts, a playground and garden areas (Plate 2 to Plate 4). None of the buildings here have basements or below-ground elements, which is likely due to the waterlogged nature of the site. Reportedly, drainage is a consistent issue on this low-lying part of the site – during periods of heavy rain, the tennis court is inundated with water causing the turf to slump, and sinking of internal floors and walls has occurred. Large parts of this part of the site are covered by existing buildings, covered in synthetic grass or paved such that ground surface visibility was low.

The northern portion of the study area is currently vacant and fenced from the public. Here, ground surface exposures revealed a soil profile comprising a thin lens of dark grey-brown silty sand with a high humic content and likely representing a modern topsoil, overlaying a pale yellow-grey to mid-brown, medium-grained sand (Plate 5). This medium sand probably represents an introduced fill layer to reclaim Boxley's Lagoon, and may or may not be reworked Tuggerah soils from elsewhere in the vicinity of the site.

Ground surface exposures in the central and northern thirds of the study area revealed evidence for some localised ground surface disturbance. A concrete-lined sewer main outlet was identified some 25m east of the Elizabeth Street boundary and 45m north of the PCYC fenceline (Plate 6). The installation of this concrete lined drain is likely to have involved considerable ground surface disturbance in that area (2-3m below ground surface). At localised areas throughout the vacant land degrading shale, mortar, concrete, dry-pressed bricks/brick rubble and paved floor surfaces were observed, and these likely relate to the 1940s phase of historical occupation (Plate 7 and Plate 8). The site has been extensively cleared of all of its native sclerophyll and sand heath vegetation. Where present, vegetation comprises planted trees including palms, figs, and gums, and mark the locations of former yard areas associated with the site's most recent phase of housing (Plate 9).

In summary, the study area appears to have been levelled and landscaped over the course of its development, which in turn has truncated the upper portion of the natural soil profile of the study area to various degrees. Based on the geotechnical investigations undertaken on site and for the Redfern Park and Oval next door, there may be ~150-200 cm of fill covering the study area. The under-lying soil profile could not be reliably investigated as part of the site inspection due to the level of introduced fill, landscaping and other structures present on the site. Although no Aboriginal objects were found on the ground surface during the inspection, the entire study area was identified as having moderate potential to contain subsurface cultural material in the form of discrete Aboriginal artefact scatters, shell midden deposits or human burials. The potential for culturally modified (scarred) trees, or other site types associated with sandstone geology is, however, considered unlikely based on field observations.

Plate 1.Typical ground coverage in the northern portion of the site, comprising vacant land, view south.

Plate 2.Entry to the PCYC building in the southern portion of the site, view north.

Plate 3. Basketball court in the southern portion of the site, view east.

Plate 4. Playground and garden areas along the southern site boundary, view east.

Plate 5. Typical ground surface comprising modern demolition rubble amongst dark sandy topsoil. The underlying medium sand is visible.

Plate 6.Concrete sewer outlet, view west.

Plate 7. Degrading shale and rubble stockpile along the PCYC fenceline, view east.

Plate 8.Concrete footings and paved surface in vacant land, view west.

Plate 9. Planted trees marking previous yard areas, view south.

7. Archaeological summary and predictions

Based on regional studies, the Aboriginal archaeological resource of the Port Jackson region is dominated by shell midden sites in rockshelters and open contexts, as well as archaeological deposits (comprising bone, stone or organic material) and Aboriginal burials. Conversely, the vast majority of sites in the Sydney CBD, Botany and surrounds (and including the study area) are dominated by surface and subsurface stone artefact scatter sites and/or isolated finds, as well as potential archaeological deposits. Proximity to water and a range of natural resources is an important factor in site patterning in the local area. Elevation and aspect is another important factor in site patterning; where prominent locations with landscape views above zones of inundation were favourable camping locations, and included elevated landforms above floodplains and surrounding the area's natural swamps.

Of specific relevance to the study area has been the identification of Aboriginal stone objects, shell midden material and human remains associated with aeolian sand dune contexts of the Tuggerah soil landscape, with examples found at the Royal Sydney Golf Club, Sheas Creek/Alexandra Canal, Moore Park and the Randwick Stabling Yard. These sites have been identified as a result of compliance-based archaeological investigation where sub-surface archaeological investigation has occurred. The study area appears to contain a broadly similar soil profile as those listed here, and therefore has the potential for similar types of cultural materials to be present, with some caveats.

No Aboriginal sites, objects, sandstone rock outcrops or culturally modified (scarred) trees were identified within the study area during this assessment. However, Aboriginal occupation of the study area in the past is considered likely given that the site is located within the Tuggerah soil landscape and is either within, or on the immediate edges of the former Boxley's Lagoon. Where parts of the study area were on the elevated margins of the former Lagoon, it can be expected that there is greater potential for evidence of Aboriginal occupation to occur, but this cannot be further refined on the basis of the investigation undertaken to date (Figure 19). Precautionary principles suggest that those areas that have not been subject to disturbance, and that are within sand dune contexts, or within 200m of waterways (including lagoons), are considered landforms of archaeological interest until proven otherwise. While historical development and occupation of the study area has involved ground disturbance, in general material has been introduced rather than removed, and this would have tended to conserve, or cap, any cultural deposits that may have been present.

As Aboriginal community consultation is currently ongoing, it is not possible to determine whether any significant Aboriginal areas of cultural value are present within the study area. However, the site is in close proximity to a well-documented post-contact site at Boxley's Clear (present day Redfern), and may have been a significant Aboriginal occupation and resource gathering place in the past. Swampy lagoons have frequently been identified as places of Aboriginal cultural significance to the past and contemporary local Aboriginal community for their ability to provide bush foods, medicines and other utilised natural resources.

On the basis of the archaeological sites registered in the region, a review of previous archaeological studies and the environmental context, the following conclusions can be drawn regarding the potential presence and location of Aboriginal sites within the study area:

- Artefact scatter sites, isolated finds and potential archaeological deposits are the most common sites within the broader area, and can occur across most landforms, even in disturbed contexts. Artefact sites may be present within the study area; both in introduced fills and within Tuggerah sands across the site. Based on other investigations, the presence of these deposits at significant depths below current surface, in the order of several metres, can occur.

- Equally, Aboriginal shell midden sites and burials are generally located close to the coast and estuarine rivers, and are often found in soft sand dune contexts such as those present within the site. It is difficult to accurately predict the location of these sites; however, burial sites can occasionally be identified on the ground surface by rounded depressions, shallow mounds, or localised patches of vegetation, through archaeological excavation, or ground-penetrating radar techniques (NSW National Parks and Wildlife Service 2003:18). Carved or scarred trees mark burial locations as well as ceremonial grounds and occur within the coastal zone - however, their distribution is equally difficult to predict, and they are often destroyed as a result of clearance, sandmining and other urban development.

- The study area has been extensively cleared and no remnant vegetation remains. As such, it is extremely unlikely that scarred or carved trees will be present within the study area.

- There is no suitable stone resource material within the study area owing to its underlying geology. Therefore, it is considered unlikely that stone quarries, rockshelters, rock-engravings or grinding grooves will be present within the study area.

Figure 19. Map of Aboriginal archaeological potential for the study area, with the approximate location of Boxley's Lagoon from the historic literature. Where parts of the study area were on the elevated margins of the former Lagoon, it can be expected that there is greater potential for evidence of Aboriginal occupation to occur, but this cannot be further refined on the basis of the investigation undertaken to date.

8. Preliminary significance assessment

No surface Aboriginal sites were identified within the study area during field inspection, and no areas of Aboriginal cultural value were identified, though consultation is currently ongoing.

However, based on background research and archaeological models for the broader region, there remains the potential for Aboriginal archaeological material to be present within deep sandy deposits of the Tuggerah soil landscape, and which extend across the entire study area. Aboriginal material present may be in the form of buried lithic material (stone artefact scatters and/or isolated finds), shell midden and faunal remains, or human skeletal remains. Based on geotechnical investigations of the study area and broader surrounds, this archaeological material is likely to be buried beneath undulating (60-200cm deep) layers of modern fill and/or historical demolition material. The deposits of interest appear to extend to depths of up to 400cm below ground surface.

Based on the level of investigation undertaken to date, however, it is not possible to accurately assess the Aboriginal archaeological (scientific) or cultural significance of the study area on the basis of surface investigation alone. Low density artefact scatters and isolated finds are prevalent in the broader region, generally have low research potential and are typically considered to have local significance; whilst large, stratified or high-density scatters of considerable antiquity are less common, have greater research potential, and may be of local or greater (State) significance. Midden sites, in particular, are considered to be highly significant for their potential to contain Aboriginal ancestral remains (human burials), especially when deep intact cultural deposits that have been subjected to minimal disturbance are identified. More broadly, Aboriginal sites are considered to be important cultural markers for local Aboriginal people as tangible evidence of past Aboriginal occupation, and have some degree of cultural value to Aboriginal people.

Notwithstanding this, swampy and waterlogged areas were not conducive to Aboriginal occupation – and historical documentation suggests that at least part, if not the majority of the study area was encompassed by Boxley's Lagoon. Where parts of the study area were on the elevated margins of the former Lagoon, it can be expected that there is greater potential for evidence of Aboriginal occupation to occur, but this cannot be further refined on the basis of the investigation undertaken to date.

9. Impact assessment and conclusion

9.1 Proposed development

9.1.1 Introduction

600-660 Elizabeth Street, Redfern will be transformed into a market leading build-to-rent redevelopment featuring contemporary urban and architectural design and creating a high quality integrated community of social, affordable and private housing.

9.1.2 Communities plus build to rent

Communities Plus is a key program under NSW Government's Future Directions for Social Housing in NSW, delivering integrated social, affordable and private housing by partnering with the private and not for profit sectors including registered Tier 1 or Tier 2 Community Housing Providers (CHPs).

The Redfern project aligns with Future Directions, by providing innovative options for private sector investment in social housing under a long term lease. The project presents an opportunity to renew and increase social housing in a well-located integrated community with good access to education, training, local employment, and close to community facilities such as shopping, health services and transport.

On 6 July 2018, the NSW Government announced the Site as the pilot for Communities Plus build-to-rent. The Project provides an opportunity for the private sector, in partnership with the not-for-profit sector, to fund, design, develop and manage the buildings as rental accommodation under a long-term lease.

Build-to-rent is a new residential housing delivery framework that is capable of providing access to broader housing choices. Established in overseas markets such as the UK and the USA, locally, build-to-rent has significant scope to provide increased rental housing supply and the opportunity for investment in residential housing in NSW.

9.1.3 Vision, reference scheme and planning framework

A design, technical analysis and consultation process was undertaken to prepare a reference scheme which indicates how the future public domain, building form and connections could be delivered. The reference scheme (shown at Figure 2) balances the challenges and opportunities of the site, particularly the desire to deliver high quality urban design while providing new and modern social housing in an integrated mixed tenure environment.

The reference scheme was prepared to indicate how the site could, rather than will, be redeveloped and has been used as a basis to prepare draft amendments to the Sydney Local Environmental Plan 2012 (including zoning, height, floor space ratio and car parking controls) and the development of a new site specific Development Control Plan which will guide the detailed design of the Site.

The proposed planning framework has regard to:

- accessibility and connectivity of the Site to public transport, employment, shops, education and other services,
- the site and local area's rich history and cultural significance,
- the surrounding urban form and context, and
- the environmental and servicing considerations, including flooding, stormwater, traffic, utilities, noise, air quality and wind.

The proposed planning framework will guide future development applications for the site which are anticipated to achieve the following:

- Approximately 500 dwellings, with a maximum FSR of 3.7:1
- Buildings with a predominant height of 6-9 storeys with a single tower up to 19 storeys (66m).
- New public spaces on Kettle and Phillip Streets activated by shops, cafes, community space and other services.
- Some supporting retail and communal floor space to support incoming population.

It is expected the site will be developed over a period of three years, once the site has been rezoned.

9.2 Potential Aboriginal heritage impact

Rezoning of the study area in itself will not result in impacts to any known or potential Aboriginal archaeological sites or deposits, or Aboriginal cultural values areas.

The eventual development, however, has the potential to impact upon any as yet unidentified Aboriginal archaeological sites, and/or areas of cultural value. Based on the reference scheme illustrated in Figure 2 above, the proposed development would include demolition of the existing PCYC structures, sporting facilities and removal of existing trees, and the construction of five multi-storey mixed density dwellings, and a residential tower. Communal lawns and public open spaces, covering an area of approximately 2,900m^2, would also be provided.

While no Aboriginal sites, objects, sandstone rock outcrops or culturally modified trees were identified within the study area during this preliminary assessment, an area of moderate archaeological potential has been identified across the entire study area (Figure 19). This identification was based on its location within the Tuggerah soil landscape, and its proximity to Boxley's Lagoon. Where parts of the study area were on the elevated margins of the lagoon, it can be expected that there is a higher potential for buried cultural material in the form of discrete Aboriginal artefact scatters, shell midden deposits and human burials to occur – but this cannot be further refined on the basis of the investigation undertaken to date. Further, there is potential for cultural material to be present in any areas outside of the lagoon (which is poorly defined), and which have not been heavily impacted by historical activities.

Based on geotechnical information, any development that would likely extend below modern or historical fill/overburden units (typically 60-200cm below ground surface) has the potential to result in direct impacts to the underlying natural soil profile (and any associated cultural material, if present). Such activities would typically include the construction of basement parking and lift wells and the installation of sewerage, stormwater and electrical infrastructure where impacts are >60cm below ground surface.

The site may also have Aboriginal cultural value relating to its use as an occupation and resource gathering site in the past; and due to other contemporary activities in the last two hundred years. However, these observations have been based on the results of background research and brief site investigation of the ground surface only, and have been constrained by a lack of Aboriginal community consultation to date – the latter of which is currently ongoing.

With respect to the Redfern Park and Oval (a State heritage item, SHR I1347) the proposed development of the study area will have no *direct* physical impact on the heritage item itself – as its mapped boundaries lie outside of the study area. However, it is noted that the Park and Oval may have social, cultural, political, and/or landscape value to the local Aboriginal community. As such, future development of the study area has potential to indirectly affect these values, and visual impacts, etc, will need to be considered. Aboriginal community consultation, in addition to the wider consultation for the project, will be imperative to understanding, appreciating, conserving and interpreting these values.

9.3 Management Strategy

This preliminary report has been written to assist in the rezoning application for the project. Rezoning of the study area in itself would not result in impacts to any known or potential Aboriginal archaeological sites or deposits, or Aboriginal cultural values areas.

Current information suggests that a vast, but poorly defined area of moderate archaeological potential exists across the study area, and that the study area may have contemporary and historical Aboriginal cultural value. Further archaeological investigation of the study area is therefore essential to define the nature, extent and significance of the Aboriginal archaeological and cultural resource, and to accurately identify the potential impacts that may result from the development. Such investigation should be undertaken prior to, and as supporting documentation to accompany, any development application for the study area.

Further archaeological investigation should take the form of a formal Aboriginal Cultural Heritage Assessment Report (ACHAR), prepared in accordance with Office of Environment and Heritage policies and guidelines. Currently, this report requires the following additional tasks to become an ACHAR:

- Conclusion of the Aboriginal community consultation process (ongoing).
- Distribution of a proposed assessment and fieldwork methodology to Registered Aboriginal Parties.
- Fieldwork comprising archaeological test excavation, and post-fieldwork analysis.

- Finalisation of the Aboriginal heritage impact assessment, development of recommendations for the management of any identified archaeological and/or cultural resource, and review of the ACHAR by Registered Aboriginal Parties.

Based on current evidence, it would seem unlikely that the cultural heritage as documented across the site would require major changes to the proposed development. However, there may potentially be requirements for minor development re-design and/or mitigation measures (e.g. salvage excavation, surface collection, interpretation, etc) in areas where significant cultural material is identified as part of the ACHAR process. Based on regional models and previous studies, such deposits (if present) are most likely to be constrained to elevated areas within the study area.

9.4 Recommendations

The following recommendations are made with regards to the proposed rezoning of the study area:

- Rezoning of the study area in itself would not result in impacts to any known or potential Aboriginal archaeological sites or deposits, or Aboriginal cultural values areas.

- Current information suggests that a vast, but poorly defined area of moderate archaeological potential exists across the study area, and that the study area may have contemporary and historical Aboriginal cultural value. Further archaeological investigation of the study area is therefore required to define the nature, extent and significance of the Aboriginal archaeological and cultural resource, and to accurately identify the potential impacts that may result from the development. Such investigation should be undertaken prior to, and as supporting documentation to accompany, any development application for the study area.

- This report should be reviewed following any further investigations that may result in refinement and/or modification of the potential Aboriginal heritage resource identified within the study area.

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11. Abbreviations

ACHAR	Aboriginal cultural heritage assessment report
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
AHMS	Archaeological and Heritage Management Solutions
BP	Before present (AD 1950)
CHL	Commonwealth Heritage List
CRM	Cultural resource management
DCP	Development control plan
DECCW	Department of Environment, Climate Change and Water (now DPIE)
DP	Deposited plan
DPIE	Department of Planning, Industry and Environment (formerly OEH)
ERS	Eastern Regional Sequence
ka	Abbreviation for thousands of years ago (e.g. 1 ka equals 1,000 years ago)
LALC	Local Aboriginal Land Council
LEP	Local environmental plan
LGA	Local government area
NHL	National Heritage List
NPW Act	*National Parks and Wildlife Act 1974* (NSW)
OEH	Office of Environment and Heritage (formerly DECCW, now DPIE)
PAD	Potential archaeological deposit
RAP	Registered Aboriginal party
REP	Regional environmental plan
SEPP	State environment planning policy
WHL	World Heritage List

12. Glossary

Aboriginal cultural heritage assessment report (ACHAR)	A document developed to assess the archaeological and cultural values of an area, generally required as part of an environmental assessment (EA).
Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010	Guidelines developed by DECCW to guide formal Aboriginal community consultation undertaken as part of an Aboriginal cultural heritage assessment report (ACHAR).
Aboriginal Heritage Impact Permit (AHIP)	The statutory instrument that the Director General of the Department of Planning, Industry and Environment (DPIE) issues under section 90 of the *National Parks and Wildlife Act 1974* (NSW) to allow the investigation (when not in accordance with certain guidelines), impact and/or destruction of Aboriginal objects. AHIPs are not required where project approval under the state-significant provisions of Part 4 (Division 4.1) of the *Environmental Planning and Assessment Act 1979* (NSW).
Aboriginal object	A statutory term defined under *the National Parks and Wildlife Act 1974* (NSW) as 'any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains'.
Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales	Guidelines developed by DECCW (2010 to inform the structure, practice and content of any archaeological investigations undertaken as part of an Aboriginal cultural heritage assessment report (ACHAR).
Department of Environment, Climate Change and Water (DECCW)	Now known as the Department of Planning, Industry and Environment (DPIE), Department of Premier and Cabinet.
Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales	Guidelines developed by DECCW, outlining the first stage of a two-stage process in determining whether Aboriginal objects and/or areas of archaeological interest are present within a study area. The findings of a due diligence assessment may lead to the development of an Aboriginal cultural heritage assessment report.
***Environmental Planning and Assessment Act 1979* (NSW)**	Statutory instrument that provides planning controls and requirements for environmental assessment in the development approval process. The Act is administered by the Department of Planning and Environment.
Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW	Guidelines developed by OEH to inform the structure and content of an Aboriginal cultural heritage assessment report (ACHAR).

Isolated find	An isolated find is usually considered a single artefact or stone tool, but can relate to any product of prehistoric Aboriginal societies. The term 'object' is used in the Aboriginal cultural heritage assessment report (ACHAR), to reflect the definitions of Aboriginal stone tools or other products in the *National Parks and Wildlife Act 1974* (NSW).
***National Parks and Wildlife Act 1974* (NSW)**	The primary piece of legislation for the protection of Aboriginal cultural heritage in New South Wales. Part 6 of this Act outlines the protection afforded to and offences relating to disturbance of Aboriginal objects. The Act is administered by DPIE
Department of Planning, Industry and Environment (DPIE)	The DPIE is responsible for managing the Aboriginal Heritage (and other) provisions of the *National Parks and Wildlife Act 1974.*
Potential archaeological deposit (PAD)	An area assessed as having the potential to contain Aboriginal objects. PADs are commonly identified on the basis of landform types, surface expressions of Aboriginal objects, surrounding archaeological material, disturbance, and a range of other factors. While not defined in the *National Parks and Wildlife Act 1974* (NSW), PADs are generally considered to retain Aboriginal objects and are therefore protected and managed in accordance with that Act.
Proponent	A corporate entity, government agency or an individual in the private sector which proposes to undertake a development project.

Appendix 1. Legislation

A1.1. Commonwealth legislation

Aboriginal and Torres Strait Islander Heritage Protection Act 1984

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* was enacted at a federal level to preserve and protect areas (particularly sacred sites) and objects of particular significance to Aboriginal Australians from damage or desecration. Steps necessary for the protection of a threatened place are outlined in a gazetted Ministerial Declaration (Sections 9 and 10). This can include the preclusion of development.

As well as providing protection to areas, it can also protect objects by Declaration, in particular Aboriginal skeletal remains (Section 12). Although this is a federal Act, it can be invoked on a state level if the state is unwilling or unable to provide protection for such sites or objects.

Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* provides for the protection of natural and cultural heritage places. The Act establishes (amongst other things) a National Heritage List (NHL) and a Commonwealth Heritage List (CHL). Places on the NHL are of natural or cultural significance at a national level and can be in public or private ownership. The CHL is limited to places owned or occupied by the Commonwealth which are of heritage significance for certain specified reasons.

Places listed on the NHL are considered to be of state and local heritage value, even if state or local various heritage lists do not specifically include them.

The heritage values of places on the NHL or the CHL are protected under the terms of the EPBC Act. The Act requires that the minister administering the Act assess any action which has, will have, or is likely to have, a significant impact on the heritage values of a listed place. The approval (or rejection) follows the referral of the matter by the relevant agency's minister.

Native Title Act 1993

The *Native Title Act 1993* provides recognition and protection for native title. The Act established the National Native Title Tribunal to administer native title claims to rights and interests over lands and waters by Aboriginal people. The Tribunal also administers the future act processes that attract the right to negotiate under the *Native Title Act 1993.*

The Act also provides for Indigenous land use agreements (ILUA). An ILUA is an agreement between a native title group and others about the use and management of land and waters. ILUAs were introduced as a result of amendments to the *Native Title Act* in 1998*.* They allow people to negotiate flexible, pragmatic agreements to suit their particular circumstances.

An ILUA can be negotiated over areas where native title has, or has not yet, been determined. They can be part of a native title determination, or settled separately from a native title claim. An ILUA can be negotiated and registered whether there is a native title claim over the area or not.

A1.2. New South Wales state legislation

Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) requires that environmental and heritage impacts are considered by consent authorities prior to granting development approvals. The relevant sections of the EP&A Act are:

- Part 3A: A single assessment and approval system for major development and infrastructure projects [note that Part 3A has now been repealed and replaced with Part 4 (Division 4.1)].
- Part 4: Development that requires consent under consideration of environmental planning instruments.
- Part 5: An assessment process for activities undertaken by Public Authorities and for developments that do not require development consent but an approval under another mechanism.

Where Project Approval is to be determined under Part 4 (Division 4.1) of the Act, further approvals under the *National Parks and Wildlife Act 1974*, are not required. In those instances, management of Aboriginal heritage follows the applicable Aboriginal assessment guidelines (the Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation, July 2005) and any relevant statement of commitments included in the Development Approval.

National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NPW Act) provides blanket protection for Aboriginal objects (material evidence of Indigenous occupation) and Aboriginal places (areas of cultural significance to the Aboriginal community) across NSW. An Aboriginal object is defined as:

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

An Aboriginal place is any place declared to be an Aboriginal place by the Minister for the Environment, under section 84 of the Act.

It is an offence to disturb Aboriginal objects or places without a permit authorised by the Director-General of the Department of Planning, Industry and Environment. In addition, anyone who discovers an Aboriginal object is obliged to report the discovery to DPIE.

The operation of the NPW Act is administered by DPIE. With regard to the assessment of Aboriginal cultural heritage, DPIE has endorsed the following guidelines:

- *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW 2010c).
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DEECW 2010b).

- *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010a).
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011).

Aboriginal Land Rights Act 1983

The *Aboriginal Land Rights Act 1983* allows for the transfer of ownership to a Local Aboriginal Land Council of vacant Crown land not required for an essential purpose or for residential land. These lands are then managed and maintained by the Local Aboriginal Land Council.

Appendix 2. Ethnographic record

A2.1. Regional ethnographic information

The Sydney coastal region was occupied and used by Aboriginal people for thousands of years prior to European settlement. Within the Sydney region the coastline, rivers and creeks, sandy dune fields, floodplains, swamps and open forests provided Aboriginal people with rich and varied resource zones and occupation areas. Aboriginal sites across the Sydney region provide tangible evidence of an ongoing link with the long history of Aboriginal use and occupation in this area.

The Coastal Darug People

Over thirty separate Aboriginal groups populated the wider Sydney area in 1788, each with their own country, practices, diets, dress, and dialects. We now know of these groups as 'clans' and each identified with broader cultural-linguistic groups sometimes referred to as 'tribes' - Darug, Darkinjung, Gundungarra, Dharawal (Tharawal), Guringai, and Awabakal.

At the time of European settlement, the Aboriginal people of the Sydney coastal region (including the study area) spoke the Darug language. According to the Anthropologist Norman Tindale, the Darug occupied a vast area of 6,000km^2, from the NSW coastline to the mouth of the Hawkesbury River and inland to Mount Victoria, Campbelltown, Liverpool, Camden and Penrith (Tindale 2018 [1974]). However, it should be noted that Tindale's descriptions of tribal boundaries were based on linguistic evidence that was gathered between 1884 and 1969, and on a conception of bounded territories that has since been questioned. Territories were clearly defined by physical places in the landscape, and boundary lines were indicated by natural features such as hills, watercourses and rock outcrops.

Darug people were distinguished as 'fresh water' or 'saltwater' people depending on whether they inhabited the coastal or inland areas of the Sydney region. According to the anthropologist and linguist RH Matthews, the Darug language closely resembled that of the Gundungurra, and had grammatical similarities with the neighbouring Tharawal and Ngunnawal tribes, but differed slightly in vocabulary (Matthews 1901:140).

Evidently, a shared language enabled the transmission of knowledge, customs, and lore as well as items and resources. Clans occasionally converged with other clans to trade, hunt, fight, feast, arrange marriages, resolve disputes, and share information. Examples of such meetings recorded in documentary sources include details of a gathering of three clans on their way to Camden to learn a new song (Backhouse 1843), Burramattagal people venturing out to Manly to feast on a beached whale (Tench 1793), and groups of hunters near Carabeely cooperating on a large-scale kangaroo hunt (Barrallier 1802). There was often tension between neighbouring groups and the boundaries between territories were not lightly traversed (White 1788). On an expedition north-west of Parramatta, Watkin Tench records that his guides Colebee (Gadigal) and Ballederry (Burramattagal) quickly found themselves in 'county unknown' and that they described those who lived there as 'enemies'. When the party finally reached the Hawkesbury River, Tench (12th April, 1791 [1793]) surmised that 'Our natives had evidently never seen this river before'.

The landscape was criss-crossed with Aboriginal paths, many of which later became roads. Missionary James Backhouse was amazed by the speed and sophistication of communication

between clans; on 23 October 1835, he encountered Aboriginal people in Richmond who knew of his brief visit to Wellington, over three hundred kilometres away: 'Our persons, costume, and many other particulars, including our manner of communicating religious instruction, had been minutely described' (Backhouse 1843:339).

It is difficult to pinpoint exactly how many people occupied the Darug area prior to, let alone after European occupation. Governor Phillip estimated that there were at least 1,500 people living in the Botany Bay, Port Jackson and Broken Bay area in 1788. This figure was based on the people and camps he had observed on expeditions around Sydney Cove, the Parramatta River and Broken Bay (Phillip 15 May 1788 [1792]:133). A recent study of the western Cumberland Plain estimated the population at 500 to 1000 people within a 600km^2 area, with a minimum overall density of around 0.5 persons/km^2 (Kohen 1995:81). Using Norman Tindale's estimates of the size of the Darug language area, this equates to 3,000 people. This figure is broadly consistent with James Kohen's, Ronald John Lampert's and Isabel McBryde's estimate of between 2,000 and 3,000 people in the Sydney region (Kohen and Lampert 1987:345; McBryde 1989:171); and with James Kohen's estimate of between 4,000 to 8,000 people from the coast to the lower Blue Mountains (Kohen 1993:19; 1995:81).

The primary sources offer only glimpses of the ceremonial life of these Aboriginal clans. Europeans recorded some Aboriginal customs, such as the avulsed teeth and 'scarifications' of certain initiated men, and the kangaroo teeth necklaces and the missing little finger joints of 'mountaineer' and coastal women. But, due to the secrecy surrounding ceremonial events, there are serious limitations to even the most richly described accounts like the 'Yoo-long Erah-ba-diang' initiation ceremonies Collins records at the head of Farm Cove and in the 'middle harbour' (Collins 1798); the contests and dances conducted on 'a clear spot between the town and the brickfield' (Collins 1798); and the operation performed by Yellomundee, a 'caradyee', on Colebe's wound on the banks of the Hawkesbury (Tench 1793).

Fire was a constant presence in early Sydney, from the 'moving lights' seen on the harbour at night (Banks 1998:243) to lone trees burning on the Cumberland Plain, 'the smoke issuing out of the top part as through a chimney' (White 1788). 'In all the country thro' which I have passed,' wrote Arthur Phillip in May 1788, 'I have seldom gone a quarter of a mile without seeing trees which appear to have been destroyed by fire' (Phillip: 15 May 1788 [1792]). The first Australians became known as the fire-makers. They used fire to open paths and to clean country; to drive animals into the paths of hunters and then to cook the kill; to keep warm at night and to carry as a torch the next day; to treat wood, melt resin and crack stone for tools; to gather around and dance and share stories (Figure 20).

Early observations provide an insight into local burning regimes. On a hot dry day in September 1790, for example, David Collins observed Aboriginal people 'burning the grass on the north shore opposite to Sydney, in order to catch rats and other animals' (Hunter 1793 [1968]: 31 August 1791). Almost exactly twelve months later, on 31 August 1791, they were again 'firing the country' in the same place on a hot day ahead of heavy rains. While Collins regarded this to be another 'remarkable coincidence', it suggests a connection to the land and an understanding of the seasons which the settlers could not fathom. This dismissive approach proved devastating during 1799 flood of the Hawkesbury. Settlers who ignored the flood

warnings given by Aboriginal people were engulfed by a destructive torrent as the 'river swell'd to more than fifty feet perpendicular height above its common level' (Collins 1798: Appendix VI).

Utilising Natural Resources

The Botany swamps, including Boxley's Lagoon, Lachlan Swamp and Waterloo Swamp played pivotal roles in Aboriginal life. They likely provided a reliable supply of water, as well as fish, eels; and terrestrial animals were likely drawn to the water and were hunted for food. Aboriginal fishing methods are known to have been many and varied and included line fishing from bark canoes, spear fishing with a *Galara* (four-pronged harpoon) in the shallow waters and utilising nets, traps and fish poisons (Figure 21). Fish, shellfish and birds such as black swans, redbills, sulphur crested cockatoos, brolgas and quails were also collected from resource rich swamps and lagoons (Attenbrow 2010:85-90; City of Sydney n.d.:2). Important plants and animals were also found in wetlands, fertile floodplains and along estuaries and lagoons, providing medicines, fibres, vitamin and food sources.

Kangaroos, wallabies, possums, sugar gliders, bandicoots, wombats, echidnas, fruit bats (flying foxes) and other smaller mammals were amongst the wide range of land animals that inhabited the Sydney region and were available to both coastal and hinterland people. Most Australian land animals are not migratory and therefore their seasonal availability and abundance do not vary markedly (Attenbrow 2010:70). The diet also included honey produced by native bees, as well as ants and their eggs. Many foods were harvested by tree climbing. Colebe and Ballederry called these people the 'climbers of trees' after their practice of skilfully ascending gums in pursuit of animals, cutting footholds in the trunks with a stone axe. Birds and tree dwelling mammals could be captured, and bird eggs and honey could be collected in this way (Tench 1793:126).

Starchy tubers and roots, bush fruits and native seeds were also frequently consumed. Certain plant foods such as the blackbean and cunjevoi plants along with some varieties of wild yam (*Dioscorea* sp.) were unpalatable or toxic in their natural state and required complex processing before consumption. Watkin Tench described how 'a poor convict' had gotten violently ill trying to eat a poisonous yam. After having seen Darug people eating the same yam, he concluded that the people had a way of preparing them to render them an 'innocent food' (Tench 1793:83). To combat toxicity, these foods were roasted in ashes, open fires or earth ovens; pounded and baked into cakes; or grated, peeled or sliced using bone, stone and shell implements and leached for lengthy periods of time in water (Beck 1985:107, 211).

At times Aboriginal people stayed for several months in the one area: Joseph Banks (1771 [1998]) records finding 'a small village consisting of about 6 or 8 houses' on the south shore of Botany Bay in April 1770, and in December 1790, Watkin Tench (1793) describes a similar 'little village (if five huts deserve the name)' on the north side of the bay. Shelters were constructed using a frame of forked branches secured to the ground. Sheets of bark were placed against the frame, angled against the wind. The front of the shelter was generally left open, facing a small fire.

Figure 20. Watercolour by Joseph Lycett of a group of Aboriginal men hunting kangaroos, c.1817 (Source: National Library of Australia, PIC MSR 12/1/4 #R5689, Object ID 138501179, http://nla.gov.au/nla.obj-138501179/view).

Figure 21. Sketch of the mouth of the Cooks River by John Thompson, 1830 (Source: Dixson Library, State Library of New South Wales, DL PXX 31 Image 2a, http://archival.sl.nsw.gov.au/Details/archive/110331218).

A2.2. Contemporary Connections

The Aboriginal community of the Sydney region has had a history that is remarkable for both continuity and change throughout the period from the arrival of European people to the present day. Connections to land and landscape remain a fundamental issue to the Aboriginal community. In addition to particular places, significance may also be attached to more general concepts of the natural landscape, to places of significance in recent history and/or to places with strong opportunities for reconnection to Country, cultural continuity and renewal, or that may demonstrate issues of contemporary importance to Aboriginal people. Some Aboriginal people may identify as descendants of the original inhabitants of the Redfern area and/or the Sydney region or from people that broadly originate from country in which the Darug language was spoken. Other Aboriginal people have a historical connection based on several generations of activism in the area.

The available historical records are largely silent regarding the presence and activities of Aboriginal people at Redfern from the 1840s, though it has been noted that a number of local Aboriginal people were employed at the Eveleigh Railway Workshops (Extent Heritage 2016:32-33; Irving and Cahill 2010:328). When the workshop opened in 1875, it provided jobs for as many as 1,500 artisans and skilled workers, many of whom were local Aboriginal people from Redfern and Darlington, or from the Aboriginal community at La Perouse. Aboriginal men were drawn to the workshops by the availability of affordable rental housing in Redfern, its growing Aboriginal community, and its proximity to Central Station, where Aboriginal people had arrived from rural regions in search of work.

Many Aboriginal men also worked in the Alexandria goods yard loading trains with kegs and potatoes and on the waterfront docks at Walsh Bay and Darling Harbour, while a number of Aboriginal women worked for the Federal Match Factory in Alexandria (Heiss 2013). Other local industries where Aboriginal people worked were the Henry Jones & Co IXL Jam Factory on Golden Grove Street in Chippendale, Francis Chocolates on Stirling Street in Redfern, and the Australian Glass Manufacturers on South Dowling Street at Waterloo.

During the Great Depression of the 1930s, the residents of Redfern were hit with high levels of unemployment and homelessness. Many Aboriginal people sought refuge with relatives in Redfern as work in rural areas became scarce. Chronic unemployment, high interest rates, mortgages and rentals resulted in the eviction of many families from their homes (AHMS 2015:16). The Aboriginal population of the Redfern-Eveleigh area expanded in the mid-twentieth century, and from the 1940s Redfern increasingly became the location of protests and political rallies. Aboriginal activist Bill Ferguson held a number of campaign meetings at Redfern Town Hall and was elected as the first Aboriginal member of the Aborigines Welfare Board in 1943, along with William Page. Ferguson, along with Bert Groves, also held a meeting in the Redfern Boot Trades Hall on behalf of the Aboriginal Progressive Association to protest the chaining of Aboriginal workers on a station in Oodnadatta (AHMS 2015).

The founding of the first Aboriginal Football Club – the Redfern All Blacks – in 1944 had important political, social and symbolic ramifications for the study area. As historian Heidi Norman has shown, the Rugby League games held on Alexandria Park and Redfern Oval allowed the Redfern community to gather and unite in support of an all-Aboriginal team (Norman

2006). The games became an important expression of community pride and Aboriginal identity (Tatz 1995:10). Other Aboriginal teams followed the All Blacks and, from 1971, an annual 'knockout', occasionally held in the area, facilitated the largest gathering of Aboriginal people in the country. It is often referred to as a 'modern day corroboree' (Norman 2009).

The Aboriginal population in Redfern in 1960 was estimated to be over 12,000. During this time Redfern was still a tough, inner city suburb with high unemployment and rising rates of crime. The media took to referring to parts of Redfern, Waterloo, Eveleigh and Surry Hills as 'slums', as many houses were run down and neglected. This negative media coverage continued throughout the twentieth century. As more underprivileged people moved into Redfern and surrounds, those who could afford it, including many migrant families, started moving out to 'better' suburbs in Sydney's west (Convy & Monsour 2008: 22).

The 1970s was a key turning point for the community living in the area. The national referendum in 1967 had brought new opportunities and freedoms to Aboriginal people, as had the election of the Whitlam Government in 1972. By the early 1970s, the Aboriginal population of Redfern had swelled to more than 35,000 (Anderson 2000:139). But this growing and vocal Aboriginal presence was met with government and corporate resistance. South Sydney Council and the NSW State Government were keen to relocate the large Aboriginal population away from the study area, drawing attention to the overcrowded and 'slum-like' conditions in which many people lived. In 1965 a large area of housing was destroyed to build the Redfern mail exchange and, in 1968, the NSW Department of Housing started to resettle Aboriginal people away from the inner city, to suburbs such as Mt Druitt and Campbelltown (Anderson 2000:139).

In the face of increasing rents and pressure to move to outer suburbs, the Aboriginal community of Redfern united to remain in the area. The most famous case relates to the area colloquially known as 'The Block': the forty-one houses bordered by Louis, Vine, Eveleigh and Caroline Streets (Pollock 2008). In 1972, IBK Constructions, a large development company, purchased several houses in and around Louis Street and began forcibly evicting Aboriginal residents from their homes. The situation came to a head when fifteen Aboriginal people were arrested for trespassing when they refused to leave their homes. The community made a formal submission for Federal Government funding in 1973, and by April the Federal Government bought the area and the Aboriginal Housing Company was formed to manage the grant. This was the first housing collective in Australia and effectively the first successful land rights claim by an Aboriginal community (Pollock 2008). This 'space' that was allocated to Indigenous Australians by the Australian Government quickly became a 'place' inscribed with Aboriginal culture and identity (Licari 2011).

The early 1970s also saw the development of a range of community controlled services, including the Aboriginal Legal Service, the Aboriginal Medical Service, the Aboriginal Children's Service and the Aboriginal Black Theatre House (Whitaker 2002:84-85). These pioneering Aboriginal services provided a model for a move towards self-determination for many Aboriginal communities across Australia. For example, the idea of an Aboriginal Legal Service, founded in Redfern by Paul Coe and others in 1970, spread to Melbourne in 1972, and to Townsville, Perth and Darwin by 1973. The Aboriginal Medical Service (AMS), which was formed in July 1971 to provide free medical support to Aboriginal people living in Sydney, was the first Aboriginal community-run medical service in Australia (Pollock 2008).

The Redfern-Eveleigh area continues to be a significant site for Aboriginal people, both those who have lived in the area for generations and for other communities who identify with the political symbolism of this dynamic place. Redfern in particular has become iconic territory for the national Aboriginal rights movement. During the official Bicentenary celebrations on 26 January 1988, for example, thousands of Australians marched from Redfern Oval to Hyde Park to celebrate Aboriginal resilience in the face of 200 years of invasion and violence. Redfern Park was also the site of Prime Minister Paul Keating's iconic speech on dispossession on 10 December 1992 for the United Nation's Year for the World's Indigenous Peoples (Whitaker 2002:85).

The last two decades have seen an influx of students and young professionals to Redfern, Eveleigh and Waterloo. New cafes, restaurants and bars have followed and old industrial spaces are being turned into studios and apartments. Zanny Begg and Keg de Souza have argued that this gentrification has seen the area 'improved, homogenized, developed [and] brought into heel with the rest of Sydney's inner city', but at the expense of its rich recent Aboriginal history (Begg & De Souza 2009).

Appendix 3. Archaeological background

A3.1. Site Type Information

Aboriginal Sites

Aboriginal sites are classified in a number of ways. At the most basic level, sites are recorded as 'closed sites' or 'open sites'. Closed sites are associated with rock shelters, and include other evidence of Aboriginal occupation that may be present, such as accumulated cultural deposit within the shelter ('potential archaeological deposit' or PAD), faunal remains (animal bone or shell), and rock art on the shelter walls (paintings or engravings). Open sites are broadly defined, and encompass all other types of Aboriginal sites identified where there is no rock shelter. The most common types of open sites found in NSW include artefacts, which can occur almost anywhere in the landscape, grinding grooves, rock art across formations, culturally modified trees, and shell deposits (middens) (OEH 2012:7). The presence or absence of stone artefacts is often a defining factor, although it is worth pointing out that almost any site is likely to have at least some associated artefacts, as discard or loss of this most ubiquitous and practically indestructible marker of Aboriginal archaeology is likely to have occurred anywhere that Aboriginal people stopped or gathered for any length of time.

Any one site (or close group of linked sites described as a 'site complex') can contain several different site features. For example, a shelter may have art on the walls, artefacts on the floor surface or outside the shelter, and be predicted to contain faunal remains and further artefacts in the accumulated deposit inside.

A description of terms used to describe different site features recorded by DPIE is provided in Table A3. 1**.** Other features or types of Aboriginal cultural sites that do not necessarily leave physical evidence may exist or have once existed in the study area. Similarly there may be places of contemporary significance to Aboriginal people and this will require consultation with the Aboriginal community to identify such places.

Table A3. 1 Aboriginal site feature definitions (OEH 2012:11-13).

Site Feature	Definition
Artefact	Objects such as stone tools, and associated flaked material, spears, manuports, grindstones, discarded stone flakes, modified glass or shell demonstrating evidence of use of the area by Aboriginal people.
Art	The expression or application of human creative skill and imagination, as evidence of the complexity of Aboriginal life. There are different styles and techniques, 'canvasses' used and a range of different motifs represented in the different areas of NSW. Art is found in shelters, overhangs and across rock formations. Techniques include painting, drawing, scratching, carving engraving, pitting, abrading and the use of a range of binding agents and the use of natural pigments obtained from clays, charcoal and plants.
Grinding Groove	Groove(s) in a rock surface resulting from manufacture of stone tools such as ground edge hatches and spears. May also include rounded depressions resulting from grinding of seeds and grains.
Potential Archaeological Deposit (PAD)	An area where Aboriginal objects may occur below the ground surface. The term 'potential archaeological deposit' was first applied in Sydney regional archaeology in the 1980s, and referred to rock shelters that were large enough and with enough accumulated deposit to allow archaeologists to presume that

Site Feature	Definition
	subsurface cultural material was highly likely to be present. Since then it has come to include open sites where the same prediction can be made.
Modified Tree (Carved or Scarred)	Trees which show the marks of modification as a result of cutting of bark from the trunk for use in the production of shields, canoes, boomerangs, burials shrouds, for medicinal purposes, foot holds etc., or alternately intentional carving of the heartwood of the tree to form a permanent marker to indicate ceremonial use/significance of a nearby area, again these carvings may also act as territorial or burial markers.
Shell	An accumulation or deposit of shellfish from beach, estuarine, lacustrine or riverine species resulting from Aboriginal gathering and consumption. Usually found in deposits previously referred to as shell middens. May be found in association with other objects like stone artefacts, fish bones, fireplaces/hearths and burials. Will vary greatly in size and components
Stone Quarry	Usually a source of good quality stone which is quarried and used for the production of stone tools
Burial	A traditional or contemporary (post-contact) burial of an Aboriginal person, which may occur outside designated cemeteries and may not be marked, e.g. in caves, marked by stone cairns, in sand areas, along creek banks etc.

Stone Artefacts

Aboriginal stone artefacts are an important source of archaeological information because stone is preserved for long periods of time whereas organic materials such as bone, shell, wood and plant fibres often decay. Stone artefacts provide valuable information about technology, economy, cultural change through time and settlement patterning. Stone has also been used for 'relative' dating of sites where direct methods such as radiocarbon dating cannot be applied. A technological sequence for stone artefacts for the region was first described in the late 1940s by Fred McCarthy and has since been refined over time by Hiscock and Attenbrow (Hiscock and Attenbrow 1998, 2005) into the 'Eastern Regional Sequence':

- Capertian – is distinguished by large uniface pebble tools, core tools, horse-hoof cores, scrapers and hammerstones. Backed artefacts occasionally present. Generally dates to before 5,000 years BP.
- Early Bondaian – Aspects of the Capertian assemblage continue, but backed artefacts and ground-edged artefacts increase. Artefacts during this period were predominantly made from fine-grained siliceous stone such as silcrete and tuff. Generally dated from 5,000 BP to 2,800 BP.
- Middle Bondaian – Characterised by backed artefacts, particularly Bondi Points and ground-edged artefacts. Artefacts made from siliceous materials, however quartz becomes more frequent. Generally dated from 2,800 BP to 1,600 BP.
- Late Bondaian – characterised by bipolar technology, eloueras, ground-edged artefacts, and bone and shell artefacts. Bondi points are virtually absent and artefacts are predominantly made from Quartz. Generally dated from 1,600 BP to European contact.

Survivability of the Archaeological Record

The following observations can be made about the nature and survivability of the archaeological record across the Cumberland subregion:

- Archaeological material is often found in areas of sub-surface exposure, such as those caused by erosion.
- Surface evidence (or the absence of surface evidence) does not necessarily indicate the potential, nature or density of sub-surface material. Extensive excavations have shown that areas with no surface evidence often contain sub-surface deposits buried beneath current ground surfaces (JMCHM 2001; Kohen 1984).
- Due to the limitations of surface surveys, test excavation is often required to establish the nature and density of archaeological material.
- Aboriginal cultural material is more likely to survive in areas that contain remnant portions of the pre-European soil profile, in contrast to landforms that have been impacted by historical or recent disturbances.
- The potential for survival of any archaeological sites will largely depend on the degree of past disturbance.
- Past disturbance to the soil profile can be due to European activity such as clearing, ploughing, grazing, and urban development and/or due to environmental factors such as flooding events, erosion and colluvial movement. These activities may disturb, erode or remove the natural soil profile completely.
- Aboriginal stone artefacts are more likely to survive because stone is preserved for long periods of time whereas organic materials such as bone, shell, wood and plant fibres decay.
- A major impact of more than 200 years of post-contact settlement on Aboriginal sites would have been the destruction of carved and scarred trees, which would have been removed as part of clearing for agricultural activities and the construction of infrastructure such as buildings and roads. However, there is some potential for culturally modified trees to survive in areas where there are stands of remnant native vegetation.

A3.2. AHIMS Extensive Site Search

A copy of the AHIMS search is provided in the subsequent pages.