URBIS

ABORIGINAL OBJECTS DUE DILIGENCE ASSESSMENT

28 Elizabeth Street, Liverpool,
Cabrogal Country, NSW.

Prepared for

ALTIS BULKY RETAIL PTY LTD AS TRUSTEE FOR ALTIS ARET SUB TRUST 20

26 October 2021

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Urbis acknowledges the important contribution that Aboriginal and Torres Strait Islander people make in creating a strong and vibrant Australian society.

We acknowledge, in each of our offices, the Traditional Owners on whose land we stand.

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GLOSSARY

Term	Definition
Aboriginal cultural heritage	The tangible (objects) and intangible (dreaming stories, legends and places) cultural practices and traditions associated with past and present-day Aboriginal communities.
Aboriginal object	As defined in the NPW Act, any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises NSW, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.
Aboriginal place	As defined in the NPW Act, any place declared to be an Aboriginal place (under s.84 of the NPW Act) by the Minister administering the NPW Act, by order published in the NSW Government Gazette, because the Minister is of the opinion that the place is or was of special significance with respect to Aboriginal culture. It may or may not contain Aboriginal objects.
AHIMS	Aboriginal Heritage Information Management System: a register of previously reported Aboriginal objects and places managed by the DPC
AHIP	Aboriginal Heritage Impact Permit. A permit issued under Section 90, Division 2 of Part 6 of the *NPW Act.*
Archaeology	The scientific study of human history, particularly the relics and cultural remains of the distant past.
Art	Art sites can occur in the form of rock engravings or pigment on sandstone outcrops or within shelters. An engraving is some form of image which has been pecked or carved into a rock surface. Engravings typically vary in size and nature, with small abstract geometric forms as well as anthropomorphic figures and animals also depicted. Pigment art is the result of the application of material to a stone to leave a distinct impression. Pigment types include ochre, charcoal and pipeclay.
Artefact	An object made by human agency (e.g. stone artefacts).
Code of Practice	*Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW, 2010).
DCP	Development Control Plan
DECCW	Department of Environment, Climate Change and Water NSW.
DPC	Department of Premier and Cabinet
EP&A Act	*NSW Environmental Planning and Assessment Act 1979.*

Term	Definition
Grinding Grooves	The physical evidence of tool making, or food processing activities undertaken by Aboriginal people. The manual rubbing of stones against other stones creates grooves in the rock; these are usually found on flat areas of abrasive rock such as sandstone.
Harm	As defined in the NPW Act, to destroy, deface, damage or move an Aboriginal object or destroy, deface or damage a declared Aboriginal place. Harm may be direct or indirect (e.g. through increased visitation or erosion). Harm does not include something that is trivial or negligible.
Isolated find	A single artefact found in an isolated context.
LALC	Local Aboriginal Land Council: corporate body constituted under the *Aboriginal Land Rights Act 1983*, having a defined boundary within which it operates.
LEP	Local Environment Plan.
Midden	Midden sites are indicative of Aboriginal habitation, subsistence and resource extraction. Midden sites are expressed through the occurrence of shell deposits of edible shell species often associated with dark, ashy soil and charcoal. Middens may or may not contain other archaeological materials including stone tools.
NPW Act	*National Parks and Wildlife Act 1974*
NPW Regulation	*National Parks and Wildlife Regulation 2019*
PAD	Potential archaeological deposit. A location considered to have a potential for subsurface archaeological material.
Scarred / Modified Trees	Trees which display signs of human modification in the form of scars left from intentional bark removal for the creation of tools, or which are carved for ceremonial purposes.

EXECUTIVE SUMMARY

Urbis has been engaged by Altis Property Partners (the Proponent) on behalf of Altis Bulky Retail Pty Ltd as trustee for Altis ARET Sub Trust 20 (Altis) to prepare an Aboriginal Objects Due Diligence Assessment (ADD) to accompany a Development Application (DA) for the site at 28 Elizabeth Street, Liverpool, NSW (Lot 1, DP 1261270) (hereafter referred as the 'subject area'). The subject area covers approximately 3600 m^2 and has recently been cleared of all pre-existing structures. The subject area is now covered by hardstand, but prior to demolition was also covered by structures associated with the Ampol service station.

The ADD was undertaken in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW, 2010) ('Due Diligence Code'), and included the following:

- Search of the Aboriginal Heritage Information Management System (AHIMS) register.
- Searches of statutory and non-statutory heritage listings.
- Analysis of previously conducted archaeological assessments in the vicinity of the subject area.
- Landscape analysis.
- Analysis of historical land use and its impact on the subject area.

The assessment concluded that:

- No Aboriginal objects or Aboriginal places are registered within the subject area.
- There are no landscape features associated with the potential for Aboriginal archaeological sites within the subject area.
- The subject area is located in the Blacktown soil landscape, the shallow to moderately deep loamy soils of which are highly susceptible to ground disturbing activities.
- Geotechnical investigation indicates that the subsurface conditions at subject area comprise of fill overlaying culturally sterile B-horizon natural soils, overlying bedrock. No natural A-horizon soils are present, greatly reducing the archaeological potential.
- Historical activities, including construction and demolition of buildings and grading works, are determined to have caused a high level of ground disturbance across the subject area. These disturbances include vegetation clearance, the construction of cottages, the Ampol service station and associated amenities (i.e. stormwater channel, underground piping and the installation of underground fuel tanks). As a result, there is low potential that the soil profile remains intact.
- As a result of the conclusions above, this ADD has identified that no further Aboriginal archaeological assessment is required for the subject area in accordance with the Due Diligence Code.

Based on the above conclusions, Urbis recommends the following:

- This ADD report should be kept as evidence of the Due Diligence Process having been applied to the subject area.
- No further archaeological assessment of the subject area is required in accordance with the Due Diligence Code.
- Any future development should proceed with caution, subject to the following archaeological chance finds and human remains procedures being implemented and followed:

Archaeological Chance Finds Procedure

Should any archaeological deposits be uncovered during any site works, the following steps must be followed:

1. All works within the vicinity of the find must immediately stop. The find must not be moved 'out of the way' without assessment. The area must be demarcated and signage installed to avoid any accidental impact.
2. The site supervisor or another nominated site representative must contact either the project archaeologist (if relevant) or Heritage NSW (Enviroline 131 555) to contact a suitably qualified archaeologist.
3. The nominated archaeologist must examine the find, provide a preliminary assessment of significance, record the item and decide on appropriate management measures. Such management may require

further consultation with Heritage NSW, preparation of a research design and archaeological investigation/salvage methodology and registration of the find with the Aboriginal Heritage Information Management System (AHIMS).

4. Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required and further archaeological investigation undertaken.
5. Reporting may need to be prepared regarding the find and approved management strategies.
6. Works in the vicinity of the find can only recommence upon receipt of approval from Heritage NSW.

Human Remains Procedure

In the unlikely event that human remains are uncovered during the proposed works, the following steps must be followed:

1. All works within the vicinity of the find must immediately stop.
2. The site supervisor or other nominated manager must notify the NSW Police and Heritage NSW (Enviroline 131 555).
3. The find must be assessed by the NSW Police, which may include the assistance of a qualified forensic anthropologist.
4. Management recommendations are to be formulated by the NSW Police, Heritage NSW and site representatives.
5. Works are not to recommence until the find has been appropriately managed.

1. INTRODUCTION

Urbis have been engaged by Altis Property Partners on behalf of Altis Bulky Retail Pty Ltd as trustee for Altis ARET Sub Trust 20 to prepare an Aboriginal Objects Due Diligence Assessment (ADD) to accompany a Development Application (DA) for the site at 28 Elizabeth Street, Liverpool, NSW (Lot 1, DP 1261270) (hereafter referred as the 'subject area) (Figure 4 and Figure 5).

This ADD is being prepared to investigate whether the proposed development has the potential to impact on Aboriginal objects, whether further investigation is needed, and whether that harm requires an Aboriginal Heritage Impact Permit (AHIP).

The ADD followed the generic steps of the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW, 2010) ('Due Diligence Code') shown in Figure 6 below. The ADD included the following:

- Search of the Aboriginal Heritage Information Management System (AHIMS) register.
- Searches of statutory and non-statutory heritage listings.
- Analysis of previously conducted archaeological assessments in the vicinity of the subject area.
- Landscape analysis.
- Analysis of historical land use and its impact on the subject area.

1.1. SUBJECT AREA LOCATION

The subject area is located at 28 Elizabeth Street, Liverpool, which is approximately 26.8km west south-west from the Sydney CBD, and within the Liverpool Council Local Government Area (LGA). The subject area is on the traditional lands of the Cabrogal people, and within the catchment of the Gandangara Local Aboriginal Land Council (GLALC).

The subject area currently consists of 3,600sqm of land which has been cleared of all previous structures, which included a former petrol service station/fruit shop and general outbuildings associated with the former car dealership.

1.2. PROPOSED WORKS

The proposed works include the construction of a multistorey mixed-use building, with six levels of basement extending across the site from boundary to boundary, with through-site links. The construction of the basement will have a direct impact on the existing environment, remove the existing soil profile and consequently will impact and potentially destroy archaeological resources that may be present. Architectural plans for the proposed development are included in Figure 1-Figure 3 illustrated below.

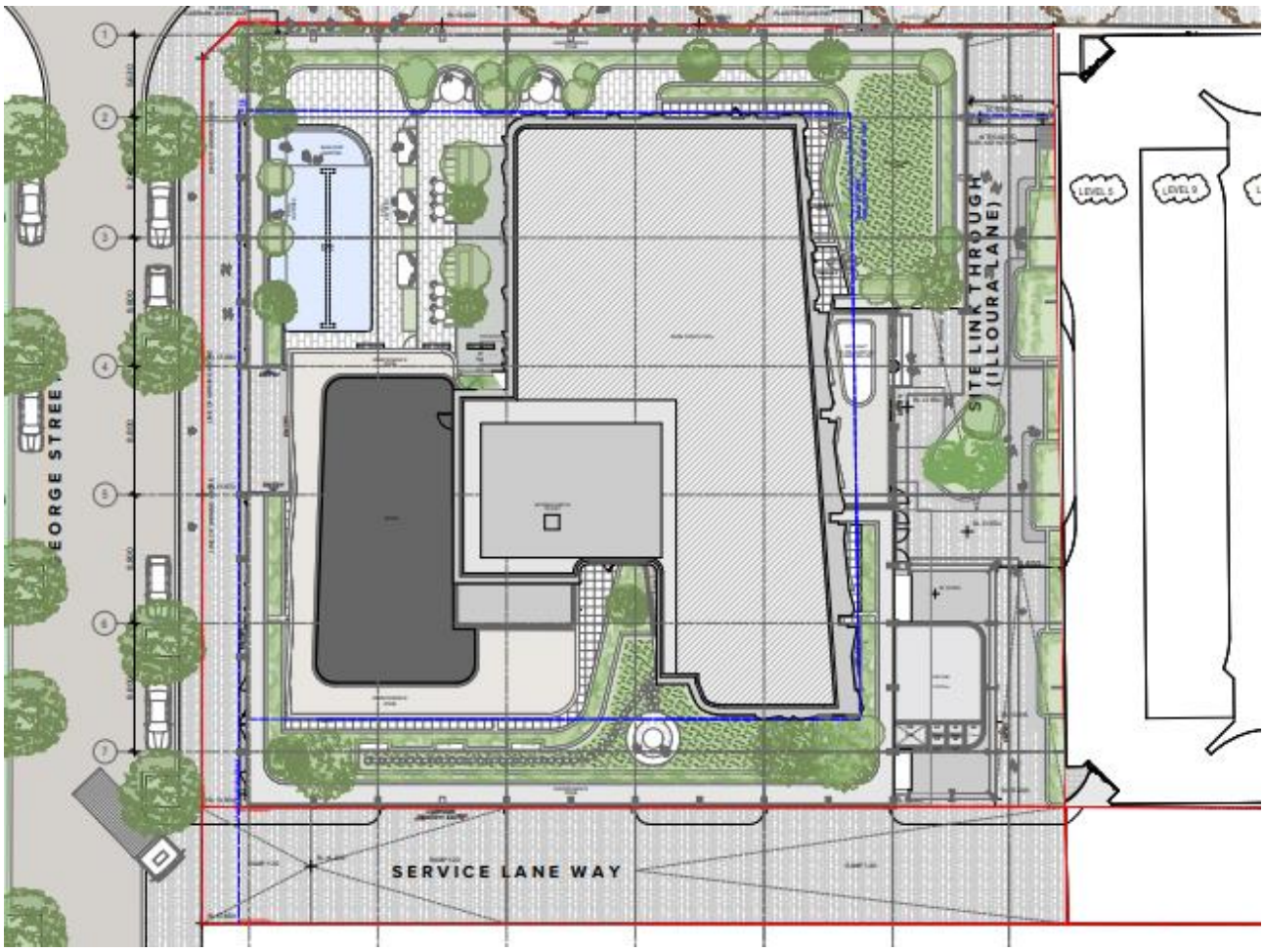

Figure 1 – Site plan, 28 Elizabeth Street, Liverpool.

Source: Turner Architects, 2021

Figure 2 – Typical elevations

Source: Turner Architects, 2021

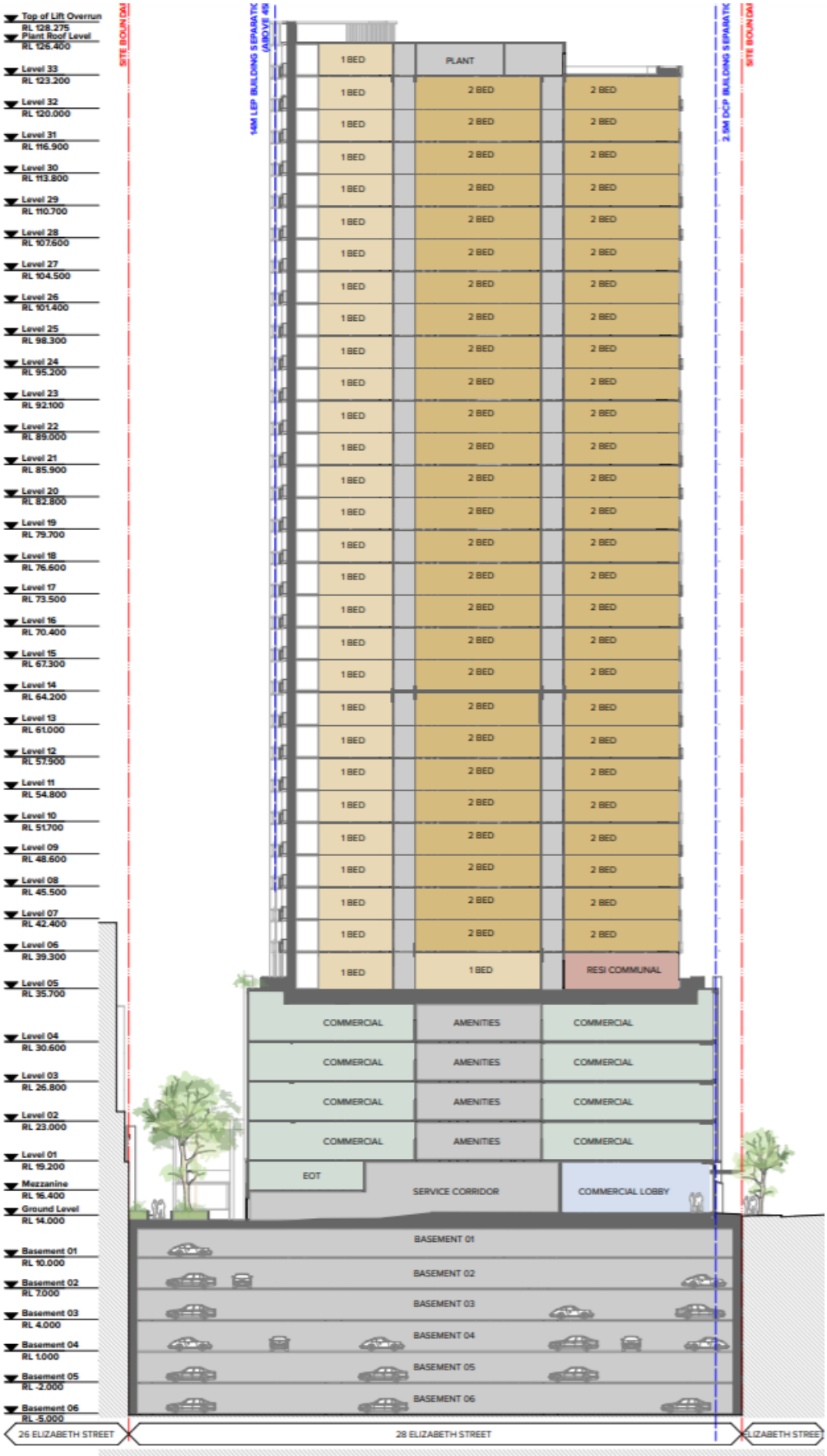

Figure 3 – Typical Section, Section AA, including 6 levels of basement to RL -5.000

Source: Turner Architects, 2021

1.3. AUTHORSHIP

The present report has been prepared by Wade Goldwyer (Urbis Consultant Archaeologist) with review and quality control undertaken by Meggan Walker (Urbis, Consultant Archaeologist) and Balazs Hansel (Urbis Associate Director, Archaeology).

1.4. LIMITATIONS

The ADD was limited to Aboriginal archaeological resources and does not consider historical archaeological remains or built heritage items. Historical archaeology is considered in the Historical Archaeological Assessment prepared by Urbis (2021).

Aboriginal community consultation was not undertaken as part of the ADD, nor was any assessment of significance of the subject area undertaken. Neither is required to be undertaken under the Due Diligence Code.

The ADD is based on the understanding that any future works would include ground disturbing activities across the entire subject area. Any departure from that understanding would require a reassessment of the impact on Aboriginal objects within the subject area.

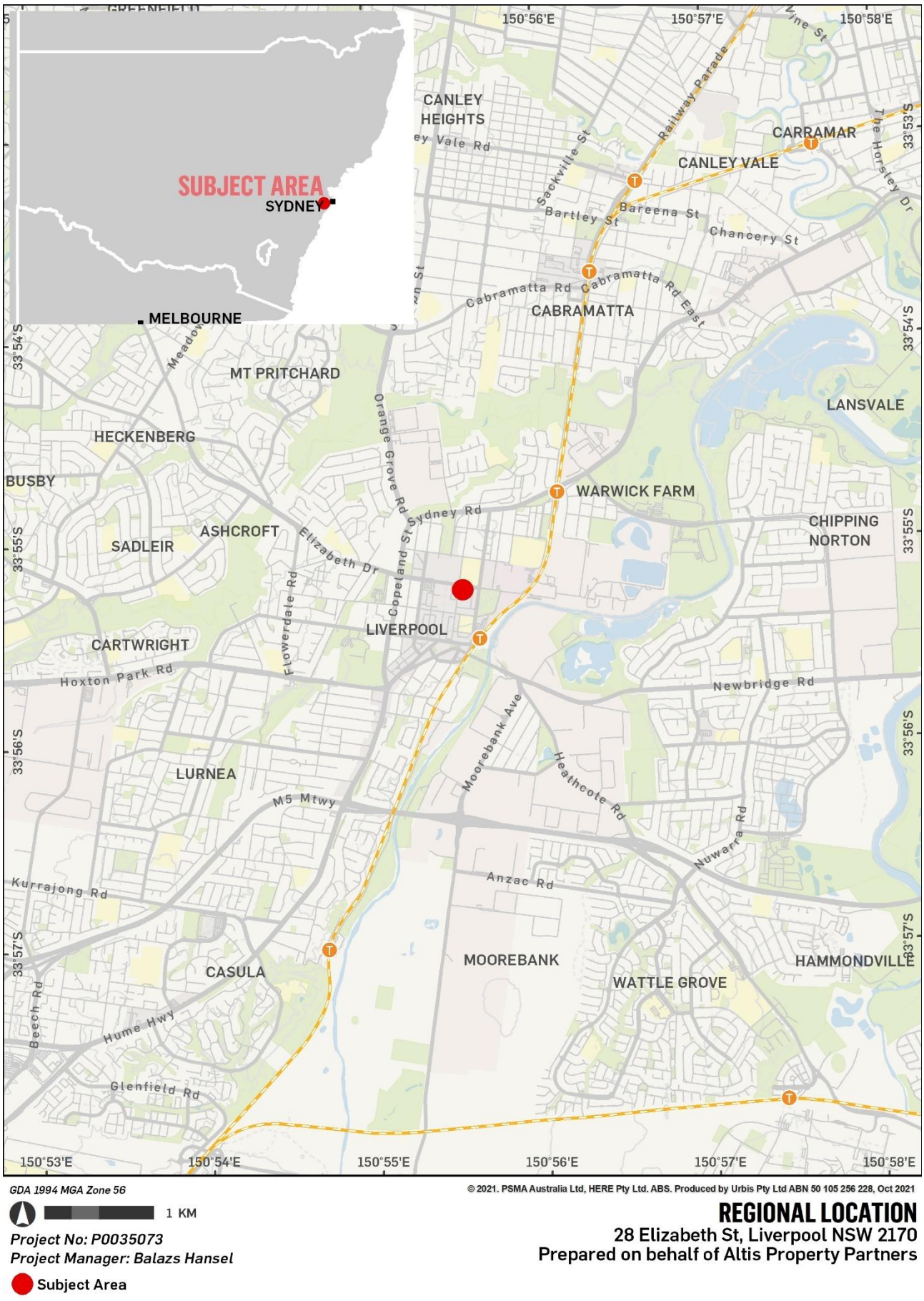

Figure 4 – Regional location

Figure 5 – Location of the subject area

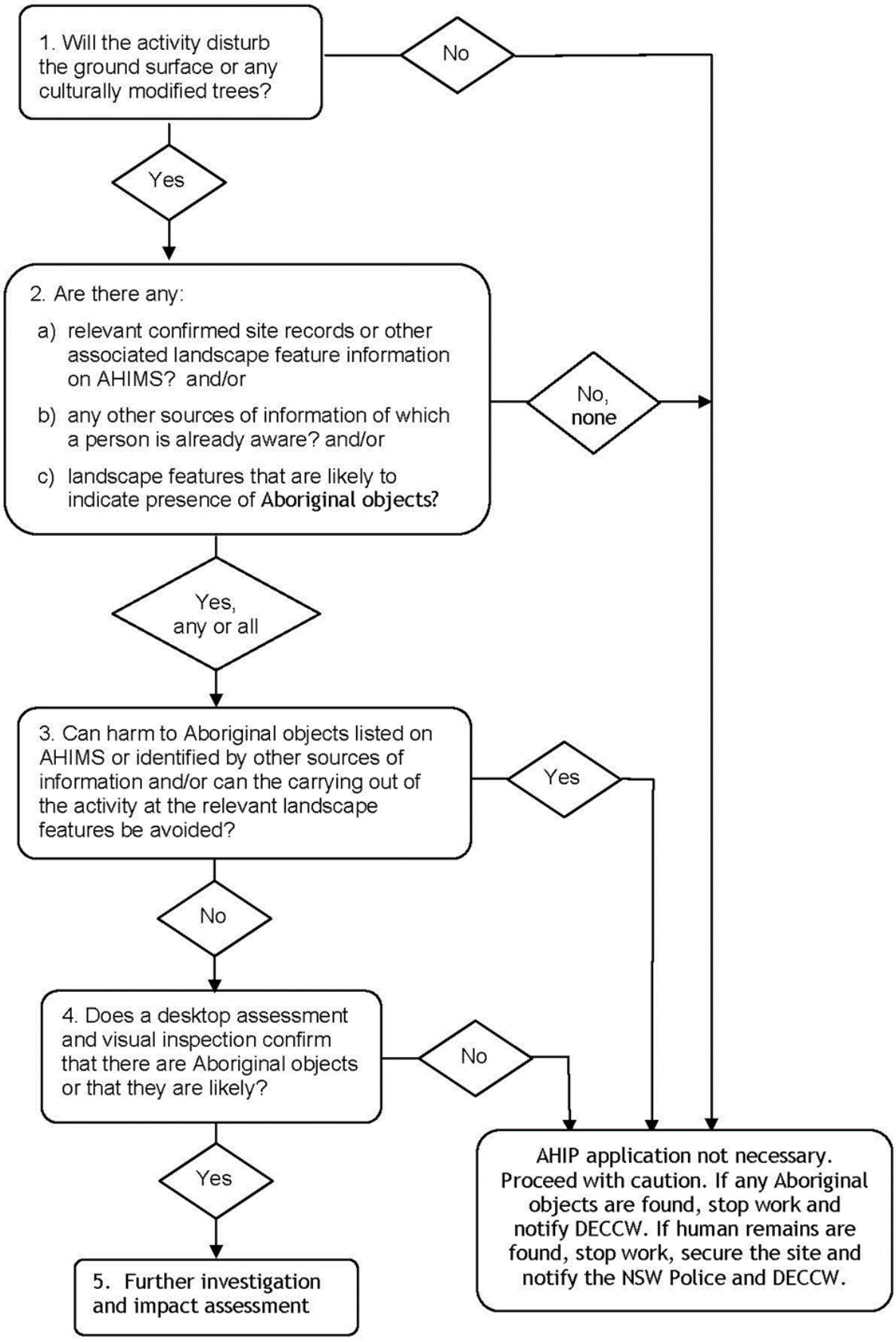

Figure 6 – Generic due diligence assessment

Source: DECCW, 2010

2. STATUTORY CONTEXT

2.1. HERITAGE CONTROLS

The protection and management of Aboriginal cultural heritage items, places and archaeological sites within New South Wales is governed by the relevant Commonwealth, State or local government legislation. These are discussed below in relation to the present subject area.

2.1.1. The National Parks and Wildlife Act 1974

Management of Aboriginal objects and places in NSW falls under the statutory control of the *National Parks and Wildlife Act 1974* (NPW Act). Application of the NPW Act is in accordance with the *National Parks and Wildlife Regulation 2019* (NPW Reg).

Section 5 of the NPW Act defines Aboriginal objects and Aboriginal places as follows:

> *Aboriginal object means 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.*
>
> *Aboriginal place means any place declared to be an Aboriginal place under section 84 of the NPW Act.*

The NPW Act provides statutory protection for Aboriginal objects, defining two tiers of offence against which individuals or corporations who harm Aboriginal objects or Aboriginal places can be prosecuted. The highest tier offences are reserved for knowledgeable harm of Aboriginal objects or knowledgeable desecration of Aboriginal places. Second tier offences are strict liability offences - that is, offences regardless of whether or not the offender knows they are harming an Aboriginal object or desecrating an Aboriginal place - against which defences may be established under the *National Parks and Wildlife Regulation 2009* (NSW) (the NPW Regulation).

Section 86 of the NPW Act identifies rules and penalties surrounding harming or desecrating Aboriginal objects and Aboriginal places. These are identified as follows:

> *(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.*
>
> *(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).

Section 87 (1), (2) and (4) of the NPW Act establishes defences against prosecution under s.86. The defences are as follows:

- The harm was authorised by an Aboriginal Heritage Impact Permit (AHIP) (s.87(1)).
- Due diligence was exercised to establish Aboriginal objects will not be harmed (s.87(2)).

Due diligence may be achieved by compliance with requirements set out in the NPW Regulation or a code of practice adopted or prescribed by the NPW Regulation (s.87(3)).

The present ADD follows the Due Diligence Code and aims to establish whether any Aboriginal objects would be harmed by the proposed redevelopment of the subject area, consistent with s.87(2) of the NPW Act.

2.1.2. Environment Protection and Biodiversity Conservation Act 1999

In 2004, a new Commonwealth heritage management system was introduced under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The EPBC Act protects any items listed in the National Heritage List (NHL) and the Commonwealth Heritage List (CHL).

The National Heritage List (NHL) is a list of natural, historic and Indigenous places of outstanding significance to the nation. It was established to protect places that have outstanding value to the nation.

The Commonwealth Heritage List (CHL) was established to protect items and places owned or managed by Commonwealth agencies. The Australian Government Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) is responsible for the implementation of national policy, programs and legislation to protect and conserve Australia's environment and heritage and to promote Australian arts and culture. Approval from the Minister is required for controlled actions which will have a significant impact on items and places included on the NHL or CHL.

A search of the CHL was undertaken on 21st October 2021. No items on the CHL were found to be within, or in proximity to, the subject area.

2.1.3. Statutory and non-statutory heritage registers

A review of relevant heritage lists and registers was undertaken to determine whether any Aboriginal cultural heritage items are located within the curtilage of, or in proximity to, the subject area.

This section includes a high-level assessment of historical (built) heritage constraints of the subject area. The assessment based on the statutory and non-statutory heritage listings and information available from previously undertaken archaeological investigations.

2.1.4. Liverpool Council Local Environment Plan 2008

The *Environmental Planning and Assessment Act 1979* (EP&A Act) requires each LGA to produce a Local Environment Plan (LEP). The LEP identifies items and areas of local heritage significance and outlines development consent requirements.

The Liverpool Council Local Environment Plan (LEP) 2008 Schedule 5 provides information on items of local heritage significance and outlines consent requirements for undertaking activities within identified areas of significance.

A search of the Liverpool Council Local Environment Plan (LEP) 2008 was undertaken on 19 October 2021. The search identified several items in proximity to the subject area, addressed in Table 1 below.

Table 1 – List of LEP items in proximity to subject area.

Item number	Item name	Approx. Distance	Significance
83	Milestone	Along north-western corner of subject area	Local
85	All Saints Roman Catholic Church	15m north (across Elizabeth Street).	Local
N/A	Bigge Park Conservation Area	63m to the east.	Local
89	Plan of Town of Liverpool (early town centre street layout–Hoddle 1827)	Directly to the north	Local

2.1.5. Liverpool Council Development Control Plan 2008

The EP&A Act requires each LGA to produce a Development Control Plan (DCP). Not all LGAs provide information regarding Aboriginal cultural heritage and specific development controls to protect Aboriginal cultural heritage. The subject area is identified within the Liverpool Council Development Control Plan (DCP) 2008. The Liverpool DCP addresses heritage in Part 1, Sections 16 and 17.

Section 16 pertains to Aboriginal archaeology and identifies it's objectives as "*To identify and where possible preserve relics of the occupation of the land by Aboriginal communities*". This identifies controls relating to Aboriginal heritage, including identifying a need for archaeological assessments in places identified as having potential including land to which the following applies:

1) *Aboriginal sites, places or relics have previously been identified.*

2) *Within an identified cultural landscape.*

3) *That has not been cleared.*

None of these criteria apply to the subject area.

Section 17 pertains to heritage and archaeological sites with a number of identified objectives. These are essentially to conserve the heritage significance of items, conservation areas and archaeological sites; to promote heritage conservation and consideration; to promote public awareness, appreciation and knowledge; and to enhance the amenity and heritage values of the LGA. This section identifies controls for development of heritage items, conservation areas or archaeological sites. This section applies to developments affecting a heritage item, land identified as an archaeological site or land within or in the vicinity of a heritage conservation area or item as listed on the LEP.

The subject area is in proximity to a number of heritage items and in proximity to one conservation area as identified on the LEP (see Table 1 and Figure *7*), and thus an assessment is required.

2.1.6. NSW State Heritage Register (SHR)

The State Heritage Register (SHR) lists items that have been assessed as being of State heritage significance to New South Wales. Items appearing on the SHR are granted protection under s.60 of the *Heritage Act 1977* (Heritage Act).

A search of the SHR was completed on 19 October 2021. No items within or in proximity to the subject area were identified.

2.1.7. State Government Agency Conservation (Section 170) Registers

Section 170 of the Heritage Act requires that State Government Agencies establish and maintain a Heritage Conservation Register for heritage items located on land under their control or ownership. Items listed on the s.170 Register are listed on the State Heritage Inventory (SHI) and bound by the regulations of the Heritage Act.

A search of the SHI was completed on 19 October 2021. No items within or in proximity to the subject area were identified.

2.1.8. Australian Heritage Database

The Australian Heritage Database contains information about more than 20,000 natural, historic and Indigenous places including: places in the World Heritage List, Places in the National Heritage List, places in the Commonwealth Heritage list; and places in the Register of the National Estate (non-statutory). The list also includes places under consideration, or that may have been considered for any one of these lists.

A search of the Australian Heritage Database was completed on 19 October 2021. No items within or in proximity to the subject area were identified.

2.2. HISTORICAL ARCHAEOLOGICAL POTENTIAL

The historic archaeological potential of the subject area has been considered in the Historical Archaeological Assessment (HAA) prepared by Urbis, 2021. Conclusions are made on the basis of the historic land use of the subject area, the findings of previous local archaeological assessments and the likelihood of preservation based of levels of subsequent disturbance.

The historical archaeological potential of the subject area is determined to be moderate-high, with Casey & Lowe (1996a) zoning the subject area as of high significance requiring further assessment prior to a DA. The archaeological resource of the subject area is determined to be of potential State significance owing to the potential for convict era remains, although this has been discounted in the HAA prepared by Urbis, which identifies the existing oviform drain as of Local significance, with a late-19th century construction date. Refer to the HAA for a full understanding of Historical Archaeology.

2.3. SUMMARY OF HISTORICAL (BUILT) HERITAGE AND ARCHAEOLOGY REVIEW

The following conclusions were made after the assessment of the relevant statutory and non-statutory historic heritage and archaeological constraints:

- The subject area is in proximity to a number of heritage listed items on the Liverpool LEP, including Bigge Park Conservation Area, a Milestone, the Plan of the Town of Liverpool and All Saints Roman Catholic Church (see Table 1), and consequently requires a detailed historical archaeological assessment.
- There are no items listed on any other heritage listings – including the SHR, SHI or Australian Heritage Database – within or in proximity to the subject area.
- The subject area has previously been identified as containing archaeological potential and requiring assessment prior to the lodgement of a DA. This has been undertaken by Urbis, under different cover.
- The present ADD follows the Due Diligence Code and aims to establish whether any Aboriginal objects would be harmed by the proposed development of the subject area, thus addressing s.87(2) of the NPW Act, Section 5.10(2) of the Liverpool Council LEP and Section 9.5 of the Liverpool Council DCP.
- Searches of the State Heritage Inventory and Australian Heritage Database did not identify any Aboriginal heritage items within the curtilage of the subject area.

Figure 7 – Heritage items

3. ABORIGINAL HERITAGE BACKGROUND

An assessment of Aboriginal cultural heritage within a particular subject area requires an understanding of the archaeological and environmental contexts in which the area is situated. The following is a review and analysis of those contexts for the present subject area.

A summary of background research for Aboriginal cultural heritage resources within and around the subject area is provided below, including search results from the Aboriginal Heritage Information Management System (AHIMS) and consideration of previous archaeological investigations pertinent to the subject area.

3.1. PAST ABORIGINAL LAND USE

Aboriginal people have lived in the Sydney area for more than 20,000 years. The oldest archaeologically accepted date for a site in the greater Sydney region is 17,800 years before present (BP), which was recorded in a rock shelter at Shaw's Creek (Nanson et al 1987), near Castlereagh. Evidence of Aboriginal occupation has been found dated to +50-60,000 years before present (BP) at Lake Mungo in western NSW, so given the various disperse models of human occupation, it is likely that Aboriginal people have lived in the Sydney region for even longer than indicated by the oldest recorded dates we have at present. The archaeological material record provides evidence of this long occupation, but also provides evidence of a dynamic culture that has changed through time.

Due to the absence of written records, much of our understanding of Aboriginal life pre-colonisation is informed by the histories documented in the late 18th and early 19th century by European observers. These histories provide an inherently biased interpretation of Aboriginal life both from the perspective of the observer but also through the act of observation. The social functions, activities and rituals recorded by Europeans may have been impacted by the Observer Effect, also known as the Hawthorne Effect. According to the Observer/Hawthorne Effect, individuals will modify their behaviour in response to their awareness of being observed. With this in mind, by comparing/contrasting these early observations with archaeological evidence is possible to establish a general understanding of the customs, social structure, languages and beliefs of Aboriginal people (Attenbrow 2010).

The archaeological record provides evidence of the long occupation of Aboriginal people in Australia. Current archaeological establishes occupation of the Australian mainland by as early as 65,000 years before present (BP) (Clarkson et al. 2017). The oldest generally accepted date for a site in the Sydney region is 17,800 BP, recorded in a rock shelter at Shaw's Creek (Nanson et al. 1987), near Castlereagh (approximately 40km west of the present subject area). Older occupation sites along the now submerged coastline would have been flooded around 10,000 years BP, with subsequent occupation concentrating along the current coastlines and rivers (Attenbrow 2010). Given the early contact with Aboriginal people in the Sydney region, more is known about these groups than those that inhabited regional areas. The Aboriginal population in the greater Sydney region is estimated to have been between around 4000 and 8000 people at the time of European contact (Attenbrow 2010).

The wider Liverpool area was an important place of contact between the Darug, Tharawal and Gandangara people. The subject area is within the traditional lands of the Cabrogal Clan of the Dharug Nation, named after the *cohbra* grubs which were harvested from the banks of the Georges River near Cabramatta Creek. The lands of the Cabrogal extended along the Georges River and its tributaries. The Cabrogal heavily utilised the Georges River for its resources and as a means of transport (Goodall & Cadzow 2015). The river was a focal point for habitation, providing not only aquatic resources but also prime hunting grounds as herd animals would come to the river to drink (Liverpool Council n.d.). Silcrete, mudstone and other stones which occur naturally in the areas around the Georges River provided raw materials for stone tool manufacture, and sandstone outcrops provided the opportunity to sharpen those tools.

The Cabrogal continued to inhabit the Liverpool area following settlement by Europeans, and evidence of contact occurs in the stories of the Cowpastures – where escaped cattle from the First Fleet were finally located grazing on the grasses of fertile plains around the Camden/Campbelltown/Liverpool area.

3.2. PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS

Previous archaeological investigations can provide invaluable information on the nature, spatial distribution, and extent of archaeological resources in a given area. While there were no readily available previous assessments of the subject area itself, there have been numerous archaeological investigations carried out in the Liverpool area during the last 30 years. A number of these reports have been sourced from the AHIMS register. A summary of findings of the most pertinent to the subject area is provided in Table 2.

Table 2 – Regional archaeological context

Consultant - Year	Summary of assessment	Relevance to subject area
Urbis 2020	This Aboriginal objects due diligence assessment was conducted at 26 Elizabeth Street, which is the property to the east of the subject area. This assessment identified that the absence of archaeological sensitivity landscape features, combined with the high levels of disturbance associated with the use of the subject area, have reduced the archaeological potential of the site.	• The study site is located directly next to the current subject area (eastern side of subject area). • The study site is also in a very similar state to the current subject area (extensively disturbed). • Identified high level of disturbance caused by the high density of development in the Liverpool area and its impact on Aboriginal archaeological sites.
Smith, L.J., 1989.	In this assessment Smith aimed to establish a spatial predictive model for the southern Cumberland Plain and to test whether the conclusions drawn for the northern Cumberland Plain apply. The 5-day survey program for the Liverpool Release Areas identified 26 previously unrecorded archaeological sites, with 19 scatters, 5 isolated finds and 2 scarred trees. Smith hypothesised that artefacts would be located within 50m of water sources and in lower densities than in the northern Cumberland Plain. Smith effectively surveyed 0.63% of the subject area on foot, once visibility conditions were accounted for (incidentally, Smith viewed visibility conditions as a primary factor in the locating of archaeological sites). Smith determined artefact scatters and isolated finds were located on almost all topographic features within the study area, with the exception of slopes. Smith found that 62% of sites occurred within 50m of a water source, with 53% within 10m and only 2 sites located at a distance greater than 100m. This assessment informed early predictive models for the Cumberland Plain and was formative in the development of Jo McDonald's (1992) predictive model widely applied today.	• One of the earliest assessments for the Liverpool LGA assessing spatial distribution and patterning of Aboriginal archaeological sites. • Identified importance of the availability of resources including water sources and variables in landform patterns.
Cain, F., 1991.	Archaeological survey assessment of the M5 Toll Plaza, which built on previous assessments from Haglund (1984). Cain identified visibility across the surveyed grounds as ranging from 0% to 100% due to thick pasture cover, with areas of heavy disturbance. Of the seven soil exposures, three contained artefacts, with two artefact scatters, one isolated find and one potential scarred tree (determined to be European in origin). Artefact density was determined to be low in comparison to other sites on the Cumberland Plain.	• Identified low density artefact scatters compared to other parts of the Cumberland Plain. • Recorded high level of disturbance and its impact on

Consultant - Year	Summary of assessment	Relevance to subject area
		the survival of Aboriginal archaeological sites.
JMCHM, 1992.	Archaeological assessment intended to investigate the archaeological potential within Precinct 4 of Hoxton Park Stage II Release Area, establish the archaeological significance of the site and determine any threats to areas of archaeological significance proposed by the development. This assessment was also used as an opportunity to test the predictive model established by Smith and Kohen. This assessment resulted in the recording of 147 artefacts in total, with silcrete the dominant raw material. The spatial location and density of artefacts recovered from these excavations, with highest density approximately 80-90m from the creek on higher ground, disputed previous claims about spatial distribution of sites within the Cumberland Plain region and led to the development of the currently accepted predictive model.	• The assessment formulated and detailed the predictive model based on stream order classification and the implications on spatial distribution of archaeological sites. • The assessment also discussed the impact of various levels of disturbance on the integrity of sub-surface archaeological deposits.
Artefact Heritage Services, 2011.	Aboriginal objects due diligence assessment for linear infrastructure alignment at Light Horse Park in Liverpool. The assessment found no archaeological constraints to the subject area and recorded high level of disturbance.	• Identified high level of disturbance caused by the high density of development in the Liverpool area and its impact on Aboriginal archaeological sites. • The current subject area is located within similar environmental settings.

3.3. AHIMS DATABASE

The Aboriginal Heritage Information Management System (AHIMS) database comprises previously registered Aboriginal archaeological objects and cultural heritage places in NSW and it is managed by the Department of Premier and Cabinet (DPC) under Section 90Q of the NPW Act. 'Aboriginal objects' is the official term used in AHIMS for Aboriginal archaeological sites. The terms 'Aboriginal sites', 'AHIMS sites' and 'sites' are used herein to describe the nature and spatial distribution of archaeological resources in relation to the subject area.

A search of the Aboriginal Heritage Information Management System (AHIMS) was carried out on 15 October 2021 (AHIMS Client Service ID: 630895) for an area of approximately 10km x 13km. A summary of all previously registered Aboriginal sites within the extensive search area is provided in Table 3 and their spatial distribution is shown in Figure 9 and Figure 10. The Basic and Extensive AHIMS search results are included in Appendix A. The results of the search are discussed below.

The AHIMS search identified no Aboriginal sites or Aboriginal places within the curtilage, or in the immediate vicinity, of the present subject area

Table 3 – Summary of extensive AHIMS search (AHIMS Client Service ID: 630895)

Site Type	Context	Total	Percentage
Isolated find	Open	30	32%
Artefact Scatter	Open	28	29%
PAD	Open	13	14%
Artefact Scatter with PAD	Open	10	11%
Modified Tree	Open	9	9%
Isolated find with PAD	Open	2	2%
Aboriginal Gathering with PAD	Open	1	1%
shell midden	Open	1	1%
Shelter with Art	Closed	1	1%
Total		**95**	**100%**

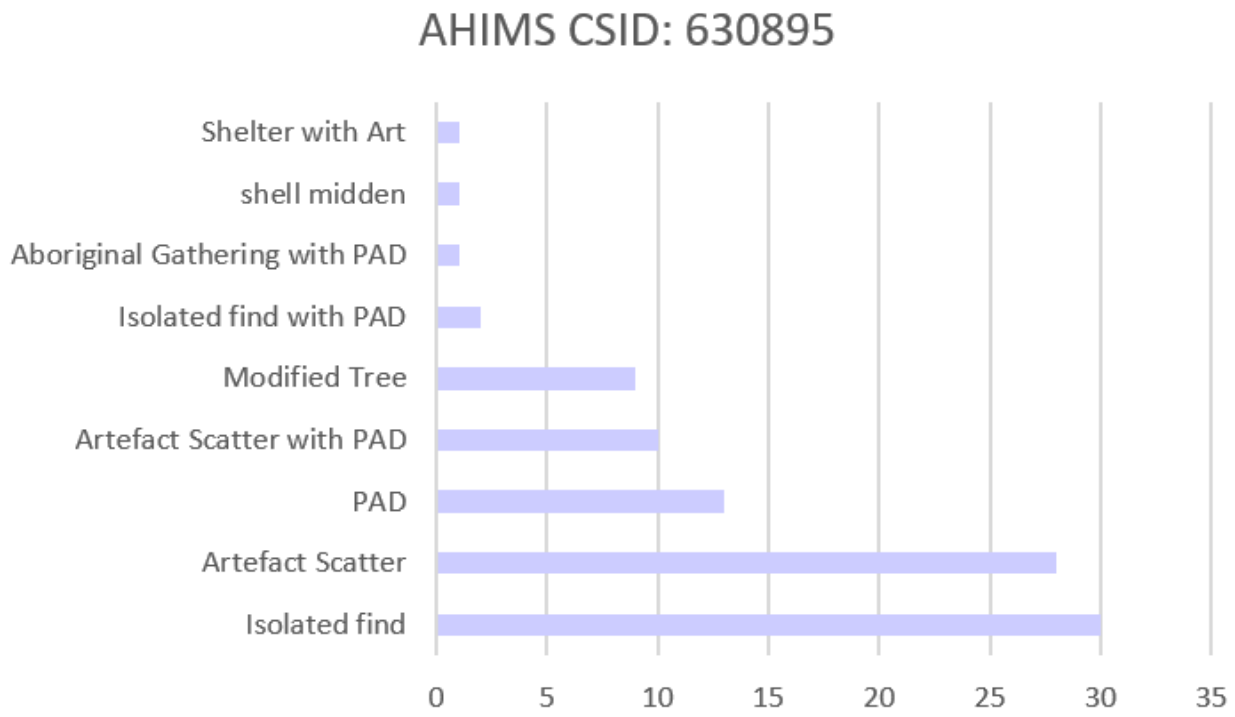

Figure 8 – AHIMS sites in extensive search

It should be noted that the AHIMS register does not represent a comprehensive list of all Aboriginal objects or sites in a specified area as it lists recorded sites only identified during previous archaeological survey effort. The wider surroundings of the subject area and the region in general have been the subject of various levels and intensity of archaeological investigations during the last few decades. Most registered sites have been identified through targeted, pre-development surveys for infrastructure and maintenance works, with the restrictions on extent and scope of those developments.

Furthermore, it is important to note that archaeological sites alone will not provide the full context of how Aboriginal people might have used the landscape in the past and how their every day and ceremonial activities shaped the landscape and provided the cultural connection to the natural environment. Archaeological resources comprise only one aspect (tangible) of Aboriginal cultural heritage and intangible cultural heritage provides a more holistic context of past and present Aboriginal life.

In the broader search area, a total of 95 Aboriginal objects and no Aboriginal places are registered (see Table 3). Sixteen (16) are identified as ‘not a site’ in the search results, reducing the total number of identified Aboriginal objects to 95. Out of the 95 registered Aboriginal cultural heritage sites, there are 11 are listed as destroyed, while the other 84 are listed as valid Aboriginal cultural heritage sites.

The types of sites identified reflect the landscape and environment of the search area. ‘Open’ context sites are sites which occur in open space, whereas ‘closed’ context sites are those which occur within rock shelters. Due to the absence of outcrops of sandstone within the search area, Open context sites dominated the search results comprising 99% (n=94) of site types. Closed context site types are the least common with only one site (1%) identified across the search area, specifically a rock shelter with art.

Sites containing stone artefacts comprised 74% (n=70) of identified site types. This included artefacts in open contexts, with scatters of varying densities and associated with other materials. Artefact scatter sites typically contain multiple culturally modified lithics within a 10m area. Artefact scatters range in size; from small, low intensity, ‘background’ scatter, to large scatters of hundreds of artefacts, with accompanying materials which would indicate use of the area for long term habitation purposes. The dominant raw material type across the stone artefact sites was silcrete, likely sourced from Plumpton Ridge nearby or from the banks of the Georges River, with silcrete boulders known to occur within the Berkshire Park soil landscape.

Potential Archaeological Deposits (PAD) sites comprised 28% (n=26) of results, occurring both in isolation as well as being associated with other sites across the search area. PADs typically represent areas where the environmental context and level of disturbance are such that subsurface remains are deemed to be likely, and the registering of PADs is usually followed by test excavation which will either realise this potential through the

identification of sites or result in the de-registering of the area due to the absence of materials. PADs are typically registered within areas where deposits indicative of habitation are anticipated to occur.

Modified trees are trees containing cultural markings such as engravings indicative of ceremonial purposes or burial locations, or scars from functional activities like canoe or equipment manufacture. Scarred trees are rare in the Cumberland plain due to extensive land clearance but occurred in diverse settings. Within the search area, scarred trees comprised 9% (n=9) of results.

Middens are sites containing deposits of edible shell indicative of habitation, sustenance, and resource extraction. Middens are typically located within shelters and/or in proximity to watercourses where edible shells were extracted and subsequently processed. Midden may represent a single meal or an accumulation over a long period of time involving many different activities. ‘Shell middens’ are delineated in this report as containing exclusively shell, whereas ‘Middens’ refers to sites which also contain culturally modified lithics (stone artefacts). One shell midden was identified within the search are, likely the result of the proximity of the Georges River.

No other site types occurred across the search area. The closest site to the subject area is an artefact scatter which is approximately 600 m away and alongside the western bank of the Georges River (see Figure 10).

Figure 9 – Map of AHIMS sites in extensive search area

Figure 10 – Close up map of AHIMS sites in extensive search area

3.4. CONCLUSIONS DRAWN FROM ARCHAEOLOGICAL CONTEXT

The following conclusions are drawn from the archaeological background information, including AHIMS results and pertinent regional archaeological investigations:

- No Aboriginal objects or Aboriginal places are registered within the subject area, or within close proximity to the subject area.
- No previous studies have been identified that directly address the subject area. There is one assessment that was conducted to the property east of the subject area with a similar land use and history to the subject area. The assessment found the study site extensively disturbed from past historical activities. In addition, the study site was not identified to contain any registered AHIMS sites and landscape features that would suggest potential for Aboriginal objects. This assessment is useful as it supports the findings and conclusions regarding the low potential for Aboriginal objects in the subject area.
- Spatially, registered Aboriginal sites within the broader area around the subject area tend to be located in close proximity to water sources, particularly the Georges River, Brickmakers Creek and their tributaries. The subject area is not located within proximity to any water sources, which therefore suggests a low potential for Aboriginal objects.
- A lack of registered Aboriginal cultural heritage sites within proximity to the subject area may be related to a lack of archaeological investigation.
- Archaeological sites can be found across a variety of landforms in the Cumberland Plain with more frequency in the vicinity of permanent water. Of particular archaeological potential are lower slopes and river terraces.
- Archaeological assessments within the vicinity have identified a correlation between disturbance and archaeological potential, with high level of disturbance reducing and potentially removing archaeological potential.
- Absence of surface artefacts can simply be the result of poor visibility variables and does not necessarily indicate an absence of artefactual material in subsurface contexts.

4. ENVIRONMENTAL CONTEXT

Aboriginal objects may be associated with certain landscape features that played a part in the everyday lives and traditional cultural activities of Aboriginal people. Landscape features that are considered indicative of archaeological potential include rock shelters, sand dunes, water sources, waterholes and wetlands. Conversely, disturbance to the landscape after Aboriginal use may reduce the potential for Aboriginal objects and places. An analysis of the landscape within and near to the subject area is provided below.

4.1. TOPOGRAPHY

Certain landform elements are associated with greater archaeological potential for Aboriginal objects and places. Areas that are located on a ridge top, ridge line or headland, located within 200m below or above a cliff face or within 20m of or in a cave, rock shelter or cave mouth are considered sensitive areas for Aboriginal objects and places.

The subject area is approximately 15m above sea level and located on the lower end of a gentle slope

4.2. SOIL LANDSCAPE AND GEOLOGY

The subject area is located upon the Cumberland Plain. The Cumberland Plain lies on Triassic shales and overlain by Hawkesbury sandstone (DPIE 2018:39). The region consists of mostly low rolling hills and wide valleys.

There is one soil landscape identified within the subject area (Figure 13), namely the Blacktown soil landscape. The Blacktown soil landscape is described as residing upon gently undulating rises on Wianamatta Group shales and Hawkesbury shale. Soils are described as shallow to moderately deep (<100 cm) Red and Brown Podzolic Soils (Dr3.21, Dr3.11, Db2.11) on crests, upper slopes and well-drained areas; deep (150-300 cm) Yellow Podzolic Soils and Soloths (Dy2.11, Dy3.11) on lower slopes and in areas of poor drainage (DPIE 2018:39). Dominant soil materials include friable brownish-black loam, hard setting brown clay loam, strongly pedal mottled brown light clay, and light grey plastic mottled clays (DPIE 2018:40).

The depth of natural soils is relevant to the potential for archaeological materials to be present, especially in areas where disturbance is high. In general, as disturbance increases, Aboriginal archaeological potential decreases. Historic land use activities as they relate to potential disturbance of the subject area are discussed below, however disturbance is determined to be high across the entirety of the subject area in association with previous structures. These disturbances include vegetation clearance, the construction of cottages, the Ampol service station and associated amenities (i.e. stormwater channel, underground piping and the installation of underground fuel tanks). These historical land disturbances have heavily disturbed the original environment and would have removed most of the original topsoil from the subject area. As a result, there is low potential that the soil profile remains intact.

4.3. GEOTECHNICAL INVESTIGATION

Geotechnical investigations assist in forming an understanding of the potential for archaeological resources to be retained, as they inform an understanding of the retention or removal of natural soils. Geotechnical investigation of the subject area was undertaken in 2019 and 2021, to identify the subsurface conditions across the subject area. Location of boreholes is included in Figure 11. The geotechnical investigation identified fill across the subject area including concrete pavement, asphalt or gravel, underlaid with fill consisting of gravelly to silty sand and clayey sand to clay, with gravels and/or brick fragments, and trace ash. This is clearly fill material not only due to the presence of brick and other non-natural debris, but also as silty sand does not occur naturally in association with the Blacktown Soil Landscape. This fill overlaid residual soils, including very soft to very still silty clay, with bedrock sandstone below residual soils. The bore hole logs are summarised in Table 4.

Generally, analysis of the geotechnical results indicates that natural topsoils have been removed across the subject area and replaced with fill materials, with no remaining natural A-horizon present. B-horizon natural soils appear to be retained with silty clay residual soils present, although it is unlikely that these soils would retain Aboriginal archaeological resources.

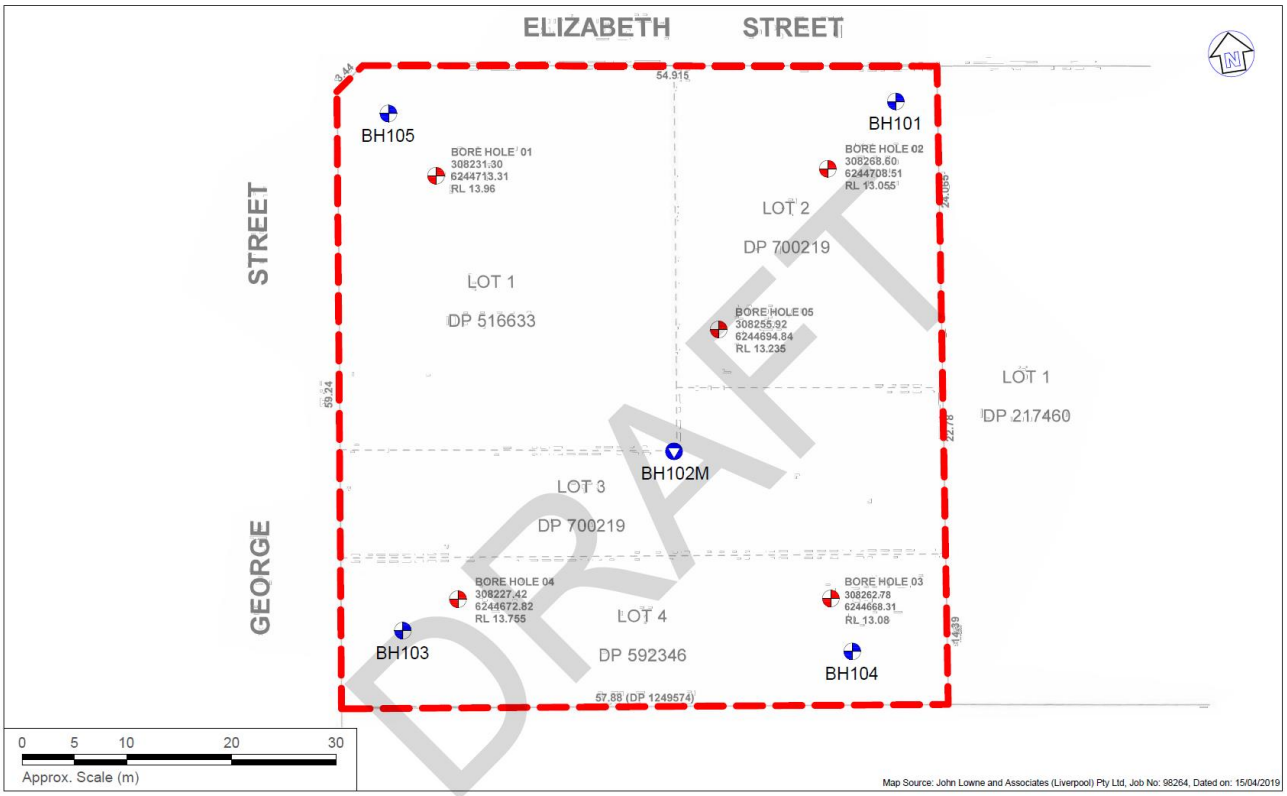

Figure 11 – Geotechnical Investigations – Borehole Locations, 2019 and 2021. 2019 Boreholes indicated in red, 2021 boreholes indicated in blue.

Source: EIAustralia, 2019.

Figure 12 – Geotechnical Investigations – Borehole Locations, 2021.

Source: EIAustralia, 2021

Table 4 – results of geotechnical investigations

Borehole No.	**Depth**	**Material**
BH1	0.0-0.12m	Concrete (120mm thick)
	0.12-0.60m	Fill: sand, medium to coarse grained, orange-brown, trace ash.
	0.60-0.90m	Fill: clay, low plasticity, dark brown, with sand, trace gravels.
	0.90-3.20m	Silty clay: medium plasticity, grey mottled red grading to grey.
	3.20-4.80m	Clay: medium to high plasticity, grey, with ironstone bands, extremely weathered shale, grading to distinctly weathered. From 4.3m, dark grey.
	4.80-5.80m	Shale: dark grey, very low strength, with iron staining, distinctly weathered.
	5.80-16.70m	Borehole continued with varying bedrock (culturally sterile) features including shale and sandstone.
BH2	0.0-0.10m	Concrete (100mm thick).

Borehole No.	Depth	Material
	0.10-0.80m	Fill: sandy clay, low plasticity, dark brown, with angular gravels, brick and other fragments.
	0.80-3.78m	Silty clay: medium plasticity, grey mottled orange. From 3.4m grading to extremely weathered sandstone with ironstone bands.
	3.78-16.52m	Borehole continued with varying bedrock (culturally sterile) features including shale and sandstone.
BH3	0.0-0.40m	Fill: gravel, fine to medium grained, sub-angular to sub-rounded, blue metal.
	0.40-0.55m	Fill: gravelly sand: fine to coarse grained, dark grey, gravel is fine to course, sub angular to subrounded. Interspersed with clay from 0.4m
	0.55-2.00m	Silty clay: medium plasticity, brown mottled pale grey.
	2.00-3.70m	Silty clay: pale grey mottled red-brown, with ironstone gravels, and sand layers. Gravel is fine, sub angular to sub-rounded.
	3.70-6.0m	Silty clay: pale grey, with ironstone gravels, and sand layers. Gravel is fine, sub angular to sub-rounded.
	6.0-16.98m	Borehole continued with varying bedrock (culturally sterile) features including shale and sandstone
BH4	0.00-1.00m	Fill: silty sand, fine grained, dark brown with gravels and brick fragments, rare clay.
	1.00-3.50m	Silty clay: high plasticity, grey mottled red.
	3.50-4.00m	Silty clay: high plasticity, grey mottled red, grading to weathered sandstone
	4.00-4.70m	Sandstone: light grey, very low strength, with iron staining, distinctly weathered.
	4.70-5.50m	Sandy clay: low plasticity, orange-red (extremely weathered sandstone).
	5.50-16.17m	Borehole continued with varying bedrock (culturally sterile) features including shale and sandstone.
BH5	0.00-0.30m	Asphalt to 30mm thick.
	0.30-0.60m	Fill: gravelly sand, fine to coarse grained, dark grey, gravel is fine to coarse, sub-angular to sub-rounded, with clay.
	0.60-3.40m	Fill: gravelly sand, with ironstone gravel, fine to coarse, sub angular to sub-rounded.
	3.40-3.60m	Fill: as above, grading ton extremely weathered bedrock
	3.60-20.53m	Borehole continued with varying bedrock (culturally sterile) features including shale and sandstone

Borehole No.	Depth	Material
BH101	0.00-0.10m	Concrete 10mm thick.
	0.10-0.80m	Fill: sandy clay, low plasticity, dark brown, with angular gravels, brick fragments.
	0.80-3.50m	Silty clay: medium plasticity, grey mottled clay.
	3.50-3.80m	Silty clay: as above, onto extremely weathered sandstone with ironstone bands.
	3.80-22.00m	Borehole continued with varying bedrock (culturally sterile) features including shale and sandstone.
BH102M	0.00-0.30m	Asphalt: 30mm thick.
	0.30-0.60m	Fill: gravelly sand, fine to coarse grained, dark grey, fine to course, sub-angular to subrounded gravels, with clay.
	0.60-3.40m	Silty clay: medium to high plasticity, pale brown-grey mottled red brown.
	3.40-4.50m	Silty clay: as above, with fine to coarse sub angular to sub rounded ironstone gravels, grading to extremely weathered materials.
	4.50-23.00m	Borehole continued with varying bedrock (culturally sterile) features including shale and sandstone
BH103	0.00-1.00m	Fill: silty sand, fine grained, dark brown, with gravels and brick fragments, with clay.
	1.00-3.50m	Silty clay: high plasticity, grey mottled red.
	3.50-4.00m	Silty clay: as above, Grading to extremely weathered material/
	4.00-20.72m	Borehole continued with varying bedrock (culturally sterile) features including shale and sandstone.
BH104	0.00-0.60m	Fill: gravelly sand, fine to coarse grained, dark grey, fine to coarse, sub-angular to sub-rounded gravels.
	0.60-2.00m	Silty clay: medium plasticity, brown mottled pale grey.
	2.00-3.70m	Silty clay: as above, pale grey mottled red brown, with fine sub angular to sub rounded ironstone gravels, fine grained sand.
	3.70-6.00m	Silty clay: as above, pale grey-brown
	6.00m-6.50m	Silty clay: grading to extremely weathered materials
	6.50-21.00m	Borehole continued with varying bedrock (culturally sterile) features including shale and sandstone
BH105	0.00-0.12m	Concrete, 120mm thick.

Borehole No.	Depth	Material
	0.12-0.60m	Fill: Silty sand, medium to coarse grained, orange-brown, trace ash.
	0.60-0.90m	Fill: silty clay, low plasticity, dark brown with sand, trace gravels.
	0.90-3.20m	Silty clay: medium plasticity, grey mottled red.
	3.20-4.80m	Silty clay: as above, grey with ironstone grading to extremely weathered materials.
	4.80-22.33m	Borehole continued with varying bedrock (culturally sterile) features including shale and sandstone.

4.4. VEGETATION

The presence of certain types of vegetation within in an area may be indicative of archaeological potential for certain site types, such as modified trees, or more generally of the habitability of an area for Aboriginal people.

The Blacktown soil landscape would have originally been associated with tall open forest and open woodland (dry sclerophyll forest). The native tree species would have included *Eucalyptus tereticornis* (forest red gum), *E. crebra* (narrow-leaved ironbark), *E. moluccana* (grey box) and *E. maculata* (spotted gum) (DPIE 2018:40).

The subject area has completely been cleared of all original vegetation. The subject area therefore has nil potential to retain any culturally modified trees.

4.5. HYDROLOGY

Proximity to a body of water is a factor in determining archaeological potential in accordance to the due diligence code. Areas within 200m of the whole or any part of a river, stream, lake, lagoon, swamp, wetlands, natural watercourse, or the high-tide mark of shorelines (including the sea) are considered sensitive areas for Aboriginal objects and places.

The nearest water source is the Georges River, which is approximately 450m south-east from the subject. As the subject area is not within 200m of water, the hydrology of the subject area is not considered sensitive for Aboriginal objects and places. The landform of the subject area has also been extensively disturbed from historical activities, such as vegetation clearance, the construction of cottages, the Ampol service station and associated amenities (i.e. stormwater channel, underground piping and the installation of underground fuel tanks). These historical disturbances have further reduced the likelihood of Aboriginal objects to low.

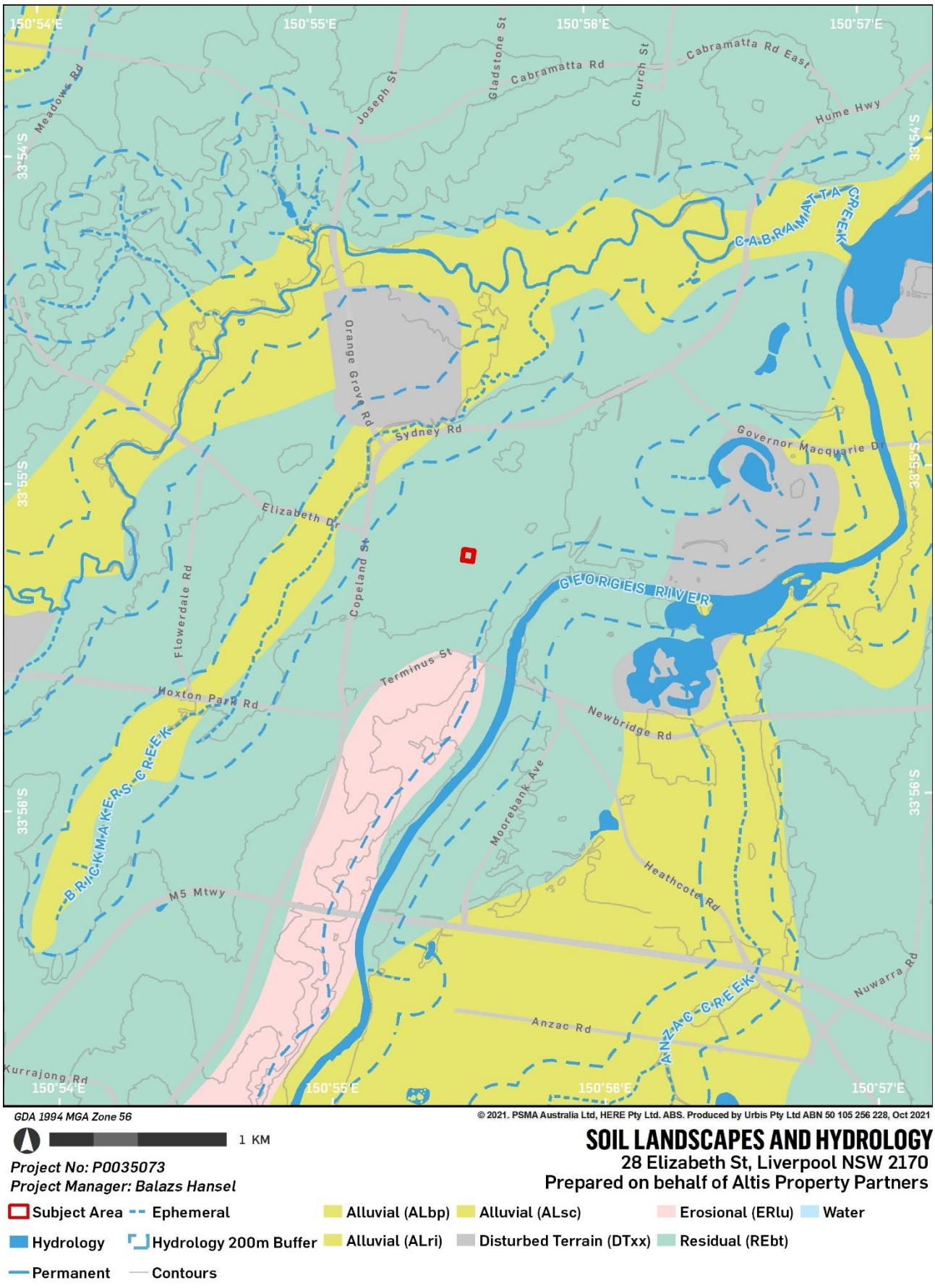

Figure 13 – Soil Landscapes and Hydrology

4.6. SUMMARY OF ENVIRONMENTAL CONTEXT

The following conclusions are drawn from the above assessment of the environmental context of the subject area:

- The subject area is not located within an archaeologically sensitive landform that indicates likely past land use by Aboriginal people, which suggest a low potential for Aboriginal objects to be present.
- Since European settlement, the subject area has since been cleared of all original vegetation. The subject area therefore has nil potential to retain in any culturally modified trees.
- The subject area is located in the Blacktown soil landscape, the shallow to moderately deep loamy soils of which are highly susceptible to ground disturbing activities.
- Geotechnical investigation indicates that the subsurface conditions at subject area comprise of fill overlaying culturally sterile B-horizon natural soils, overlying bedrock. No natural A-horizon soils are present, greatly reducing the archaeological potential.
- The historical activities are determined to have caused a high level of surface and subsurface disturbance across the subject area, which has reduced the likelihood of Aboriginal objects being present. These disturbances include vegetation clearance, the construction of cottages, the Ampol service station and associated amenities (i.e. stormwater channel, underground piping and the installation of underground fuel tanks).

5. HISTORICAL CONTEXT

The brief historical overview provided in this section is derived from the Historical Archaeological Assessment (HAA) prepared for the subject area in 2021 (Urbis). The below provides a summary of the historical context. For full historical overview please refer to the HAA prepared under separate cover.

5.1. SUMMARY OF HISTORICAL CONTEXT

- Early Land Grants and the Hope Inn, 1827-1854
  - The subject area was originally under the ownership of John Rowley and William Levey from at least 1827. Evidence suggests that the subject area was vacant during the 19th century with no significant disturbances made. John Rowley, and his wife Sarah, did not hold the land for long following the death of Solomon Levey in 1833, selling in December 1837 to Mr George Graham.
- Subdivisions, 1854-1905:
  - It appears that the property was passed from Graham to the ownership of William Pritchard in 1854 before being passed to his wife Mary Pritchard upon his death in 1864.
  - During said period it is also possible that the subject area may have been occupied by a tan yard, although the location of this tan yard is currently unknown.
  - In 1898, the Works Committee discussed the laying of a brick drain in George Street, with a request that a similar drain be constructed in Elizabeth Street. In 1901, an article discussed the extension of the drain from the intersection of Elizabeth & Bigge Street (to the east of the subject area) to the railway, suggesting the drain was constructed at the section of Elizabeth Street between George & Bigge Streets (including the subject area) by this time. By 1906, the drain was remarked to be in a bad state, with the section in Northumberland Street taken up and re-laid and the section from Elizabeth Street Culvert to George Street Culvert be cleaned up. By 1911, the drain was known as ‘the stink-pot’ and portions had been bricked.
  - During this period improvements had been made to the subject area including not only the construction of the stormwater drain but also the construction of two brick cottages.
- Residential Ownership, 1905-1962:
  - By 1928, the subject area was occupied by three cottages with associated outbuildings, fronting to George Street in the west with rear gardens. The brick oviform stormwater channel ran through the centre of the site diagonally.
  - The subject area was further subdivided during this time with additional lots were constructed in 1943. By 1965 the northernmost cottage had been demolished, with two new cottages - one fronting Elizabeth Street to the east and the other to the south fronting George Street.
  - The subject area was later consolidated under the ownership of Peter Warren in 1962.
- Peter Warren, 1962- 2020:
  - Once the subject area was consolidated under the ownership of Peter Warren, the existing structures were demolished to make way for the car dealership lot, with an Ampol service station in the north-western corner. The cottages were demolished by 1969. The service station would likely have resulted in considerable disturbance and contamination in this portion of the site, such as installation of underground tanks to store fuel.
  - The subject area was operating as a fruit seller by 2007 and was cleared of all structures by 2021.

5.2. ANALYSIS OF HISTORICAL AERIAL PHOTOGRAPHS

An informative way of assessing the level of soil disturbance is to analyse historical aerial photographs which can provide vital information on the changing environment and the impacts of historical land use within a given area. Aerial photographs from 1930, 1961 and 1986 and 2021 were analysed to evaluate previous land use and associated impacts.

Table 5 – Analysis of historic aerial imagery

Year	Observation
1930	The 1930 aerial is poor in quality and thus only limited information can be gathered. By 1930 the subject area has already been cleared and subdivided, with various structures present. These structures include walls, three cottages and associated outbuildings. The land to the south of the subject area is cleared and remains largely unoccupied.
1961	In the 1961 aerial, the previous cottages have remained with an additional two cottages constructed in the north-east and south-west sections of the subject area. These new cottages also include associated outbuildings.
1986	The residential structures within the subject area have since been demolished and replaced with the Ampol service station in the north-western section of the subject area. The area surrounding the Ampol service station has been asphalted/concreted to function as a carpark and car yard. The land surrounding the subject area has also changed from a residential function to a commercial function, as seen by the larger structures in the aerial, i.e. the All Saints' Catholic Church (north of the subject area) and the Liverpool Polics Station (south of the subject area).
2021	By 2021 the subject area is drastically changed. All previous structures have been demolished and the land remains covered in asphalted/concreted. There are areas of exposed soils towards the south-east of the subject area, and these sections appear highly disturbed.

The subject area has been the subject of consecutive developments since as early as 1837, with historical research affirming that structures have been present since at least 1928. Historical land use and associated disturbance within the subject area is generally consistent with the rest of the Liverpool City area, which was heavily developed prior the introduction of legislation protecting Aboriginal and historical heritage and archaeology.

GDA 1994 MGA Zone 56

50 M

Project No: P0035073
Project Manager: Balazs Hansel

HISTORICAL AERIAL PHOTOGRAPHS
28 Elizabeth St, Liverpool NSW 2170
Prepared on behalf of Altis Property Partners

LEGEND:

Figure 14 – Historical aerial imagery

5.3. SUMMARY OF HISTORICAL CONTEXT AND DISTURBANCE

The review of the historical context is summarised as follows:

- During the 19th century the soil profile of the subject area remained largely undisturbed with very little activities taking place. The historical data indicates that the subject area was largely unoccupied until the end of the 19th century when a series of cottages and outbuildings were constructed, along with a brick stormwater drain which was excavated and installed running diagonally across the centre of the subject area. T
- he cottages on the site were demolished in the 1960s to make way for new facilities including the Peter Warren car dealership and an Ampol service station which was later converted into a fruit market
- . These properties remained on site until 2019 when they were demolished. The construction of these facilities would likely have resulted in considerable disturbance and potential contamination of subsurface deposits.
- The above-mentioned historical activities have significantly disturbed the surface and subsurface soil profile, which has therefore reduced the likelihood of Aboriginal objects being present.

6. PREDICTIVE MODEL

A predictive model may be used to estimate the nature and distribution of evidence of Aboriginal land use in a subject area. A predictive model should consider variables that may influence the location, distribution and density of sites, features or artefacts within a subject area. Variables typically relate to the environment and topography, such as soils, landscape features, slope, landform and cultural resources.

The general process archaeologists employ to determine the likelihood of any particular site type (artefact scatter, shelter, midden etc) occurring within a given subject area requires the synthesis of information for general distribution of archaeological sites within the wider area including:

- Detailed analysis of previous archaeological investigations within the same region.
- Presence or absence of landscape features that present potential for archaeological resources (human occupation, use) such as raised terraces adjacent to permeant water.
- Analysis of the geology and soil landscape within the subject area which allows for a determination to be made of the type of raw material that would have been available for artefact production (silcrete, tuff, quartz etc) and the potential for the accumulation of archaeological resource within the subject area.
- Investigation of and determination of the level of disturbance/historical land use within the subject area which may impact on or remove entirely any potential archaeological material.

An indicative process of determining the likelihood of a given site occurring within a subject area is provided in Table 6 below.

Table 6 – Indicative process for determining the potential presence of a site

Likelihood	Indicative subject area context	Indicative action
High	Low level of ground disturbance in combination with at least one archaeologically sensitive landscape feature or Aboriginal object (either registered or newly identified) within the subject area.	Detailed archaeological investigation including but not limited to survey, test excavation and potentially (depending on density and/or significance of archaeological deposit) salvage excavation.
Moderate	Moderate level of ground disturbance in combination with at least one archaeologically sensitive landscape feature or Aboriginal object (either registered or newly identified) within the subject area.	Detailed archaeological investigation including but not limited to survey, test excavation and potentially (depending on density and/or significance of archaeological deposit) salvage excavation.
Low	High level of ground disturbance in combination with at least one archaeologically sensitive landscape feature or Aboriginal object (either registered or newly identified) within the subject area.	Employ chance finds procedure and works can continue without further archaeological investigation.
Nil	Complete ground disturbance (i.e. complete removal of natural soil landscape); or no archaeologically sensitive landscape features and no archaeological sites within subject area.	Employ chance finds procedure and works can continue without further archaeological investigation.

6.1. TYPICAL SITE TYPES

A range of Aboriginal site types are known to occur within New South Wales. Site types that are typically encountered in the Cumberland Plain are described below.

Art sites can occur in the form of rock engravings or pigment on sandstone outcrops or within shelters. An engraving is some form of image which has been pecked or carved into a rock surface. Engravings typically vary in size and nature, with small abstract geometric forms as well as anthropomorphic figures and animals also depicted. In the Sydney region engravings tend to be located on the tops of Hawkesbury Sandstone ridges where vistas occur. Pigment art is the result of the application of material to a stone to leave a distinct impression. Pigment types include ochre, charcoal and pipeclay. Pigment art within the Sydney region is usually located in areas associated with habitation and sustenance.

Artefact Scatters/Camp Sites represent past Aboriginal subsistence and stone knapping activities and include archaeological remains such as stone artefacts and hearths. This site type usually appears as surface scatters of stone artefacts in areas where vegetation is limited, and ground surface visibility increases. Such scatters of artefacts are also often exposed by erosion, agricultural events such as ploughing, and the creation of informal, unsealed vehicle access tracks and walking paths. These types of sites are often located on dry, relatively flat land along or adjacent to rivers and creeks. Camp sites containing surface or subsurface deposit from repeated or continued occupation are more likely to occur on elevated ground near the most permanent, reliable water sources. Flat, open areas associated with creeks and their resource-rich surrounds would have offered ideal camping areas to the Aboriginal inhabitants of the local area.

Bora / Ceremonial Sites are locations that have spiritual or ceremonial values to Aboriginal people. Aboriginal ceremonial sites may comprise natural landforms and, in some cases, will also have archaeological material. Bora grounds are a ceremonial site type, usually consisting of a cleared area around one or more raised earth circles, and often comprised of two circles of different sizes, connected by a pathway, and accompanied by ground drawings or mouldings of people, animals or deities, and geometrically carved designs on the surrounding trees.

Burials of the dead often took place relatively close to camp site locations. This is due to the fact that most people tended to die in or close to camp (unless killed in warfare or hunting accidents), and it is difficult to move a body long distance. Soft, sandy soils on, or close to, rivers and creeks allowed for easier movement of earth for burial; and burials may also occur within rock shelters or middens. Aboriginal burial sites may be marked by stone cairns, carved trees or a natural landmark. Burial sites may also be identified through historic records or oral histories.

Contact Sites are most likely to occur in locations of Aboriginal and settler interaction, such as on the edge of pastoral properties or towns. Artefacts located at such sites may involve the use of introduced materials such as glass or ceramics by Aboriginal people or be sites of Aboriginal occupation in the historical period.

Grinding Grooves are the physical evidence of tool making or food processing activities undertaken by Aboriginal people. The manual rubbing of stones against other stones creates grooves in the rock; these are usually found on flat areas of abrasive rock such as sandstone. They may be associated with creek beds, or water sources such as rock pools in creek beds and on platforms, as water enables wet-grinding to occur.

Isolated Finds represent artefactual material in singular, one off occurrences. Isolated finds are generally indicative of stone tool production, although can also include contact sites. Isolated finds may represent a single item discard event or be the result of limited stone knapping activity. The presence of such isolated artefacts may indicate the presence of a more extensive, in situ buried archaeological deposit, or a larger deposit obscured by low ground visibility. Isolated artefacts are likely to be located on landforms associated with past Aboriginal activities, such as ridgelines that would have provided ease of movement through the area, and level areas with access to water, particularly creeks and rivers.

Middens are indicative of Aboriginal habitation, subsistence and resource extraction. Midden sites are expressed through the occurrence of shell deposits of edible shell species often associated with dark, ashy soil and charcoal. Middens often occur in shelters, or in eroded or collapsed sand dunes. Middens occur along the coast or in proximity to water sources, where edible resources were extracted. Midden may represent a single meal or an accumulation over a long period of time involving many different activities. They are also often associated with other artefact types.

Modified Trees are evidence of the utilisation of trees by Aboriginal people for various purposes, including the construction of shelters (huts), canoes, paddles, shields, baskets and bowls, fishing lines, cloaks, torches and bedding, as well as being beaten into fibre for string bags or ornaments. The removal of bark exposes the heart wood of the tree, resulting in a scar. Trees may also have been scarred in order to gain access to food resources (e.g. cutting toeholds so as to climb the tree and catch possums or birds), or to mark locations such as tribal territories. Such scars, when they occur, are typically described as scarred trees. These sites most often occur in areas with mature, remnant native vegetation. The locations of scarred trees often reflect an absence of historical clearance of vegetation rather than the actual pattern of scarred trees. Carved trees are different from scarred trees, and the carved designs may indicate totemic affiliation; they may also have been carved for ceremonial purposes or as grave markers.

Potential Archaeological Deposits (PADs) are areas where there is no surface expression of stone artefacts, but due to a landscape feature there is a strong likelihood that the area will contain buried deposits of stone artefacts. Landscape features which may feature in PADs include proximity to water sources, particularly terraces and flats near third order streams and above; ridge lines, ridge tops and sand dune systems.

Shelters are places of Aboriginal habitation. They take the form of rock overhangs which provided shelter and safety to Aboriginal people. Suitable overhangs must be large and wide enough to have accommodated people with low flooding risk. Due to the nature of these sites, with generic rock over hangs common particularly in areas with an abundance of sandstone, their use by Aboriginal people is generally confirmed through the correlation of other site types including middens, art, PAD and/or artefactual deposits.

6.2. ASSESSMENT OF ARCHAEOLOGICAL POTENTIAL

The likelihood of the site types described in Section 6.1 above occurring within the present subject area is assessed in Table 7 below.

Table 7 – Predictive Model

Site type	Assessment	Potential
Art	The subject area does not include any visible sandstone outcrops or rock overhangs that would be indicative of the potential for rock art. The likelihood of any concealed rock overhangs or sandstone outcrops being present within the subject area is considered to be low.	**Nil**
Artefact Scatters / Campsites	The landscape features of the subject area are not indicative of likely past Aboriginal land use and the potential for artefact scatters / campsites. In addition, a high level of historical ground disturbance across the entire subject significantly reduces the potential for artefact scatters / campsites to be retained.	**Low-Nil**
Bora / Ceremonial	The landscape features of the subject area are not indicative of likely past Aboriginal land use and the potential for bora / ceremonial sites. In addition, a high level of historical ground disturbance across the entire subject significantly reduces the potential for bora / ceremonial sites to be retained.	**Nil**
Burial	The subject area is not located within a soft, sandy soil landscape and is not located in proximity to a water source. The environmental context of the subject area is therefore not indicative of the likelihood of burials.	**Low-Nil**
Contact site	The location of the subject area within an area of early European settlement is indicative of the potential for contact sites. However, a high level of historical ground disturbance	**Low-Nil**

Site type	Assessment	Potential
	across the entire subject significantly reduces the potential for contact sites to be retained.	
Grinding Grooves	The subject area does not include any visible sandstone outcrops that would be indicative of the potential for grinding grooves. The likelihood of any concealed sandstone outcrops being present within the subject area is considered to be low.	**Nil**
Isolated Finds	The landscape features of the subject area are not indicative of likely past Aboriginal land use and the potential for isolated finds. In addition, a high level of historical ground disturbance across the entire subject significantly reduces the potential for isolated finds to be retained.	**Low-Nil**
Midden	The subject area is not located within a soft, sandy soil landscape and is not located in proximity to a water source. The environmental context of the subject area is therefore not indicative of the likelihood of middens.	**Nil**
Modified Trees	Historical development of the subject area has resulted in clearance of all native vegetation, removing any potential for the presence of modified trees.	**Nil**
PADs	The landscape features of the subject area are not indicative of likely past Aboriginal land use and the potential for archaeological deposits. In addition, a high level of historical ground disturbance across the entire subject significantly reduces the potential for archaeological deposits to be retained.	**Low-Nil**
Shelters	The subject area does not include any visible rock overhangs that would be indicative of the potential for shelters. The likelihood of any concealed rock overhangs being present within the subject area is nil.	**Nil**

7. DUE DILIGENCE ASSESSMENT

7.1. OVERVIEW OF DUE DILIGENCE PROCESS

The NPW Act provides statutory protection for Aboriginal objects and places in NSW. Section 87 (2), Part 6 of the NPW Act ensures that a person who exercises 'due diligence' in determining that their actions will not harm Aboriginal objects has a defence against prosecution for the strict liability offence, outlined by Section 86 of Part 6 of the NPW Act, if they later unknowingly harm an object without an Aboriginal Heritage Impact Permit (AHIP).

The Due Diligence Code (DECCW, 2010) was developed to help individuals and/or organisations to establish whether certain activities have the potential to harm Aboriginal objects within a given proposed activity footprint. Following the generic due diligence process (Figure 6), which is adopted by the NPW Regulation, would be regarded as 'due diligence' and consequently would provide a defence under the NPW Act.

The due diligence process outlines a set of practicable steps for individuals and organisations to:

1. Identify whether or not Aboriginal objects are, or likely to be, present in an area.
2. Determine whether or not their activities are likely to harm Aboriginal objects (if present).
3. Determine whether an AHIP application is required to carry out the harm.

The present assessment follows the steps of the due diligence process and provides clear and concise answers. Where necessary the present assessment provides detailed description to every aspect of the due diligence code to ensure the compliance of the proposed development and assessment of any Aboriginal heritage constraints.

7.2. IS THE ACTIVITY A LOW IMPACT ACTIVITY FOR WHICH THERE IS A DEFENCE IN THE REGULATIONS?

No.

The NPW Regulation removes the need to follow the due diligence process if the proposed activity is a low impact activity which is prescribed as a defence against prosecution for an offence under section 86(2) of the NPW Act. The following low impact activities are prescribed in the NPW Regulation:

- Certain maintenance work on land that has been disturbed.
- Certain farming and land management work on land that has been disturbed.
- Farming and land management work that involved the maintenance of certain existing infrastructure.
- The grazing of animals.
- An activity on land that has been disturbed that comprises exempt development or was the subject of a complying development certificate issued under the *Environmental Planning and Assessment Act 1979.*
- Certain mining exploration work on land that has been disturbed.
- Certain geophysical work.
- The removal of isolated, dead or dying vegetation, but only if there is minimal disturbance to the surrounding ground surface.
- Seismic surveying on land that has been disturbed,
- The construction and maintenance of ground water monitoring bores on land that has been disturbed.
- Environmental rehabilitation work including temporary silt fencing, tree planting, bush regeneration and weed removal, but not including erosion control or soil conservation works (such as contour banks).

It is important to note that this defence does not apply to situations where you already know there is an Aboriginal object and does not authorise harm to known Aboriginal objects.

The proposed works involves earthworks associated with new construction and therefore is not listed as a low impact activity for which a defence against prosecution under section 86(2) of the NPW Act is prescribed under the NPW Regulation.

7.3. STEP 1 – WILL THE ACTIVITY DISTURB THE GROUND SURFACE?

Yes.

The proposed works involves earthworks and therefore has the potential to disturb Aboriginal objects.

7.4. STEP 2A – ARE THERE ANY RELEVANT CONFIRMED SITE RECORDS OR OTHER ASSOCIATED LANDSCAPE FEATURE INFORMATION ON AHIMS?

No.

The AHIMS database records no Aboriginal sites within the curtilage of, or near to, the subject area (see Section 3.3 above). There is no information recorded in the AHIMS database about landscape features of relevance to the determining the presence of Aboriginal objects or Aboriginal places within the subject area (see Section 3.3 above).

7.5. STEP 2B – ARE THERE ANY OTHER SOURCES OF INFORMATION OF WHICH A PERSON IS AWARE?

Yes.

The Due Diligence Code requires identification of any other sources of information, such as previous studies, reports or surveys, relevant to identifying the presence of Aboriginal objects within the subject area.

Previous assessment of the subject area has been restricted to an assessment of historical archaeological resources and have not identified Aboriginal archaeological resources (see Section 3).

7.6. STEP 2C – ARE THERE ANY LANDSCAPE FEATURES THAT ARE LIKELY TO INDICATE THE PRESENCE OF ABORIGINAL OBJECTS?

No.

The Due Diligence Code identifies certain landscape features that have high potential for Aboriginal archaeological resources and cultural heritage. The following landscape features are identified as having high potential for Aboriginal objects:

- within 200 m of waters including freshwater and the high tide mark of shorelines; or
- located within a sand dune system; or
- located on a ridge top, ridge line or headland; or
- located within 200 m below or above a cliff face; or
- within 20 m of or in a cave, rock shelter, or a cave mouth.

There are no known Aboriginal archaeological sites registered within the subject area.

The subject area is approximately 440m north-west from the Georges River and is situated upon a heavily modified landform. The high level of historical ground disturbance within the subject area has significantly reduced the likelihood of Aboriginal objects being retained (see Section 5 above). The landscape features of the subject area therefore do not indicate the likely presence of Aboriginal objects.

7.7. STEP 3 – CAN HARM TO ABORIGINAL OBJECTS LISTED ON AHIMS OR IDENTIFIED BY OTHER SOURCES OF INFORMATION AND/OR CAN THE CARRYING OUT OF THE ACTIVITY AT THE RELEVANT LANDSCAPE FEATURES BE AVOIDED?

N/A.

The Due Diligence Code specifies that this step only applies if the proposed activity is on land that is not disturbed or contains known Aboriginal objects. The historical development and utilisation of the subject area is determined to have caused high levels of ground disturbance across the entire subject area. As a result, landscape features of the subject area therefore do not indicate the likely presence of Aboriginal objects. Furthermore, the desktop assessment confirmed that there are no Aboriginal objects listed on AHIMS or identified by other sources of information within the subject area. As such no direct or indirect harm is anticipated associated with the proposed development.

7.8. STEP 4 – DOES THE DESKTOP ASSESSMENT AND VISUAL INSPECTION CONFIRM THAT THERE ARE ABORIGINAL OBJECTS OR THAT THEY ARE LIKELY?

No.

The Due Diligence Code specifies that this step only applies if the proposed activity is on land that is not disturbed or contains known Aboriginal objects. The historical development and utilisation of the subject area is determined to have caused high levels of ground disturbance across the entire subject area.

As a result, landscape features of the subject area therefore do not indicate the likely presence of Aboriginal objects. Furthermore, the desktop assessment confirmed that there are no Aboriginal objects listed on AHIMS or identified by other sources of information within the subject area. Notwithstanding the foregoing, the subject area has been assessed as having only low archaeological potential and is therefore unlikely to retain any Aboriginal objects.

7.9. OUTCOME OF DUE DILIGENCE ASSESSMENT

In accordance with the due diligence process described in the Due Diligence Code and outlined in Figure 6, the above assessment has determined that no further investigation is required for the subject area because there are no known Aboriginal objects within the subject area and no relevant landscape features, owing to a high level of historical ground disturbance across the subject area.

Urbis recommends that any future development should proceed with caution, subject to the following archaeological chance finds and human remains procedures described in Section 8 below being implemented and followed.

8. CONCLUSIONS AND RECOMMENDATIONS

The present report was prepared to investigate whether development of the subject area has the potential to harm Aboriginal objects and/or places that may exist within the subject area. The assessment was undertaken in accordance with the Due Diligence Code, and included the following:

- Search of the Aboriginal Heritage Information Management System (AHIMS) register.
- Searches of statutory and non-statutory heritage listings.
- Analysis of previously conducted archaeological assessments in the vicinity of the subject area.
- Landscape analysis.
- Analysis of historical land use and its impact on the subject area.

The assessment concluded that:

- No Aboriginal objects or Aboriginal places are registered within the subject area.
- There are no landscape features associated with the potential for Aboriginal archaeological sites within the subject area.
- The subject area is located in the Blacktown soil landscape, the shallow to moderately deep soils of which are highly susceptible to ground disturbing activities.
- Geotechnical investigation indicates that the subsurface conditions at subject area comprise of fill overlaying culturally sterile B-horizon natural soils, overlying bedrock. No natural A-horizon soils are present, greatly reducing the archaeological potential.
- Historical activities, including construction and demolition of buildings and grading works, are determined to have caused a high level of ground disturbance across the subject area. These disturbances include vegetation clearance, the construction of cottages, the Ampol service station and associated amenities (i.e. stormwater channel, underground piping and the installation of underground fuel tanks). As a result, there is low potential that the soil profile remains intact.
- As a result of the conclusions above, this ADD has identified that no further Aboriginal archaeological assessment is required for the subject area in accordance with the Due Diligence Code.

Based on the above conclusions, Urbis recommends the following:

- This ADD report should be kept as evidence of the Due Diligence Process having been applied to the subject area.
- No further archaeological assessment of the subject area is required in accordance with the Due Diligence Code.
- Any future development should proceed with caution, subject to the following archaeological chance finds and human remains procedures being implemented and followed:

Archaeological Chance Finds Procedure

Should any archaeological deposits be uncovered during any site works, the following steps must be followed:

1. All works within the vicinity of the find must immediately stop. The find must not be moved ‘out of the way’ without assessment.
2. The site supervisor or another nominated site representative must contact either the project archaeologist (if relevant) or Heritage NSW (Enviroline 131 555) to contact a suitably qualified archaeologist.
3. The nominated archaeologist must examine the find, provide a preliminary assessment of significance, record the item and decide on appropriate management measures. Such management may require further consultation with Heritage NSW, preparation of a research design and archaeological investigation/salvage methodology and registration of the find with the Aboriginal Heritage Information Management System (AHIMS).

4. Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required and further archaeological investigation undertaken.
5. Reporting may need to be prepared regarding the find and approved management strategies.
6. Works in the vicinity of the find can only recommence upon receipt of approval from Heritage NSW.

Human Remains Procedure

In the unlikely event that human remains are uncovered during the proposed works, the following steps must be followed:

1. All works within the vicinity of the find must immediately stop.
2. The site supervisor or other nominated manager must notify the NSW Police and Heritage NSW (Enviroline 131 555).
3. The find must be assessed by the NSW Police, which may include the assistance of a qualified forensic anthropologist.
4. Management recommendations are to be formulated by the NSW Police, Heritage NSW and site representatives.
5. Works are not to recommence until the find has been appropriately managed.

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APPENDIX A AHIMS BASIC AND EXTENSIVE RESULTS

URBIS