



Ivanhoe Estate, Macquarie Park NSW

Aboriginal and Historical Heritage Assessment

Prepared for
Citta Property Group Pty Ltd

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1 Introduction

1.1 Overview

Eco Logical Australia (ELA) has been engaged by Citta Property Group to conduct an Aboriginal and historical heritage assessment for the proposed Ivanhoe Estate Redevelopment at Macquarie Park NSW. The Ivanhoe precinct is owned by the NSW Land and Housing and classified as State Significant Development. This report supports a Concept Development Application for the Ivanhoe Estate Masterplan, a State Significant Development (SSD) submitted to the Department of Planning and Environment (DPE) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). It has been prepared for Aspire Consortium on behalf of NSW Land and Housing Corporation.

1.2 Background

In September 2015, the Ivanhoe Estate was rezoned by the Department of Planning and Environment as part of the Macquarie University Station (Herring Road) Priority Precinct, to transform the area into a vibrant centre that benefits from the available transport infrastructure and the precinct's proximity to jobs, retail and education opportunities within the Macquarie Park corridor.

The Ivanhoe Estate is currently owned by NSW Land and Housing Corporation and comprises 259 social housing dwellings. The redevelopment of the Ivanhoe Estate is part of the NSW Government Communities Plus program, which seeks to deliver new communities where social housing blends with private and affordable housing, with good access to transport, employment, improved community facilities and open space.

The Communities Plus program seeks to leverage the expertise and capacity of the private and non-government sectors. As part of this program, Aspire Consortium, comprising Frasers Property Australia, Citta Property Group and Mission Australia Housing, was selected as the successful proponent to develop the site in July 2017.

The Masterplan DA is the first step of the planned redevelopment of the Ivanhoe Estate and will create an integrated neighbourhood including social housing mixed with affordable and private housing, as well as seniors housing, a new school, child care centres, community facilities and retail development.

1.3 Study area description

The Ivanhoe Estate site is located in Macquarie Park near the corner of Epping Road and Herring Road within the Ryde Local Government Area (LGA). The site is approximately 8.2 hectares and currently accommodates 259 social housing dwellings, comprising a mix of townhouse and four storey apartment buildings set around a cul-de-sac street layout. An aerial photo of the site is provided at **Figure 1** below.

Immediately to the north of the site are a series of four storey residential apartment buildings. On the north-western boundary, the site fronts Herring Road and a lot which is currently occupied by four former student accommodation buildings and is likely to be subject to redevelopment. Epping Road runs along the south-western boundary of the site and Shrimptons Creek, an area of public open space, runs along the south-eastern boundary. Vehicle access to the site is via Herring Road.

The site is comprised of 17 individual lots and a part lot and are owned and managed by Land and Housing Corporation. The Masterplan site also incorporates adjoining land, being a portion of Shrimptons Creek and part of the commercial site at 2-4 Lyonpark Road. This land is included to facilitate a bridge crossing and road connection to Lyonpark Road.

1.4 Purpose of heritage constraints assessment

The purpose of this heritage assessment is to determine the likelihood of historical and Aboriginal objects or places being present within the study area. This report will assess the proposal against relevant planning and legislative context and identifies heritage risks, constraints and potential future works, if required.

Consultation with Aboriginal people was not undertaken as part of this assessment. Consultation with the Aboriginal community is not a formal requirement of the due diligence process. No Aboriginal objects or sites are recorded in the study area and none were located during the site inspection.

1.5 Proposal

The proposed Masterplan is a Concept DA (in accordance with Section 83B of the EP&A Act), which sets out the concept proposal for the development of the site. The concept contained in the Masterplan DA establishes the planning and development framework, which will form the basis for the detailed design of the future buildings and against which the future detailed DAs will be assessed.

The Masterplan DA seeks approval for the maximum building envelopes for future stages of development, the maximum gross floor area (GFA) and land uses for the development. Specifically:

- A mixed use development involving a maximum of GFA of 281,905m², including:
 - residential flat buildings comprising private, social and affordable housing
 - seniors housing comprising residential care facilities and self-contained dwellings
 - a new high school
 - child care centres
 - minor retail development
 - community uses
- maximum building heights and GFA for each development block;
- public domain landscape concept, including parks, streets and pedestrian connections;
- provision of the Ivanhoe Estate Design Guidelines to guide the detailed design of the future buildings; and;
- vehicular and intersection upgrades.

1.6 Authorship

This assessment has been prepared by Andrew Crisp, Archaeologist with ELA (BA [Hons Archaeology]). The report was reviewed by Karyn McLeod, Principal Heritage Consultant with ELA (BA [Hons Archaeology] University of Sydney, MA [Cultural Heritage] Deakin University).



Figure 1: Study area location (red polygon)

2 Statutory context and listings

2.1 Overview

The conservation and management of Aboriginal objects and places, historic heritage items, places and archaeological sites is subject to a range of statutory provisions in Commonwealth and State Government legislation. The relevant statutory and non-statutory heritage listings applicable to the study area are discussed below.

2.2 National Parks and Wildlife Act 1974

Aboriginal objects and places in NSW are afforded protection under the *National Parks and Wildlife Act 1974* (NSW) regardless if they are registered on the Aboriginal Heritage Information Management System (AHIMS) register or not. Strict penalties apply for harm to an Aboriginal object or place without a defence under the Act. Under Section 87 of the Act there are five defences to causing harm to an Aboriginal object:

- The harm was authorised under an AHIP.
- By exercising due diligence, and be able to demonstrate this.
- The actions complied with a code of practice as described in the National Parks and Wildlife Regulation 2009, for example, undertaking test excavation in accordance with the 'Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW'.
- It was a low-impact activity or omission under the regulation and where you don't know that an Aboriginal object is already present.
- Was an exemption under Section 87A, for example emergency fire-fighting act or bush fire hazard reduction work within the meaning of the *Rural Fires Act 1997*.

If an AHIP application is required, the OEH necessitate that it is supported by an Aboriginal Cultural Heritage Assessment Report (ACHAR) prepared in line with the '*Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2010)*', and development approval (DA) under Part 4 or Part 5 of the *Environmental Planning and Assessment Act 1979* (NSW).

2.3 Heritage Act 1977 (NSW)

The *Heritage Act 1977* (NSW) provides protection of the environmental heritage of the State which includes places, buildings, works, relics, movable objects or precincts that are of State or local heritage significance.

2.3.1 State Heritage Register

A key measure for the identification and conservation of State significant items is its listing on the State Heritage Register (SHR) as provided in Part 3A of the Heritage Act. Listing on the SHR means that any proposed works or alterations (unless exempted) to listed items must be approved by the Heritage Council or its delegates. Proposals to alter, damage, move or destroy places, buildings, works, relics; moveable objects or precincts protected by an Interim Heritage Order (IHO) or listed on the SHR require an approval under section 60 of the Act.

The Heritage Branch of OEH maintains a register of heritage places and items that are of State or local significance to NSW. The State Heritage Inventory (SHI) includes historical and Aboriginal places of state

significance as well as an amalgamated register of items listed on Local Environmental Plans (LEP)s and/or on a State Government Agency's Section 170 (s170) heritage register and may include items that have been identified as having state or local level significance, but which are statutorily protected at a local level.

2.3.2 The Relics Provision

Archaeological features and deposits are afforded statutory protection by the 'relics provision' whether they are listed items or not. Section 4(1) of the Heritage Act (as amended 2009) defines 'relic' as any deposit, artefact, object or material evidence that:

(a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and

(b) is of State or local heritage significance.

The 'relics provision' requires that no archaeological relics be disturbed or destroyed without prior consent from the Heritage Council of NSW. Therefore, no ground disturbance works may proceed in areas identified as having archaeological potential without first obtaining an Excavation Permit pursuant to Section 139 of the Heritage Act or Section 57 of the Heritage Act if within a place on the SHR, or an appropriate exemption.

2.4 Environmental Planning and Assessment Act 1979 (NSW)

The *Environmental Planning and Assessment Act 1979* (NSW) [EP&A Act] requires that consideration is given to environmental impacts as part of the land use planning process. In NSW, environmental impacts are interpreted as including cultural heritage impact. Proposed activities and development are considered under different parts of the EP&A Act, including:

- Major projects (State Significant Development under Part 4.1 and State Significant Infrastructure under Part 5.1), requiring the approval of the Minister for Planning.
- Minor or routine developments, requiring local council consent, are usually undertaken under Part 4. In limited circumstances, projects may require the Minister's consent.
- Part 5 activities which do not require development consent. These are often infrastructure projects approved by local councils or the State agency undertaking the project.

The EP&A Act also controls the making of environmental planning instruments (EPIs) such as Local Environmental Plans (LEPs) and State Environmental Planning Policies (SEPPs). LEPs are prepared by local councils to guide planning and management decisions in the Local Government Areas (LGAs) and establish the requirements for the use and development of land. LEPs commonly identify, and have provisions for, the protection of listed heritage items, conservation areas and archaeological sites. These are usually listed in Schedule 5 of the LEP.

The EP&A Act also provides for the preparation of Development Control Plans (DCPs), which can include more detailed guidelines for certain types of development. LEPs and DCPs commonly identify and have provisions for the protection of local heritage items and Heritage Conservation Areas (HCAs).

The Ivanhoe project is classified State significant development (SSD 8707) which requires development consent under Part 4.1 of the EP&A Act. This assessment will be appended to the EIS for the project.

2.5 Secretary's Environmental Assessment Requirements (SEARs)

This assessment has been prepared to address specific requirements provided in the SEARs issued on 25 September 2017 for Ivanhoe Estate Redevelopment (Concept Development Application), Macquarie Park (SSD 8707). The relevant SEARs are provided below:

- Provide an assessment that documents and addresses the impacts of the proposal on any heritage significance of the site and adjacent areas, including heritage items, places or relics significant to Aboriginal or European culture or history. The EIS must demonstrate attempts to avoid impact upon heritage values of the site, identify any conservation outcomes and outline proposed mitigation measures where impacts are unavoidable;
- Where Aboriginal cultural heritage values are identified, consultation with Aboriginal people must be undertaken and documented. The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the EIS; and
- Provide a Heritage Interpretation Plan that reflects and interprets the history of the site.

*Note - A heritage interpretation plan has not been provided at this stage as the site does not contain any listed heritage items and has limited heritage significance.

A heritage interpretation plan is a document that is a means of sharing Australian history and culture with other communities, new citizens and visitors. Interpretation enhances understanding and enjoyment of heritage items. Interpretation is a means of conveying 'what's important' about an item. Interpretation is an integral part of the experience of significant heritage items (Heritage Office 2005 - Heritage Interpretation Guidelines)

3 Database searches

3.1 Aboriginal heritage

3.1.1 Aboriginal Heritage Information Management System (AHIMS) register

An extensive search of the Aboriginal Heritage Information Management System (AHIMS) database was conducted on 26 October 2017 covering GDA, Zone: 56, Eastings: 323600 - 327600, Northings: 6258410 - 6262410 with zero buffer, covering the study area and its surrounding landscape (**Appendix A**). A total of nine (9) AHIMS sites were identified during this search (**Figure 2**). A breakdown by site feature is presented in Table 1 below.

Table 1: Types of Aboriginal sites recorded in the vicinity of the study area

Site feature	Number of sites	Percentage of all sites
Shelter with deposit	5	55.55%
Grinding groove	2	22.22%
Potential Archaeological Deposit (PAD) and isolated find	1	11.11%
Art (pigment or engraved)	1	11.11%
Total number of sites	9	100%

Zero AHIMS sites are located within the study area boundary. All registered AHIMS sites identified in this search are all located in close proximity to the Lane Cove River and Lane Cove National Park approximately 1.5 km to the north of the study area. The four nearest registered AHIMS sites are presented below in Table 2.

Table 2: AHIMS sites in proximity to the study area

Site number	Site name	Site feature	Distance
45-6-2585	Shrimpton's Creek 2; Macquarie Park (Lane Cove NP); RYDE 006	Shelter with deposit	1090 m
45-6-2584	Shrimptons Creek 1: Macquarie Park (Lane Cove NP); RYDE 005	Shelter with deposit	1175 m
45-6-2653	Eden Gardens PAD RYDE 007	Potential Archaeological Deposit (PAD) and isolated find	1515 m
45-6-1053	Lane Cove River	Art (pigment or engraved)	1675 m

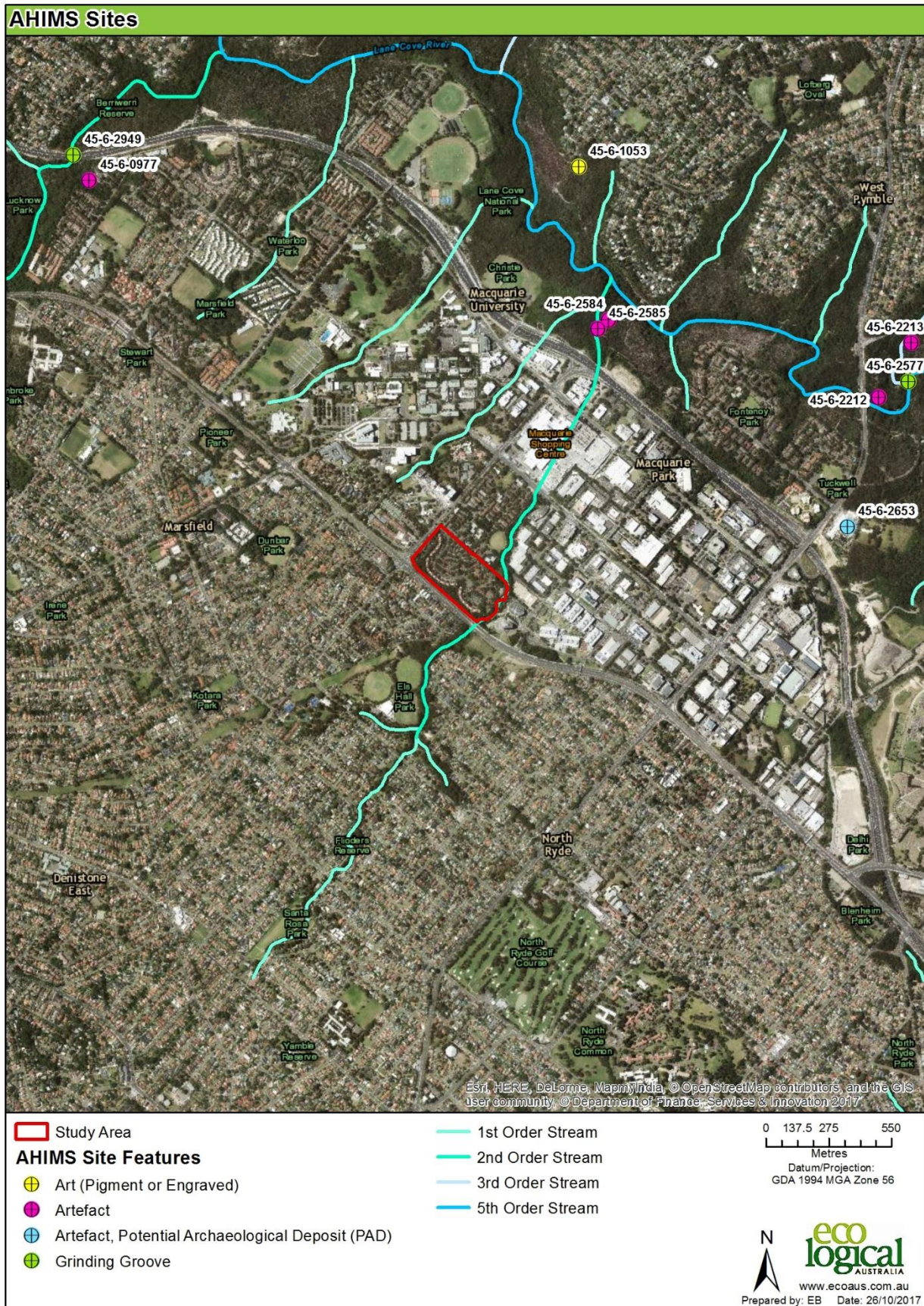


Figure 2: AHIMS sites in the vicinity of the study area

3.1 Historical heritage

3.1.1 Statutory and non-statutory heritage register searches

Searches were also made of the following heritage databases on 1 November 2017:

- World Heritage List (WHL);
- National Heritage List (NHL);
- Commonwealth Heritage List (CHL);
- NSW State Heritage Register (SHR);
- NSW State Heritage Inventory (SHI);
- Section 170 Registers;
- Ryde LEP (2014).

The results of the searches indicated that there are no items of Aboriginal or historical heritage significance located within or near the study area.

Table 3: Listed heritage items/sites within the vicinity of the study area

Item name/number	Location	Listing type	Distance
Macquarie University (ruins) (I10)	192 Balaclava Road	Local	170 m north
Curzon Hall (restaurant) (I1)	53 Agincourt Road	Local	925 m west
Eastwood Town Hall (I2)	74 Agincourt Road	Local	940 m west
Porter's Creek Culvert (RTA Bridge No. 581)	Riverside Drive	s.170 RMS	1780 m east

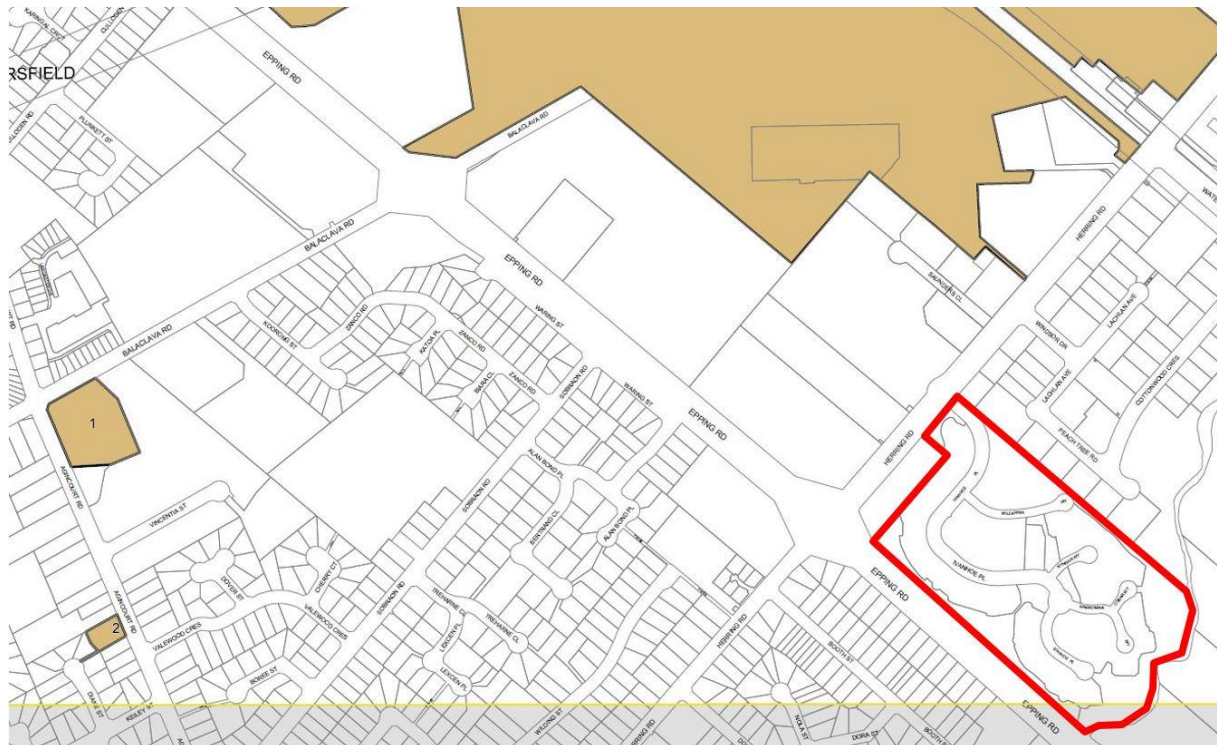


Figure 3: Ryde LEP 2014 heritage map showing the nearest locally list items to the study area (red)

4 Field survey

4.1 Overview

A site inspection was conducted on Thursday 2nd November 2017 by ELA Archaeologist Andrew Crisp. The NSW Land and Housing site comprises of one main access road (Ivanhoe Place) with four cul-de-sacs. The vast majority of the site is covered in buildings, roads, paving or paths and open areas are limited to scrubby native regrowth bounding Epping Road and Herring Road and a park adjacent to Shrimpton Creek. None of the trees appear old enough to have been scar bearing.

Most of the vegetation post-dates the construction of the buildings, and landscape modification such as cut and fill is evident throughout the site. Shrimpton Creek contained water and had very steep overgrown banks with level ground beyond the embankments. The creek flows north toward Lane Cove.

The site inspection did not identify any Aboriginal artefacts, PADs or sites and confirmed that the study area has low potential for Aboriginal archaeological sites. Similarly, the level of ground disturbance within the study area confirms that there is low potential for historical sites or relics to be present.

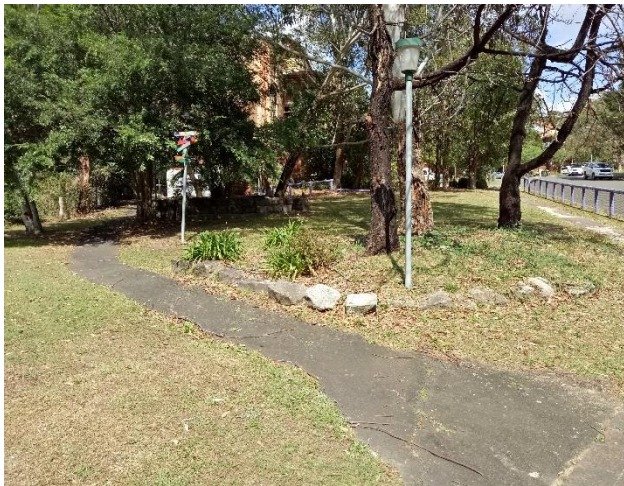


Figure 4 Ivanhoe Place



Figure 5 Epping Road and the site to the right



Figure 6 Regenerated bush and scrub along boundary with Epping Road

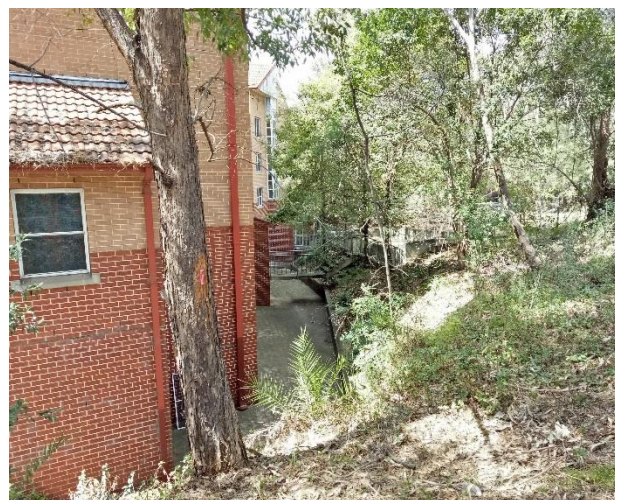


Figure 7 Buildings and scrub on Ivanhoe Place



Figure 8 Ivanhoe Place



Figure 9 Wilcannia Way



Figure 10 Nyngan Way



Figure 11 Park adjacent to Shrimpton Creek



Figure 12 Shrimpton Creek with stormwater outlet



Figure 13 Foot paths adjacent to Shrimpton Creek

5 Aboriginal assessment

5.1 Environmental context

5.1.1 Geology and soils

The area surrounding Shrimptons Creek is situated on Mittagong Formation, located between Ashfield Shale and Hawkesbury Sandstone. Outcropping sandstone is visible in the area. The study area is located partly within the Lucas Heights and Glenorie soil landscapes. The main soil type for this soil landscape group is a sandy loam or a sandy clay loam (Chapman and Murphy: 1989, pp.26-29).

5.1.2 Vegetation

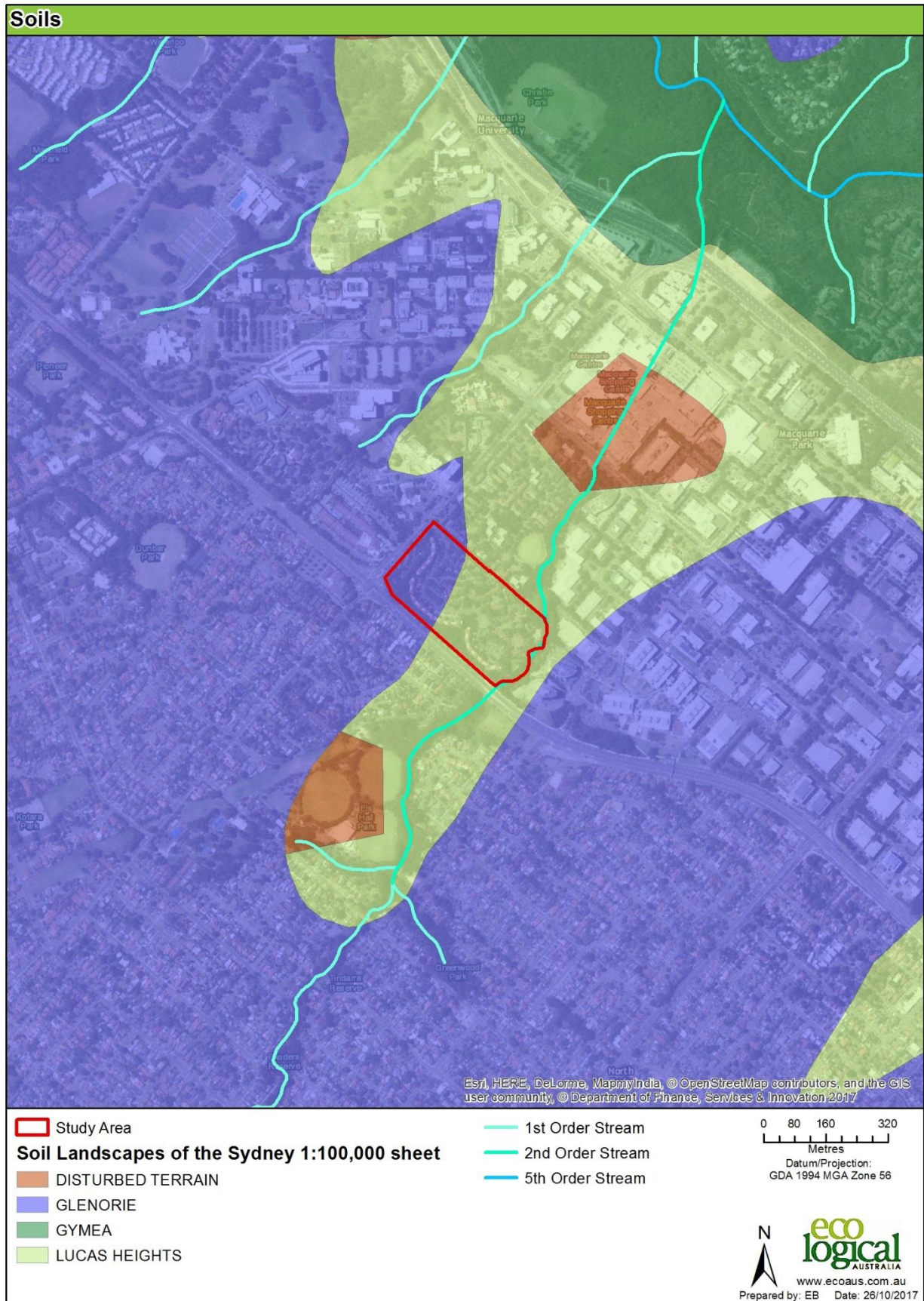
The majority of the vegetation along Shrimptons Creek and the adjacent parks have been highly disturbed with weed species more prominent than native vegetation. Historically the City of Ryde area was heavily timbered with Sydney Turpentine Ironbark Forest. Most of native vegetation in the study area and surrounding Shrimpton Creek has been planted and is weed infested but there is an area near Peach Tree Road to the north of the study area containing a remnant Sydney Blue Gum (*E. saligna*) and Rough-barked Apple (*Angophora fl oribunda*) (Shrimpton Creek Parkland Plan of Management). Wilga Park to the north east of the study area contains planted Brush Box (*Lophostemon conferta*). There is no remnant vegetation from the period of market gardens within the study area.

5.2 Predictive model

The nature of Aboriginal site distribution has been interpreted through lithic analysis of excavated sites in the Rouse Hill Development Area (White & McDonald 2010). The modelling provides a spatial and distributive analysis of Aboriginal objects in relation to freshwater resources and along varying landform units. The findings of this study highlighted the relationship between proximity to freshwater and landscape with Aboriginal occupation. The following predictive statements were asserted (White & McDonald 2010:36):

- archaeological evidence of past Aboriginal peoples will be limited and be representative of background scatter within proximity to first order creek lines;
- within the reaches of second order creek lines, archaeological evidence will again be representative of background scatter and will likely consist of one-off camp locations and / or isolated events;
- within the reaches of third order creeks, archaeological evidence will consist of repeated occupation by small groups of people. Archaeological expressions will likely consist of knapping floors and evidence of repeated use over time; and
- along major fourth order creek lines — which include Second Ponds Creek — archaeological expressions will consist of continued and repeated use by past Aboriginal peoples and may include stratified deposits.

This stream order model also identifies that the confluences of creek lines across the Cumberland Plain will likely have evidence of a foci of activity with stratified deposits (White & McDonald 2010: 33). It was found that artefacts were most likely within 50-100 metres of higher (fourth) order streams, within 50 metres of second order streams, and that artefact distribution around first order streams was not significantly affected by distance from the watercourse (White & McDonald 2010: 33).



Based on the material evidence and range of archaeological sites across the region, it is clear that Aboriginal people have been utilising the land and resources within western and northern Sydney region for thousands of years. The predictive model outlined in **Table 4** below has been developed for the study area based on the AHIMS search results, landscape modelling, and regional and local Aboriginal archaeological context outlined below.

Table 4: Predictive model

Site type	Description
Open Camp Sites / Stone Artefact Scatters / Isolated Finds	<p>Open 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.</p> <p>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.</p> <p>Artefact scatters and isolated artefacts are common site types often found in association with fresh water, and/or food resource gathering areas. The disturbance to the site indicates that previously unrecorded artefact scatters, or isolated artefacts are unlikely to occur in the study area.</p>
Potential Archaeological Deposit	<p>Potential Archaeological Deposits (or 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 waterways, particularly terraces and flats near 3rd order streams and above, ridge lines and ridge tops and sand dune systems.</p> <p>The previously recorded AHIMS sites are associated with the Lane Cove River over 1km to the north. Historically the land was completely cleared and used for market gardens prior to the development of medium density housing. The creek and associated low potential landforms within the study area, indicates that this site type is unlikely to occur in the study area.</p>
Scarred Tree	<p>Tree bark was utilised 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 toe-holds so as to climb the tree and catch possums or birds), or to mark locations such as tribal territories. These sites most often occur in areas with mature, remnant native vegetation. The locations of scarred trees often reflect historical clearance of vegetation rather than the actual pattern of scarred trees. Carved trees generally marked areas for ceremonial purposes, or the locations of graves.</p>

Site type	Description
	There are no modified trees recorded in or near the study area. All vegetation consists of regrowth or plantings.

5.3 Historical background

Macquarie Park is a suburb in northern Sydney, New South Wales. Macquarie Park is located 15 kilometres north-west of the Sydney central business district in the local government area of the City of Ryde and is situated on the southern side of the Lane Cove River. Macquarie Park was part of the suburb of North Ryde until it was gazetted as a suburb in its own right on 5 February 1999.

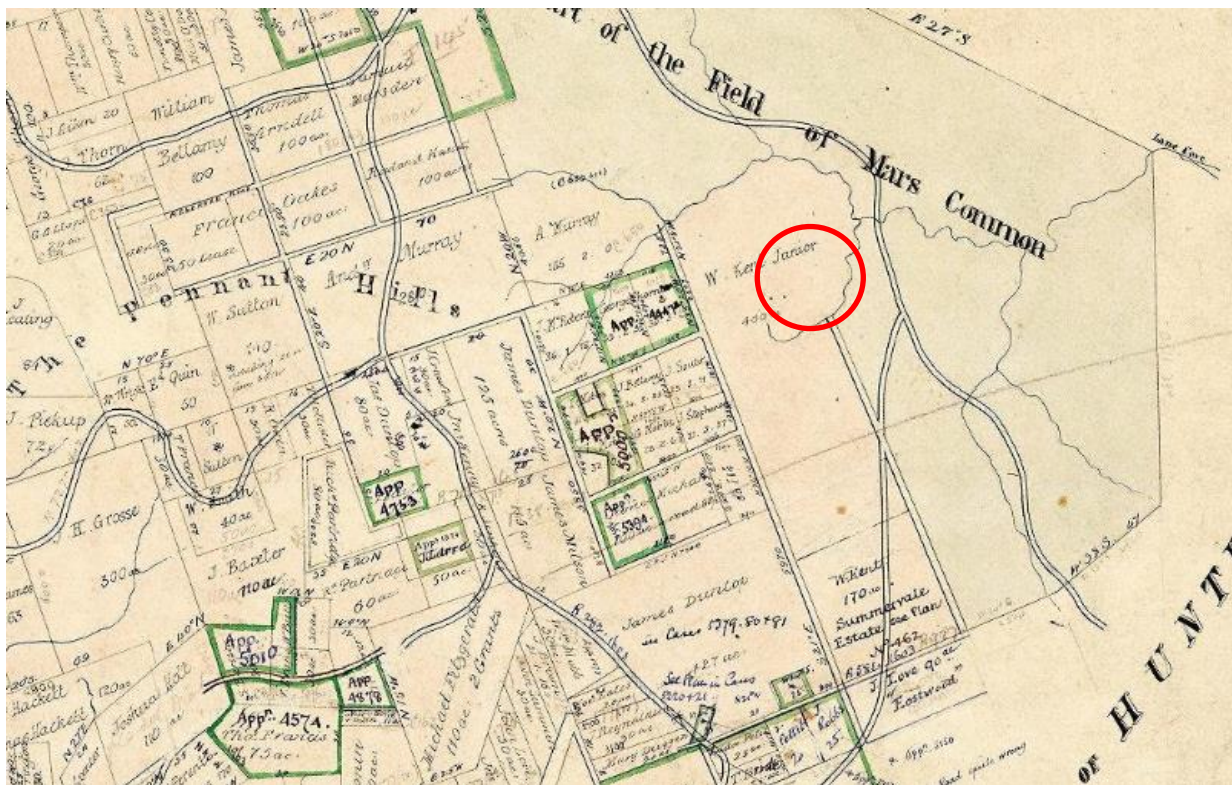


Figure 14 Parish Map Field of Mars and location of the study area on William Kent's grant (Land and Property Information)

On the 3rd January 1792, the first land in the Ryde area was granted to eight marines along the northern bank of the Parramatta River. The area was named by Governor Phillip the 'Field of Mars'. Further grants were issued to emancipists and new settlers in 1794 and 1795. Most of the grants were small, ranging between 30 to 100 acres (Dictionary of Sydney).

Farming and grazing on small lots proved difficult and in 1804 it was decided that a 'traditional English common' - a large area of public land for use by local inhabitants - would be set aside. The Field of Mars Common, an area of approximately 5,050 acres located north of the settlement of Ryde around the Parramatta River covered most of the Ryde municipality including the study area. The largest land grant in the district was William Kent's 400 acres adjacent to the Field of Mars Common, which included all the land between Lane Cove, Herring, Bridge and Waterloo Roads.

By 1874 the proposal to resume the common took place. The land was subdivided and the population slowly increased. At this time, the village of Ryde itself comprised only a modest scattering of houses in a few streets around the church, surrounded by farms, orchards and some large estates. North Ryde was,

until well into the nineteenth century, part of the Field of Mars Common. The district's first school opened in Cox's Road in 1878, while the post office opened in 1885. The growing population highlighted the growing need for a direct road link to the city and the need for bridges to be built at Iron Cove and across the Parramatta River. The money from the sale of the common was used to finance the building of the Iron Cove and Gladesville bridges. The building of the bridges commenced in 1878, but the actual sale of the common lands did not commence until 1885 and continued until 1900. The subdivision and sale of the common caused dramatic change as streets were laid out and allotments of one to four acres (.4 to 1.6 hectares) were offered for sale. (Dictionary of Biography)

The area was once filled with market gardens, poultry farms and vast tracts of bushland, with many waterfalls along the creek lines. In the 1940s the southern part of the study area bounding Epping Road was partially cleared, uninhabited scrub while the northern part of the was used as an orchard or market garden (Figure 16). Until the 1960s, much of the land adjacent to Shrimpton Creek was market gardens and remained undeveloped due to flooding. Prior to the construction of the present buildings there was only one house fronting Herring Road in the northern part of the study area. Buildings on the site were constructed between the 1980s and 1990 and owned by the Department of Housing. The original house has been replaced by a four storey brick apartment building.



Figure 15 The study area in 1943 (Land and Property Information)

6 Aboriginal due diligence

Due diligence is defined in the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (hereafter referred to as 'CoP') (DECCW 2010 as "taking reasonable and practical steps to determine whether a person's actions will harm an Aboriginal object and, if so, what measures can be taken to avoid that harm". The following section relates to the generic due diligence process as applied to the study area.

6.1 Step 1 – Will the activity disturb the ground surface or any culturally modified trees?

Yes. The proposed works will disturb the ground surface. All of the trees within the already developed area will be removed, however the proposal will retain some of the EEC along Epping Road and some of the trees towards Shrimptons Creek.

There are no recorded culturally modified trees within the study area. No trees are of size or age to demonstrate cultural scarring.

6.2 Step 2 – Are there any a) relevant confirmed site records on AHIMS, other sources of information, or b) landscape features that are likely to indicate presence of Aboriginal objects?

Consequently, if your proposed activity is:

- Within 200 m of waters, 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;
- and is on land that is not disturbed land then you must go to step 3.

"Land is disturbed if it has been the subject of a human activity that has changed the land's surface, being changes that remain clear and observable.

Examples include ploughing, construction of rural infrastructure (such as dams and fences), construction of roads, trails and tracks (including fire trails and tracks and walking tracks), clearing vegetation, construction of buildings and the erection of other structures, construction or installation of utilities and other similar services (such as above or below ground electrical infrastructure, water or sewerage pipelines, stormwater drainage and other similar infrastructure) and construction of earthworks."(DECCW 2010).

The land is within 200 m of water but none of the other sensitive landform features are present. According to the CoP the above description of disturbed land describes the current state of the study area. The property has been completely cleared of native vegetation in the past and the range, size and age of trees present demonstrates that the land within the study area boundary has undergone previous forms of disturbance. The site is almost entirely covered with buildings, roads, pathways, and above and below ground utilities.

A search of the AHIMS register identified AHIMS sites were over 1 km of the study area.

6.3 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?

There are no registered AHIMS sites located within the study area. The study area is assessed as having low sensitivity for further archaeological material to be located the study area.

6.4 Step 4 – Does the desktop and visual assessment confirm that there are Aboriginal objects or that they are likely?

A site inspection was conducted on Thursday 2nd October 2017 by ELA Archaeologist, Andrew Crisp. The site inspection was carried out on foot and transacted the entire area for visual assessment. The site inspection did not identify any Aboriginal artefacts, PADs or sites and confirmed that the study area is highly developed and has low potential for any intact sub-surface archaeological sites.

Following an analysis of the desktop assessment and observations made during the archaeological field survey the entire study area has been identified as having low to nil archaeological potential. There is no requirement for further archaeological assessment within the study area.

7 Conclusions and recommendations

Conclusions

The purpose of the assessment is to address specific requirements provided in the SEARs issued on 25 September 2017 for Ivanhoe Estate Redevelopment (Concept Development Application), Macquarie Park (SSD 8707). The relevant SEARs (Section 14 – Heritage and Archaeology) are reproduced below:

- Provide an assessment that documents and addresses the impacts of the proposal on any heritage significance of the site and adjacent areas, including heritage items, places or relics significant to Aboriginal or European culture or history. The EIS must demonstrate attempts to avoid impact upon heritage values of the site, identify any conservation outcomes and outline proposed mitigation measures where impacts are unavoidable;
- Where Aboriginal cultural heritage values are identified, consultation with Aboriginal people must be undertaken and documented. The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the EIS; and
- Provide a Heritage Interpretation Plan that reflects and interprets the history of the site.

ELA has undertaken an extensive search of the Aboriginal Heritage Information Management System (AHIMS) database maintained by the Office of Environment & Heritage (OEH) and a review of available background reports. The AHIMS data has been mapped in relation to the proposed development area showing that no registered AHIMS sites will be impacted by the proposed works.

A site inspection was undertaken in accordance with the CoP and identified no Aboriginal artefacts, PADs or sites. This assessment confirms that the study area is highly developed and has no potential for any intact sub-surface archaeological sites. As a result of the extremely low archaeological potential within the study area neither Aboriginal community consultation nor a Heritage Interpretation Plan is considered warranted.

A heritage Interpretation plan has not been provided because the site does not contain any listed heritage items and has limited heritage significance.

Recommendations

Based on the findings of this heritage assessment and the requirement of the NP&W Act and the Heritage Act, the following is recommended;

Recommendation 1 – No Further Archaeological Assessment Required

- No further historical archaeological assessment or Aboriginal heritage assessment should be required as part of the development approval process. The proposed development will not impact on any identified historical or Aboriginal objects or heritage values. The land is assessed as having no potential for the survival of archaeological objects and no potential to impact on heritage items in the vicinity.

Recommendation 2 - General measures

- Aboriginal objects are protected under the NPW Act regardless if they are registered on AHIMS or not. If suspected Aboriginal objects, such as stone artefacts are located during future works, works must cease in the affected area and an archaeologist called in to assess the finds. If the finds are found to be Aboriginal objects, the OEH must be notified under section 89A of the NPW Act. Appropriate management and avoidance or approval under a section 90 AHIP should then be sought if Aboriginal objects are to be moved or harmed.
- Historical archaeological sites are protected under the Heritage Act regardless if they are listed items or not. In the unlikely case that unexpected historical archaeological objects or deposits are uncovered, works should cease and a qualified Archaeologist contacted to assess the significance of the material and recommend whether further investigation is required.
- In the extremely unlikely event that human remains are found, works should immediately cease and the NSW Police should be contacted. If the remains are suspected to be Aboriginal, the OEH may also be contacted at this time to assist in determining appropriate management.

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