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15SYD-4190

26 April 2016

Dear Ryan,

### **FASS Building Project – Response to SEARs SSD 7081, Biodiversity Assessment Report**

Eco Logical Australia (ELA) has been requested by Lendlease to provide a letter report addressing the ecological assessment for the FASS Building Development Application at the University of Sydney.

The University of Sydney is currently planning the construction of a new four-storey building at the Camperdown campus known as the FASS Building. This building is to be located between the RD Watt Building and Parramatta Road, west of the Heydon Laurence Building.

This project is classified as State Significant Development and requires the preparation of an Environmental Impact Assessment. The Secretary's Environmental Assessment Requirements (SEARs) for addressing biodiversity impacts under the Framework for Biodiversity Assessment (FBA) are addressed as follows in this document.

### **Objectives and Scope**

The objective of this investigation is to provide up-to-date preliminary information on biodiversity that may be impacted by the footprint for the FASS building. The scope is to provide advice based on the footprint provided to ELA, a site inspection and address the SEARs relevant to the project (SSD 7081 condition 8, Biodiversity). ELA has not provided detailed information on relevant policy and legislative frameworks, detailed descriptions of landscape features and biodiversity attributes, and advice and recommendations regarding further assessment as these are beyond the scope for this project.

The requirements of the SEARs include that the assessor must be accredited in accordance with Section 142B(1)c of the *Threatened Species Conservation Act* 1995. The assessment was undertaken by Greg Steenbeeke, accreditation number 110 in the Biobanking Scheme, as identified in that Section.

### **Literature Review**

The study area was reviewed through use of publicly detailed aerial imagery (Google imagery on both Google Maps and Street View) before the site visit to identify areas of interest and show structures, planted beds and any likely habitat features, as well as gather an overview of the immediate vicinity.

Nomination of potential threatened species and communities was determined using a selection of these entities occurring in the Sydney Metro Major Catchment Area and Pittwater (Part B) subregion, which includes the study

area, using the species selection tool on the NSW Environment Threatened Species website ([www.environment.nsw.gov.au/threatenedspecies](http://www.environment.nsw.gov.au/threatenedspecies)) executed on the 18<sup>th</sup> of April 2016.

139 entities were identified in that survey as occurring in the subregion (Appendix 1). Of these, only 9 entities were considered to be present or likely to use the site. Reasons for exclusion are provided within that section of this document.

### **Site Inspection and Results**

A survey was undertaken by Senior Ecologist Greg Steenbeeke on 21 April 2016. The survey included a brief but thorough inspection of the site to determine species of flora and fauna present, habitat features and identification of any habitat elements that may be used by threatened entities.

The site visit confirmed no remnant native vegetation will be removed by this proposal; all vegetation within the footprint is horticultural plantings or naturalised plants of both native and exotic species. A complete list of vascular plant species identified on the site is included in Appendix 2.

The site visit identified that structures within the development footprint that will require removal lack habitat for threatened species that could be present on the site, or which are constructed in such a manner that any likely or potential threatened species are excluded. This is the basis under which the opportunities for residence are excluded. Photographs of these structures, internal and external, are provided in Plate 1.

Brush Box (*Lophostemon confertus*) is a heavily-flowering native tree which may be used as a foraging source for nectar. It is planted in the site and commonly planted in the immediate vicinity. Loss of the few individuals in the footprint would be deemed to have a negligible effect on foraging by identified threatened species.

Two figs (*Ficus rubiginosa*) occur on the northern side of the development footprint. Fig trees are occasionally used as foraging habitat for bats such as the Grey-headed Flying Fox. The impact would be minimal as the species and other members of the genus are common and widely dispersed in the immediate region and impact on the foraging value for bats would be negligible.

The northern boundary planting, and the row of shrubs along the drive beside the Heydon Laurence Building, consist of native species of *Syzygium* or *Acmena*, planted for amenity purposes. While these produce fruit and flowers, and could therefore provide foraging habitat for fruit and nectar feeding animals, and those raptor birds which might prey upon them, it was considered that the loss of these individuals would constitute a negligible effect, given the widespread presence of similar amenity plantings of these species in the local area.

None of the species identified during the site visit were of a species of conservation concern (none are threatened) and therefore there is only the foraging use of some of the plants to be taken into account.

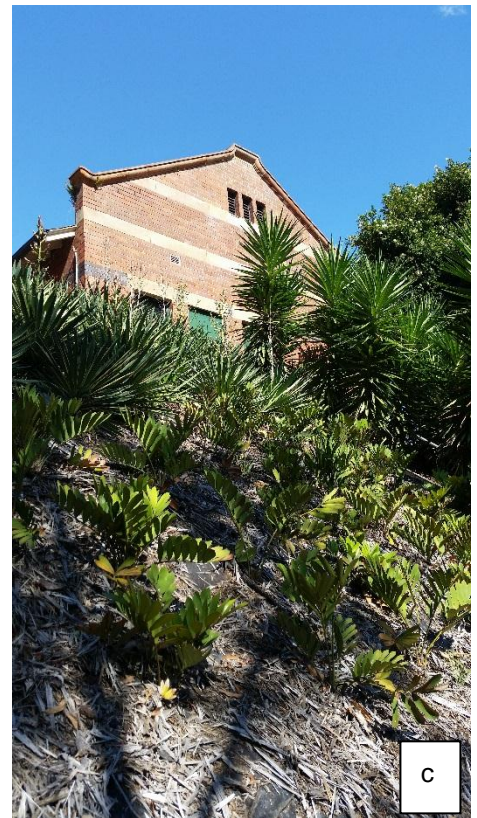




**Plate 1: Buildings and structures that were assessed as habitat for threatened species in the development area.**

- a) Facilities alcove on northern side of RD Watt building.
- b) Access stairs and entrance to electrical shed near Parramatta Road
- c) Carpark and view to northern electrical sheds

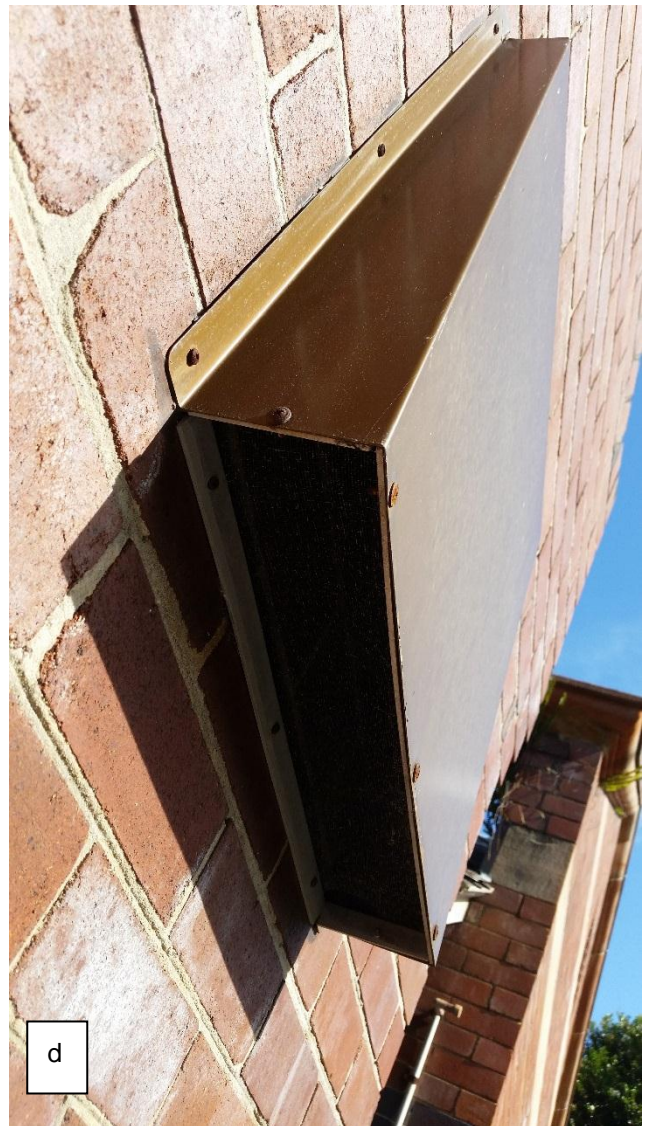




**Plate 2: Planted hedges, beds and canopy trees in the development area**

- a) View into eastern lane from Science Road, showing planted beds, with non-local and exotic canopy
- b) View along the eastern lane showing amenity hedge beside demountable buildings
- c) View from Parramatta Road towards the electrical shed showing planted beds of exotics and eastern end of part of the lilly pilly hedge.
- d) View eastwards along the front of the Electrical Sheds towards the eastern Hedge on Parramatta Road.





**Plate 3. Views within sheds showing absence of habitat and restriction of access points**

- a) Amenities area behind RD Watt Building
- b) Interior of larger electrical shed
- c) Lean-to near carpark
- d) Vent on northern side of small electrical shed (gauzed)

## **Conclusion**

ELA is of the opinion that the impact of the development on biodiversity will be minimal. Where vegetation occurs, the site is a modified urban landscape consisting of planted trees, horticultural hedges, cultivated groundcovers and small areas of open dirt being colonised by native and exotic pioneer species.

The use of the Biobanking Credit Calculator would not need to be applied to this project on the basis that the vegetation present consists of non-natural vegetation, the diversity of native species is low and the potential impact on threatened species has been minimised through the amelioration being applied to the site (additional plantings at conclusion, retention of a planted bed along the Parramatta Road boundary). Any foraging habitat currently in place will be retained although in a modified form.

Greg Steenbeeke  
**Senior Ecologist**

## Appendices

### Appendix 1. Nominated threatened species occurring in the subregion, with notes regarding likelihood.

Threatened Species	Record within 10km	Note
<b>Animal&gt;Amphibians</b>		
<i>Crinia tinnula</i> , Wallum Froglet		Will not occur – no habitat
<i>Heleioporus australiacus</i> , Giant Burrowing Frog		Will not occur – no habitat
<i>Litoria aurea</i> , Green and Golden Bell Frog	Yes	Will not occur – no suitable habitat
<i>Litoria brevipalmata</i> , Green-thighed Frog		Will not occur – no habitat
<i>Pseudophryne australis</i> , Red-crowned Toadlet	Yes	Will not occur – no habitat
<b>Animal&gt;Bats</b>		
<i>Chalinolobus dwyeri</i> , Large-eared Pied Bat		Check structures for roosts, but insufficient nearby habitat
<i>Miniopterus australis</i> , Little Bentwing-bat	Yes	Check structures for roosts, but insufficient nearby habitat
<i>Miniopterus schreibersii oceanensis</i> , Eastern Bentwing-bat	Yes	Check structures for roosts, but insufficient nearby habitat
<i>Mormopterus norfolkensis</i> , Eastern Freetail-bat	Yes	Check for hollow trees and structures for roosts, but insufficient nearby habitat
<i>Myotis macropus</i> , Southern Myotis	Yes	Check structures for roosts, but insufficient nearby habitat
<i>Pteropus poliocephalus</i> , Grey-headed Flying-fox	Yes	Forage habitat may be present
<i>Scoteanax rueppellii</i> , Greater Broad-nosed Bat		Check structures for roosts, but insufficient nearby habitat
<b>Animal&gt;Birds</b>		
<i>Anseranas semipalmata</i> , Magpie Goose	Yes	Will not occur – no habitat
<i>Anthochaera phrygia</i> , Regent Honeyeater	Yes	Forage habitat may be present
<i>Botaurus poiciloptilus</i> , Australasian Bittern	Yes	Will not occur – no habitat
<i>Burhinus grallarius</i> , Bush Stone-curlew	Yes	Will not occur – no habitat
<i>Calidris alba</i> , Sanderling		Will not occur – no habitat
<i>Calidris ferruginea</i> , Curlew Sandpiper	Yes	Will not occur – no habitat
<i>Calidris tenuirostris</i> , Great Knot		Will not occur – no habitat
<i>Callocephalon fimbriatum</i> – endangered population, Gang-gang Cockatoo population in the Hornsby and Ku-ring-gai Local Government Areas		Site outside nominated area
<i>Callocephalon fimbriatum</i> , Gang-gang Cockatoo		Will not occur – no habitat
<i>Calyptorhynchus lathamii</i> , Glossy Black-Cockatoo	Yes	Will not occur – no habitat
<i>Charadrius leschenaultii</i> , Greater Sand-plover		Will not occur – no habitat
<i>Charadrius mongolus</i> , Lesser Sand-plover		Will not occur – no habitat
<i>Circus assimilis</i> , Spotted Harrier		Will not occur – no habitat

Threatened Species	Record within 10km	Note
<i>Daphoenositta chrysoptera</i> , Varied Sittella		Will not occur – no habitat
<i>Dasyornis brachypterus</i> , Eastern Bristlebird		Will not occur – no habitat
<i>Diomedea exulans</i> , Wandering Albatross	Yes	Will not occur – no habitat
<i>Epthianura albifrons</i> – endangered population, White-fronted Chat ( <i>Epthianura albifrons</i> ) in the Sydney Metropolitan Catchment Management Authority area	Yes	Habitat not suitable
<i>Epthianura albifrons</i> , White-fronted Chat	Yes	Habitat not suitable
<i>Erythrotriorchis radiatus</i> , Red Goshawk	Yes	Will not occur – no habitat
<i>Esacus magnirostris</i> , Beach Stone-curlew		Will not occur – no habitat
<i>Eudyptula minor</i> – endangered population, Little Penguin in the Manly Point Area		Site outside nominated area
<i>Glossopsitta pusilla</i> , Little Lorikeet	Yes	Forage habitat may be present
<i>Gygis alba</i> , White Tern		Will not occur – no habitat
<i>Haematopus fuliginosus</i> , Sooty Oystercatcher		Will not occur – no habitat
<i>Haematopus longirostris</i> , Pied Oystercatcher	Yes	Will not occur – no habitat
<i>Hieraaetus morphnoides</i> , Little Eagle	Yes	Will not occur – no habitat
<i>Ixobrychus flavicollis</i> , Black Bittern	Yes	Will not occur – no habitat
<i>Lathamus discolor</i> , Swift Parrot	Yes	Forage habitat may be present
<i>Limicola falcinellus</i> , Broad-billed Sandpiper		Will not occur – no habitat
<i>Limosa limosa</i> , Black-tailed Godwit		Will not occur – no habitat
<i>Lophoictinia isura</i> , Square-tailed Kite		Will not occur – no habitat
<i>Macronectes giganteus</i> , Southern Giant Petrel		Will not occur – no habitat
<i>Macronectes halli</i> , Northern Giant-Petrel		Will not occur – no habitat
<i>Neochmia ruficauda</i> , Star Finch		Will not occur – no habitat
<i>Neophema chrysogaster</i> , Orange-bellied Parrot		Will not occur – no habitat
<i>Nettapus coromandelianus</i> , Cotton Pygmy-Goose		Will not occur – no habitat
<i>Numenius madagascariensis</i> , Eastern Curlew	Yes	Will not occur – no habitat
<i>Ninox connivens</i> , Barking Owl	Yes	Will not occur – no habitat
<i>Ninox strenua</i> , Powerful Owl	Yes	Will not occur – no habitat
<i>Onychoprion fuscata</i> , Sooty Tern		Will not occur – no habitat
<i>Pandion cristatus</i> , Eastern Osprey		Will not occur – no habitat
<i>Petroica boodang</i> , Scarlet Robin		Will not occur – no habitat
<i>Petroica phoenicea</i> , Flame Robin		Will not occur – no habitat
<i>Pezoporus wallicus wallicus</i> , Eastern Ground Parrot		Will not occur – no habitat
<i>Pterodroma leucoptera leucoptera</i> , Gould's Petrel		Will not occur – no habitat
<i>Ptilinopus magnificus</i> , Wompoo Fruit-Dove		Will not occur – no habitat
<i>Ptilinopus superbus</i> , Superb Fruit-Dove	Yes	Will not occur – no habitat



Threatened Species	Record within 10km	Note
<i>Rostratula australis</i> , Australian Painted Snipe		Will not occur – no habitat
<i>Stagonopleura guttata</i> , Diamond Firetail	Yes	Will not occur – no habitat
<i>Sternula albifrons</i> , Little Tern	Yes	Will not occur – no habitat
<i>Stictonetta naevosa</i> , Freckled Duck	Yes	Will not occur – no habitat
<i>Thalassarche cauta</i> , Shy Albatross		Will not occur – no habitat
<i>Thalassarche melanophris</i> , Black-browed Albatross		Will not occur – no habitat
<i>Tyto longimembris</i> , Eastern Grass Owl		Will not occur – no habitat
<i>Tyto novaehollandiae</i> , Masked Owl		Will not occur – no habitat
<i>Tyto tenebricosa</i> , Sooty Owl	Yes	Will not occur – no habitat
<i>Xenus cinereus</i> , Terek Sandpiper	Yes	Will not occur – no habitat
<b>Animal&gt;Marine Mammals</b>		
<i>Arctocephalus forsteri</i> , New Zealand Fur-seal	Yes	Will not occur – no habitat
<i>Arctocephalus pusillus doriferus</i> , Australian Fur-seal	Yes	Will not occur – no habitat
<i>Dugong dugon</i> , Dugong		Will not occur – no habitat
<i>Eubalaena australis</i> , Southern Right Whale	Yes	Will not occur – no habitat
<i>Physeter macrocephalus</i> , Sperm Whale		Will not occur – no habitat
<b>Animal&gt;Marsupials</b>		
<i>Aepyprymnus rufescens</i> , Rufous Bettong		Will not occur – no habitat
<i>Cercartetus nanus</i> , Eastern Pygmy-possum	Yes	Will not occur – no habitat
<i>Dasyurus maculatus</i> , Spotted-tailed Quoll	Yes	Will not occur – no habitat
<i>Dasyurus viverrinus</i> , Eastern Quoll	Yes	Will not occur – no habitat
<i>Isodon obesulus obesulus</i> , Southern Brown Bandicoot (eastern)		Will not occur – no habitat
<i>Perameles nasuta</i> - endangered population, Long-nosed Bandicoot population in inner western Sydney	Yes	Will not occur – no habitat
<i>Perameles nasuta</i> - endangered population, Long-nosed Bandicoot, North Head		Site outside nominated area
<i>Petaurus australis</i> , Yellow-bellied Glider		Will not occur – no habitat
<i>Petaurus norfolcensis</i> , Squirrel Glider		Will not occur – no habitat
<i>Phascolarctos cinereus</i> - endangered population, Koala in the Pittwater Local Government Area		Site outside nominated area
<i>Phascolarctos cinereus</i> , Koala		Will not occur – no habitat
<b>Animal&gt;Reptiles</b>		
<i>Caretta caretta</i> , Loggerhead Turtle		Will not occur – no habitat
<i>Dermochelys coriacea</i> , Leatherback Turtle		Will not occur – no habitat
<i>Hoplocephalus bungaroides</i> , Broad-headed Snake		Will not occur – no habitat
<i>Varanus rosenbergi</i> , Rosenberg's Goanna		Will not occur – no habitat

Threatened Species	Record within 10km	Note
<b>Fungi&gt;Fungi</b>		
<i>Camarophyllopsis kearneyi</i>		Will not occur – no habitat
<i>Hygrocybe anomala</i> var. <i>ianthinomarginata</i>		Will not occur – no habitat
<i>Hygrocybe aurantipes</i>		Will not occur – no habitat
<i>Hygrocybe austropratensis</i>		Will not occur – no habitat
<i>Hygrocybe collucera</i>	Yes	Will not occur – no habitat
<i>Hygrocybe griseoramosa</i>	Yes	Will not occur – no habitat
<i>Hygrocybe lanecovensensis</i>	No	Will not occur – no habitat
<i>Hygrocybe reesia</i>		Will not occur – no habitat
<i>Hygrocybe rubronivea</i>		Will not occur – no habitat
<b>Plant&gt;Aquatic Plants</b>		
<i>Zannichellia palustris</i>		Will not occur – no habitat
<b>Plant&gt;Ferns and Cycads</b>		
<i>Grammitis stenophylla</i> , Narrow-leaf Finger Fern		Will not occur – no habitat
<b>Plant&gt;Herbs and Forbs</b>		
<i>Chamaesyce psammogeton</i> , Sand Spurge		Will not occur – no habitat
<i>Deyeuxia appressa</i>		Will not occur – no habitat
<i>Dichanthium setosum</i> , Bluegrass	Yes	Will not occur – no habitat
<i>Senecio spathulatus</i> , Coast Groundsel		Will not occur – no habitat
<i>Thesium australe</i> , Austral Toadflax	Yes	Will not occur – no habitat
<i>Wahlenbergia multicaulis</i> - endangered population, Tadgell's Bluebell in the local government areas of Auburn, Bankstown, Baulkham Hills, Canterbury, Hornsby, Parramatta and Strathfield		Site outside nominated area
<b>Plant&gt;Mallees</b>		
<i>Eucalyptus camfieldii</i> , Camfield's Stringybark	Yes	Will not occur – no habitat
<i>Eucalyptus pulverulenta</i> , Silver-leafed Gum	Yes	May occur only as planted specimens
<b>Plant&gt;Orchids</b>		
<i>Caladenia tessellata</i> , Thick Lip Spider Orchid	Yes	Will not occur – no habitat
<i>Cryptostylis hunteriana</i> , Leafless Tongue Orchid		Will not occur – no habitat
<i>Diuris arenaria</i> , Sand Doubletail		Will not occur – no habitat
<i>Genoplesium baueri</i> , Bauer's Midge Orchid	Yes	Will not occur – no habitat
<i>Microtis angusii</i> , Angus's Onion Orchid		Will not occur – no habitat
<i>Prasophyllum fuscum</i> , Slaty Leek Orchid		Will not occur – no habitat
<i>Pterostylis</i> sp. Botany Bay, Botany Bay Bearded Orchid		Will not occur – no habitat
<i>Sarcochilus hartmannii</i> , Hartman's Sarcochilus		Outside natural range - planted

Threatened Species	Record within 10km	Note
<b>Plant&gt;Shrubs</b>		
<i>Acacia bynoeana</i> , Bynoe's Wattle		Will not occur – no habitat
<i>Acacia gordonii</i>	Yes	Will not occur – no habitat
<i>Acacia pubescens</i> , Downy Wattle		Will not occur – no habitat
<i>Acacia terminalis</i> subsp. <i>terminalis</i> , Sunshine Wattle	Yes	Will not occur – no habitat
<i>Allocasuarina portuensis</i> , Nielsen Park She-oak		Will not occur – no habitat
<i>Amperea xiphoclada</i> var. <i>pedicellata</i>	Yes	Will not occur – no habitat
<i>Callistemon linearifolius</i> , Netted Bottle Brush		Will not occur – no habitat
<i>Darwinia biflora</i>	Yes	Will not occur – no habitat
<i>Darwinia peduncularis</i>		Will not occur – no habitat
<i>Dillwynia tenuifolia</i>		Will not occur – no habitat
<i>Epacris purpurascens</i> var. <i>purpurascens</i>	Yes	Will not occur – no habitat
<i>Grevillea caleyi</i> , Caley's Grevillea		Will not occur – no habitat
<i>Grevillea parviflora</i> subsp. <i>parviflora</i> , Small-flower Grevillea		Will not occur – no habitat
<i>Haloragodendron lucasii</i>		Will not occur – no habitat
<i>Hibbertia puberula</i>	Yes	Will not occur – no habitat
<i>Hibbertia</i> sp. <i>Turramurra</i> , Julian's Hibbertia ( <i>Hibbertia spanantha</i> )		Will not occur – no habitat
<i>Hibbertia superans</i>		Will not occur – no habitat
<i>Lasiopetalum joyceae</i>		Will not occur – no habitat
<i>Leptospermum deanei</i>		Will not occur – no habitat
<i>Melaleuca deanei</i> , Deane's Paperbark	Yes	Will not occur – no habitat
<i>Persoonia hirsuta</i> , Hairy Geebung	Yes	Will not occur – no habitat
<i>Pimelea curviflora</i> var. <i>curviflora</i>		Will not occur – no habitat
<i>Prostanthera junonis</i> , Somersby Mintbush		Will not occur – no habitat
<i>Prostanthera marifolia</i> , Seaforth Mintbush	Yes	Will not occur – no habitat
<i>Tetradlea glandulosa</i>	Yes	Will not occur – no habitat
<i>Tetradlea juncea</i> , Black-eyed Susan	Yes	Will not occur – no habitat
<i>Wilsonia backhousei</i> , Narrow-leafed Wilsonia		Will not occur – no habitat
<b>Plant&gt;Trees</b>		
<i>Eucalyptus fracta</i> , Broken Back Ironbark	Yes	May occur only as planted specimens
<i>Eucalyptus nicholii</i> , Narrow-leaved Black Peppermint	Yes	Outside natural range - planted
<i>Melaleuca biconvexa</i> , Biconvex Paperbark		Will not occur – no habitat
<i>Syzygium paniculatum</i> , Magenta Lilly Pilly	Yes	May occur only as planted specimens
<b>Threats</b>		

All threats are discounted here as the site being affected is not a natural environment and already heavily modified.



**Appendix 2. List of species identified as occurring on site during the field visit.***Planted bed on Science Road extending beside drive behind Heydon Laurence building*

Name	Note
<i>Lophostemon confertus</i> (Brush Box)	Planted, outside natural range
<i>Vinca major</i> (Blue Periwinkle)	Planted, exotic
<i>Hedera helix</i> (Ivy)	Naturalised, exotic
<i>Agapanthus</i> cv. (Nile Lily)	Planted, exotic
<i>Dietes</i> cv. (African Iris)	Planted, exotic
<i>Ulmus</i> sp. (Elm)	Naturalised, exotic
<i>Persea</i> sp. (Avocado)	Naturalised, exotic
<i>Morus alba</i> (Mulberry)	Planted, exotic
<i>Clivia miniata</i> (Clivia)	Planted, exotic
<i>Acmena smithii</i> (Lilly pilli)	Planted, outside natural habitat
<i>Grevillea</i> cv. (grevillea)	Planted, cultivar
<i>Jacaranda mimosifolia</i> (Jacaranda)	Planted and naturalising, exotic

Boundary Planting along Parramatta Road fence

Name	Note
<i>Syzygium australe</i> (Lilly Pilli)	Planted, outside natural habitat
<i>Ficus rubiginosa</i> (Hill Fig)	Planted, within natural range
<i>Doryanthes excelsa</i> (Gynea Lily)	Planted, outside natural habitat
<i>Agapanthus</i> cv. (Nile Lily)	Planted, exotic
<i>Bromeliad</i>	Planted, exotic
<i>Cordyline australe</i> (Ti)	Planted, exotic
<i>Yucca</i> cv.	Planted, exotic
<i>Cycas</i> cv.	Planted, exotic

## Carpark area plantings and naturalisations

Name	Note
<i>Melaleuca linariifolia</i> (Snow in Summer)	Planted cultivar, outside natural range
<i>Lophostemon confertus</i> (Brush Box)	Planted, outside natural range
<i>Morus alba</i> (Mulberry)	Planted, exotic
<i>Jacaranda mimosifolia</i> (Jacaranda)	Planted and naturalising, exotic
<i>Dietes</i> cv. (African Iris)	Planted, exotic
<i>Agapanthus</i> cv. (Nile Lily)	Planted, exotic
<i>Fimbristylis</i> species	Not local native, colonisation from vehicles in carpark

## Other naturalised plants in the area of interest

Name	Note
<i>Digitaria porrecta</i>	Local native, coloniser
<i>Euphorbia drummondii</i>	Local native, coloniser
<i>Eleusine indica</i> (Crow's-foot Grass)	Exotic, coloniser
<i>Sonchus oleraceus</i>	Exotic, coloniser
<i>Solanum nigrum</i>	Exotic, coloniser
<i>Modiola caroliniana</i>	Exotic, coloniser
<i>Ulmus</i> sp. (Elm)	Naturalised, exotic
<i>Bidens pilosa</i>	Exotic, coloniser
Palm species	Exotic, coloniser
Sterile large grass – maybe <i>Eragrostis curvula</i> (African Love Grass)	Exotic, coloniser
<i>Cyperus eragrostis</i>	Exotic, coloniser
<i>Portulaca oleracea</i>	Local native, coloniser