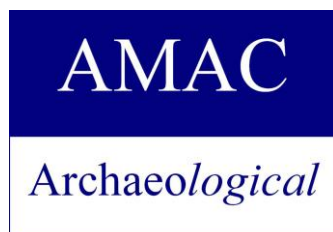


ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT: RESEARCH DESIGN AND TESTING METHODOLOGY

“338 Pitt Street”
324-348 Pitt St,
229-253 Castlereagh St,
& 126 - 130 Liverpool St
Sydney, NSW
(Sydney LGA)



Benjamin Streat & Steven J. Vasilakis

Archaeological Management & Consulting Group
and Streat Archaeological Services

**For
Touchstone Partners Pty Ltd**

**On Behalf of
Han Sydney Pty Ltd**

December 2020



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Cover Image

Aerial of study area outlined in red.
Six Maps (accessed 19/11/2019).

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CULTURAL HERITAGE ASSESSMENT METHODOLOGY

1.1 BACKGROUND

Archaeological Management and Consulting Group (AMAC) in conjunction with Streat Archaeological Services Pty Ltd (SAS) was commissioned by Touchstone Partners Pty Ltd on behalf of Han Sydney Pty Ltd in October 2019, to prepare an Aboriginal Cultural Heritage Assessment Report and Aboriginal Archaeological Technical Report for the proposed mixed-use development at 338 Pitt Street, Sydney New South Wales 2000.

This report is part of State Significant Development pre-development application in response to requirement 7 of the SEARs SSD-10362. The status of said document is in Stage 1 of the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010). The following heritage advice was provided by the Environmental Planning and Assessment Regulation 2000 in a letter dating to the 19th August 2019.

7. Aboriginal Cultural Heritage

- identify and describe Aboriginal cultural heritage values that exist across the whole area that will be affected by the development and document these in an Aboriginal Cultural Heritage Assessment Report (ACHAR). The identification of cultural heritage values must be conducted in accordance with the Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH 2010) and the Guide to investigating, assessing and reporting on Aboriginal Cultural heritage in NSW (DECCW 2011)*
- ensure consultation has taken place with Aboriginal people and is documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW)*
- assess impacts on Aboriginal cultural heritage values and be documented in the ACHAR. This must demonstrate attempts to avoid impacts, identify any conservation outcomes and measures to mitigate impacts.*

This report conforms to the reporting process, conditions and requirements of Aboriginal Cultural Heritage Standards and Guidelines Kit (NPWS 1998) and Part 6; National Parks and Wildlife Act *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010).

1.2 STUDY AREA

The study site is that piece of land described as Lot 3 of the Land and Property Information, Deposited Plan 1044304, Lot 1 DP 66428, Lot 1 DP 90016, Lot 1 DP 78245 and Lot 1 DP 70702, Lot B DP 183853, Lot 10 DP 857070, Lots A, B, C DP 448791, forming the following consolidated street address of 338 Pitt Street, Sydney in the Parish of St Phillip, County of Cumberland (Figure 2.1 and Figure 2.2)

Street Address	Title
229-39 Castlereagh Street and 324-330 Pitt Street	Lot 3 DP1044304
332-336 Pitt Street	Lot 1 DP 66428
241-243 Castlereagh Street – “Manchester House”	Lot 1 DP 90016
245-247 Castlereagh Street – “ANZAC House”	Lot 1 DP78245

	Lot 1 DP70702
249-253 Castlereagh Street – “Downing Hotel”	Lot B DP 183853
338-348 Pitt Street	Lot 10 DP 857070
126 Liverpool Street	Lot A DP 448971
128 Liverpool Street	Lot B DP 448971
130 Liverpool Street	Lot C DP 448971

1.3 SCOPE

The document aims to provide registered Aboriginal persons and/or organisations who hold cultural knowledge relevant to determining the cultural significance of Aboriginal object(s) and/or place(s) within or in the vicinity of the area of the proposed activity. This knowledge is then presented for synthesis, analysis and compilation into a Cultural Heritage Assessment about the study area.

This information is used to assess the impact of the proposed activity on any identified items or places of Aboriginal cultural heritage value and to develop mitigative strategies under the appropriate legislation for the management of Aboriginal archaeological and cultural heritage values of the study area.

This document also allows the proponent or the proponent’s representative to outline the project details and for the participating Aboriginal stakeholders to have input into formulating mitigative strategies at identified points in the impact assessment process. With roles clearly identified, this methodology and project background is submitted to the participating Aboriginal stakeholders for review and input for a period of no less than 28 days.

1.4 AUTHOR IDENTIFICATION

The analysis of the archaeological background and the reporting were undertaken by Mr. Benjamin Streat (BA, Grad Dip Arch Her, Grad Dip App Sc), archaeologist and Director of Streat Archaeological Services Pty Ltd in association with archaeologist Mr. Steven J. Vasilakis (B. Arch. Hons.), and under the guidance of Mr. Martin Carney archaeologist and Managing Director of AMAC Group.

1.5 IDENTIFICATION AND ASSESSMENT OF CULTURAL SIGNIFICANCE

The research of this cultural heritage assessment is to consist of four stages, which are listed below.

Stage 1 – Background Research

Background research will entail a detailed review of sources of information on the history, oral history, ethnohistory and archaeological background of the study area and surrounds and will include but not be limited to material from:

- HNSW archaeological assessment and excavation reports and cultural heritage assessments.
- HNSW Library.
- State Library of NSW including Mitchell Library.

- Local libraries and historical associations.
- National Library of Australia.

This research will also entail searches from the following databases, sources and registers:

- The National Heritage List.
- The Commonwealth Heritage List.
- The NSW State Heritage Inventory.
- The National Native Title Register.
- The Register of Declared Aboriginal Places.
- Prevailing local and regional environmental plans.
- Environmental background material for the study area will also be included.

Stage 2 – Aboriginal Consultation

Aboriginal consultation will take place in accordance with Part 6; National Parks and Wildlife Act *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010) and group or individual oral history interview/ discussion will be conducted with all registered Aboriginal stakeholders in accordance with Talking History: Oral History Guidelines (Veale and Schilling 2004).

A list of questions upon which these discussions will focus is outlined in Section 7 – Research questions and these will attempt to identify the social or cultural, historical, scientific and aesthetic values of the study area. Following this an analysis and synthesis in accordance with Australia ICOMOS 'Burra' Charter for the conservation of culturally significant places (Australia ICOMOS 1999) will be undertaken to establish a comprehensive assessment of the cultural values and significance of the study area.

Stage 3 – Site Inspection and Cultural Heritage Mapping

As the study area is currently developed and covered in concrete, a formal site survey did not take place in accordance with Section 2 of the *Code of Practice for the Investigation of Aboriginal Objects in NSW* ('The Code'). The approach and methodology chosen for the archaeological survey (in this instance, the absence of a survey) has utilised the information obtained from Requirements 1 to 4 of the Code in order to ensure that the type of archaeological survey, which is planned, can logically be expected to yield the information necessary to meet the archaeological objectives stated in Section 1.2 of this Code. As an archaeological survey was not expected to yield any information about the surface or subsurface deposits, a survey sampling strategy was not developed, and a programme of test excavation has been proposed.

Stage 4 – Report Writing and Review

All the information from the previous stages will be collated and presented for synthesis, analysis and compilation into a Cultural Heritage Assessment Report about the study area. Participating Aboriginal stakeholders will have a minimum of 28 days to review and comment. To which all comments will be included in the final version of the document for submission.

1.6 LEGISLATIVE CONTEXT AND STATUTORY CONTROLS

This section of the report provides a brief outline of the relevant legislation and statutory instruments that protect Aboriginal archaeological and cultural heritage sites within the state of New South Wales. Some of the legislation and statutory instruments operate at a federal or local level and as such are applicable to Aboriginal archaeological and cultural heritage sites in New South Wales. This material is not legal advice and is based purely on the author's understanding of the legislation and statutory instruments. This document seeks to meet the requirements of the legislation and statutory instruments set out within this section of the report.

1.6.1 COMMONWEALTH HERITAGE LEGISLATION AND LISTS

One piece of legislation and two statutory lists and one non-statutory list are maintained and were consulted as part of this report: The Environmental Protection and Biodiversity Conservation Act; The National Heritage List; the Commonwealth Heritage List and the Register of the National Estate.

1.6.2 Environmental Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) offers provisions to protect matters of national environmental significance. This act establishes the National Heritage List and the Commonwealth Heritage List which can include natural, Indigenous and historic places of value to the nation. This Act helps ensure that the natural, Aboriginal and historic heritage values of places under Commonwealth ownership or control are identified, protected and managed (Australian Government 1999).

1.6.3 National Heritage List

The National Heritage List is a list which contains places, items and areas of outstanding heritage value to Australia; this can include places, items and areas overseas as well as items of Aboriginal significance and origin. These places are protected under the Australian Government's EPBC Act.

1.6.4 Commonwealth Heritage List

The Commonwealth Heritage List can include natural, Indigenous and historic places of value to the nation. Items on this list are under Commonwealth ownership or control and as such are identified, protected and managed by the Federal Government.

1.7 NEW SOUTH WALES STATE HERITAGE LEGISLATION AND LISTS

The state (NSW) based legislation that is of relevance to this assessment comes in the form of the acts which are outlined below.

1.7.1 National Parks and Wildlife Act 1974

The NSW National Parks and Wildlife Act 1974 (as amended) defines Aboriginal objects and provides protection to any and all material remains which may be evidence of the Aboriginal occupation of lands continued within the state of New South Wales. The relevant sections of the Act are sections 84, 86, 87 and 90.

An Aboriginal object, formerly known as a relic, 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” (NSW Government, 1974).

It is an offence to harm or desecrate an Aboriginal object or places under Part 6, Section 86 of the NPW Act:

Part 6, Division 1, Section 86: Harming or desecrating Aboriginal objects and Aboriginal places:

- (1) *A person must not harm or desecrate an object that the person knows is an Aboriginal object.*

Maximum penalty:

- (a) *in the case of an individual—2,500 penalty units or imprisonment for 1 year, or both, or (in circumstances of aggravation) 5,000 penalty units or imprisonment for 2 years, or both, or*
- (b) *in the case of a corporation—10,000 penalty units.*

- (2) *A person must not harm an Aboriginal object.*

Maximum penalty:

- (a) *in the case of an individual—500 penalty units or (in circumstances of aggravation) 1,000 penalty units, or*
- (b) *in the case of a corporation—2,000 penalty units.*

- (3) *For the purposes of this section, **circumstances of aggravation** are:*

- (a) *that the offence was committed in the course of carrying out a commercial activity, or*
- (b) *that the offence was the second or subsequent occasion on which the offender was convicted of an offence under this section.*

This subsection does not apply unless the circumstances of aggravation were identified in the court attendance notice or summons for the offence.

- (4) *A person must not harm or desecrate an Aboriginal place.*

Maximum penalty:

- (a) *in the case of an individual—5,000 penalty units or imprisonment for 2 years, or both, or*
- (b) *in the case of a corporation—10,000 penalty units.*

- (5) *The offences under subsections (2) and (4) are offences of strict liability and the defence of honest and reasonable mistake of fact applies.*

- (6) *Subsections (1) and (2) do not apply with respect to an Aboriginal object that is dealt with in accordance with section 85A.*

- (7) *A single prosecution for an offence under subsection (1) or (2) may relate to a single Aboriginal object or a group of Aboriginal objects.*

- (8) *If, in proceedings for an offence under subsection (1), the court is satisfied that, at the time the accused harmed the Aboriginal object concerned, the*

accused did not know that the object was an Aboriginal object, the court may find an offence proved under subsection (2).

1.7.2 Environmental Planning & Assessment Act 1979

The *Environmental Planning and Assessment Act 1979 (EP&A Act)* states that environmental impacts of proposed developments must be considered in land use planning procedures. Four parts of this act relate to Aboriginal cultural heritage.

- Part 3, divisions 3 and 4 refer to Regional strategic plans and both Local Environmental Plans (LEP) and Development Control Plans (DCP), which are environmental planning instruments and call for the assessment of Aboriginal heritage among other requirements.
- Part 4 determines what developments require consent and what developments do not require consent. Section 4.15 calls for the evaluation of

The likely impacts of that development, including environmental impacts on both the natural and built environments and the social and economic impacts in the locality (NSW Government 1979).

This part of the legislation also addresses State Significant Developments as mentioned in division 4.7 with section 4.38 outlining the consent for State Significant Development in relation to the environmental planning instruments.

- Part 5 of this Act requires that impacts on a locality which may have an impact on the aesthetic, anthropological, architectural, cultural, historic, scientific, recreational or scenic value are considered as part of the development application process (NSW Government, 1979).

1.7.3 The Aboriginal Land Rights Act 1983

The NSW *Aboriginal Land Rights Act 1983 (ALR Act)*, administered by the NSW Department of Aboriginal Affairs, established the NSW Aboriginal Land Council (NSWALC) and Local Aboriginal Land Councils (LALCs). The ALR Act requires these bodies to:

- take action to protect the culture and heritage of Aboriginal persons in the council's area, subject to any other law.
- promote awareness in the community of the culture and heritage of Aboriginal persons in the council's area.

These requirements recognise and acknowledge the statutory role and responsibilities of New South Wales Aboriginal Land Council and Local Aboriginal Land Councils.

The ALR Act also establishes the Office of the Registrar whose functions include but are not limited to, maintaining the Register of Aboriginal Land Claims and the Register of Aboriginal Owners.

Under the ALR Act the Office of the Registrar is to give priority to the entry in the Register of the names of Aboriginal persons who have a cultural association with:

- lands listed in Schedule 14 to the NPW Act.
- lands to which section 36A of the ALR Act applies (NSW Government, 1974 & DECCW 2010).

1.7.4 The Native Title Act 1993

The *Native Title Act 1993* (NTA) provides the legislative framework to:

- recognise and protect native title.
- establish ways in which future dealings affecting native title may proceed, and to set standards for those dealings, including providing certain procedural rights for registered native title claimants and native title holders in relation to acts which affect native title.
- establish a mechanism for determining claims to native title.
- provide for, or permit, the validation of past acts invalidated because of the existence of native title.

The National Native Title Tribunal has a number of functions under the NTA including maintaining the Register of Native Title Claims, the National Native Title Register and the Register of Indigenous Land Use Agreements and mediating native title claims (NSW Government, 1974 & DECCW 2010).

1.7.5 New South Wales Heritage Register and Inventory 1999

The State Heritage Register is a list of places and objects of particular importance to the people of NSW. The register lists a diverse range of over 1,500 items, in both private and public ownership. Places can be nominated by any person to be considered to be listed on the Heritage register. To be placed an item must be significant for the whole of NSW. The State Heritage Inventory lists items that are listed in local council's local environmental plan (LEP) or in a regional environmental plan (REP) and are of local significance.

1.7.6 Register of Declared Aboriginal Places 1999

The NPW Act protects areas of land that have recognised values of significance to Aboriginal people. These areas may or may not contain Aboriginal objects (i.e., any physical evidence of Aboriginal occupation or use). Places can be nominated by any person to be considered for Aboriginal Place gazettal. Once nominated, a recommendation can be made to EPA/HNSW for consideration by the Minister. The Minister declares an area to be an 'Aboriginal place' if the Minister believes that the place is or was of special significance to Aboriginal culture. An area can have spiritual, natural resource usage, historical, social, educational or other type of significance.

Under section 86 of the NPW Act it is an offence to harm or desecrate a declared Aboriginal place. Harm includes destroying, defacing or damaging an Aboriginal place. The potential impacts of the development on an Aboriginal place must be assessed if the development will be in the vicinity of an Aboriginal place (DECCW 2010).

1.8 LOCAL PLANNING INSTRUMENTS

1.8.1 Sydney Local Environmental Plan (2012)

The Sydney Local Environmental Plan was prepared by City of Sydney in 2012. Section 5.10 deals with Heritage Conservation. Clause 1 in the following section highlights the archaeological considerations of a site in relation to developments:

5.10 Heritage conservation

(1) Objectives

The objectives of this clause are as follows:

- (a) *to conserve the environmental heritage of City of Sydney Council*
- (b) *to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,*
- (c) *to conserve archaeological sites,*
- (d) *to conserve Aboriginal objects and Aboriginal places of heritage significance.*

(2) Requirement for consent

Development consent is required for any of the following:

- (a) *demolishing or moving any of the following or altering the exterior of any of the following (including, in the case of a building, making changes to its detail, fabric, finish or appearance):*
 - (i) *a heritage item,*
 - (ii) *an Aboriginal object,*
 - (iii) *a building, work, relic or tree within a heritage conservation area,*
- (b) *altering a heritage item that is a building by making structural changes to its interior or by making changes to anything inside the item that is specified in Schedule 5 in relation to the item,*
- (c) *disturbing or excavating an archaeological site while knowing, or having reasonable cause to suspect, that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed,*
- (d) *disturbing or excavating an Aboriginal place of heritage significance,*
- (e) *erecting a building on land:*
 - (i) *on which a heritage item is located or that is within a heritage conservation area, or*
 - (ii) *on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance,*
- (f) *subdividing land:*
 - (i) *on which a heritage item is located or that is within a heritage conservation area, or*
 - (ii) *on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance.*

(3) When consent not required

However, development consent under this clause is not required if:

- (a) *the applicant has notified the consent authority of the proposed development and the consent authority has advised the applicant in writing before any work is carried out that it is satisfied that the proposed development:*
 - (i) *is of a minor nature or is for the maintenance of the heritage item, Aboriginal object, Aboriginal place of heritage significance or archaeological site or a building, work, relic, tree or place within the heritage conservation area, and*

- (ii) *would not adversely affect the heritage significance of the heritage item, Aboriginal object, Aboriginal place, archaeological site or heritage conservation area, or*
- (b) *the development is in a cemetery or burial ground and the proposed development:*
 - (i) *is the creation of a new grave or monument, or excavation or disturbance of land for the purpose of conserving or repairing monuments or grave markers, and*
 - (ii) *would not cause disturbance to human remains, relics, Aboriginal objects in the form of grave goods, or to an Aboriginal place of heritage significance, or*
- (c) *the development is limited to the removal of a tree or other vegetation that the Council is satisfied is a risk to human life or property, or*
- (d) *the development is exempt development.*

(8) Aboriginal places of heritage significance

The consent authority must, before granting consent under this clause to the carrying out of development in an Aboriginal place of heritage significance:

- (a) *consider the effect of the proposed development on the heritage significance of the place and any Aboriginal object known or reasonably likely to be located at the place by means of an adequate investigation and assessment (which may involve consideration of a heritage impact statement), and*
- (b) *notify the local Aboriginal communities, in writing or in such other manner as may be appropriate, about the application and take into consideration any response received within 28 days after the notice is sent*

(10) Conservation incentives

The consent authority may grant consent to development for any purpose of a building that is a heritage item or of the land on which such a building is erected, or for any purpose on an Aboriginal place of heritage significance, even though development for that purpose would otherwise not be allowed by this Plan, if the consent authority is satisfied that:

- (a) *the conservation of the heritage item or Aboriginal place of heritage significance is facilitated by the granting of consent, and*
- (b) *the proposed development is in accordance with a heritage management document that has been approved by the consent authority, and*
- (c) *the consent to the proposed development would require that all necessary conservation work identified in the heritage management document is carried out, and*
- (d) *the proposed development would not adversely affect the heritage significance of the heritage item, including its setting, or the heritage significance of the Aboriginal place of heritage significance, and*
- (e) *the proposed development would not have any significant adverse effect on the amenity of the surrounding area*

1.8.2 Sydney Development Control Plan (2012)

The Sydney Development Control Plan was prepared by the City of Sydney in 2012. Section 3 – General Provisions, Subsection 3.9 deals with heritage. The following outlines Aboriginal heritage requirements as discussed in this section.

Objectives

- (a) Ensure that heritage significance is considered for heritage items, development within heritage conservation areas and development affecting archaeological sites and places of Aboriginal heritage significance.*
- (b) Enhance the character and heritage significance of heritage items and heritage conservation areas and ensure that infill development is designed to respond positively to the heritage character of adjoining and nearby buildings and features of the public domain.*

3.9.3 Archaeological Assessments

- 1. An archaeological assessment is to be prepared by a suitable qualified archaeologist in accordance with the guidelines prepared by the NSW Office and Environment and Heritage.*
- 2. For development proposals in Central Sydney, refer to the Central Sydney Archaeological Zoning Plan to determine whether the development site has archaeological potential*
- 3. An archaeological assessment is to be submitted as part of the statement of environmental effects for development applications affecting an archaeological site or a place of Aboriginal heritage significance, or potential archaeological site that is likely to have heritage significance.*
- 4. An archaeological assessment is to include:*
 - (a) an assessment of the archaeological potential of the archaeological site or place of Aboriginal heritage significance.*
 - (b) the heritage significance of the archaeological site or place of Aboriginal heritage significance.*
 - (c) The probable impact of the proposed development on the heritage significance of the archaeological site or place of Aboriginal heritage significance.*
 - (d) The compatibility of the development with conservation policies contained within an applicable conservation management plan or conservation management strategy; and*
 - (e) A management strategy to conserve the heritage significance of the archaeological site or place of Aboriginal heritage significance*
- 5. If there is any likelihood that the development will have an impact on significant archaeological relics, development is to ensure that the impact is managed according to the assessed level of significance of those relics.*

1.8.3 The Central Sydney Archaeological Zoning Plan

The Central Sydney Archaeological Zoning Plan comprises the Central Sydney area (including sections of Potts Point, Surry Hills, East Sydney and Chippendale), being under the jurisdiction of the City of Sydney. Millers point, the Rocks and the Pyrmont/Ultimo peninsula were excluded as they had been subject to previous archaeological assessments. The Plan identifies areas within Central Sydney which contain archaeological potential and assesses this according to criteria based on their perceived physical potential (dependent on the level of disturbance), resulting from site inspections. The plan also isolates areas of little or no archaeological potential, indicating where no further archaeological assessment/research will be required. The site survey was carried out in August 1992, and the report completed in February 1993.

Schedule 4 of the SAZP lists the following properties within the study site as an “Area of Archaeological Potential.”

- 249-251 Castlereagh Street
- 126 Liverpool Street

1.9 DUE DILIGENCE CODE OF PRACTICE FOR THE PROTECTION OF ABORIGINAL OBJECTS IN NEW SOUTH WALES

This assessment conforms to the parameters set out in the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales, Part 6 National Parks and Wildlife Act 1974*, (DECCW 2010).

The Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales states that if.

- a desktop assessment and visual inspection confirm that there are Aboriginal objects or that they are likely, then further archaeological investigation and impact assessment is necessary.

1.10 CODE OF PRACTICE FOR ARCHAEOLOGICAL INVESTIGATION OF ABORIGINAL OBJECTS IN NSW

Any further work resulting from recommendations should be carried out conforming to the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales, Part 6 National Parks and Wildlife Act 1974*, (DECCW 2010).

1.11 GUIDELINES

This report has been carried out in consultation with the following documents which advocate best practice in New South Wales:

- Aboriginal Archaeological Survey, Guidelines for Archaeological Survey Reporting (NSW NPWS 1998).
- Aboriginal Cultural Heritage Standards and Guidelines Kit (NPWS 1998).
- Australia ICOMOS 'Burra' Charter for the conservation of culturally significant places (Australia ICOMOS 1999);
- Part 6; National Parks and Wildlife Act Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010).

- Protecting Local Heritage Places: A Guide for Communities (Australian Heritage Commission 1999).

2.0 DESCRIPTION OF STUDY AREA

The study site is that piece of land described as Lot 3 of the Land and Property Information, Deposited Plan 1044304, Lot 1 DP 66428, Lot 1 DP 90016, Lot 1 DP 78245 and Lot 1 DP 70702, Lot B DP 183853, Lot 10 DP 857070, Lots A, B, C DP 448791, forming the following consolidated street address of 338 Pitt Street, Sydney in the Parish of St Phillip, County of Cumberland (Figure 2.1 and 2.2).

Street Address	Title
229-39 Castlereagh Street and 324-330 Pitt Street	Lot 3 DP1044304
332-336 Pitt Street	Lot 1 DP 66428
241-243 Castlereagh Street – “Manchester House”	Lot 1 DP 90016
245-247 Castlereagh Street – “ANZAC House”	Lot 1 DP78245 Lot 1 DP70702
249-253 Castlereagh Street – “Downing Hotel”	Lot B DP 183853
338-348 Pitt Street	Lot 10 DP 857070
126 Liverpool Street	Lot A DP 448971
128 Liverpool Street	Lot B DP 448971
130 Liverpool Street	Lot C DP 448971

2.1 REGISTERED ARCHAEOLOGICAL SITES WITHIN THE STUDY AREA

There are no registered sites within the study area of which the author of this report is aware.



Figure 2.1 Aerial photograph showing the study site.
Study site outlined in red. Six Maps, NSW LPI online, accessed 11/01/18

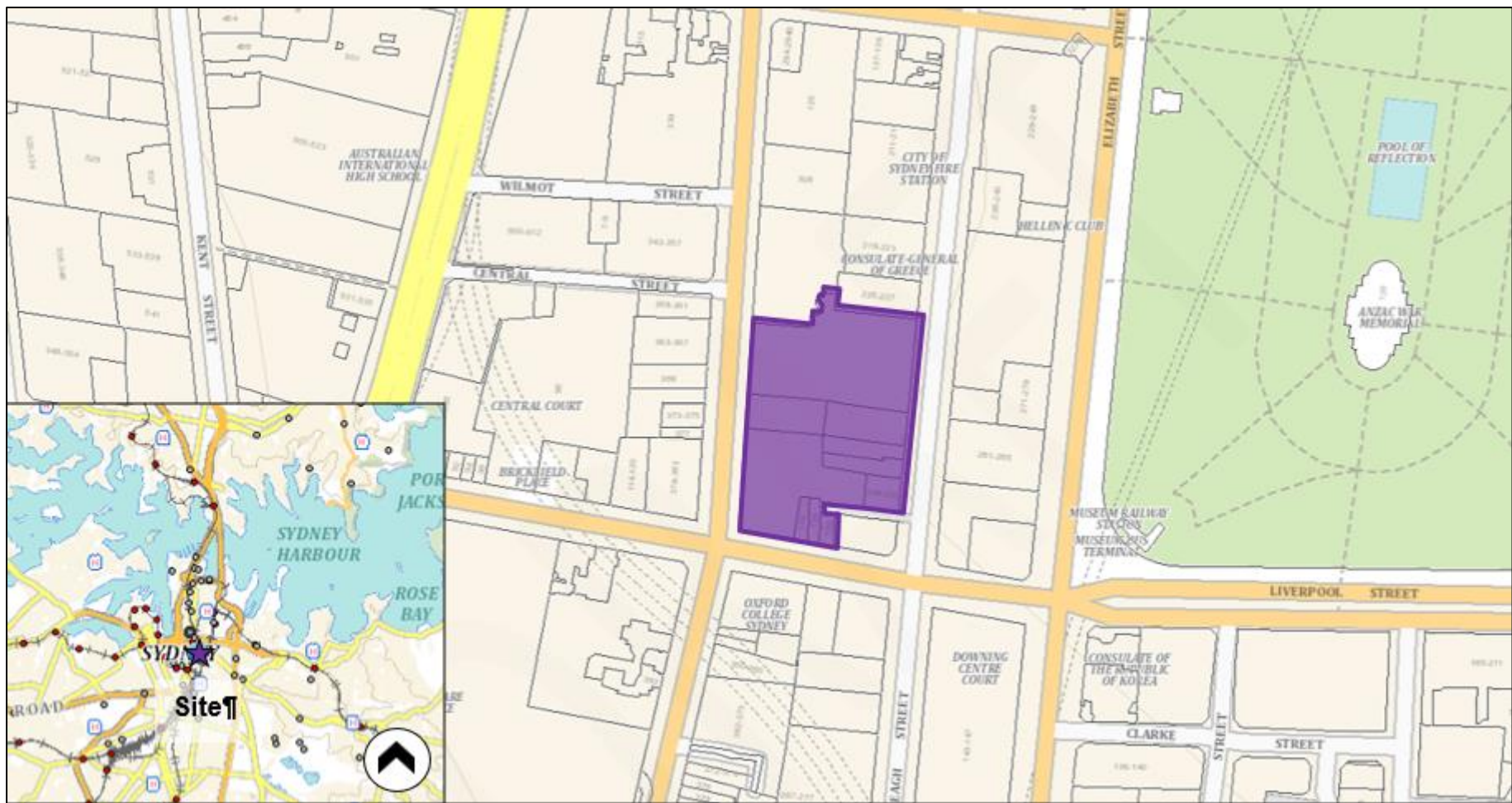


Figure 2.2 Topographic map with site location
 Study site outlined in purple. Six Maps, LPI Online, accessed 07/11/2019.

3.0 PROPOSED ACTIVITY

This section outlined the proposed activity including the staging and timeframes along with the potential harm of the proposed activity on Aboriginal objects and or declared Aboriginal places, assessing both the direct and indirect result of the activity on any cultural heritage values associated with the study area.

It also aims to outline the justification for harm with the intention of avoiding and minimising harm where possible.

3.1 DESCRIPTION OF PROPOSED ACTIVITY

The proposed development seeks to construct a multi storey mixed retail, hotel and residential development (Figure 3.1). The development will include the construction of two towers, each comprising of 81 levels in total. While both towers will remain separate to one another, the footprint of the towers on the first seven floors will be larger to accommodate retail spaces, hotel and residential lobbies, hotel facilities and function spaces. The two towers will still remain separate at ground/ plaza level, divided by pedestrian walkways providing access between Pitt, Castlereagh and Liverpool Streets (Figure 3.3).

The hotel space will be divided among the podium and lower levels of the towers, though the majority of the north tower will comprise of residential space. Apart from a hotel amenities space (pool, spa, restaurant) on level 35, the hotel space will not exceed level 18 in the south tower. Both towers will measure 277.5m in total height (Figure 3.1). Retail space will be restricted to the lower ground, ground/ plaza and first floors of the podium construction.

A four storey multi-level basement carpark with loading facilities is proposed to be constructed beneath the proposed building footprint. Part of the ground floor/ plaza level fronting Pitt Street will form the access ramp to basement parking (Figure 3.3). Based on real levels (RLs), the lowest basement level (four) will be set at approximately RL0.00, the ground floor/ plaza level of the development ranging between RL18.30 to RL20.50 (Figure 3.2). Due to reserve curtilages for the Sydney Metro tunnel, the footprint of basement levels 2 – 4 will be slightly smaller in the southwest corner of the study site (corner of Pitt and Liverpool Streets). Basement level one will reflect the entire study site footprint, the slab level sitting at RL9.00, approximately 9.00m (Pitt Street) - 13.7m (Castlereagh Street) below current street level.

The proposed development will impact and harm any objects and/or deposits of Aboriginal and/or archaeological significance that may be present. Test excavation has been proposed under an Aboriginal Cultural Heritage Management Plan as part of the SSD consent as it is not feasible to excavate under the Code due to the current occupation and staged demolition planned as well as historical archaeological constraints. This testing programme will assist in assessing the level of disturbance of the site and the potential harm that may be the result of the proposed activity. The results of said excavation will assist in minimising harm to Aboriginal objects and/or deposits, if present.

No formal areas of exclusion have been identified in the current plans.

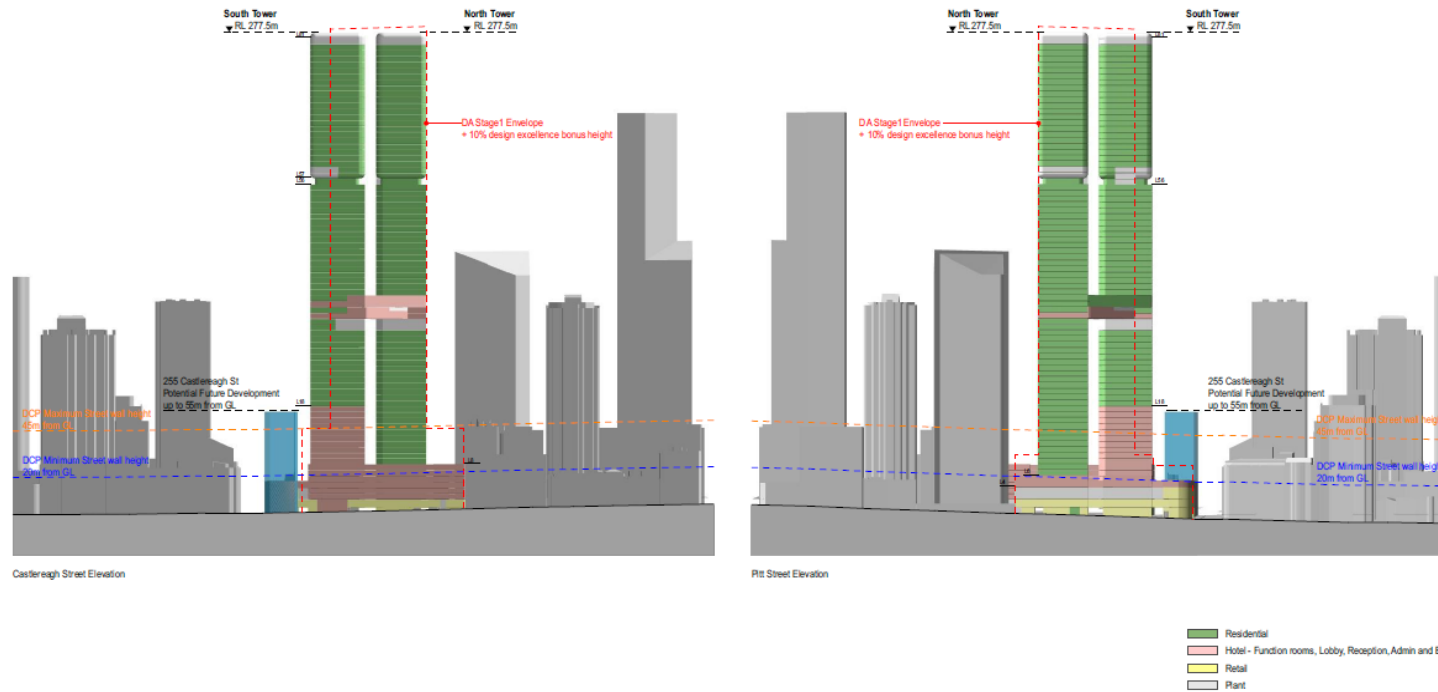
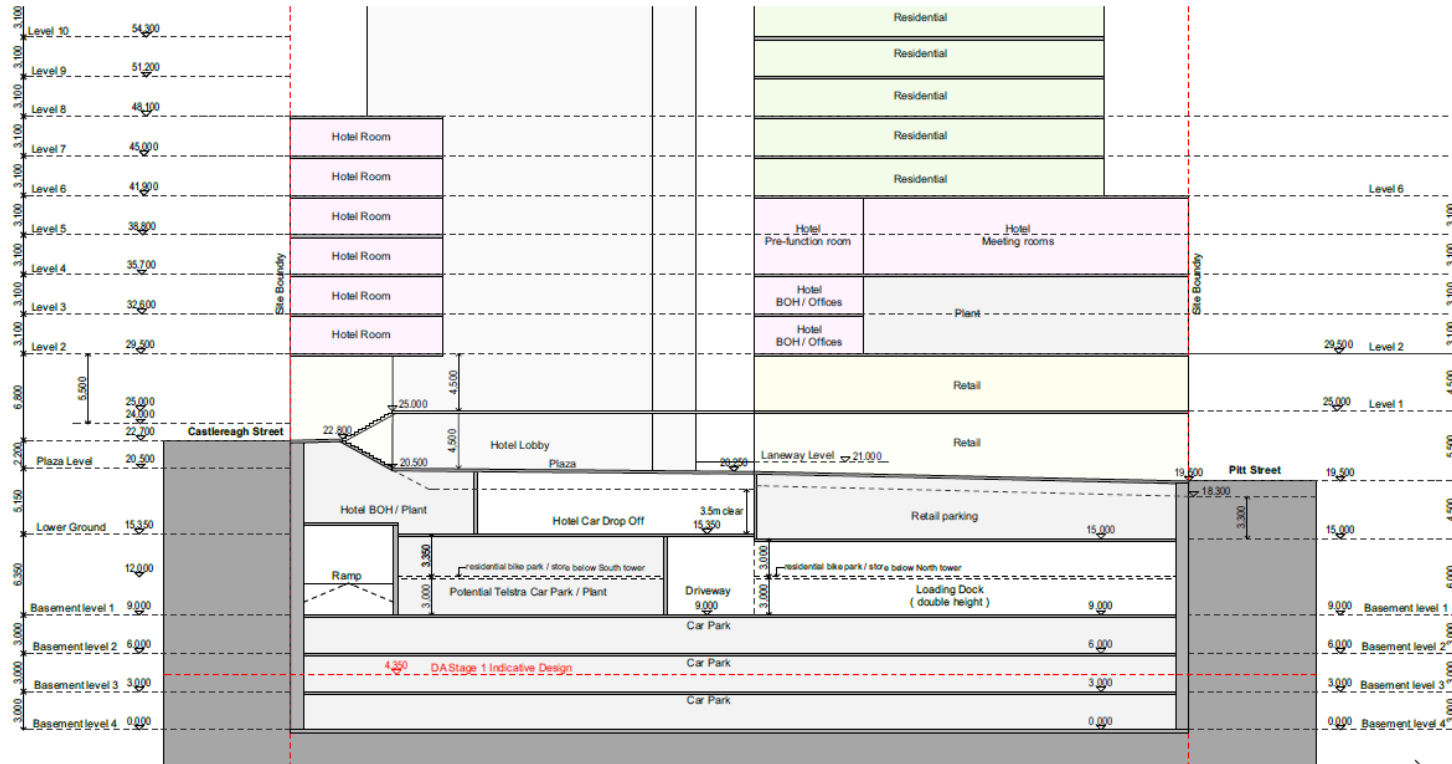


Figure 3.1
Indicative
elevation plan
showing layout of
buildings and
occupancy
spaces.
Francis-
Jones
Morehen
Thorp Pty
Ltd,
September
2019



fjmt

Podium Section Diagram

Hans - 338 PITT STREET

1:300 @ A3

For Information

13/9/19

2001

Figure 3.2
Indicative
section plan
showing layout
of buildings and
basement levels.
Francis-Jones
Morehen
Thorp Pty
Ltd,
September
2019.

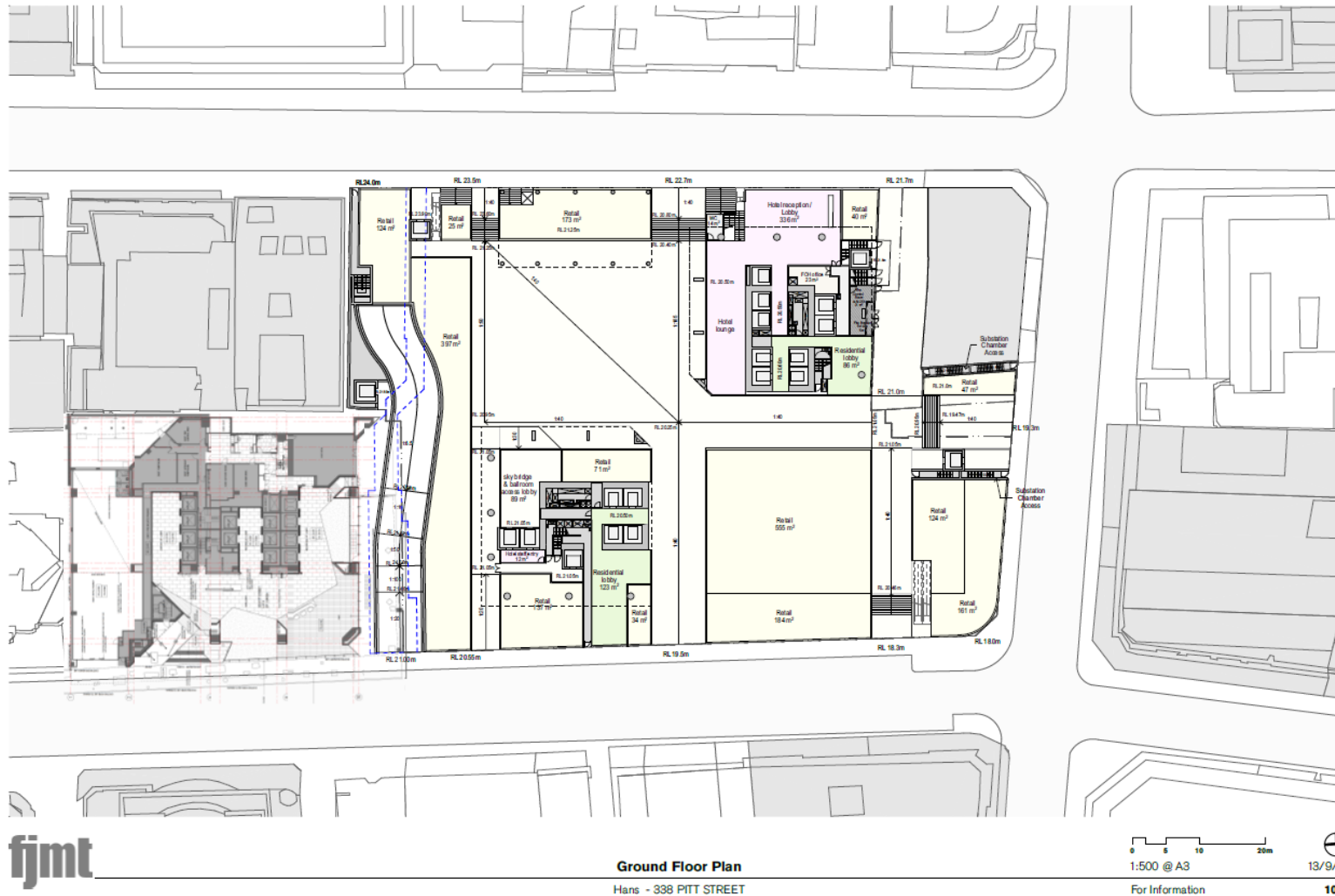


Figure 3.3
Proposed
ground floor
plan.
Francis-
Jones
Morehen
Thorp Pty
Ltd,
September
2019.

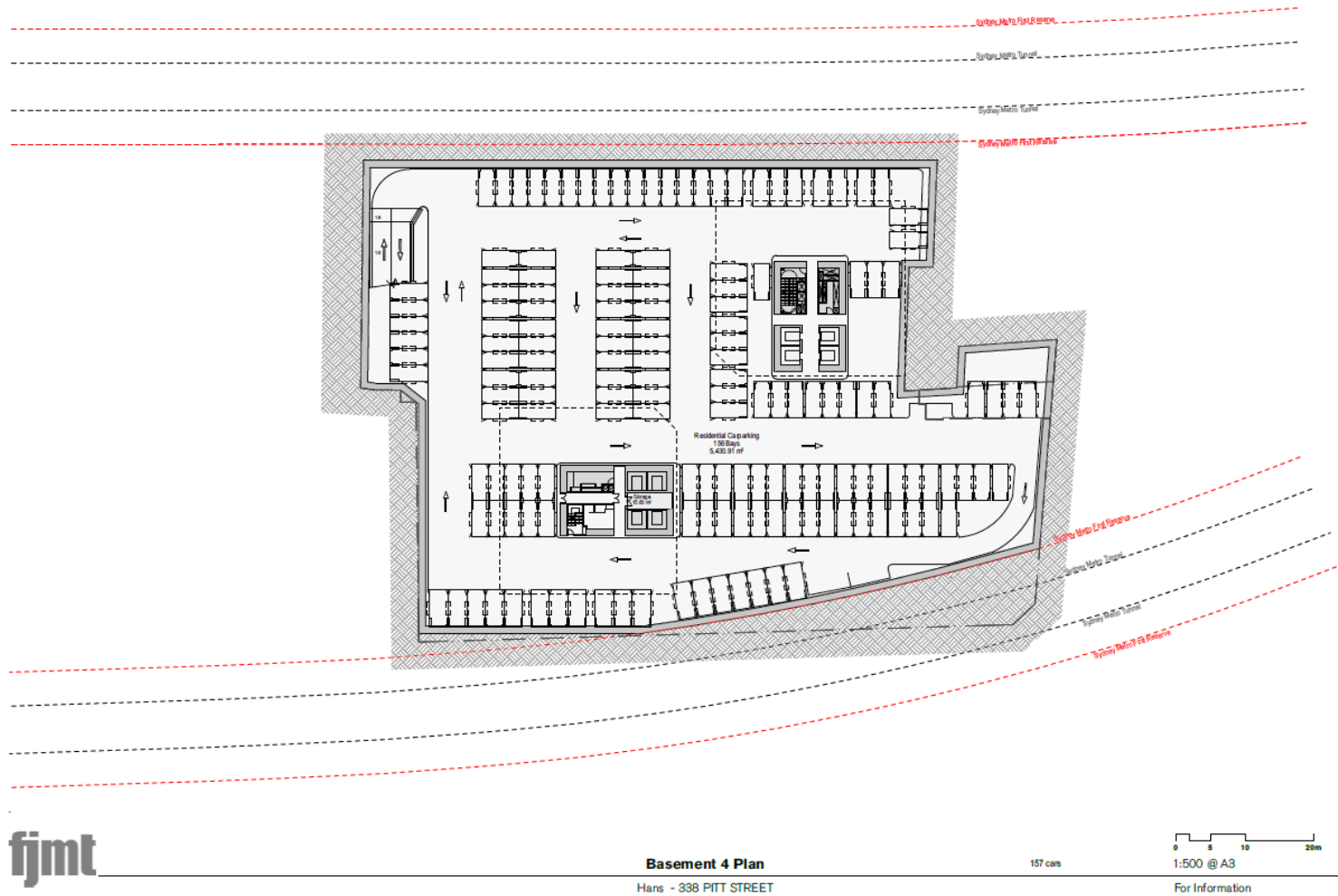


Figure 3.5
Proposed
Basement 4 plan.
Francis-
Jones
Morehen
Thorp Pty
Ltd,
September
2019.

4.0 ENVIRONMENTAL CONTEXT

To adequately understand and assess the potential Aboriginal archaeological resources that may be present within the study area it is vital to understand the environment in which the Aboriginal inhabitants of the study area carried out their activities. The environment that Aboriginal inhabitants lived in is a dominant factor in shaping their activity and therefore the archaeological evidence created by this activity. Not only will the resources available to the Aboriginal population have an influence on the evidence created but the survival of said evidence will also be influenced by the environment.

4.1 TOPOGRAPHY

The study area lies near the foreshore of Darling Harbour and extends over one topographic zone which would have consisted of gently undulating plateau 200-1000m in width where the local relief is <30m and slopes <10%. Rock outcrops are absent. The study area has been exposed to significant disturbance and filling events on the bedrock. A number of the buildings in the study area have multi-level/single-level basements. This is consistent with the majority of the land within the City of Sydney that has been significantly developed and modified post settlement.

4.2 GEOLOGY AND SOILS

The soil landscape map for the Sydney 1:100 000 map sheet shows that the study area lies on the Lucas Heights (lh) soil landscape (Chapman and Murphy, 1989). The geology of the study area consists of the Mittagong Formation – interbedded shale, laminite and fine to medium grained quartz sandstone. This is one of the dominant geological formations which occur in Sydney, occurring between the Ashfield Shale and Hawkesbury Sandstone.

The Lucas Heights soil profile is low - moderately deep (50-150cm) consisting of hardsetting yellow podzolic soils and yellow earths. The erodibility is seen to be relatively high due to the fine sand grains in the clay matrix.

Table 4.1 Description of dominant soil material

Dominant Soil Material	Soil Horizon	Description
lh1	A Horizon	Loose yellowish-brown sandy loam which sometimes contains organic matter resulting in a friable topsoil. Colour can be a dull yellowish - brown, or very dark brown. It is commonly containing small iron coated sandstone rock fragments, as well as charcoal and roots.
lh2	A2 Horizon	Bleached, hard setting, stony, sandy clay loam – clayey sand. Colour can be a dull yellowish-brown, which bleaches when dry. It can however range from brown to bright yellowish-brown. Pale yellow and brown mottles are often present due to bioturbation. Inclusions such as fine sandstone fragments and rounded iron nodules are abundant and are often

		concentrated at depth. Angular ironstone is also common. Roots become rare with depth.
lh3	B Horizon	Earthy, yellowish – brown sandy clay loam. Develops on coarse sandstone. The soil increases to a sandy clay with depth along with orange mottles occurring with depth. Iron coated sandstone fragments remain common however roots and charcoal fragments are rare.
lh4	B/C Horizon	Yellowish-brown clay – light clay to yellowish-brown sandy clay to heavy clay. Occurs on fine-grained sandstone as a subsoil material. Colour commonly bright yellowish-brown but can range from reddish-brown. Yellow, red and orange mottles are occasionally present. iron coated, fine sandstone rock fragments are common while charcoal and roots are rarely present.

Table 4.2 Expected Lucas Heights soil profile depth based on landform

Common Soil Profile

- up to 30cm of loose, yellowish-brown sandy loam (**lh1**) overlies;
- 10-30cm of bleached, stony hardsetting sandy clay sand (**lh2**) overlies;
- up to 100cm of yellowish-brown clay (**lh4**)

N.B The total soil profile is commonly <100cm

Soil Profile Near Sandstone Boundaries

- up to 15cm of loose, sandy loam (**lh1**) overlies;
- up to 10-30cm of bleached hardsetting sandy clay loam (**lh2**) occasionally overlies;
- up to 30cm of yellowish-brown sandy clay loam (**lh3**)

4.3 WATERCOURSES

The study area is within the Sydney Foreshore and surrounded by several bays, e.g., Blackwattle Bay ca. 1.5km to the west, Darling Harbour ca. 700m to the northwest, Sydney Cove ca. 1.6km to the north, Woolloomooloo Bay ca. 1.3km to the northeast, and Rushcutters Bay ca. 2.1km to the east. The area also contained a number of early freshwater tributaries which have since been filled as a result of European occupation and development activity. In the past, the close proximity to the Sydney basin would have channelled Aboriginal activity to this location as a major resource of food and water.

4.4 VEGETATION

No vegetation is located within the development zone. The lands were extensively cleared soon after European settlement. The native vegetation would have consisted of eucalypt open forest and low eucalypt woodland with a sclerophyll shrub understorey. Dominant tree species that would have grown within the area include turpentine *Syncarpia glomulifera*, *E. eugenioides* and scribbly gum *E. haemastoma* (Walker 1975, p. 11 – 13).

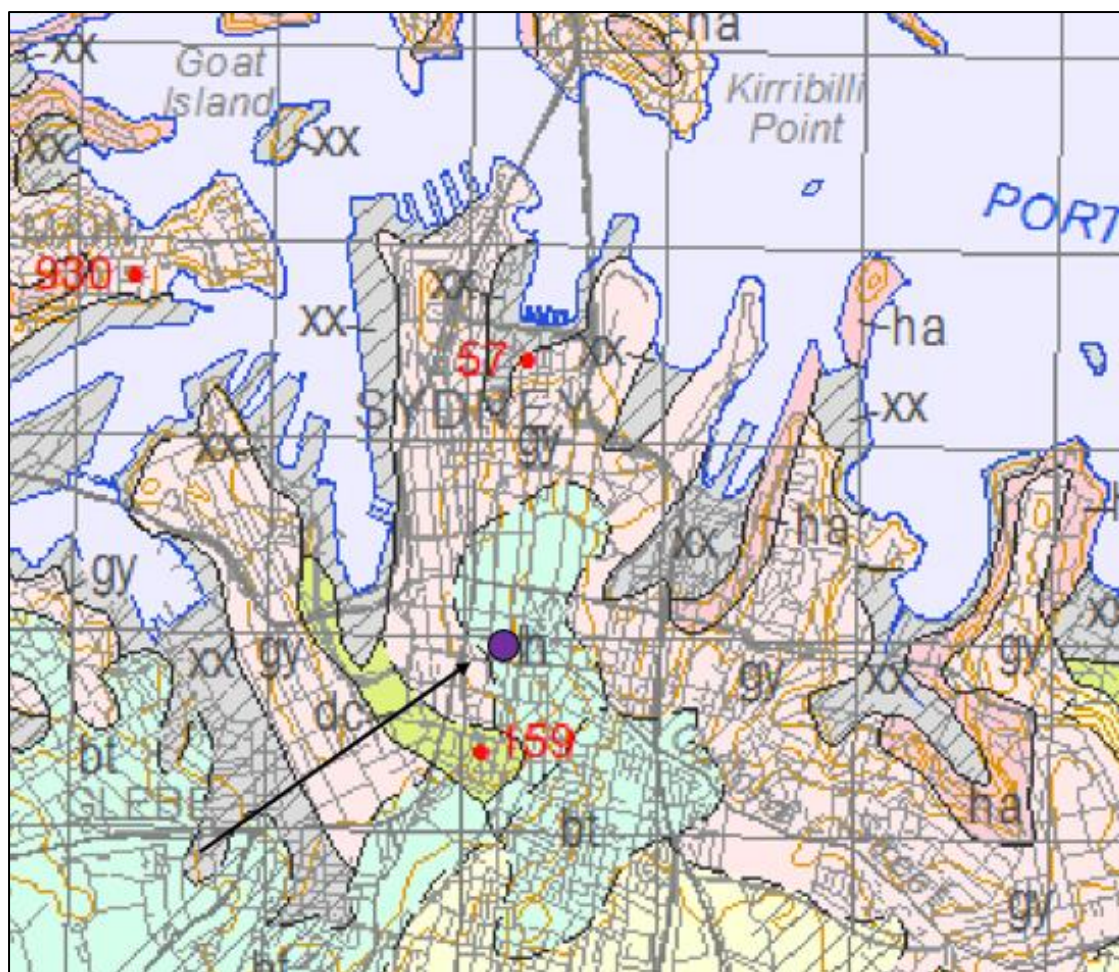


Figure 4.1 Study area on soil map.
 Study area in purple indicated by black arrow. Soil Landscapes of the Sydney 1:100 000 Sheet Report (Chapman et al. 2009).



Figure 4.2 Topography Map indicating watercourses in blue.
Study site indicated in purple with black arrow, Six Maps (2019).

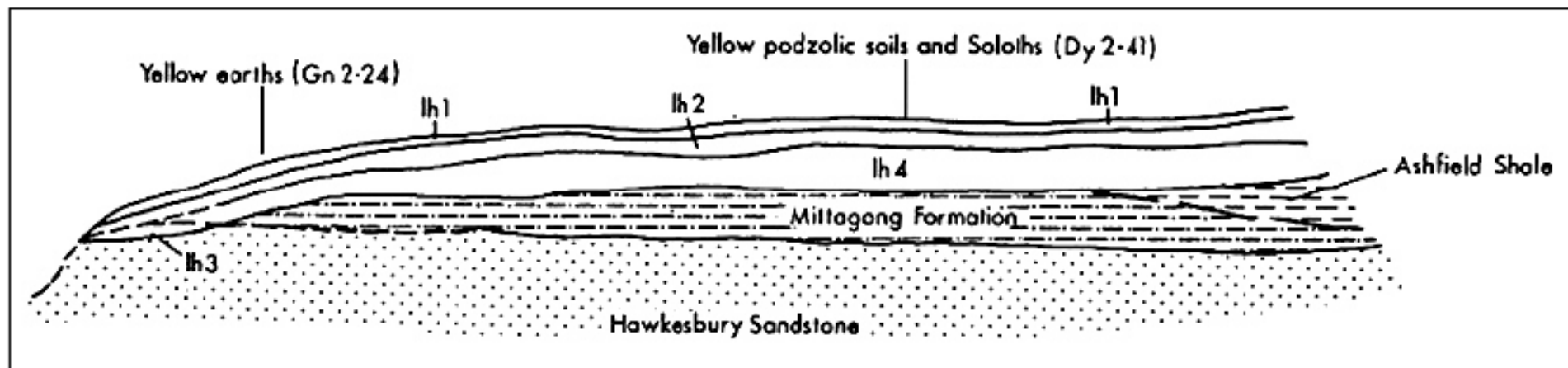


Figure 4.3 Cross Section of soil landscape illustrating relationships between landscape features and dominant soil materials. (Matthei 1995).

5.0 LAND USE AND DISTURBANCE FACTORS

This section of the report provides an assessment of land use, the level of disturbance and the likely archaeological potential of the study area. The archaeological potential is based on the level of previous disturbance as well as the previously discussed predictive model for the region.

The Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales, Part 6 National Parks and Wildlife Act 1974, (DECCW 2010); defines disturbed lands as given below.

“Land is disturbed if it has been the subject of a human activity that has changed the land’s surface, these being changes that remain clear and observable. Examples include ploughing, construction of rural infrastructure (such as dams and fences), construction of roads, trails and tracks (including fire trails and tracks and walking tracks), clearing vegetation, construction of buildings and the erection of other structures, construction or installation of utilities and other similar services (such as above or below ground electrical infrastructure, water or sewerage pipelines, stormwater drainage and other similar infrastructure and construction of earthworks).”

This definition is based on the types of disturbance as classified in The Australian Soil and Land Survey Field Handbook (CSIRO 2010). The following is a scale formulated by CSIRO (2010) of the levels of disturbances and their classification.

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

The above scale is used in determining the level of disturbance of the study area and its impact on the potential archaeology which may be present.

5.1 ABORIGINAL LAND USE AND RESOURCES

The study area lies in a zone which had resources that may have been exploited on either a regular or repeated basis. Reliable access to fresh water may have been present near to the study area.

Sites containing fresh water and sedentary food sources, coupled with the presence of other resources which may have been exploited or available on a seasonal basis, would suggest that Aboriginal land use of the study area was regular and repeated, with this reflected in the archaeological record.

Goodwin (1999) stated that a higher archaeological potential is present for areas which had a concentrated or repeated occupation pattern, due to reliable access to water and food sources.

Sydney Harbour provided a rich dietary intake for the local inhabitants in which marine resources could be exploited. Large numbers of shell middens were recorded at Wogganmagule and Yurong Peninsula, signifying the importance of accessible resources and the role of the coastline including the study area. Coastal tribes depended heavily on marine resources such as fish and shellfish but were not limited to such diets, as cabbage palms and bracken fern roots were also included (Dyall 1971).

Farming practices were also utilised in the form of land clearing. This was conducted through the burning of grasslands in order to encourage new growth which attracted local game. It is likely that these activities would result in repeated occupation as do ceremonial activities which take place within specific sacred places within the cultural landscape.

The procurement of specific resources for ceremonial or domestic purposes would rely on the accessibility and availability of these resources. There are readily mapped resources within the region that may have been exploited by Aboriginal occupants, with more being present before the land was cleared and settled.

Historical and archaeological documentation suggests that semi-sedentary coastal groups were evident within the region, where social arrangements allowed for a large number within one camp. Based on the predominance of rock shelters found in regions within the Hawkesbury sandstone landscape, it is also evident that natural rock overhangs were utilised as an alternate place of temporary and/or repeated occupation.

5.2 EUROPEAN LAND USE

Early plans of the city of Sydney indicate that there was no early development on the study site, nor had the city block that contains the study site been formed. By 1822, blocks surrounding the study site had been divided and developed, with the future Liverpool Street marked as the southern extent of the road to South Head. Despite this early phase of development, the study site appears to have remained vacant during this period. It is not until 1823 that the block containing the study site appears to have been formalised, due to a series of quit rent leases. The plan of this date indicates all but three of the eleven allotments (or part allotments) had been developed for residential use. This is further reinforced by the plans of the 1830s and 1840s. Despite being schematic, these plans detail at least a single structure on each of the allotments. However, no associated outbuildings or other domestic features are rendered on any of these plans.

By 1854 it is apparent that every allotment had been developed and was occupied. Plans dated between 1854 and 1910 indicated that the study site underwent numerous phases of development, with occupation transitioning from residential to mixed-use. During this period several of the allotments were further subdivided, with numerous structures, both residential, commercial and mixed-use constructed. From the 1920s onwards, the study site was marked solely by commercial use, with many of the buildings occupying the study site multi-storey and best described as large warehouse complexes. By the late 1970s to early 1980s, a number of these early to mid-20th century multi-storey complexes were demolished to make way for large

scale, multi-storey commercial towers, some of which contained a series of basement levels, as well as industrial infrastructure, specifically substations. Despite this extensive modern redevelopment of the study site, several buildings dating to the early-to-mid 20th century still stand on the study site.

For a full history, please refer to AMAC 2018 Baseline Archaeological Assessment; 338 Pitt Street, 324-348 Pitt St, 229-253 Castlereagh St, & 126-130 Liverpool St Sydney, NSW.

5.3 DISTURBANCE AND ARCHAEOLOGICAL POTENTIAL

It is important to note that the following assessments describe the archaeological potential of the study area. It is acknowledged that if the study area has little or no archaeological potential, the study area may still have cultural significance to the Aboriginal community.

Background research indicates that the study area has undergone significant modifications, primarily the deep excavations of the site to bedrock in order to establish the basement levels for some of the buildings which currently stand. Post-contact period developments indicate the site was subject to earthworks as part of the establishment of the original streetscape of the town of which the western side fronting Pitt Street was truncated to even the lot with the current street level of Pitt Street. Areas outside of the current building footprint such as the driveway/access way, are predicted to also be disturbed as a result of modern service trenches evident within this area.

As large sections of the original ground levels of the study have been removed by the installation of basements in the 19th and 20th centuries, the probability of any intact A horizon (artefact bearing soil layer) is unlikely to be present in this area however has a potential to be present outside of the basement zones.

In light of this, and in the context of the information provided about the level of disturbance of the site, the following has been predicted.

Major disturbance to the landscape: Sub-surface Aboriginal objects with potential conservation value have a low probability of being present within the study area, particularly towards the eastern side along Castlereagh street and Liverpool street to the south of the study area.

6.0 RESEARCH CONTEXT

Pre-field work research consisted of an analysis and synthesis of the background data to determine the nature of the potential archaeological and cultural heritage resource in the region.

The research of this cultural heritage assessment consisted of stages which are listed below:

- Background research.
- Aboriginal consultation and oral history interviews.
- Site inspection and cultural heritage mapping.

Background research entailed a detailed review of sources of information on the history, oral history, ethno-history and archaeological background of the study area and surrounds and will include but not be limited to material from:

- HNSW archaeological assessment and excavation reports and cultural heritage assessments.
- HNSW Library.
- State Library of NSW including the Mitchell Library.
- Local libraries and historical associations.
- National Library of Australia.

A search of the HNSW AHIMS was undertaken and the results examined. The site card for each site within 1000m in all directions from the centre of the study area was inspected (where available) and an assessment made of the likelihood of any of the sites being impacted by the proposed development. The HNSW library of archaeological reports (Hurstville) was searched and all relevant reports were examined. Searches were undertaken on the relevant databases outlined in *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*, Part 6 National Parks and Wildlife Act 1974, (DECCW 2010).

Further to this the following sources were examined:

- The National Heritage List.
- The Commonwealth Heritage List.
- The NSW State Heritage Inventory.
- The National Native Title Register.
- The Register of Declared Aboriginal Places.
- Prevailing local and regional environmental plans.
- Environmental background material for the study area.

6.1 ARCHAEOLOGICAL CONTEXT

It is generally accepted that Aboriginal occupation of Australia dates back at least 40,000 years (Attenbrow 2002, p.20-21 & Kohen et al 1983). The result of this extensive and continued occupation which includes the Sydney region has left a vast amount of accumulated depositional evidence and the Cumberland Lowlands is no exception. The oldest date generally considered to be reliable for the earliest

occupation around the region comes from excavations at Parramatta which contain objects or features which have been dated to 30,735 ± 407 BP (McDonald et al 2005).

The majority of reliably dated archaeological sites within the region are less than 5,000 years old which places them in the mid to late Holocene period. A combination of reasons has been suggested for this collection of relatively recent dates. There is an argument that an increase in population and 'intensification' of much of the continent took place around this time, leading to a great deal more evidence being deposited than was deposited as a result of the sparser prior occupation period. It is also the case that many archaeological sites along the past coastline may have been submerged as the seas rose approximately to their current level around 6,000 years ago. This would have had the effect of covering evidence of previous coastal occupation. In addition, it is also true that the acidic soils which are predominate around the Sydney region do not allow for longer-term survival of sites (Hiscock 2008 p. 106).

Different landscape units not only influence the preservation of sites but can determine where certain site types will be located. Across the whole of the Sydney Basin, the most common Aboriginal archaeological site type is occupation evidence within Rock Shelters. However, the most common Aboriginal archaeological site type in the Cumberland Lowlands are Open Artefact Scatters or Open Campsites, which are locations where two or more pieces of stone show evidence of human modification. These sites can sometimes be very large, with up to thousands of artefacts and include other habitation remains such as animal bone, shell or fireplaces [known as *hearths*] (Attenbrow 2002 p. 75 – 76). Many hundreds of artefact sites have been recorded within the Cumberland Lowlands. This is despite the fact that at least 50% of the Cumberland Lowlands has already been developed to such an extent that any archaeological evidence which may have once been present has been destroyed.

6.2 AHIMS SEARCH RESULTS

The Archaeological Heritage and Information Management System Database (AHIMS) is located at the HNSW Offices at Hurstville in New South Wales. This database comprises information about all the previously recorded Aboriginal archaeological sites registered with HNSW. Further to the site card information that is present about each recorded site, the assessments and excavation reports that are associated with the location of many of these sites are present in the library of reports.

The location of these sites) must be viewed as purely indicative as errors in the recording of the locations of sites often occurs due to the disparate nature of the recording process, the varying level of experience of those locating the sites and the errors that can occur when transferring data. If possible, sites that appear to be located near a study area should be relocated.

An AHIMS extensive 1km search was conducted on 16th October 2019 (ID 456948). This search resulted in 13 registered sites within 1000 m of the study area, 2 of which have been indicated as not sites. The following table is comprised of the results listed from the extensive search.

Table 6.1 AHIMS Search Results

Site ID	Site name	Site status	Site features
45-6-2580	Junction Lane	Valid	Artefact
45-6-2637	George street 1	Valid	Artefact
45-6-2651	William St PAD	Valid	Potential Archaeological Deposit (PAD)
45-6-2647	KENS Site 1	Valid	Artefact, Potential Archaeological Deposit (PAD)
45-6-2652	Ultimo PAD 1	Valid	Potential Archaeological Deposit (PAD)
45-6-2663	Mountain Street Ultimo	Valid	Artefact, Potential Archaeological Deposit (PAD)
45-6-2687	Crown Street PAD 1	Valid	Potential Archaeological Deposit (PAD)
45-6-2838	420 George Street PAD	Not a Site	Potential Archaeological Deposit (PAD)
45-6-2979	UTS PAD 1 14-28 Ultimo Rd Syd	Valid	Potential Archaeological Deposit (PAD)
45-6-2987	Poultry Market 1	Valid	Artefact 1
45-6-3152	168-190 Day Street, Sydney PAD	Not a Site	Potential Archaeological Deposit (PAD)
45-6-3217	Darling Central Midden	Valid	Aboriginal Ceremony and Dreaming1, Artefact 1, Shell 1
45-6-3654	CRS AS 01 (Central Railway Station Artefact scatter 01)	Valid	Artefact

6.3 OTHER SEARCH RESULTS

Results for other statutory databases searched are given below.

Heritage Listings/ Register/ Other	Result
National Heritage List	Not Listed
Commonwealth Heritage List	Not Listed
NSW State Heritage Register	Not Listed
Register of Declared Aboriginal Places	Not Listed
National Native Title Register	Not Listed
The Central Sydney Archaeological Zoning Plan (1997)	Listed

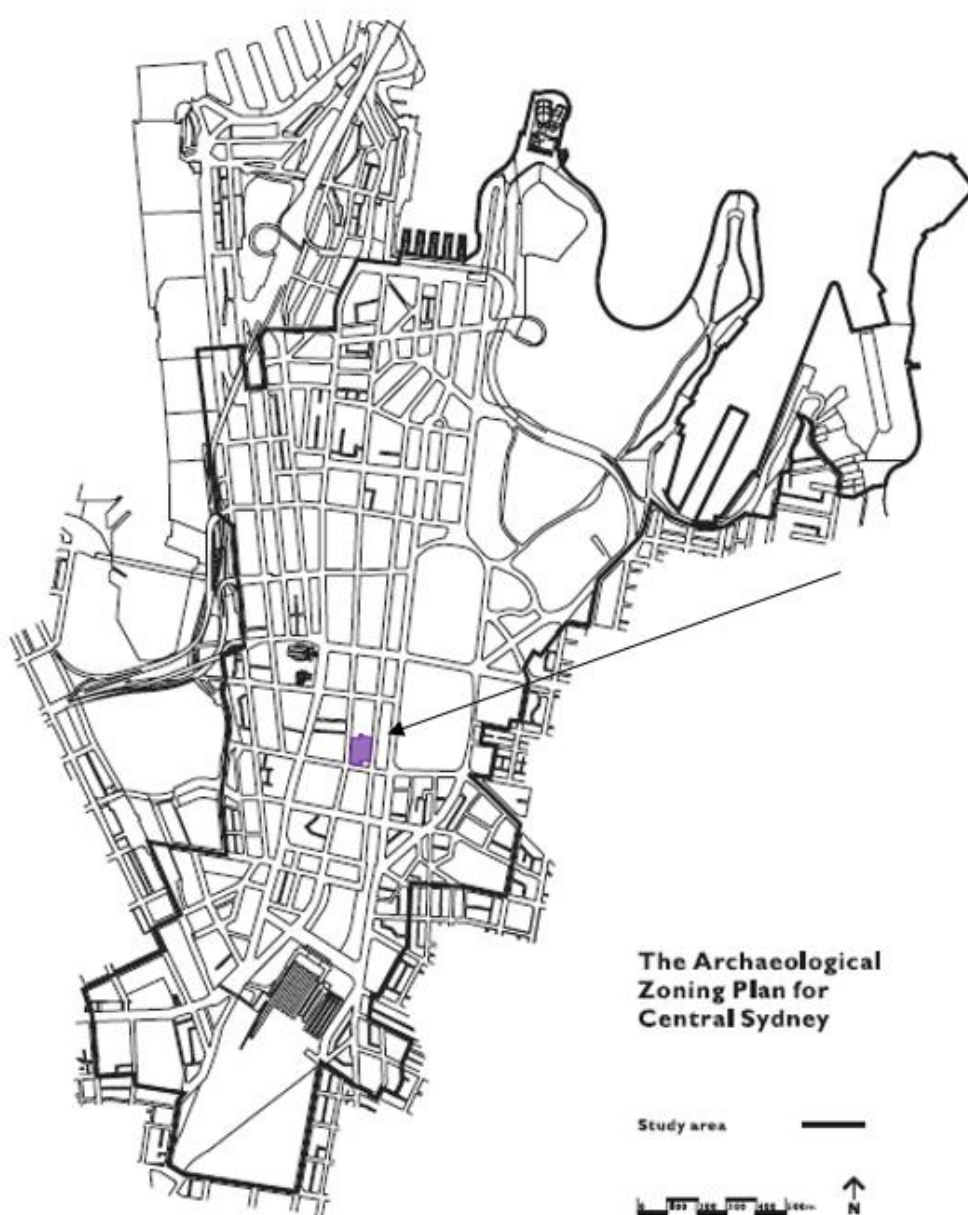


Figure 6.2 Central Sydney Archaeological Zoning.
Study area indicated by purple fill and black arrow. (City of Sydney 1997).

6.4 SUMMARY OF ARCHAEOLOGICAL PREDICTIVE MODEL FOR THE REGION

Predictive modelling is an adaptive process which relies on a framework formulated by a number of factors, including but not limited to the use of local land systems, the environmental context, archaeological work and any distinctive sets of constraints that would influence land use patterns. This is based on the concept that different landscape zones may offer different constraints, which is then reflected in the spatial distributions and forms of archaeological evidence within the region (Hall and Lomax 1996).

Early settlement models focused on seasonal mobility, with the exploitation of inland resources being sought once local ones become less abundant. These principles were adopted by Foley (1981) who developed a site distribution model for forager settlement patterns. This model identifies two distinctive types of hunter and gather settlements; 'residential base camps' and 'activities areas.' Residential base camps are predominately found located in close proximity to a reliable source of permanent water and shelter. From this point the surrounding landscape is explored and local resources gathered. This is reflected in the archaeological record, with high density artefact scatters being associated with camp bases, while low density and isolated artefacts are related to the travelling routes and activity areas, see Figure 6.3 (Foley 1981).

However, more recently, investigation into understanding the impacts of various episodes of occupation on the archaeological record has been explored, of which single or repeated events are being identified. This is often a complex process to establish, specifically within predictive models as land use and disturbance can often result in post depositional processes and the superimposition of archaeological materials by repeated episodes of occupation.

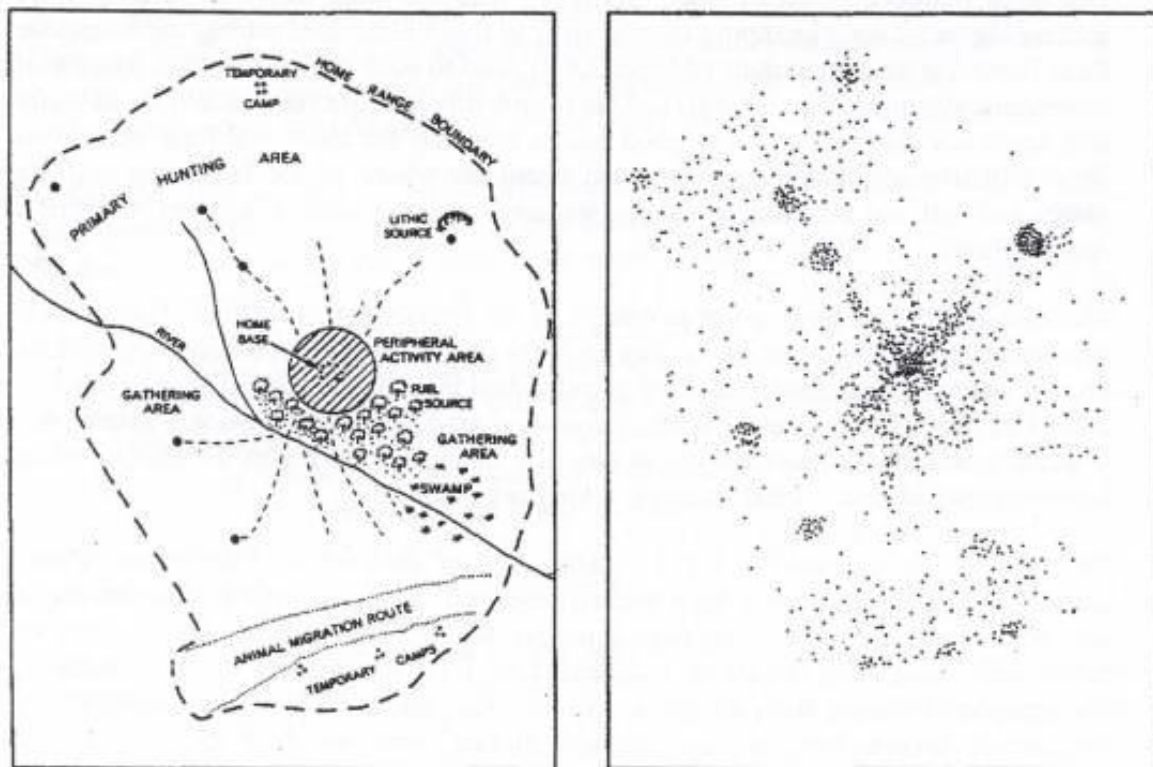


Figure 6.3 Examples of forager settlement patterns.
Foley (1981).

The principals behind this model have been incorporated into other predictive models such as that of McBryde (1976). McBryde's model is centred on the utilisation of food resources as a contributor to settlement patterns, specifically with reference to the predictability and reliability of food resources for Aboriginal people within the immediate coastal fringe and/or hinterland zone, with migratory behaviour being a possibility. Resources such as certain species of animals, particularly; small marsupials and reptiles, plant resources and nesting seabirds may have been exploited or only available on a seasonal or intermittent basis. As such, archaeological sites which represent these activities whilst not being representative of permanent occupation may be representative of brief, possibly repeated occupation.

Jo McDonald and Peter Mitchell have since contributed to this debate, with reference to Aboriginal archaeological sites and proximity to water using their Stream order model (1993). This model utilises Strahler's hierarchy of tributaries (Figure 6.4). This model correlates with the concept of proximity to permanent water and site locations and their relationship with topographical units. They identify that artefact densities are greatest on terraces and lower slopes within 100m of water.

Intermittent streams, however, also have an impact on the archaeological record. It was discovered that artefacts were most likely within 50 – 100m of higher (4th) order streams, within 50m (2nd) order streams and that artefact distributions around (1st) order streams was not significantly affected by distance from the watercourse. Landscapes associated with higher order streams (2nd) order streams were found to have higher artefact densities and more continuous distribution than lower order streams.

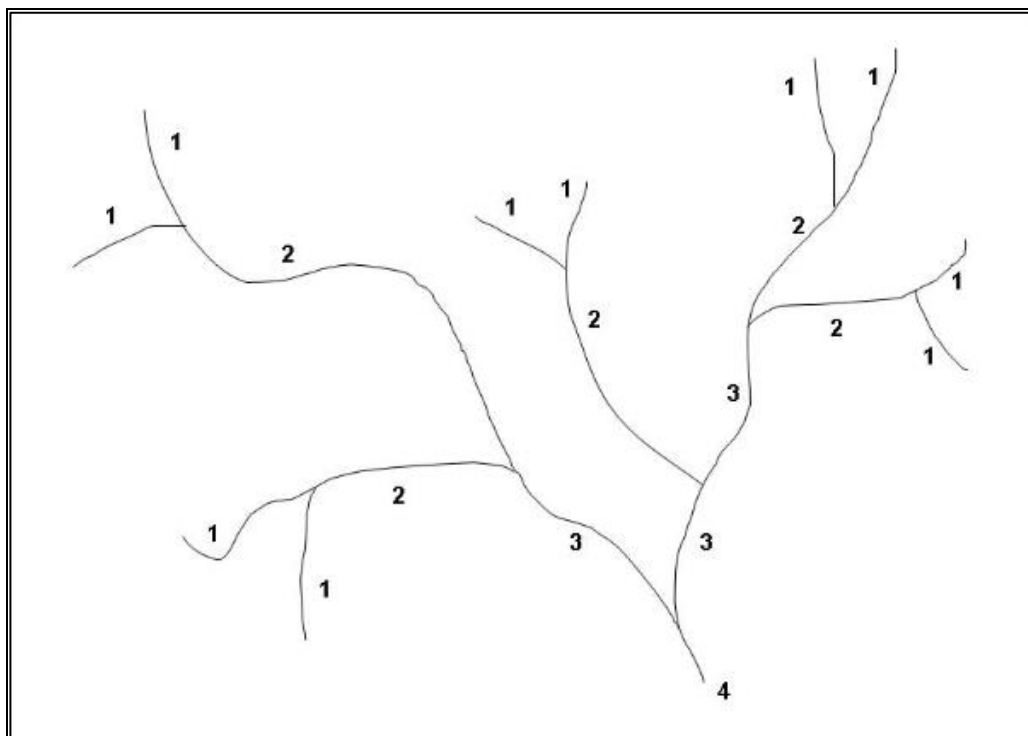


Figure 6.4

Strahler's hierarchy of tributaries.
Strahler (1957).

Table 6.1 Relationship between landscape unit and site distribution for region

Landscape Unit /Site types	Site Distribution and activity
1st order stream	Archaeological evidence will be sparse and reflect little more than a background scatter
Middle reaches of 2nd Order Stream	Archaeological evidence will be sparse but focus activity (one off camp locations, single episodes and knapping floor)
Upper reaches of 2nd order stream	Archaeological evidence will have a relatively sparse distribution and density. These sites contain evidence of localised one-off behaviour.
Lower reaches of 3rd order stream	Archaeological evidence for frequent occupation. This will include repeated occupation by small groups, knapping floors (used and unused material) and evidence of concentrated activities.
Major creek-lines 4th order streams	Archaeological evidence for more permanent or repeated occupation. Sites will be complex and may be stratified with a high distribution and density.
Creek junctions	This landscape may provide foci for site activity, the size of the confluence in terms of stream rankings could be expected to influence the size of the site, with the expectation of there being higher artefact distribution and density.
Ridge top locations between drainage lines	Ridge Tops will usually contain limited archaeological evidence, although isolated knapping floors or other forms of one-off occupation may be in evidence in such a location.
Raw Materials near water-sources	The most common raw materials are silcrete and chert in sites closer to coastal headlands, though some indurated mudstone/silicified tuff and quartz artefacts may also be found.
Grinding Grooves	Grinding Grooves may be found in the sandstone or shale/sandstone transition areas.
Scarred trees	May occur in stands of remnant vegetation.
Ceremonial Sites	Consultation with relevant Aboriginal Stakeholder groups, individuals and review of ethnographic sources often reveal the presence of ceremonial or social sites.

This predictive model has been refined with focus on the dominant environment and landscape zones of the Cumberland Lowlands, such as the Wianamatta Group Shales, Hawksbury Sandstone, Quaternary alluvium, Quaternary Aeolian and Tertiary alluvium. Attenbrow (2002) discovered that the Quaternary alluvial deposits had a greater concentration of archaeological sites, which is likely the result of these deposits being located towards major creek lines and rivers, such as Eastern Creek, Second Ponds Creek etc. Areas of alluvial deposits were found by Kohen (1986) to contain artefact scatters of a large and complex nature the closer they were to permanent creeks.

Umwelt (2004), has identified similar environmental – archaeological relationships which contribute to the mapping and modelling of archaeological sites, such as;

- The pattern of watercourses and other landscape features such as ridge lines affected the ease with which people could move through the landscape;
- Certain landscape features such as crests or gently sloping, well-drained landforms influenced the location of camping places or vantage points that provided outlooks across the countryside;
- The morphology of different watercourses affected the persistence of water in dry periods and the diversity of aquatic resources and so influenced where, and for how long, people could camp or procure food;
- The distribution of rock outcrops affected the availability of raw materials for flakes and ground stone tools;
- The association of alluvial, colluvial and stable landforms affects the potential that sites will survive;
- European land-use practices affect the potential for site survival and/or the capacity for sites to retain enough information for us to interpret the types of activities that took place at a specific location.

All models state that the primary requirement of all repeated, concentrated or permanent occupation is reliable access to fresh water. Brief and possibly repeated occupation may be represented in areas that have unreliable access to ephemeral water sources, however, these areas will not possess a high archaeological potential (Goodwin 1999).

Table 6.3 Aboriginal Cultural Heritage Data Audit, Predictive Modelling for Coastal Aboriginal Sites, NSW.

Site Type	Archaeological/ Predictive Modelling
Aboriginal Ceremony and Dreaming Sites	Can only be identified on the basis of Aboriginal community knowledge.
Aboriginal Resource and Gathering Sites	Can occur at any location where plant and animal target species are found at present or were available in the past.
Art Sites	All rock paintings or drawings and some rock engravings will occur within rock shelters/overhangs, most commonly within sandstone cliff lines and in granite boulder fields. Rock engravings may occur wherever there are suitable rock-surface exposures.
Artefacts	Will occur in all landscapes with varying densities. Artefacts of greatest scientific significance will occur in stratified open contexts (such as alluvial terraces, sand bodies) and rock shelter floors.
Burials	Most likely (but not always) to be buried in, or eroding from, sandy soils. Can occur within rock shelters/overhangs, most commonly within sandstone cliff lines and in granite boulder fields.
Ceremonial Ring Sites	Environmental factors may be of particular importance in site location including association with sources of water, ridges, unstructured soils and geological boundaries. Distance to adjacent ceremonial ring sites may influence site location.
Conflict Sites	Can only be identified on the basis of historical records and community knowledge.
Grinding Grooves	Most likely to occur on surface exposures of sandstone. Occasionally occur within sandstone rock shelters.
Modified Trees	Will only occur where target tree species survive and if these are of an age generally greater than 100 years old.
Non-Human Bone and Organic Material Sites	Will occur in any surface or buried context where preservation conditions allow. Most commonly survive in open shell midden sites and in rock shelter floor deposits.
Ochre Quarry Sites	Can occur at any location where suitable ochre sources are found, either as isolated nodules or as suitable sediments (clays).
Potential Archaeological Deposits	Can occur in all landscape types. PADs of greatest scientific significance will occur in stratified open contexts (such as alluvial terraces, sand bodies) and rock shelter floors.
Shell Middens	Will occur as extensive packed shell deposits to small shell scatters in all coastal zones along beaches, headlands and estuaries, both in open situations and in rock shelters. May occur along rivers and creeks where edible shellfish populations exist or existed in the past.
Stone Arrangements	Tend to be on high ground, often on the tops of ridges and peaks commanding views of the surrounding country. Often situated in relatively inaccessible places.
Stone Quarry Sites	Can occur at any location where suitable raw materials outcrop, including pebble beds/beaches.
Waterholes	May occur within any river or creek. Rare examples may occur in open exposures of rock.

6.5 ARCHAEOLOGICAL PREDICTIVE MODEL FOR THE STUDY AREA

The following section gives an indication of the likelihood of certain site types being located within the study area. These indications are based on the research and results of assessments and excavations in the vicinity of the study area and also from the greater Cumberland Region.

Site Type	Research	Likelihood
Open Artefact Scatters	Higher order streams are located within the vicinity of the study area. The dearth of known reliable raw material source within nearby landscape units, would suggest that the artefacts may be significant in number but smaller in size, on account to greater levels of stone tool reduction. Excavations in the vicinity of the study area indicate the presence of deposits that are suggestive of concentrated and repeated occupation.	Likely within undisturbed parts of the study area.
Isolated Artefacts	Higher order streams are located within the vicinity of the study area. The dearth of known reliable raw material source within nearby landscape units, would suggest that the artefacts may be significant in number but smaller in size, on account to greater levels of stone tool reduction. Excavations in the vicinity of the study area indicate the presence of deposits that are suggestive of concentrated and repeated occupation.	Likely within undisturbed parts of the study area.
Grinding Grooves	Boulders of sandstone or outcrops can occur in the landscape, generally near watercourses.	Unlikely, not apparent in area.
Stone Resource Sites	Rock outcrops of suitable flaking material are almost absent from the soil landscapes represented within the study area.	Unlikely
Scarred Trees	Trees of sufficient age are not located within the study area due to land clearing.	Unlikely
Sandstone Shelters	The soil landscapes of the study area do not contain sandstone overhangs	Unlikely
Burials	Undisturbed sandy loam deposits do not lie within the study area and the soil landscapes in which the study area is located are generally acidic. Skeletal remains tend to decompose very quickly in acidic soil profiles.	Unlikely
Ceremonial Sites	Consultation with relevant Aboriginal parties and individuals is taking place, however it is possible that such information may become available in the future as a result of further consultation	Possible that Ceremonial/Social sites will be present within the study area

6.6 PREVIOUS ARCHAEOLOGICAL STUDIES NEAR THE STUDY AREA

As part of the research process of this report the library of archaeological assessments, test excavation and open area salvage excavation reports which is located at the offices of DECCW at Hurstville was consulted. Presented below are summaries of indigenous archaeological survey assessments, test excavations and salvage excavations in the vicinity of the study area, which have all been carried out. This list is by no means exhaustive and is merely a representative sample of archaeological activity within the vicinity of the study area.

V. Attenbrow (1984) – Sheas Creek midden

Attenbrow conducted excavations at Sheas Creek (now Alexandria Canal) which resulted in two shell horizons. Artefacts within these horizons consisted of stone axes and butchered bones. The bones were later tested and found to date to 5,520 ± 70BP.

Crew, David (1991) – Aboriginal Archaeological Assessment – Archaeological Survey for Aboriginal Sites of the Botany Wetlands, Sydney NSW

In 1991, David Crew conducted an Aboriginal Archaeological Assessment within the Botany Wetlands. The report identified that the Lachlan Swamps System, which extends across much of the Centennial Parklands provided a significant freshwater resource area flanked by 25m sand dunes and in close proximity to the sheltered estuary at Botany Bay for Aboriginal occupation. It concluded that Aboriginal archaeological evidence such as occupation and burial sites have the potential to survive in areas which are less disturbed during historical settlement activities. Crew also reports on the 1982 Aboriginal skeletal remains that were identified in the Botany Wetlands at Eastlakes Golf Course.

Godden Mackay Pty Ltd and Austral Archaeology Pty Ltd (1995) – Aboriginal Archaeological Assessment – Prince of Wales Hospital Excavation, NSW Department of Health

In 1995, Godden Mackay (GM) and Austral Archaeology (AA) prepared an Aboriginal Archaeological Assessment as part of a historical archaeological excavation at the Prince of Wales Hospital. During the historical excavations three roughly circular shaped hearths with burnt sandstone manuports were identified. Carbon 14 dating and thermoluminescence were used to date one of the hearths (Feature 203) and dated to 7860 +/- 50 BP and 8400 +/- 800 BP respectively. In addition, residue analysis on one of the hearth stones from Feature 203 indicated high amounts of fatty acids probably belonging to a freshwater fish that had been cooked on this hearth.

Additional sandstone manuports were also identified though not clearly associated to a defined hearth. The report indicated that these sandstone manuports are evidence of local Aboriginal occupation based on the 'assumption that pieces of stone in an aeolian sand dune can have no method of transport other than human' (GM & AA 1995: 29). Ten flaked artefacts of white, banded indurated stone (unknown source) were also identified during the excavations, with the report noting the unusual absence of silcrete. The report suggested that the small number of flaked stone artefacts indicates that the site was probably a short-term settlement and subsistence type formed under conditions of high human mobility (GM & AA 1995: 40).

Godden Mackay Heritage Consultants (1997) – Aboriginal Archaeological Monitoring – Eastern Distributor, Moore Park NSW

In 1997, Godden Mackay conducted Aboriginal archaeological monitoring along the western boundary of Moore Park. The test pits were excavated to a depth of 2.2m and resulted in no evidence of Aboriginal habitation. The investigation indicated that this area of Moore Park was highly disturbed with introduced fill between 40cm and 150cm present across the site.

In addition, the report included details from geotechnical investigations conducted during the construction of the Eastern Distributor in the Moore Park Precinct. The results of these investigations indicated that fill extended between 1m and 4.7m deep along some parts of Moore Parks' western end. South of the Moore Park Precinct (south of Charles St. Redfern), sand dunes between 15m to 20m thick were reported. Close to Charles Street, lake deposits and freshwater swamp peat were located in the A Horizon between 1m to 3m thick and 13m to 17m below the present ground level and increasing to 5m below ground level in the vicinity of Maddison Street.

Australian Museum Business Services (2002) – Aboriginal Archaeological Assessment – Centennial Parklands Conservation Management Plan

In 2002, Australian Museum Business Services (AMBS) prepared an Aboriginal Archaeological Assessment as part of an investigation for Aboriginal land and resource use in Centennial, Moore and Queens Parks for the Centennial Parklands Conservation Management Plan. The assessment discussed previously identified Aboriginal sites, including a rock-shelter with 27 white human hand stencils at Queens Park, rock engravings (now destroyed) at Darvall Street and one artefact found at the Sydney Cricket Ground which is now stored at the Australian Museum collection.

AMBS indicated that it is likely that Aboriginal archaeological evidence may survive in areas beneath buildings, ponds, and landfill that are now present across the Centennial Parklands. The assessment also suggested that it is possible that additional rock engravings may have been exposed in areas of currently covered sandstone outcrops during periods in the past when these outcrops were exposed.

Archaeological & Heritage Management Solutions 2003 – Test Excavation – William Henry & Harris St's, Ultimo

Archaeological & Heritage Management Solutions conducted an Aboriginal test excavation programme in 2003. This was in response to the proposed Ultimo Aquatic Centre development. A total of 12 (1m x 1m) test trenches were excavated within the boundary of the development and identified PADs. Only remanent A1 and A2 horizon were identified (artefact bearing layer), however, no artefacts were recovered from any of the test trenches.

Jo McDonald Cultural Heritage Management (2005) – Archaeological Testing and Salvage Excavation – Discovery Point, NSW

In 2005, Jo McDonald Cultural Heritage Management conducted excavations at Discovery Point to the southwest area of Tempe House. The excavation was divided into three phases during the course of archaeological activities; 1) across the proposed carpark, backhoe testing to the water-table depth to establish whether intact cultural material was present; 2) If stone artefacts identified during backhoe work, test pits to be hand excavated; and 3) to retrieve a sample of cultural materials for analysis, open area salvage excavations. A number of intact natural soil horizons were located, consisting of black sand, a light grey sand layer, overlaying a mottled sand/coffee rock. Three

hundred and eighty-nine artefacts were excavated the majority recovered from the light grey sand layer.

It was concluded that the site constituted an extensive, low density artefact scatter. The excavation of a charcoal feature that was subsequently radiocarbon dated was calibrated to ca. 10,7000 BP and classified as the earliest date of Aboriginal occupation along the Sydney Basin's eastern coastal strip. As a result, it was suggested that people have been repeatedly visiting Discovery Point, for thousands of years.

Dominic Steele Consulting Archaeology (2006) – Aboriginal Heritage Assessment – Randwick Racecourse, Randwick NSW

In 2006, Dominic Steele Consulting Archaeology was commissioned to prepare an Aboriginal heritage assessment as part of a conservation management plan for Randwick Racecourse. It was reported that the site had widespread environmental and landscape modification and subsequently concluded that due to the high disturbance levels it was unlikely that any surface and/or subsurface Aboriginal archaeological evidence would be located across most of the site. However, it was advised that a large sand dune to the southeast of the racecourse with a height of over 20m may have archaeological evidence in deeper sand dune contexts, possibly as much as several thousand years old, and was identified as high Aboriginal archaeological sensitivity.

Cultural Heritage Connections, (2007) – Indigenous Archaeological Investigation for Proposed Upgrade of Beare Park & Kings Cross Rotary Park, Elizabeth Bay

In May 2007, Cultural Heritage Connections were commissioned to conduct an Indigenous archaeological investigation of potential impacts from the proposed upgrade of the Beare Park & Kings Cross Rotary Park, Elizabeth Bay. The assessment identified that the study site was located within reclaimed land suggesting a highly disturbed context of the area and therefore concluded no impediment to the proposed development on Aboriginal archaeological grounds.

Comber Consultants Pty Ltd 2008 – Aboriginal Archaeological & Cultural Heritage Assessment – Darling Walk, Darling Harbour

Comber Consultants Pty Ltd, conducted an Aboriginal Archaeological & Cultural Heritage Assessment in 2008. This was in response to the proposed upgrade of the Darling Walk at Darling Harbour. As part of this assessment, a site inspection took place, however, it resulted in no new or known sites identified. Research indicated that there was the potential for objects and deposits of archaeological and/or cultural value to be present within the development area. This area was identified as a tidal zone with the potential original shoreline being present and if so, evidence of past occupation also may be present. Therefore, a programme of subsurface test excavation was proposed within the area where the basement would be located.

Jo McDonald Cultural Heritage Management (2010) – Royal Sydney Golf Club

Excavations were conducted by JMCHM resulting in several human remains as well as over 5,700 artefacts. It was evident through testing that the Tuggerah dune field has been truncated – although disturbed, it still maintained Aboriginal objects and features. The assemblage was seen to be of middle to late Bondaian age predominately consisting of quartz and FGS material. More recently, work within the Botany Lowlands physiographic region at the Randwick Stabling Yard has 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).

Comber Consultants Pty Ltd 2011 – Aboriginal Archaeological & Cultural Heritage Assessment – Johnston’s Stormwater Canal, Darling Harbour

Comber Consultants Pty Ltd, conducted an Aboriginal Archaeological & Cultural Heritage Assessment in 2011. This was in response to the proposed shared pathway project which connects to an existing shared pathway on the north-eastern side of Johnston’s Stormwater Canal at Blackwattle Bay to the existing shared pathway south of Wigram Road. A site inspection of the proposed shared pathway and background research confirmed that the study area was in reclaimed land and therefore no Aboriginal objects and/or deposits of cultural and archaeological significance was expected to exist within the study area.

Biosis 2012 – Test Excavation– The Quay Project, Haymarket

Biosis conducted a programme of test excavation in 2012. This was in response to the proposed mixed-use development in Haymarket. A total of 5 (50cm x 50cm) test pits were excavated across the study area where intact A horizon was identified. A high level of disturbance was evident across the site and as such, no Aboriginal artefacts and/or deposits were recovered during the testing programme. However, during the European historical excavations, an isolated find was located (Site 45-6-2987). This artefact came from a highly disturbed context. It was proposed that an AHIP be sought in order for the development to proceed.

Godden Mackay Logan 2014 – Post excavation Report – 200 George Street, Sydney

Godden Mackay Logan (GML) conducted, both historical and Aboriginal test excavation in 2013. The study area was initially recorded as a PAD 45-6-3081 and the excavation of eight pits revealed no Aboriginal objects of heritage value, however, it did locate sediments associated with the original shoreline towards the northern end of the study area. The majority of the area consisted of exposed bedrock with little intact natural upper soil deposits, of those discovered it was determined that the stepped sandstone and highly organic estuarine soils would have made it unsuitable to Aboriginal people or unsuitable for conserving an archaeological signature relating to any activity that did occur.

Artefact Heritage (2014) – Aboriginal Heritage Management Assessment – CBD and South East Light Rail Project: Construction Heritage Management Plan for the Moore Park Works

In 2014, as part of the CBD and South East Light Rail Project (CSELR), Artefact Heritage carried out an Aboriginal Heritage Impact Assessment at Moore Park. The Tramway Oval and Tennis Centre formed part of the investigation of the Moore Park Works. Based on geotechnical investigations at the Tramway Oval Site, the following archaeological implication was concluded; Due to the removal of the upper sand layers that may have contained Aboriginal objects, it is likely that the site is culturally sterile and Aboriginal archaeological test excavation not warranted.

Dominic Steele Consulting Archaeology 2015 – Due Diligence – Biome RBG

Dominic Steele Consulting Archaeology conducted an Aboriginal Archaeological Due Diligence Assessment in 2015. This report assesses the Aboriginal archaeological and cultural potential for the proposed electrical substation and cabling for Ausgrid within the Royal Botanic Garden. This desktop study resulted in no Aboriginal sites and/or objects being identified and that the proposed works had a minimal probability of impacting on any significant objects and/or intact deposits.

Archaeological & Heritage Management Solutions 2015 – Aboriginal and Historical Heritage Review – Central to Eveleigh Corridor, Sydney

Archaeological & Heritage Management Solutions (AHMS) conducted an Aboriginal and Historical heritage review in 2015. This was in response to investigations concerning redevelopment options within the stretch of land known as the Central to Eveleigh Corridor. Community consultation took place as part of this review and as a result, it was proposed that an archaeological assessment and associated archaeological zoning plan needed to be devised in order to inform future management, as well as an interpretation strategy including an oral history programme focusing on urban communities and heritage places.

Archaeological Management & Consultancy Group (AMAC) 2017 – Archaeological Survey Report - 210–220 George Street, Sydney

In 2017, Archaeological Management & Consultancy Group (AMAC) conducted an Archaeological Survey. The survey revealed that the study area was not likely to contain items or areas of Aboriginal archaeological significance. There were no confirmed Aboriginal archaeological site records located within the study area on the Aboriginal Heritage Information Management System (AHIMS) or from other sources of information.

The landscape had been identified as being heavily disturbed with the site located on reclaimed land. Prior to reclamation works the site would have been an intertidal zone. Based on this information, sub-surface Aboriginal objects with potential conservation value may be present within undisturbed parts of the study area. However, the disturbed nature and significant land modifications made to the site, indicates that there is no intact topsoil (A horizon) – the layer of soil in which Aboriginal archaeological or cultural material would be located if present. It was recommended that no further archaeological and cultural assessment was necessary.

The practical ramifications of the results of the aforementioned archaeological assessments and excavation are that there is a low -moderate potential for Aboriginal archaeological objects to be present within the study area, particularly if intact original soil profiles are present.

7.0 RESEARCH QUESTIONS

7.1 ABORIGINAL CULTURAL HERITAGE QUESTIONS

All registered stakeholders were given a copy of this research methodology and given 28 days to respond to this methodology.

- Does the study area hold any social, spiritual or cultural values to the participating Aboriginal stakeholders? If so, what are these values and are they confined to particular parts of the study area?
- Why are these parts or the whole of the study area culturally significant to the participating Aboriginal stakeholders?
- Are particular parts of the study area more important than others?
- Are any previously unidentified known culturally significant places present within the study area? If so, where are they located?
- Are any previously unidentified Aboriginal objects or Aboriginal places present within the study area? If so, where are they located?
- Are any previously unidentified natural or archaeological resources present within the study area? If so, where are they located?
- Are there any traditional stories or legends associated with the study area?
- Are there any recollections of Aboriginal people living within the study area?
- Is there any information to suggest the presence of burials within the study area?
- Are any traditional flora or fauna resources associated with the study area?
- Does the study area have any sensory scenic or creatively significant cultural values? If so, what are these values and are they confined to particular parts of the study area and where are they located?
- In what way, if any, will the proposed development harm the identified cultural heritage and archaeological values of the study area?
- Do the participants have suggestions on the mitigative strategies for the management of the cultural and archaeological values of the study area?
- Are there any gender specific cultural values associated with the study area which cannot be raised in a male presence?
- Are there any gender specific cultural values associated with the study area which cannot be raised in a female presence? If so, how would the Aboriginal stakeholders like these dealt with?
- Do the participants have any concerns not yet raised in this interview?

7.2 TEST EXCAVATION QUESTIONS

- Are Aboriginal archaeological or cultural materials present? If so, what are these archaeological or cultural materials present?
- If Aboriginal archaeological or cultural materials are not present, what reasons can be ascertained from the evidence as to why not?
- What level of disturbance is present within the study area?
- What level of bioturbation is present within the study area?
- Is it possible to assign a relative time framework to all of the excavated material?
- Is it possible to assign an absolute temporal framework (via C14 or OSL dating) to any of the excavated material?
- Are these materials present in Holocene or Pleistocene age deposits?
- Are rare or representative archaeological or cultural materials present?
- Are locally or regionally significant archaeological or cultural material present in any Holocene age deposits that may be present?
- Are locally or regionally significant archaeological or cultural material present in any Pleistocene age deposits that may be present?
- What artefact densities are represented by any assemblage located within the study area?
- What do these artefact densities suggest about the level and nature of activity that took place within the study area?
- How do these artefact densities compare at a local and regional level?
- Are features such as hearth or middens present within the study area?
- What raw materials were chosen for the manufacture of stone implements?
- Is there any observable change in raw material usage evident within any assemblage that is located within the study area?
- Is there any observable flaking technology change within any assemblage that is located within the study area?
- What was the nature and extent of the activity that took place within the study area and how does the study area compare with other sites in the immediate vicinity and similar landforms to the study area?
- Are any materials that could be associated with personal adornment located within any assemblage that is located within the study area?
- How can the information from any assemblage excavated contribute to the temporal and geographic information regarding local and regional site patterning?

8.0 TEST EXCAVATION

The purpose of subsurface test excavation is to identify the nature and extent of any intact archaeological deposit and/ or objects which may be situated within the study area and its significance.

It aims to collate additional information regarding any site characteristics which may enhance our understanding of the local and/or regional prehistory of the area. The results of the test excavation aid in the formalisation of appropriate management recommendations and conservation goals for the proposed development and any archaeological material recovered.

The methodology and recommendations presented in the following section of the report take into account the following:

- Legislation which protects Aboriginal cultural and archaeological objects and places in New South Wales.
- Research and assessments carried out by the author/s of this report and previous reports.
- Results of previous archaeological assessments and excavations in the vicinity of the study area.
- The impact of the proposed development on any Aboriginal archaeological material that may be present.

It is not possible to carry out test excavation on this site under the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*, Part 6 National Parks and Wildlife Act 1974 due to the constraints of the historic archaeological deposits and significant fills and disturbance anticipated in areas as well as the staged occupancy and demolition of the current buildings. Demolition works will need to take place first prior to Aboriginal test excavations commencing. These works will be undertaken under the SSD. Due to the proposed application for SSD status, it is therefore recommended that test excavation be undertaken under an Aboriginal Cultural Heritage Management Plan (ACHMP) as conditions of the SSD.

8.1 FIELDWORK METHODOLOGY

As detailed in the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*, Part 6 National Parks and Wildlife Act 1974 (DECCW 2010). The purpose for test excavation

“...is to collect information about the nature and extent of sub-surface Aboriginal objects, based on a sample derived from sub-surface investigations. Test excavations contribute to the understanding of site characteristics and local and regional prehistory and they can be used to inform conservation goals and harm mitigation measures for the proposed activity”

Although the proposed test excavation cannot be conducted under the Code of Practice, the principles however are to be adopted as part of the recommended ACHMP and in compliant with best practice.

As set out in the Code of Conduct for the Investigation of Archaeological Objects in NSW:

“The test excavation should be sufficiently comprehensive to allow characterisation of the Aboriginal objects present without having a significant impact on the archaeological value of the subject area” (DECCW 2010)

Any test excavation carried out under this requirement must cease when:

- suspected human remains are encountered.
- enough information has been recovered to adequately characterise the objects present, with regard to their nature and significance.

The Code of Conduct for the Investigation of Archaeological Objects in NSW ‘enough information’ means that the sample of excavated material clearly and self-evidently demonstrates the deposit’s nature and significance, and may include things like:

- locally or regionally high object density
- presence of rare or representative objects
- presence of archaeological features or locally or regionally significant deposits, stratified or not.

Decisions regarding the nature and significance of the site and choices about discontinuing the test excavation program shall be made by the excavation director in consultation with the registered Aboriginal stakeholders, if required. Information will be reviewed on a daily basis and the excavation director reserves the right to cease all excavation if he/she believes the nature and extent of the site is understood in accordance with the *Code of Practice for the Investigation of Archaeological Objects in NSW*.

8.2 TEST EXCAVATION METHODOLOGY

The following measures will be taken to establish the nature and extent of any such material discovered during test excavations. This methodology is recommended to be adopted under an ACHMP as SSD conditions.

The proposed development does have the potential to disturb any Aboriginal archaeological deposits and/or objects which may be present. Therefore, in accordance with the Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales, Part 6 National Parks and Wildlife Act 1974 (DECCW 2010), it is recommended a programme of test excavation be conducted prior to the completion of the development.

The first priority in test excavations, and recording Aboriginal objects during test excavations, must always be to avoid or minimise, as far as practicable, the risk of harm to the objects under investigation. This means due care must be taken when excavating and collecting objects.

In compliance with the Code of Practice the following test excavation methodology will be conducted.

- Test excavation units will be placed on a systematic grid appropriate to the scale of the area – either PAD or site – being investigated e.g., 10 m intervals, 20 m intervals, or other justifiable and regular spacing.
- Any test excavation point will be separated by at least 5 m.
- Test excavations units will be excavated using hand tools only.
- Test excavations will be excavated in 50 cm x 50 cm units.

- Test excavations units may be combined and excavated as necessary to understand the site characteristics, however: the maximum continuous surface area of a combination of test excavation units at any single excavation point conducted in accordance with point (above) will be no greater than 3 m². The maximum surface area of all test excavation units will be no greater than 0.5% of the area – either PAD or site – being investigated.
- The first excavation unit will be excavated and documented in 5 cm spits at each area – either PAD or site – being investigated. Based on the evidence of the first excavation unit, 10 cm spits or sediment profile/stratigraphic excavation (whichever is smaller) will then be implemented.
- Test excavation units will be excavated to at least the base of the identified Aboriginal object-bearing units and will continue to confirm the soils below are culturally sterile.
- Photographic and scale-drawn records of the stratigraphy/soil profile features and informative Aboriginal objects will be made for each single excavation point.
- Test excavations units will be backfilled as soon as practicable.
- Following test excavation, an Aboriginal Site Impact Recording form will be completed and submitted to the AHIMS Registrar as soon as practicable

8.2.1 Sieving

The excavated soil from each spit is to be placed in buckets of uniform size (9-10kg limit); these buckets will be counted, and all material excavated from the test excavation units will be sieved using a 5 mm aperture wire-mesh sieve. All archaeological material that is recovered from sieving will be placed in a zip lock bag and labelled with the site number, date, trench and spit. All bags will then be placed in a larger zip lock bag for processing.

8.2.2 Recording

A photographic record will be kept of the progress of each test trench as well as photographic and scale-drawn records of the stratigraphy/soil profile and features will be made for each single excavation point.

Details pertaining to individual spits will be recorded through the completion of site forms. The details on the form include site name, pit number, location and landform, area, spit number, spit depth, soil horizon, artefacts, stratigraphic profile as well as additional notes relating to the soil deposits encountered.

Personal records are also to be noted in the director's field journal. Any artefacts recovered shall be recorded under the parameters set out in the Code of Conduct for the investigation of Archaeological objects in NSW and will be stored as outlined in the care and control agreement.

8.2.3 Excavation of Archaeological Features

Any archaeological features including but not limited to hearths, shell middens and/or knapping floors if discovered shall be subject to the following.

If at any stage during the excavation activities of any Aboriginal archaeological test trench where historical archaeological material is encountered, then excavation shall cease while the protocols outlined in AMAC 2019 *Archaeological Assessment*

Research Design & Excavation Methodology are observed and carried out. If the material is deemed to be 'State Significant Material' by the historical archaeology Excavation Director, then the Aboriginal archaeological test trench shall be offset by an appropriate distance to avoid said 'state significant' material thus leaving it intact.

- Identifiable features, if apparent, shall be excavated in full if the excavation director in consultation with the Aboriginal stakeholders are of the opinion that the excavation of the feature can contribute substantially to the cultural and archaeological knowledge of the study area and/or the region.
- Once the nature and location of the feature has been established full recording will be carried out (photographs, profile and plan drawings and GPS location).
- The excavation of any feature shall not extend outside any given excavation square. If needed open excavation units will be combined and excavated as necessary to understand the features characteristics and extent, and to expose the feature in entirety if possible.
- The significance of the feature being investigated is clearly understood and it has been adequately investigated and recorded.
- The first excavation unit for each area being investigated will be excavated and documented in 5cm spits. After the first excavation unit, 10cm spits or sediment profile/stratigraphic excavation (whichever is smaller) will then be implemented.
- In feature excavation, a new spit and/or a new stratigraphic unit will be recorded photographically, with scale -drawn plans of the features if appropriate and noticeable changes have occurred. Information will be recorded on the relevant excavation record sheet and if necessary, within the excavation site diary.
- All material collected will be issued with the following information pertaining to its recovery - job title, excavation unit, spit number and date.
- All material excavated from the test excavation units will be wet sieved using 3mm and 5mm aperture, nested wire-mesh sieves.
- Should archaeological and cultural material with potential for scientific dating in particular, material suitable for carbon dating (C14), thermoluminescence dating (TL) and optical luminescence (OSL) dating, be encountered the relevant samples shall be taken. These shall include but not be limited to charcoal deposits; material with apparent contemporary association with intact deposits and archaeological and cultural material as well as suitable sand/soil deposits with apparent contemporary association with intact deposits and archaeological and cultural material. The dating of specific assemblages will occur if appropriate charcoal samples are located and sand soil cores shall be taken at appropriate intervals or points in the stratigraphic layers from the section face of any given excavation unit.
- Soil samples shall also to be taken to allow soil analysis to take place, if appropriate, these shall include pH measurements and pollen analysis. Analysis of specific assemblages will occur if appropriate soil samples are located and sand/soil cores shall be taken at appropriate intervals or points in the stratigraphic layers from the section face of any given excavation unit.
- Use wear and residue analysis samples shall take place if appropriate and if any material exhibiting any evidence of use wear or residue is identified at any stage during the recovery process, these items shall be bagged

separately with the following information: job title, excavation unit, spit number and date.

8.2.4 Historical Archaeological Excavation

The study area may contain both European and Aboriginal archaeological objects therefore it will be necessary to work in conjunction with the methodology endorsed by the Historical team. This will assist in ensuring the full potential of site activity and occupation is recorded especially if disturbed Aboriginal artefact bearing soil profiles are encountered.

The historical excavation methodology can be seen in full in AMAC 2019 *Archaeological Assessment Research Design & Excavation Methodology*. In the event that historical fills and deposits need to be removed to locate intact natural pre-settlement soil horizons, a member of AMAC staff will be onsite during these works and this member of staff will have appropriate knowledge and experience in identifying Aboriginal archaeological and cultural material.

8.2.4.1 Monitoring of demolition and removal of fills

It is proposed that building demolition be carried out to the level of the footings before archaeological work commences. Demolition must be carried out in such a way as to minimise impact on the foundations and underlying ground and minimise the impact on any surviving relics. The archaeologist should be consulted about the method of demolition. Once the demolition has reached the level of the footings an archaeologist should be present on site to establish protocols for archaeological supervision and attendance, or if required, guide the remainder of the work.

An archaeologist must be on site to supervise all excavation with the possibility of revealing archaeological relics. The excavation will be carried out according to the direction of the archaeologist. Any archaeological excavation will be carried out according to current best practice and in terms of the methodology set out here and required under permit conditions.

Where a mechanical excavator is used it must have a flat or mud bucket, rather than a toothed bucket, in order to maintain a clean excavated surface. In general, any machinery used will move backwards, working from a slab or fill surface, in order not to damage any exposed archaeological relics. The fill will be removed in layers, with no more than one context, such as bedding fill/ demolition fill, being removed at one time. This will allow any underlying deposits or relics to be identified (and recorded and preserved if necessary).

8.2.4.2 Excavation

If archaeological relics are detected during the excavation of fills from the site, excavation will cease while these are analysed and investigated. If the relics are found to be of State Significance or otherwise outside the range of relics predicted in the assessment of the site, excavation will cease in this area while Heritage, DPC, or its relevant delegate under State Significant Development approval, is notified. Additional archaeological assessment or evaluation and delegate liaison/approval may be required to deal with such finds.

All other exposed relics will be recorded, and excavated by hand (or where possible, by machine) in reverse stratigraphic sequence, to the extent which they will be destroyed by the proposed development. All works will be carried out in compliance

with conditions issued for such works by Heritage, DPC, or its relevant delegate under State Significant approval.

Samples will be taken of any earlier topsoils, and of soils within features such as pits or a well, should they exist. Any occupation deposits and fills of features such as pits will be sieved, and all artefacts will be retained, with the exception of building materials, which will be sampled. If underfloor deposits are encountered during excavation works, works will cease while the deposits are archaeologically excavated. An underfloor deposit will be manually hand excavated using small tools such as a trowel. Dependent on the size and depth of the deposit, the area will be broken up and excavated in 50cm x 50cm or 1m x 1m squares, in 10cm spits, until the extent of the deposit is reached, or to the extent of impact. Any occupation deposit will be hand excavated and placed into buckets (divided by square numbers) and weighed prior to sieving. The deposit will be sieved through double nested sieves (10mm on top of 5mm) and all artefacts will be collected.

Should any archaeological relics be uncovered, but not removed, in the process of excavation, these will be recorded. They should be covered with a semi-permeable membrane, such as bidum, before construction. Should the proposed development require any plantings in the areas of retained archaeological remains, these should be restricted to small plants and not include trees, as significant root growth may disturb the retained remains. This is considered unlikely for the proposed development.

The relics which are of archaeological potential are identified at this time as post holes, footings and foundations from domestic/commercial dwellings and outbuildings, remnant under floor deposition, yards pits and scatters, fills within wells, cesspits, former services, hard surfaces, evidence of earlier fence lines or earlier surfaces. Evidence for light industrial activities may also be present on portions of the study site. These relics in the form of internally coherent discrete deposition or integral form will be archaeologically excavated and recorded.

8.2.4.3 Recording

Any archaeological relics found and excavated will be recorded in three ways. A written description of each feature and context will be made using printed context sheets. A Harris Matrix will be formulated in order to record the relationship of all contexts found if relevant to the situation. A scaled plan and/or a photogrammetric model (dependent on site conditions) will be made of the site and of each feature found, and levels will be taken as part of this process. Recording of the site will be carried out according to Heritage, DPC, guidelines and the AMAC excavation manual. The site and features will also be recorded photographically, according to current Heritage, DPC, guidelines.

8.2.4.4 Analysis and Final Reporting

Artefacts from the excavation will be cleaned and catalogued, as well as placed in labelled bags according to their catalogue number. The artefacts, in boxes, will be returned to the property owner for safe keeping (as per any issued conditions). Conservation strategy and procedures (if required) in terms of issued conditions should be carried out prior to initiation of long-term storage. Should a higher quantity of artefacts be collected from a site, this may entail the need for a long-term purpose suited and formalised storage facility.

The scope and extent of reporting is linked directly to the nature, extent and complexity of site finds, and a ratio of 1:1 for site time should be expected as a starting point to complete reporting in terms of Heritage, DPC guidelines, the methodology proposed and any issued conditions. The timeframe will move up or down relative to the extent and complexity of material and any necessary conservation measures.

A final report on the archaeological work on the site will be prepared in compliance with conditions provided by Heritage, DPC, or its relevant delegate under State Significant approval. This will be produced within twelve months of completion of all archaeological site works and contractor excavation works unless a longer term is agreed. This will include a trench, area or overall stratigraphic report detailing precisely what was found by area, phase and stratigraphic relationships and an analysis of the results of the work; a response to the research design, so far as the results allow, and a comparison with the results of similar sites in the local area where possible. The final report will also include a completed Harris Matrix, digitised records (context sheets, unit list, photographic register, and artefact catalogue), digitised plans, artefact analysis and artefact photography. Additional historical research may also be conducted in response to the finds of excavation.

All components of the final archaeological report will be submitted to Heritage, DPC, or its relevant delegate under State Significant approval, which will sign-off on the permit, should it be satisfied that the issued conditions have been met or acknowledge receipt of documentation.

8.3 POST EXCAVATION METHODOLOGY

- It is proposed to design the artefact analysis in such a manner as to yield data comparable to that of assemblages excavated from other study sites within the region including those outlined earlier in this report (Section 6.0). Results of analysis will be presented in a form that is comparable with assemblages previously excavated from sites within the local context.
- Variation in artefact densities both topographic and stratigraphic, across each of the test trench will be tabulated and graphed.
- Artefact numbers and densities yielded from the test trenches would be used as a basis for extrapolating likely distribution patterns for untested portions of the study area within the proposed impact zones.
- Based upon the results of investigation, appropriate management strategies would be formulated for the study area. This may include the establishment of conservation zones, monitoring of future excavation associated with the development and/or further excavation. Any further works should take place prior to any changes in ownership of the property.
- The results of investigation will be documented in an Aboriginal Archaeological Technical Report following completion of the test excavation and post-excavation analysis. Reporting will be consistent with the best practices suggested by the NSW NPWS Draft Aboriginal Cultural Heritage Standards & Guidelines Kit.

8.4 ADDITIONAL EXCAVATION PROTOCOLS

The following section outlines additional excavation activities that may take place or factors and/or limitations that may need to be addressed.

8.4.1 Modern Services

Modern services are expected to be present onsite. This includes known and unknown services. Information can be gained from additional investigation. This is addressed below as well as the potential disturbance factors that damaged services may pose.

If modern services are at a width and depth which allows for additional investigation to take place, to which the soil profile can be viewed and inferences can be drawn regarding the presence, location, integrity and depth of the soil profile, will involve the following methodology.

- All disturbed contexts and post settlement fills related to the modern services will be machine excavated using a flay edged (mud) bucket under the direct supervision of an archaeologist.
- Machine excavation shall cease when intact pre-settlement soil horizons are encountered.
- No artefacts, objects and/or features shall be removed from the soil profiles.
- All soil profiles shall be inspected by a qualified geomorphologist and an archaeologist.
- All soil profiles shall be photographed and drawn in section.
- Modern service trenches shall be back filled as soon as practicable.

If known/unknown active services are damaged during the test excavation programme, which as a result may disturb heritage items and/or deposits (either intact or disturbed), the following procedure will be in place in order to record/monitor the process and impact on the heritage of the site.

- A qualified archaeologist will monitor the repair and/or course of action and consult on best practice with regards to preservation of any impacted heritage item and/or deposit.
- Works will try and be limited to hand tools only, however, if an excavator is required, a mud bucket will be used in order to minimise impact.
- A photographic record and plan of the impacted heritage item and/or deposit will take place.

8.4.2 Flooding/ Inundation

The following measure has been put in place to address disturbance factors such as flooding/ inundation that the study area may be subject to and which has the potential to impact heritage items and/or deposits.

In the event of a trench section collapse from rainfall the following protocol should take place.

- The collapsed material from the test trench unit will be excavated as a separate context in order to avoid cross contamination of silt material.
- The collapsed material will be wet sieved using 3mm and 5mm aperture, nested wire-mesh sieves, for cultural material.
- A photographic record will be observed with both before and after photographs taken.
- Depending on the severity of the section collapse a 1m exclusion zone shall be in place and demarcated if trench wall instability is observed and

the trench wall instability protocol will take place as outlined in section 8.4.3 of this report.

Past excavations have illustrated the permeability of the sand terrace and the highly erosional nature of the deposit. In the event of the site being inundated the first priority is containment, in order to prevent run off being exposed to the public and environment. Impact to the soil profile as a result of the study area being inundated and the containment of run off, should be exempt as harm. The following measures should take place.

- Areas of pooling should be demarcated with a 1m exclusion zone and silt fencing and/or run off buffers should be set up to avoid further erosion of the study area in the event the sand terrace is present.
- In severe cases, trenching may be necessary to contain run off. This will be at the discretion of the director of the test excavation program and in consultation with OEH – full documentation and photographic record will be taken of the events if they proceed.
- If possible, the water should be pumped or sponged out.

8.4.3 Trench Wall Instability

Past excavations have experienced significant trench wall instability due to the nature of the soil landscape which is very sandy. The following measures shall be in place to deal with trench wall instability.

- A 1m exclusion zone shall be in place and demarcated for all baulks to prevent wall collapse from undue pressure.
- Access points between and into trenches will be strictly demarcated to prevent wall collapse from undue pressure.
- Trench edges shall be covered with boards to prevent wall collapse from undue pressure.
- All new persons to site shall be informed as part of SWMS as to the nature of the instability of trench walls and informed of their responsibilities with regard to this matter.
- Any weekly or daily toolbox talks shall reiterate the conditions under which the site is to operate with regard to SWMS conditions about trench instability.
- Machines shall not operate within 10m of and open area excavation unit and within 5m of dispersed test trenches where possible.
- Where necessary plywood boards and braces shall be in place to prevent wall collapse.
- Trench wall shall be damped down to increase instability.
- All trenches shall be covered overnight.
- If trench walls collapse the material shall be collected and marked as to the locale of the collapse and sieved as with all other material.

8.4.4 Soil Contamination

Past excavations have experienced significant soil contamination due to the permeability of the sand terrace and alluvial soils. The following measures shall be taken to deal with soil contamination within archaeological/ cultural deposits.

- Test excavation in identified contaminated areas will cease. The area will be demarcated with a 1m exclusion zone in place.

- Excavated contaminated soil should be dry sieved using a 3mm and 5mm aperture, nested wire-mesh sieves and wearing required PPE. This sieved material should be separated from all other spoil piles, if removed by machine, this material should be placed on bidum before dry sieving.
- All cultural material recovered from contaminated soils should be double bagged and given a separate context number. The material should be clearly labelled as having come from a contaminated context and gloves are required for handling.
- This should be allowed to take place under the test excavation programme.
- Excavation and sieving of contaminated material shall only occur if deemed safe by an appropriate person or organisation.

8.5 VISION STATEMENT AND PURPOSE OF POLICIES

The archaeological and cultural heritage significance of the study area carries with it implications for the development and management of the study site. The following vision statement captures the vision and aims of the conservation policies for the study area that arise from the development, its archaeological and cultural heritage significance, and relevant constraints and opportunities.

The following policies have been developed to retain as much as possible the identified archaeological and cultural heritage significance of the study area. The policies are sufficiently flexible in recognising both operational constraints and requirements, while enabling as much as is possible of the archaeological and cultural significance of the study area to be retained.

The policies and guidelines should be read in conjunction with each other. The individual policies are structured under a series of major headings as follows:

- Archaeological and Cultural Policy
- Care and Control Agreement
- Nature of Significance of the Site

8.5.1 Archaeological and Cultural Policy

A background analysis of the archaeological context revealed that the study area has the potential to contain items or areas of low-moderate Aboriginal archaeological significance. In light of this, and in the context of the information provided about the proposed activity works, the following has been recommended to manage the archaeological values of the study area;

- Further investigation in the form of an Aboriginal Cultural Heritage Management Plan be undertaken in accordance with the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in New South Wales*, Part 6 National Parks and Wildlife Act 1974 (DECCW 2010);
- Consultation with the Registered Aboriginal Parties (RAPs) should continue, as per the requirements detailed in the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW, 2010).
- A systematic subsurface disburied test excavation programme should be carried out under an Aboriginal Cultural Heritage Management Plan as recommended conditions of SSD. This is to take place prior to the development activity proceeding (Figure 3.1-3.5).

- In the event, archaeological test excavations reveal Aboriginal archaeological objects or deposits, the following is recommended;

Once the nature and extent of the archaeological site has been established through test excavation, the data will be analysed and synthesised into an Aboriginal Archaeological Technical Report. An ACHMP will need to be subject to review by the Department of Planning (DPIE), with input from the HNSW (formerly OEH), but no formal AHIP will need to be in place should the development achieve State Significant Development status.
- An analysis of artefacts retrieved should be conducted in a framework to allow for comparison with previous relevant results.
- After this, and before any ground disturbance takes place as part of the construction, all development staff, contractors and workers should be briefed prior to works commencing on site, as to the status of the area and their responsibilities regarding any Indigenous archaeological deposits and/or objects that may be located during the following development through a Cultural Awareness Induction;

Should any human remains be located during the following development?

- All excavation in the immediate vicinity of any objects of deposits shall cease immediately.
- The NSW police and HNSW's Enviroline be informed as soon as possible:
- Once it has been established that the human remains are Aboriginal ancestral remains, HNSW and the relevant Registered Aboriginal Parties will identify the appropriate course of action.

8.3.2 Care and Control Agreement

If any archaeological material is recovered it shall be subject to a care and control agreement established after the nature and significance of the archaeological or cultural material is understood as per requirement 26 of the Code of Conduct for the investigation of Archaeological objects in NSW.

Any artefacts recovered shall be reburied as soon as practicable. They will be temporarily secured in a storage location in accordance with requirement 26 of the Code of Conduct for the investigation of Archaeological objects in NSW, pending any agreement reached as to the long-term management of the salvaged Aboriginal objects.

The excavation director is responsible for ensuring that procedures are put in place so that Aboriginal objects that are reburied are not harmed. The location of the secure temporary storage location must be submitted to AHIMS with a site update record card for the site(s) in question.

8.3.3 Nature and Significance of the Site

As set out in the *Code of Practice for the Investigation of Archaeological Objects in NSW*:

"The test excavation should be sufficiently comprehensive to allow characterisation of the Aboriginal objects present without having a significant impact on the archaeological value of the subject area" (DECCW 2010)

Any test excavation carried out under this requirement must cease when:

- suspected human remains are encountered: or

- enough information has been recovered to adequately characterise the objects present with regard to their nature and significance.

The *Code of Practice for the Investigation of Archaeological Objects in NSW* 'enough information' means that the sample of excavated material clearly and self-evidently demonstrates the deposit's nature and significance, and may include things like:

- locally or regionally high object density
- presence of rare or representative objects
- presence of archaeological features or locally or regionally significant deposits, stratified or not.

Decisions regarding the nature and significance of the site and choices about discontinuing the test excavation program shall be made by the excavation director in consultation with the registered Aboriginal stakeholders and HNSW if required.

Information will be reviewed on a daily basis and the excavation director reserves the right to cease all excavation if he/she believes the nature and extent of the site is understood in accordance with the *Code of Practice for the Investigation of Archaeological Objects in NSW*.

8.6 TEST TRENCH LOCATIONS

Test trenches will be located with reference to known or suspected locations of Aboriginal archaeological deposits, the location of development excavation and areas of known disturbance.

The order of excavation will be established on site as logistics and site access will be factors taken into consideration and all landforms will be investigated.

Test trenches are indicated in blue in Figure 8.1. They are 1m x 1m in order to create a buffer around the test pit location which will be a 50cm x 50cm, in case historical finds or disturbance is observed, and the test pit needs to be relocated within the 1m x 1m. The whole of the 1m x 1m will be opened up with a concrete cutter and/or excavator with the final test pit location decided upon by the excavation director.

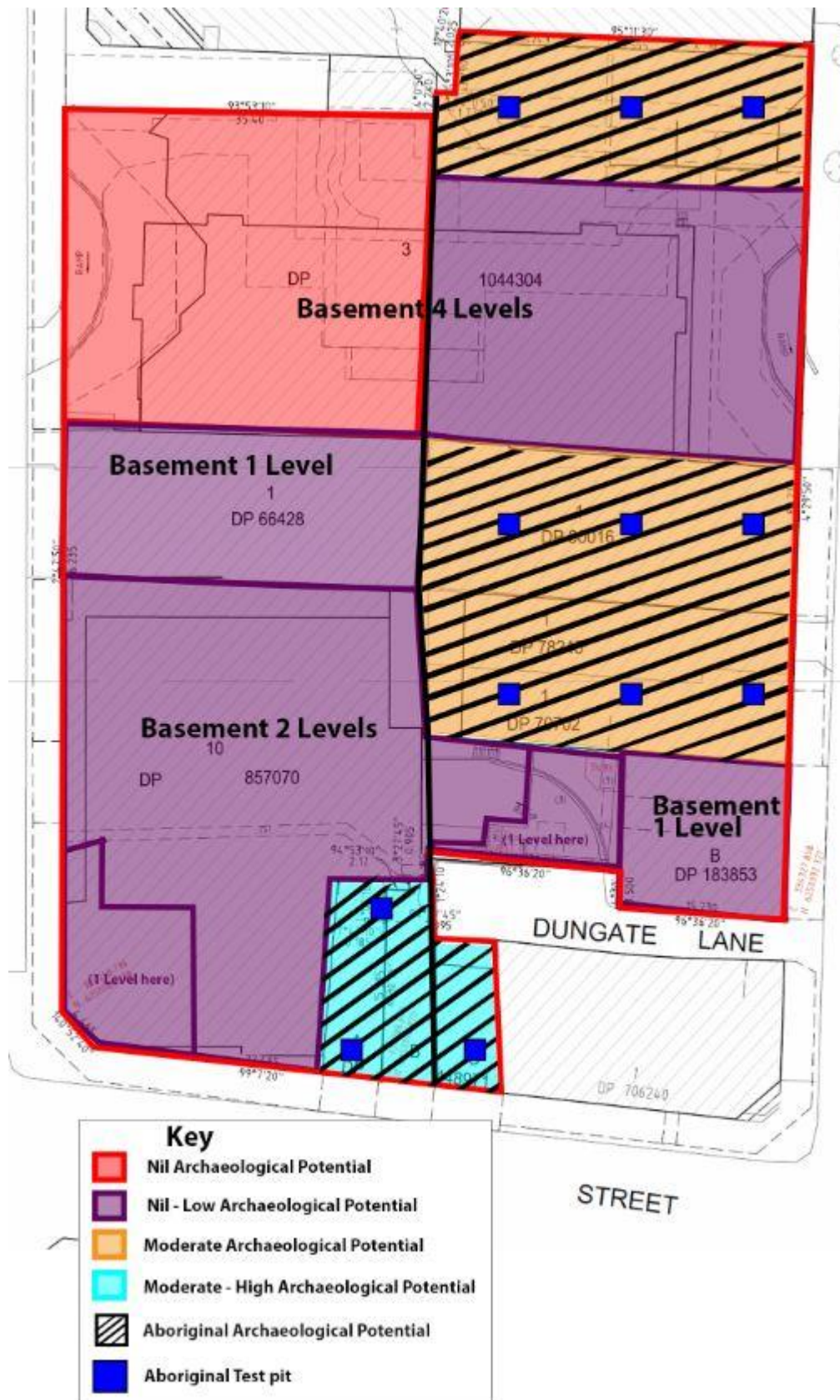
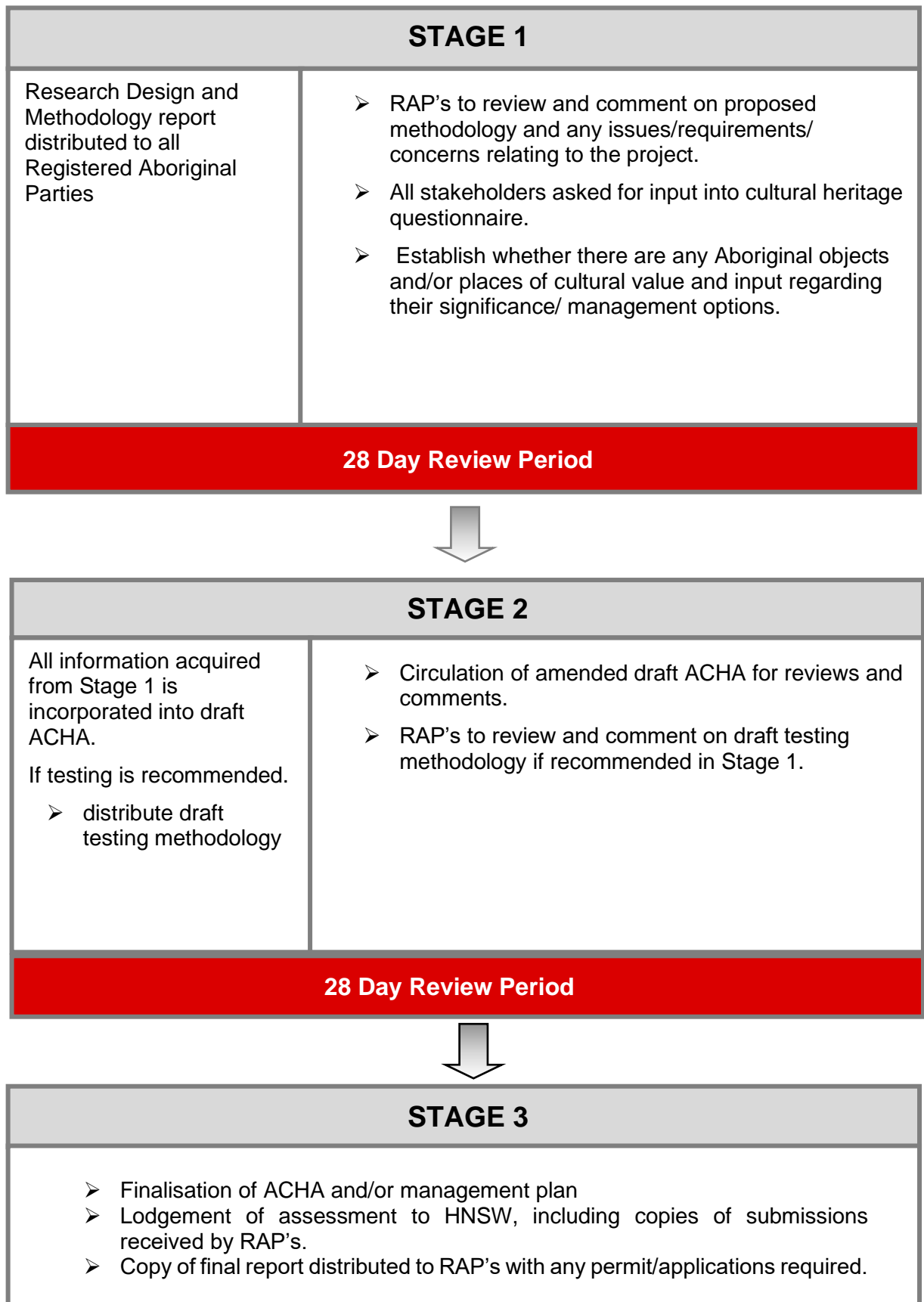


Figure 8.1 Aboriginal test trench location with archaeological potential overlay
AMAC 2019

9.0 CONSULTATION PROCESS USED



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APPENDICES

APPENDIX ONE – SEARS SSD-10362 PRE-DEVELOPMENT APPLICATION LETTER 19/08/2019

Planning Secretary's Environmental Assessment Requirements	
Section 4.12(8) of the <i>Environmental Planning and Assessment Act 1979</i> Schedule 2 of the <i>Environmental Planning and Assessment Regulation 2000</i>	
Application Number	SSD-10362
Project Name	Mixed Use Development
Location	338 Pitt Street, Sydney
Applicant	China Centre Development Pty Ltd
Date of Issue	19/08/2019
General Requirements	<p>The environmental impact statement (EIS) must be prepared in accordance with, and meet the minimum requirements of, clauses 6 and 7 of Schedule 2 of the <i>Environmental Planning and Assessment Regulation 2000</i> (the Regulation).</p> <p>Notwithstanding the key issues specified below, the EIS must include an environmental risk assessment to identify the potential environmental impacts associated with the development.</p> <p>Where relevant, the assessment of key issues below, and any other significant issues identified in the risk assessment, must include:</p> <ul style="list-style-type: none"> - adequate baseline data - consideration of the potential cumulative impacts due to other developments in the vicinity (completed, underway or proposed); - measures to avoid, minimise and if necessary, offset predicted impacts, including detailed contingency plans for managing any significant risks to the environment. <p>The EIS must also be accompanied by a report from a qualified quantity surveyor providing:</p> <ul style="list-style-type: none"> - a detailed calculation of the capital investment value (CIV) (as defined in clause 3 of the Regulation) of the proposal, including details of all assumptions and components from which the CIV calculation is derived. The report shall be prepared on company letterhead and indicate applicable GST component of the CIV; - an estimate of jobs that will be created during the construction and operational phases of the proposed development; and - certification that the information provided is accurate at the date of preparation.
Key Issues	<p>The EIS must address the following specific matters:</p> <ol style="list-style-type: none"> 1. Statutory and Strategic Context <p>Address the statutory provisions applying to the development contained in all relevant environmental planning instruments, including:</p>

- o State Environmental Planning Policy (State and Regional Development) 2011
- o State Environmental Planning Policy (Infrastructure) 2007
- o State Environmental Planning Policy No 55 – Remediation of Land (and Draft remediation of Land SEPP)
- o State Environmental Planning Policy No 64 – Advertising and Signage
- o State Environmental Planning Policy No 65 – Design Quality of Residential Development (Including Apartment Design Guideline)
- o State Environmental Planning Policy (Building Sustainability Index – BASIX) 2004
- o Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005
- o Draft State Environmental Planning Policy (Environment)
- o Sydney Local Environmental Plan 2012.

Address the relevant planning provisions, goals and strategic planning objectives in the following:

- o NSW State Priorities
- o Greater Sydney Region Plan and supporting District Plan
- o Better Placed – an integrated design policy for the built environment of NSW
- o Better Placed – Design Guide for Heritage
- o Future Transport Strategy 2056 and supporting plans
- o Guide to Traffic Generating Development (RMS)
- o EIS Guidelines – Road and Related Facilities (DoPI)
- o Cycling Aspects of Austroads Guides
- o NSW Planning Guidelines for Walking and Cycling
- o Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development
- o Standards Australia AS2890.3 (Bicycle parking facilities)
- o Development near Rail Corridors and Busy Roads – Interim Guideline
- o Sustainable Sydney 2030
- o Sydney Development Control Plan 2012.
- o Sydney's Cycling Future
- o Sydney's Walking Future
- o Legible Sydney
- o City Centre Access Strategy
- o City of Sydney Interim Floodplain Management Policy
- o City of Sydney Public Domain Manual

	<ul style="list-style-type: none"> o Making Sydney a Sustainable Destination o Sydney Landscape Code o Tourism Action Plan 2013 o Retail Action Plan 2013 o Sydney Landscape Code o City of Sydney Section 61 Contributions Plan 2013 o City of Sydney Guidelines for Waste Management in New Development 2018.
	<p>2. Compliance with the Concept Approval</p> <p>The EIS shall demonstrate how the proposed development is consistent with the Concept Approval D/2016/1509, including the terms, conditions and future assessment requirements contained within the approval.</p>
	<p>3. Design Excellence</p> <p>The EIS shall demonstrate that a design competition has been undertaken in accordance with the Concept Approval D/2016/1509. The EIS shall include the design competition brief, jury recommendations report and a design integrity process/strategy, prepared in consultation with the Government Architect and City of Sydney, demonstrating how the proposal will achieve design excellence in accordance with the design competition winning scheme.</p>
	<p>4. Built form and urban design</p> <p>The EIS shall:</p> <ul style="list-style-type: none"> o provide an analysis of the proposed built form against the applicable development standards and controls and concept approval D/2016/1509 o include a table identifying the proposed land uses, including a floor by floor breakdown of gross floor area (GFA), total GFA and FSR and site coverage o provide a Visual Impact Assessment of the proposal, including before and after photomontages and perspectives for each elevation, showing: <ul style="list-style-type: none"> - elements and views of the proposal from key locations, vistas and view corridors from the public domain and residential buildings that may be impacted; and - an assessment of the view impacts and design considerations to mitigate any impacts. o include public domain details, including: <ul style="list-style-type: none"> - clear definition of any private use of the public domain - pedestrian movement patterns - street trees, associated landscaping, hardworks, street furniture, lighting, materials and surface finishes alignment levels and stormwater design - identify linkages with and between other public domain spaces, other

	streets and lanes
	o consider opportunities to provide green roof, cool roof and/or green walls into the building design.
	5. Amenity
	The shall EIS include:
	o a detailed assessment of amenity impacts for future occupants of the residential component of the development and any amenity impacts of the proposal on surrounding development and the public domain
	o a detailed analysis of overshadowing impacts of the development on key public spaces, including Harmony Park and Hyde Park, and existing residential dwellings in the vicinity
	o a Wind Impact Assessment, including wind tunnel testing of any wind impacts of the proposal on the public domain and all landscape areas on upper levels (using the assessment criteria for sitting)
	o an integrated landscape design for the hotel and residential towers, with consideration of green roofs, walls and facades
	o detailed design for a residential common open space, being a minimum 25% of the total site area and 6 metres wide
	o detail on the amenity and solar access in accordance with the Sydney DCP 2012 and Apartment Design Guide
	o measures to minimise potential overshadowing, noise, reflectivity, visual privacy, wind, daylight and view impacts.
	6. Heritage
	The EIS shall include:
	o a Statement of Heritage Impact (SOHI), prepared by a suitably qualified heritage consultant in accordance with the guidelines in the NSW Heritage Manual. The SOHI is to address the impacts of the proposal on the heritage significance of the site and adjacent areas and is to:
	- identify all heritage items (state and local) within and near the site, including built heritage, landscapes and archaeology, include detailed mapping of these items, and an assessment of why the items and site(s) are of heritage significance
	- assess the proposal's impact on the heritage significance of heritage items or potential heritage items on, and near the development site
	- address the proposal's compliance with policies of relevant Conservation Management Plans for the affected sites
	- include a detailed visual impact assessment along with photomontages
	- provide detailed mitigation measures and strategies to avoid and mitigate any adverse impacts on heritage values of the affected sites.

- o a historical archaeological assessment (if the SOHI identifies a potential impact on historical archaeology) by a suitably qualified archaeologist in accordance with the Heritage Guidelines 'Archaeological Assessment' 1996 and 'Assessing Significance for Historical Archaeological Sites and Relics' 2009. This assessment should identify what relics, if any, are likely to be present, assess their significance and consider the impacts from the proposal on this potential archaeological resource. Where harm is likely to occur, it is recommended that the significance of the relics be considered in determining an appropriate mitigation strategy. If harm cannot be avoided in whole or part, an appropriate Research Design and Excavation Methodology should also be prepared to guide any proposed excavations or salvage programme
- o a strategy for any archaeological finds during the excavation and demolition to be interpreted and where possible displayed in the new building
- o an investigation and analysis of the quality of sandstone to be removed during the excavation, including consideration of contamination and an assessment of the suitability of the rock for removal by cutting into quarry blocks for use as high-quality building construction material.

7. Aboriginal Cultural Heritage

The EIS shall:

- o identify and describe Aboriginal cultural heritage values that exist across the whole area that will be affected by the development and document these in an Aboriginal Cultural Heritage Assessment Report (ACHAR). The identification of cultural heritage values must be conducted in accordance with the Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH 2010) and the Guide to Investigating, assessing and reporting on Aboriginal Cultural heritage in NSW (DECCW 2011)
- o ensure consultation has taken place with Aboriginal people and is documented in accordance with the Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW)
- o assess impacts on Aboriginal cultural heritage values and be documented in the ACHAR. This must demonstrate attempts to avoid impacts, identify any conservation outcomes and measures to mitigate impacts.

8. Operation

The EIS shall include details of the proposed use and operation of the development, including but not limited to:

- o any uses ancillary and/ or not ancillary to the hotel use
- o hours of operation
- o patron capacity
- o signage
- o the relationship between the proposed uses of the building
- o a Plan of Management.

9. Traffic, Transport Parking and Access (Construction and Operation)

The EIS shall include a Traffic and Transport Impact Assessment that includes, but is not limited to, the following:

- o details of the current and likely estimated future daily and peak hour vehicle, public transport network, point to point transport, taxis, pedestrian and bicycle movements to/ from the site
- o an assessment of the operation of existing and future transport networks including the rail, bus, Sydney Light Rail and Sydney Metro City and Southwest, pedestrian and bicycle networks and point-to-point transport and coach facilities and their ability to accommodate the forecast number of trips to and from the development
- o an assessment of the:
 - Impact of the proposal on existing traffic and transport performance and safety at key intersections in the area, including but not limited to Pitt St/Liverpool Street/Bathurst Street, Castlereagh Street/Bathurst Street and Castlereagh Street/Liverpool Street. This must include specific reference to the impact of taxi trips to the performance of nearby intersections
 - likely impact of the proposal on bus operations (stops, routes and parking)
 - point to point parking in the surrounding streets
 - proposed temporary or permanent changes to transport and access on surrounding streets.
- o details of existing and proposed vehicular access, including for hotel drop off and pick up, coach and servicing, and an assessment of any potential impacts, such as potential pedestrian, cyclist and bus conflict. This must include how the access impacts on the pedestrian and bicycle amenity of the area given that the site is in an area with high numbers of pedestrians
- o details of any road/intersection upgrades required as a result of the development, supported by appropriate modelling and analysis, and any other measures to mitigate impacts of the development
- o details of the proposed vehicle, motorcycle, taxi, bus and coach parking, including compliance with parking requirements and justification for the level of parking on the site
- o details of the location of bicycle parking facilities (and end of trip facilities) as these need to be in secure, convenient, accessible areas close to main entries incorporating lighting and passive surveillance
- o details of emergency vehicle access arrangements
- o road and pedestrian safety adjacent to the proposed development and details of required road safety measures
- o proposals to encourage employees, guests and residents to make sustainable travel choices, such as walking, cycling, public transport and car

	<p>sharing and how these will be implemented</p> <ul style="list-style-type: none"> o assessment of loading and servicing demand and details of the existing and proposed loading and servicing facilities, including safe and efficient access to loading, deliveries and servicing of the development. o a draft Construction Pedestrian and Traffic Management Plan that includes, but is not limited to, the following: <ul style="list-style-type: none"> - assessment of cumulative impacts associated with other construction activities including the construction of the Sydney Light Rail project and the Sydney Metro City and Southwest - assessment of road safety at key intersections and locations subject to heavy vehicle movements and high pedestrian activity - details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process - details of anticipated number of peak hour and daily truck movements to and from the site, vehicle routes, hours of operation, access arrangements and traffic control measures for all demolition/construction activities - details of access arrangements for workers to/from the site, emergency vehicles and service vehicle movements - details of temporary cycling and pedestrian access during construction - details of proposed construction vehicle access arrangements at all stages of construction - details of mitigation measures for traffic, pedestrian, cyclists, parking and public transport impacts to demonstrate the proposed management of the impact.
	<p>10. Construction management</p> <p>The EIS shall include a draft construction management plan that includes:</p> <ul style="list-style-type: none"> o an assessment of potential impacts of the construction on surrounding buildings and the public domain, including noise and vibration, air quality and odour impacts, dust emissions, water quality, stormwater runoff, groundwater seepage, soil pollution and construction waste, and details of measures to mitigate any impact o provide a Demolition and Construction Noise Vibration Management Plan in accordance with Condition 30 of the Stage 1 consent.
	<p>11. Water, drainage and stormwater</p> <p>The EIS shall include:</p> <ul style="list-style-type: none"> o a detail assessment of flooding hazard in accordance with City of Sydney Interim Floodplain Management Policy and the Environment, Energy and Science (EES) Group flooding comments o information on the required water and waste water services and any

	<p>augmentation to Sydney Water Infrastructure that may be required for the proposed development</p> <ul style="list-style-type: none"> o a stormwater management plan through the City's MUSIC link model.
	<p>12. Rail corridor</p> <p>The EIS shall detail the likely effect of the proposal on the Sydney Metro Corridor and Pitt Street North Station consistent with the Sydney Metro Underground Corridor Protection Technical Guidelines (available from www.sydneymetro.info).</p>
	<p>13. Ecologically Sustainable Development (ESD)</p> <p>The EIS shall:</p> <ul style="list-style-type: none"> o identify how the development will incorporate ESD principles (as defined in Clause 7(4) of Schedule 2 of the Regulation) in the design, construction and ongoing operation phases of the development, and include innovative and best practice proposals for environmental building performance o include a framework for how the future development will be designed to consider and reflect national best practice sustainable building principles to improve environmental performance and reduce ecological impact. This should be based on a materiality assessment and include waste reduction design measures, future proofing, use of sustainable and low-carbon materials, energy and water efficient design (including water sensitive urban design) and technology and use of renewable energy o include certification that the residential component of the development achieves the BASIX scores set out in the Concept Approval D/2016/1509 o investigate the use of third party ESD certification to achieve targets beyond those required under the concept approval and NCC o outline any sustainability initiatives that will minimise/ reduce the demand for drinking water, including alternative water supply and end uses of drinking and non-drinking water that may be proposed, demonstrate water sensitive urban design principles are used, and any water conservation measures that are likely to be proposed.
	<p>14. Utilities</p> <p>The EIS shall:</p> <ul style="list-style-type: none"> o address the existing capacity of the site to service the proposed development and any augmentation requirements for utilities, including arrangements for electrical network requirements, drinking water, waste water and recycled water o identify the existing infrastructure on-site and any possible impacts of the construction and operation of the proposal on this infrastructure. The existing capacity and any augmentation requirements of the development for the provision of utilities, including staging of infrastructure and additional licence/approval requirements in consultation with relevant agencies o provide details on the location, construction and servicing of the waste/recycling collection facilities for the building.

	<p>15. Biodiversity</p> <p>The EIS shall:</p> <ul style="list-style-type: none"> o provide an assessment of the proposal's biodiversity impacts in accordance with Section 7.9 of the <i>Biodiversity Conservation Act 2017</i>, the Biodiversity Assessment Method and documented in a Biodiversity Development Assessment Report where required under the Act o Include landscape plans that improve and accommodate biodiversity (see Section 3.5.1 of the Sydney Development Control Plan 2012). Landscaping is to give preference to using local native provenance species from the native vegetation community that once occurred in the locality, where appropriate. <p>16. Contributions and/ or Voluntary Planning Agreement</p> <p>The EIS shall address the provision of public benefit, services, infrastructure and any relevant contribution requirements.</p>
Consultation	<p>During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners.</p> <p>In particular you must consult with:</p> <ul style="list-style-type: none"> - City of Sydney Council - Government Architect of NSW - Transport for NSW (Roads and Maritime Services) - Heritage Council of NSW - Sydney Coordination Office within Transport for NSW - Sydney Trains - Sydney Metro - Sydney Airport/CASA <p>The EIS must describe the consultation process and the issues raised, and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.</p>
Further consultation after 2 years	<p>If you do not lodge a Development Application and EIS for the development within 2 years of the issue date of these SEARs, you must consult further with the Secretary in relation to the preparation of the EIS.</p>
Plans and Documents	<p>The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the Regulation. Provide these as part of the EIS rather than as separate documents.</p> <p>In addition, the EIS must include the following:</p> <ul style="list-style-type: none"> - high quality files of maps and figures of the subject site and proposal

	<ul style="list-style-type: none"> - architectural drawings (to a useable scale at A3) showing key dimensions, RLs, scale bar and north point, plans, sections and elevations of the proposal (including 1:20 scale detail plans where works affect heritage fabric) and illustrated materials schedule including physical or digital samples board - site title diagrams and survey plan, showing existing levels, location and heights of existing and adjacent structures/ building - locality/context plan drawn, including significant local features such as heritage items - urban design report - heritage impact statement - Aboriginal and historical archaeological impact assessment - access impact statement - visual impact assessment - solar access analysis report and diagrams - public domain design statement and plans - landscape design report and landscape design package, including plans, details and levels for hotel and residential components - detailed green wall and green roof plans and details - biodiversity development assessment report (or waiver) - ESD statement (incorporating a sustainability framework) and BASIX Certificate - geotechnical report - Building Code of Australia statement - consultation summary report - noise impact assessment - wind impact report, including wind tunnel testing for public domain areas and all landscaped terraces on upper levels - reflectivity report - flood study and stormwater concept plan - Public Art Proposal in accordance with the adopted Public Art Strategy - signage strategy, including commercial signage / building name signage (if proposed) - traffic and transport impact assessment, including parking, access, loading dock
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	strategy / management plan and a construction traffic management plan
-	a report demonstrating compliance with the Sydney Metro Underground Corridor Protection Guidelines
-	construction impacts and management plan, including a construction noise and vibration management plan, construction waste and recycling management plan and cumulative impact of construction activities on other nearby sites, including any impact to Rail services nearby
-	utilities and services statement
-	Detailed Environmental Site Investigation
-	Acoustic reports regarding: <ul style="list-style-type: none"> o Demolition and Construction Noise Vibration Management Plan in accordance with Condition 30 of the Stage 1 consent o Noise Impact assessment considering City's Acoustic Amenity requirements under DCP 2012 4.2.3.11 for residential apartments & NSW EPA <i>Noise Policy for Industry</i> and NSW Department of Planning <i>Planning for Entertainment Guidelines 2009</i> for commercial plant and entertainment related noise associated with the proposed development
-	Acid Sulphate Soils report
-	Crime Prevention through Environmental Design report
-	Physical and 3D CAD model as per Council requirements.

APPENDIX TWO – AHIMS EXTENSIVE SEARCH RESULTS



Office of
Environment
& Heritage

AHIMS Web Services (AWS) Search Result

Purchase Order/Reference : 338 Pitt Street

Client Service ID : 456948

Benjamin Streat
122 c-d Percival Road
Stanmore New South Wales 2048
Attention: Benjamin Streat
Email: streatarchaeological@netspace.net.au

Date: 16 October 2019

Dear Sir or Madam:

AHIMS Web Service search for the following area at Lot : 10, DP:DP857070 with a Buffer of 1000 meters, conducted by Benjamin Streat on 16 October 2019.

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



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

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