Preliminary Biodiversity Assessment in relation to the Carslaw Extension Project, University of Sydney

Prepared by Australian Museum Consulting
for The University of Sydney

Final Report

October 2015

AM Consulting Project Number: 1500756

Australian Museum Consulting
6 College Street, Sydney NSW 2010 *t 02 9320 6311 f 02 9320 6428*
australianmuseum.net.au/AMC *AMC@austmus.gov.au*

Document Information

Citation:	Australian Museum Consulting 2015, *Preliminary Biodiversity Assessment in relation to the Carslaw Extension Project, University of Sydney*. Consultancy report to the University of Sydney.
Versions:	Version 1: Draft Report issued 21 August 2015 Version 2: Final Report issued 20 October 2015
Recipient:	Ms Jenny Watt, University of Sydney
Authors:	Glenn Muir, Belinda Pellow, Ulrike Kloecker, Mark Semeniuk
Approved by:	Glenn Muir

Contents

Figures

1 Introduction

1.1 Background

The University of Sydney wishes to construct a multi-storey building referred to as the "F08 Carslaw Extension LEES1" (the Project) on its Camperdown campus adjacent to the main entry off City Road. The project is a State Significant Development and requires an Environmental Impact Statement to be prepared. The Secretary's Environmental Assessment Requirements (SEARS) have been received and include a requirement 8, "Biodiversity", which reads:

> *"Biodiversity impacts related to the proposed development are to be assessed and documented in accordance with the Framework for Biodiversity Assessment (FBA) (OEH 2014), unless otherwise agreed by OEH, by a person accredited in accordance with s.142B(1)(c) of the Threatened Species Conservation Act 1995.*
>
> *Note: In accordance with s.5.1.1.3 of the FBA, areas that are not native vegetation do not require further assessment in the FBA except where it is assessed as habitat for threatened species according to Section 6.4."*

The Project is to be located in an area of the University that is currently a small park/garden area with pathways and a delivery driveway to the existing building. All of the vegetation that exists has been planted.

Appendix 7 of the FBA indicates that there are three stages to the FBA:

Stage 1 – Biodiversity assessment
Stage 2 – Impact assessment
Stage 3 – Biodiversity Offset Strategy.

Appendix 7 of the FBA also states that:

> *"If not prepared prior to application, it is recommended that the outcomes of Stage 1 are discussed with OEH prior to commencement of Stage 2, during the preparation of the EIS."*

1.2 Objectives and scope

The objective of this study is to provide preliminary information regarding potential impacts on biodiversity in relation to the Project that can be used by the University as a basis for discussions with OEH. The scope of this study is to provide information in relation to relevant matters listed by the FBA as information required for Stage 1 of a Biodiversity Assessment Report (BAR). The scope of this study does not include the preparation of Stages 2 or 3 of a BAR. Information requirements for Stage 1 are listed in Table 20 of the FBA and can be summarised as follows:

- identification and mapping of development site;
- identification of landscape features in the area in which the development site is located;
- calculation of a landscape value score,
- description of vegetation zones in the development area; and
- identification of ecosystem credit species and species credit species on the development site.

2 Methodology

2.1 Study area

The Project is located in the City of Sydney local government area on the Campus of the University of Sydney (Figure 2.1). It is situated between City Road, the Carslaw Building, Eastern Avenue and Victoria Park (Figure 2.2).

The site currently contains a delivery driveway adjoining the Carslaw Building, a raised walkway, an at-grade pathway, a lawn area, garden beds and planted trees and shrubs. The surrounding area mainly contains University buildings, residences, roads and other infrastructure, sports ovals, parks and gardens. The proposed development will result in the removal of a number of trees. The development footprint is shown in Figures 2.2 and 2.3.

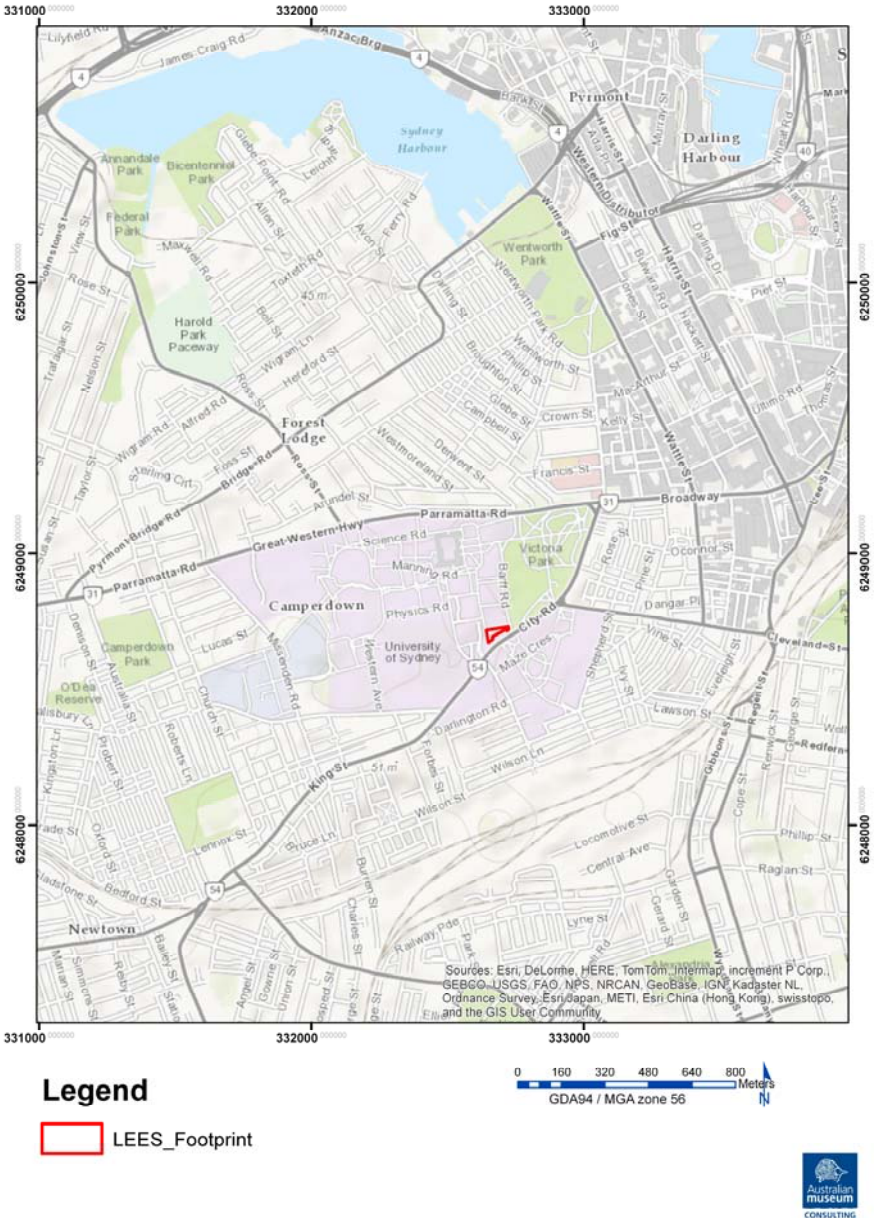

Figure 2.1 Project location

Figure 2.2 Project footprint

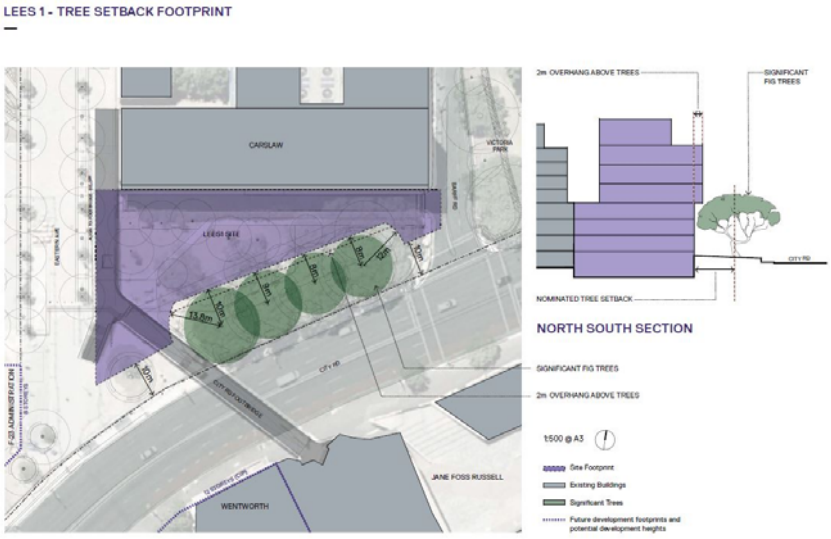

Figure 2.3 Development footprint (from Tree IQ 2015)

2.2 Approach

The approach to this study involved:

- Background research;
- Mapping of the site and landscape features;
- A site inspection and collection of data and photographs;
- Consideration of the potential for threatened species known from the vicinity to occur within the study area and/or be impacted by the proposed development;
- Use of the BioBanking Credit Calculator to generate a landscape score.

2.3 Background research

Features of the study area and the surrounding landscape were examined through use of satellite imagery, maps and relevant reports. Information sources included:

- Preliminary Ecological Assessment for the University of Sydney Campus Improvement Program (AM Consulting 2013);
- Results of field surveys undertaken within the University and in the adjacent Victoria Park by AM Consulting in 2010-2011;
- *The Native Vegetation of the Sydney Metropolitan Area*. Version 2.0 (OEH 2013);
- The Arboricultural Impact Assessment Report for the Project (Tree IQ 2015); and
- OEH spatial data including IBRA bioregions and subregions, NSW landscape regions (Mitchell landscapes) and rivers and wetlands.

2.4 Field assessment

Two ecologists (Belinda Pellow and Glenn Muir) surveyed the site on 5 August 2015. The survey included identification of the flora on and adjacent to the site and examination of fauna habitat features. Data on flora and site features (where present) were collected, such as vegetation structure, native vegetation cover, exotic vegetation cover, native and weed species present, number of hollow-bearing trees and length of logs. Opportunistic records of fauna utilising the site at the time of the survey were collected.

2.5 BioBanking Credit Calculator

Data were entered into the BioBanking Credit Calculator in order to determine the landscape value of the development site (refer to section 4 of the BioBanking Assessment Methodology 2014 [BBAM]).

2.6 Threatened species

Section 6.4 of the FBA was used to guide the identification of candidate species for further assessment.

3 Results

3.1 Landscape features

The site is situated within the Interim Biogeographic Regionalisation for Australia (IBRA) "Sydney Basin" bioregion and the "Cumberland – Sydney Metro" subregion and the Mitchell Landscape "Ashfield Plains" (Figure 3.1).

There are no rivers, streams or estuaries within the development site (Figure 3.2). The nearest waterways to the development site are Orphan School Creek, located on the other side of Parramatta Road approximately 900 m to the north-west, and a stormwater channel approximately 1500 m to the west. Both these waterways drain to Johnstons Canal and ultimately to Rozelle Bay. The nearest "wetland" to the development site is Lake Northam, which is a large constructed pond that collects stormwater, approximately 400 m to the north-east in Victoria Park.

The majority of the vegetation within both the 100 ha and the 1000 ha assessment circles consists of planted street trees, gardens and parks classified by OEH (2013) as "urban/exotic". Native vegetation mapped by OEH (2013) within the 1,000 ha circle comprises a few small areas of Estuarine Mangrove Forest, Estuarine Saltmarsh and Seagrass Meadows (Figure 3.2) that in total make up less than 5 ha in area.

3.2 Native vegetation

No remnant native vegetation was located within the development site. The vegetation that does occur comprises a lawn area and planted trees, shrubs and garden beds. A stand of large, mature *Ficus macrophylla* (Morton Bay Fig), a species native to the region, has been planted. One specimen of *Syzygium luehmannii* is also located in this area. Other planted non-indigenous species include *Lophostemon confertus* (Brush Box) and *Corymbia citriodora* (Lemon Scented Gum), natives of northern NSW. Planted exotics include *Celtis sinensis* (Chinese Hackberry) and a number of Oleander shrubs. The garden beds consist of the exotic species *Hedera helix* (English Ivy), Clivia and Philodendron.

The following trees within the development footprint have been identified for removal in the Arborists report, one specimen of *Ficus macrophylla*, one specimen of *Syzygium luehmannii,* three *Lophostemon confertus* (Brush Box), three *Corymbia citriodora* (Lemon Scented Gum) and one *Celtis sinensis* (Chinese Hackberry) (Tree IQ 2015).

Most of the mature *Ficus macrophylla* are located between the development site and City Road and will be retained.

3.3 Other site features

Fauna habitat within the development site is minimal and mainly comprises a few large trees (Brush Box and one Chinese Hackberry), an exotic hedge about 1 m high and the ivy-covered garden bed that would likely provide habitat for rats and small lizards. Apart from the hedge there is no mid-storey vegetation and there are no logs. Most of the trees showed evidence of branch lopping. Two of the trees on the development site contained hollows (one Brush Box and the Chinese Hackberry). The only native fauna opportunistically observed during the survey were Noisy Miners, which were abundant.

The large, mature fig trees adjacent to the development site contained many hollows and would likely provide both food and shelter resources for a range of native and exotic animals.

View of LEES 1 site looking east

Garden bed of *Hedera helix* (English Ivy), Clivia and Philodendron.

Figure 3.1IBRA bioregions and NSW landscape regions of the Project site

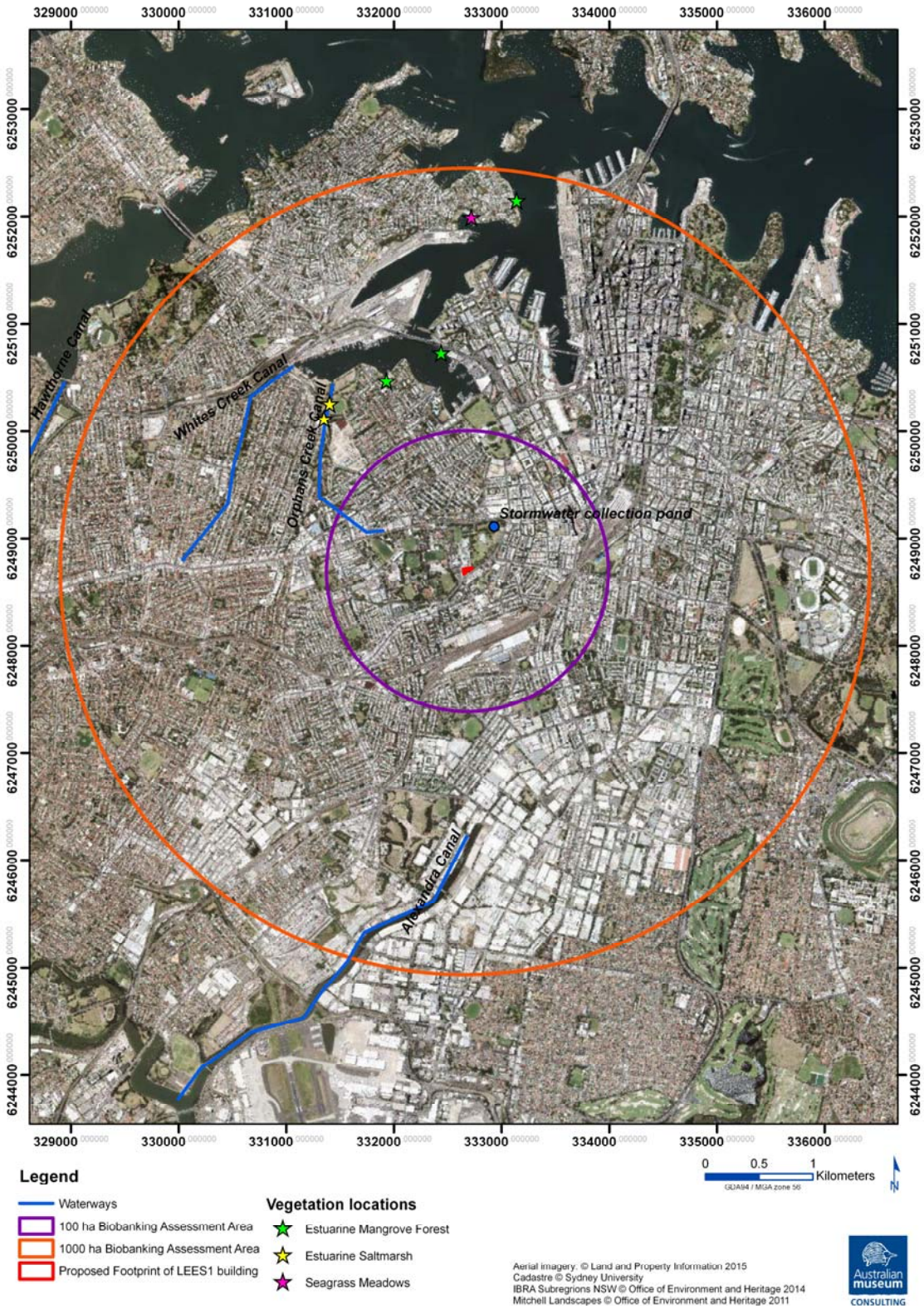

Figure 3.2 Landscape features

Note: areas of vegetation are marked with a star as the total area of each is too small to be seen.

3.4 Landscape value

The landscape value generated by the BioBanking Credit Calculator in relation to the development site was 0.00.

3.5 Threatened species

One candidate species for further assessment was identified; the Grey-headed Flying-fox (*Pteropus poliocephalus*). This species was assumed to be likely to use the habitat on the development site on the basis that:

- It is known to occur in the vicinity of the development site;
- It is known to forage on two species of tree that occur within or adjacent to the development site (Brush Box *Lophostemon confertus* and Moreton Bay Fig *Ficus macrophylla*).

Based on the occurrence of previous records within 5 km of the development site and the presence of tree hollows, there is also some potential for the ecosystem-credit microbat species Eastern Freetail-bat *Mormopterus norfolkensis* to occur.

4 Discussion

There are a number of issues associated with the use of the BBAM in relation to this Project. In particular, the site does not contain a native vegetation community, it is less than 0.25 ha in size and the vegetation that is present occupies a very small area and is highly simplified. The BioBanking Assessment Methodology and Credit Calculator Operational Manual (BAM) indicates that the minimum size of a vegetation zone should be 0.25 ha and that:

> *"If the total area of native vegetation on the development site is an area of less than 0.25 ha, then the assessor should consider whether the methodology is a suitable option for assessing the biodiversity values of the site"* and

> *"If the development site contains only scattered paddock trees and the groundcover is not native (indigenous) vegetation or the groundcover is in low condition, the assessor should consider whether the biobanking methodology is a suitable option to assess the biodiversity values of the site, especially where the area is small. Assessment for biobanking is not recommended in these circumstances".*

For the purposes of addressing the requirements of item 8 of the SEARS, this study has utilised the BioBanking Credit Calculator to determine the landscape value of the site, which was zero. However, further use of the calculator in relation to this Project is not recommended. If there is a requirement to prepare an impact assessment and/or an offset strategy for this Project, then it is recommended that a more suitable assessment mechanism be utilised; for example, the Transport for NSW Offset Calculator.

5 Conclusion

The development site for this Project is small, highly disturbed and contains no native plant communities. The vegetation that is present consists of planted trees and shrubs, most of which are not native to the area, a low hedge, an ivy-covered garden bed and a lawn. The surrounding area is highly urbanised and there is very little vegetation that has not been mapped by OEH as "Urban Exotic/Native". The BioBanking Credit Calculator generated a landscape value of zero for the

development site. Due to the size and nature of the site it is not recommended that the Credit Calculator be applied any further.

The development site is likely to be of limited value for most native fauna. However, the site does contain some trees that are likely to provide a foraging resource for the Grey-headed Flying-fox and there were two hollow-bearing trees located within the development area.

If there is a requirement to prepare an impact assessment and/or an offset strategy for this Project, then it is recommended that a more suitable assessment mechanism than the BBAM be utilised; for example, the Transport for NSW tree offset calculator.

6 Bibliography

AM Consulting (2013) *Preliminary Ecological Assessment for the University of Sydney Campus Improvement Program*. Consultancy report prepared for the University of Sydney by Australian Museum Consulting.

DotE (2015) EPBC *Protected Matters Search Tool*. Commonwealth Department of the, Environment, website: http://www.environment.gov.au/epbc/pmst/index.html. [Accessed August 2015].

DotE (2015) *Species Profile and Threats Database*. Commonwealth Department of the, Environment, website: http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl [Accessed August 2015].

OEH (2013) *The Native Vegetation of the Sydney Metropolitan Area*. Version 2.0. Office of Environment and Heritage, Department of Premier and Cabinet, Sydney.

OEH (2014a) *Framework for Biodiversity Assessment*. NSW Biodiversity Offsets Policy for Major Projects. NSW Office of Environment and Heritage, Sydney.

OEH (2014b) *BioBanking Assessment Methodology 2014*. Office of Environment and Heritage for the NSW Government, Sydney.

OEH (2015a). *Atlas of NSW Wildlife Search*. NSW Office of Environment and Heritage. [Accessed August 2015].

Tree IQ (2015) *Arboricultural Impact Assessment Report Tree Protection Significance, F23 Building Administration Building, University of Sydney*. Prepared for the University of Sydney.