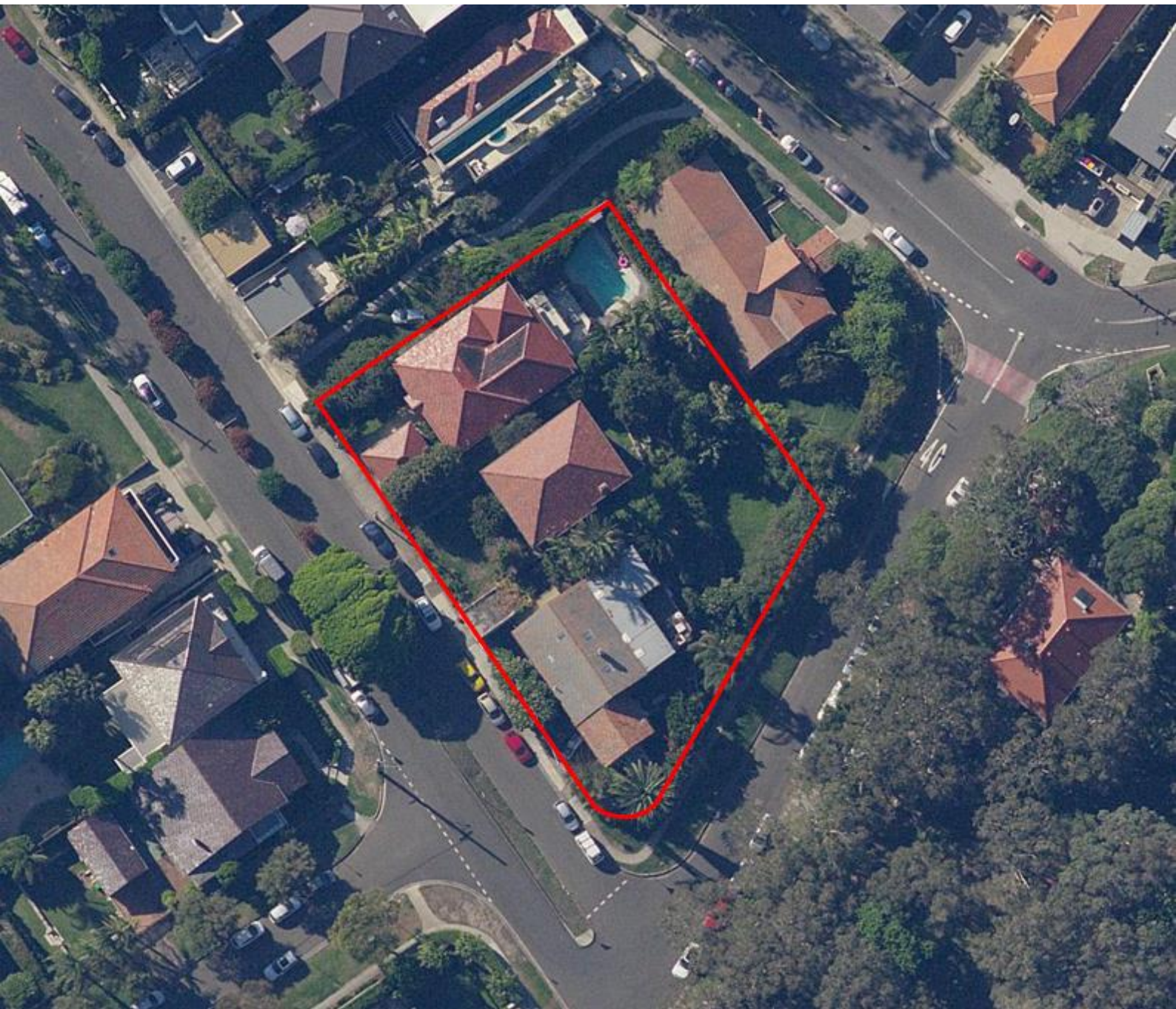


Flora & Fauna Impact Assessment

29-35 Reddall St, Manly



6 February 2023

SIA ECOLOGICAL & ENVIRONMENTAL PLANNING PTY LTD
Suite 56, 8-24 Kippax St, Surry Hills, NSW, 2010

SIA Ecological & Environmental Planning Pty Ltd

Suite 56, 8-24 Kippax St Surry Hills NSW 2010

ABN: 12 152 072 977

www.siaeep.com.au

Email: mjames@siaeep.com.au

Mob: 0403 233 676

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Report prepared by: Martin James

A handwritten signature in blue ink, appearing to read 'Martin James', with a stylized flourish at the end.

Signed:

Date: 6th February 2023

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1 INTRODUCTION

1.1 Project Site Location and Setting

The project site comprises three properties located at 29, 31 & 35 Reddall St, Manly (Lots 84, 83 & 82 DP8076 respectively) in the Northern Beaches Local Government Area. It is approximately 2,360m² in size. The project site is moderately sloping with a north-easterly aspect. The highest point of the project site at the western end of 29 Reddall St with an elevation of approximately 22m AHD. The project site is approximately 120m from the Pacific Ocean water frontage at Cabbage Tree Bay. Figure 1.1 shows the location of the project site on a topographic map. Figure 1.2 shows the location of the project site on an aerial image. Figure 1-3 is a close-up aerial image of the project site.

1.2 Description of Proposed Development

The proposal is to subdivide the three (3) existing lots into five (5) lots, demolish the three existing buildings and construct five new dwellings, one on each of the new lots. A plan drawing of the proposal is provided in Appendix A.

1.3 Biodiversity Offset Scheme

1.3.1 Biodiversity Values Map

No part of the subject property is shaded on the NSW Government's Biodiversity Values Map (BVM). Therefore, the Biodiversity Offset Scheme (BOS) would not be triggered by the BVM for this proposal. The biodiversity values mapping is shown in Figure 1-4 below.

1.3.2 Area of Clearing Threshold

The minimum lot size for all three lots under the Manly LEP 2011 is 250m². Therefore, as specified in the *Biodiversity Conservation Regulation 2017*, the area of clearing threshold for triggering the BOS is 2,500m². The total area of the three properties is approximately 2,360m², which is below the area of clearing threshold. Therefore, clearing of native vegetation for the proposal would not exceed the area of clearing threshold and the proposal would not trigger the BOS.

1.4 Purpose of This Report

This report provides the flora and fauna impact assessment for the proposed development. It describes the flora and fauna habitat on the property and discusses the likely impacts of the proposal on these. The report identifies species, populations or communities listed under the NSW *Biodiversity Conservation Act 2016* (BC Act) and/ or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) that occur or may occur on the property. Where the proposal is likely to impact on these it includes the mandatory assessments of significance.

The report also addresses in the following section Clause 6.5 *Terrestrial Biodiversity* of the Manly Local Environment Plan (LEP) 2013, and Clauses 3.3.1 *Landscape Design - Bandicoot Habitat* and 5.4.2 *Threatened Species and Critical Habitat Lands* of the Manly Development Control Plan (DCP) 2013.

1.5 Manly Local Environment Plan 2013

1.5.1 Clause 6.5 Terrestrial Biodiversity

The proposal is consistent with the objectives of this clause because it maintains terrestrial biodiversity by increasing the amount of native vegetation on the property thereby contributing to the recovery of native flora and fauna in the area. Additionally, the proposal would provide habitat specifically designed and landscaped for the Long-nosed Bandicoot thereby assisting in the protection of the local endangered population.

(3) (a) (i) *any adverse impact on the condition, ecological value and significance of the fauna and flora on the land, and*

The ecological value and significance of flora and fauna on the land currently is low. The flora comprises almost entirely introduced species, many of which are weeds. There is no evidence of any bandicoot activity on the land, only on surrounding land. The proposal would increase the ecological value of the land and its significance for flora and fauna.

(ii) *any adverse impact on the importance of the vegetation on the land to the habitat and survival of native fauna, and*

The vegetation on the land has low importance for native fauna. The proposal would restore native vegetation and enhance the fauna habitat value of the land.

(iii) *any potential to fragment, disturb or diminish the biodiversity structure, function and composition of the land, and*

The land has little biodiversity structure, function and composition as it comprises almost entirely of introduced species of flora, including many weeds. It has no biodiversity corridor value and little native biodiversity habitat value.

(iv) *any adverse impact on the habitat elements providing connectivity on the land, and*

The proposal would increase the amount of native vegetation on the property including small trees, shrubs and groundcover vegetation. Consequently, the proposal would increase habitat elements on the land providing connectivity to other native vegetation in the area.

(b) *any appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.*

Measures are proposed to avoid and minimise the potential for adverse impacts from construction activities on the Long-nosed Bandicoot that occurs in the area. Measures are proposed in the design of the proposal to restore areas of habitat for bandicoots and to ensure those areas remain accessible to the bandicoots. Measures are proposed to restore native flora and fauna habitat on the land as part of the proposed landscaping. Measures are also proposed to minimise the potential for adverse impacts on bandicoots during operation of the proposal (i.e. during occupation of the dwellings).

(4) *Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that—*

(a) *the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or*

No significant adverse environmental impact would result from the proposed development. There is little existing native flora and fauna habitat on the land. The proposal would remove some areas of potential habitat for the long-nosed bandicoot, although there is no evidence the bandicoots are actually using that habitat. Nevertheless, the proposal has been designed to provide new areas of good quality habitat specifically designed for the bandicoots and would be managed to protect any bandicoots on the land from inadvertent harm.

(b) if that impact cannot be reasonably avoided by adopting feasible alternatives—the development is designed, sited and will be managed to minimise that impact, or

The removal of a small amount of native flora and fauna habitat on the land cannot be avoided. The proposed landscaping would restore a greater amount of native flora thereby providing a greater amount of fauna habitat on the land, including habitat designed specifically for the Long-nosed Bandicoot.

(c) if that impact cannot be minimised—the development will be managed to mitigate that impact.

The removal of a small amount of native flora and fauna habitat on the land cannot be minimised. The proposal is designed with new areas of flora and fauna habitat of greater biodiversity value because the vegetation would comprise native flora rather than introduced species, providing native fauna habitat that presently does not occur on the land. Similarly, the proposal would create new areas of good quality habitat for the bandicoots that presently does not occur on the land.

1.6 Manly Development Control Plan 2013

1.6.1 Clause 3.3.1 Landscape Design

The proposed landscaping would be consistent with this clause and in particular with sub-clause a)iv) that identifies the species for planting in areas of habitat for the Long-nosed Bandicoot. These species would be planted in the dedicated areas of Long-nosed Bandicoot habitat identified in the plan drawings in Appendices A and B of this report.

1.6.2 Clause 5.4.2 Threatened Species and Critical Habitat Lands

This report includes (in Appendix F) an Assessment of Significance (5-part test) under Section 7.3 of the *Biodiversity Conservation Act 2016* for the Long-nosed Bandicoot. The proposal would not impact on the areas of Critical Habitat for the Little Penguin.

1.7 Assessment Methodology

Background information was collated from relevant sources and databases including, but not limited to, Department of Primary Industry and Environment (DPIE) BioNet Atlas of NSW Wildlife database, DPIE vegetation mapping, NSW Government Six Viewer website, Google Maps, etc.

A site assessment was undertaken on the 5th November 2021. The site assessment involved inspecting vegetation and fauna habitat over the entire project site comprising the three properties. All observed species of flora were identified and fauna habitat described, any opportunistic sightings of fauna were documented, and any significant flora or fauna features described. A brief examination of the vegetation in the adjoining and surrounding areas was undertaken to establish the local context for vegetation and fauna habitat on the site. Digital photographs were taken for later reference and for inclusion in this report. A second site

assessment was undertaken on 30th March 2022 specifically to look for evidence of bandicoot activity around the project site and to look for any bandicoots nesting with the shrubs and dense undergrowth at 31 Reddall St.

The results of the site assessments were analysed with reference to relevant information sources and databases including, but not limited to, the NSW Flora Online PlantNET database, NSW Threatened Species Profiles, NSW Scientific Committee Determinations, Commonwealth Listing Advices, and Threatened Species Assessment of Significance Guidelines (DECC, 2007).

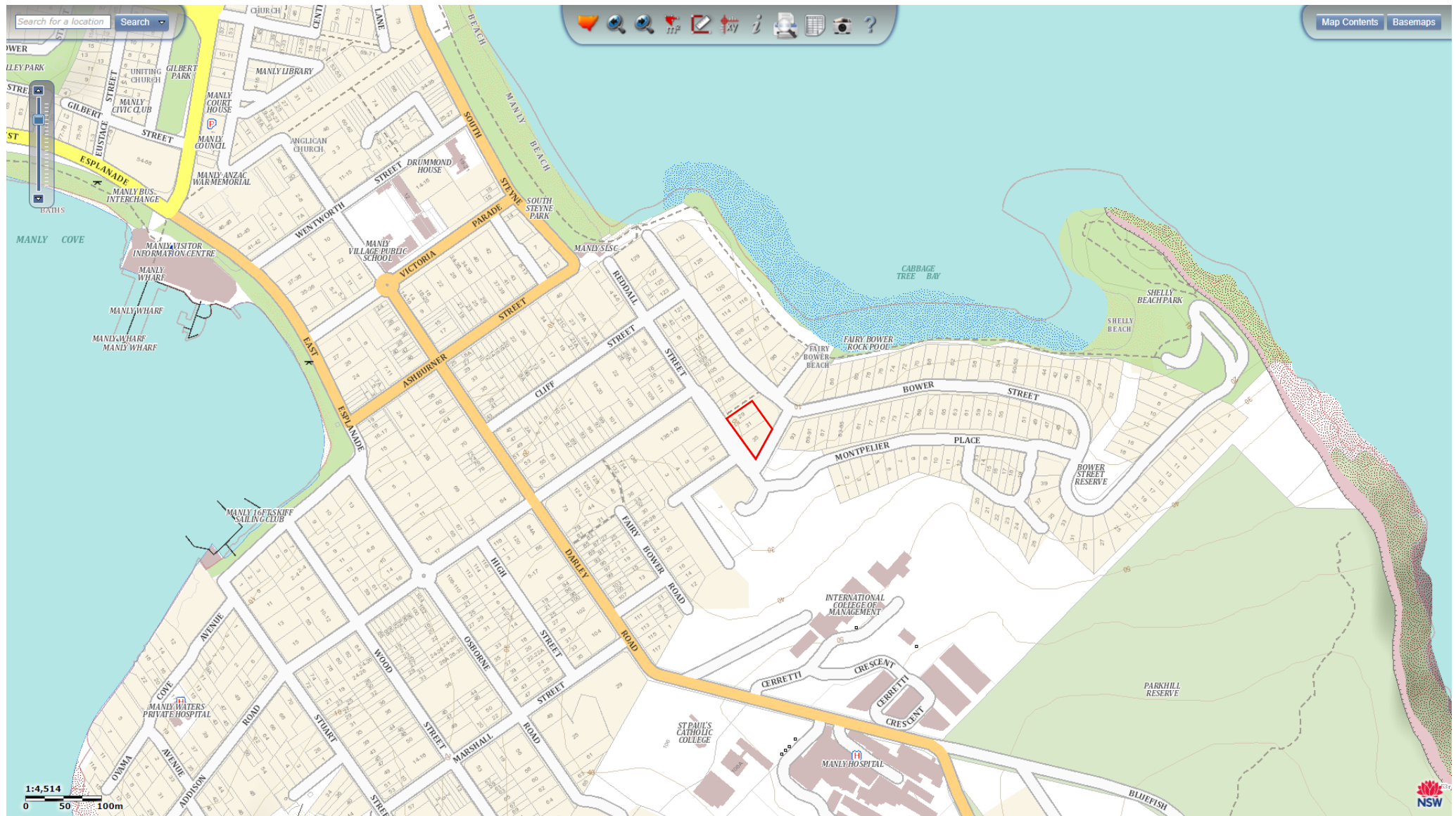


Figure 1-1: Topographic map of the project area. The project site is marked in red.

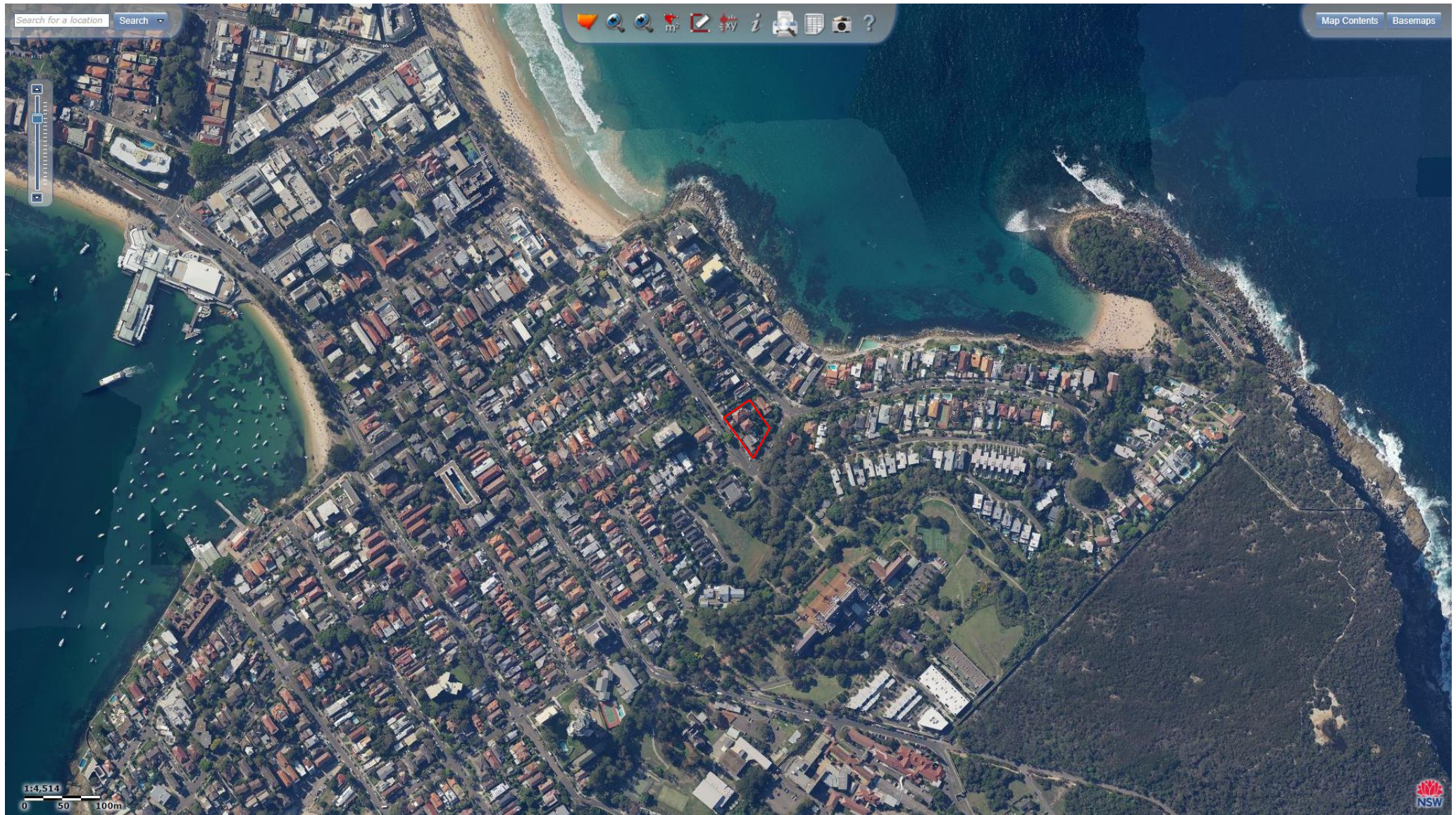


Figure 1-2: Aerial image of the project area. The project site is marked in red.



Figure 1-3: Close-up aerial image of project site.

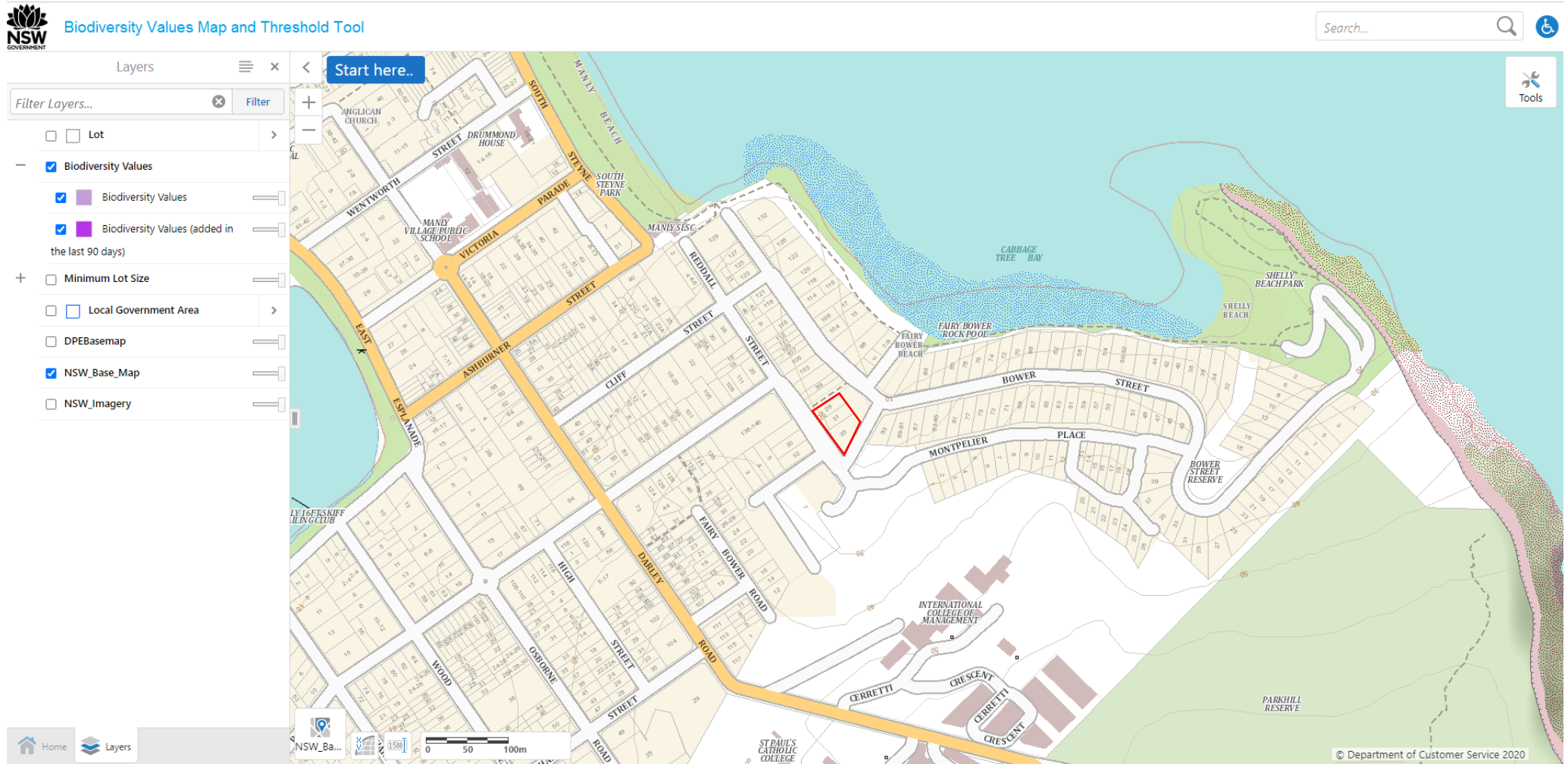


Figure 1-4: Biodiversity Values Mapping. The project site is marked in red.

2 EXISTING FLORA AND FAUNA

2.1 Flora

2.1.1 Flora on the property

The DPIE (2016) *The Native Vegetation of the Sydney Metropolitan Area* (VIS_ID 4489) vegetation mapping identifies vegetation over part of the project site as Urban Exotic/ Native. This vegetation type is not listed as an endangered community under either the BC Act or EPBC Act. The DPIE (2016) vegetation mapping is provided below in Figure 2-1.

The site assessment confirmed the DPIE (2016) vegetation mapping. However, the vegetation is almost entirely exotic. The vegetation on the three properties is typical of residential properties in the Sydney metropolitan area. It comprises a mixture of mostly introduced, planted trees, shrubs and groundcover vegetation with small areas of lawn and many weeds. A small number of native plants are present. These have probably established naturally with seed from the nearby areas of native bushland brought onto the properties.

The tallest trees on the properties are palm trees. There are six (6) Bangalow Palms (*Archontophoenix cunninghamiana*) at the rear of 29 and 31 Reddall St, one of which is approximately 10m high. There are three (3) Cocos Palms (*Syagrus romanzoffianum**) and one (1) Canary Island Date Palm (*Phoenix canariensis**) at front of 35 Reddall St. These reach approximately 8m in height. There are two more Cocos Palms on the College St side of 35 Reddall St reaching approximately 6m in height. There is another Canary Island Date Palm at the rear of 35 Reddall St, approximately 5m high.

There are many small trees and shrubs approximately 2-5m high on all properties comprising a variety of species. These occur mostly just inside the property boundaries surrounding a small area of lawn, garden beds, rockeries and swimming pool. Species include, for example, Brush Cherry (*Syzygium australe*), Port Jackson Fig (*Ficus rubiginosa*), Giant White Bird of Paradise (*Strelizia nicolai**), Frangipani (*Plumeria rubra**), Southern Magnolia (*Magnolia grandiflora**), etc.

Many shrubs (<2m), climbers and groundcovers also occur on all properties, typically around and under the taller shrubs/ small trees. Species include, for example, English Ivy (*Hedera helix**), Ground Asparagus (*Asparagus aethiopicus**), Fishbone Fern (*Nephrolepis cordifolia**), Japanese Honeysuckle (*Lonicera japonica**), Fruit Salad Plant (*Monstera deliciosa**), Mondo Grass (*Ophiopogon Japonicus**), etc.

A variety of grasses are also present including, for example, Buffalo Grass (*Bouteloua dactyloides**), Kikuyu (*Cenchrus clandestinus**), Prairie Grass (*Bromus catharticus**), etc.

The complete list of flora recorded on the property is provided in Appendix E. Photos are provided in Appendix D.

2.1.2 Species Listed under BC Act and EPBC Act

A search of the DPIE BioNet Atlas of NSW Wildlife database (on 04/04/2022) indicated that twenty-five (25) species of flora listed under the BC Act and/ or EPBC Act have been recorded within a 10km x 10km square centred on the project site. The species are presented in Table 2-1 below. The table indicates whether potential habitat for the species exists on site and whether it was observed during the site assessment.



Figure 2-1: DPIE (2016) vegetation mapping. The project site is marked in red.

Table 2-1: Species of flora listed under the BC Act or EPBC Act recorded within a 10km x 10km square centred on the project site.

Scientific Name	Common Name	Habitat	BC Act/ EPBC Act Status *	Potential Habitat On-site	Observed On-site
<i>Senecio spathulatus</i>	Coast Groundsel	Coast Groundsel grows on frontal dunes.	E/ -	No	No
<i>Allocasuarina portuensis</i>	Neilson Park She-oak	The original known habitat of the Neilson Park She-oak is at Nielsen Park, in Woollahra local government area. There are no plants left at the original site where it was discovered. However, propagation material has been planted successfully at a number of locations at Nielsen Park and other locations in the local area, e.g. Gap Bluff, Hermit Point and Vaucluse House. The original habitat is tall closed woodland. Canopy species include: <i>Ficus rubiginosa</i> , <i>Angophora costata</i> , <i>Elaeocarpus reticulatus</i> and <i>Glochidium ferdinandi</i> with a shrub layer of <i>Pittosporum revolutum</i> , <i>Kunzea ambigua</i> and <i>Monotoca elliptica</i> . The original habitat occurs above a sandstone shelf approximately 20 m above the harbour.	E/ E	No	No
<i>Tetratheca glandulosa</i>		Associated with shale-sandstone transition habitat where shale-cappings occur over sandstone, with associated soil landscapes such as Lucas Heights, Gynea, Lambert and Faulconbridge. Topographically, the plant occupies ridgetops, upper-slopes and to a lesser extent mid-slope sandstone benches. Soils are generally shallow, consisting of a yellow, clayey/sandy loam. Stony lateritic fragments are also common in the soil profile on many of these ridgetops. Vegetation structure varies from heaths and scrub to woodlands/open woodlands, and open forest. Vegetation communities correspond broadly to Benson & Howell's Sydney Sandstone Ridgetop Woodland (Map Unit 10ar). Common woodland tree species include: <i>Corymbia gummifera</i> , <i>C. eximia</i> , <i>Eucalyptus haemastoma</i> , <i>E. punctata</i> , <i>E. racemosa</i> , and/or <i>E. sparsifolia</i> , with an understorey dominated by species from the families Proteaceae, Fabaceae, and Epacridaceae.	V/ -	No	No

Scientific Name	Common Name	Habitat	BC Act/ EPBC Act Status *	Potential Habitat On-site	Observed On-site
<i>Tetradlea juncea</i>	Black-eyed Susan	It is usually found in low open forest/woodland with a mixed shrub understorey and grassy groundcover. However, it has also been recorded in heathland and moist forest. The majority of populations occur on low nutrient soils associated with the Awaba Soil Landscape. While some studies show the species has a preference for cooler southerly aspects, it has been found on slopes with a variety of aspects. It generally prefers well-drained sites below 200m elevation and annual rainfall between 1000 - 1200mm. The preferred substrates are sandy skeletal soil on sandstone, sandy-loam soils, low nutrients; and clayey soil from conglomerates, pH neutral.	V/ V	No	No
<i>Epacris purpurascens</i> var. <i>purpurascens</i>		Found in a range of habitat types, most of which have a strong shale soil influence.	V/ -	No	No
<i>Chamaesyce psammogeton</i>	Sand Spurge	Grows on fore-dunes, pebbly strandlines and exposed headlands, often with Spinifex (<i>Spinifex sericeus</i>) and Prickly Couch (<i>Zoysia macrantha</i>).	E/ -	No	No
<i>Acacia bynoeana</i>		Occurs in heath or dry sclerophyll forest on sandy soils. Seems to prefer open, sometimes slightly disturbed sites such as trail margins, edges of roadside spoil mounds and in recently burnt patches. Associated overstorey species include Red Bloodwood, Scribbly Gum, Parramatta Red Gum, Saw Banksia and Narrow-leaved Apple.	E/ V	No	No
<i>Acacia terminalis</i> subsp. <i>terminalis</i>	Sunshine Wattle	Coastal scrub and dry sclerophyll woodland on sandy soils. Habitat is generally sparse and scattered. Most areas of habitat or potential habitat are small and isolated. Most sites are highly modified or disturbed due to surrounding urban development. Flowers in autumn.	E/ E	No	No
<i>Grammitis stenophylla</i>	Narrow-leaf Finger Fern	Moist places, usually near streams, on rocks or in trees, in rainforest and moist eucalypt forest.	E/ -	No	No

Scientific Name	Common Name	Habitat	BC Act/ EPBC Act Status *	Potential Habitat On-site	Observed On-site
<i>Prostanthera marifolia</i>	Seaforth Mintbush	<i>Prostanthera marifolia</i> is currently only known from the northern Sydney suburb of Seaforth and has a very highly restricted distribution within the Sydney Basin Bioregion. The single population is fragmented by urbanisation into three small sites. All known sites are within an area of 2x2 km. Two of the sites are within the local government area of Manly and one site is in the LGA of Warringah. Occurs in localised patches in or in close proximity to the endangered Duffys Forest ecological community. Located on deeply weathered clay-loam soils associated with ironstone and scattered shale lenses, a soil type which only occurs on ridge tops and has been extensively urbanised.	CE/ CE	No	No
<i>Callistemon linearifolius</i>	Netted Bottle Brush	Grows in dry sclerophyll forest on the coast and adjacent ranges.	V/ -	No	No
<i>Eucalyptus camfieldii</i>	Camfield's Stringybark	Poor coastal country in shallow sandy soils overlying Hawkesbury sandstone. Coastal heath mostly on exposed sandy ridges. Occurs mostly in small scattered stands near the boundary of tall coastal heaths and low open woodland of the slightly more fertile inland areas. Associated species frequently include stunted species of <i>E. oblonga</i> Narrow-leaved Stringybark, <i>E. capitellata</i> Brown Stringybark and <i>E. haemastoma</i> Scribbly Gum. Population sizes are difficult to estimate because its extensive lignotubers may be 20m across. A number of stems arise from these lignotubers giving the impression of individual plants. Flowering period is irregular, flowers recorded throughout the year. Poor response to too frequent fires.	V/ V	No	No
<i>Eucalyptus nicholii</i>	Narrow- leaved Black Peppermint	Typically grows in dry grassy woodland, on shallow soils of slopes and ridges. Found primarily on infertile soils derived from granite or metasedimentary rock. Seedling recruitment is common, even in disturbed soils, if protected from grazing and fire. Tends to grow on lower slopes in the landscape.	V/ V	No	No
<i>Melaleuca biconvexa</i>	Biconvex Paperbark	Biconvex Paperbark generally grows in damp places, often near streams or low-lying areas on alluvial soils of low slopes or sheltered aspects.	V/ V	No	No

Scientific Name	Common Name	Habitat	BC Act/ EPBC Act Status *	Potential Habitat On-site	Observed On-site
<i>Melaleuca deanei</i>	Deane's Paperbark	The species occurs mostly in ridgetop woodland, with only 5% of sites in heath on sandstone. Flowers appear in summer but seed production appears to be small and consequently the species exhibits a limited capacity to regenerate.	V/ V	No	No
<i>Rhodamnia rubescens</i>	Scrub Turpentine	Found in littoral, warm temperate and subtropical rainforest and wet sclerophyll forest usually on volcanic and sedimentary soils. This species is characterised as highly to extremely susceptible to infection by Myrtle Rust. Myrtle Rust affects all plant parts.	CE/ -	No	No
<i>Syzygium paniculatum</i>	Magenta Lilly Pilly	On the south coast the Magenta Lilly Pilly occurs on grey soils over sandstone, restricted mainly to remnant stands of littoral (coastal) rainforest. On the central coast Magenta Lilly Pilly occurs on gravels, sands, silts and clays in riverside gallery rainforests and remnant littoral rainforest communities.	E/ V	No	No
<i>Triplarina imbricata</i>		Occurs along watercourses in low open forest with Water Gum (<i>Tristaniopsis laurina</i>) or in montane bogs, often with <i>Baekea amissa</i> .	E/ E	No	No
<i>Caladenia tessellata</i>	Thick Lip Spider Orchid	The Thick Lip Spider Orchid is known from the Sydney area (old records), Wyong, Ulladulla and Braidwood in NSW. Populations in Kiama and Queanbeyan are presumed extinct. It was also recorded in the Huskisson area in the 1930s. The species occurs on the coast in Victoria from east of Melbourne to almost the NSW border. Generally found in grassy sclerophyll woodland on clay loam or sandy soils, though the population near Braidwood is in low woodland with stony soil. The single leaf regrows each year. Flowers appear between September and November (but apparently generally late September or early October in extant southern populations).	E/ V	No	No

Scientific Name	Common Name	Habitat	BC Act/ EPBC Act Status *	Potential Habitat On-site	Observed On-site
<i>Prasophyllum fuscum</i>	Slaty Leek Orchid	Grows in moist heath, often along seepage lines. The known population grows in moist sandy soil over sandstone amongst sedges and grasses in an area that appears to be regularly slashed by the local council. Flowering does not necessarily occur every year, often skipping years. Although successful flowering and reproduction is likely to be dependent on favourable weather and habitat conditions, the factors which influence flowering behaviour are poorly understood. The seed is dust-like and is wind dispersed. Dies back after the flowering and fruiting phases and exist only as a dormant tuber for much of the year. Like most terrestrial orchids, the species is believed to be semi or fully dependent on a mycorrhizal symbiont. Dormant over summer and leaves emerge around April and flowering occurs from September to December. The response of this species to fire is unknown, however fire stimulation of flowering is common within the genus. Reproduction is by means of seed and probably to a lesser extent by vegetative reproduction. Flowers are not self-pollinating, as not all set seed and the perfume suggests an insect pollinator. The pollinator is unknown, but related species seem to be pollinated by a variety of thynnid wasps and perhaps hoverflies. It can be assumed that there is more than one pollinator species. The mature seeds senesce after seed dispersal in late December and January. The species is very similar to <i>P. uroglossum</i> but has a much shorter midlobe on the labellum and by having the callus extending well onto the midlobe. It has also been confused with <i>P. pallens</i> which can be distinguished by its paler-coloured flowers with a musty smell. The total population, based on a single observation in 2007, is estimated to be approximately 25 mature individuals.	CE/ V	No	No

Scientific Name	Common Name	Habitat	BC Act/ EPBC Act Status *	Potential Habitat On-site	Observed On-site
<i>Grevillea caleyi</i>	Caley's Grevillea	Restricted to an 8 km square area around Terrey Hills, approximately 20 km north of Sydney. Occurs in three major areas of suitable habitat, namely Belrose, Ingleside and Terrey Hills/Duffys Forest within the Kuring-gai, Pittwater and Warringah Local Government Areas. All natural remnant sites occur within a habitat that is both characteristic and consistent between sites. All sites occur on the ridgetop between elevations of 170 to 240m asl, in association with laterite soils and a vegetation community of open forest, generally dominated by Eucalyptus sieberi and E. gummifera. Commonly found in the endangered Duffys Forest ecological community.	CE/ E	No	No
<i>Macadamia integrifolia</i>	Macadamia Nut	Not known to occur naturally in the wild in NSW.	-/ V	No	No
<i>Asterolasia buxifolia</i>		Rediscovered in 2000, little is known about the species. The growth rate appears to be very slow, and the flowering season short. Apparently restricted to the riparian zone of a granitic rocky section of the Lett River.	E/ -	No	No
<i>Pimelea curviflora</i> var. <i>curviflora</i>	Rice Flower	Occurs on shaley/ lateritic soils over sandstone and shale/sandstone transition soils on ridgetops and upper slopes amongst woodlands. Also recorded in Illawarra Lowland Grassy Woodland habitat at Albion Park on the Illawarra coastal plain. Flowers October to May. Has an inconspicuous cryptic habit as it is fine and scraggly and often grows amongst dense grasses and sedges. It may not always be visible at a site as it appears to survive for some time without any foliage after fire or grazing, relying on energy reserves in its tuberous roots. Likely to be fire tolerant species capable of re-sprouting following fire due to the presence of a tap root. Seedlings have been observed following fire.	V/ V	No	No

* E = Endangered; E2 = Endangered Population; V = Vulnerable; X = Presumed Extinct.

2.2 Fauna

2.2.1 Fauna Habitat on the Property

The project site provides limited habitat for native fauna. It comprises residential buildings and paved areas, swimming pool, car port, etc. surrounded by lawns and bordered by hedges of small trees and shrubs, with an abundance of climbers and weeds. The plants are mostly introduced species. The trees are not old and do not contain any tree hollows. The site is situated within a largely developed urban environment, although there is a moderately large, though highly fragmented, remnant of native vegetation across the street within the International College of Management property. The project site provides habitat for the native fauna one typically encounters in the highly urbanised environment around Sydney. This comprises mainly invertebrates, small lizards, birds, flying-foxes and microbats.

The endangered population of Long-nosed Bandicoots (*Perameles nasuta*) occurs in the area and there is evidence of Long-nosed Bandicoot activity in the form of conical shaped diggings within the lawns on the road verges around the project site. No evidence of Bandicoot activity in the form of conical shaped diggings was found within the project site. No evidence of Bandicoot activity was found either within the three subject properties during two earlier site assessments as part of a separate Development Application (SIAEEP, 2019) in April and May 2017, although the conical shaped diggings were found at that time on the adjoining land around the properties and within the neighbouring properties below the project site that front onto Bower St. The lawns within the properties provide potential foraging habitat and several areas of dense groundcover could potentially provide nesting habitat for the Bandicoots, although, the lack of diggings within the lawns indicates the bandicoots are not utilising these areas of potential habitat. These areas were also searched for bandicoots and none were present. Presumably the habitat is not suitable, inaccessible, or there is better habitat elsewhere.

During the site assessment in total two (2) species of native bird were observed within the project site and evidence in the form of conical shaped diggings of the Long-nosed Bandicoot was observed outside the project site on the adjoining land. The species are listed in Appendix E.

2.2.2 Species Listed under BC Act and EPBC Act

A search of the DPIE BioNet Atlas of NSW Wildlife database (on 04/04/2022) indicated that fifty-one (51) species of fauna listed under the BC Act and/ or EPBC Act have been recorded within a 10km x 10km square centred on the project site. Twenty-one (21) of these species are marine fauna and waterbirds that would not occur at the project site. The resulting thirty (30) species that could potentially occur at the project site are presented in Table 2-2 below. The table indicates whether potential habitat for the species exists on the proposed development site and whether it was observed during the site assessment.

Table 2-2: Species of fauna listed under the BC Act or EPBC Act recorded within a 10km x 10km square centred on the project site (excluding marine fauna and waterbirds).

Scientific Name	Common Name	Habitat	TSC Act/ EPBC Act Status *	Potential Habitat On-site	Observed On-site
Amphibia					
<i>Heleioporus australiacus</i>	Giant Burrowing Frog	Home range approx. 0.04ha in size (i.e. 20m x 20m). Heath, woodland and dry sclerophyll forest in range of soil types except clay based. Burrows in soil or leaf litter within 300m of breeding habitat that is soaks or pools within 1st or 2nd order streams.	V/ V	No	No
<i>Pseudophryne australis</i>	Red-crowned Toadlet	Occurs in Open Forests, mostly on sandstones. Inhabits periodically wet drainage lines below sandstones ridges that often have shale lenses. Shelters under rocks and amongst masses of dense vegetation or thick piles of leaf litter. Breeding congregations occur in dense vegetation and debris beside ephemeral creeks and gutters. Disperses outside the breeding period when it is found under rocks and logs on sandstone ridges and forage amongst leaf litter. Largely restricted to the immediate vicinity of suitable breeding habitat.	V/ -	No	No
Reptilia					
<i>Veranus rosenbergi</i>	Rosenberg's Goanna	Rosenberg's Goanna occurs on the Sydney Sandstone in Wollemi National Park to the north-west of Sydney, in the Goulburn and ACT regions and near Cooma in the south. There are records from the South West Slopes near Khancoban and Tooma River. Found in heath, open forest and woodland. Associated with termites, the mounds of which this species nests in; termite mounds are a critical habitat component. Individuals require large areas of habitat. Feeds on carrion, birds, eggs, reptiles and small mammals. Shelters in hollow logs, rock crevices and in burrows, which they may dig for themselves, or they may use other species' burrows, such as rabbit warrens.	V/ -	No	No
Aves					
<i>Ptilinopus regina</i>	Rose-crowned Fruit-Dove	Rose-crowned Fruit-doves occur mainly in sub-tropical and dry rainforest and occasionally in moist eucalypt forest and swamp forest, where fruit is plentiful. They are shy pigeons, not easy to see amongst the foliage, and are more often heard than seen. They feed entirely on fruit from vines, shrubs, large trees and palms, and are thought to be locally nomadic as they follow the ripening of fruits. Some populations are migratory in response to food availability - numbers in north-east NSW increase during spring and summer then decline in April or May.	V/ -	No	No

Scientific Name	Common Name	Habitat	TSC Act/ EPBC Act Status *	Potential Habitat On-site	Observed On-site
<i>Ptilinopus superb</i>	Superb Fruit-Dove	Inhabits rainforest and similar closed forests where it forages high in the canopy, eating the fruits of many tree species such as figs and palms. It may also forage in eucalypt or acacia woodland where there are fruit-bearing trees.	V/ -	No	No
<i>Hirundapus caudacutus</i>	White-throated Needle-tail	In Australia, the White-throated Needle-tail is almost exclusively aerial, from heights of less than 1 m up to more than 1000 m above the ground. White-throated Needle-tails almost always forage aerially, at heights up to 'cloud level', above a wide variety of habitats ranging from heavily treed forests to open habitats, such as farmland, heathland or mudflats, though they sometimes forage much closer to the ground in open habitats, once as low as about 15 cm in a coastal saltworks. The species has been recorded roosting in trees in forests and woodlands, both among dense foliage in the canopy or in hollows, though the number of references to Needle-tails roosting in trees possibly over-emphasizes such occurrences. It has been suggested that they also sometimes roost aerially, and it was formerly erroneously thought that the species did not alight while in Australia. The species breeds in wooded lowlands and sparsely vegetated hills, as well as mountains covered with coniferous forests. White-throated Needle-tails may take refuge during extreme conditions. Many birds were seen perching on the trunks of trees during a bushfire; during cold weather, one was found roosting during the day in the hollow branch of a eucalypt and some were seen sheltering in stunted scrub during bad weather on the high plains. They may also alight on the trunks or branches of trees during hot or inclement weather; and there is a record of Needle-tails resting on a lawn under sprinklers during hot weather.	-/ V	No	No
<i>Ixobrychus flavicollis</i>	Black Bittern	Inhabits both terrestrial and estuarine wetlands, generally in areas of permanent water and dense vegetation. Where permanent water is present, the species may occur in flooded grassland, forest, woodland, rainforest and mangroves.	V/ -	No	No
<i>Haliaeetus leucogaster</i>	White-bellied Sea Eagle	White-bellied Sea-Eagles are normally seen perched high in a tree, or soaring over waterways and adjacent land. Birds form permanent pairs that inhabit territories throughout the year.	V/ C	No	No
<i>Hieraaetus morphnoides</i>	Little Eagle	Occupies open eucalypt forest, woodland or open woodland. She-oak or Acacia woodlands and riparian woodlands of interior NSW are also used. Nests in tall living trees within a remnant patch, where pairs build a large stick nest in	V/ -	No	No

Scientific Name	Common Name	Habitat	TSC Act/ EPBC Act Status *	Potential Habitat On-site	Observed On-site
		winter. Preys on birds, reptiles and mammals, occasionally adding large insects and carrion. Single population in NSW.			
<i>Pandion cristatus</i>	Eastern Osprey	Favour coastal areas, especially the mouths of large rivers, lagoons and lakes. Feed on fish over clear, open water. Breed from July to September in NSW. Nests are made high up in dead trees or in dead crowns of live trees, usually within one kilometre of the sea.	V/ -	No	No
<i>Burhinus grallarius</i>	Bush Stone-curlew	Inhabits open forests and woodlands with a sparse grassy groundlayer and fallen timber. Largely nocturnal, being especially active on moonlit nights. Feed on insects and small vertebrates, such as frogs, lizards and snakes. Nest on the ground in a scrape or small bare patch. Two eggs are laid in spring and early summer.	E/ -	No	No
<i>Glossopsitta pusilla</i>	Little Lorikeet	Forages primarily in the canopy of open Eucalyptus forest and woodland, yet also finds food in Angophora, Melaleuca and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity. Nests in proximity to feeding areas if possible, most typically selecting hollows in the limb or trunk of smooth-barked Eucalypts. Entrance is small (3 cm) and usually high above the ground (2–15 m). These nest sites are often used repeatedly for decades, suggesting that preferred sites are limited. Riparian trees often chosen, including species like Allocasuarina.	V/ -	No	No
<i>Lathamus discolor</i>	Swift Parrot	Migrates to the Australian south-east mainland between March and October. On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. Favoured feed trees include winter flowering species such as Swamp Mahogany (<i>Eucalyptus robusta</i>), Spotted Gum (<i>Corymbia maculata</i>), Red Bloodwood (<i>C. gummifera</i>), Mugga Ironbark (<i>E. sideroxylon</i>), and White Box (<i>E. albens</i>). Commonly used lerp infested trees include Inland Grey Box (<i>E. microcarpa</i>), Grey Box (<i>E. moluccana</i>) and Blackbutt (<i>E. pilularis</i>). Following winter they return to Tasmania where they breed from September to January, nesting in old trees with hollows and feeding in forests dominated by Tasmanian Blue Gum (<i>Eucalyptus globulus</i>).	E/ CE	No	No

Scientific Name	Common Name	Habitat	TSC Act/ EPBC Act Status *	Potential Habitat On-site	Observed On-site
<i>Ninox connivens</i>	Barking Owl	Inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. It is flexible in its habitat use, and hunting can extend in to closed forest and more open areas. Roost in shaded portions of tree canopies, including tall midstorey trees with dense foliage such as Acacia and Casuarina species. Preferentially hunts small arboreal mammals such as Squirrel Gliders and Ringtail Possums, but when loss of tree hollows decreases these prey populations the owl becomes more reliant on birds, invertebrates and terrestrial mammals such as rodents and rabbits. Can catch bats and moths on the wing, but typically hunts by sallying from a tall perch. Requires very large permanent territories in most habitats due to sparse prey densities. Monogamous pairs hunt over as much as 6000 hectares, with 2000 hectares being more typical in NSW habitats.	V/ -	No	No
<i>Ninox strenua</i>	Powerful Owl	Inhabits a range of vegetation types, from woodland and open sclerophyll forest to tall open wet forest and rainforest. The Powerful Owl requires large tracts of forest or woodland habitat but can occur in fragmented landscapes as well. The species breeds and hunts in open or closed sclerophyll forest or woodlands and occasionally hunts in open habitats. It roosts by day in dense vegetation comprising species such as Turpentine (<i>Syncarpia glomulifera</i>), Black She-oak (<i>Allocasuarina littoralis</i>), Blackwood (<i>Acacia melanoxylon</i>), Rough-barked Apple (<i>Angophora floribunda</i>), Cherry Ballart (<i>Exocarpus cupressiformis</i>) and a number of eucalypt species. The main prey items are medium-sized arboreal marsupials, particularly the Greater Glider, Common Ringtail Possum and Sugar Glider. Flying foxes are important prey in some areas; birds comprise about 10-50% of the diet depending on the availability of preferred mammals. As most prey species require hollows and a shrub layer, these are important habitat components for the owl. In good habitats a mere 400 ha can support a pair; where hollow trees and prey have been depleted the owls need up to 4000 ha. Powerful Owls nest in large tree hollows (at least 0.5 m deep), in large eucalypts (diameter at breast height of 80-240 cm) that are at least 150 years old. While the female and young are in the nest hollow the male Powerful Owl roosts nearby (10-200 m) guarding them, often choosing a dense "grove" of trees that provide concealment from other birds that harass him.	V/ -	No	No

Scientific Name	Common Name	Habitat	TSC Act/ EPBC Act Status *	Potential Habitat On-site	Observed On-site
<i>Anthochaera phrygia</i>	Regent Honeyeater	The species inhabits dry open forest and woodland, particularly Box-Ironbark woodland, and riparian forests of River Sheoak. Regent Honeyeaters inhabit woodlands that support a significantly high abundance and species richness of bird species. These woodlands have significantly large numbers of mature trees, high canopy cover and abundance of mistletoes. Every few years non-breeding flocks are seen foraging in flowering coastal Swamp Mahogany and Spotted Gum forests, particularly on the central coast and occasionally on the upper north coast. Birds are occasionally seen on the south coast.	E4A/ CE	No	No
<i>Daphoenositta chrysoptera</i>	Varied Sittella	Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, Mallee and <i>Acacia</i> woodland. Feeds on arthropods gleaned from crevices in rough or decorticating bark, dead branches, standing dead trees and small branches and twigs in the tree canopy. Builds a cup-shaped nest of plant fibres and cobwebs in an upright tree fork high in the living tree canopy, and often re-uses the same fork or tree in successive years.	V/ -	No	No
<i>Stagonopleura guttata</i>	Diamond Firetail	Found in grassy eucalypt woodlands, including Box-Gum Woodlands and Snow Gum Eucalyptus pauciflora Woodlands. Also occurs in open forest, mallee, Natural Temperate Grassland, and in secondary grassland derived from other communities. Often found in riparian areas (rivers and creeks), and sometimes in lightly wooded farmland.	V/ -	No	No
Mammalia					
<i>Isoodon obesulus obesulus</i>	Southern Brown Bandicoot (Eastern)	Southern Brown Bandicoots are largely crepuscular (active mainly after dusk and/or before dawn). They are generally only found in heath or open forest with a heathy understorey on sandy or friable soils. They feed on a variety of ground-dwelling invertebrates and the fruit-bodies of hypogeous (underground-fruiting) fungi. Their searches for food often create distinctive conical holes in the soil.	V/ E	No	No

Scientific Name	Common Name	Habitat	TSC Act/ EPBC Act Status *	Potential Habitat On-site	Observed On-site
<i>Perameles nasuta</i>	Long-nosed Bandicoot – North Head	Essentially a solitary animal that occupies a variety of habitats on North Head. Forages mainly at or after dusk, digging for invertebrates, fungi and tubers. The conical holes it leaves in the soil are often seen at the interface of naturally vegetated and areas of open grass around the Quarantine Station, former Defence Lands and Saint Patrick's Estate. Shelters during the day in a well-concealed nest based on a shallow hole lined with leaves and grass, sometimes under debris, sometimes hidden with soil and with the entrance closed for greater concealment.	EP/ -	Yes	No
<i>Phascolarctos cinereus</i>	Koala	Inhabit eucalypt woodlands and forests. Feed on the foliage of more than 70 eucalypt species and 30 non-eucalypt species, but in any one area will select preferred browse species. Home range size varies according to quality of habitat, ranging from less than two hectares to several hundred hectares. Around Sydney, red gums and mahoganies are their most favoured trees.	V/ V	No	No
<i>Cercartetus nanus</i>	Eastern Pygmy-possum	Found in a broad range of habitats from rainforest through sclerophyll (including Box-Ironbark) forest and woodland to heath, but in most areas woodlands and heath appear to be preferred, except in north-eastern NSW where they are most frequently encountered in rainforest. Feeds largely on nectar and pollen collected from banksias, eucalypts and bottlebrushes; an important pollinator of heathland plants such as banksias; soft fruits are eaten when flowers are unavailable. Also feeds on insects throughout the year; this feed source may be more important in habitats where flowers are less abundant such as wet forests.	V/ -	No	No
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy. Can travel up to 50 km from the camp to forage; commuting distances are more often <20 km. Feed on the nectar and pollen of native trees, in particular Eucalyptus, Melaleuca and Banksia, and fruits of rainforest trees and vines.	V/ V	Yes	No
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows. When foraging for insects, flies high and fast over the forest canopy, but lower in more open country. Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory.	V/ -	Yes	No

Scientific Name	Common Name	Habitat	TSC Act/ EPBC Act Status *	Potential Habitat On-site	Observed On-site
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin (<i>Petrochelidon ariel</i>), frequenting low to mid-elevation dry open forest and woodland close to these features. Females have been recorded raising young in maternity roosts (c. 20-40 females) from November through to January in roof domes in sandstone caves and overhangs. They remain loyal to the same cave over many years. Found in well-timbered areas containing gullies. The relatively short, broad wing combined with the low weight per unit area of wing indicates manoeuvrable flight. This species probably forages for small, flying insects below the forest canopy. Likely to hibernate through the coolest months.	V/ V	No	No
<i>Myotis macropus</i>	Southern Myotis	Generally roost in groups of 10 - 15 close to water in caves, mine shafts, hollow-bearing trees, stormwater channels, buildings, under bridges and in dense foliage. Forage over streams and pools catching insects and small fish by raking their feet across the water surface.	V/ -	No	No
<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	Utilises a variety of habitats from woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest. Although this species usually roosts in tree hollows, it has also been found in buildings. Forages after sunset, flying slowly and directly along creek and river corridors at an altitude of 3 - 6 m. Open woodland habitat and dry open forest suits the direct flight of this species as it searches for beetles and other large, slow-flying insects; this species has been known to eat other bat species.	V/ -	No	No
<i>Vespadelus troughtoni</i>	Eastern Cave Bat	Very little is known about the biology of this uncommon species. A cave-roosting species that is usually found in dry open forest and woodland, near cliffs or rocky overhangs; has been recorded roosting in disused mine workings, occasionally in colonies of up to 500 individuals. Occasionally found along cliff-lines in wet eucalypt forest and rainforest. Little is understood of its feeding or breeding requirements or behaviour.	V/ -	No	No

Scientific Name	Common Name	Habitat	TSC Act/ EPBC Act Status *	Potential Habitat On-site	Observed On-site
<i>Miniopterus australis</i>	Little Bentwing-bat	Moist eucalypt forest, rainforest, vine thicket, wet and dry sclerophyll forest, Melaleuca swamps, dense coastal forests and banksia scrub. Generally found in well-timbered areas. Little Bentwing-bats roost in caves, tunnels, tree hollows, abandoned mines, stormwater drains, culverts, bridges and sometimes buildings during the day, and at night forage for small insects beneath the canopy of densely vegetated habitats. They often share roosting sites with the Common Bentwing-bat and, in winter, the two species may form mixed clusters. In NSW the largest maternity colony is in close association with a large maternity colony of Eastern Bentwing-bats (<i>Miniopterus schreibersii</i>) and appears to depend on the large colony to provide the high temperatures needed to rear its young. Maternity colonies form in spring and birthing occurs in early summer. Males and juveniles disperse in summer. Only five nursery sites /maternity colonies are known in Australia.	V/ -	No	No
<i>Miniopterus orianae oceanensis</i>	Large Bentwing-bat	Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. Form discrete populations centred on a maternity cave that is used annually in spring and summer for the birth and rearing of young. At other times of the year, populations disperse within about 300 km range of maternity caves. Hunt in forested areas, catching moths and other flying insects above the tree tops.	V/ -	No	No

* V = Vulnerable, E = Endangered, EP = Endangered Population, C = China Australia Migratory Bird Agreement (CAMBA).

3 IMPACT ASSESSMENT

3.1 Flora

The proposal would clear all vegetation on the three properties. There are no threatened species of flora present, and almost all plants are introduced species, many of which are weeds. Several plants of common native species occur.

As part of the proposed landscaping for the new development, native tree, shrub and groundcover species would be planted. It is recommended that the eight (8) locally occurring native species of trees/ shrubs that presently occur on the site be included in the proposal landscaping. Combined with the native groundcover species that would be planted to provide Long-nosed Bandicoot habitat (refer Section 3.2 below), this would result in an increase in native vegetation on the site from the present.

There would be no significant adverse impact on flora from the proposed development.

3.2 Fauna

The proposal would remove a small area of habitat for common species of native fauna typically encountered within the urban environment around Manly. Fauna impacted would comprise mainly commonly occurring invertebrates, birds and small lizards.

The site provides marginal habitat for two threatened species of fauna that have been recorded nearby, namely the Grey-headed Flying Fox and Yellow-bellied Sheath-tail-bat. In the unlikely event these threatened species do actually use the site, removal of the habitat on the project site would not have a significant impact on these species, mainly because there are relatively vast areas of similar and better quality habitat locally. A Test of Significance (5-part Test) provided in Appendix F confirms there would be no significant impact to these species.

The project site also provides potential habitat for the Long-nosed Potoroo, the local population of which is listed as Endangered. While there was evidence the bandicoots forage on the lawns of the road verges around the project site no evidence was found during three assessments of the site in March 2017, May 2017, November 2021 or March 2022, that the bandicoots utilise habitat within the project site. Nevertheless, the proposal has been designed specifically to ensure bandicoots can access new areas of habitat within the site by providing suitable gaps at strategic locations beneath gates/ fences and between fence pickets. The areas within the site accessible to bandicoots would be landscaped specifically for bandicoots by including species listed in Section 3.3.1 of the Manly Development Control Plan 2013. The proposed areas of bandicoot habitat are illustrated in the plan drawings provided in Appendices A and B. To protect bandicoots utilising habitat on the site owners would be advised to keep pets indoors at night and/or ensure pets wear bells fitted to their collars. Owners would also be advised to be aware of bandicoots in the area when driving, particularly when entering or exiting the property. Importantly, there would be no significant change in traffic volumes in the area as a result of the proposal.

The following additional recommendations are made to prevent bandicoots being harmed during construction period:

1. As part of the induction for all construction workers on this project, workers should be informed of the presence on and around the site of Long-nosed Bandicoots that are part of the endangered North Head population.

2. Every morning prior to commencement of work all equipment, material stockpiles and trenches should be inspected to ensure no Bandicoots are sheltering there.

3. Impacts to the lawn on the road verges and adjoining footpaths around the development site should be avoided where possible. Where avoiding such impact is not possible, the areas impacted should be kept to a minimum. These areas provide foraging habitat for the Long-nosed Bandicoots.

With the effective implementation of the above recommendations there would be no significant impact to the endangered population of Long-nosed Bandicoots at North Head. This is confirmed in a 5-part test provided in Appendix F.

There would be no significant impact on fauna from the proposed development.

4 CONCLUSION AND SUMMARY OF RECOMMENDATIONS

The proposal is to demolish the three buildings and completely clear all vegetation on the three properties in order to construct five new residences there. The vegetation that currently exists on the properties comprises largely introduced species of ornamental trees, shrubs and groundcovers, and many weeds. There are a small number of plants of native species present also. There is no remnant native vegetation present and there are no threatened species of flora.

The project site provides marginal habitat for two species of threatened fauna that have been recorded in the area, namely the Grey-headed Flying Fox and the Yellow-bellied Sheath-tail-bat. In the unlikely event these threatened species do actually use the site, removal of the habitat on the project site would not have a significant impact on these species, mainly because there are relatively vast areas of similar habitat locally.

The project site also provides potential habitat for the Long-nosed Potoroo, the local population of which is listed as Endangered. While there was evidence the bandicoots forage on the lawns around the project site no evidence was found during the site assessment that they utilise the habitat within the project site. The proposal would not have a significant impact on this species, because there are large areas of similar habitat around the project site and in the local area more generally, and there is no evidence they are utilising habitat on the project site at present.

Landscaping is proposed around the residences as part of the proposal. The landscaping would restore similar vegetation and habitat to what currently exists on the properties in the form of scattered small trees and shrubs and continuous areas of groundcover vegetation that are linked across the project site. However, the proposal would restore a larger proportion of native vegetation in the form of locally occurring native tree, shrub and groundcover species, than what currently exists on the site. In addition to assisting to conserve the native flora of the area it would also provide habitat for native fauna, particularly invertebrates and birds, but also possibly the threatened Grey-headed Flying Fox and species of threatened microbat that have been recorded in the area. The proposal has also been designed to specifically restore areas of habitat for the Long-nosed Bandicoot and to ensure the bandicoots have access to these areas.

There would be no significant adverse impact on native flora and fauna from the proposal. Indeed, there may be a positive, beneficial impact on native flora and fauna as a result of the proposed landscaping.

While there would be no significant impact on the Long-nosed Bandicoot from the proposed development, there may be some minor impact. The following recommendations are provided to minimise any potential impacts and to mitigate those impacts by providing new areas of habitat for the species as part of the proposed development.

Recommendations

1. As part of the induction for all construction workers on this project, workers should be informed of the presence on and around the property of Long-nosed Bandicoots that are part of the endangered North Head population.
2. The Construction Environmental Management Plan (CEMP) for the project should include measures specifically to minimise impacts to the Long-nosed Bandicoot. For example, impacts to the lawns around the project site should be avoided where possible. These areas provide foraging habitat for the Long-nosed Bandicoots. Where avoiding such impact is not possible, the areas of lawn impacted should be kept to a

minimum. Also, equipment and materials stockpiles should be inspected prior to commencement of work each morning to ensure no Bandicoots are sheltering there as they may be harmed when construction commences.

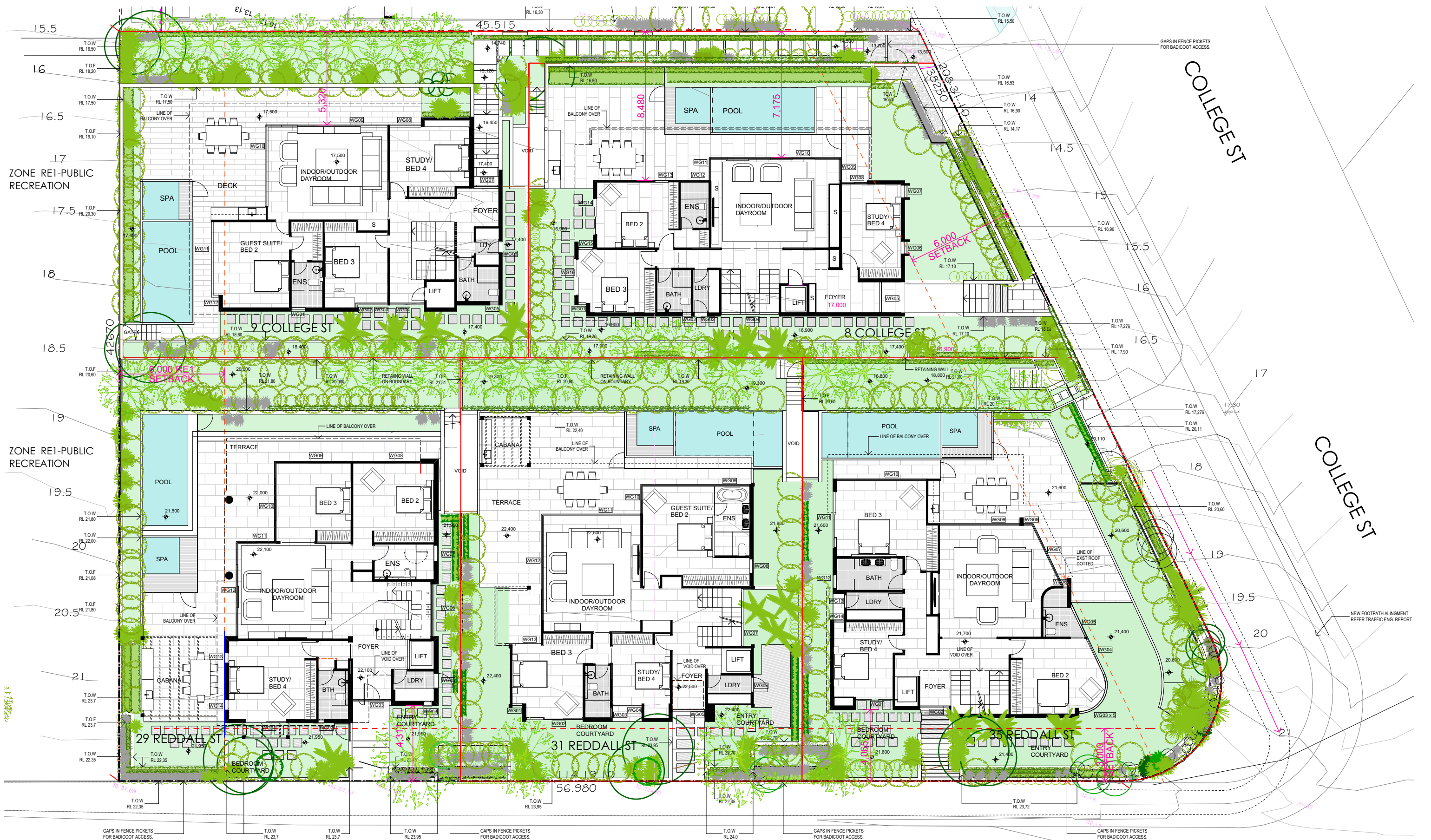
3. Certain areas within the property that are accessible to Long-nosed Bandicoots should be landscaped as specified in Clause 3.3.1 of the Manly DCP 2013 that states: “In areas of habitat for the long-nosed bandicoot landscape design must include native plant species to provide new and/or improved low dense clumping habitat to provide for potential foraging and nesting. The planting schedule should comprise species such as Lomandra sp. Dianella sp., Banksia spinulosa, Caustis sp., Xanthorrhoea sp., Isolepis sp., Juncus sp., Adiantum sp., Calochlaena sp., Callistemon sp., Grevillea juniperina, Gleichenia sp., Grevillea ‘Robyn Gordon’ and tussocky native grasses (e.g. Kangaroo Grass).”
4. Internal landscaping for the proposed development should also incorporate where possible some locally occurring native plants.

5 REFERENCES

- DECC, 2007. *Threatened Species Assessment Guidelines - The Assessment of Significance*. NSW Department of Environment and Climate Change.
- DPIE, 2016. *The Native Vegetation of the Sydney Metropolitan Area* (VIS_ID 4489). NSW Department of Primary Industry and Environment.
- iScape, 2022. *Residential Development 29, 31 and 31 Reddall St + 8 and 9 College St, Manly. Concept Plan*. Drawing No. 241.22(51)/532. iScape Landscape Architecture.
- SIAEEP, 2019. *29, 31-35 Reddall St & 95 Bower St, Manly - Terrestrial Biodiversity Report & '5-part Test' for the Long-nosed Bandicoot*. Report dated 6th June 2019. SIA Ecological & Environmental Planning Pty Ltd.

Appendices

Appendix A – Ground Floor Plan



GROUND FLOOR

DA ISSUE 25/01/2023

NOTES:

FIGURED DIMENSIONS ARE TO BE TAKEN IN PREFERENCE TO SCALED DIMENSIONS.

THE CONTRACTOR IS TO CHECK AND VERIFY FIGURED DIMENSIONS PRIOR TO ANY COMMENCEMENT OF WORK ON SITE.

THIS DRAWING IS COPYRIGHT AND SHALL REMAIN THE PROPERTY OF WOLSKI COPPIN ARCHITECTURE

REVISIONS:		
DATE	REV	DESCRIPTION

ARCHITECT:

WOLSKI . COPPIN
ARCHITECTURE

SUITE 3, LEVEL 1, 507 MILITARY ROAD MOSMAN NSW 2088
T: 9953 8477 E: info@wolskicoppin.com.au
DAVID WOLSKI NSW ARB No. 5297

PROJECT TITLE:

FIVE RESIDENCES
for Reddall Street Pty Ltd
29, 31 & 35 Reddall St + Proposed lots
8 & 9 College St Manly

DRAWING TITLE:

GROUND FLOOR

DRAWING No:

DA02

PROJECT No:	22020
SCALE:	1:200 @ A3
REVISION:	
DATE:	25/01/2023

NORTH POINT:

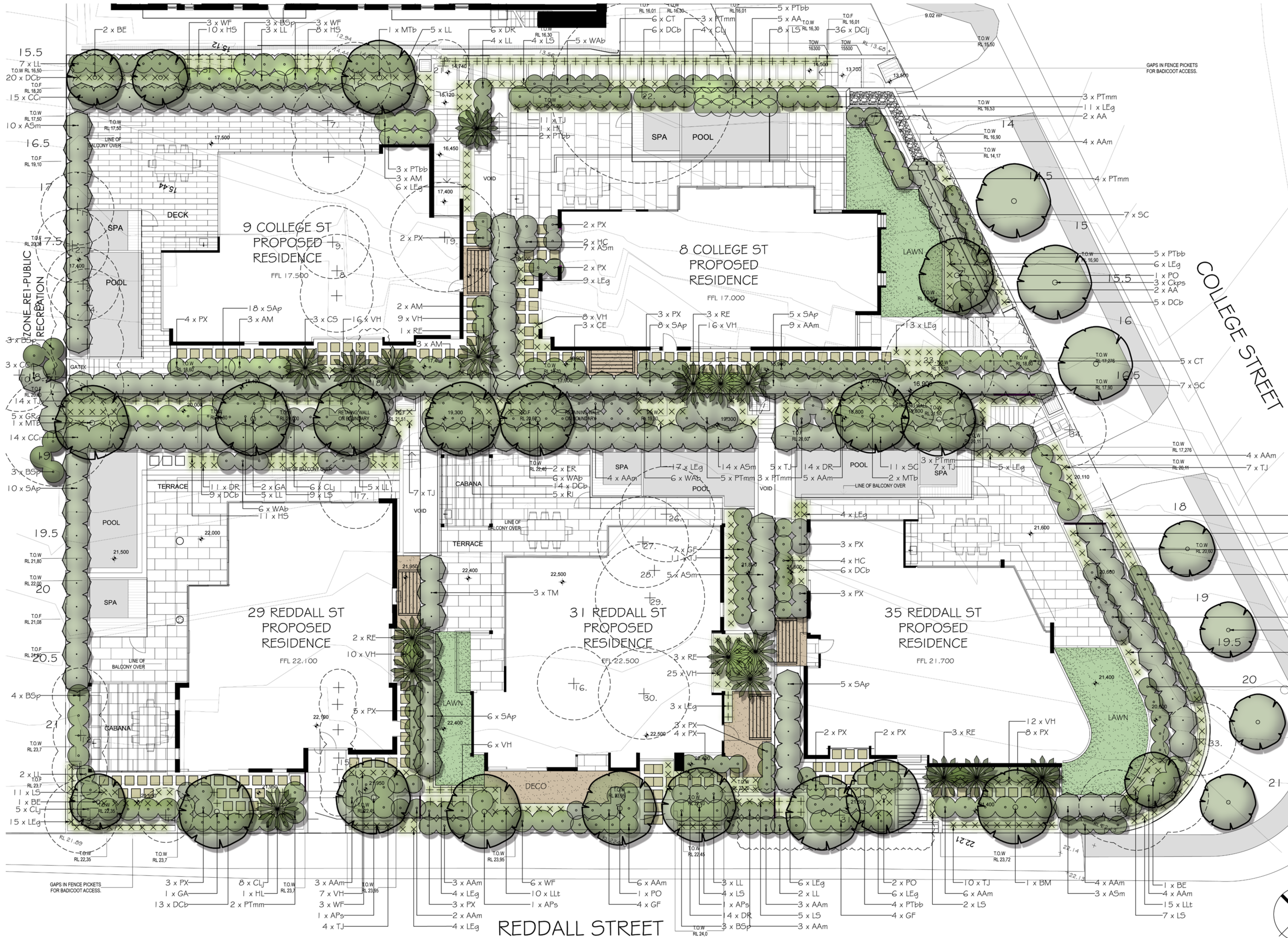
PLOT DATE: 25/01/2023

BIM Server: BIMSRV01 - BIM Server 20/29-35 Reddall Street, Manly 5 Residences - Study 1 - 121121

Appendix B – Landscape Plan

LEGEND

- + 55.28 EXISTING LEVELS
- EXISTING TREES TO BE REMOVED
- PROPOSED SMALL TREES
- PROPOSED FERN/PALMS
- PROPOSED SCREEN SHRUBS
- PROPOSED SMALLER SHRUBS, ACCENT PLANTS
- PROPOSED GROUNDCOVER PLANTS
- NEW TURF AREAS
- DECOMPOSED GRANITE
- STEPPING STONES
- BRICK GARDEN EDGING



Verify all dimensions on site before commencing construction or ordering materials. Verify the dimensions of all manufactured products before installation. Use figured dimensions in preference to scaled dimensions. Report any discrepancies to the Landscape Architect for a decision before work commences.

NOTES

This plan is to be read in conjunction with all documentation prepared by Wolski Coppin Architecture.



office. 16/303 pacific highway
lindfield nsw 2070

ph 9416 4290
A.C.N 097 328 580
email ilja@netspace.net.au

project
Residential Development
29, 31 & 35 Reddall Street + 8 & 9 College Street, Manly

drawing
Landscape Plan 1

client
Reddall Street Pty Ltd

date	scale
January 2023	1:100 @ A1
job.dwg no.	1:200 @ A3
241.23(21)/078	no. in set
designed by	ONE/TWO
IJ	drawn by
	AM



SCHEDULE OF PLANT MATERIAL

CODE	BOTANICAL NAME	COMMON NAME	QUANTITY	MATURE HEIGHT	CONTAINER SIZE	STAKES
AA	<i>Agave attenuata</i>	Agave	14	1m	200mm	-
AAm	<i>Acmena smithii</i> 'Allyn Magic'	Dwarf Lilly Pilli	60	1m	200mm	-
ASm	<i>Acmena smithii</i> 'Minor'	Dwarf Lilly Pilli	50	3m	200mm	-
APs	<i>Acer palmatum</i> 'Senkaki'	Coral Barked Maple	3	4m	75 litre	2
AM	<i>Alpinia mutica</i>	Dwarf Cardemon Ginger	11	2m	200mm	-
BM	<i>Backhousia myrtifolia</i>	Grey Myrtle	1	7m	25 litre	2
BE	<i>Banksia ericifolia</i>	Heath Banksia	4	3m	45 litre	-
BSp	<i>Banksia spinulosa</i>	Hairpin Banksia	16	1.5m	200mm	-
CCi	<i>Callistemon citrinus</i>	Bottlebrush	32	2.5m	200mm	-
CCI*	<i>Callistemon citrinus</i>	Bottlebrush	4	2.5m	75 litre	-
CKps	<i>Callistemon</i> 'Kings Park Special'	Bottlebrush	3	5m	75 litre	-
CLj	<i>Callistemon</i> 'Little John'	Bottlebrush	23	1m	200mm	-
CS	<i>Chamaedorea seifrizii</i>	Bamboo Palm	3	2.5m	200mm	-
CT	<i>Choisya ternata</i>	Mexican Orange Blossom	11	1.5m	200mm	-
CE	<i>Colocasia esculenta</i>	Elephant Ear	3	2m	200mm	-
DCb	<i>Dianella</i> 'Cassa Blue'	Blue Flax Lily	79	0.4m	140mm	-
DCIj	<i>Dianella caerulea</i> 'Little Jess'	Little Jess Dianella	36	0.4m	140mm	-
DR	<i>Dianella revoluta</i>	Flax Lily	45	0.4m	140mm	-
ER	<i>Elaeocarpus reticulatus</i>	Blueberry Ash	2	5m	45 litre	2
GF	<i>Gardenia augusta</i> 'Florida'	Gardenia	15	1m	200mm	-
GRg	<i>Grevillea</i> 'Robyn Gordon'	Robyn Gordon	5	1.5m	200mm	-
GA	<i>Gordonia axillaris</i>	Fried Egg Plant	3	5m	45 litre	2
HC	<i>Hedychium coronarium</i>	Fragrant White Ginger	6	2m	200mm	-
HS	<i>Hibbertia scandens</i>	Guinea Flower	29	0.4m	140mm	-
HL	<i>Hyophorbe lagenicaulis</i>	Bottle Palm	2	3m	45 litre	2
LEg	<i>Liriope</i> 'Evergreen Giant'	Turf Lily	127	0.6m	140mm	-
LL	<i>Lomandra longifolia</i>	Mat Rush	36	1m	140mm	-
LLt	<i>Lomandra longifolia</i> 'Tanika'	Tanika Lomandra	37	0.4m	140mm	-
LS	<i>Lomandra</i> 'Seascape'	Seascape Lomandra	50	0.4m	140mm	-
MTb	<i>Magnolia grandiflora</i> 'Teddy Bear'	Dwarf Magnolia	4	4m	45 litre	2
PO	<i>Plumeria obtusa</i>	Singapore Plumeria	4	4m	45 litre	-
PTbb	<i>Phormium tenax</i> 'Bronze Baby'	Dwarf NZ Flax	33	1m	140mm	-
PTmm	<i>Pittosporum</i> 'Miss Muffet'	Pittosporum	23	1m	200mm	-
PX	<i>Philodendron</i> 'Xanadu'	Xanadu	49	0.75m	200mm	-
RI	<i>Rhaphiolepis indica</i>	Indian Hawthorn	5	1.5m	200mm	-
RE	<i>Rhapis excelsa</i>	Lady Palm	12	3m	200mm	-
SC	<i>Syzygium</i> 'Cascade'	Cascade Lillypilly	25	2m	200mm	-
SAP	<i>Syzygium australe</i> 'Pinnacle'	Dwarf Lilly Pilli	52	3m	200mm	-
TJ	<i>Trachelospermum jasminoides</i>	Star Jasmine	76	0.4m	140mm	-
TM	<i>Thysanolaena maxima</i>	Tiger Grass	3	2m	200mm	-
VH	<i>Viola hederacea</i>	Native Violet	109	0.1m	140mm	-
WAb	<i>Westringia fruticosa</i> 'Aussie Box'	Dwarf Coastal Rosemary	23	1m	200mm	-
WF	<i>Westringia fruticosa</i>	Coastal Rosemary	15	2m	200mm	-



Acer palmatum 'Senkaki'



Acmena smithii 'Allyn Magic'



Acmena smithii 'Minor'



Agave attenuata



Alpinia mutica



Banksia ericifolia



Banksia spinulosa



Callistemon citrinus



Callistemon 'Kings Park Special'



Callistemon 'Little John'



Chamaedorea seifrizii



Choisya ternata



Colocasia esculenta



Dianella 'Cassa Blue'



Dianella caerulea 'Little Jess'



Dianella revoluta



Elaeocarpus reticulatus



Gardenia augusta 'Florida'



Gordonia axillaris



Grevillea 'Robyn Gordon'



Hedychium coronarium

SCHEDULE OF EXISTING TREES

KEY	BOTANICAL NAME	COMMON NAME	HEIGHT X SPREAD
1.	<i>Murraya paniculata</i>	Orange jessamine	7 x 6m
2.	<i>Melaleuca bracteata</i>	Black Tea-tree	7.5 x 6m
3.	<i>Camellia sasanqua</i>	Sasanqua camellia	6.5 x 4m
4.	<i>Murraya paniculata</i> x 4	Orange jessamine	6 x 5m
5.	<i>Viburnum odoratissimum</i>	Sweet viburnum	6.5 x 13m
6.	<i>Olea europaea</i> L. subsp.cuspidata	African olive	-
7.	<i>Archontophoenix cunningghamiana</i>	Bangalow palm	-
8.	<i>Murraya paniculata</i> x 2	Orange jessamine	4.5 x 6m
9.	<i>Archontophoenix alexandrae</i> ,	Alexandra palm	-
10.	<i>Ficus benjamina</i>	Weeping fig	5.5 x 4m
11.	<i>Nerium oleander</i>	Oleander	5 x 6m
12.	<i>Robinia pseudoacacia</i> 'Frisia'	Golden Robinia	-
13.	<i>Elaeocarpus reticulatus</i> cv	Blueberry Ash 'Prima Donna'	5 x 5m
14.	<i>Magnolia grandiflora</i> cv.	Little Gem	4.5 x 3m
15.	<i>Syzygium australe</i> cv. x 9	Brush Cherry	5-6 x 10m
16.	<i>Cupressus</i> sp.	Cypress	-
17.	<i>Pittosporum undulatum</i>	Native Daphne	-
18.	<i>Camellia japonica</i> x 3	<i>Viburnum odoratissimum</i> x 1	5 x 5.5m
19.	<i>Ficus rubiginosa</i>	Port Jackson fig	10 x 7m
20.	<i>Cyathea cooperi</i>	Australian Tree fern	4 x 5m
21.	<i>Archontophoenix alexandrae</i>	Alexandra palm	-
22.	<i>Strelitzia nicolai</i>	Giant White Bird of Paradise	13 x 10m
23.	<i>Plumeria acutifolia</i>	Frangipani	4.5 x 6m
24.	<i>Phoenix canariensis</i>	Canary Island date palm	-
25.	<i>Olea europaea</i> L. subsp. cuspidata	African olive	-
26.	<i>Phoenix canariensis</i>	Canary Island date palm	-
27.	<i>Dracaena marginata</i>	Red-edged Dracaena	6 x 5m
28.	<i>Archontophoenix alexandrae</i>	Alexandra palm	-
29.	<i>Ficus lyrata</i>	Fiddle-leaved fig	8 x 6m
30.	<i>Plumeria acutifolia</i>	Frangipani	4.5 x 5m
31.	<i>Plumeria acutifolia</i> x 4	Frangipani	5 x 12m
32.	<i>Syagrus romanzoffiana</i> x 3	Cocos palm	-
33.	<i>Phoenix canariensis</i>	Canary Island date palm	-
34.	<i>Syagrus romanzoffiana</i>	Cocos palm	-
35.	<i>Nerium oleander</i>	Oleander	-



Hibbertia scandens



Hyophorbe lagenicaulis



Liriope 'Evergreen Giant'



Lomandra longifolia



Lomandra longifolia 'Tanika'



Lomandra 'Seascape'



Magnolia grandiflora 'Teddy Bear'



Plumeria obtusa



Phormium tenax 'Bronze Baby'



Pittosporum 'Miss Muffet'



Philodendron 'Xanadu'



Rhaphiolepis indica



Syzygium australe 'Pinnacle'



Syzygium 'Cascade'



Rhapis excelsa



Trachelospermum jasminoides



Thysanolaena maxima



Viola hederacea



Westringia fruticosa 'Aussie Box'



Westringia fruticosa

NOTE: Also refer to Tree Impact Assessment prepared by Catriona Mackenzie, Urban Forestry Australia for Trees No.1-35.

Verify all dimensions on site before commencing construction or ordering materials. Verify the dimensions of all manufactured products before installation. Use figured dimensions in preference to scaled dimensions. Report any discrepancies to the Landscape Architect for a decision before work commences.

NOTES

This plan is to be read in conjunction with all documentation prepared by **Wolski Coppin Architecture**.



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A.C.N 097 328 580
email ijla@netspace.net.au

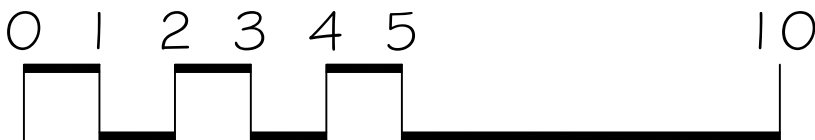
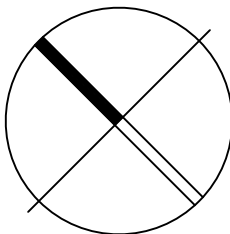
project
Residential Development

29, 31 & 35 Reddall Street + 8 & 9 College Street, Manly

drawing
Landscape Plan 2

client
Reddall Street Pty Ltd

date January 2023	scale 1:100 @ A1 1:200 @ A3
job.dwg no. 241.23(21)/079	no. in set TWO/TWO
designed by IJ	drawn by AM



Appendix C – Bandicoot Access Plan

LEGEND

- +55.20 EXISTING LEVELS
- BANDICOOT ACCESS POINTS
- SITE THROUGH LINKS
- BANDICOOT ACCESS HOLE IN WALLS/FENCES (MINIMUM 100 x 100MM)
- BANDICOOT ACCESS UNDER GATES (MINIMUM 80MM)
- BANDICOOT ACCESSIBLE AREAS
- BANDICOOT ACCESSIBLE AREAS VIA STAIRS
- NEW TURF AREAS
- DECOMPOSED GRANITE
- STEPPING STONES
- BRICK GARDEN EDGING

Verify all dimensions on site before commencing construction or ordering materials. Verify the dimensions of all manufactured products before installation. Use figured dimensions in preference to scaled dimensions. Report any discrepancies to the Landscape Architect for a decision before work commences.

NOTES

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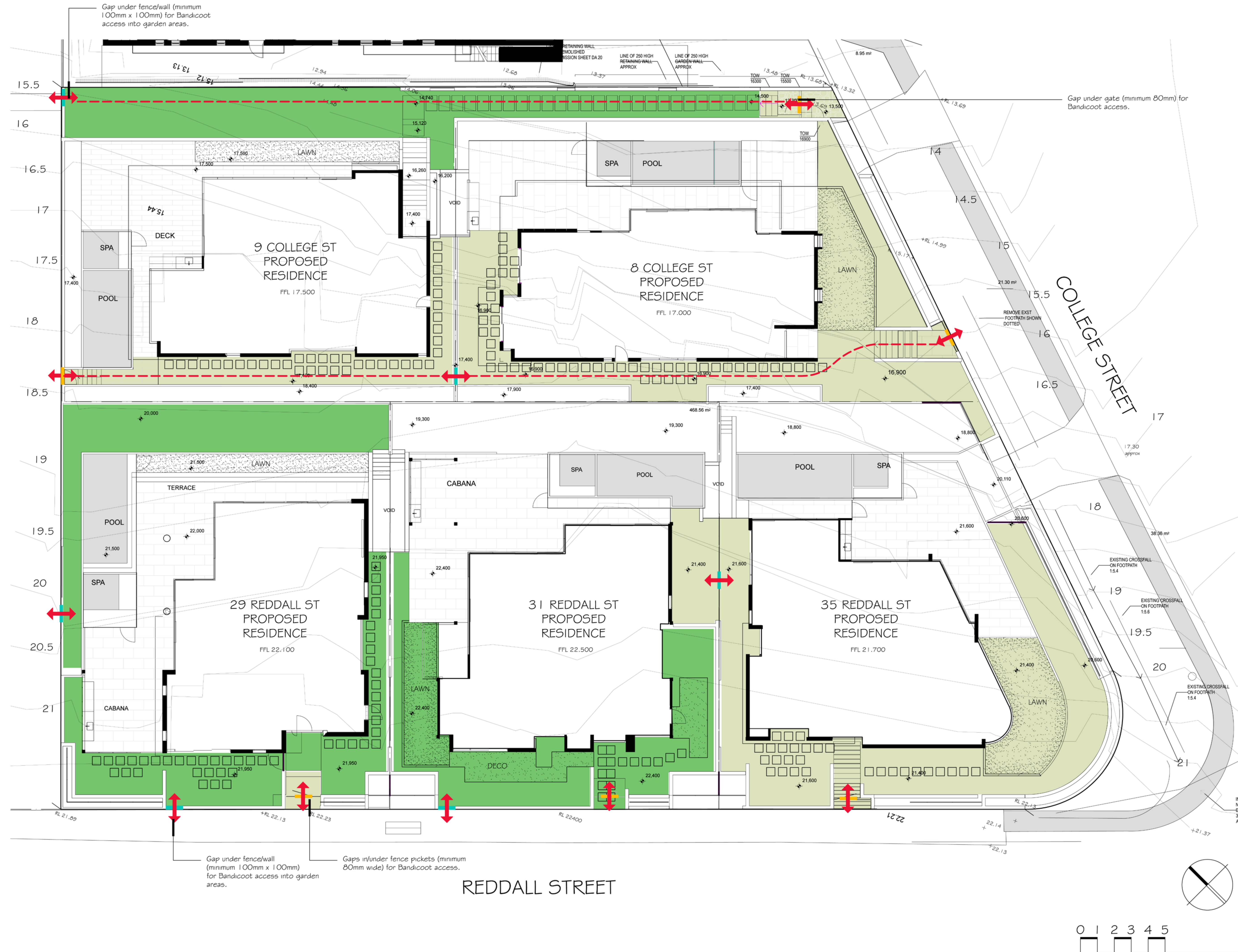
ph 9416 4290
A.C.N 097 328 580
email ijla@netspace.net.au

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Bandicoot Access Plan

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job.dwg no. 241.23(21)/023
no. in set ONE/ONE
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REDDALL STREET

Appendix D – Photographs



Photo 1: Existing landscaped vegetation.



Photo 2: Similar landscaping would be restored as part of the proposed landscaping but comprising mostly locally occurring native species.



Photo 3: Lawn adjoining the project site where Long-nosed Bandicoot diggings were observed.



Photo 4: Vegetation currently includes small trees and shrubs of mostly introduced species.



Photo 5: The front yard of 31 Reddall St comprising mostly introduced species and weeds.



Photo 6: The rear yard of 31 Reddall St again comprising mostly introduced species and weeds.



Photo 7: The weeds are overgrown in the rear yard.



Photo 8: Lawn on the road verge where Long-nosed Bandicoot diggings were observed.



Photo 9: The rear yard of 35 Reddall St with planted introduced species, a lawn of introduced grasses, introduced ornamental shrubs and weeds.



Photo 10: Introduced species and weeds.

Appendix E – Species Lists

FLORA**TREES**

<i>Archontophoenix cunninghamiana</i>	Bangalow Palms
<i>Cinnamomum camphora</i> *	Camphor Laurel
<i>Cupressus</i> sp.*	Cypress
<i>Cyathea cooperi</i>	Straw Treefern
<i>Elaeocarpus reticulatus</i>	Blueberry Ash
<i>Ficus lyrata</i> *	Fiddle-leaf Fig
<i>Ficus rubiginosa</i>	Port Jackson Fig
<i>Jacaranda mimosifolia</i> *	Jacaranda
<i>Magnolia grandiflora</i> *	Southern Magnolia
<i>Melia azedarach</i>	White Cedar
<i>Olea europaea</i> *	European Olive
<i>Phoenix canariensis</i> *	Canary Island Date Palm
<i>Pittosporum undulatum</i>	Sweet Pittosporum
<i>Plumeria rubra</i> *	Frangipani
<i>Robinia pseudoacacia</i> *	Black Locust
<i>Strelizia nicolai</i> *	Giant White Bird of Paradise
<i>Syagrus romanzoffianum</i> *	Cocos Palms
<i>Syzygium australe</i>	Brush Cherry
<i>Schefflera arboricola</i> *	Dwarf Umbrella Tree

SHRUBS

<i>Brugmansia</i> spp.*	Angel's Trumpet
<i>Camellia japonica</i> *	Camelia
<i>Hibiscus</i> sp.*	Hibiscus
<i>Justicia brandegeana</i> *	Mexican Shrimp Plant
<i>Melaleuca armillaris</i>	Bracelet Honey-myrtle
<i>Murraya paniculata</i> *	Murraya
<i>Nerium oleander</i> *	Oleander
<i>Ochna serrulata</i> *	Mickey Mouse Plant
<i>Nerium oleander</i> *	Oleander
<i>Senna pendula</i> var. <i>glabrata</i> *	Cassia
<i>Solanum mauritianum</i> *	Wild Tobacco

GROUNDCOVERS AND CLIMBERS

<i>Acetosa Sagittata</i> *	Turkey Rhubarb
<i>Agave attenuata</i> *	Foxtail Agave
<i>Ageratina adenophora</i> *	Crofton Weed
<i>Aloe vera</i> *	
<i>Anagallis arvensis</i> *	Scarlet Pimpernel
<i>Anredera cordifolia</i> *	Madeira Vine
<i>Asparagus aethiopicus</i> *	Ground Asparagus
<i>Asphodelus fistulosus</i> *	Onion Weed
<i>Asplenium australasicum</i>	Bird's Nest Fern
<i>Bidens pilosa</i> *	Cobbler's Pegs
<i>Bougainvillea</i> sp.*	Bougainvillea
<i>Bouteloua dactyloides</i> *	Buffalo Grass
<i>Bromus catharticus</i> *	Prairie Grass
<i>Cenchrus clandestinus</i> *	Kikuyu
<i>Chlorophytum comosum</i> *	Spider Plant

<i>Clivia miniata</i> *	Clivia
<i>Conyza bonariensis</i> *	Fleabane
<i>Dichondra repens</i>	Kidney Weed
<i>Ehrharta erecta</i> *	Panic Veldt-grass
<i>Ehrharta longiflora</i> *	Annual Veldt-grass
<i>Euphorbia peplus</i> *	Petty Spurge
<i>Ficus pumila</i> *	Creeping Fig
<i>Foeniculum vulgare</i> *	Fennel
<i>Gamochaeta calviceps</i> *	Cudweed
<i>Hedera helix</i> *	English Ivy
<i>Lolium multiflorum</i> *	Italian Ryegrass
<i>Lomandra longifolia</i>	Mat Rush
<i>Lonicera japonica</i> *	Japanese Honeysuckle
<i>Modiola caroliniana</i> *	Red-flowered Mallow
<i>Monstera deliciosa</i> *	Fruit Salad Plants
<i>Nephrolepis cordifolia</i> *	Fishbone Fern
<i>Ophiopogon Japonicus</i> *	Mondo Grass
<i>Pandorea pandorana</i>	Wonga-Wonga Vine
<i>Parietaria judaica</i> *	Pellitory
<i>Paspalum dilatatum</i> *	Common Paspalum
<i>Poa annua</i> *	Winter Grass
<i>Rumex crispus</i> *	Curled Dock
<i>Setaria palmifolia</i> *	Palm Grass
<i>Sida rhombifolia</i> *	Paddy's Lucerne
<i>Solanum nigrum</i> *	Black Nightshade
<i>Sporobolus africanus</i> *	Parramatta Grass
<i>Stellaria media</i> *	Chickweed
<i>Taraxacum officinale</i> *	Dandelion
<i>Tradescantia fluminensis</i> *	Wandering Jew
<i>Trifolium repens</i> *	White Clover

FAUNA

Birds

<i>Alectura lathami</i>	Australian Brushturkey
<i>Manorina melanocephala</i>	Noisy Miner

Mammals

<i>Perameles nasuta</i>	Long-nosed Bandicoot [#]
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* = Introduced species

= Evidenced from diggings

Appendix F – Tests of Significance (5-part tests)

5-Part Test for the Grey-headed Flying-fox (*Pteropus poliocephalus*) and Yellow-bellied Sheathtail-bat (*Saccolaimus flaviventris*).

(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

The proposal would remove a small area of poor quality, potential habitat for these species comprised mainly of introduced species and weeds. There are vast areas of better quality habitat throughout the local area including within the nearby Parkhill Reserve and North Head National Park that retain large areas of relatively pristine native vegetation. The minor impact from the proposal would not affect the life cycle of these species such that viable local populations would be placed at risk of extinction.

(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

- (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or*

N/A.

- (ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,*

N/A.

(c) in relation to the habitat of a threatened species, population or ecological community:

- (i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and*

Only a small area of poor quality, potential habitat would be removed.

- (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and*

The proposal would not result in habitat becoming fragmented or isolated from other areas of habitat.

- (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,*

The small area of poor-quality, potential habitat to be removed has low importance for the long-term survival of these species in the locality.

(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),

The proposal would not impact on any declared areas of outstanding biodiversity value.

(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

The proposal would include the 'clearing of native vegetation' that is identified as a key threatening process. However, the vegetation is mostly introduced species and weeds with only a small number of native plants present.

Conclusion

Based on the above assessment it is concluded that the proposed development would not have a significant impact on the Grey-headed Flying-fox (*Pteropus poliocephalus*) and Yellow-bellied Sheathtail-bat (*Saccolaimus flaviventris*).

5-Part Test for the Long-nosed Bandicoot (*Perameles nasuta*) Endangered Population at North Head.

(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

N/A.

(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

(iii) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

N/A.

(iv) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

N/A.

(c) in relation to the habitat of a threatened species, population or ecological community:

(ii) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

Only a small area of poor quality, potential habitat would be removed. As there is no evidence of bandicoot activity on the project site these areas of potential habitat may be unsuitable and/or difficult for the bandicoots to access. There are relatively vast areas of similar and better quality habitat with evidence of bandicoot activity in the local area. Only a small extent, if any, of the bandicoot habitat in the area would be removed as a result of the proposal. Furthermore, the proposal would restore good quality habitat designed especially for this species and would ensure the bandicoots can access that habitat and are protected from inadvertent harm during occupation of the new dwellings.

(iii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

The proposal would not result in habitat becoming fragmented or isolated from other areas of habitat. Continuity of habitat would be retained on the grassed roadsides and pathways surrounding the land. Additionally, new areas of good quality habitat would be established on the land with linkages to the surrounding existing areas of habitat.

(iv) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,

The small area of poor-quality, potential habitat to be removed has low importance for the long-term survival of these species in the locality. This is supported by the absence of evidence of bandicoot activity on the project site.

(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),

Four declared 'Areas of Outstanding Biodiversity Value' exist in New South Wales. These are:

- Critical habitat for the Gould's Petrel at Cabbage Tree Island, and to a lesser extent, Boondelbah Island, off the coast of Port Stephens.*
- Little Penguin population in Sydney's north harbour.*
- Mitchell's Rainforest Snail in Stotts Island Nature Reserve, on the NSW north coast.*
- Wollemi Pine in the Wollemi National Park, north-west of Sydney.*

The proposal would not affect any declared areas of outstanding biodiversity value.

(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

The proposal would require the ‘clearing of native vegetation’ that is identified as a key threatening process. However, the vegetation on the land is mostly introduced species and weeds and only a small number of native plants would be removed. Importantly, native vegetation would be restored on the land by the proposed landscaping resulting in a greater amount of native vegetation on the land post-development.

Conclusion

Based on the above assessment it is concluded that the proposed development would not have a significant impact on the Long-nosed Bandicoot (*Perameles nasuta*) Endangered Population at North Head.