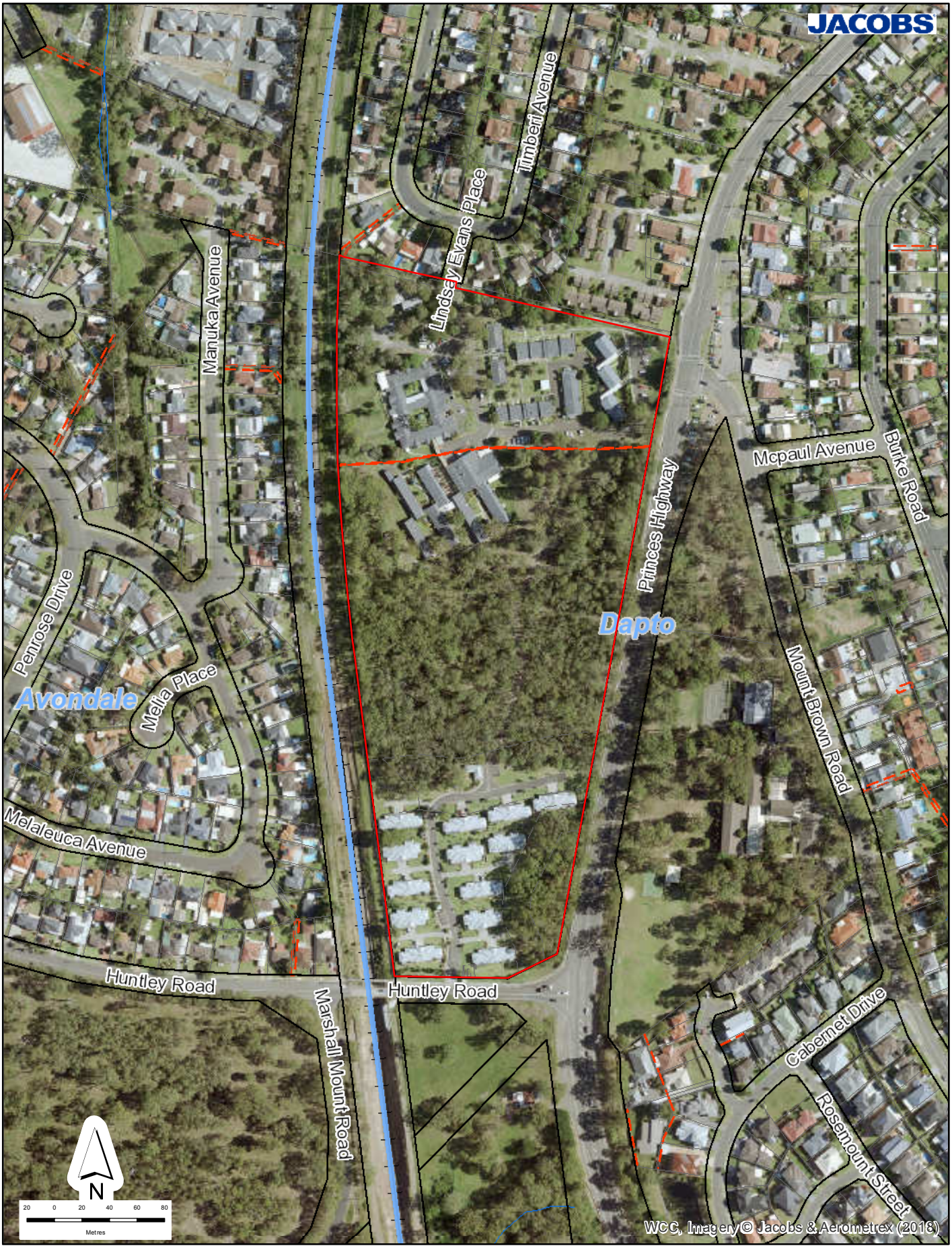

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Aerial Photograph

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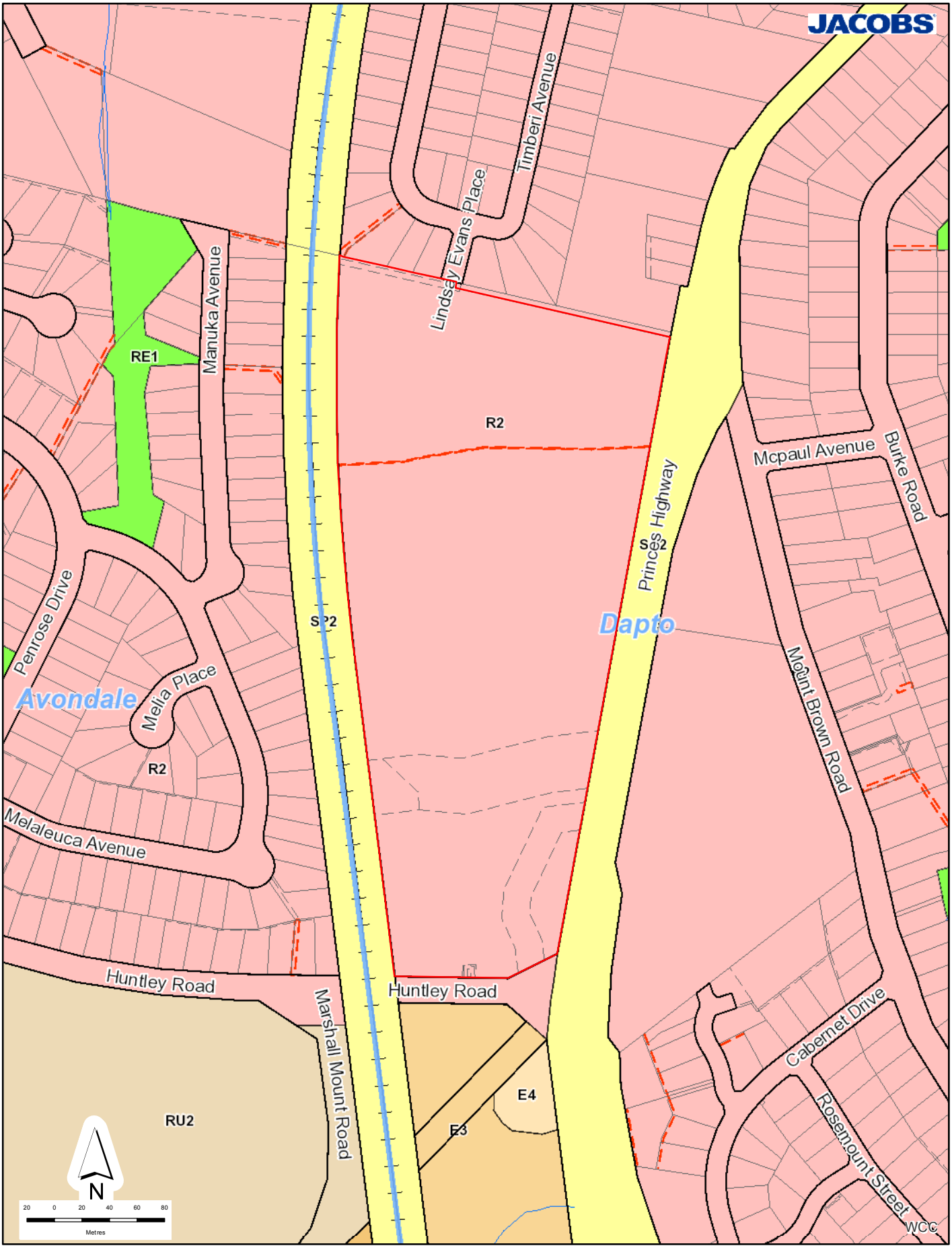

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WLEP 2009 Land Use Zoning

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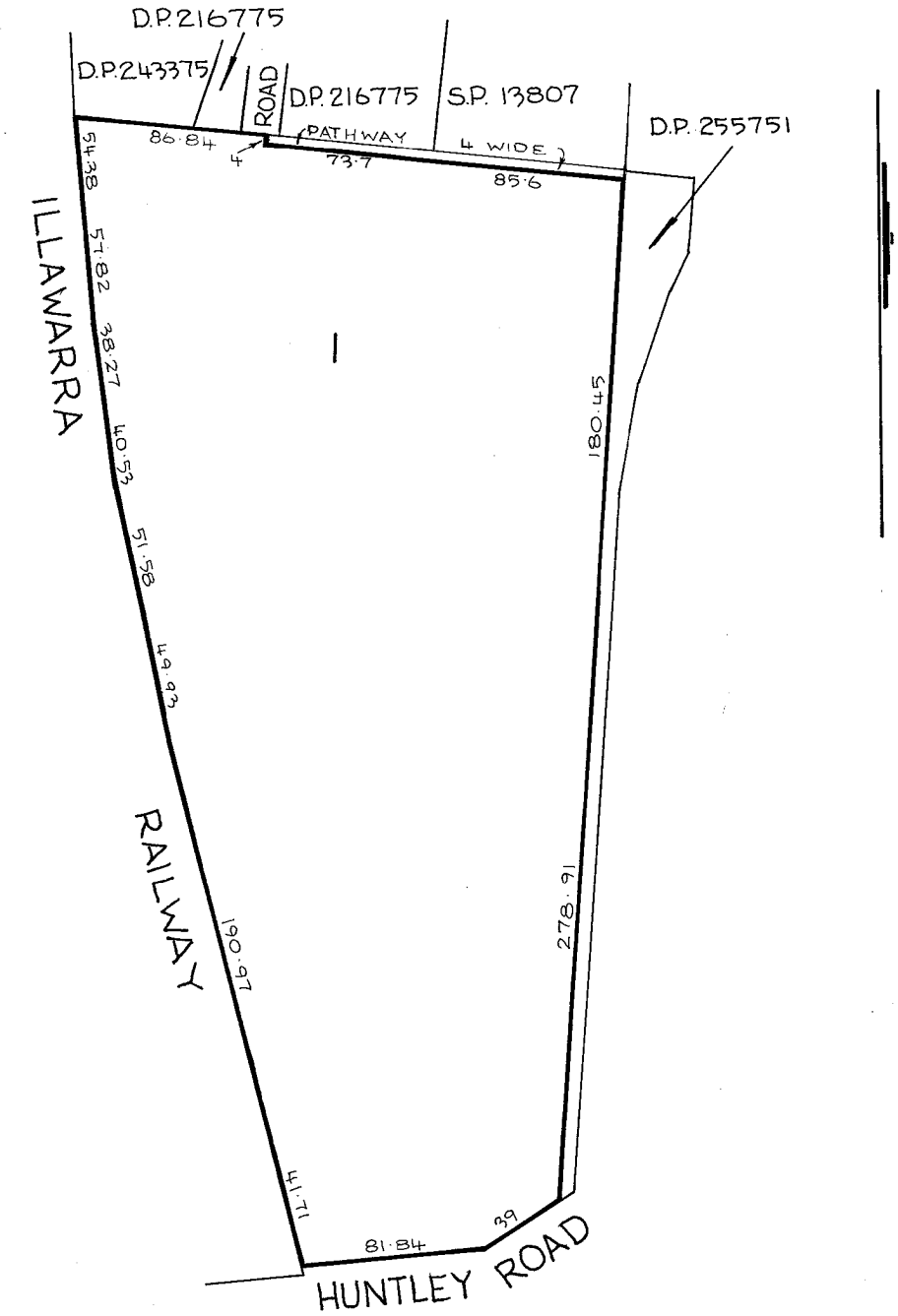
This automated map was produced using ESRI Australia's: dekho

Full dimensions and/or area(s) are not available for all lots. Any division of the lands herein may necessitate the lodgement of a plan of survey.



DP 1082602

Registered : [redacted] 6.5.2005

Title System : TORRENS

Purpose : DEPARTMENTAL

Ref. Map : W7399 - 99

Last Plan : D.P. 230295

PLAN OF PART OF LOT 4 IN D.P. 230295 COMPRISED IN VOL 10413 FOL 80

Lengths are in metres. Reduction Ratio - NTS
LPI Ref. SM3

Sheet of sheet(s)

L.G.A. : WOLLONGONG

LOCALITY : DAPTO

PARISH : CALDERWOOD

COUNTY : CAMDEN

LOT	PRIOR IDENTITY

THIS PLAN HAS BEEN PREPARED TO PROVIDE A UNIQUE IDENTITY FOR THE LAND IN THE CERTIFICATE OF TITLE REFERRED TO ABOVE

IT IS NOT A CURRENT PLAN IN THE TERMS OF 7A OF THE CONVEYANCING ACT, 1919

Attachment 3

Wollongong Design Review Panel
Meeting minutes and recommendations DA-2018/557

Date	1 November 2018
Meeting location	Wollongong City Council Administration Offices
Panel members	Gabrielle Morrish (Chair)
	Karla Castellanos
	Tony Tribe
Apologies	
Council staff	Vivian Lee – Senior Development Project Officer Jessica Saunders - Senior Development Project Officer
Guests/ representatives of the applicant	Dean Cotter – Anglicare Steve Hopper – Architect Richard Abbott – Project Manager Andrew Minto – Town Planner
Declarations of Interest	
Item number	3
DA number	DA-2018/557
Determination pathway	Southern Regional Planning Panel
Property address	4 Lindsay Evans Place Dapto
Proposal	Demolition of existing 45 bed residential aged care facility, construction of new two storey 111 bed residential aged care (RAC) facility and conversion of existing 44 hostel bed facility to 22 serviced self-care dwellings (ILU), and community/ancillary spaces reconfiguration of and additional on-grade parking with associated landscaping, infrastructure and tree removals.
Applicant or applicant's representative address to the design review panel	The applicant gave the panel an overview of the design brief and the proposal's response to its site and context. This confirmed that the primary design drivers relate to the living standards of residents, operational / staffing efficiencies, close physical relationships between the new RAC facility administration areas and Community Centre in the refurbished ILU building. Cost effective compliance with relevant RAC standards and BCA requirements were also confirmed as key drivers. The RAC plan form adapted here was confirmed as an evolving 'model' suitable ready adaption to the wide range of sites operated by the applicant. Several precedents were mentioned where the 'model' is in use or under construction.
Background	The site was inspected by the Panel on 1 November 2018.
Design quality principals SEPP65	
SEPP65 is NOT applicable to this proposal, however the following categories are appropriate in addressing design merit.	
Context and Neighbourhood Character	ILU Building: The panel supports the refurbishment and conversion of the hostel building to 2 room ILUs. This retains the existing plan and built form and with no external bulk, or scale impacts. RAC Building: The panel acknowledges the rationale of the location, on the site of the existing (demolished) facility and strong link with the ILU building.

	The proposal is set well back from residential areas to the north and across the South Coast Railway. It is remote from the Princes Highway. Provided the planning of the new facilities is done in a way that attempts to preserve or retain more of the existing trees between the proposals and they are reinforced with additional planting, any visual impact could be minimised subject to the ground level of the RAC and treatment of any subfloor area. The railway corridor is the only adjacent property likely to be slightly overshadowed. Access The traffic impact of the increased density having sole access through an existing residential area warrants assessment. Pedestrian linkage from the bus stop on the Princes Hwy for RAC visitors and ILU residents needs clarification.
Built Form and Scale	ILU Building: NA RAC Building: The proposal has a significantly larger footprint than the existing single storey structure. It will be two storey above a similar ground floor level. The building and its courtyards will be elevated, on retained fill, one floor (approx 3m) above the existing ground level on the west elevation and for portions of the north and south elevations. The panel acknowledges the practical rationale of this 'flat plate on platform' approach in this instance. However, to support the proposal the design would need to demonstrate design initiatives have been explored to minimise the height of such a plinth and adverse impacts of the approach. Key issues are: · Excessive loss of mature trees. The building platform, at grade car parking and the new fire trail result in unnecessarily excessive loss of mature native trees. Consideration should be given to relocating most of the surface car parking to under the building platform. Any residual surface car parking should be planned to incorporate existing (or new) trees. The Fire Trail (shown inconsistently in plans) should be configured to meander through existing trees minimising the need for removal. Opportunities to reinforce existing tree planting between the RAC and ILU and North and West boundaries should be explored. · Visually obtrusive retaining wall: The proposal should include initiatives to reduce the height of this retaining wall as well as the visual prominence of the extensive split block wall bounding the building platform to the West and North e.g. varying width planting to the base sufficient for large shrubs, small trees, shrubs and hedge planting behind the courtyard fencing. Possible use of batters at base and landscaped terraces to the setback edges should be considered to reduce visual height; use of visually recessive colours and materials for walls and fences should also be considered.

	· Three-storey scale and integration with site. To break down the scale of the platform-based development the landscape design should be finessed to create visual continuity of foliage between secure courtyards and outside areas beyond the fences. The panel is of the view that the localised non-compliance with the WLEP height limit could be justified if this enabled a reduced footprint for the proposal, greater existing tree retention between the 'fingers' of the development and a better relationship to the ground level to the rear of the site and the other issues in this report were satisfactorily addressed in the proposal.
Density	No issue
Sustainability	Water Management A storm water detention tank is indicated under the building platform. There is no proposal for the use of rainwater for landscape irrigation, WC flushing or other uses. The applicant suggested such initiatives are precluded by health standards. This warrants further investigation & consideration. Energy Management PV panels are shown on two of the eight 'wing' roofs of the RAC building only. The panel recommends that this scale and type of development should be accompanied by an energy management cost/benefit report.
Landscape	Refer to Built Form & Scale above. The inclusion of basement/undercroft car parking would facilitate retention of existing and opportunities for additional tree planting between the buildings and to the West and North boundaries. New & Courtyard Planting The landscape plans indicate new trees of various sizes in courtyards and on the 'platform' periphery. Elevations indicate these with mature heights at or above adjacent roof height. This principle is encouraged. It is recommended security fences are visually recessive in material and colour and that they be disguised by shrubs on both sides where possible. The inclusion of any basement car parking as above must ensure adequate deep soil to support courtyard planting. The landscape elevations exclude western retaining wall treatment and wall-top fencing. Refer above for recommendations. The extent of hardstand and paving in both buildings appears excessive and should be reviewed to maximise soft landscaping.
Amenity	Solar access: Reasonable standards appear to be achieved to majority of ILUs and RAC rooms and courtyards. Light: Proportion of courtyards generally and roofed external access corridors and terraces reduce available light to courtyards. A light-reflective palette of materials and colours is recommended. Privacy and Noise Management issues need to be addressed

	in the detail design development.
Safety	Contamination: It is noted that further information is required. Bushfire prone Land: The proposal includes an asset protection zone south of the ILU building and fire trail (appliance access?) west and north of the RAC building, but not to the south of the ILU building. Fire safety assessment should address evacuation alternatives in the event of a fire in the on-site remnant forest and appliance access to all buildings.
Housing Diversity and Social Interaction	NA
Aesthetics	The aesthetic merits of the proposal will hinge largely on its sensitive integration with the existing mature treed setting and new soft landscaping. The use of skillion roof forms was described as reflecting the existing roof forms on site. The panel is of the view that the complex built-form and massing penetrated by landscaped courtyards would benefit from a carefully considered, but more limited palette of materials, colours and detail.
Design Excellence WLEP2009	
WLEP 2009 Cl 7.18 is NOT applicable to this proposal, however the following categories appropriate in addressing design merit.	
Whether a high standard of architectural design, materials and detailing appropriate to the building type and location will be achieved	The proposal demonstrates an effective, pragmatic design response to a growing social need for managed aged care accommodation. The design is based on an evolving model with established precedents. It is a model with limited flexibility to adapt and respond to specific site and context conditions without compromising resident welfare and operational efficiencies. To be acknowledged as meeting a high standard of architectural design it is expected the proposal would also exploit every opportunity to respond to and fit with its specific site, topography and landscape setting. The goal should be to avoid a formulaic approach by applying the concept on to the site in a more organic and less rigid way. The proven model's organisational principles should not dominate how the proposal responds to the specific aspects of the site. The inclusion of suggestions above would greatly assist this.
Whether the form and external appearance of the proposed development will improve the quality and amenity of the public domain,	The proposal's relationship to the public domain is limited to the Southern coast Railway. The adoption of above recommended measures will assist in limiting its visual intrusion in its setting viewed from passing trains.
Whether the proposed development detrimentally impacts on view corridors,	See above
Whether the proposed development detrimentally overshadows an area shown distinctively coloured and numbered on the Sun Plane Protection Map,	NA
How the development addresses the following:	
the suitability of the land for	YES

development,	
existing and proposed uses and use mix	YES
heritage issues and streetscape constraints,	NA
the location of any tower proposed, having regard to the need to achieve an acceptable relationship with other towers (existing or proposed) on the same site or on neighbouring sites in terms of separation, setbacks, amenity and urban form,	NA
bulk, massing and modulation of buildings	See above
street frontage heights	NA
environmental impacts such as sustainable design, overshadowing, wind and reflectivity	See above
the achievement of the principles of ecologically sustainable development	See above
pedestrian, cycle, vehicular and service access, circulation and requirements	See Context above The extent of intrusion of service vehicles so far into the site involves unfortunate pedestrian conflicts. The effective servicing criteria for both buildings is acknowledged. The stated design objective of 'pedestrian friendly connections' between the RAC, community centre and ULI components is not clearly evident in the proposal.
impact on, and any proposed improvements to, the public domain	NA
Key issues, further Comments & Recommendations	The Proposal demonstrates the need for a more holistic design approach integrating an efficient and proven 'model' facility into a specific site with unique attributes, opportunities and constraints. The mature tree canopy defines the dominant character of this site. Design objectives should include: · Minimise disturbed area, surface parking and hardstand. · Maximise retention and integration of existing trees and opportunities for additional tree planting. · Minimise visual presence/intrusion of retaining and garden walls and fences, primarily by lower the height above grade and terracing the plinth in combination with planting. Regardless of possible cost and BCA compliance implications, the relocating of at-grade parking bays to under the building 'platform' is considered the key to the effective integration of this model to this site.

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Minto Planning Services P/L
PO Box 225,
Thornleigh NSW 2120

Attn: Mr Andrew Minto

26 March 2019

Dear Andrew,

PROPOSED ALTERATIONS & ADDITIONS TO EXISTING AGED CARE FACILITY
ST LUKES – 4 LINDSAY EVANS PLACE, DAPTO (DA 2018/557)

Since the Wollongong Design Review Panel Meeting held on the 1st November 2018 for the above project, the following correspondence has been generated to-date:

- 09/11/18 – Council Record of Briefing identifying landscape setting as the key concern
- 21/11/18 – Wollongong Design Review Panel minutes & recommendations
- 19/12/18 – Revised Design /Additional information package to address DRP specific issues
- 25/02/19 – Council RFI dated 22/02/19 Item 5 DRP detailed response request
- 01/03/19 – Minto Planning Services RFI response addressing Item 5 DRP key issues
- 22/03/19 – Council request to address each heading of the DRP notes

In response to Council's latest request dated 22/03/19, even though SEPP65 and WLEP2009 Cl 7.18 are not applicable to this DA proposal, the following detailed response is provided in order to address each applicable heading referred to in the Wollongong Design Review Panel minutes and recommendations DA-2018/557, because they are appropriate in addressing design merit. Each item has been addressed within the latest Architectural documentation as outlined below:

Design quality principles SEPP65	
Context and Neighbourhood Character	ILU Building: Existing building is primarily unchanged in relation to built form, external bulk and scale, hence identified as no impact. RAC Building: Siting and setbacks acknowledged are unchanged. Adjustments to the proposed RAC design has been made to retain more existing trees. Refer to Merrin & Cranston Dapto RAC DA Drawings Schedule of Amendments provided to Council 19/12/18; and latest Landscape Architect drawings for complimentary additional planting. Access: Refer Traffic Engineer's and Accessibility Reports.
Built Form and Scale	ILU Building: N/A RAC Building: As recommended by the DRP, the design initiative to take advantage of the western elevated ground floor level by incorporating an undercroft carpark and relocate the on-grade staff carpark, has been adopted. As a result, an additional 15 existing mature trees located around the perimeter of the building have been retained to minimise the

	loss referred to. Refer to Arborist Report issued to Council 19/12/18. In addition to the open undercroft carpark reducing the extent of the split-face block of the western building/courtyard "plinth", retaining wall heights previously up to 3m, have been terraced to incorporate additional planting mid-height (refer Architectural drawing SD.R.302 P06 Elevations) and re-positioned to retain additional existing trees. Podium planters have also been incorporated in the courtyard over the undercroft carpark. Refer also to the latest Landscape Architect's drawings for proposed planting in these areas. Better utilising the part under-storey height created by the building's platform-base for the staff carpark has reduced the development footprint, achieving a greater retention of existing trees.
Density	No issue.
Sustainability	Water and energy management observations noted.
Landscape	The subsequent design changes have resulted in additional tree planting opportunities around the building. Consideration has also been given to the selection of the security fence types that will disappear in the landscape. Refer latest Landscape Architect's drawings for details.
Amenity	Solar access: No issue Light: Suggested light-reflective palette of materials and colours noted. Privacy and Noise Management reference noted.
Safety	Contamination: reference noted Bushfire prone Land: Proposed on-site new roads and fire trail accommodate fire truck circulation (refer Bushfire Consultant Report)
Housing Diversity and Social Interaction	N/A
Aesthetics	The increased extent of retained mature trees around the perimeter of the proposed RAC building and courtyards, creates improved integration of the proposed built form within the existing landscape and retirement village context. The intentional break-up of the built form is to create identifiable residential proportions and house materials that relate to human scale. To achieve this with a large-scale building generates some complexity, however residents are able to identify and relate to the sense of familiarity created which is important for their well-being and a "home-like" environment.

Design Excellence WLEP2009	
Whether a high standard of architectural design, materials and detailing appropriate to the building type and location will be achieved	The proposed RAC design is a one-off project-specific and site-specific response to Anglicare's RAC requirements in addressing the growing social need for accessible aged care accommodation. The way in which the 111 bedrooms are organised intentionally creates smaller knowable communities for residents with direct access to sunlight outdoor spaces amongst existing mature trees. The upper level arrangement takes advantage of elevated desirable horizon views and has access to dedicated outdoor courtyard areas adjacent the Lift Lobby. This is made possible by the generous external spaces generated from the building "fingers". It Is important for the well-being of frail and elderly residents to be as mobile and active as they physically can. To enable this as much as possible, the RAC design provides a variety of flat indoor and outdoor circulation routes suitable for residents with varying degrees of independent and assisted mobility and cognitive functioning. For more detail on the RAC design, refer the Design Statement provided on drawing SD S.104 Site Analysis.
Whether the form and external appearance of the proposed development will improve the quality and amenity of the public domain	Consideration of the limited public interface has been addressed by the design improvements and explanation mentioned previously.
Whether the proposed development detrimentally impacts on view corridors	See above
Whether the proposed development detrimentally overshadows an area shown distinctively coloured and numbered on the Sun Plane Protection Map	N/A
How the development addresses the following:	
the suitability of the land for development	Yes
existing and proposed uses and use mix	Yes
heritage issues and streetscape constraints	N/A
the location of any tower proposed, having regard to the need to achieve an acceptable relationship with other towers (existing or proposed) on the same site or on neighbouring sites in terms of separation, setbacks, amenity and urban form	N/A
bulk, massing and modulation of buildings	See above

street frontage heights	N/A
environmental impacts such as sustainable design, overshadowing, wind and reflectivity	See above
the achievement of the principles of ecologically sustainable development	See above
pedestrian, cycle, vehicular and service access, circulation and requirements	A direct pedestrian connection between the proposed RAC and the existing entry to the proposed Community Centre has been provided as shown on drawing SD S.101 Proposed Site Plan. The one accessible pedestrian crossing provided for this purpose has safe and adequate sightlines (refer Traffic Engineer's Report).
impact on, and any proposed improvements to, the public domain	N/A
Key issues, further Comments & Recommendations	The above detailed response demonstrates the holistic design approach taken to integrate sound aged care practice with specific site attributes, opportunities and constraints, and how this has been further improved by incorporating the undercroft carpark and terracing the building plinth to achieve a greater retention of the existing mature trees and an increase in planting areas as a result of these building design changes. The above design changes adopted have increased the fire rating requirements of the building as outlined in the BCA "Type A" construction specification (refer Building Certifiers Report), and as such has added cost to the construction of the building. Regardless of this, the relocation of the at-grade staff carpark to under the building 'platform' has been adopted as the key to effectively integrating the proposed RAC design model with the landscape of this particular existing aged care site.

Kind regards

Steven Hopper
Associate

Merrin & Cranston Architects
People Centred Architecture

Attachment 5

ecoplanning

ecology | planning | offsets

Biodiversity Development Assessment Report (BDAR)

Lot 1 // DP 1082602; 4 Lindsay Evans Place, Dapto, NSW, 2530

Proposed Residential Aged Care Facility

Prepared for: Anglicare

24 January 2019

PROJECT NUMBER	2017 – 125	
PROJECT NAME	Biodiversity Development Assessment Report (BDAR) – St Luke's Anglican Retirement Village – proposed Residential Aged Care Facility	
PROJECT ADDRESS	Lot 1 // DP 1082602; 4 Lindsay Evans Place, Dapto, NSW	
PREPARED FOR	Anglicare	
AUTHOR/S	Kieren Northam and Lucas McKinnon	
REVIEW	Lucas McKinnon	
VERSION	**Version**	**Date to client**
	1.0 – Draft	2 May 2018
	1.0 – Final	4 May 2018
	1.1 – Final (incl. Commonwealth and Local considerations)	14 May 2018
	2.0 – Final (response to Council comments)	6 September 2018
	3.0 – Final (response to Council Comments)	24 January 2019

This report should be cited as: *Ecoplanning (2019). Biodiversity Development Assessment Report. Proposed Residential Aged Care Facility, Lot 1 // DP 1082602, 4 Lindsay Evans Place, Dapto, NSW, 2530 (v 3.0). Prepared for Anglicare.*

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Contents

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Glossary and abbreviations

Acronym	Description
APZ	Asset Protection Zone
BAM	Biodiversity Assessment Methodology
BC Act	NSW *Biodiversity Conservation Act 2017*
BDAR	Biodiversity Development Assessment Report
BCT	Biodiversity Conservation Trust
CEMP	Construction Environmental Management Plan
DA	Development Application
DoEE	Department of the Environment and Energy
DPE	NSW Department of Planning and Environment
EEC	Endangered Ecological Community
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
ha	hectare(s)
IBRA	Interim Bioregionalisation of Australia
ISCLGW	Illawarra and South coast lowland grassy woodland
km	kilometre
LGA	Local Government Area
masl	Metres above sea level
NSW	New South Wales
OEH	NSW Office of Environment and Heritage
PCT	Plant community type, as defined by OEH (2018)
SAII	Serious and Irreversible Impacts
Subject site	Lot 1 // DP 1082602; 4 Lindsay Evans Place, Dapto, NSW
WLEP	Wollongong Local Environmental Plan

1 Introduction

1.1 Background

This Biodiversity Development Assessment Report (BDAR) has been undertaken to accompany a Development Application (DA) relating to a proposed development of a Residential Aged Care Facility at St Luke's Anglican Retirement Village, Lot 1 // DP 1082602 (4 Lindsay Evans Place, Dapto, NSW).

Part 6 of the NSW Biodiversity Conservation Act 2016 (BC Act), establishes an offset scheme which aims to ensure no net loss of biodiversity values. Entry into the offset scheme is triggered by exceeding the thresholds as outlined in Part 7 of the NSW Biodiversity Conservation Regulation 2017 (BC Reg). Specific to the subject land, entry into the offset scheme is triggered by clearing of native vegetation greater than 0.25 ha, based upon minimum lot sizes of less than 1 ha (minimum lot sizes for the subject land are all less than 0.5 ha). The details of the offset scheme established under Part 6 of the BC Act is outlined within the Biodiversity Assessment Method (BAM; OEH 2017a) which includes the requirements for a BDAR. This BDAR has been prepared by Lucas McKinnon, an Accredited Assessor (BAAS17012) under the BC Reg, and is consistent with the BAM (OEH 2017a)

One native vegetation type was identified in the subject land. This was Plant Community Type (PCT) 838 – Forest Red Gum – Thin Leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion. This PCT is listed as a threatened ecological community (TEC) under the NSW *Biodiversity Conservation Act 2016* (BC Act) and as part of a Critically Endangered Ecological Community (CEEC) under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) (CoA 2010), including:

- Illawarra Lowlands Grassy Woodland in the Sydney Basin Bioregion (BC Act)
- Illawarra and South Coast Lowland Forest and Woodland (EPBC Act)

Areas of infrastructure, plantings and cleared land are also present within the subject land.

Direct impacts to the biodiversity values of the development site are expected from the clearing of native vegetation. No additional impacts are considered for management of a bushfire Asset Protection Zone (APZ) which surrounds the site to the south, as this is already approved (BCBHS 2018). A total area of 0.31 ha of native vegetation is proposed for complete clearing. Assessments of significance are considered in **Appendix E**.

Sources of information for this report included:

- NSW Planning Portal (NSW Dept. of Planning and Environment 2018)
- BioNet Atlas of NSW Wildlife (NSW Office of Environment and Heritage 2017a)
- Protected Matters Search Tool (Commonwealth Dept. of the Environment and Energy 2017)
- Illawarra native vegetation mapping (NPWS 2002)
- Soil Landscapes of Kiama NSW (OEH 2010)
- SIX Maps (LPI 2018)

- Ecoplanning (2016), Environmental Constraints Assessment, St Lukes Anglican Retirement Village, 4 Lindsay Evans Place, Dapto, Wollongong LGA, Prepared for Anglicare

Plot based vegetation survey data, which was collected in accordance with BAM (OEH 2017), were captured and used for this assessment. Targeted threatened species survey was also conducted.

1.2 Location and site identification

The subject land for this BDAR covers a total area of 1.62 ha and includes part of Lot 1 // DP 1082602 (4 Lindsay Evans Place, Dapto, NSW) (**Figure 1.1**). The subject land is situated in the Wollongong Local Government Area (LGA) and is zoned as R2 – Low density residential under the Wollongong Local Environmental Plan 2009 (WLEP). R2 zoned land allows for seniors housing with consent and has a minimum lot size of 449 m². The subject land comprises land containing grassy woodland, cleared land, plantings and infrastructure. Outside of the subject land, grassy woodland vegetation occurs in the centre of the property and is found in a disturbed/shrubby condition, with high levels of exotic shrubs present along with a diversity of native mid-story and ground layer species in this area (**Figure 1.2**). The woodland vegetation in the subject land has been cleared of clearing of the midstorey and native groundcover, and predominantly persists as remnant trees over lawn grasses, native/introduced plantings and some exotic species.

This BDAR describes the outcome of the assessment conducted consistent with the BAM, and addresses the legislative context provided in (**Table 1.1**). Local considerations are addressed in **Appendix D** and Commonwealth consideration are in **Appendix E**.

Table 1.1: Legislative framework addressed in this report.

Instrument	Considerations	Context
Commonwealth		
Environment Protection and Biodiversity Conservation (EPBC) Act 1999	Matters of National Environmental Significance	An action will require approval from the Minister if the action has, will have, or is likely to have, a significant impact on a matter of national environmental significance.
State (New South Wales)		
Environmental Planning and Assessment (EP&A) Act 1979	Section 5A	Assessment of the potential for an action or activity to have a significant effect on threatened species, populations or ecological communities, or their habitats.
Biosecurity Act 2015	Priority weeds	Describes the state and regional priorities for weeds in New South Wales.
Biodiversity Conservation (BC) Act 2017	Part 4, Divisions 2 and 5	Lists threatened species, populations, ecological communities and key threatening processes to be considered under Section 5A EP&A Act.

Instrument	Considerations	Context
Local		
Wollongong Local Environment Plan (WLEP) 2009	Clause 7.2: Biodiversity Protection:	The objective of this clause is to maintain terrestrial and aquatic biodiversity. It applies to land identified on the 'Natural Resources – Biodiversity Map'.
	Clause 7.4: Riparian Lands	The objective of this clause is to ensure that development does not adversely impact upon riparian lands
	Clause 7.8: Illawarra Escarpment area conservation	The objective of this clause is to provide specific controls to protect, conserve and enhance the Illawarra Escarpment.
Wollongong Development Control Plan (WDCP) 2011	Chapter E18: Threatened species impact assessment:	The objective of this chapter is to ensure that developments that have the potential to impact upon threatened species, populations or endangered ecological communities are assessed in accordance with legislative requirements.
	Chapter E23: Riparian Lands	The main objective of this chapter is to protect, enhance and conserve riparian corridors.

The locality includes areas of land that are predominantly zoned R2 – Low Density Residential and RU2 – Rural Landscape under the WLEP. South and west of the subject land are areas zoned DM – Deferred Matter, and RU2 – Rural Landscape. Native vegetation in the locality is mostly associated with extant areas of woodland. Large areas of intact bushland are located to the east and the south of the subject land. There is low – moderate connectivity to the vegetation south of the subject land. East of the subject land, however, urban development impedes connectivity beyond the property boundary.

1.3 Proposed development

The proposed development involves two stages. The first stage is the construction of a residential care facility, consisting of 110 beds with access roads and carparks. The second stage involves the renovation of an existing facility located within the south of the subject land, which not impact upon biodiversity values and is therefore not assessed (**Figure 1.3**).

Figure 1.1: Property boundary and subject land location.

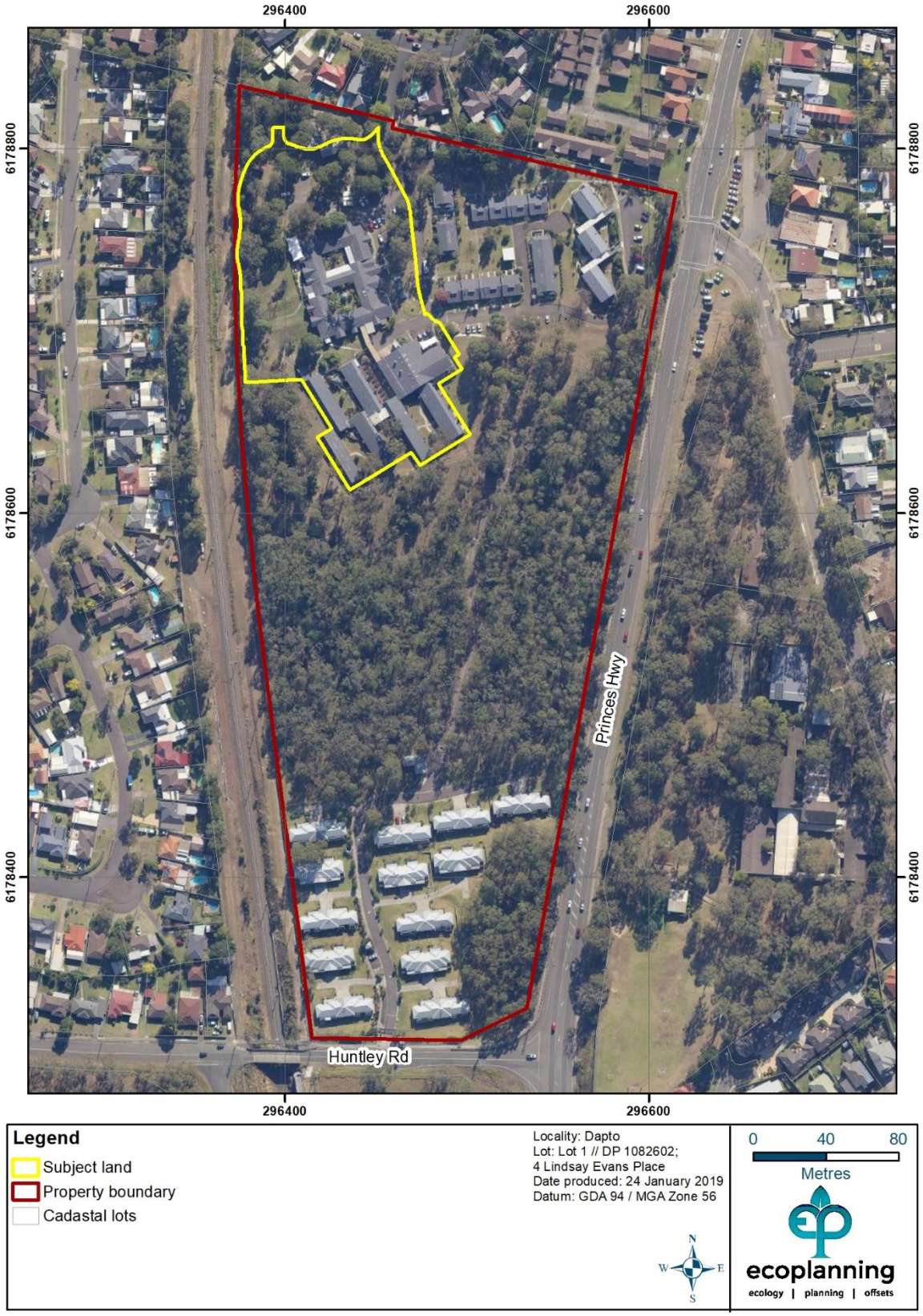

Figure 1.2: Site map.

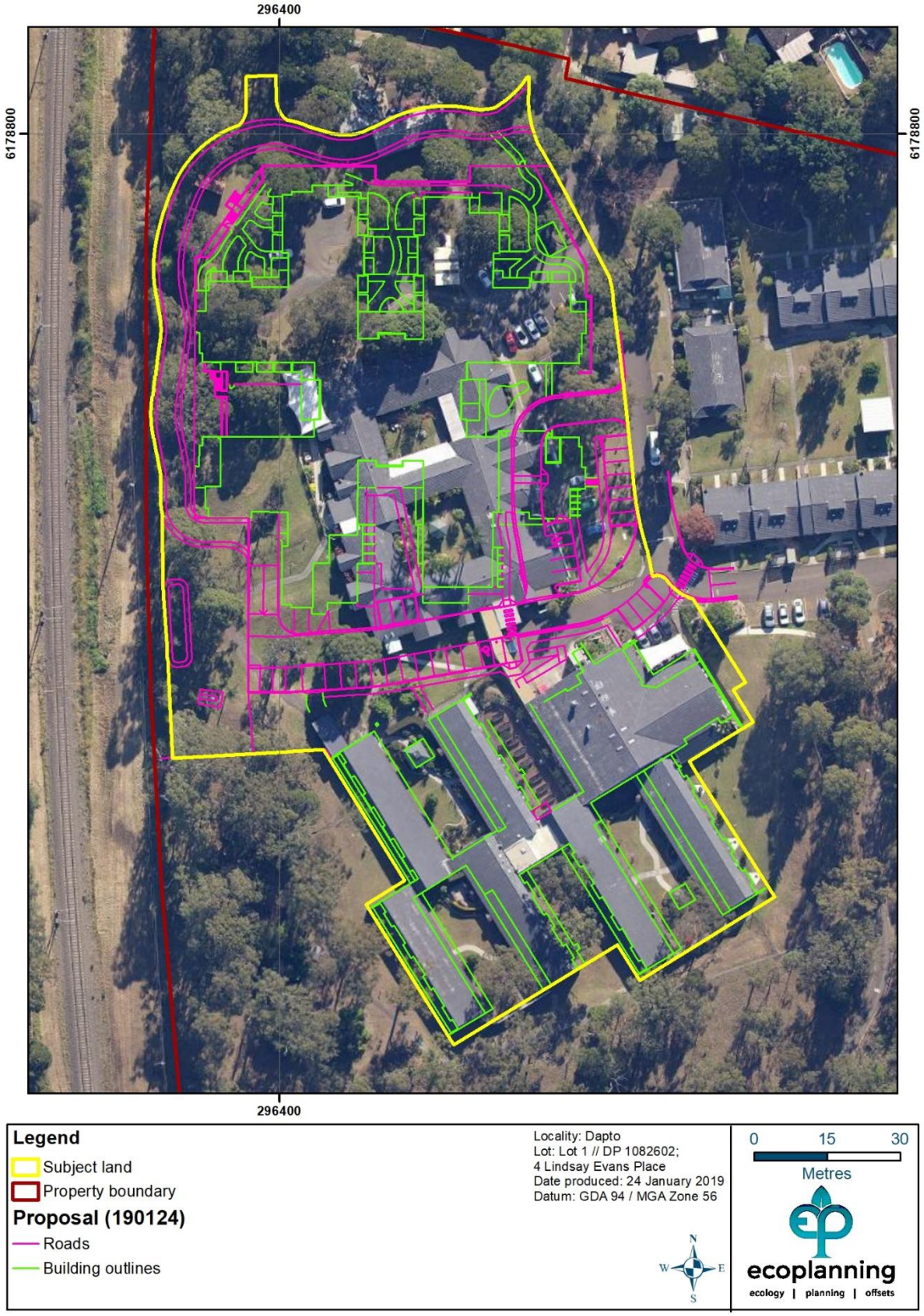

Figure 1.3: Proposed development footprint.

2 Landscape context

2.1 Identify landscape features

In accordance with the BAM, several features are assessed within and surrounding the subject land. Provided below are details related to IBRA region and subregion and NSW landscape regions (Mitchell Landscapes). Other features, such as rivers, streams, estuaries and wetlands, habitat connectivity, karst areas or areas of outstanding biodiversity value are considered where appropriate.

2.1.1 IBRA bioregions and IBRA subregions

The subject land is located entirely within the Illawarra subregion (Version 7) and within the NSW Sydney Basin IBRA region (version 7).

2.1.2 NSW landscape regions (Mitchell Landscapes)

The subject land occurs in only one NSW Mitchell Landscape, being the '*Dapto – Wollongong Coastal Slopes'* landscape (Mitchell Landscapes V3). The landscape '*Lake Illawarra Alluvial Plains'* also occurs within the 1,500 m assessment circle. This is shown on the Locality Map (**Figure** 2.1).

The Dapto – Wollongong Coastal Slopes Landscape was entered into the credit calculator due to it being the only Mitchell Landscape within the subject land.

2.1.3 Other features

Rivers, streams and estuaries

No watercourses run through the subject land. To the north (within the 1,500 m buffer) lies Mullet Creek, north east lies Brooks Creek whilst Duck Creek lies to the south of the subject land.

Local and important wetlands

The subject land contains no local and important wetlands. Further, no important wetlands, as defined by the BAM, are within the 1,500 m buffer or the study area.

Connectivity of different areas of habitat

A reasonably contiguous vegetated corridor extends south of the subject land, outside of the Dapto urban area. Although this connection is interrupted by the areas of cleared rural land, it connects to a larger area of native vegetation to the south. No other vegetated corridors provide connectivity to the site. Low density residential areas to the north, east and west prevent further connectivity (**Figure 2.1**).

Areas of geological significance and soil hazard features

The site does not incorporate areas of geological significance and soil hazard features.

Areas of outstanding biodiversity value

The site does not incorporate areas of outstanding biodiversity value.

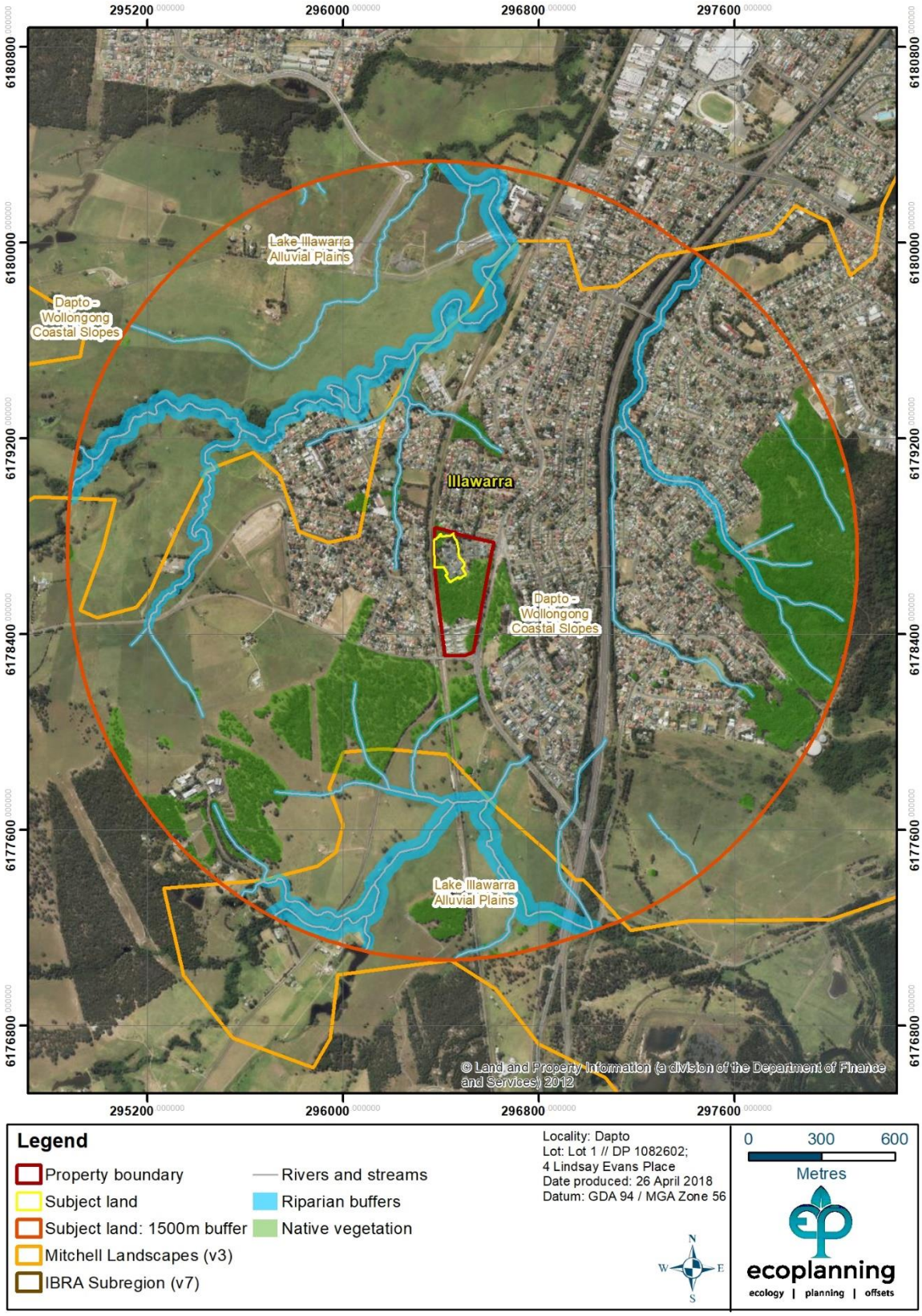

Figure 2.1: Location map.

2.2 Determining site context

2.2.1 Assessing native vegetation cover

A layer of native vegetation cover is required for a 1,500 m buffer around the study area to determine the context of the site. The extent of native vegetation on the subject land and immediate surrounds was mapped using the 2002 NPWS vegetation layer (NPWS 2002) as a base, with edits made to the layer where obvious changes to vegetation extent had occurred.

The total area of the 1,500 m buffer around the study area is 830.2 ha, with the area of vegetation mapped within the buffer being 110 ha. This is a native vegetation cover of 13.2 %, falling in the >10-30 % class, and was entered into the BAM calculator.

2.2.2 Assessing patch size

Patch size as defined by the BAM as *'an area of native vegetation that:*

> *a) occurs on the development site or biodiversity stewardship site, and*
>
> *b) includes native vegetation that has a gap of less than 100m from the next area of moderate to good condition native vegetation (or ≤30m for non-woody ecosystems).*

Patch size may extend onto adjoining land that is not part of the development site or biodiversity stewardship site.'

Patch size was calculated for the vegetation on the development site using the field validated map of vegetation types identified and the updated native vegetation extent data layer prepared for the 1,500 m buffer.

Patch size is required to be assessed as one of four classes per vegetation zone mapped, being <5 ha, 5-24 ha, 25-100 ha or >100 ha. As described above, the site is reasonably well connected to the south, to vegetation of varying quality and condition. The size of this patch has been assessed at the maximum required under the BAM, being >100 ha. This value is used for all vegetation zones assessed.

3 Native vegetation

3.1 Plant community types (PCTs) and threatened ecological communities

Desktop assessments provided contrasting assessments of the possible native vegetation communities within the subject land. Vegetation mapping by NPWS (2002) indicates that one vegetation community is present; Lowland Woollybutt Melaleuca Forest (MU24) (**Figure 3.1**). Conversely, Tozer *et al. (*2006) Identified two vegetation community within the study area (**Figure 3.2**). These communities were South Coast Grassy Woodland (p34) and Illawarra Lowland Swamp Woodland (p3). Each of these described communities are components of listed threatened ecological communities (TEC) under the EPBC Act and BC Act (**Table 3.1**).

Field survey found regional vegetation mapping by NPWS (2002) to be inconsistent with the vegetation in the study area. Whilst the vegetation in the subject land is highly modified, based on the floristic composition of the vegetation it is found to be more consistent with, Coastal Grassy Red Gum Forest (MU23; NPWS 2002) or South Coast Grassy Woodland (GW p34; Tozer et al 2006) (**Figure 3.3**). This is equivalent to PCT838, Forest Red Gum - Thin-leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion (FRGTS). Forest Red Gum – Thin-leaved stringy bark grassy woodland is a component of the Illawarra Lowlands Grassy Woodland in the Sydney Basin Bioregion (BC Act – EEC) and Illawarra and South Coast Lowland Grassy Woodland and Forest (CEEC) – EPBC Act).

Table 3.1: Vegetation community nomenclature.

Vegetation communities (NPWS 2002)	Vegetation Communities (Tozer et al. 2006)	Plant Community Type (PCT)	Threatened Ecological Communities	BC Act	EPBC Act
Not mapped	South Coast Grassy Woodland (p34)	Forest Red Gum - Thin-leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion (PCT838/SR545)	Illawarra Lowlands Grassy Woodland in the Sydney Basin Bioregion (BC Act) **and** Illawarra and South Coast Lowland Forest and Woodland (EPBC Act)	EEC	CEEC
Lowland Woollybutt Melaleuca Forest (MU24)	Illawarra Lowland Swamp Woodland (p3)	Woollybutt - White Stringybark - Forest Red Gum grassy woodland on coastal lowlands, southern Sydney Basin Bioregion and South East Corner Bioregion (PCT1326/SR669)			

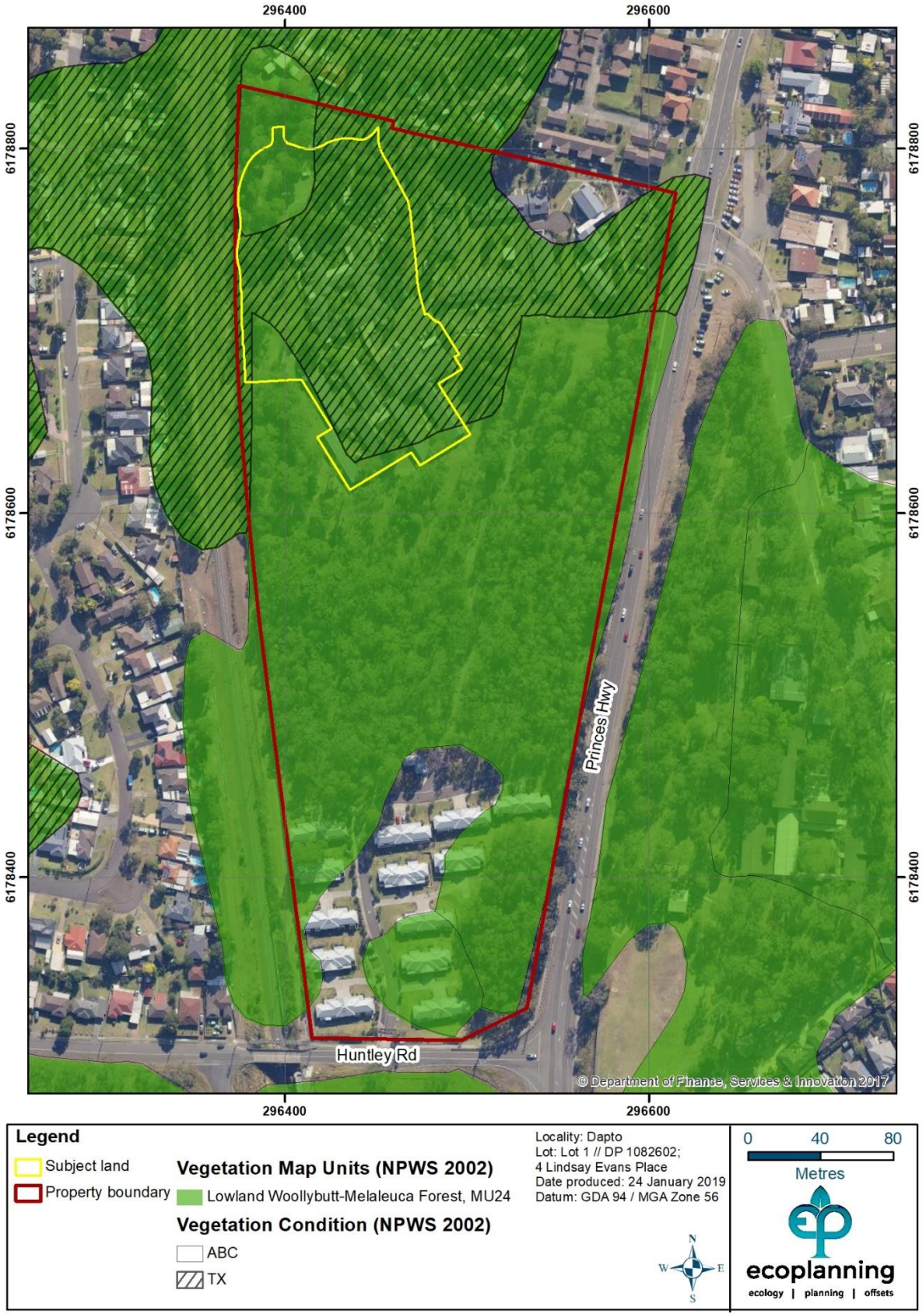

Figure 3.1: Vegetation types (NPWS 2002).

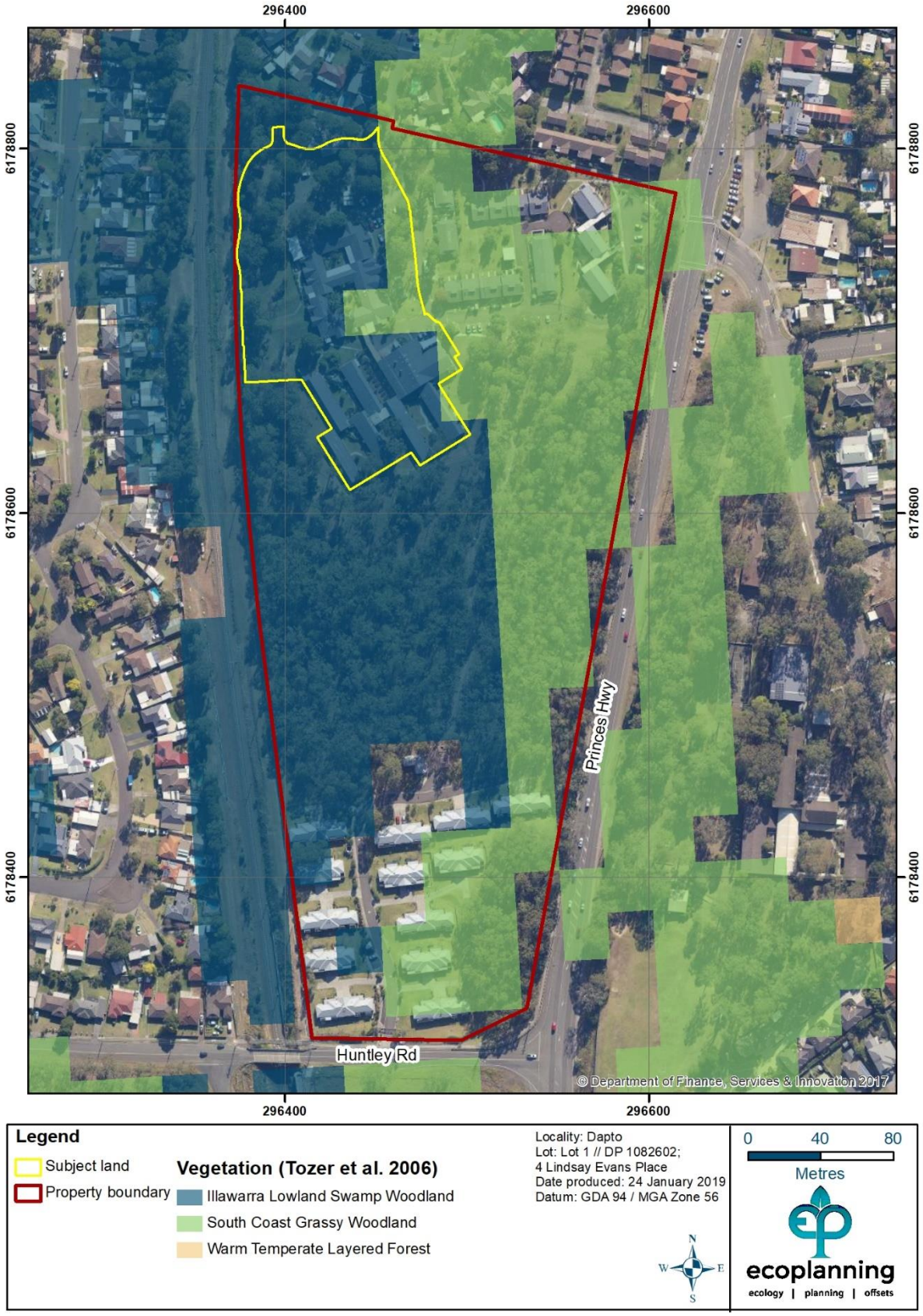

Figure 3.2: Vegetation types (Tozer et al. 2006).

Figure 3.3: Field validated vegetation (Ecoplanning 2018).

3.1.1 Forest Red Gum - Thin-leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion (PCT 838; SR545)

The assemblage of native species throughout the subject land comprises native vegetation consistent with Forest Red Gum – Thin-leaved Stringybark grassy woodland on coastal lowlands. Within the property boundary, FRGTS occurs in two condition classes; 'underscrubbed' (**Figure 3.4**) and 'disturbed/shrubby' (**Figure 3.5**). However, only the 'underscrubbed' condition class occurs within the subject land.

The 'underscrubbed' vegetation is highly modified, with sparse native canopy species including, *Eucalyptus tereticornis* and *E. eugenioides* (Thin-leaved Stringybark) and the occasional *E. amplifolia* (Cabbage Gum). *Casuarina cunninghamiana* subsp. *cunninghamiana* (River Oak) and *Melaleuca decora* are present through the underscrubbed condition class. Native grasses and groundcovers in this vegetation type include *Microlaena stipoides* subsp. *stipoides* (Weeping Grass), *Cyperus gracilis* (Slender Flat-sedge), *Cynodon dactylon* (Couch), *Commelina cyanea, Sporobolus elongatus* (Slender Rat's Tail Grass) and *Dichondra repens* (Kidney Weed).

The groundlayer is dominated by exotic grasses *Ehrharta erecta** (Panic Veldtgrass), *Paspalum dilatatum** (Paspalum), *Axonopus fissifolius** (Carpet Grass) and shrubby/herbaceous weeds, *Asparagus asparagoides** (Bridal Creeper), *Conyza* spp.*, *Bidens pilosa** (Cobblers Peg) and *Verbena bonariensis** (Purpletop). Past and current clearing has contributed to the degradation of the vegetation community in the subject land and a higher proportion of exotic species in the areas mapped as 'underscrubbed'). Few canopy species in the subject land occur in a mature – over mature growth stage, with most trees consisting of early mature regrowth.

A summary of the PCT profile for this vegetation type in the Vegetation Information System (VIS) (OEH (2017) is provided in **Table 3.2**.

Figure 3.4: Shale Plains Woodland 'underscrubbed' in the subject land.

Figure 3.5: Shale Plains Woodland 'Disturbed/shrubby' in the property boundary, outside the subject land.

Table 3.2: VIS plant community type profile (OEH 2018b) - Forest Red Gum – Thin-leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion (PCT 838; SR545).

Vegetation formation	Grassy Woodlands
Vegetation class	Coastal Valley Grassy Woodlands
Dominant canopy spp	**Forest Red Gum (*E. tereticornis*)**, **Thin-leaved Stringybark (E. eugenioides)**.
Main associated spp	
Landscape position	Occurs on lower slopes in coastal rainshadow valleys, below 350m ASL, from Wollongong to Milton and west to Yalwal.
Characteristic mid-storey spp	*Breynia oblongifolia; Eustrephus latifolius; Geitonoplesium cymosum; Myrsine variabilis; Pandorea pandorana; Pittosporum undulatum;*
Characteristic groundcover spp	*Carex longebrachiata;* ***Commelina cyanea****; Desmodium gunnii;* ***Dichondra repens****;* ***Microlaena stipoides*** **var. *stipoides****; Oplismenus imbecillis; Poa labillardierei* var. *labillardierei;* ***Pratia purpurascens****; Themeda australis;*
Other diagnostic features	Woodland with an open shrub layer and a continuous grassy groundcover.
Profile source	GW p34 (Tozer et al. 2006)
Full reference details	Tozer, M.G., Turner, K., Keith, D.A., Tindall, D., Pennay, C., Simpson, C., MacKenzie, B., Beukers, M. and Cox, S. (2010). Native vegetation of southeast NSW: a revised classification and map for the coast and eastern tablelands. Cunninghamia 11(3): 359-406; NSW Scientific Committee (1999b) Illawarra lowlands grassy woodland in the Sydney Basin Bioregion - Endangered ecological community determination - final. DEC (NSW), Sydney.;

3.1.2 Condition thresholds under the EPBC Act

Illawarra and South Coast Lowland Forest and Woodland

The Conservation Advice (including listing advice) for Illawarra and South Coast Lowland Forest and Woodland (TSSC 2016) provides condition thresholds for when a patch of the community retains sufficient conservation value to be considered as a Matter of National Environmental Significance (MNES). This rationale is provided in **Table 3.3**.

Two condition classes of PCT 838 have been mapped in the study area; 'Disturbed/shrubby' and 'underscrubbed'. However, only the 'underscrubbed' condition class occurs within the subject land. In accordance with TSSC (2016), the native vegetation on the subject land meets the 'Category A – High condition class', as the patch size is >2 ha, 50% of its total (*perennial)* understorey vegetation is native comprised of native species and at least 6 native species occur per 0.5 ha (see **Table 3.4**). Consequently, it is classified as MNES, and will require impact assessment under the EPBC Act Significant Impact Guidelines (see **Appendix E**).

Table 3.3: Condition categories, rationale and thresholds for Lowland Grassy Woodland in the South East Corner Bioregion.

Category and rationale	Patch size thresholds	Biotic thresholds		
A. High condition class *A larger patch with good quality native understorey and/or many very large trees*	The patch is at least 2 ha.	50% of its total understorey vegetation cover* is comprised of native species (exotic annuals are excluded from this assessment) and		
		At least 6 native plant species per 0.5 ha in the ground layer	OR	the patch has at least ten trees that are either very large (at least 60cm diameter at breast height dbh) or have hollows.
B. High condition class *A patch with very good quality native understorey with a species rich ground layer*	The patch is at least 0.5 ha.	At least 70% of the understorey vegetation cover* is comprised of native species (exotic annuals are excluded from this assessment) and with at least 10 native plant species per 0.5 ha in the ground layer		
C. Moderate condition class *A patch with good quality native understorey*	The patch is at least 0.5 ha.	At least 50% of its total understorey vegetation cover* is comprised of native species (exotic annuals are excluded from this assessment) and with at least 6 native plant species per 0.5 ha in the ground layer		
D. Moderate condition class *A patch that makes other important ecological contributions*	The patch is at least 0.5 ha.	At least 30% of total perennial understorey vegetative cover* is comprised of native species and		
		the patch is contiguous** with another patch of native vegetation *** (at least 1 ha in area)	OR	the patch has at least one large locally indigenous tree (at least 50 cm diameter at breast height (dbh)), or at least one tree with hollows

* Understorey vegetation cover includes vascular plant species of both the ground layer and the shrub layer (where present). The ground layer includes herbs (graminoids and forbs) and low (≤0.5 m) shrubs, but does not include cryptogams, leaf litter or exposed soil.

** Contiguous with another patch of native vegetation means the patch is continuous with or in close proximity (within 100 m) to another area of native vegetation.

*** Native vegetation' refers to areas where ≥50% of the perennial vegetation cover is comprised of native plant species.

3.1.3 Other vegetation

Cleared land, plantings, exotics and built structures

The cleared areas of the study area are highly modified and consist of exotic pasture grasses and herbs, including *Paspalum dilatatum*, Cenchrus clandestinus** and *Plantago lanceolata** (Plantain) (**Figure 3.6**). Sections of the site mapped as "cleared land, plantings, exotics and built structures" contain occasional native grasses and groundcovers, such as *Microlaena stipoides* var. *stipoides*. However, native species generally occur in low abundance and cover in this vegetation type and are, therefore, not classified as derived native grasslands (DNG). Plantings in this vegetation zone consist of exotics and non-indigenous natives to the Wollongong LGA and are mostly associated with the residential property and immediate surrounds.

The total area of each vegetation type, and a description of each vegetation condition category mapped, is displayed in **Table 3.4**.

Figure 3.6: Cleared land 'exotics and built structures' along the western perimeter of the study area.

Table 3.4: Vegetation types and condition (zone), a description and the total area within the development site.

Vegetation type	Vegetation zone (condition class)	BC Act	EPBC Act (Condition category)	Description	Area (ha)
PCT838 - Forest Red Gum – Thin-leaved Stringybark grassy woodland grassy woodland on coastal lowlands, southern Sydney Basin Bioregion (Illawarra Lowlands Grassy Woodland)	Underscrubbed	Y	Y (A)	The native species composition of the 'underscrubbed' FRGTS contains a higher proportion of exotic species, and a reduced midstorey cover, likely due to past slashing, grazing or manual removal of midstorey species. The southern and northern patches of the vegetation zone are represented by scattered paddock trees with no established midstorey and a moderate cover of exotic grasses and herbaceous weeds. Exotic species in this zone include, *include Asparagus asparagoides* (Bridal Creeper), Conyza sp.*, Ehrharta erecta* (Panic Veldtgrass), Paspalum dilatatum* (Paspalum), Bidens pilosa* (Cobblers Peg) and Verbena bonariensis* (Purpletop).*	0.31
				Total Illawarra Lowlands Grassy Woodland (PCT 838)	***0.31***
				Total native vegetation	***0.31***
Other vegetation	Cleared land, plantings, exotics and built structures	-	-	Cleared areas are highly modified and consist of exotic grasses and herbs, including *Paspalum dilatatum*, Cenchrus clandestinus** and *Plantago lanceolata**. Sections of the site contain occasional native grasses and groundcovers, such as *Microlaena stipoides* var. *stipoides*. However, native species generally occur in low abundance and are therefore, not classified as DNG. Plantings in this vegetation zone consist of exotics and non-indigenous natives to the Wollongong LGA and is mostly associated with the residential property and immediate surrounds.	1.32
				Total other vegetation	***1.32***

3.2 Vegetation zones

3.2.1 Condition classes, subcategories and areas

The PCTs identified within the subject land were classified into vegetation zones for credit calculation purposes. The vegetation zones are based on the condition descriptions above.

Within the property boundary, two vegetation zones (condition categories) were mapped for the Forest Red Gum – Thin-leaved Stringybark grassy woodland on coastal flats of the Sydney Basin Bioregion (PCT 838) vegetation community (**Figure 3.3**). However, only one occurred in the subject land, 'underscrubbed' vegetation.

Complete clearing will be required in areas proposed for development. Although some vegetation retention is expected in these areas complete clearing has been assessed in the BAM credit calculator.

The location of these impacts means that all vegetation zones within the subject land are proposed to be impacted through complete clearing associated with the proposed development. The total proposed impact to native vegetation is 0.31 ha. An additional 1.32 ha of previously cleared land, plantings and existing infrastructure will be removed for the new aged care facility or modified for the renovation of the existing facility. **Figure 3.7** shows the subject land, the vegetation zones that will be impacted and the vegetation integrity survey plots.

Figure 3.7: Vegetation zones and vegetation integrity survey plot locations.

3.2.2 Vegetation integrity survey plots

Four vegetation integrity survey plots were completed on site, with one (BB04) being used to meet the requirements of the BAM (see **Appendix A** for data captured). Two plots were completed for each of the vegetation zones mapped. See **Figure 3.7** for the location of vegetation integrity survey plots.

3.2.3 Current and future vegetation integrity scores

Vegetation integrity scores were calculated based on the vegetation integrity survey plots collected for each vegetation zone. Based upon the plot used to meet the BAM requirements, the current vegetation integrity score was **30.6 / 100**.

Future vegetation integrity scores were allocated to each clearing type. For those areas to be completely cleared the default future vegetation integrity score of **0** was retained.

4 Threatened species

4.1 Identifying threatened species for assessment

4.1.1 Ecosystem credit species

Ecosystem credit species are predicted based on habitat surrogates, and several ecosystem credit species are predicted on site. The ecosystem credit species predicted on site are provided in **Table 4.1**. All ecosystem credit species were maintained in the assessment.

Table 4.1: Ecosystem credit species predicted on site.

Scientific Name / Common Name	BC Act	EPBC Act
Anthochaera phrygia (Regent Honeyeater)	CE	CE
Callocephalon fimbriatum (Gang-gang Cockatoo)	V	-
Calyptorhynchus lathami (Glossy Black-Cockatoo)	V	-
Circus assimilis (Spotted Harrier)	V	-
Daphoenositta chrysoptera (Varied Sittella)	V	-
Dasyurus maculatus (Spotted-tailed Quoll)	V	E
Glossopsitta pusilla (Little Lorikeet	V	-
Haliaeetus leucogaster (White-bellied Sea-Eagle)	V	-
Hieraaetus morphnoides (Little Eagle)	V	-
Lathamus discolor (Swift Parrot)	E	CE
Lophoictinia isura (Square-tailed Kite)	V	-
Miniopterus schreibersii oceanensis (Eastern Bentwing-bat)	V	-
Mormopterus norfolkensis (Eastern Freetail-bat)	V	-
Neophema pulchella (Turquoise Parrot)	V	-
Ninox connivens (Barking Owl)	V	-
Petroica boodang (Scarlet Robin)	V	-
Petroica phoenicea (Flame Robin)	V	-
Phascolarctos cinereus (Koala)	V	V
Pteropus poliocephalus (Grey-headed Flying-fox)	V	V
Saccolaimus flaviventris (Yellow-bellied Sheathtail-bat)	V	-
Tyto novaehollandiae (Masked Owl)	*V*	-

* CE- Critically Endangered; E- Endangered, Ex- Extinct; V- Vulnerable

4.1.2 Species credit species

Geographic and habitat features

Species credit species are predicted following assessment of geographic and habitat features in the credit calculator, such as site location (IBRA subregion), PCTs and condition, patch size and the area of surrounding vegetation within the 1,500 m circle. Some species require further assessment of habitat constraints and/or geographic limitations before being confirmed as candidate species for assessment. **Table 4.2** outlines the questions asked for these species, and whether the species is confirmed as a candidate species.

Table 4.2: Assessment of habitat constraints and geographic limitations.

Scientific Name / Common Name	Habitat constraints	Geographic limitations	Maintained as candidate species
Anthochaera phrygia *Regent* Honeyeater (Breeding)	-	-	No
Burhinus grallarius Bush Stone-curlew	• Fallen/standing dead timber including logs	-	No
Callocephalon fimbriatum Gang-gang Cockatoo (Breeding)	-	• The area bounded by western Road, Elizabeth Drive, Devonshire Road and Cross Street, Kemps Creek in the Liverpool Local Government Area	No
Calyptorhynchus lathami Glossy Black-Cockatoo (Breeding)	• Other • Ridgetops	-	No
Cercartetus nanus Eastern Pygmy-possum	-	-	No
Chalinolobus dwyeri Large-eared Pied Bat	• Cliffs • Within two kilometres of rocky areas containing caves, overhangs, escarpments, outcrops, or crevices, or within two kilometres of old mines or tunnels	-	No
Chorizema parviflorum - endangered population Chorizema parviflorum Benth. in the Wollongong and Shellharbour Local Government Areas	-	• Shellharbour and Wollongong LGAs	No

Scientific Name / Common Name	Habitat constraints	Geographic limitations	Maintained as candidate species
Haliaeetus leucogaster White-bellied Sea-Eagle (Breeding)	-	-	No
Hieraaetus morphnoides Little Eagle (Breeding)	-	-	No
Lathamus discolor Swift Parrot (Breeding)	-	-	No
Lespedeza juncea subsp. sericea - endangered population Lespedeza juncea subsp. sericea in the Wollongong Local Government Area	-	• Wollongong LGA	No
Lophoictinia isura Square-tailed Kite (Breeding)	-	-	No
Miniopterus schreibersii oceanensis Eastern Bentwing-bat (Breeding)	-	-	No
Myotis macropus Southern Myotis	• Hollow bearing trees • Within 200 m of riparian zone • Bridges, caves or artificial structures within 200 m of riparian zone	-	No
Ninox connivens Barking Owl (Breeding)	-	-	No
Petaurus norfolcensis Squirrel Glider	-	-	No
Phascolarctos cinereus Koala (Breeding)	-	-	No
Pimelea curviflora var. curviflora Pimelea curviflora var. curviflora	-	-	No
Pimelea spicata Spiked Rice-flower	-	• Within 5 km of coast	No
Pteropus poliocephalus Grey-headed Flying-fox (Breeding)	-	-	No

Scientific Name / Common Name	Habitat constraints	Geographic limitations	Maintained as candidate species
Pterostylis gibbosa Illawarra Greenhood	-	-	No
Tyto novaehollandiae Masked Owl (Breeding)	-	-	No
Zieria granulata Illawarra Zieria	-	-	No

Table 4.2 provides the list of species credit species identified by the Tool as 'candidate species'. In accordance with Section 6.4 of the BAM, each species was assessed to determine whether the species is likely to occupy the site based on habitat constraints, additional geographic limitations or the presence of degraded habitat such that a species is unlikely to utilise a site (or part thereof).

In order to inform this assessment threatened species, populations and migratory species recorded within 5 km of the development site (the locality) were obtained from a search of the Atlas of NSW Wildlife (OEH 2017) and their likelihood of occurrence was assessed by:

- review of location and date of recent (<5 years) and historical (>5-20 years) records
- review of available habitat within the development site and surrounding areas
- review of the scientific literature pertaining to each species and population
- applying expert knowledge of each species

The potential for each threatened species, population and/or migratory species to occur was then considered following review of available habitat within the development site, and the condition of such habitat. The potential for species to utilise the site and to be affected directly or indirectly by the proposed action were considered as either:

- "Recent record" = species has been recorded in the development site within the past 5 years
- "High" = species has previously been recorded in the development site (>5 years ago) or in close proximity (for mobile species), and/or habitat is present that is likely to utilised by a local population
- "Moderate" = suitable habitat for a species is present onsite but no evidence of a species detected and relatively *high* number of recent records (5-20 years) in the locality or species is highly mobile
- "Low" = suitable habitat for a species is present onsite but limited or highly degraded, no evidence of a species detected and relatively *low* number of recent records in the locality
- "Not present" – suitable habitat for the species is not present onsite or adequate survey has determined species does not occur in the development site

The likelihood of occurrence assessment (**Appendix B**) determined some of the candidate species (listed in **Table 4.2**) as “not present” within the development site. This was dependent on several factors, including whether the habitat for the species was absent or substantially modified, whether species were observed a long distance from the development site, occur in relatively low numbers or were not recorded in the locality. This assessment of likelihood corresponds to 6.4 of the BAM, where species can be removed from consideration as a candidate species (Step 1 to Step 3 of Section 6.4 of the BAM). Species not identified as candidate species for further assessment do not require formal site survey, however, informal survey was opportunistically conducted whilst surveying for other threatened species.

No candidate species were assessed considered likely, consistent with Steps 4 – 6 of Section 6.4 of the BAM (OEH 2017) no additional survey is required.

4.2 Field survey and results

4.2.1 Field survey

A number of field surveys have been completed at the subject land (see Ecoplanning 2015). However, surveys for this proposal were undertaken over two separate periods. The first was undertaken on 29 March 2017 by Kieren Northam (Ecologist) and Lucas McKinnon (Principal Ecologist). The second was undertaken on 18 December 2017 by Angela Bibby (Ecologist) and Lucas Mckinnon (Principal Ecologist). The field survey included a general flora and fauna habitat and vegetation community assessment (CSIRO 2009), and sampling four BioMetric plots (OEH 2014) over a total of 10 person hours.

Weather conditions on both days were warm, with light showers experienced on 18 December (**Table 4.3**).

Table 4.3: Daily weather observation at Albion Park, station number 068241 (5 km south).

Date	Temp (°C)		Rainfall (mm)	Max wind	
	Min	Max		Direction	Speed (km/h)
29/3/2017	20.5	28.0	0	NE	24
18/12/2017	21.5	27.3	0.8	NE	28

Vegetation communities and flora

Field survey involved traversing the study area, whilst recording all visible flora species and identifying viable habitat for threatened flora species. Areas of intact, resilient vegetation were surveyed more extensively than degraded areas of the site. Nomenclature follows the Flora of NSW (Harden 1990-2002) and updates provided in PlantNET (RBGDT 2017).

Field survey was undertaken to validate regional vegetation mapping of NPWS (2002) and Tozer (et. al 2010) within the study area. Vegetation communities were checked against described threatened ecological communities (TEC) listed under either the EPBC Act or the TSC Act.

Initial plot data was collected in March and supplemented by additional BAM data and a second pot in November.

Fauna and fauna habitat

Opportunistic observations of fauna were recorded along with signs of direct and indirect occupancy (i.e. scats, owl pellets, fur, bones, tracks, bark scratches, foliage chew marks and chewed cones of *Allocasuarina* spp. or *Pinus* spp. as well as some of the other cultivars known to be used).

Fauna habitat searches were conducted for potential foraging, roosting, breeding or nesting habitat of nocturnal and diurnal species. This includes inspection for the presence of tree hollows, stags, bird nests, possum dreys, decorticating bark, rock shelters, rock outcrops/crevices, mature / old growth trees, food trees (*Banksia* spp., *Allocasuarina* spp., and winter-flowering eucalypts), culverts, dens, dams, riparian areas and refuge habitats of man-made structures.

Primary sources of literature accessed for species nomenclature were:

- Birds - Christidis and Boles (2008)
- Mammals - Van Dyck and Strahan (2008)
- Reptiles and amphibians - Cogger (2014)
- Terrestrial invertebrates - Australian Faunal Directory (AG 2015)

Survey limitations

The flora survey aimed to record as many species as possible. However, a definitive list of the flora within the study area is not possible in time and budget constraints of the project. Additional species would be recorded during a longer survey over various seasons. Nevertheless, the techniques used in this investigation are considered adequate to gather the data necessary to validate the vegetation communities and vegetation condition in the study area and detect any threatened flora.

Fauna survey following *Threatened Species Survey and Assessment Guidelines* (OEH 2013) was only undertaken for candidate species credit species. Sufficient detail to determine the likelihood of occurrence of other threatened (ecosystem) and migratory species for the purpose of this report was achieved through habitat assessment during the field survey.

4.2.2 Field survey results

Flora species

A total of 60 flora species were identified in the study area during the field survey, of which 33 were native and 27 were exotic (**Appendix C**).

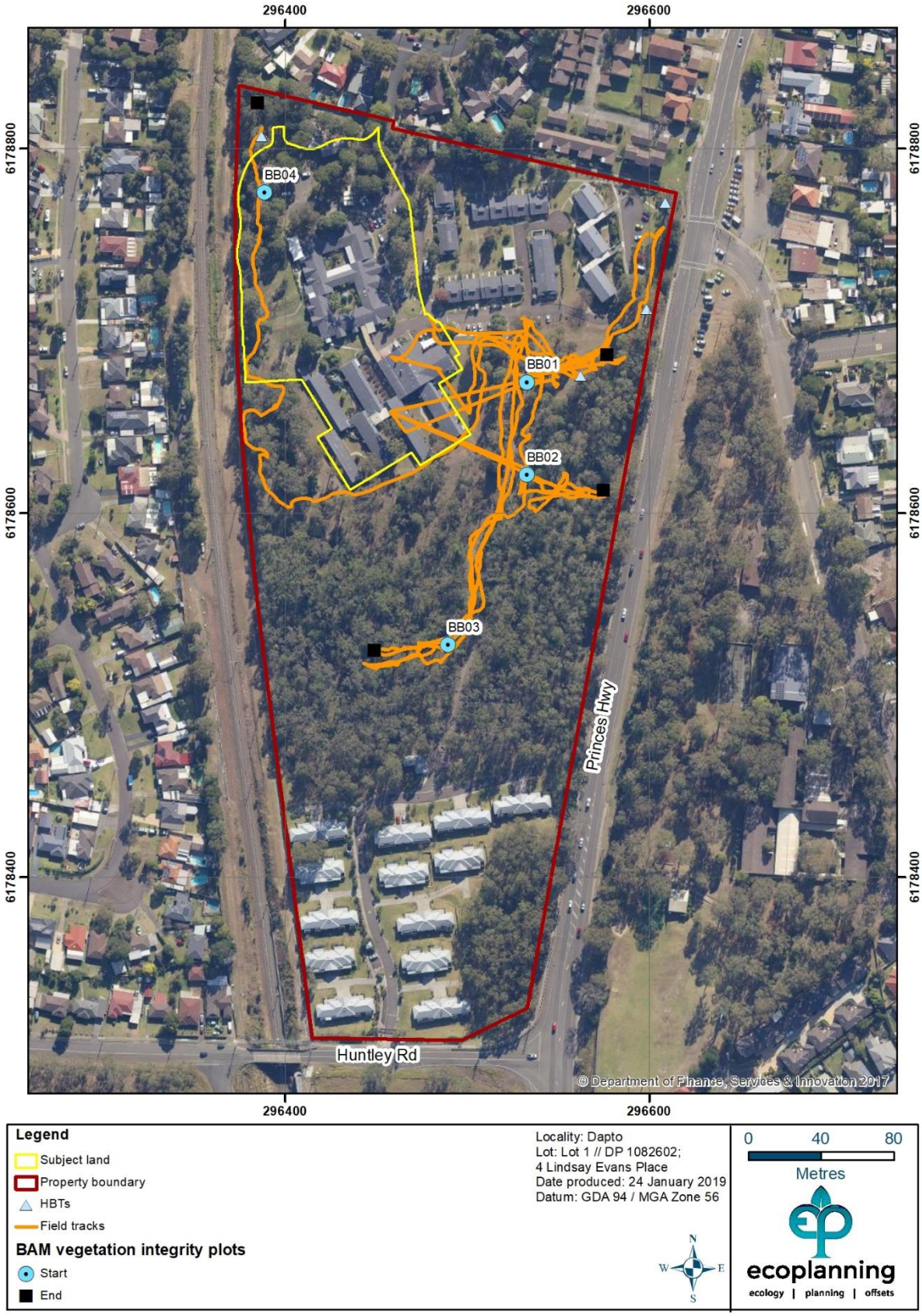

Figure 4.1: Survey effort.

Fauna habitat

The site contains a range of habitat values, with the potential to provide refuge for a diversity of native fauna:

- Woodland (**Figure 3.4** and **Figure 3.5**)
- Cleared land (**Figure 3.6**)
- Dense native/exotic midstorey (**Figure 3.5**)
- Stag trees containing hollows and hollow bearing trees (HBTs)

Habitat within the study area provides potential foraging, roosting, breeding and nesting resources. Five HBTs were identified in the study area. A higher abundance of HBTs were identified in the north east of the study area, where stag trees and mature – over mature canopy species are present.

Fauna species

The field survey undertaken for this report recorded a total of 13 fauna species. Of the 14 species, there were 12 birds including one exotic species, Common Myna (*Acridotheres tristis**), one frog species and one reptile species (**Appendix C**).

No threatened fauna was recorded during the field survey.

5 Avoiding and minimising impacts on biodiversity values

5.1 Avoiding and minimising impacts on native vegetation and habitat during project planning

A total of 0.31 ha of native vegetation, consisting of FRGTS, will be cleared by the proposal, with an additional 1.32 ha of land consisting of other vegetation, "cleared land, plantings, exotics/built structures' will also be cleared (**Figure 5.1**). The development site falls on land within WCCs Biodiversity Values Map, see **Appendix D**. However, 4.27 ha of FRGTS has been avoided and will be retained post development. The retained vegetation is protected through a s88 covenant which was put in place following previous approvals. The potential impacts are located in the underscrubbed vegetation zone. All of the vegetation completely cleared by the proposal is mapped within this condition class and represents approximately 8 % of the FRGTS within the property boundary (**Table 5.1**). The development has completely avoided the disturbed/shrubby vegetation in the centre of the subject land.

Table 5.1: Impact and retention of vegetation zones on subject land.

Veg zone	Plant community type	Condition Class	Total impact (ha)
1	PCT 838 - Forest Red Gum - Thin-leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion	Under-scrubbed	0.31[1]
		Total	***0.31***
N/A	Cleared land, exotics and built structures	N/A	1.32

[1] Listed under the EBPC Act

5.2 Avoiding and minimising prescribed biodiversity impacts during project planning

As described in **Section 2.1.3**, no prescribed biodiversity impacts are anticipated from the proposed development.

Figure 5.1: Field validated vegetation (Ecoplanning 2017) and proposed footprint.

6 Assessing and offsetting impacts

6.1 Assessment of impacts

6.1.1 Assessing impacts to native vegetation and habitat

Impacts to native vegetation are anticipated through the direct clearing of vegetation for proposed aged care facility and modification of existing infrastructure. Although some vegetation may be retained within the subject land, this assessment has assumed the complete loss of this vegetation. In total, the complete loss of 0.31 ha of native vegetation has been assessed. The vegetation zones assessed are described in **Section 3.2**.

No impacts to species credit species will occur.

6.1.2 Assessing prescribed biodiversity impacts

As described in **Section 2.1.3**, no prescribed biodiversity impacts are anticipated from the proposed development.

6.1.3 Mitigating and managing impacts on biodiversity values

Onsite measure to avoid and minimise direct and indirect impacts

Siting of the proposed residential aged care facility has been refined to avoid impacts to native vegetation where practical following numerous iterations of the design. Ecoplanning have been involved in direct consultation with OEH and WCC over the past 4 years with Anglicare considering a potential Biobanking Agreement over the retained vegetation, however this option did not prove economically feasible following from these investigations.

Several measures will be implemented to reduce impacts where possible, such as appropriate pre-clearance protocols and a Construction Environmental Management Plan (CEMP). Details are provided below.

Vegetation management plan (VMP)

Retained vegetation in the centre of the property which has been mapped in a disturbed shrubby condition state would benefit from the removal of woody weeds, in particular *Lantana camara* and *Asparagus asparagoides**. A VMP targeting woody weed removal and spanning a 3-year maintenance period will be implemented to improve the resilience of the retained vegetation (Ecoplanning 2019). The area covered under the VMP is shown in **Figure 6.1**.

Construction Environmental Management Plan (CEMP)

To avoid potential indirect offsite impact during construction, an appropriate erosion and sedimentation control plan should be in place following best practice protocols such as Landcom (2004). It is recommended that this is included in a site-specific Construction Environmental Management Plan (CEMP), prior to any construction works taking place.

The CEMP will be required to span the pre, during and post-construction period, and will include the above pre-clearance and fauna management protocols.

Indirect impacts

It is difficult to quantify indirect impacts of the proposed development, but these may include impacts such as noise and/or erosion associated with the construction phase of the project.

The management of the APZ should provide an adequate buffer to the retained vegetation to avoid indirect impacts. Indirect impacts will be managed through the development of a VMP and CEMP.

6.1.4 Adaptive management for uncertain impacts

Excluding the need for a VMP and CEMP, no additional adaptive management measures are proposed.

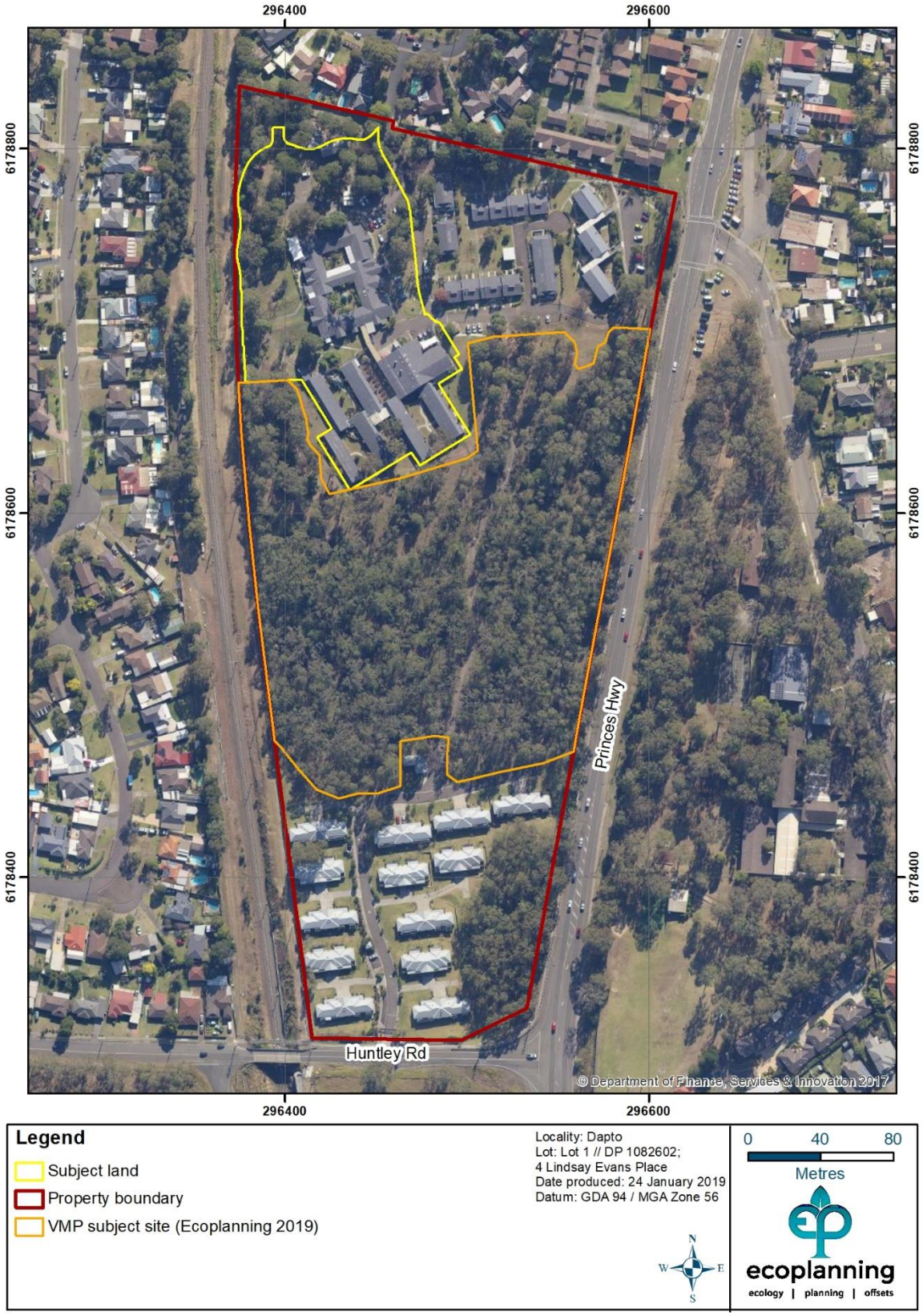

Figure 6.1: Vegetation Management Plan (VMP) area discussed in Ecoplanning (2019).

6.2 Thresholds for the assessment and offsetting of impacts of development

6.2.1 Serious and Irreversible impacts

There are no Serious and Irreversible Impacts (SAII) impacts anticipated in the subject land in accordance with 'Guidance to assist a decision-maker to determine a serious and irreversible impact' (OEH 2017c). Further, no SAII entities are listed for this site (OEH 2018a). The area of FRGTS is highly fragmented and modified (disturbed/shrubby; underscrubbed and derived native shrubland), and the proposal will not cause a substantial reduction in the quality or integrity of the local occurrence of this community.

6.2.2 Impacts which require an offset

All impacts associated with the project are required to be offset under the BAM. The impacts assessed that require offsets is the clearance of the 0.31 ha of 'underscrubbed' FRGTS. Further details are provided in **Section 3** of this report

6.2.3 Impacts that do not require further assessment

Impacts to non-native vegetation (cleared land, exotics and built structures, plantings (exotic/non-indigenous) do not require an offset and have therefore not been assessed.

7 Final Credit Calculations

7.1 Credit calculations and classes

7.1.1 Ecosystem credits

A total of 5 ecosystem credits are required to offset the clearing of 0.31 ha of 'underscrubbed' PCT 838 (**Appendix F**). The following offset rules apply:

For credit class 838:

- Illawarra Lowlands Grassy Woodland in the Sydney Basin Bioregion (including PCT's 838, 1326)
- In the following subregions - Illawarra, Ettrema, Jervis, Moss Vale, Sydney Cataract and Northern Basalts. **or**
- Any IBRA subregion that is within 100 kilometres of the outer edge of the impacted site.
- Containing hollow bearing trees – yes

7.1.2 Species credits

No species credits were required for this assessment.

7.2 Credit costs

The total cost of credits, should the Biodiversity Conservation Trust (BCT) be used to offset the impacts, are currently estimated to be **$62,730** (excl. GST) (January 2019). Details are provided in **Table 7.1** and **Appendix F**. The proponent may also wish to purchase credits available on the market or may wish to pursue other offset sites as required. A final decision on how the credits will be secured will be made as the project progresses.

Table 7.1: Ecosystem credits summary and credit profiles.

Plant community type	Baseline price per credit[1]	Price per credit[1]	No. of ecosystem credits	Final credits price (ex GST)
PCT 838 - Forest Red Gum - Thin-leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion	$10,026[1]	$12,546[1]	5	$62,730
			Total	**$62,730**

[1] rounded to the nearest dollar

8 References

Building Code & Bushfire Hazard Solutions Pty Ltd (BCBHS) 2018, Bushfire Hazard Assessment Report Proposed Alterations and Additions at St Lukes Village Dapto, 4 Lindsay Evans Place, Dapto, Ref: 150796, 23 April 2018

Commonwealth Dept. of the Environment and Energy (DoEE) (2017). Protected Matters Search Tool. Accessed at: http://www.environment.gov.au/epbc/protected-matters-search-tool

Department of Sustainability, Environment, Water, Population and Communities (DEWPC) (2013). Approved Conservation Advice for Lowland Grassy Woodland in the South East Corner Bioregion. Canberra, ACT: Department of Sustainability, Environment, Water, Population and Communities. Available from: http://www.environment.gov.au/biodiversity/threatened/communities/pubs/82-conservation-advice.pdf.

Ecoplanning (2019). Vegetation Management Plan, - Lot 1 // DP 1082602, 4 Lindsay Evans Place, Dapto, NSW (V2.0). Prepared for Anglicare.

Mitchell, P. (2002). NSW ecosystems study: Background and Methodology, prepared by Groundtruth Consulting, Gladesville, NSW.

NSW National Parks and Wildlife Service (2002). Native Vegetation Maps of the Cumberland Plain, Western Sydney. NPWS, Hurstville.

NSW Dept. of Planning and Environment (DPE) (2018). NSW Planning Portal. NSW Government. Accessed at: https://www.planningportal.nsw.gov.au/

NSW Land and Property Information (LPI) (2018). SIX Maps. Accessed at: https://maps.six.nsw.gov.au/

NSW Office of Environment and Heritage (NSW OEH) (2017). Biodiversity Assessment Method. Office of Environment and Heritage for the NSW Government, Sydney.

NSW Office of Environment and Heritage (NSW OEH) (2017a). BioNet Atlas of NSW Wildlife. Accessed at: http://www.environment.nsw.gov.au/atlaspublicapp/UI_Modules/ATLAS_/AtlasSearch.aspx

NSW Office of Environment and Heritage (NSW OEH) (2017b). Soil Landscapes of Central and Eastern NSW, NSW Office of Environment and Heritage, Sydney.

NSW Office of Environment and Heritage (NSW OEH) (2017b). Guidance to assist a decision-maker to determine a serious and irreversible impact.

NSW Office of Environment and Heritage (NSW OEH) (2018a) Atlas of NSW Wildlife, Threatened biodiversity, logged in as registered user at: https://www.environment.nsw.gov.au/AtlasApp/UI_Modules/TSM_/Default.aspx?a=1

NSW Office of Environment and Heritage (NSW OEH) (2018b). NSW Vegetation Information Sydney (VIS) Classification Database VIS 2.1, logged in as public user at:

http://www.environment.nsw.gov.au/NSWVCA20PRapp/LoginPR.aspx?ReturnUrl=%2fNSWVCA20PRapp%2fdefault.aspx

Appendix A: Plot data collected

Plot No.	Bearing	Composition						Structure						Function									
		Tree	Shrub	Grass	Forb	Fern	Other	Tree	Shrub	Grass	Forb	Fern	Other	Large trees	Hollow trees	Litter cover	Fallen logs	Tree stem 5-10	Tree stem 10-20	Tree stem 20-30	Tree stem 30-50	Tree stem 50-80	Tree regen	High threat exotic
4	190	2	1	3	8	0	0	15.0	10.0	22.0	1.2	0.0	0.0	0	0	41.4	0.0	0	0	1	1	1	0	28.6

Note: see Appendix C for plot fauna species.

Appendix B: Likelihood Table

Scientific Name Common Name	Legal Status	Number of records	Closest record and date	Most recent and proximity	Likelihood of occurrence	
					Prior to field assessment	Post field assessment
KINGDOM: Animalia; CLASS: Aves						
Ardea ibis Cattle Egret	EPBC Act: C, J	152	2.38 km (31/07/2016)	31/07/2016 (2.38 km)	Moderate	No
Artamus cyanopterus Dusky Woodswallow	BC Act: V	5	2.62 km (28/08/2011)	29/11/2013 (4.17 km)	Low	Low
Calyptorhynchus lathami Glossy Black-Cockatoo	BC Act: V	4	4.45 km (9/05/1999)	9/05/1999 (4.45 km)	Low	No
Circus assimilis Spotted Harrier	BC Act: V	1	4.47 km (18/10/2013)	18/10/2013 (4.47 km)	Low	Low
Haliaeetus leucogaster White-bellied Sea-Eagle	BC Act: V EPBC Act: C	18	2.38 km (24/06/2016)	24/06/2016 (2.38 km)	Low	Low
Hieraaetus morphnoides Little Eagle	BC Act: V	3	2.38 km (24/06/2016)	24/06/2016 (2.38 km)	Low	Low
Hirundapus caudacutus White-throated Needletail	EPBC Act: C, J, K	58	2.38 km (28/02/2016)	28/02/2016 (2.38 km)	Low	Low
Lophoictinia isura Square-tailed Kite	BC Act: V	2	2.38 km (24/06/2016)	24/06/2016 (2.38 km)	Low	Low
Ninox strenua Powerful Owl	BC Act: V	3	2.82 km (14/11/2012)	14/11/2012 (2.82km)	Low	Low
Pandion cristatus Eastern Osprey	BC Act: V	43	2.38 km 31/07/2016	31/07/2016 (2.38 km)	Low	No
Petroica boodang Scarlet Robin	BC Act: V	2	2.38 km (15/08/2015)	15/08/2015 (2.38 km)	Low	Low

Scientific Name Common Name	Legal Status	Number of records	Closest record and date	Most recent and proximity	Likelihood of occurrence	
					Prior to field assessment	Post field assessment
Petroica rodinogaster Pink Robin	BC Act: V	1	2.38 km (31/07/1996)	31/07/1996 (2.38 km)	Low	No
Plegadis falcinellus Glossy Ibis	EPBC Act: C	4	2.38 km (4/02/2015)	4/02/2015 (2.38 km)	Low	Low
KINGDOM: Animalia; CLASS: Mammalia						
Chalinolobus dwyeri Large-eared Pied Bat	BC Act: V EPBC Act: V	7	0.59 km (30/1/2015)	26/03/2015 (2.40 km)	Low	Low
Falsistrellus tasmaniensis Eastern False Pipistrelle	BC Act: V	37	0.46 km (4/03/2015)	4/03/2015 (0.46 km)	Moderate	Low
Miniopterus australis Little Bentwing-bat	BC Act: V	64	0.46 km (4/03/2015)	26/03/2015 (2.40 km)	Moderate	Low
Miniopterus schreibersii oceanensis Eastern Bentwing-bat	BC Act: V	27	6.5 m (10/3/2015)	26/03/2015 (2.40 km)	Moderate	Known
Mormopterus norfolkensis Eastern Freetail-bat	BC Act: V	339	6.5 m (10/3/2015)	11/10/2016 (3.15 km)	Moderate	Moderate
Myotis macropus Southern Myotis	BC Act: V	2	3.15 km (11/10/2016)	11/10/2016 (3.15 km)	Moderate	Not recorded
Pteropus poliocephalus Grey-headed Flying-fox	BC Act: V EPBC Act: V	14	1.24 km (20/07/2014)	11/09/2015 (2.71 km)	Low	Low
Saccolaimus flaviventris Yellow-bellied Sheathtail-bat	BC Act: V	9	0.59 km (30/01/2015)	15/02/2015 (2.24 km)	Moderate	Low
Scoteanax rueppellii Greater Broad-nosed Bat	BC Act: V	20	0.59 km (30/01/2015)	20/02/2015 (1.31 km)	Moderate	Low
KINGDOM: Plantae						

Scientific Name Common Name	Legal Status	Number of records	Closest record and date	Most recent and proximity	Likelihood of occurrence	
					Prior to field assessment	Post field assessment
Chorizema parviflorum Chorizema parviflorum Benth. in the Wollongong and Shellharbour Local Government Areas	BC Act: E2	107	1.68 km (17/09/2003)	9/09/2013 (1.07 km)	Low	Not recorded
Cynanchum elegans White-flowered Wax Plant	BC Act: E1 EPBC Act: E	6	4.08 km (12/4/2001)	14/03/2012 (4.67 km)	Low	Low
Lespedeza juncea subsp. sericea Lespedeza juncea subsp. sericea in the Wollongong Local Government Area	BC Act: E2	502	0.11 km (4/04/2014)	6/3/2018 (0.53 km)	**High**	**High (recorded on property, not within subject land)**
Pterostylis gibbosa Illawarra Greenhood	BC Act: E1 EPBC Act: E	121	1.74 km (28/03/2018)	28/03/2018 (1.74 km)	Moderate	Not recorded
Solanum celatum	EPBC Act: E1	501	1.31 km (19/12/2016)	19/12/2016 (1.31 km)	Moderate	Not recorded
Zieria granulata Illawarra Zieria	BC Act: E1 EPBC Act: E	19	4.10 km (9/08/2016)	9/08/2016 (4.10 km)	Low	Not recorded

Unless other stated, text is taken from the OEH Threatened Species (http://www.environment.nsw.gov.au/threatenedspecies/); Legal Status codes from the Atlas of NSW Wildlife: V = Vulnerable, E1 = Endangered, E2 = Endangered Population, E4A = Critically Endangered, C = China and Australia Migratory Bird Agreement (CAMBA), J = Japan and Australia Migratory Bird Agreement (JAMBA); BC Act = NSW *Biodiversity Conservation Act 2017;* EPBC Act = Commonwealth *Environment Protection and Biodiversity Conservation Act 1999.*

Appendix C: Flora and fauna species inventories

Flora

Family	Genus	Species	Common name	Native/Exotic	Form	Plot 4
Apiaceae	*Cyclospermum*	*leptophyllum*	Slender Celery	Exotic	F	X
Apocynaceae	*Araujia*	*sericifera*	Moth Vine	Exotic	L	X
Arecaceae	*Phoenix*	*Canariensis*	Canary Island Date Palm	Exotic	T	X
Asparagaceae	*Asparagus*	*asparagoides*	Bridal Creeper	Exotic	L	X
Asteraceae	*Bidens*	*pilosa*	Cobblers Pegs	Exotic	F	X
Asteraceae	*Cotula*	*australis*	Common Cotula	Native	F	
Asteraceae	*Conyza*	sp.		Exotic	F	X
Asteraceae	*Euchiton*	*sphaericus*	Cudweed	Native	F	
Asteraceae	*Lactuca*	*Serriola*	Prickly Lettuce	Exotic	F	X
Asteraceae	*Sonchus*	*oleraceus*	Common Sowthistle	Exotic	F	X
Asteraceae	*Taraxacum*	*officinale*	Dandelion	Exotic	F	X
Basellaceae	*Anredera*	*cordifolia*	Potato Vine	Exotic	V	X
Caryophyllaceae	*Cerastium*	*sp.*		Exotic	F	
Casuarinaceae	*Casuarina*	*cunninghamiana subsp. cunninghamiana*	River Oak	Native	T	X
Chenopodiaceae	*Einadia*	*nutans*	Climbing Saltbush	Native	F	X
Commelinaceae	*Commelina*	*cyanea*		Native	F	X
Convolvulaceae	*Dichondra*	*repens*	Kidney Weed	Native	F	X
Crassulaceae	*Bryophyllum*	*delagoense*	Mother-of-millions	Exotic	F	X
Crassulaceae	*Crassula*	sp.		Native	F	X
Cyperaceae	*Carex*	*Inversa*		Native	G	
Cyperaceae	*Cyperus*	*gracilis*		Native	F	X

Family	Genus	Species	Common name	Native/Exotic	Form	Plot 4
Cyperaceae	*Cyperus*	*sp.*		Native	F	
Cyperaceae	*Fimbristylis*	*sp.*		Native	F	
Fabaceae - Faboideae	*Desmodium*	*varians*	Slender Tick-trefoil	Native	L	
Fabaceae - Faboideae	*Glycine*	*clandestina*		Native	L	
Fabaceae - Faboideae	*Glycine*	*tabacina*		Native	L	
Gentianaceae	*Centaurium*	*sp..*		Exotic	F	X
Geraniaceae	*Geranium*	*solanderi var. solanderi*	Australian Cranesbill	Native	F	X
Lobeliaceae	*Pratia*	*purpurascens*	Whiteroot	Native	F	X
Malaceae	*Cotoneaster*	*sp.*		Exotic	S	X
Malvaceae	*Sida*	*rhombifolia*	Paddy's Lucerne	Exotic	F	X
Malvaceae sens lat.	*Modiola*	*caroliniana*	Red-flowered Mallow	Exotic	F	
Myrtaceae	*Eucalyptus*	*amplifolia*	Cabbage Gum	Native	F	X
Myrtaceae	*Eucalyptus*	*tereticornis*	Forest Red Gum	Native	F	
Myrtaceae	*Melaleuca*	*decora*	White Feather Honeymyrtle	Native	S	X
Oxalidaceae	*Oxalis*	*perennans*		Native	F	X
Papaveraceae	*Fumaria*	*sp.*		Native	F	X
Phyllanthaceae	*Breynia*	*Oblongifolia*	Coffee Bush	Native	S	
Plantaginaceae	*Plantago*	*lanceolata*	Lamb's Tongue	Exotic	F	
Plantaginaceae	*Veronica*	*plebeia*	Trailing Speedwell	Native	F	
Poaceae	*Bothriochloa*	*macra*	Red-leg Grass	Native	G	
Poaceae	*Bromus*	*catharticus*	Prairie Grass	Exotic	G	X
Poaceae	*Cynodon*	*dactylon*	Couch	Exotic	G	X
Poaceae	*Cenchrus*	*Clandestinus*	Kikuyu Grass	Exotic	G	X
Poaceae	*Eragrostis*	*leptostachya*	Paddock Lovegrass	Native	Grass	
Poaceae	*Ehrharta*	*erecta*	Panic Veldtgrass	Exotic	Grass	X
Poaceae	*Microlaena*	*stipoides*	Weeping Grass	Native	G	X

Family	Genus	Species	Common name	Native/Exotic	Form	Plot 4
Poaceae	*Oplismenus*	*aemulus*	Australian Basket Grass	Native	G	
Poaceae	*Paspalum*	*dilatatum*	Paspalum	Exotic	G	
Poaceae	*Setaria*	*parviflora*	Pigeon Grass	Exotic	G	
Poaceae	*Sporobolus*	*creber*	Western Rat-tail Grass	Native	G	
Poaceae	*Sporobolus*	*elongatus*	Slender Rat's Tail Grass	Native	G	
Poaceae	*Stenotaphrum*	*secundatum*	Buffalo Grass	Exotic	G	X
Polygonaceae	*Rumex*	*brownii*	Swamp dock	Native	F	X
Rubiaceae	*Asperula*	*conferta*	Common Woodruff	Native	F	X
Rubiaceae	*Opercularia*	*diphylla*	Stinkweed	Native	F	
Rubiaceae	*Richardia*	*sp.*		Exotic	F	
Scrophulariaceae	*Veronica*	*plebeia*	Creeping Speedwell	Native	F	
Solanaceae	*Solanum*	*nigrum*	Black-berry Nightshade	Exotic	F	X
Verbenaceae	*Verbena*	*bonariensis*	Purpletop	Exotic	F	

Fauna

Class	Family	Scientific name	Common name	Native/ Exotic	Ecoplanning (29/03/17)
Amphibia	Hylidae	*Litoria peronii*	Perrons Tree Frog	Native	W
Aves	Artamidae	*Cracticus tibicen*	Australian Magpie	Native	OW
	Artamidae	*Cracticus torquatus*	Grey Butcherbird	Native	OW
	Artamidae	*Strepera graculina*	Pied Currawong	Native	W
	Corvidae	*Corvus coronoides*	Australian Raven	Native	W
	Meliphagidae	*Manorina melanocephala*	Noisy Miner	Native	W
	Monarchidae	*Grallina cyanoleuca*	Magpie-lark	Native	W
	Pardalotidae	*Pardalotus punctatus*	Spotted Pardalote	Native	W
	Psittacidae	*Platycercus elegans*	Crimson Rosella	Native	W
	Psittacidae	*Platycercus eximius*	Eastern Rosella	Native	OW
	Psittacidae	*Trichoglossus haematodus*	Rainbow Lorikeet	Native	W
	Rhipiduridae	*Rhipidura albiscapa*	Grey Fantail	Native	W
	Sturnidae	*Sturnus tristis**	Common Myna*	Exotic	OW
Reptilia	Scincidae	*Lampropholis guichenoti*	Common Garden Skink	Native	O

Observation type = O (seen), W (heard call), OW (seen and heard), U (ultrasonic recording, Q (camera)

Appendix D: Local considerations

Wollongong LEP 2009

A section of the Proposed development site has been identified under the Natural resource sensitivity – Biodiversity layer of the WLEP.

Clause 7.2 (3) Natural resource sensitivity – Biodiversity

Development consent must not be granted for development on land to which this clause applies unless the consent authority has considered the impact of the development on:

(a) native terrestrial flora and fauna and its habitat,

The impact to native terrestrial flora and fauna and its habitat has been considered in **Section 6.1.1** of this report.

(b) native aquatic flora and fauna and its habitat,

Aquatic flora and fauna and its habitat **will not** be impacted by the proposal. The proposal only impacts terrestrial vegetation.

(c) the ecological role of the land, waterways, riparian land or wetland

The ecological role of the land, waterways and riparian lands have been considered in **Sections 2.1** and **2.2**.

(d) threatened species, communities, populations and their habitats.

Threatened species, communities, populations and their habitats are considered in **Section 6.1**.

Clause 7.2 (4) Natural resource sensitivity – Biodiversity

Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that the development is consistent with the objectives of this clause and:

(a) the development is designed, sited and managed to avoid potential adverse environmental impact, or

The proposed development is designed and sited so that the vast majority of impacts are to predominantly cleared and exotic vegetation (1.32 ha), although there will be a 0.31 ha impact to native vegetation, all of which is listed as EEC. This vegetation is classified as 'underscrubbed' and lacks a native midstorey or understorey. Avoidance and mitigation measures are discussed in **Section 5**.

(b) if a potential adverse environmental impact cannot be avoided, the development:

(i) is designed and sited so as to have minimum adverse environmental impact, and

(ii) incorporates effective measures so as to have minimal adverse environmental impact, and

(iii) mitigates any residual adverse environmental impact through the restoration of any existing disturbed or modified area on the site.

Avoidance and mitigation measures are discussed in **Section 5**.

Clause 7.4: Riparian Lands

The proposal **will not** impact on land identified as Riparian Land under the WLEP.

Clause 7.8: Illawarra Escarpment area conservation

The proposal **does not** fall within land covered by Clause 7.8 – Illawarra Escarpment area conservation.

Appendix E: Assessments of Significance

Commonwealth listings under the EPBC Act

Illawarra and south coast lowland grassy woodland ecological community

An action is likely to have a significant impact on a critically endangered or endangered ecological community if there is a real chance or possibility that it will:

- reduce the extent of an ecological community

The extent of Illawarra and South coast lowland grassy woodland (ISCLGW) to be removed is small (1 patch <0.5ha), highly fragmented and modified (disturbed/shrubby; underscrubbed and derived native shrubland).

- fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines

The proposal will not fragment any ISCLGW.

- adversely affect habitat critical to the survival of an ecological community

The habitat to be removed is not critical to the survival of ISCLGW. Much more substantial parcels occur across the south of the subject land within the locality.

- modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns

The proposal will modify abiotic factors, but such that it will impacts the capacity for ISCLGW to survive in the locality or the broader Dapto precinct.

- cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting

The area ISCLGW is highly fragmented and modified (disturbed/shrubby; underscrubbed and derived native shrubland) and will not cause a substantial change in the species composition of the local occurrence of this community.

- cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to:
  - assisting invasive species, that are harmful to the listed ecological community, to become established, or
  - causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community, or
  - interfere with the recovery of an ecological community.

The area ISCLGW is highly fragmented and modified (disturbed/shrubby; underscrubbed and derived native shrubland) and will not cause a substantial reduction in the quality or integrity of the local occurrence of this community.

Appendix F: BAM Calculator Reports

Credit summary report

NSW GOVERNMENT

BAM Credit Summary Report

Proposal Details

Assessment Id	Proposal Name	BAM data last updated *
00010581/BAAS17012/19/00010583	St Lukes Retirement Village	04/01/2019
Assessor Name	Report Created	BAM Data version *
Lucas McKinnon	24/01/2019	6
Assessor Number	* Disclaimer: BAM data last updated may indicate either complete or partial update of the BAM calculator database. BAM calculator database may not be completely aligned with Bionet.	
BAAS17012		

Ecosystem credits for plant communities types (PCT), ecological communities & threatened species habitat

Zone	Vegetation zone name	Vegetation integrity loss / gain	Area (ha)	Constant	Species sensitivity to gain class (for BRW)	Biodiversity risk weighting	Candidate SAII	Ecosystem credits
Forest Red Gum - Thin-leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion								
1	838_Underscrubbed	30.6	0.3	0.25	High Sensitivity to Potential Gain	2.00		5
							Subtotal	**5**
							Total	**5**

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BAM Credit Summary Report

Species credits for threatened species

Vegetation zone name	Habitat condition (HC)	Area (ha) / individual (HL)	Constant	Biodiversity risk weighting	Candidate SAII	Species credits

Biodiversity payment summary report

Biodiversity payment summary report

Assessment Id	Payment data version	Revision number	Report created
00010581/BAAS17012/19/00010583	41	0	24/01/2019

PCT list

Include	PCT common name	Credits
Yes	**838 -** Forest Red Gum - Thin-leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion	5

Species list

Include	Species	Credits

Ecosystem credits for plant communities types (PCT), ecological communities & threatened species habitat

IBRA sub region	PCT common name	Baseline price	Dynamic coefficient	Market coefficient	Risk premium	Administrative cost	Methodology adjustment factor	Price per credit	No. of ecosystem credits	Final credits price
Illawarra	**838 -** Forest Red Gum - Thin-leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion **Note: This PCT has trades recorded**	$ 10,026.33			24.87%	$26.07	1.0000	$ 12,545.95	5	$62,729.73
								Subtotal (excl. GST)		**$62,729.73**

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Biodiversity payment summary report

	GST	$6,272.97
	Total ecosystem credits (incl. GST)	**$69,002.70**

Species credits for threatened species

Species profile ID	Species	Threat status	Price per credit	Risk premium	Administrative cost	No. of species credits	Final credits price
No species available							
					Grand total		**$69,002.70**

Attachment 6

ecoplanning

ecology | planning | offsets

Vegetation Management Plan

Lot 1 // DP 1082602,
4 Lindsay Evans Place, Dapto, NSW

Proposed Residential Aged Care Facility

Prepared for Anglicare

28 February 2019

PROJECT NUMBER	2018-255		
PROJECT NAME	Vegetation Management Plan		
PROJECT ADDRESS	Lot 1 // DP 1082602, 4 Lindsay Evans Place, Dapto, 2530, NSW		
PREPARED FOR	Anglicare		
AUTHOR/S	Kieren Northam		
REVIEW	Bruce Mullins		
VERSION	**Version**	**Draft/Final**	**Date to client**
	1.0	Draft	24 January 2019
	2.0	Draft/Final	24 January 2019
	2.1	Draft/Final	28 February 2019

This report should be cited as: '*Ecoplanning (2019). Vegetation Management Plan, - Lot 1 // DP 1082602, 4 Lindsay Evans Place, Dapto, NSW (V.2.1). Prepared for Anglicare.*'

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Glossary and abbreviations

Abbreviation	Description
*	Denotes exotic species
APZ	Asset Protection Zone
BC Act	NSW Biodiversity Conservation Act 2016
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
FRGTS	Forest Red Gum – Thin-leaved Stringybark grassy woodland
ha	Hectares
LGA	Local Government Area
MZ	Management Zone
VMP	Vegetation Management Plan
WLEP	Wollongong Local Environmental Plan 2009
WoNS	Weeds of National Significance

Contents

Figures

Tables

1. Introduction

1.1 Description of project and purpose of the Vegetation Management Plan

This Vegetation Management Plan (VMP) has been prepared to guide the management of retained and restored vegetation as part of the proposed residential aged care facility of Lot 1 // DP 1082602, 4 Lindsay Evans Place, Dapto, NSW 2530 (the 'study area'; **Figure 1.1**). The study area is located approximately 2.6 km south of Dapto town centre. The study area is zoned R2 (Low Density Residential) under the Wollongong Local Environmental Plan (WLEP) 2009.

The need for a VMP was recommended a Biodiversity Development Assessment Report (BDAR) (Ecoplanning 2018). The BDAR addresses a proposed residential aged care facility in the north west of the study area (the 'subject land'; **Figure 1.1**). The objective of this VMP is to provide feasible management options for the restoration of the central vegetated zone within the study area (the 'subject site'; **Figure 1.1**).

This VMP outlines the management methods for the restoration and rehabilitation of the central vegetation zone in the study area. Considerations have been made to the relevant components of Chapter E23 of the Wollongong Development Control Plan (DCP) 2009. Revegetation of cleared areas of the site and primary woody-weed removal will be implemented to achieve the VMPs primary objectives, which are:

- reduce the abundance and cover of all exotic species, particularly exotic grasses and herbaceous weeds,
- revegetate/rehabilitate the subject site with a combination of native midstorey, overstory and grasses/groundcovers, and
- improve the habitat connectivity that runs to the east of the study area.

This report includes a proposal for staging of works to guide the weed management, revegetation and general restoration of the subject site by a qualified bush regeneration company. This VMP is intended to be implemented over a 3-year period.

Figure 1.1: The study area, BDAR subject land and VMP subject site.

1.2 Site description

The study area is located in the suburb of Dapto, within the Wollongong Local Government Area (LGA). The study area is approximately 2.8 km west of Lake Illawarra (**Figure 1.2**). No drainage lines pass through the study area.

Within the locality, native vegetation is mostly associated with extant areas of woodland. Large areas of intact bushland are located to the east and the south of the subject site. There is low – moderate connectivity to the vegetation south of the subject land. West of the subject site, urban development impedes connectivity beyond the property boundary.

The study area comprises land containing grassy woodland, cleared land, plantings and infrastructure. The northern and southern sections of the study area contain aged care residences and associated infrastructure. Planted vegetation occurs around the residential premises in the north and south of the study area.

The subject site is restricted to the central vegetated zone within the study area and comprises 3.83 ha. An access track runs north-south through the centre of the subject site. Within the subject site, grassy woodland vegetation is found in two condition classes; 'disturbed/shrubby' and 'underscrubbed'. The vegetation in 'disturbed/shrubby' condition class occurs throughout most of the subject site and contains a mix of native and exotic species in the midstorey and groundlayer. The vegetation near the northern subject site boundary comprises grassy woodland in an 'underscrubbed' condition class. This area has been managed for an APZ. It has been cleared of midstorey vegetation, predominately persisting as remnant trees over lawn grasses, plantings and exotic species.

Restoration of the subject site will require intervention including woody-weed removal, spray preparation, revegetation and ongoing maintenance works to ensure the successful establishment of planted native vegetation. Management actions required for the restoration of the VMP subject site are discussed further in **Sections 3.1** to **3.6** and in **Appendix C**.

Figure 1.2: Locality of the study area and VMP subject site depicting surrounding suburbs and landscape features.

2. Site assessment

2.1 Methods

Several field surveys have been completed at the study area (Ecoplanning 2015, 2018). Field surveys were undertaken on 29 March 2017 by Kieren Northam (Ecologist) and Lucas McKinnon (Principal Ecologist) and 18 December 2017 by Angela Bibby (Ecologist) and Lucas McKinnon. Field surveys included a general flora and fauna habitat and vegetation community assessment (CSIRO 2009) over 10-person hours. Weather conditions on both days were warm with light showers experienced on 18 December (**Table 2.1**).

Table 2.1: Daily weather observation at Albion Park, station number 068241 (5 km south, BOM 2018)

Date	Temp (°C)		Rainfall (mm)	Max wind	
	Min	Max		Direction	Speed (km/h)
29/03/2017	20.5	28.0	0.0	NE	24
18/12/2017	21.5	27.3	0.8	NE	28

The field assessment aimed to determine the overall resilience of the subject site, thus its capacity to respond to regeneration works. Appropriate management methods were considered, with the aim of identifying areas of the subject site requiring revegetation, as opposed to assisted natural regeneration. The subject site was surveyed to determine the problematic exotic species present and aimed to identify all priority weeds and Weeds of National Significance (WoNS). During the survey, appropriate weed control techniques were considered for the dominant exotic species within the subject site. All vegetation patches were assessed to determine their location, extent, structure and floristics.

2.2 Results

2.2.1 Plant communities

Desktop assessments of the native vegetation provided contrasting assessments of the possible vegetation communities within the subject land. Vegetation mapping by NPWS (2002) indicated that one vegetation community was present; Lowland Woollybutt Melaleuca Forest (MU24) (**Figure 2.1**). Conversely, Tozer et al. (2010) identified two vegetation communities within the study area (**Figure 2.2**). These communities were South Coast Grassy Woodland (p34) and Illawarra Lowland Swamp Woodland (p3). Each of these communities are components of listed threatened ecological communities (TEC) under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and NSW *Biodiversity Conservation Act 2016* (BC Act) (**Table 2.2**).

Field survey found regional vegetation mapping by NPWS (2002) to be inconsistent with the vegetation in the study area. Whilst the vegetation in the subject site was modified, based on the floristic composition of the vegetation it was found to be more consistent with, Coastal Grassy Red Gum Forest (MU23; NPWS 2002), or, South Coast Grassy Woodland (GW p34; Tozer et al 2006) (**Figure 2.3**) (Ecoplanning 2018). This vegetation community is equivalent to

PCT838, Forest Red Gum - Thin-leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion (FRGTS). FRGTS is a component of the Illawarra Lowlands Grassy Woodland in the Sydney Basin Bioregion (BC Act – EEC) and Illawarra and South Coast Lowland Grassy Woodland and Forest (EPBC Act – CEEC).

Table 2.2: Vegetation community nomenclature.

Vegetation communities (NPWS 2002)	Vegetation Communities (Tozer et al. 2006)	Plant Community Type (PCT)	Threatened Ecological Communities	BC Act	EPBC Act
Not mapped	South Coast Grassy Woodland (p34)	Forest Red Gum - Thin-leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion (PCT838/SR545)	Illawarra Lowlands Grassy Woodland in the Sydney Basin Bioregion (BC Act) **and** Illawarra and South Coast Lowland Forest and Woodland (EPBC Act)	EEC	CEEC
Lowland Woollybutt Melaleuca Forest (MU24)	Illawarra Lowland Swamp Woodland (p3)	Woollybutt - White Stringybark - Forest Red Gum grassy woodland on coastal lowlands, southern Sydney Basin Bioregion and South East Corner Bioregion (PCT1326/SR669)			

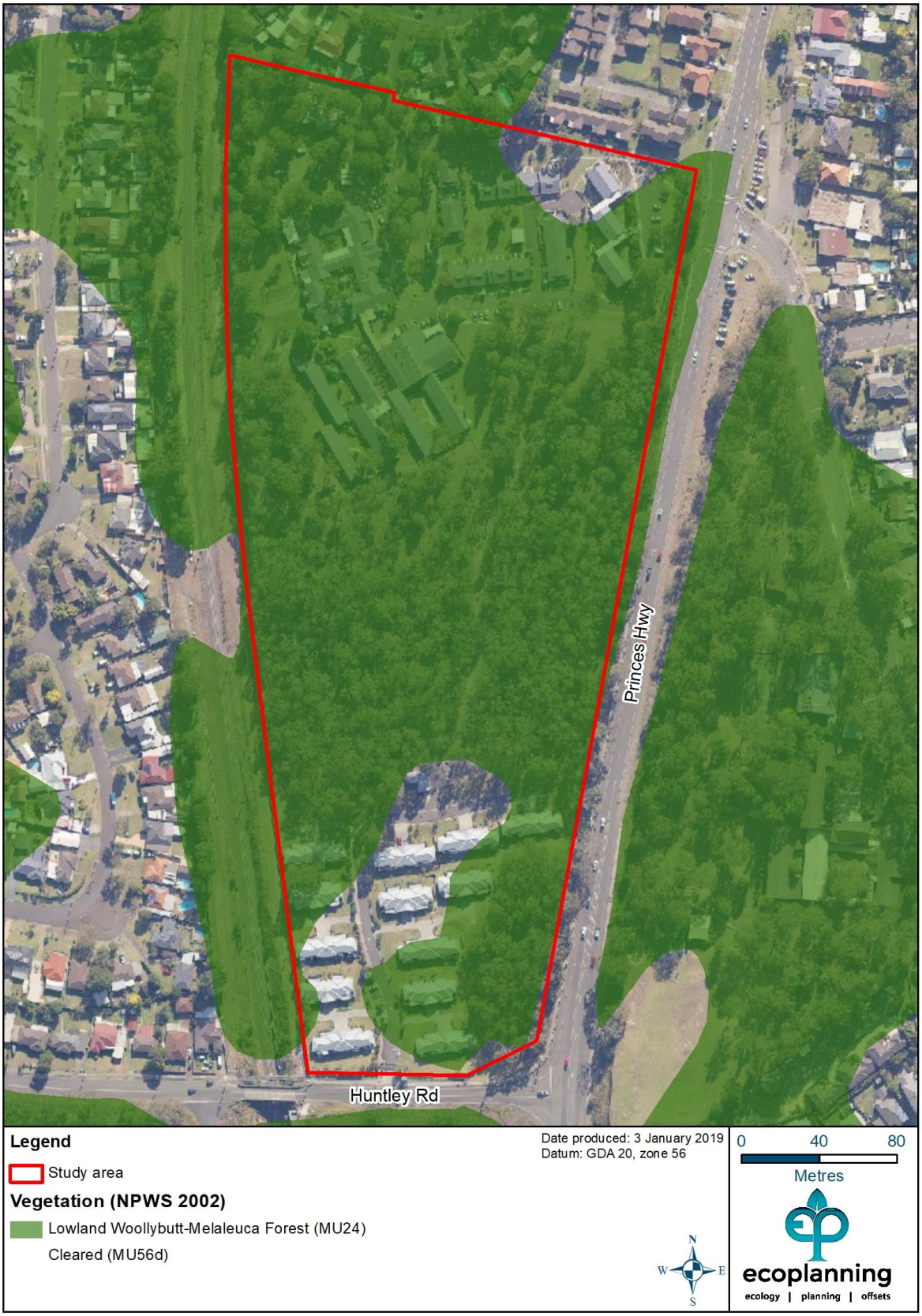

Figure 2.1: Regional vegetation mapping of the study area (NPWS 2002)

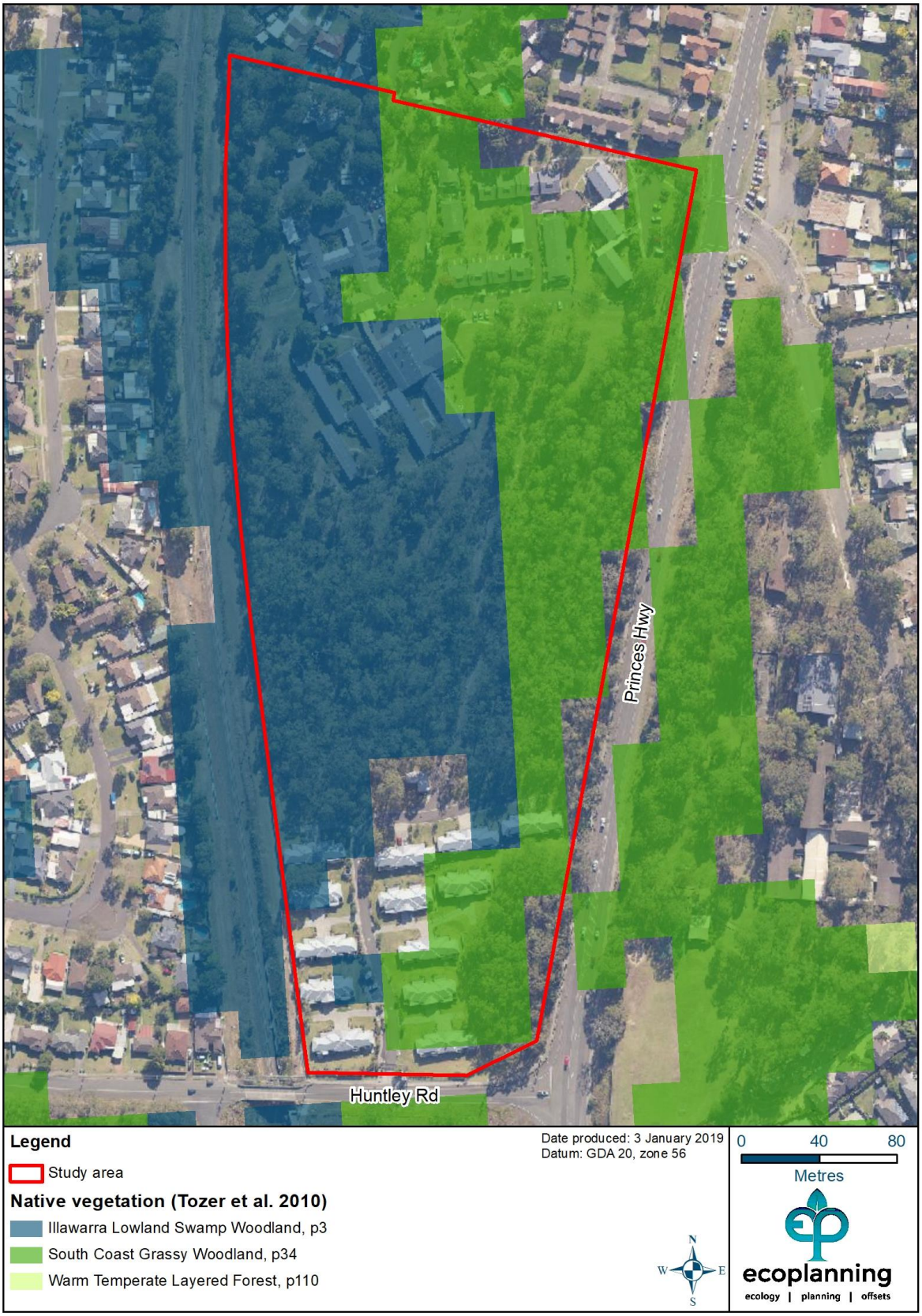

Figure 2.2: Native vegetation in the study area (Tozer et al. 2010).

Figure 2.3: Vegetation within the study area (Ecoplanning 2018).

Forest Red Gum - Thin-leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion (PCT 838; SR545)

The assemblage of native species throughout the subject site comprises native vegetation consistent with Forest Red Gum – Thin-leaved Stringybark grassy woodland on coastal lowlands (PCT 838). Within the subject site, FRGTS occurs in two condition classes; 'disturbed/shrubby' (**Figure 2.4**) and 'underscrubbed' (**Figure 2.5**).

The 'disturbed/shrubby' condition class vegetation occurs throughout the central and southern regions of the subject site. Canopy species include *Eucalyptus tereticornis, E. eugenioides* (Thin-leaved Stringybark) and *E. amplifolia* (Cabbage Gum). *Casuarina cunninghamiana* subsp*. cunninghamiana* (River Oak) and *Melaleuca decora* are also present within the canopy species. Native species and woody weeds occur throughout the midstorey of this condition class, including *Lantana camara*.* Groundcover species comprises both native and exotic species. Exotic species include herbaceous weeds and exotic grasses, including *Cenchrus clandestinus** (Kikuyu), *Ehrharta erecta** (Panic Veldtgrass) and *Sporobolus africanus** (Parramatta Grass).

The 'underscrubbed' condition class vegetation is highly modified for the purpose of an APZ. It contains sparse native canopy species of the same composition to the 'disturbed/shrubby' condition class. No midstorey vegetation occurs within this condition class. Native grasses and groundcovers in this vegetation type include *Microlaena stipoides* var*. stipoides* (Weeping Grass), *Cyperus gracilis* (Slender Flat-sedge), *Cynodon dactylon* (Couch), *Commelina cyanea, Sporobolus elongatus* (Slender Rat's Tail Grass) and *Dichondra repens* (Kidney Weed). The groundlayer, however, is dominated by exotic grasses *Ehrharta erecta**, *Paspalum dilatatum** (Paspalum), *Axonopus fissifolius** (Carpet Grass) and shrubby/herbaceous weeds, *Asparagus asparagoides** (Bridal Creeper), *Conyza spp.**, *Bidens pilosa** (Cobblers Peg) and *Verbena bonariensis** (Purpletop).

Past and current clearing has contributed to the degradation of this vegetation community. Few canopy species occur in a mature – over mature growth stage, with most trees consisting of early mature regrowth.

2.2.2 Other Vegetation

Cleared land, plantings, exotics and built structures

The cleared areas within the study area and subject site are highly modified and consist of exotic pasture grasses and herbs, including *Paspalum dilatatum**, *Cenchrus clandestinus** and *Plantago lanceolata** (Plantain) (**Figure 2.6**). Sections of the site mapped as "cleared land, plantings, exotics and built structures" contain occasional native grasses and groundcovers, such as *Microlaena stipoides var. stipoides.* However, native species generally occur in low abundance and cover in this vegetation type and are, therefore, not classified as derived native grassland (DNG). Plantings in this vegetation zone consist of exotics and non-indigenous natives to the Wollongong LGA and are mostly associated with the residential property and immediate surrounds, outside of the subject site.

2.2.3 Site resilience

Resilience is a measure of a sites capacity to respond to restoration works and often is an indication of the extent and severity of past disturbance. Field assessment determined that the disturbed/shrubby vegetation in VMP subject site has a moderate resilience while the underscrubbed vegetation and cleared land has a low resilience. This was gauged by the

number of native and exotic species which occurred throughout the subject site. These areas will require primary and secondary woody-weed removal and ongoing maintenance works.

The FRGTS found in a 'disturbed/shrubby' condition class will require primary and secondary woody-weed removal and ongoing maintenance works. The vegetation consisted predominantly of native species within the canopy, although the midstorey and groundlayer contain several exotic species. Nevertheless, this vegetation is likely to respond to assisted natural rehabilitation. The FRGTS in an 'underscrubbed' condition class contained a native canopy with no midstorey species. The groundlayer contains both native and exotic species. However, it was dominated by exotic. These areas will require revegetation to restore native species within the ground layer.

Figure 2.4: Forest Red Gum – Thin-leaved Stringybark grassy woodland (PCT838) in a 'Disturbed/shrubby' condition class within the VMP subject site.

Figure 2.5: Forest Red Gum – Thin-leaved Stringybark Grassy Woodland in an 'Underscrubbed' condition class.

Figure 2.6: Other vegetation 'Cleared land, plantings, exotics and built structures' along the western perimeter of the study area.

Flora species

A total of 63 flora species were identified within the study area during field investigations, of which 28 are exotic or introduced species (**Appendix B**). Four priority weeds listed under the NSW *Biosecurity Act 2015* for Wollongong were recorded in the study area, three of which are Weeds of National Significance (WoNS) (**Table 2.3**).

Table 2.3: Priority weeds and Weeds of National Significance (WONS).

Common name	Scientific name	WoNS[1]	Duty
Madeira vine	*Anredera cordifolia*	Y	**Prohibition on dealings** Must not be imported into the State or sold
Bridal Creeper	*Asparagus asparagoides*	Y	**Prohibition on dealings** Must not be imported into the State or sold
Mother-of-millions	*Bryophyllum delagoense*	N	**General Biosecurity Duty**
Lantana	*Lantana camara*	Y	**Mandatory Measure** *Must not be imported into the State or sold* **Regional Recommended Measure** Exclusion zone: whole region excluding the core infestation area of Eurobodalla, Kiama, Shellharbour, Wollongong and the Shoalhaven local government area north of the Lantana Containment Line at 35'11"42 S

[1] http://www.environment.gov.au/biodiversity/invasive/weeds/weeds/lists/wons.html

One threatened flora species listed under the BC Act has been previously recorded in the southern section of the subject site. This species is *Lespedeza juncea* subsp*. sericea* and is listed as an endangered population. There is one record of this species within the subject site, and a cage has been placed around the plant for its protection.

No threatened flora species listed under the EPBC Act were recorded in the study area or subject site.

3. VMP weed management and revegetation

The vegetation management works outlined below should be implemented for the subject site. Weed management should begin prior to the commencement of construction works within the subject site. A suitably qualified and experienced bush regeneration contractor as per **Section 4.3** must be engaged to carry out vegetation management works.

3.1 Preliminary Works

Seed collection

Seed collection will be required to ensure indigenous species are available for revegetation works; species identified for revegetation are outlined in **Appendix B**. All plantings should be of local provenance and collected from adjacent patches of vegetation. However, nurseries that supply indigenous seedling stock, (not horticultural varieties), may also be used to supplement the plantings.

Seed collection zones can extend within a radius of 3 km for groundcover, shrubs and trees and up to 10 km for grasses. The collection site should reflect the natural conditions that exist for the area being regenerated.

Record keeping of seed collection and planting locations is to be as per the Flora Bank guidelines (Mortlock 2000), the bush regeneration contractor is responsible for recording this information. A Section 132C licence under the NSW *National Parks and Wildlife Act 1974* will be required to undertake seed collection works.

Fencing

Stock proof fencing should be installed around the eastern and western boundaries of the VMP subject site to prevent access by deer. The fencing will consist of strained wire fences and should be installed prior to the initiation of the contract, particularly prior to revegetation works being undertaken.

Bollards or similar low fencing should be installed around the northern and southern boundaries of the subject site where they interface between the aged care facilities and open space to discourage public access through this open space. This type of fencing should also be installed along the access road that runs through the centre of the subject site.

Signage

Signage in accordance with Wollongong City Council (WCC) standardised signs for conservation areas will be installed at select locations along the perimeter of the subject site. The exact information and location of these signs will be determined during implementation of the works in accordance with the VMP. At a minimum, the signage should be positioned at all main access points or visual areas along the perimeter of the site and should state that the area is being managed for conservation purposes.

3.2 Weed Management Techniques

Weed management will be carried out using primary and secondary weed control followed by ongoing maintenance. Weed control will include mechanical removal techniques, herbicide application and natural shading techniques. Disturbance of the soil during the weed management process should always be minimised (Buchanan 2000, Bradley 2002). Weed

control objectives and treatment techniques are outlined below (**Appendix C**) in accordance with weed type.

Primary Weed Control

Primary weed control is the initial removal of weed species. Mechanical removal techniques relevant to the weed being removed (Buchanan 2000; Bradley 2002; DPI 2015) should be used for all woody weeds and herbaceous plants. Herbicide application, such as backpack spraying should be avoided where off target loss of native species is likely to occur.

Secondary Weed Control

Secondary weed control involves follow-up weed control to remove seedlings that have emerged after primary control and treatment of any existing plants that reshoot. Any new weed infestation areas identified must also be treated.

Maintenance

Maintenance is the long-term management of a site to prevent weeds from becoming re-established after primary and secondary work. Substantial effort should be focussed on reducing the weed seed bank, eradicating problematic weeds and supporting the growth of native vegetation. Areas of high resilience should be the focus of intensive maintenance works, which will include fine hand-weeding. A structured maintenance regime following primary and secondary work will reduce the time taken for the site to reach a reasonable level of stability.

Weed Disposal

All seeding herbaceous/grass material and tubers should be bagged, removed from site and disposed of at an appropriate green-waste facility. Woody weeds, such *as Lantana camara** should be removed offsite. However, small piles of woody weeds may be stored onsite for fauna habitat if not located in a position that will make the future treatment of exotic grasses and herbaceous weeds difficult.

Threatened species

One record of *Lespedeza juncea* subsp*. sericea* has previously been recorded at the southern end of the VMP subject site and is currently in a cage. Specific attention should be given to ensure that weed management techniques do not negatively influence this species. Within a 10 m vicinity of the species, weeds must be hand pulled and the use of herbicide avoided.

3.3 Vegetation Management Zones

The VMP subject site has been categorised into two management zones (MZs), based on the different management actions required to restore the vegetation within the subject site (**Figure** 3.1**; Table 3.1** and **Appendix C**).

Table 3.1: Vegetation community type and management zones in the subject site.

Vegetation Community (Tozer et al. 2006)	Plant Community Type (PCT)	Management zones	Area (ha)[1]
South Coast Grassy Woodland (p34)	Forest Red Gum - Thin-leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion (PCT838/SR545)	MZ1 – Rehabilitation	2.56
		MZ2 – APZ	1.30
		Total	**3.85**

[1] subject to rounding errors

3.3.1 Management Zone 1 – Disturbed/Shrubby Rehabilitation

Management zone 1 (MZ1) comprises areas of the subject site consisting of FRGTS in a 'Disturbed/shrubby' condition class (**Figure 2.4**). This management zone comprises 2.56 ha, or approximately 66 % of the subject site.

Assisted natural rehabilitation is required to restore the community. However, where this is unlikely to occur, revegetation may be required. The need for this will be determined by the qualified bush regenerator, adhering to the principles in **Section 3.1.1** for sourcing local provenance.

All annual and perennial weed species should be hand-weeded, with any regrowth sprayed with herbicide. Following primary and secondary weed treatment, this zone will be rehabilitated, with the aim of removing the exotic vegetation whilst retaining extant native vegetation. If assisted natural rehabilitation is determined to be unsuccessful, this zone should be planted out with a combination of native understory, midstorey and overstory tubestock species outlined in **Appendix B**. Any planting required in this zone should be supplementary to existing retained native species in order to achieve natural plant densities for these vegetation types.

3.3.2 Management Zone 2 – APZ

Management zone 2 (MZ2) includes areas within the subject site consisting of FRGTS in an 'Underscrubbed' condition class, managed as an APZ. This management zone comprises 1.30 ha or 34 % of the subject site.

Weed removal techniques should follow that of MZ1. The southern section of MZ2 includes vegetation currently mapped as a 'disturbed/shrubby' condition class. This vegetation zone may require further clearance of overstory and midstorey vegetation to meet the APZ requirements. Following any additional clearance, primary and secondary weed treatment, this zone will be revegetated and managed with in accordance with the APZ requirements.

Overstory and midstorey plantings will not be required for this zone. Additional groundlayer species will be required in this zone to assist in maintaining soil structure and to prevent wind erosion. Any planting required in this zone should be consistent with those found in FRGTS, outlined in **Appendix B**.

Figure 3.1: Management zones within the VMP subject site.

3.4 Revegetation

Revegetation within MZ1 may be necessary to achieve a reasonable restoration outcome. While it is possible that the native vegetation is sufficiently resilient to respond to assisted natural regeneration, revegetation of this area may be required if natural regeneration is unsuccessful or too slow. This is based on the modified condition of MZ1 and the moderate likelihood of native species recruiting following restoration works. Revegetation of canopy species within MZ1 is not necessary, and minimal midstorey revegetation may be required.

Revegetation within MZ2 should only consist of ground cover species as this zone will be actively managed as an APZ. The species suitable for revegetation are listed in **Appendix B**.

3.4.1 Staging and logic

Management Zone 2 - APZ

Exotic grasses, particularly *Cenchrus clandestinus**, are currently stabilising the soil. The complete removal of all the exotic grass cover will likely increase the erosive potential and result in an influx in herbaceous weeds. Therefore, the extent of *Cenchrus clandestinus** and other exotic grasses will gradually be reduced, coinciding with the installation of native groundlayer species. Two planting events of native groundlayer species have been scheduled, one mid-way through the first year of the contract and one mid-way through the second year of the contract. The timing of groundlayer species revegetation can differ from these recommendations, so long as the recommended number of plants are installed in each zone. Supplementary planting is recommended and will account for a 10% attenuation rate of all plantings conducted in this MZ.

3.4.2 Planting densities and species

Planting densities for strata within each management zone are provided below. The native species used for revegetation should be consistent with the planting palette provided (**Appendix B**). Planting densities have been determined for each MZ based on site condition/flooding capacity of the study area, and is guided by NPWS (2002) and the Wollongong LGA DCP (Chapter E23), as follows:

Management Zone 1:

- 1 shrub species per 10 m^2
- 1 groundcover (grass, fern, forb or sedge) at a density of 2/m^2 (if required)

Management Zone 2:

- 1 groundcover (grass, fern, forb or sedge) at a density of 3/m^2

Table 3.2. Planting density table for revegetation works.

Zone	Area (m^2)	Number of individuals			Total
		Canopy	Shrub	Groundcover	
MZ1	25,600	0	2,560	51,200	53,760
MZ2	13,000	0	0	39,000	39,000
TOTAL					92,760

Planting may not be necessary in MZ1 following initial woody weed removal. Any planting in MZ1 should aim to replicate densities outlined in **Table 3.2**.

3.4.3 Equipment, installation and timing

Prior to commencing supplementary planting, stock proof fencing should be installed to protect new vegetation from herbivory by deer. Plantings should be planned for late winter leading up to spring when regular rainfall is naturally occurring and growth conditions are ideal. Planting of tube-stock (tree and shrub species) and Hiko or Viro cells (grasses and other groundcover species) will be favoured over broad-scale seed application, such as direct seeding or brush matting.

A water retaining and fertilising product (e.g. Terraform™) should be applied to each hole, to assist in the establishment of the plants. Each plant should be sufficiently watered on the same day as installation and regular watering should continue in lieu of rainfall for a period of 6 weeks, or until plantings have taken.

3.5 Concurrent Works

Vegetation management works will be carried out concurrently with civil construction works, therefore, planning between the bush regeneration contractor and civil works supervisor must be undertaken.

The civil works team will install environmental management controls across the site including exclusion zone fencing and erosion and sediment control. It is the responsibility of the bush regeneration contractor not to damage these controls and if any damage is observed or inadvertently caused it must be notified to the civil works supervisor immediately.

3.6 Maintenance

The maintenance phase must continue for three (3) years. Regular inspections of site condition will be conducted, including general site monitoring for potential new infestation areas and subsequent weed control of any identified weed species. In the first year, inspections and site monitoring will occur monthly, followed by inspections and site monitoring every 3 months during winter and autumn and every month during summer and spring during the second and third years. This schedule could be revised depending on performance criteria recorded.

Weed maintenance works will include:

- Removal of all herbaceous weeds prior to establishment and seeding, which will be achieved by hand-weeding in proximity to plantings. A broad-leaf selective herbicide (i.e. Starane Advanced), may be used to treat herbaceous weeds and planted native vegetation.

- Careful spot spraying of exotic grasses and herbaceous weeds amongst plantings in all management zones
- Gradual removal of exotic grasses, such as *Cenchrus clandestinus** in response to the spread and growth of planted vegetation
- Regular sweeps for woody weeds, which will be cut and painted with neat Roundup Biactive® prior to establishment

Re-vegetation maintenance works will include:

- Replacement of poorly growing or diseased individuals consistent with the prescribed planting
- Management of insect damage, if necessary
- Watering during dry periods
- Augmenting past planting areas where attenuation has occurred

3.7 Ongoing Monitoring

Due to the location of the threatened species, *Lespedeza juncea* subsp. *sericea,* within the VMP subject site it is recommended that every spring a search of a 50 m vicinity around the initial record is undertaken to determine if any additional species are present. Additional records should be recorded to ensure that any ongoing VMP management does not negatively impact this species.

3.8 Cost of implementation

The costing for the VMP has been calculated over a three-year period and is estimated at a total of $289,653 (**Table 3.3**), including the cost of quarterly and annual reporting. This figure reflects a first-year cost of $132,195, second year costs of $127,750.50, and third year costs of $25,507.50. This includes the quarterly and annual reporting costs over the three-year period of $4,200. The costs have been calculated based on the employment of trained bush regenerators at a rate of $480 pp/day ($60 pp/hr for an 8-hour working day), which covers crew and supervisor wages, equipment, herbicides, and all other associated business costs.

The costing indicates how many crew members are required to attend visits to the subject site over the three-year contract, based on the size of the site, extent of weed infestation and expected timeframes for the completion of primary, secondary works and initiation of maintenance works. The costs are indicative of commercial bush regeneration charge-out rates, and some variation is expected depending on the bush regeneration company used and their associated charge-out rates.

Plantings

The cost of revegetation was based on $3.00 per tree and shrub and $2.25 per groundcover/grass, including purchasing and installation costs (watering, plant guards for shrubs and canopy species, etc.). Supplementary plantings have been calculated based on a 10% attenuation rate from original installation numbers.

Table 3.3: Cost of VMP implementation over the 3 year contract period.

Timing	Task	Cost
Year 1	Primary and secondary weed control based on the cost of employing a team of 4 bush regenerators at $480 ($60 per hour for 8 hours) pp/day to attend site monthly.	$23,040
First 6 months of contract	Revegetation of MZ1 with a total of 2,560 midstorey plants (**Table 3.2**) at $3.00 per plant.	$7,680
Mid-way through year 1	Revegetation of MZ1 (if required) with 25,600 groundcover species (50% of total for zone) (**Table 3.2.2**) at $2.25 per plant.	$57,600
	Revegetation of MZ2 with 19,500 groundcover species (50% of total for zone) (**Table 3.2.2**) at $2.25 per plant.	$43,875
	Year 1 total	***$132,195***
Year 2	Secondary weed control based on the cost of employing a team of 4 bush regenerators at $480 ($60 per hour for 8 hours) pp/day to attend site monthly during spring and summer, and then 3 monthly for autumn and winter (8 visits).	$15,360
	Revegetation of MZ1 based on a ~10% attenuation of the initial plantings (~2,816 plants) at $3 per plant for midstorey plants and $2.25 per plant for groundcovers.	$768 (mid) $5,760 (ground)
	Revegetation of MZ2 based on a ~10% attenuation of the initial plantings (~1,950 plants) at $2.25 per plant for groundcovers.	$4,387.50
Mid-way through year 2	Revegetation of MZ1 (if required) with 25,600 groundcover species (50% of total for zone) (**Table 3.2.2**) at $2.25 per plant.	$57,600
	Revegetation of MZ2 with 19,500 groundcover species (50% of total for zone) (**Table 3.2.2**) at $2.25 per plant.	$43,875
	Year 2 total	***$127,750.50***
Year 3	Maintenance weed control based on the cost of employing a team of 4 bush regenerators at $480 ($60 per hour for 8 hours) pp/day to attend site monthly during spring and summer, and then 3 monthly for autumn and winter (8 visits).	$15,360
	Revegetation of MZ1 site based on a ~10% attenuation of the initial plantings (~2,560 plants) at $2.25 per plant for groundcovers.	$5,760
	Revegetation of MZ2 site based on a ~10% attenuation of the initial plantings (~1,950 plants) at $2.25 per plant for groundcovers.	$4,387.50
	Year 3 total	***$25,507.50***
Quarterly	Cost of quarterly reporting over the 3-year contract period. Report should consist of a one - two page report detailing the works conducted on site ($100 per month).	$1,200
Annually	Annual report detailing all works conducted on site, weed treatment methods, planting success and failures etc. ($1,000 annually)	$3,000

Timing	Task	Cost
	Reporting costs total	***$4,200***
Grand Total		***$289.653***

4. Performance criteria and Monitoring

4.1 Performance criteria

The progress and compliance with the VMP will be monitored and reviewed annually. This process will involve the bush regeneration contractor and land manager. The performance criteria listed in **Table 4.1** are considered best practice and are not linked with any specific legislation. The bush regeneration contractor, in consultation with Wollongong City Council, can adapt these criteria as required in response to the success of restoration works. Based on the success of the management works, further performance criteria may need to be developed for the maintenance phase.

Table 4.1. Revegetation performance monitoring criteria.

Treatment Zones	Year 1	Year 2	Year 3
All Zones	Commencement of all tasks outlined in the VMP or evidence of planning for their implementation.		
	A demonstrated increase in native cover and diversity and a demonstrated decrease in exotic species cover and diversity by the end of the 3rd year.		
	A minimum of 90% survival rate of all revegetation.		
	A visible improvement of soil stability along the riparian zone.		
	No exotic vines >5 cm in length with low abundance and cover (<5%) throughout the site.		
	A 40% reduction in exotic grass cover.	A 70-80% reduction in exotic grass cover.	Exotic grasses maintained at <5% cover.
	A 40% reduction in herbaceous weed cover.	A 70-80% reduction in herbaceous weed cover.	Herbaceous weed cover maintained at <5% cover.
	A 90% reduction in woody weed cover.	No woody weeds >10 cm in height remaining, with low cover (<5%) and abundance throughout the site.	

4.2 Monitoring reports

A monitoring report will be provided to Wollongong Council every three (3) months. The aim of the report will be to ensure that reporting is consistent with the on-ground implementation of the VMP and to revise the costings accordingly. An example report is detailed in **Table 4.2**, the report should include:

- Works carried out, including weed species targeted and their location;
- An approximation of the time spent on each task;
- Any observations, such as the occurrence of new weed species;
- Results from photo monitoring points;
- Rates of regeneration and herbivory of native species;
- A description of any problems encountered and how they were overcome;
- A summary of how the site-specific objectives have been met (or not);

- Herbicide and other chemicals used, including quantity, dilution rate and other relevant information;
- Weed control mechanisms used during the period;
- Climatic conditions which may have influenced weed germination and growth;
- Records of any additional threatened species within the site,
- Performance criteria and success; and
- If required, maps of weed distribution and density.

This data should be included in the annual report that summarises activity for the year. Monitoring photo points should be established at three permanent reference points.

4.3 Bush regeneration contractors

Suitably qualified and experienced bush regeneration contractors that are members of the Australian Association of Bush Regenerators or fulfil the membership criteria must undertake all vegetation management works. In addition to this, team leaders should hold a Certificate III in Conservation & Land Management or possess equivalent field experience and certification. The contractor should carry out best practice bush regeneration techniques as described by Buchanan (2009).

Table 4.2. Example monitoring report template.

Date			
Name of Contractor:			
Hours worked on site since last monitoring report:			
Site Condition:	Zone		
	Weed cover %		
	Seedling survival %		
	Planting numbers		
	Herbicide used (in Litres)		
	Other		
Describe relevant weed management techniques:			
Describe problems; e.g. weed invasions, damage to planted material, etc.:			
Photographic evidence:			
Planned work before next monitoring report:			

5. References

Bradley, J. (2002) *Bringing back the bush. The Bradley Method of Bush Regeneration*. New Holland Publishers, Sydney.

Brodie L (1999) The National Trust Bush Regenerators Handbook. National Trust of Australia (NSW).

Buchanan R.A (2000) Bush regeneration: recovering Australian landscapes. 2nd edn, TAFE NSW, Sydney.

Ecoplanning (2016) Letter Report. Environmental Constraints Assessment, St Lukes Anglican Retirement Village, 4 Lindsay Evans Place, Dapto, Wollongong LGA. Prepared for Anglicare.

Ecoplanning (2018) Biodiversity Development Assessment Report. Proposed Residential Aged Care Facility, Lot 1 // DP 1082602, 4 Lindsay Evans Place, Dapto NSW 2530 (v 3.0). Prepared for Anglicare.

Fuller, L. (2011) *Wollongong's Native Trees*. Big Bean Books, Wollongong

Landcom (2004) Managing urban stormwater: soils and construction.

Mortlock, W. (2000) The Hawkesbury-Nepean Catchment Management Authority (2000) Florabank Guideline 10: Seed collection ranges for revegetation. http://www.florabank.org.au/ Florabank, Yarralumla, ACT [20 August 2001]

Muyt, A. (2001) Bush Invaders of South-East Australia. R.G. and F.J. Richardson Publishers, Meredith, Vic.

NSW Dept. of Planning and Environment (DPE) (2015) NSW Planning Viewer Beta. NSW Government. Accessed at: https://maps.planningportal.nsw.gov.au/Terms

NSW Land and Property Information (LPI) (2015) SIX Maps. Accessed at: https://maps.six.nsw.gov.au/

NSW NPWS (2002) Native Vegetation of the Illawarra Escarpment and Coastal Plain. NSW NPWS, Hurstville

Tozer, M.G., Turner, K., Keith, D.A., Tindall, D., Pennay, C., Simpson, C., MacKenzie, B., Beukers, P. and Cox, S. (2010). Native vegetation of southeast NSW: a revised classification and map for the coast and eastern tablelands. Cunninghamia 11(3): 359–406 [plus Appendices].

Appendix A: Flora inventory

Table A1 – Flora species recorded during site visit

Species	Common Name	Disturbed/ Shrubby	Underscrubbed
Cyclospermum leptophyllum	Slender Celery		X
**Araujia sericifera*	Moth Vine	X	X
#*Phoenix canariensis*	Canary Island Date Palm		X
**Asparagus asparagoides*	Bridal Creeper	X	X
**Bidens pilosa*	Cobblers Pegs	X	X
Cotula australis	Common Cotula	X	
**Conyza* sp.			X
Euchiton sphaericus	Cudweed	X	
**Lactuca serriola*	Prickly Lettuce		X
**Sonchus oleraceus*	Common Sowthistle		X
**Taraxacum officinale*	Dandelion	X	X
**Anredera cordifolia*	Potato Vine	X	X
**Cerastium* sp.		X	
Casuarina cunninghamiana subsp. *cunninghamiana*	River Oak		X
Einadia nutans	Climbing Saltbush	X	X
Commelina cyanea		X	X
Dichondra repens	Kidney Weed	X	X
**Bryophyllum delagoense*	Mother-of-millions		X
Crassula sp.			X
Carex Inversa		X	
Cyperus gracilis			X
Cyperus sp.		X	
Fimbristylis sp.		X	
Lespedeza juncea subsp. *sericea*			X
Desmodium varians	Slender Tick-trefoil	X	
Glycine clandestina		X	
Glycine tabacina		X	
**Centaurium* sp.			X
Geranium solanderi var. *solanderi*	Australian Cranesbill		X
Pratia purpurascens	Whiteroot	X	X
**Cotoneaster* sp.			X
**Sida rhombifolia*	Paddy's Lucerne		X
**Modiola caroliniana*	Red-flowered Mallow	X	
Eucalyptus amplifolia	Cabbage Gum	X	X
Eucalyptus eugenioides	Thin-leaved		

Species	Common Name	Disturbed/ Shrubby	Underscrubbed
Eucalyptus tereticornis	Forest Red Gum	X	
Melaleuca decora	White Feather Honeymyrtle	X	X
Oxalis perennans			X
Fumaria sp.		X	X
Breynia Oblongifolia	Coffee Bush	X	
**Plantago lanceolata*	Lamb's Tongue	X	
Veronica plebeia	Trailing Speedwell	X	
Bothriochloa macra	Red-leg Grass	X	
**Bromus catharticus*	Prairie Grass		X
**Cynodon dactylon*	Couch	X	X
**Cenchrus Clandestinus*	Kikuyu Grass	X	X
Eragrostis leptostachya	Paddock Lovegrass	X	
**Ehrharta erecta*	Panic Veldtgrass	X	X
Microlaena stipoides	Weeping Grass	X	X
Oplismenus aemulus	Australian Basket Grass	X	
**Paspalum dilatatum*	Paspalum	X	
**Setaria parviflora*	Pigeon Grass	X	
Sporobolus creber	Western Rat-tail Grass	X	
Sporobolus elongatus	Slender Rat's Tail Grass	X	
**Stenotaphrum secundatum*	Buffalo Grass		X
Rumex brownii	Swamp dock		X
Asperula conferta	Common Woodruff		X
Opercularia diphylla	Stinkweed	X	
**Richardia* sp.		X	
Veronica plebeia	Creeping Speedwell	X	
**Solanum nigrum*	Black-berry Nightshade	X	X
**Lantana camara*	Lantana	X	
**Verbena bonariensis*	Purpletop	X	

An '*' or '#' preceding the species name denotes an exotic species or planted specimen, respectively

Appendix B: Planting palette

Forest Red Gum – Thin-leaved Stringybark Grassy woodland (PCT 838)

Planting palette for the vegetation community Forest Red Gum – Thin-leaved stringybark grassy woodland, which is equivalent to Coastal Red Gum Grassy Forest (MU23), as described in the Native Vegetation of the Illawarra Escarpment and Coastal Plain (NPWS 2003).

Scientific Name	Common Name
Tree	
Brachychiton populneus subsp. *populneus*	Kurrajong
Eucalyptus bosistoana	Coast Grey Box
Eucalyptus eugenioides	Thin-leaved Stringybark
Eucalyptus tereticornis	Forest Red Gum
Livistona australis	Cabbage Fan Palm
Shrub	
Acacia maidenii	Maiden's Wattle
Acmena smithii	Lilly Pilly
Breynia oblongifolia	Coffee Bush
Myrsine variabilis	
Notelaea venosa	Veined Mock-olive
Pittosporum revolutum	Wild Yellow Jasmine
Grasses, sedges and rushes	
Aristida ramosa	Purple Wiregrass
Bothriochloa decipiens	Red Grass
Carex longebrachiata	
Chloris divaricata var. *divaricata*	Slender Chloris
Chloris ventricosa	Plump Windmill Grass
Cyperus laevis	
Dichelachne rara	
Dichopogon strictus	Chocolate Lily
Digitaria diffusa	Open Summer-grass
Echinopogon ovatus	Forest Hedgehog Grass
Entolasia marginata	Bordered Panic
Eragrostis brownii	Brown's Lovegrass
Microlaena stipoides var. *stipoides*	Weeping Grass
Poa labillardieri var. *labillardieri*	Tussock
Rytidosperma racemosum	
Sporobolus elongatus	Slender Rat's Tail Grass
Themeda australis	Kangaroo Grass
Groundcover species and vines/scramblers	
Commelina cyanea	
Davallia solida var. *pyxidata*	Hare's-foot Fern

Scientific Name	Common Name
Desmodium varians	Slender Tick-trefoil
Dichondra repens	Kidney Weed
Doodia aspera	Prickly Rasp Fern
Einadia hastata	Berry Saltbush
Geitonoplesium cymosum	Scrambling Lily
Glycine clandestina	
Glycine tabacina	
Gymnostachys anceps	Settlers' Twine
Marsdenia rostrata	Milk Vine
Pratia purpurascens	Whiteroot
Smilax australis	Lawyer Vine
Xerochrysum bracteatum	Golden Everlasting

Appendix C: Weed treatment methods

Zone	Objective	Main Weeds	Method	Key Performance Indicators (KPI)
All	• Control and suppress exotic grasses.	• *Axonopus fissifolius, Bromus catharticus, Cenchrus clandestinus, Cynodon dactylon, Ehrharta erecta, Paspalum dilatatum, Setaria parviflora* and *Stenotaphrum secundatum.*	• Primary and secondary works will consist of targeted removal of seeding annual and perennial exotic grasses, such as *Bromus catharticus* and *Paspalum dilatatum*. This will be achieved using a combination of brush-cutting and regular spot spraying. • Pasture and lawn grasses, including *Cenchrus clandestinus* and *Cynodon dactylon* will be targeted for removal in preparation for the revegetation of native midstorey and canopy species. This will be achieved by establishing 50 cm weed free zones, where all exotic species will be eradicated. • The broadscale removal of *Cenchrus clandestinus** should be avoided, given that it is likely suppressing an established herbaceous weed seed bank and assisting with soil stability. The removal of *Cenchrus clandestinus** will be gradual and will correspond with the expansion and consolidation of previously planted areas, particularly leading up the installation of native groundlayer species.	• A 40% reduction in exotic grass cover by the end of year 1. • A 70% - 80% reduction in exotic grass cover by the end of year 2. • Exotic grasses maintained at <10% cover by the end of year 3.
	• Control and suppress herbaceous weeds.	• *Anredera cordifolia, Araujia sericifera, Asparagus asparagoides, Bidens pilosa, Bryophyllum delagoense, Centaurium* sp., *Cerastium* sp., *Conyza* sp., *Cotoneaster* sp., *Cyclospermum leptophyllum, Lactuca serriola, Modiola caroliniana, Plantago lanceolata, Sida rhombifolia, Richardia* sp., *Solanum nigrum, Sonchus oleraceus, Taraxacum officinale* and *Verbena bonariensis.*	• Primary and secondary works will consist of selective brush-cutting and spot spraying through the subject site. It is recommended that a broad-leaf selective herbicide (i.e. Starane Advanced) is used to prevent unwanted removal of large areas of *Cenchrus clandestinus** in the early years of the contract. The uncontrolled removal of *Cenchrus clandestinus** will likely result in the germination and establishment of herbaceous weeds. As such, it is recommended that *Cenchrus clandestinus** is only removed in preparation for planting. This will be followed by a strict maintenance regime to suppress herbaceous weed growth and reduce the exotic weed seed bank.	• A 40% reduction in herbaceous weed cover by the end of year 1. • A 60% reduction in herbaceous weed cover by the end of year 2. • Herbaceous weed cover maintained at <10% cover by the end of year 3.

Zone	Objective	Main Weeds	Method	Key Performance Indicators (KPI)
			• Herbaceous weeds will be hand weeded or cut and painted with neat Roundup Biactive® when in close proximity to planted vegetation or watercourses in the subject site. • Herbaceous weeds will be treated prior to seeding, bagged, removed from site and disposed at a licensed green waste facility.	
	• Treatment of all woody weeds.	• *Lantana camara*	• Primary woody weed removal will be conducted in the first three months of the contract. Primary works will aim to eradicate all woody weed species. All less established woody weeds (i.e. *Lantana camara*) will be treated by cut and painting with neat Roundup Biactive®. • Secondary and maintenance woody removal will consist of sweeps through the VMP subject site to prevent woody weeds from becoming re-established. Maintenance works will be conducted regularly, with a focus on removing woody weeds before reaching >50 cm, or prior to seeding. • It is recommended that all cut woody weed material is removed from site and disposed of at a licenced green waste facility. However, small habitat piles can be constructed out of woody weed material (i.e. *Lantana camara*).	• A 90% reduction in woody weed cover by the end of year 1. • No woody weeds >10 cm in height remaining, with low cover (<5%) and abundance throughout the site from year 2 onwards.

MOORE TREES
Consulting Arborist

16 May 2019

Anglicare
c/o RJA Projects
P O Box 3051
North Turramurra NSW 2074
FAO: Richard Abbott

Site: Anglicare, St Lukes - 4 Lindsay Evans Place, Dapto NSW 2530

This Report has been commissioned by RJA Projects on behalf of Anglicare. The Report concerns a number of trees impacted by the proposed works at the aforementioned site.

1. Introduction: This report has been requested due to design variations that are proposed to increase the number of trees to be retained for this project. Sixty nine (69) trees have been assessed for this report. An initial Arboricultural Report was undertaken by Hugh Taylor for Asplundh dated 11.10.2017. Tree numbering within this report does not cover the trees assessed for this report. The numbering of the trees within my report are based on the actual tree numbered tags present at the time of inspection. The subject trees assessed for this report are numbered as 101, 102-110, 204, 241-243, 246, 247, 248, 249, 250, 345, 351, 352, 355, 356, 357, 358, 359-365, 369, 371-380, 381, 385-389, 391, 393, 395-398, 400-412.

Additional numbered trees are shown on the plan within this report for reference. The subject trees are located at Anglicare St Lukes Village, Dapto (Diagram 1).

Recommendations have been made for the trees based on the project requirements and the current condition of the tree, taking into consideration surrounding trees and the project impacts.

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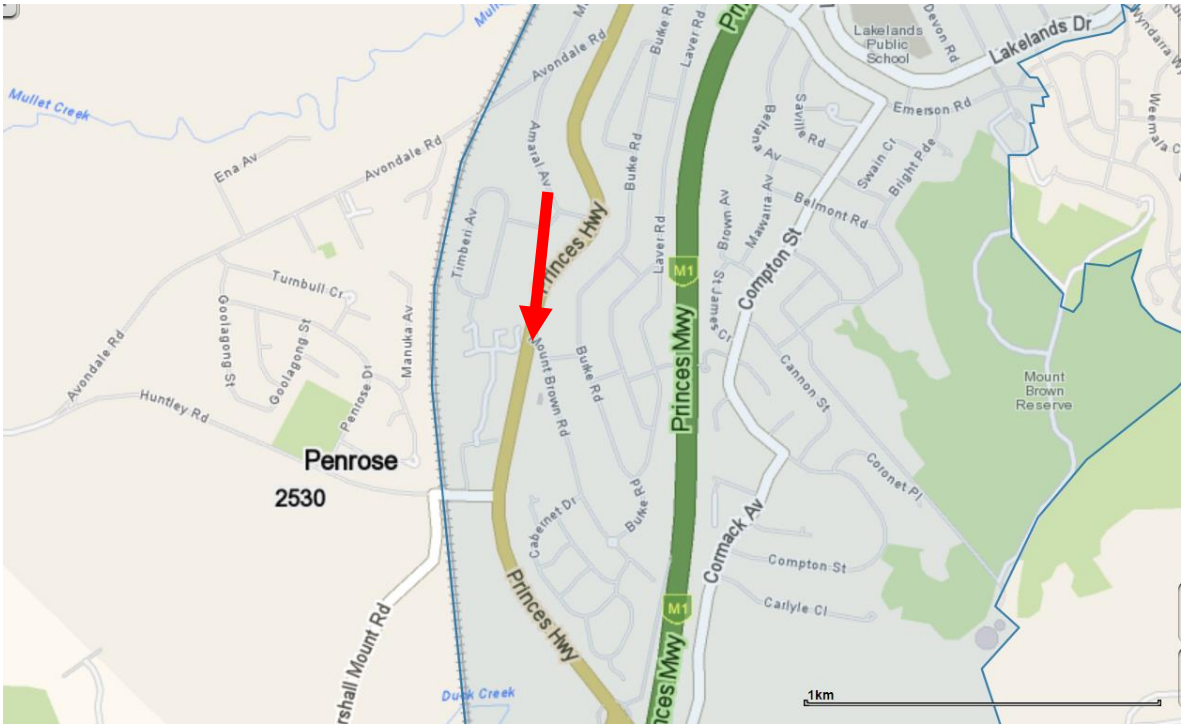


Diagram 1: Image showing the site location. (Where is 2019)

2. Methodology: A Visual Tree Assessment (VTA) was performed on these trees on 19th November 2018 by Paul Vezgoff. The VTA consists of a detailed inspection of the subject trees from ground level to the upper canopy. This method of tree evaluation is adapted from Matheny and Clark, 1994 and is recognised by The International Society of Arboriculture, Arboriculture Australia and The Institute Australian of Consulting Arborists (IACA). It is also known as a Level 1: Limited Visual Assessment Process as per the International Society of Arboriculture best management practices titled *'Tree Risk Assessment"*. All inspections were undertaken from the ground. No diagnostic devices were used on these trees

3. Height: The heights and distances within this report have been measured with a Bosch DLE 50 laser measure.

4. Tree Protection Zones (TPZ): The TPZ is the principal means of protecting trees on development sites. The TPZ is a combination of the root area and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable. TPZ's have been calculated for each tree to determine construction impacts. The TPZ calculation is based on the Australian Standard *Protection of trees on development sites,* AS 4970, 2009. The Tree Protection Zones are shown in the Tree Protection Plan (Appendix 1, Plan 1).

5. Structural Root Zone (SRZ): The SRZ is a specified distance measured from the trunk that is set aside for the protection of tree roots, both structural and fibrous. The woody root growth and soil cohesion in this area are necessary to hold the tree upright. The TPZ and SRZ are measured as a radial measurement from the trunk. No roots should be severed within this area. A detailed methodology on the TPZ and SRZ calculations can be found in Appendix 4.

6. Safe Useful Life Expectancy (SULE): The subject trees were assessed for a Safe Useful Life Expectancy (SULE). The SULE rating for each tree can be seen the Tree Assessment Schedule (Appendix 1). A detailed explanation of SULE can be found in Appendix 3.

7. Impact Assessment: An impact assessment was conducted on the site trees. This was conducted by assessing the proposed site plan provided by Merrin & Cranston marked project A220 SD.S.107 dated 23/11/18. The plans provided were assessed for the following:

- Reduced Level (R.L.) at base of tree.
- Incursions into the Tree Protection Zone (TPZ).
- Assessment of the likely impact of the works.

8. Observations - The Subject Trees: To record the health and condition of the trees, a Visual Tree Assessment (VTA) was undertaken on the subject trees on 19th November 2018. The assessment of sixty nine (69) trees has occurred due to design variations that are proposed to increase the number of trees to be retained for this project. The subject trees assessed for this report are numbered as 101, 102-110, 204, 241-243, 246, 247, 248, 249, 250, 345, 351, 352, 355, 356, 357, 358, 359-365, 369, 371-380, 381, 385-389, 391, 393, 395-398, 400-412.

Several trees have incursions to the TPZ areas. Provided the following recommendations in this report are implemented, it should be possible to retain these trees, with minor impacts to their health and condition.

Tree No.	Anticipated Impacts	Image
351, 352, 354, 355, 356	Between Trees 352 and 354 (Red line) a distance of 4.8 metres is currently used. This existing trail could be used for the fire trail.	
Trees 356-359.	If Tree 359 (Blue arrow) could be removed this would provide a distance of 5.2 metres (Red line) for the fire trail to thread between these trees.	

Tree No.	Anticipated Impacts	Image
Tree 359	Image showing the base of Tree 359 (Blue arrow) showing the stem wound.	
Tree 248	Tree 248 has had the proposed retaining wall moved so as to minimize incursions to the TPZ. Existing concrete foot paths can be removed with care. New footpaths can be installed with minimal impacts.	
Tree 249	Tree 249 has a low retaining wall near it however this is to enable the gradient to increase to the west. It will be important that soil does not build up around the trunk due to the level changes required. Existing concrete foot paths can be removed with care. New footpaths can be installed with minimal impacts.	

Tree No.	Anticipated Impacts	Image
Tree 101	Tree 101 requires no level changes within the TPZ area. Existing concrete foot paths can be removed with care. New footpaths can be installed with minimal impacts. No subsurface drains shall breach the TPZ of this tree, being six (6) metres. Proposed building set back recommended to be moved two (2) metres west from this tree.	
Tree 102	Tree 102 is required to be removed due to the incursions to the TPZ to the west of this tree.	
	Image showing the hard surfaces below Tree 102.	

Tree No.	Anticipated Impacts	Image
Tree 361 and 362	The smaller Tree 362 could be removed.	
Tree 385	Tree 385 that has been nominated for removal in the previous Report by Asplundh. It is possible to retain this tree with the current designs. It is not structurally dangerous or in poor health.	
Tree 385	Stem wound on Tree 385	

Tree No.	Anticipated Impacts	Image
Tree 381	This species is considered a weed species of palm however this group is currently proposed to be retained.	

9. Recommendations:

Based on the proposed designs trees numbered as 102-110, 204, 241-243, 246, 247, 250, 345, 356, 357, 359, 376-380, 386-389, 391, 393, 396-398, 400-412 are proposed to be removed for the purpose of the project.

Trees that appear possible to retain are numbered as 101, 248, 249, 351, 352, 354, 355, 358, 361-365, 369, 371-375, 381, 385, 395.

Removal of hard surfaces below Tree 101 shall be undertaken with a flat bucket excavator, with surfaces removed pulling away from the trees. A spotter should be used to ensure that the bucket attachment does not contact the main stem and damage the trunks. Tree 101 has a stormwater pipe located within the respective TPZ distance. It is recommended that this pipe be left in place, if possible. In terms of design there should be no level increases within the TPZ distances of this tree that require strip footings. A retaining wall could be built across the TPZ of Tree 101, provided the existing grade could be bridged via the use of pier and beam type construction.

Removal of hard surfaces below Trees 248, 249 shall be undertaken with a flat bucket excavator, with surfaces removed pulling away from the trees. A spotter should be used to ensure that the bucket attachment does not contact the main stem and damage the trunks. The proposed retaining wall near Tree 248 will increase soil levels up to one (1) metre around this tree. Ideally a retaining wall could be installed so as to keep the trunk clear of soil. This type of design should not be closer than two (2) metres to the main stem. Strip footings to be avoided vis the use of pier and beam type construction with the beam above grade.

Plate 1: Image showing a design concept that allows an increase in levels over the TPZ.

The proposed new fire trail running along the western side of the proposed development will impact Trees 354, 355, 357-359, 362, 365. If Tree 359 could be removed, this would allow a distance of 5.2 metres between Tree 358 and the side boundary fence to allow the fire trail to weave through these trees. It is possible the existing distance may be acceptable. This would ensure that Trees 356, 357 and 358 can be retained. Between Trees 352 and 354 is a distance of 4.8 metres and it should be possible to keep these two trees and weave the fire trail between these two trees.

Tree 355 appears that it will be impacted by the design by the secret garden area and the anticipated level alterations over the TPZ. Existing levels need to be retained around the base of this tree to a distance of five (5) metres.

Tree group 381 are a group of five (5) Cocos palms planted around a substation. Potentially these trees could be relocated however they are listed as a weed species and could be replaced with an indigenous species of palm such as Bangalow or Cabbage tree palm. At present they are proposed to be retained.

Prior to the commencing of demolition and construction all trees are to be tagged with numbered tags so that these numbers correspond with the trees numbered on the plans. The shall be undertaken by the project arborist.

10 TREE PROTECTION

10.1 **Trees to be protected:** Trees to be retained will be required to be fenced for protection. All fencing shall be installed as specified in Section 5.5 (Tree Protection – Implementation of Tree Protection Zone). Indicative locations of the fencing are shown in the Tree Protection Plan (Appendix 1).

10.2 **Implementation of Tree Protection Zone:** All tree protection works should be carried out before the start of demolition or building work. It is recommended that chain mesh fencing with a minimum height of 1 metre 1.8 metres be erected as shown in the Tree Protection Plan (Appendix 1).

10.3 **Individual trunk protection:** Trees 101, 248 and 249 will require trunk protection. This is achieved by attaching lengths of timber (75mm x 50mm x 2000mm) fastened around the trunk. Geotextile fabric or carpet underlay shall be wrapped around the trunk prior to the timbers being attached. These timbers are to be fastened with hoop iron strapping and not attached directly into the bark of the tree. These timbers are only to be removed when all construction is complete.

10.4 **Instructional videos:** Alternatively, you can view the Moore Trees' short instructional films on the links below. These films are a quick onsite reference for builders, project managers and architects.

Film #1, Trunk Protection

https://www.youtube.com/watch?v=ehcFre6bp74

Film #2, Tree Protection Fencing

https://www.youtube.com/watch?v=ffMabxLN9nU

Film #3, TPZ Ground Protection

https://www.youtube.com/watch?v=Se-VlLi-AGQ

10.5 The Tree Protection Zone (TPZ) and Structural Root Zone (SRZ): The TPZ is implemented to ensure the protection of the trunk and branches of the subject tree. The TPZ is based on the Diameter at Breast Height (DBH) of the tree. The SRZ is also a radial measurement from the trunk used to protect and restrict damage to the roots of the tree.

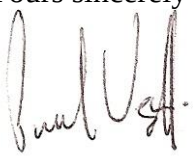
The Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) have been measured from the centre of the trunk. TPZ and SRZ distances are all listed in the Tree Schedule (Appendix 2). The following activities shall be avoided within the TPZ and SRZ of the trees to be retained;

- Erecting site sheds or portable toilets.
- Trenching, ripping or cultivation of soil (with the exception of approved foundations and underground services).
- Soil level changes or fill material (pier and beam or suspended slab construction are acceptable).
- Storage of building materials.
- Disposal of waste materials, solid or liquid.

10.6 Tree Damage: If the retained trees are damaged a qualified Arborist should be contacted as soon as possible. The Arborist will recommend remedial action so as to reduce any long term adverse effect on the tree's health.

10.7 Root Zone Protection: Ply sheeting or similar ground protection should be placed over the root zone areas shown in the Tree Protection Plan to reduce compaction over the root zone whilst works are occurring. It is likely that the existing fire trail will be used for construction purposes. Alternatively, where Council approves access across a TPZ mulch shall be placed on the access way for the duration of the construction period to a depth of three hundred and fifty (350) millimetres. This mulch is to help reduce soil compaction and retain moisture. Once construction is complete this mulch is to be reduced to a depth of no deeper than seventy five (75) millimetres or be replaced with the finish specified for the fire trail.

Yours sincerely



Paul Vezgoff
Consulting Arborist
Dip Arb (Dist), Arb III, Hort cert, AA, ISA

16th May 2019

Appendix 1

Tree Protection Plan

Tree protection plan

Moore Trees

LEGEND

Trees to be removed

Trees to be retained

Tree Protection Zone

Ground Protection. Ply sheeting or course gravel to be placed over the root zone to the extent of the drip line. Protection to remain until all construction works are completed.

Fence. Implementation of tree protection zone (TPZ). All tree protection works should be carried out before the start of demolition or building works. It is recommended that chain mesh fencing with a minimum height of 1.8 metres be erected

Trunk protection. Lengths of timber (75mm x 50mm x 2000) shall be fastened to the trunk or overhead branches that are greater than 80mm in diameter. These timbers are to be fastened with hoop iron strapping and not fixed directly onto the trunk of the tree.

Location of possible root pruning. This area is to be excavated by hand to a depth of 400mm to expose any roots. If roots under 50mm are encountered they can be severed cleanly with a sharp saw. If roots over 50mm are encountered then a qualified arborist should be consulted for further advice.

Date:	16.05.19
Drawn:	P.Vezgoff
Site Address:	St Lukes Dapto RAC Project Dapto NSW

Appendix 2

Tree schedule

PROPOSAL	Tree	Species	Height (m)	Spread (m)	DBH (m)	Live canopy %	Defects	SULE	Condition	Age	Comments	TPZ (m)	SRZ (m)
RETAIN	101	Melaleuca decora	14	5	0.6	95	No visual defects	1a >40 years	Good	Mature	Remnant	7.2	2.8
REMOVE	102	Melaleuca decora	14	5	0.6	95	No visual defects	1a >40 years	Good	Mature	Remnant	7.2	2.8
REMOVE	103	Melaleuca decora	12	8	0.7	95	Included union deadwood 50-100mm	1a >40 years	Good	Mature		8.4	2.8
REMOVE	104	Melaleuca decora	12	8	0.7	95	Included union deadwood 50-100mm	1a >40 years	Good	Mature		8.4	2.8
REMOVE	105	Corymbia maculata	17	8	0.35	95	Deadwood <50mm	1a >40 years	Good	Mature		4.2	2.4
REMOVE	106	Corymbia maculata	17	8	0.35	95	Deadwood <50mm	1a >40 years	Good	Mature		4.2	2.4
REMOVE	107	Robinia pseudoacacia	3	2	0.35	95	Deadwood <50mm	Dead	Poor	Dead	Tree has been lopped	4.2	2.4
REMOVE	108	Robinia pseudoacacia	3	2	0.35	95	Deadwood <50mm	Dead	Poor	Dead	Tree has been lopped	4.2	2.4
REMOVE	109	Syagrus romanzoffiana	7	3	0.3	95	Undesirable species	Short	Fair	Mature	Trees been spiked	3.8	2.1
REMOVE	110	Syagrus romanzoffiana	7	3	0.3	95	Undesirable species	Short	Fair	Mature	Trees been spiked	3.8	2.1
REMOVE	204	Melaleuca decora	10	7	0.65	95	Included union deadwood 50-100mm	1a >40 years	Good	Mature		7.5	2
REMOVE	241	Casuarina glauca	13	6	0.5	95	Wounds	2a May only live for 15-40 years	Good	Mature	Small wounds within upper canopy	6	2.6
REMOVE	242	Melaleuca decora	10	7	0.5	95	Included union deadwood 50-100mm	1a >40 years	Good	Mature		8	2.8
REMOVE	243	Melaleuca decora	10	7	0.5	95	Included union deadwood 50-100mm	1a >40 years	Good	Mature		8	2.8
REMOVE	246	Melaleuca decora	10	6	0.65	95	Included union deadwood 50-100mm. Poor pruning	1a >40 years	Good	Mature		7.5	2.8
REMOVE	247	Melaleuca decora	10	6	0.65	95	Included union deadwood 50-100mm. Poor pruning	1a >40 years	Good	Mature		7.5	2.8
RETAIN	248	Melaleuca decora	14	4	0.6	95	No visual defects	1a >40 years	Good	Mature	Remnant	7.2	2.8

RETAIN	249	Melaleuca decora	16	4	0.7	95	No visual defects	1a >40 years	Good	Mature	Remnant	8.4	2.9
REMOVE	250	Melaleuca decora	12	6	0.8	95	Included union deadwood 50-100mm	1a >40 years	Good	Mature		9.6	2.7
REMOVE	345	Casuarina glauca	17	8	0.7	40	Deadwood >100mm. General dieback	Short	Fair	Semi-mature		2.4	1.8
RETAIN	351	Forest red gum (Eucalyptus tereticornis)	11	5	0.4	80	No visual defects	2a May only live for 15-40 years	Good	Mature		4.8	2.4
RETAIN	352	Melaleuca styphelioides	8	4.5	0.6	90	No visual defects	1a >40 years	Fair	Mature		7.2	2.8
RETAIN	354	Forest red gum (Eucalyptus tereticornis)	17	6	0.45	90	Dead wood <50mm	2a May only live for 15-40 years	Fair	Mature	4.8m to tree352	5.4	2.5
RETAIN	355	Melaleuca decora	11	4	0.5	95	No visual defects	1a >40 years	Good	Mature	Fill over TPZ. Could be removed	6	2.6
REMOVE	356	River she oak (Casuarina cunninghamiana)	12	4.5	0.35	90	No visual defects	1a >40 years	Fair	Mature		4.2	2.3
REMOVE	357	River she oak (Casuarina cunninghamiana)	12	4.5	0.35	90	No visual defects	1a >40 years	Fair	Mature		4.2	2.3
RETAIN	358	River she oak (Casuarina cunninghamiana)	12	4.5	0.25	90	No visual defects	1a >40 years	Fair	Mature		3	2.1
REMOVE	359	Melaleuca styphelioides	9	4	0.5	98	Stem wounds	1a >40 years	Good	Mature		6	2.6
RETAIN	361	Sydney blue gum (Eucalyptus saligna)	17	7	0.9	95	No visual defects	1a >40 years	Good	Mature		10.8	3.3
RETAIN	362	Swamp mahogany (Eucalyptus robusta)	13	4.5	0.3	90	No visual defects	2c removed for more suitable planting	Fair	Mature	Multi stemmed specimen	3.6	2.2
RETAIN	363	Melaleuca decora	8	3.7	0.5	95	No visual defects	1a >40 years	Good	Mature	Fill over TPZ. Could be removed	6	2.6
RETAIN	364	River she oak (Casuarina cunninghamiana)	7	2.5	0.25	95	No visual defects	1a >40 years	Fair	Mature		3	2.1
RETAIN	365	Forest red gum (Eucalyptus tereticornis)	17	7	0.45	80	Dead wood >50mm	2a May only live for 15-40 years	Fair	Mature	Borer damage at base. Mech damage	5.4	2.5
RETAIN	369	Casuarina glauca	5	2	0.15	90		2a May only live for 15-40 years	Good	Mature		2	1.2

RETAIN	371	Tallowwood (Eucalyptus microcorys)	14	6	0.5	95	No visual defects	1a >40 years	Good	Mature		6	2.6
RETAIN	372	Swamp mahogany (Eucalyptus robusta)	13	4.5	0.45	90	No visual defects	2c removed for more suitable planting	Fair	Mature	Multi stemmed specimen	5.4	2.5
RETAIN	373	Casuarina cunninghamiana	5	2	0.1	90	No visual defects	2c removed for more suitable planting	Fair	Semi mature		2	1.2
RETAIN	374	Casuarina cunninghamiana	5	2	0.1	90	No visual defects	2c removed for more suitable planting	Fair	Semi mature		2	1.2
RETAIN	375	Casuarina cunninghamiana	5	2	0.1	90	No visual defects	2c removed for more suitable planting	Fair	Semi mature		2	1.2
REMOVE	376	Melaleuca decora	10	6	0.5	90	Included union deadwood 50-100mm	1a >40 years	Good	Mature		8	2.5
REMOVE	377	Melaleuca styphelioides	14	10	0.6	90	Included union wounds	1a >40 years	Good	Mature	Small wound on trunk	7.2	2.8
REMOVE	378	Casuarina glauca	16	8	0.55	90	Deadwood 50-100mm	1a >40 years	Good	Mature		8.8	2.8
REMOVE	379	Casuarina glauca	16	8	0.55	90	Deadwood 50-100mm	1a >40 years	Good	Mature		8.8	2.8
REMOVE	380	Melaleuca decora	10	6	0.5	90	Included union	1a >40 years	Good	Mature		8	2.8
RETAIN	381	Cocos palm (Syagrus romanzoffiana)	9	2.5	0.2	100	No visual defects	2c removed for more suitable planting	Good	Mature	Group of 5 around substation	2.4	1.6
RETAIN	385	Melaleuca styphelioides	9	4.5	0.55	90	No visual defects	2a May only live for 15-40 years	Good	Mature	Small wound at base	6.6	2.6
REMOVE	386	Lophostemon confertus	8	7	0.3	90	Dead wood <50mm	1a >40 years	Good	Mature		3.6	2.8
REMOVE	387	Lophostemon confertus	8	7	0.3	90	Dead wood <50mm	1a >40 years	Good	Mature		3.6	2.8
REMOVE	388	Casuarina glauca	12	7	0.5	90	Abdominal lean, deadwood <50mm	2a May only live for 15-40 years	Good	Mature		6	2.7
REMOVE	389	Melaleuca decora	5	5	0.25	90	Cross conflicting branches, deadwood <50mm	2a May only live for 15-40 years	Good	Mature	Remove branch conflicting with adjacent tree	3	2
REMOVE	391	Melia azedarach	9	7	0.35	95	No visual defects	2a May only live for 15-40 years	Fair	Mature		4.7	2.3
REMOVE	393	Melaleuca styphelioides	12	13	0.7	95	Wounds. Deadwood 50-100mm. Hangers and previous failures	1a >40 years	Good	Mature	Severe trunk wound	8.4	3.2

RETAIN	395	Casuarina cunninghamiana	17	4	0.7	95	No visual defects	2a May only live for 15-40 years	Good	Mature		8.4	3.2
REMOVE	396	Casuarina glauca	3	3	0.2	60	Suckers, decay.	Short	Poor	Semi-mature	Too stems suckering from old stump	2.4	2
REMOVE	397	Casuarina glauca	14	8	0.55	90	Deadwood 50-100mm	1a >40 years	Good	Mature		6.6	2.8
REMOVE	398	Melaleuca decora	12	8	0.45	80	Included union deadwood 5-10cm	1a >40 years	Good	Mature		5.4	2.5
REMOVE	400	Melaleuca styphelioides	14	10	0.6	90	Included union	1a >40 years	Good	Mature		7.2	2.5
REMOVE	401	Ulmus parvifolia	4	2	.15	70		Short	fair	Semi mature		2	1.2
REMOVE	402	Melaleuca decora	12	4	0.5	90		Long	Good	Mature		6	2.7
REMOVE	403	Olea europeus	3	2	0.1	90	Weed	Short	Good	Mature	Weed	2	1.2
REMOVE	404	Melaleuca decora	10	3	0.6	80		long	Good	Mature		7.5	2.5
REMOVE	405	Casuarina glauca	12	4	0.5	90		2a May only live for 15-40 years	Good	Mature			
REMOVE	406	Melaleuca decora	13	3	0.5	90	Some inclusions	Medium	Good	Mature		6	2.7
REMOVE	407	Cupressus sempervirens	5	1	0.1	80		Medium	Fair	Mature		2	1.2
REMOVE	408	Melaleuca decora	12	3.5	0.4	90		2a May only live for 15-40 years	Good	Mature		6	2.7
REMOVE	409	Melaleuca decora	12	3.5	0.4	90		2a May only live for 15-40 years	Good	Mature		6	2.7
REMOVE	410	Melaleuca decora	12	3.5	0.4	90		2a May only live for 15-40 years	Good	Mature		6	2.7
REMOVE	411	Yucca gloriosa	5	2	0.2	100	Weed	1a >40 years	Good	Mature	Weed	2	1.2
REMOVE	412	Jacarand mimosifolia	6	2	0.2	95		2a May only live for 15-40 years	Fair	Semi mature		2	1.2

Appendix 3

SULE categories (after Barrell, 2001)[1]

SULE Category	Description
Long	*Trees that appeared to be retainable at the time of assessment for more than 40 years with an acceptable level of risk.*
1a	Structurally sound trees located in positions that can accommodate for future growth
1b	Trees that could be made suitable for retention in the long term by remedial tree care.
1c	Trees of special significance that would warrant extraordinary efforts to secure their long term retention.
Medium	*Trees that appeared to be retainable at the time of assessment for 15-40 years with an acceptable level of risk.*
2a	Trees that may only live for 15-40 years
2b	Trees that could live for more than 40 years but may be removed for safety or nuisance reasons
2c	Trees that could live for more than 40 years but may be removed to prevent interference with more suitable individuals or to provide for new planting.
2d	Trees that could be made suitable for retention in the medium term by remedial tree care.
Short	*Trees that appeared to be retainable at the time of assessment for 5-15 years with an acceptable level of risk.*
3a	Trees that may only live for another 5-15 years
3b	Trees that could live for more than 15 years but may be removed for safety or nuisance reasons.
3c	Trees that could live for more than 15 years but may be removed to prevent interference with more suitable individuals or to provide for a new planting.
3d	Trees that require substantial remedial tree care and are only suitable for retention in the short term.
Remove	*Trees that should be removed within the next five years.*
4a	Dead, dying, suppressed or declining trees because of disease or inhospitable conditions.
4b	Dangerous trees because of instability or loss of adjacent trees
4c	Dangerous trees because of structural defects including cavities, decay, included bark, wounds or poor form.
4d	Damaged trees that are clearly not safe to retain.
4e	Trees that could live for more than 5 years but may be removed to prevent interference with more suitable individuals or to provide for a new planting.
4f	Trees that are damaging or may cause damage to existing structures within 5 years.
4g	Trees that will become dangerous after removal of other trees for the reasons given in (a) to (f).
4h	Trees in categories (a) to (g) that have a high wildlife habitat value and, with appropriate treatment, could be retained subject to regular review.
Small	*Small or young trees that can be reliably moved or replaced.*
5a	Small trees less than 5m in height.
5b	Young trees less than 15 years old but over 5m in height.
5c	Formal hedges and trees intended for regular pruning to artificially control growth.

updated 01/04/01)

1 (Barrell, J. (2001) "SULE: Its use and status into the new millennium" in *Management of mature trees*, Proceedings of the 4th NAAA Tree Management Seminar, NAAA, Sydney.

Appendix 4

TPZ and SRZ methodology

Determining the Tree Protection Zone (TPZ)

The radium of the TPZ is calculated for each tree by multiplying its DBH x 12.

TPZ = DBH x 12

Where

DBH = trunk diameter measured at 1.4 metres above ground

Radius is measured from the centre of the stem at ground level.

A TPZ should not be less than 2 metres no greater than 15 metres (except where crown protection is required.). Some instances may require variations to the TPZ.

The TPZ of palms, other monocots, cycads and tree ferns should not be less than 1 metre outside the crown projection.

Determining the Structural Root Zone (SRZ)

The SRZ is the area required for tree stability. A larger area is required to maintain a viable tree.

The SRZ only needs to be calculated when major encroachment into a TPZ is proposed.

There are many factors that affect the size of the SRZ (e.g. tree height, crown area, soil type, soil moisture). The SRZ may also be influenced by natural or built structures, such as rocks and footings. An indicative SRZ radius can be determined from the trunk diameter measured immediately above the root buttress using the following formula or Figure 1. Root investigation may provide more information on the extent of these roots.

SRZ radius = $(D \times 50)^{0.42} \times 0.64$

Where

D = trunk diameter, in m, measured above the root buttress

NOTE: The SRZ for trees with trunk diameters less than 0.15m will be 1.5m (see Figure 1).

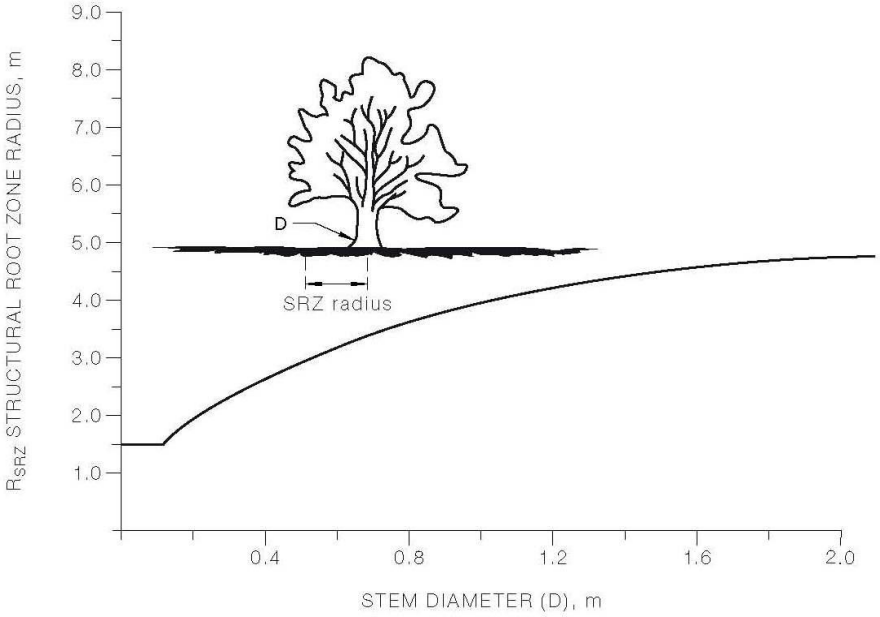


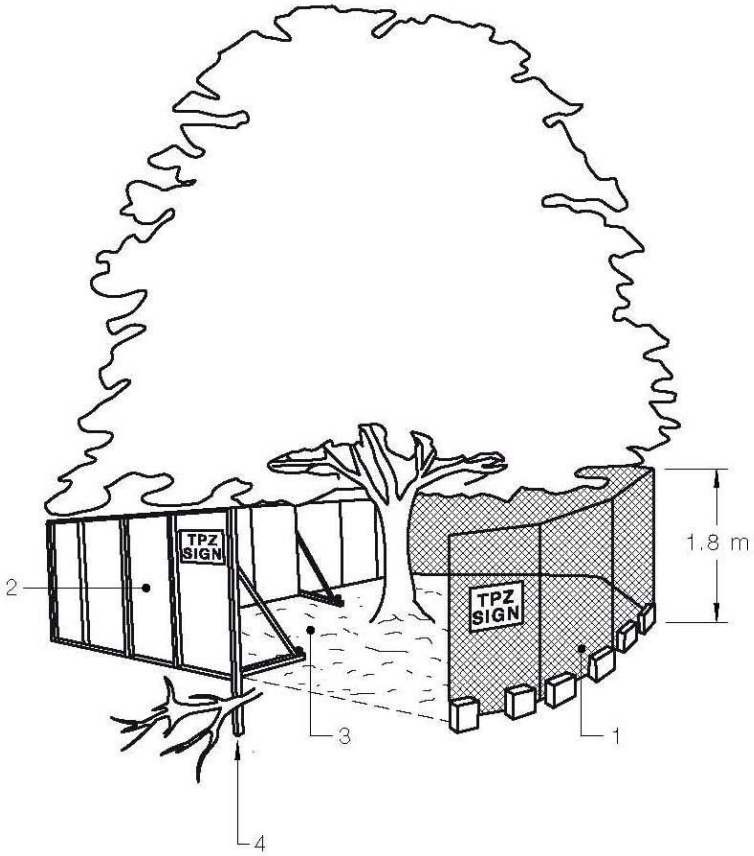
FIGURE 1 - STRUCTURAL ROOT ZONE

Notes:

1 R_{SRZ} is the structural root zone radius.
2 *D* is the stem diameter measured immediately above root buttress.
3 The SRZ for trees less than o.15 metres diameter is 1.5 metres.
4 The SRZ formula and graph do not apply to palms, other monocots, cycads and tree ferns.
5 This does not apply to trees with an asymmetrical root plate.

Appendix 5

Tree protection fencing specifications



LEGEND:

1 Chain wire mesh panels with shade cloth (if required) attached, held in place with concrete feet.
2 Alternative plywood or wooden paling fence panels. This fencing material also prevents building materials or soil entering the TPZ.
3 Mulch installation across surface of TPZ (at the discretion of the project arborist). No excavation, construction activity, grade changes, surface treatment or storage of materials of any kind is permitted within the TPZ.
4 Bracing is permissible within the TPZ. Installation of supports should avoid damaging roots.

Figure 1: Protective fencing as specified in AS 4970, 2009.

Appendix 6

Tree protection sign

sign sample

Moore Trees
Tree Consultancy
0411 712 887

Tree Protection Zone

Fence not to be moved without approval from Arborist

Within this fence there is to be

NO

Storage of materials

Trenching or excavation

Washing of tools or equipment

Attachment 8 – SEPP 65 Assessment

Principle 1: Context and neighbourhood character

Good design responds and contributes to its context. Context is the key natural and built features of an area, their relationship and the character they create when combined. It also includes social, economic, health and environmental conditions.

Responding to context involves identifying the desirable elements of an area's existing or future character. Well designed buildings respond to and enhance the qualities and identity of the area including the adjacent sites, streetscape and neighbourhood.

Consideration of local context is important for all sites, including sites in established areas, those undergoing change or identified for change.

The site is located outside of the Dapto Town Centre, situated approximately 2km south. Towards the edge of the established residential areas within Dapto noting that site being use as housing for seniors is recorded to be in the mid to late 1960s. Development in the vicinity of the site to the north and west beyond the railway corridor generally comprises of detached one to two storey dwelling houses with some multi dwelling developments. To the east across Princes Highway is Mount Brown Public School and St Aidan's Anglican Church and to the south across form Huntley Road farm land.

It is recognised that the residential areas in Dapto contains medium density housing and the desired future character of the area includes for senior living self-care and residential care facilities albeit encouraged closer to the Dapto Town Centre, the proposal involves the redevelopment of part of an existing established retirement village.

It is acknowledged the character of the site is largely defined by its landscape setting and mature tree canopy in particular to the central portion of the site that is heavily vegetated and undeveloped part of the land. It is considered the development has been designed to be sited within the existing disturbed part of the site to minimise the impacts on existing vegetation and includes measures to improve the existing landscape character of the site with planting and rehabilitation of existing native vegetation further within the site.

The proposal is considered to be generally consistent with the existing and desired future character of Dapto as identified through the development standards and controls applicable to the land.

Principle 2: Built form and scale

Good design achieves a scale, bulk and height appropriate to the existing or desired future character of the street and surrounding buildings.

Good design also achieves an appropriate built form for a site and the building's purpose in terms of building alignments, proportions, building type, articulation and the manipulation of building elements.

Appropriate built form defines the public domain, contributes to the character of streetscapes and parks, including their views and vistas, and provides internal amenity and outlook.

Whilst the bulk, scale and height of the proposed residential care facility building is greater than the surrounding development due the majority of the adjoining development being single to two storey it is envisaged the scale of development will undergo transition over time to be of a greater scale than existing to the 9m height limit within the context of the low and medium density residential zoning permissible and desired for the immediate locality.

The proposal is well setback from the site boundaries from the adjoining residential properties and the railway corridor. Due to the nature of the site and siting of the proposal, the development will be of limited visibility from the public domain therefore will not have an adverse impact on the streetscape.

The proposed development has demonstrated it will not unreasonably overshadow adjoining development or development within the site. The design of the proposal has allowed for a level of reasonable amenity in regards to solar access, internal amenity and outlook. The proposal will not

adversely impact existing views and vistas from the public domain, with the siting of the buildings located on the lowest part of the site.

Amended plans have been provided addressing the recommendations made by the Design Review Panel reducing the development footprint with extent of the hard surfaces decreased on the site with the at grade parking located in the undercroft of the proposed RCF building and allowing for the retention of additional trees. Design changes and landscape measures have been provided to minimise the three (3) storey scale.

Overall the development will be compatible with the character of the area regard to the existing or desired future character of the area that accounts for the provisions of seniors housing development.

Principle 3: Density

Good design achieves a high level of amenity for residents and each apartment, resulting in a density appropriate to the site and its context.

Appropriate densities are consistent with the area's existing or projected population. Appropriate densities can be sustained by existing or proposed infrastructure, public transport, access to jobs, community facilities and the environment.

With an FSR of 0.18:1 the density of the development is significantly below the 0.5:1 permitted for the land under WLEP 2009 and the 1:1 permitted under SEPP (Housing of Seniors or People with a Disability) 2004.

The proposal is consistent with the objectives of the R2 Low Density Residential zone providing for residential accommodation in the form of a mixed form of seniors housing. Despite the proposal exceeding the 9m maximum building height, the proposal has been demonstrated to not result in any significant adverse impacts, and the exception is supported in this case.

It is considered proposal will allow of a high level of amenity for the residents within the residential care facility and the proposed ILUs.

The site is already serviced by electricity, water and sewerage services. It is expected that the existing utility services can be augmented to support the proposed development. The existing retirement village provides for community facilities for the use of all the residents that are sought to be reconfigured as part of the proposal. The site is located within 400m of a bus stop along Princes Highway and there are an existing transportation services in the form of a mini bus for the use of the residents that are less mobile to access relevant shops and services.

The developments size and scale is considered consistent with the envisaged future neighbourhood character. It is noted that DRP did not consider this principle an issue for the proposal.

Principle 4: Sustainability

Good design combines positive environmental, social and economic outcomes.

Good sustainable design includes use of natural cross ventilation and sunlight for the amenity and liveability of residents and passive thermal design for ventilation, heating and cooling reducing reliance on technology and operation costs. Other elements include recycling and reuse of materials and waste, use of sustainable materials and deep soil zones for groundwater recharge and vegetation.

The proposal is considered acceptable with regard to sustainable design as follows:-

- A BASIX Certificate has been provided indicating minimum requirements with regard to energy and water efficiency and thermal comfort are met for the ILUs;
- Solar panels are proposed as part of the RCF building;
- A Site Waste Management and Minimisation Plan has been provided indicating appropriate management and disposal of any excavated materials;
- The development has been appropriately designed with regard to solar access and natural ventilation;

- The proposal will not have an unreasonable impact on any heritage items or environmentally sensitive areas.

Principle 5: Landscape

Good design recognises that together landscape and buildings operate as an integrated and sustainable system, resulting in attractive developments with good amenity. A positive image and contextual fit of well designed developments is achieved by contributing to the landscape character of the streetscape and neighbourhood.

Good landscape design enhances the development's environmental performance by retaining positive natural features which contribute to the local context, co-ordinating water and soil management, solar access, micro-climate, tree canopy, habitat values and preserving green networks.

Good landscape design optimises useability, privacy and opportunities for social interaction, equitable access, respect for neighbours' amenity and provides for practical establishment and long term management.

The proposal provides suitable landscaped areas and communal open spaces that will improve the amenity of the occupants. Amended plans have provided the re-design of the proposal reducing the at-grade parking and these spaces now located within the undercroft are of the RCF building. This has enable to retention of some trees and allowed for existing landscape areas to be maintained on site. In addition, increased planting has been provided for around the RCF building as shown in the submitted Landscape Plans at Attachment 1.

Principle 6: Amenity

Good design positively influences internal and external amenity for residents and neighbours. Achieving good amenity contributes to positive living environments and resident well being.

Good amenity combines appropriate room dimensions and shapes, access to sunlight, natural ventilation, outlook, visual and acoustic privacy, storage, indoor and outdoor space, efficient layouts and service areas and ease of access for all age groups and degrees of mobility.

It is considered the proposal provides for reasonable solar access, private and communal open space, visual and acoustic privacy, access and the like for future occupants of the development. Future occupants of the development are expected to enjoy reasonable amenity.

There are no nearby residences that will be affected by the proposed development in terms of privacy or loss of solar access due the siting and design of the proposal.

Principle 7: Safety

Good design optimises safety and security within the development and the public domain. It provides for quality public and private spaces that are clearly defined and fit for the intended purpose. Opportunities to maximise passive surveillance of public and communal areas promote safety.

A positive relationship between public and private spaces is achieved through clearly defined secure access points and well lit and visible areas that are easily maintained and appropriate to the location and purpose.

The proposal is satisfactory with regard to safety and security and is generally consistent with the principles of crime prevention through environmental design. Refer to discussion in relation to Chapter E2 of WDCP 2009.

Concerns raised by DRP in regards to contamination is discussed in relation to SEPP 55 in the report and considered the site can be remediated to be suitable for the proposed use as a seniors housing development. Bushfire concerns raised by DRP have also been addressed in the report with the RFS providing a Bushfire Safety Authority and General Terms of Approval, noting there is an existing 40m APZ around the existing buildings.

Principle 8: Housing diversity and social interaction

Good design achieves a mix of apartment sizes, providing housing choice for different demographics, living needs and household budgets.

Well designed apartment developments respond to social context by providing housing and facilities to suit the existing and future social mix.

Good design involves practical and flexible features, including different types of communal spaces for a broad range of people and providing opportunities for social interaction among residents.

It is noted that this principle was considered not applicable by DRP. The proposal provides to residential care facility beds and ILUs.

Principle 9: Aesthetics

Good design achieves a built form that has good proportions and a balanced composition of elements, reflecting the internal layout and structure. Good design uses a variety of materials, colours and textures.

The visual appearance of a well designed apartment development responds to the existing or future local context, particularly desirable elements and repetitions of the streetscape.

The proposal has been amended in response to the suggestions provided by the Design Review Panel. It is considered the built form of the proposal has been improved with the amended plans to integrate better with the landscape and existing development within the site. Design elements and landscape measures have been incorporated to minimise the bulk and massing of the development including the proposed undercroft parking area the appearance of the western elevation of the RCF building. The proposal as mentioned will have limited visibility from the streetscape and/or public domain.

Attachment 9

Minto Planning Services
Town Planning Consultants

PROPOSED ALTERATIONS & ADDITIONS TO EXISTING RETIREMENT VILLAGE

ST LUKE'S, 4 LINDSAY EVANS PLACE, DAPTO

On behalf of
Anglicare

Clause 4.6 – Exceptions to development standards – Height of Building

The proposed development will result in a maximum building height of 12.12m and which is in excess of the maximum building height permitted by Clause 4.3 of the Wollongong Local Environmental Plan 2009.

The maximum permissible height of building for the subject site under the provisions of Clause 4.3 of the LEP is 9m.

The proposal will provide for a number of roof elements which exceed the 9m control as detailed on Architectural Plan – Sheet SD.R.208.

The proposed non-compliances which are directly attributable to a combination of the slope of the land and the need to provide for an accessible building entry, single level floor plates and compliant ceiling heights apply to an area of the building having a total area of 1,512m^2 and which equates to 34% of the proposed building footprint.

Given that the proposal does not comply with the maximum height of building control and in order for consent to be granted to the proposal a variation pursuant to Clause 4.6 of the LEP is required.

This Clause 4.6 variation has been prepared having regard to the recent decisions of the Land & Environment Court.

It is submitted that the variation is well founded and is worthy of the support of the Council.

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abn 68 091 465 271

The following is an assessment of the proposed variation against the requirements of Clause 4.6.

1. What are the objectives of Clause 4.6 and is the proposal consistent with them.

The objectives of Clause 4.6 of the LEP are:

(a) to provide an appropriate degree of flexibility in applying certain development standards to particular development, and
(b) to achieve better outcomes for and from development by allowing flexibility in particular circumstances.

It is my opinion, as is demonstrated by the responses to the questions below, that the proposed variation is consistent with the objectives of this clause.

2. Is the standard to be varied a Development Standard to which Clause 4.6 applies.

Clause 4.3 is contained within Part 4 of the LEP and which is titled Principal Development Standards. It is also considered that the wording of the Clause is consistent with previous decisions of the Land & Environment Court of NSW in relation to matters which constitute development standards.

It is also noted that Clause 4.3 does not contain a provision which specifically excludes the application of Clause 4.6.

On this basis it is considered that Clause 4.3 is a development standard for which Clause 4.6 applies.

3. Is compliance with the development standard unreasonable or unnecessary in the circumstances of this case.

It is my opinion that compliance with the requirements of Clause 4.3 is both unreasonable and unnecessary in the circumstances of this case for the following reasons:

- The proposed non-compliance is attributable to the sloping nature of the site and the need to provide for an accessible building entry, single level floor plates and compliant ceiling heights.
- The subject building is located approximately 33m at its closest point from the boundary of the nearest residential neighbour.
- The proposal will not in my opinion result in any amenity impacts upon adjoining properties including unreasonable overshadowing.
- The proposal will not result in any unreasonable impacts upon either adjoining properties or the streetscape as a result of the non-compliance.

On this basis it is my opinion that strict compliance with the standard is unreasonable and unnecessary in the circumstances of this case.

4. Are there sufficient environmental planning grounds to justify contravening the development standard.

It is considered that a contravention of the development standard is justified on environmental planning grounds for the following reasons:

1. The proposed non-compliance is attributable to the sloping nature of the site and the need to provide for an accessible building entry, single level floor plates and compliant ceiling heights associated with the provision of specialised aged care accommodation upon the site.

2. The proposed non-compliance is also attributable to the bushfire affectation and ecological impacts associated with the site which limit the locating of the development on the existing undeveloped portions of the site.

5. Is the proposed development in the public interest because it is consistent with the objectives of the particular standard and the objectives for development within the zone in which the development is proposed to be carried out.

The proposed development is in my opinion in the public interest because it will provide for a high quality development upon the site which will make a positive contribution to the character of the locality through the provision of specialised aged care services and which will also provide for high levels of amenity for future residents without any unreasonable impacts.

It is understood that the proposal is otherwise compliant with the requirements of the enabling SEPP, the LEP, the applicable zone objectives and the objectives of the particular standard.

In this regard it is submitted that in relation to the objectives for the R2 – Low Density Residential zone that:

- The proposal will provide for the housing needs of the community through the provision of 111 aged care facility beds.

The proposal is also considered to be consistent with the objectives of Clause 4.3 – Height of Buildings as detailed below:

(a) Whilst a variation is sought in relation to the maximum height control the proposal does comply with the applicable maximum floor space control.
(b) The proposal does provide for a high quality urban form.

(c) The proposal will ensure that buildings and public areas continue to have views of the sky and receive exposure to sunlight.

6. Whether contravention of the development standard raises any matter of significance for state or regional environmental planning.

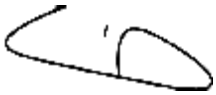
It is my opinion that contravention of the standard does not raise any matters of significance for State or Regional environmental planning.

7. What is the public benefit of maintaining the development standard.

It is my opinion that there is no public benefit in maintaining the development standard in this instance given the high quality of the proposal, the public benefits arising from the provision of 111 RAC beds and the absence of any unreasonable detrimental impacts.

Conclusion

It is therefore my opinion based upon the content of this submission that a variation of the maximum height of building control as required by Clause 4.3 of the Wollongong LEP 2009 is appropriate in this instance.



Andrew Minto
Graduate Diploma (Urban & Regional Planning), Associate Diploma (Health & Building Surveying). MPIA.
MINTO PLANNING SERVICES PTY LTD
15th May 2019

Attachment 10 – Draft conditions

The development proposed is integrated development and approval is required from the approval bodies listed below:

NSW Rural Fire Service (RFS)
Pursuant to Section 4.14 of the Environmental Planning and Assessment (EP&A) Act 1979 – requirements imposed by the NSW RFS dated 22 June 2018 as attached form part of this Notice of Determination – Attachment 1.

Conditions imposed by Council as part of this Integrated Development Consent are:

Approved Plans and Specifications

1 The development shall be implemented substantially in accordance with the details and specifications set out on:
Overall Proposed Site Plan SD.S.100.1-P03 dated 28 February 2019 prepared by Merrin & Cranston
Proposed Site Plan SD.S.101-P20 dated 28 February 2019 prepared by Merrin & Cranston
Proposed RAC Site Plan SD.S.107-P14 dated 28 February 2019 prepared by Merrin & Cranston
Overall Ground Floor Layout Plan SD.R.201-P13 dated 28 February 2019 prepared by Merrin & Cranston
Overall First Floor Layout Plan SD.R.202-P08 dated 28 February 2019 prepared by Merrin & Cranston
Overall Undercroft Layout Plan SD.R.203-P15 dated 27 March 2019 prepared by Merrin & Cranston
Elevations (Sheet 1) Plan SD.R.301-P06 dated 28 February 2019 prepared by Merrin & Cranston
Elevations (Sheet 2) Plan SD.R.302-P06 dated 28 February 2019 prepared by Merrin & Cranston
Proposed Site Sections (Sheet 1) SD.S.109-P07 dated 28 February 2019 prepared by Merrin & Cranston
Sections (Sheet 2) SD.R.304-P08 dated 27 March 2019 prepared by Merrin & Cranston
Sections (Sheet 3) SD.R.305-P01 dated 27 March 2019 prepared by Merrin & Cranston
Overall Roof Plan SD.R.208-P05 dated 15 May 2019 prepared by Merrin & Cranston
Proposed ILU Site Plan SD.S.108-P15 dated 28 February 2019 prepared by Merrin & Cranston
Overall Proposed Layout Plan SD.U.201-P09 dated 7 December 2018 prepared by Merrin & Cranston
ILU Floor Plan North SD.U.203-P08 dated 20 August 2018 prepared by Merrin & Cranston
ILU Floor Plan South SD.U.204-P08 dated 20 August 2018 prepared by Merrin & Cranston
Elevations (Sheet 1) Plan SD.U.301-P04 dated 20 August 2018 prepared by Merrin & Cranston
Elevations (Sheet 2) Plan SD.U.302-P04 dated 20 August 2018 prepared by Merrin & Cranston
Elevations (Sheet 3) Plan SD.U.303-P01 dated 20 August 2018 prepared by Merrin & Cranston
Elevations (Sheet 4) Plan SD.U.304-P01 dated 20 August 2018 prepared by Merrin & Cranston
Sections (Sheet 1) Plan SD.U.305-P01 dated 20 August 2018 prepared by Merrin & Cranston
Proposed Site Sections (Sheet 2) SD.S.110-P04 dated 20 August 2018 prepared by Merrin & Cranston
and any details on the application form, and with any supporting information received, except as amended by the conditions specified and imposed hereunder.

General Matters

2 **Phasing of Development**
Phase 1:

- Demolition of existing residential care facility building, cottage and awning structure.
- Remediation and validation works.
- Construction of 111 bed residential care facility building and associated landscaping, provision of all car parking and access and infrastructure works including drainage works, water sensitive urban design measures, tree removals and vegetation management works.

Phase 2:

- Conversion of hostel bed facility to 22 serviced self-care dwellings (independent living units) and reconfiguration of community/ancillary spaces in community centre including associated landscaping works.

3 **Sydney Trains Requirements**

Conditions imposed by the Sydney Trains dated 20 December 2018 as attached shall form part of this Notice of Determination. – Attachment 2.

4 **Water Cycle/Stormwater Quality Management**

The water cycling management treatment nodes shall be constructed as per the Civil Design Report prepared Bonacci Group (NSW) Pty Ltd dated 6 February 2019 to achieve the treatment goals for removal of pollutants and nutrients which shall be minimum: Gross pollutants – 90%, total suspended solids – 80%, total phosphorus – 55% and total nitrogen – 40%.

The stormwater quality treatment devices shall be installed and maintained under private ownership.

5 **Geotechnical**

a All work is to be in accordance with the geotechnical recommendations contained in the report dated 15 December 2017 by Douglas Partners and any subsequent geotechnical report required to address unanticipated conditions encountered during construction.

b All earthworks including drainage, retaining wall and footing construction is to be subject to Level 1 geotechnical supervision as defined in Australian Standard AS3798 Guidelines for Earthworks for Commercial and Residential Developments. Where necessary amendments are to be made to the designs during construction based on supplementary geotechnical advice given during the supervision to ensure that the completed works accommodates all encountered geotechnical constraints.

c Foundation systems are to be designed for Class P soils with all footings to be founded within the underlying weathered bedrock as recommended by the geotechnical consultant.

6 **Building Work - Compliance with the Building Code of Australia**

All building work must be carried out in compliance with the provisions of the Building Code of Australia.

7 The access and use of the site is to be in accordance with the Commonwealth Aged Care Accreditation Standards and the Building Code of Australia.

8 **Construction Certificate**

A Construction Certificate must be obtained from Council or an Accredited Certifier prior to work commencing.

A Construction Certificate certifies that the provisions of Clauses 139-148 of the Environmental Planning and Assessment Amendment Regulations, 2000 have been satisfied, including compliance with all relevant conditions of Development Consent and the Building Code of Australia.

Note: The submission to Council of two (2) copies of all stamped Construction Certificate plans and supporting documentation is required within **two (2)** days from the date of issue of the Construction Certificate, in the event that the Construction Certificate is not issued by Council.

9 **Disability Discrimination Act 1992**

This consent does not imply or confer compliance with the requirements of the Disability Discrimination Act 1992.

It is the responsibility of the applicant to guarantee compliance with the requirements of the Disability Discrimination Act 1992. The current Australian Standard AS1428.1 (2009) – Design for Access and Mobility is recommended to be referred for specific design and construction requirements, in order to provide appropriate access to all persons within the building.

10 **Separate Consent Required for Advertising Signage**

This consent does not authorise the erection of any advertising signage. Any such advertising signage will require separate Council approval, in the event that such signage is not exempt development, under Schedule 2 of Wollongong Local Environmental Plan 2009.

Any new application for advertising signage must be submitted to Council in accordance with Chapter C1 – Advertising and Signage Structure of Wollongong Development Control Plan 2009.

11 **Maintenance of Access to Adjoining Properties**

Access to all properties not the subject of this approval must be maintained at all times and any alteration to access to such properties, temporary or permanent, must not be commenced until such time as written evidence is submitted to Council or the Principal Certifying Authority indicating agreement by the affected property owners.

12 **Height Restriction**

The residential care facility building shall be restricted to a maximum height of 12.12 metres AHD from the natural ground level (inclusive of the lift tower and any air conditioning plant). Any alteration to the maximum height of the development will require further separate approval of Council.

13 **Occupation Certificate**

An Occupation Certificate must be issued by the Principal Certifying Authority prior to occupation or use of the development. In issuing an Occupation Certificate, the Principal Certifying Authority must be satisfied that the requirements of section 6.9 of the Environmental Planning and Assessment Act 1979, have been complied with as well as all of the conditions of the Development Consent.

14 **Tree Retention/Removal**

The Applicant shall retain the existing trees indicated on the Trees - Retain and Remove RAC L6-J and Trees - Retain and Remove ILU L7-J (as per the symbols on the plan), by Nicholas Bray Landscapes, dated 16 May 2019 consisting of trees numbered 101, 111, 112, 151 to 155 (inclusive), 160 to 163 (inclusive), 166, 167, 168, 170, 171, 248, 249, 345, 347, 351, 352, 354, 355, 358, 361, 362, 363, 364, 365, 369, 371, 372, 373, 374, 375, 381, 385 and 395.

Any branch pruning, which has been given approval, must be carried out by a qualified arborist in accordance with Australian Standard AS4373-2007.

All tree protection measures are to be installed in accordance with Australian standard AS4970:2009 Protection of Trees on development Sites.

All recommendations in Arborist's Report by Moore Tress dated 16 May 2019 to be implemented including and not restricted to: remedial tree pruning, deadwooding, fencing and signage, sediment buffer, stem protection, establishing tree protection zones and watering and root hormone application if required.

This consent permits the removal of trees numbered, 102 to 110 (inclusive), 164, 204, 241, 242, 243, 246, 247, 250, 345, 356, 357, 359, 376, 377, 378, 379, 380, 386, 387, 388, 389, 391, 393, 396, 397, 398, 400 -412 (inclusive) as indicated on Trees - Retain and Remove RAC L6-J and Trees - Retain and Remove ILU L7-J (as per the symbols on the plan), by Nicholas Bray Landscapes, dated 16 May 2019. No other trees shall be removed without prior written approval of Council.

Prior to the Issue of the Construction Certificate

15 **Parking and Driveway Pavement over Easement**

The parking area and driveway pavement over the easement must be designed by a suitably qualified civil engineer to ensure that appropriate cover is achieved over the existing stormwater line within the easement for the largest proposed design traffic loading. Pot holing must be undertaken of the existing storm water within the easement to determine the exact location and cover where works are proposed over. Details of the potholing results must be clearly shown on construction certificate plans prior to the release of the construction certificate. The pavement design must ensure no impact on the structural integrity of the existing stormwater line. Details of the pavement design, a longitudinal section of the pipe line within the extent of works

(existing and proposed) and associated pipe cover must be provided to the certifying authority prior to the issuing of a construction certificate.

16 **Construction over Easement**

A suitably qualified civil engineer must identify the largest machinery size able to work over the existing stormwater line during construction to ensure no impact on the structural integrity of the existing stormwater line. Details of the minimum cover and machinery size able to work above the existing easement must be provided to the certifying authority prior to the issuing of a construction certificate.

17 **Ecosystem Credit Retirement**

Prior to issue of the Construction Certificate the class and number of ecosystem credits in the table below must be retired to offset the residual biodiversity impacts of the development.

The requirement to retire credits in this condition may be satisfied by payment to the Biodiversity Conservation Fund of an amount equivalent to the class and number of ecosystem credits, as calculated by the Biodiversity Offsets Payment Calculator.

Evidence of the retirement of credits or payment to the Biodiversity Conservation Fund in satisfaction of this condition must be provided to Council prior to issue of the Construction Certification.

Ecosystem Credits Required to be Retired – Like for Like

Impacted plant community type	**Number of ecosystem credits**	**IBRA sub-region**	**Plant community type(s) that can be used to offset the impacts from development**
PCT 838 - Forest Red Gum - Thin-leaved Stringybark grassy woodland on coastal lowlands, southern Sydney Basin Bioregion	5	Illawarra, Ettrema, Jervis, Moss Vale, Sydney Cataract and Northern Basalts or from a location within 100km of the impact site	Illawarra Lowlands Grassy Woodland in the Sydney Basin Bioregion (including PCT's 838, 1326)

18 **Further Detailed Site Investigation Report and Remediation Action Plan**

A further Stage 2 Detailed Site Investigation Report as recommended by the Report on Detailed Site Investigation for Contaminated Land prepared by Douglas Partners dated October 2018 to assess the extent of asbestos contamination and the extent and potential source of TRH F2 contamination shall be prepared. Based on this Report, a Stage 3 Remediation Action Plan must be prepared so that the site can be made suitable for proposed development. The Stage 2 and 3 Reports must be prepared as per the Guidelines for Consultants Reporting on Contaminated Sites, published by NSW Office of Environment & Heritage, August 2011.

The further Detailed Site Investigation Report and Remediation Action Plan must be prepared by a contaminated land consultant who is certified under one of the following certification schemes:

- the Environment Institute of Australia and New Zealand's (EIANZ) Certified Environmental Practitioner (Site Contamination) scheme (CEnvP (SC)); or
- the Soil Science Australia (SSA) Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) certification.

The further Detailed Site Investigation Report and Remediation Action Plan are to be issued by the certified contaminated land consultant direct to Council. No third party submissions will be accepted.

19 **Site Validation Report**

A Stage 4 Validation Report shall be submitted to Council at the completion of remediation works.

The Validation Report shall verify that:

a the site is not affected by soil and/or groundwater contamination above the NSW EPA threshold limit criteria; and
b the site is suitable for the proposed development.

The Validation Report must be prepared by a contaminated land consultant who is certified under one of the following certification schemes:

- the Environment Institute of Australia and New Zealand's (EIANZ) Certified Environmental Practitioner (Site Contamination) scheme (CEnvP (SC)); or
- the Soil Science Australia (SSA) Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) certification.

The Validation Report is to be issued by the certified contaminated land consultant direct to Council. No third party submissions will be accepted.

20 **Design and Construction of Food Premises**
Documentary evidence must be submitted to the Principal Certifying Authority confirming that the proposed kitchen and café areas on the premises comply with AS4674-2004: Design, construction and fit out of food premises prior to the issue of the Construction Certificate:

21 **Hairdresser – Design and Fit Out**
The internal fit out of the Hairdressing Salon/Barber Shop must comply with the Local Government (General) Regulation 2005 Schedule 2 Part 2, Clauses 8-10. Documentary evidence showing compliance with the above standards must be submitted to the Principal Certifying Authority prior to the issue of the construction certificate.

22 **Acoustic Attenuation**
The developer shall provide the detailed design of Section 6.1.2 Glazing Recommendations and Section 6.3.2 Noise Mitigation Measures of the Acoustic Report for Development Application prepared Wood & Grieve Engineers dated 28 February 2019 to ensure the following LAeq levels are not exceeded:

a in any bedroom in the building: 35dB(A) at any time between 10.00 pm and 7.00 am.
b anywhere else in the building (other than a garage, kitchen, bathroom or hallway): 40dB(A) at any time between 10pm and 7am.

In addition, detailed design of all mechanical plants must be satisfactorily attenuated to levels complying with the noise emission criteria through appropriate location and (if necessary) standard acoustic treatments such as noise screens, enclosures, in-duct treatments (silencers/lined ducting) or similar as recommended by Section 6.3.2 Noise Mitigation Measures of the Acoustic Report for Development Application prepared by Wood & Grieve Engineers dated 28 February 2019

23 **Building Code of Australia – Fire Safety Upgrade**
The following information will be required to be detailed on the plans or supporting documentation to the accredited certifier, prior to the issue of the Construction Certificate. This condition relates to fire safety upgrade considerations under Clause 94 of the Environmental Planning & Assessment Regulation 2000 and relates to the existing buildings applicable under this consent and/or applicable parts identified below (The upgrade work shall be carried out in accordance with the National Construction Code Series (BCA) Volume One):

- Full details, Engineering, specifications and any other supporting information/documentation demonstrating how the proposed works will comply with the National Construction Code Series Volume 1 (BCA).
- BCA Assessment Report that includes the following:
  a identifies any proposed upgrade works.
  b any non - compliances with the deemed to satisfy provisions of the BCA proposed to be addressed by a Fire Engineered solution

c Fire safety schedule including existing and proposed Fire safety measures including any fire engineered building solutions.

- A Fire Engineering Report prepared by a suitably accredited Fire Engineer demonstrating compliance with the performance requirements for any identified non compliances with the National Construction Code Series Volume 1 (BCA).

24 **Present Plans to Sydney Water**

Approved plans must be submitted online using Sydney Water Tap, available through _____ to determine whether the development will affect Sydney Water's sewer and water mains, stormwater drains and/or easements, and if further requirements need to be met.

The Certifying Authority must ensure that Sydney Water has issued an approval receipt prior to the issue of a Construction Certificate.

Visit _____ or telephone 13 20 92 for further information.

25 **Endeavour Energy Requirements**

The submission of documentary evidence from Endeavour Energy to the Principal Certifying Authority is required confirming that satisfactory arrangements have been made with Endeavour Energy for the provision of electricity supplies to the development, prior to the release of the Construction Certificate.

Note: Applications should be made to Customer Connections – South Coast, Endeavour Energy PO Box 811 Seven Hills NSW 1730.

26 **Telecommunications**

The submission of documentary evidence from an approved telecommunications carrier to the Principal Certifying Authority confirming that underground telecommunication services are available for this development is required prior to the issue of the Construction Certificate.

27 **Schedule of External Building Materials/Finishes**

The final details of the proposed external treatment/appearance of the development, including a schedule of building materials and external finishes (including the type and colour of the finishes) together with a sample board and an A4 or A3 sized photograph of the sample board shall be submitted for the separate approval of the Principal Certifying Authority, prior to the release of the Construction Certificate.

28 **Glass Reflectivity Index**

The reflectivity index of the glass used in the external façade of the building shall not exceed 20 per cent. The details and samples of the glass to be used are to be submitted with the Construction Certificate together with written evidence that the reflectivity of the glass is 20 per cent or less.

29 **External Clothes Drying Facilities**

In the event that external clothes drying facilities are proposed, full details of the screening and the location of these facilities shall be reflected on the Construction Certificate plans and the final landscape plan.

30 **Single Master TV Antenna**

A single master TV antenna is to be installed to service the development and provision made for connection to each dwelling unit within the development. This requirement shall be reflected on the Construction Certificate plans.

31 **Fencing of Private Open Space for Independent Living Units (ILUs)**

The terraces for each ILU are to be adequately screened to ensure amenity for the future residents in regards to their private open space. At minimum 1.5m privacy screen is to be provided as shown on Sheet SD.U.201 P09 dated 7 December 2018 prepared by Merrin & Cranston Pty Ltd. This requirement is to be reflected on the Construction Certificate plans.

32 **Garbage, Green Waste and Recycling Bin Enclosure Structure**
The garbage/recycling bin enclosure area shall be constructed of brick or other approved masonry material and shall be provided with sufficient screening of all bins contained therein. The storage area shall be constructed with a concrete floor, suitably graded to enable drainage of run-off into Council's stormwater drainage system and shall be at-grade with any proposed pedestrian accessway. The final design details of the proposed storage area shall be reflected on the Construction Certificate plans.

33 **Disabled Access and Facilities**
The provision of disabled access throughout the development is required and shall be in compliance with the Building Code of Australia Part D3 "Access for People with Disabilities" and Australian Standard AS1428.1 (2009) - Design for Access and Mobility – Part 1 General Requirements for Access – Buildings. This requirement shall be reflected on the Construction Certificate plans.

34 Toilet facilities shall be provided for disabled persons in accordance with the design criteria in AS1428.1 (2009) – Design for Access and Mobility – General Requirements for Access – New Building Work. This requirement shall be reflected on the Construction Certificate plans.

35 In order to maximise visibility in the basement carpark, the ceiling shall be painted white. This requirement shall be reflected on the Construction Certificate plans.

36 **Crime Prevention through Environmental Design (CPTED)**
In order to reduce the opportunities for "hiding places" the proposed landscaping must:

a use shrubs/plants which are no higher than 1 metre adjacent to pathways.
b the type of trees proposed must have a sufficiently high canopy, when installed and fully grown, so that pedestrian vision is not impeded.
c Shrub planting to be set back min. 0.5 metres from the edge of the pathway. Groundcover planting acceptable.

This requirement shall be reflected on the Construction Certificate plans.

37 **Design Details for Lighting – Car Parking Areas**
The proposed design details for the lighting system of the undercroft car park and at grade car parking areas are to be provided to the Principal Certifying Authority, prior to the release of the Construction Certificate.

38 **Car Parking and Access**
The development shall make provision for a total of 58 car parking spaces (including 3 disabled car parking spaces) and 1 ambulance parking bay. This requirement shall be reflected on the Construction Certificate plans. Any change in the above parking numbers shown on the approved DA plans shall be dealt with via a section 96 modification to the development. The approved parking spaces shall be maintained to the satisfaction of Council, at all times.

39 The parking dimensions, internal circulation, aisle widths, kerb splay corners, head clearance heights, ramp widths and grades of the car parking areas are to be in conformity with the current relevant Australian Standard AS2890.1, except where amended by other conditions of this consent. Details of such compliance are to be reflected on the Construction Certificate plans.

40 Each disabled person's parking space must comply with the current relevant Australian Standard AS2890.6 – Off-street parking for people with disabilities. This requirement shall be reflected on the Construction Certificate plans.

41 The main entry point to the building shall be in accordance with the current relevant Australian Standard 1428.1 - 2001 Design for Access and Mobility - Part 1 General Requirements for Access - Buildings. The proposed pedestrian ramps within the car parking areas shall incorporate gradients (with suitable landing intervals) in accordance with the Australian Standard. The final design of the pedestrian ramps, including ramp gradients shall be reflected on the Construction Certificate plans.

42 **Designated Loading/Unloading Facility**
The designated loading/unloading facility must be clearly delineated with appropriate signage and or line marking to ensure the area is kept clear at all times. The designated loading/unloading facility shall be shown on the Construction Certificate plans.

43 The provision of suitable barriers, line-marking and painted signage delineating vehicular flow movements within the car parking areas. These details shall be reflected on the Construction Certificate plans.

44 **Structures Adjacent to Driveway**
Any proposed structures adjacent to the driveway shall comply with the requirements of the current relevant Australian Standard AS2890.1 (figure 3.2 and 3.3) to provide for adequate pedestrian and vehicle sight distance. This includes, but is not limited to, structures such as signs, letterboxes, retaining walls, dense planting etc. This requirement shall be reflected on the Construction Certificate plans.

45 The depth and location of all services (ie gas, water, sewer, electricity, telephone, traffic lights, etc) must be ascertained and reflected on the Construction Certificate plans and supporting documentation.

46 **Landscaping**
The submission of a final Landscape Plan will be required in accordance with the requirements of Wollongong City Council DCP 2009 Chapter E6 and the approved Landscape Plans L1- L5 Revision J dated 16 May 2019 prepared by Nicholas Bray Landscapes (ie as part of this consent) for the approval by the Principal Certifying Authority, prior to the release of the Construction Certificate.

47 The submission of a final Landscape Plan to the Principal Certifying Authority, prior to the release of the Construction Certificate. The final Landscape Plan shall address the following requirements:

a planting of indigenous plant species native to the Illawarra Region such as: *Melaleuca decora*, *Syzygium smithii* (syn *Acmena smithii*) Lilly pilly, *Archontophoenix cunninghamiana* Bangalow palm, *Backhousia myrtifolia* Grey myrtle, *Elaeocarpus reticulatus* Blueberry ash, *Glochidion ferdinandii* Cheese tree, *Livistona australis* Cabbage palm tree, *Syzygium paniculatum* Brush cherry.
A further list of suitable suggested species may be found in Wollongong Development Control Plan 2009 – Chapter E6: Landscaping;

b a schedule of proposed planting, including botanic name, common name, expected mature height and staking requirements as well as number of plants and pot sizes;

c any proposed hard surface under the canopy of existing trees shall be permeable and must be laid such that the finished surface levels match the existing level. Permeable paving is to be installed in accordance with the manufacturer's recommendations; and

d landscaping is to comply with the principles of Appendix 5 of Planning for Bush Fire Protection 2006.

The completion of the landscaping works as per the final approved Landscape Plan is required, prior to the issue of Occupation Certificate.

48 The submission of certification from a suitably qualified and experienced landscape designer and drainage consultant to the Principal Certifying Authority prior to the release of the Construction Certificate, confirming that the landscape plan and the drainage plan are compatible.

49 The implementation of a landscape maintenance program in accordance with the approved Landscape Plan for a minimum period of 12 months to ensure that all landscape work becomes well established by regular maintenance. Details of the program must be submitted with the Landscape Plan to the Principal Certifying Authority prior to release of the Construction Certificate.

50 **Tree Protection and Management**
The existing trees are to be retained upon the subject property and any trees on adjoining properties shall not be impacted upon during the excavation or construction phases of the

development. This will require the installation and maintenance of appropriate tree protection measures, including (but not necessarily limited to) the following:

a Installation of Tree Protection Fencing - Protective fencing shall be 1.8 metre cyclone chainmesh fence, with posts and portable concrete footings. Details and location of protective fencing must be indicated on the architectural and engineering plans to be submitted to the Principal Certifying Authority prior to release of the Construction Certificate.

51 **Bushfire Attack Level (BAL)**

New construction for the Residential Aged Care building shall comply with Sections 3 and 5 (BAL 12.5) Australian Standard AS3959-2009 'Construction of buildings in bush fire-prone areas' or NASH Standard (1.7.14 updated 'National Standard Steel Framed Construction in Bushfire Areas – 2014' as appropriate and section A3.7 Addendum Appendix 3 of 'Planning for Bush Fire Protection 2006'.

The existing hostel building to be refurbished to a Community Centre and Independent Living Units is required to be upgraded to improve ember protection. This is to be achieved by enclosing all openings (excluding roof tile spaces) or covering openings with a non-corrosive metal screen mesh with a maximum aperture of 2mm. Where applicable, this includes any sub floor areas, openable windows, vents, weepholes and eaves. External doors are to be fitted with draft excluders.

The above requirements shall be reflected on the Construction Certificate plans and supporting documentation for the endorsement of the Principal Certifying Authority prior to the issue of the Construction Certificate.

52 **Retaining Wall Structures**

The proposed retaining wall(s) shall be constructed in accordance with Council's Retaining Wall Policy. This requirement is to be reflected on the Construction Certificate plans and shall be supported by a certificate from a structural engineer which confirms the structural adequacy of the proposed retaining wall structure(s) and compliance with Council's Retaining Wall Policy.

53 **Engineering Plans and Specifications - Retaining Wall Structures Greater than One (1) Metre**

The submission of engineering plans and supporting documentation of all proposed retaining walls greater than 1m to the Principal Certifying Authority for approval prior to the issue of the Construction Certificate. The retaining walls shall be designed by a suitably qualified and experienced civil and/or structural engineer. The required engineering plans and supporting documentation shall include the following:

a A plan of the wall showing location and proximity to property boundaries;
b An elevation of the wall showing ground levels, maximum height of the wall, materials to be used and details of the footing design and longitudinal steps that may be required along the length of the wall;
c Details of fencing or handrails to be erected on top of the wall;
d Sections of the wall showing wall and footing design, property boundaries and backfill material. Sections shall be provided at sufficient intervals to determine the impact of the wall on existing ground levels. The developer shall note that the retaining wall and footing structure must be contained wholly within the subject property;
e The proposed method of subsurface and surface drainage, including water disposal;
f Reinforcing and joining details of any bend in the wall at the passing bay of the accessway;
g The assumed loading used by the engineer for the wall design.
h Flows from adjoining properties shall be accepted and catered for within the site. Finished ground and top of retaining wall levels on the boundary shall be no higher than the existing upslope adjacent ground levels.

54 **Roof Dust – Proposed Independent Living Units/Community Centre**

Due to the location of this property the ceiling space may have accumulated industrial fallout over its lifespan. The proposed renovation/extensions shall be carried out in the following

manner:

a The occupants of the building and any contractors/employees involved in the construction work are to be fully protected from dust created by cutting into the roof cavity space of the building. The protection required for workers is a P2 dust mask approved by the SafeWork NSW.

b If dust is going to be removed from the existing roof cavity, the ceiling dust must be vacuumed with an approved industrial vacuum cleaner. The collected dust must be sealed in heavy-duty plastic bags and disposed of at an approved waste facility (call the NSW Environment Protection Authority or your local council for details).

c It is advised to consult the following fact sheet prior to the removal of roof dust

55 **Plant and Equipment - Noise Emission Levels**

The equivalent continuous noise level ($L_{Aeq\ (15min)}$) from the operation of the plant and equipment shall not exceed 5dB(A) above the background noise level ($L_{A90\ (15min)}$) when measured at the most affected point(s) along the boundaries of the site. A report from a suitably qualified and experienced acoustical consultant who is a member of the Australian Acoustical Society (AAS), or the Association of Australian Acoustical Consultants (AAAC) shall be obtained detailing the measures required to ensure compliance with this condition of consent. This report is to be submitted to the Principal Certifying Authority prior to the release of the Construction Certificate. The recommended noise attenuation measures shall be implemented, prior to the issue of any Occupation Certificate.

56 **Property Addressing Policy Compliance**

Prior to the issue of any construction certificate, the developer must ensure that any site addressing complies with Council's Property Addressing Policy (as amended). Where appropriate, the developer must also lodge a written request to Council's Infrastructure Systems & Support – Property Addressing (_____), for the site addressing prior to the issue of the construction certificate. Please allow up to 3-5 business days for a reply. Enquiries regarding property addressing may be made by calling 4227 8660.

57 **Stormwater Drainage Design**

A detailed drainage design for the development must be submitted to and approved by the Principal Certifying Authority prior to the release of the Construction Certificate. The detailed drainage design must satisfy the following requirements:

a Be prepared by a suitably qualified civil engineer in accordance with Chapter E14 of Wollongong City Council's Development Control Plan 2009, Subdivision Policy, conditions listed under this consent, and generally in accordance with the concept plan/s lodged for development approval, The Concept Stormwater Management Plan, prepared by Bonacci Reference No. 201040501, Drawing no. C031, revision P6 dated 28 February 2019.

b Include details of the method of stormwater disposal. Stormwater from the development must be piped to Council's existing stormwater drainage system and the existing stormwater line servicing the development site.

c Engineering plans and supporting calculations for the stormwater drainage system are to be prepared by a suitably qualified engineer and be designed to ensure that stormwater runoff from upstream properties is conveyed through the site without adverse impact on the development or adjoining properties. The plan must indicate the method of disposal of all stormwater and must include rainwater tanks, existing ground levels, finished surface levels on all paved areas, estimated flow rates, invert levels and sizes of all pipelines.

d Overflow paths shall be provided to allow for flows of water in excess of the capacity of the pipe/drainage system draining the land, as well as from any detention storage on the land. Blocked pipe situations with 1 in 100 year ARI events shall be incorporated in the design. Overflow paths shall also be provided in low points and depressions. Each overflow path shall be designed to ensure no entry of surface water flows into any building and no

concentration of surface water flows onto any adjoining property. Details of each overflow path shall be shown on the detailed drainage design.

58 **On-Site Stormwater Detention (OSD) Design**

The developer must provide on-site stormwater detention (OSD) storage for stormwater runoff from the development. The design and details of the OSD system must be provided in conjunction with the detailed drainage design and approved by the Principal Certifying Authority prior to the release of the Construction Certificate. The OSD design and details must satisfy the following requirements:

a Must be prepared by a suitable qualified engineer in accordance with Chapter E14 of the Wollongong DCP 2009.

b The developer must provide on-site detention storage for stormwater runoff from the development designed to ensure no increase in stormwater discharge at each discharge location for events up to and including the 100 year storm ensuring no increase in flows to neighbouring properties. The Site Storage Requirement (SSR) and Permissible Site Discharge (PSD) values for the site must be determined by a suitably qualified civil engineer, pre and post development stormwater discharge rates at each discharge location from the site must be provided clearly demonstrating the above requirements. Details of the detention facility, SSR/PSD values and certification from a suitably qualified civil engineer must be submitted with the Construction Certificate application.

c The OSD facility must be designed to withstand the maximum loadings occurring from any combination of traffic (with consideration to residential and heavy vehicles), hydrostatic, earth, and buoyancy forces. Details must be provided demonstrating these requirements have been achieved.

d The OSD facility shall incorporate a minimum 900mm x 900mm square lockable grate for access and maintenance purposes, provision for safety, debris control screen, and a suitably graded invert to the outlet to prevent ponding. The access must not be within the building to ensure non ingress of stormwater into the building.

e Must include discharge control calculations (i.e. orifice/weir calculations) generally in accordance with Section 12.2.6 and 12.5.4 of Chapter E14 of the Wollongong DCP2009.

f Details of the orifice plate including diameter of orifice and method of fixing shall be provided.

g Must include details of a corrosion resistant identification plaque for location on or close to the OSD facility. The plaque shall include the following information and shall be installed prior to the issue of the occupation certificate:

- The structure is an OSD facility, being part of the stormwater drainage network, and is not to be tampered with.
- Identification number DA-2018/557.
- Any specialist maintenance requirements.

h Must include a maintenance schedule for the OSD system, generally in accordance with Chapter E14 of the Wollongong DCP2009.

59 **Fire Hydrants**

The fire hydrant network is to comply with AS2419.1 – 2005 for the new buildings. The hydrant sizing, spacing and pressures must comply with AS2419.1– 2005 for the new buildings. The fire hydrant(s) must be shown on the construction certificate plans.

60 **Fire Safety Schedule**

When issuing a Construction Certificate, a certifying authority must attach a Fire Safety Schedule specifying all of the fire safety measures required for the building to ensure the safety of persons in the building in the event of fire.

Prior to the Commencement of Works

61 **Pre Development CCTV/Dilapidation Report**
All stormwater pipes within existing easement and in the area of proposed works must be inspected by CCTV prior to the commencement of work. A copy of the CCTV inspection (report and CCTV video's) must be submitted to Councils Development Engineering Manager and the Certifying Authority prior to the commencement of works.

62 **Prior to Tree Removal**
Prior to removal, the trees approved for removal under this development consent shall be closely inspected for native vertebrate fauna occupation, and if occupied by native vertebrate fauna, then the NSW Wildlife Information, Rescue and Education Service (WIRES) shall be contacted for advice (phone 1300 094 737).

63 **Appointment of Principal Certifying Authority**
Prior to commencement of work, the person having the benefit of the Development Consent and a Construction Certificate must:

a Appoint a Principal Certifying Authority (PCA) and notify Council in writing of the appointment irrespective of whether Council or an accredited private certifier is appointed; and
b notify Council in writing of their intention to commence work (at least two days notice is required).

The Principal Certifying Authority must determine when inspections and compliance certificates are required.

64 **Sign – Supervisor Contact Details**
Before commencement of any work, a sign must be erected in a prominent, visible position:

a stating that unauthorised entry to the work site is not permitted;
b showing the name, address and telephone number of the Principal Certifying Authority for the work; and
c showing the name and address of the principal contractor in charge of the work site and a telephone number at which that person can be contacted at any time for business purposes.

This sign shall be maintained while the work is being carried out and removed upon the completion of the construction works.

65 **Temporary Toilet/Closet Facilities**
Toilet facilities are to be provided at or in the vicinity of the work site on which work involved in the erection or demolition of a building is being carried out at the rate of one toilet for every 20 persons or part of 20 persons employed at the site.

Each toilet provided must be:

a a standard flushing toilet; and
b connected to either:
  i the Sydney Water Corporation Ltd sewerage system or
  ii an accredited sewage management facility or
  iii an approved chemical closet.

The toilet facilities shall be provided on-site, prior to the commencement of any works.

66 **Structural Engineer's Details**
Structural engineer's details for all structurally designed building works such as reinforced concrete footings, reinforced concrete slabs and structural steelwork must be submitted to the Principal Certifying Authority, prior to the commencement of any works on the site.

67 **Enclosure of the Site**
The site must be enclosed with a suitable security fence to prohibit unauthorised access, to be approved by the Principal Certifying Authority. No building work is to commence until the fence is erected.

68 **Demolition Works**

The demolition of the existing building elements/buildings/structures shall be carried out in accordance with Australian Standard AS2601 (2001): The Demolition of Structures or any other subsequent relevant Australian Standard and the requirements of the SafeWork NSW.

No demolition materials shall be burnt or buried on-site. The person responsible for the demolition works shall ensure that all vehicles leaving the site carrying demolition materials have their loads covered and do not track soil or waste materials onto the road. Any unforeseen hazardous and/or intractable wastes shall be disposed of to the satisfaction of the Principal Certifying Authority. In the event that the demolition works may involve the obstruction of any road reserve/footpath or other Council owned land, a separate application shall be made to Council to enclose the public place with a hoarding or fence over the footpath or other Council owned land.

69 **Notification to SafeWork NSW**

The demolition licence holder who proposes demolition of a structure or part of a structure that is loadbearing or otherwise related to the physical integrity of the structure that is at least six metres in height, involving load shifting machinery on a suspended floor, or involving the use of explosives must notify SafeWork NSW in writing at least five (5) calendar days before the work commences.

70 **Notification to Surrounding Property Owners/Occupants Prior to Commencement of Demolition Works**

At least five (5) days notice must be given in writing to any residence or business within 100 metres of the premises to which this consent pertains of the impending demolition works. The written notice must include at least the following information:

a a summary of the work plan and method for the demolition and a timetable for completion of works, including hours of operation, transport routes etc;
b details of the primary contractor and/or company conducting the demolition works;
c the name and telephone number for a person supervising the works to which residents can direct questions, comments and/or concerns about the works for the duration of the works.

71 **Updated Hazardous Materials Survey Report**

At least one (1) week prior to demolition, the applicant must prepare an updated hazardous materials survey report and any asbestos hazard management strategy (prepared by a suitably qualified and experienced licensed asbestos assessor) with the results of additional survey work and submit the updated report to Council and the PCA (should Council not be the PCA).

72 **Consultation with SafeWork NSW – Prior to Asbestos Removal**

A licensed asbestos removalist must give written notice to SafeWork NSW at least five (5) days before licensed asbestos removal work is commenced.

73 **Temporary Sediment Fences**

Temporary sediment fences (eg haybales or geotextile fabric) must be installed on the site, prior to the commencement of any excavation, demolition or construction works in accordance with Council's guidelines. Upon completion of the development, sediment fencing is to remain until the site is grassed or alternatively, a two (2) metre strip of turf is provided along the perimeter of the site, particularly lower boundary areas.

74 **All-weather Access**

An all-weather stabilised access point must be provided to the site to prevent sediment leaving the site as a result of vehicular movement. Vehicular movement should be limited to this single accessway.

75 **Sediment Control Measures**

The developer must ensure that sediment-laden runoff from the site is controlled at all times subsequent to commencement of construction works. Sediment control measures must be maintained at all times and checked for adequacy at the conclusion of each day's work.

76 **Supervising Arborist – Tree Inspection and Installation of Tree Protection Measures**
Prior to the commencement of any demolition, excavation or construction works, the supervising arborist must certify in writing that tree protection measures have been inspected and installed in accordance with the arborist's recommendations and relevant conditions of this consent.

77 **Certification from Arborist - Adequate Protection of Trees to be Retained**
A qualified arborist is required to be engaged for the supervision of all on-site excavation or land clearing works. The submission of appropriate certification from the appointed arborist to the Principal Certifying Authority is required which confirms that all trees and other vegetation to be retained are protected by fencing and other measures, prior to the commencement of any such excavation or land clearing works.

78 **Application for Occupation, Use, Disturbance or Work on Footpath/Roadway**
Any occupation, use, disturbance or work on the footpath or road reserve for construction purposes, which is likely to cause an interruption to existing pedestrian and/or vehicular traffic flows requires Council consent under Section 138 of the Roads Act 1993. An application must be submitted and approved by Council prior to the works commencing where it is proposed to carry out activities such as, but not limited to, the following:

a Digging or disruption to footpath/road reserve surface;
b Loading or unloading machinery/equipment/deliveries;
c Installation of a fence or hoarding;
d Stand mobile crane/plant/concrete pump/materials/waste storage containers;
e Pumping stormwater from the site to Council's stormwater drains;
f Installation of services, including water, sewer, gas, stormwater, telecommunications and power;
g Construction of new vehicular crossings or footpaths;
h Removal of street trees;
i Carrying out demolition works.

79 **Asset Protection Zones**
At the commencement of building works and in perpetuity the property around the existing buildings for a distance of 40 metres shall be managed as an Inner Protection Area (IPA) as outlined within section 4.1.3 and Appendix 5 of 'Planning for Bush Fire Protection 2006' and the NSW Rural Fire Service's document 'Standards for asset protection zones'.

80 **Works in Road Reserve - Minor Works**
Approval, under Section 138 of the Roads Act must be obtained from Wollongong City Council's Development Engineering Team prior to any works commencing or any proposed interruption to pedestrian and/or vehicular traffic within the road reserve caused by the construction of this development.

The application form for Works within the Road Reserve – Section 138 Roads Act can be found on Council's website. The form outlines the requirements to be submitted with the application, to give approval to commence works under the roads act. It is advised that all applications are submitted and fees paid, five (5) days prior to the works within the road reserve are intended to commence. The Applicant is responsible for the restoration of all Council assets within the road reserve which are impacted by the works/occupation. Restoration must be in accordance with the following requirements:

a All restorations are at the cost of the Applicant and must be undertaken in accordance with Council's standard document, "Specification for work within Council's Road reserve".
b Any existing damage within the immediate work area or caused as a result of the work/occupation, must also be restored with the final works.

81 **Building Exclusion Zone – Protection of Existing Vegetation**
Prior to the commencement of work the land marked on the plan and shown as "VMP subject site" in Figure 1.1 on page 7 in the Vegetation Management Plan dated 28 February 2019

prepared by Ecoplanning is to be pegged out on site to clearly identify the area, so not be impacted during demolition, excavation or construction.
A plan of the VMP subject site is attached to this development consent at Attachment 3.

During Demolition, Excavation or Construction

82 **Survey Report – Residential Care Facility Building**
The submission of a survey report by a registered Land Surveyor to the Principal Certifying Authority is required to guarantee that the development is completed in accordance with the approved plans, that the residential care facility building does not exceed the maximum height of 12.12 metres AHD.

83 **Installation of Water Sensitive Urban Design Treatment Train**
The developer shall install the water sensitive urban design treatment measures as stated in Table 3-2 of the Civil Design Report prepared by Bonacci Group (NSW) Pty Ltd dated 6 February 2019.

84 **Avoidance of Cruelty and Harm to Fauna**
During tree removal works, all care shall be taken to avoid cruelty and harm to fauna.

85 **Injured Native Fauna**
In the event any native fauna are injured during tree removal works, then the NSW Wildlife Information, Rescue and Education Service (WIRES) shall be contacted (phone 1300 094 737) for assistance.

86 **Disposal of Excess Removed Vegetation Off-site**
Excess removed vegetation taken from the site shall be disposed of only at a location that may lawfully accept that waste.

87 **Weed Control**
No known environmental weeds or known invasive plant species shall be used in any plantings or landscaping on the site, or otherwise brought onto the site.

88 **Protection of Native Vegetation Beyond the Development Footprint**
Construction impacts must be restricted to the development site and must not encroach into areas of retained native vegetation and habitat. All materials stockpiles, vehicle parking, machinery storage and other temporary facilities must be located within the areas for which biodiversity impacts were assessed in the Biodiversity Development Assessment Report prepared by Ecoplanning dated 24 January 2019.

89 **Building Exclusion Zone – Protection of Existing Vegetation**
No excavation or compaction, no building or other structure and no filling material shall be erected, placed or be permitted to remain within that part of the land marked on the plan and shown as "VMP subject site" in Figure 1.1 on page 7 in the Vegetation Management Plan dated 28 February 2019 prepared by Ecoplanning. A plan of the VMP subject site is attached to this development consent at Attachment 3.

90 **Implementation of Vegetation Management Plan**
The Vegetation Management Plan prepared by Ecoplanning dated 28 February 2019 shall be implemented as described.

91 **Supervision of Engineering Works**
All engineering works associated with the development are to be carried out under the supervision of a practicing engineer and/or registered surveyor.

92 **No Adverse Run-off Impacts on Adjoining Properties**
The design of the development shall ensure there are no adverse effects to adjoining properties as a result of flood or stormwater run-off. Attention must be paid to ensure adequate protection for buildings against the ingress of surface run-off.

Allowance must be made for surface run-off from adjoining properties. Any redirection or treatment of that run-off must not adversely affect any other property.

93 **Branch or Root Pruning in accordance with Australian Standard**
Any branch or root pruning which has been given approval, must be carried out by a qualified arborist in accordance with Australian Standard AS4373 (2007).

94 **Copy of Consent to be in Possession of Person carrying out Tree Removal**
The applicant/developer must ensure that any person carrying out tree removal is in possession of this development consent, in respect to the trees which have been given approval to be removed in accordance with this consent.

95 **Restricted Washing of Equipment or Disposal of Materials on any Tree Dripline Area**
No washing of equipment and or the disposal of building materials such as cement slurry must occur within the drip line of any tree which has been nominated for retention of the site and adjacent property.

96 **Treatment of any Tree Damage by a Supervised Arborist**
Any damage inflicted on a tree during the construction phase which has been nominated for retention shall be treated by an approved arborist at the developer's expense.

97 **Waste Inventory Report**
A Waste Inventory report must be maintained on-site during demolition work. The waste inventory is a register of all materials and waste removed from the site during the demolition work. The register must record each load or movement of material and waste from the site and must include at a minimum the following information:

a the description of the material (including identified hazardous material);
b an estimate of the quantity by volume and weight;
c the name of the transporter and the registration details of the relevant vehicle;
d the intended destination of the material;
e a copy of the Waste Inventory and copies of relevant receipts of disposal shall be forwarded to Council's Division of Regulation and Enforcement prior to the Construction Certificate for re-development being issued.

98 **Restricted Hours of Construction Work**
The developer must not carry out any work, other than emergency procedures, to control dust or sediment laden runoff outside the normal working hours, namely, 7.00 am to 5.00 pm, Monday to Saturday, without the prior written consent of the Principal Certifying Authority and Council. No work is permitted on public holidays or Sundays.

Any request to vary these hours shall be submitted to the **Council** in writing detailing:

a the variation in hours required (length of duration);
b the reason for that variation (scope of works);
c the type of work and machinery to be used;
d method of neighbour notification;
e supervisor contact number;
f any proposed measures required to mitigate the impacts of the works.

Note: The developer is advised that other legislation may control the activities for which Council has granted consent, including but not limited to, the Protection of the Environment Operations Act 1997.

99 Drains, gutters, access ways and roadways must be maintained free of sediment and any other material.

100 **Dust Suppression Measures**
Activities occurring during the demolition and construction phases of the development must be carried out in a manner that will minimise the generation of dust.

101 **Asbestos – Removal, Handling and Disposal Measures/Requirements Asbestos Removal by a Licensed Asbestos Removalist**
The removal of any asbestos material must be carried out by a licensed asbestos removalist if over 10 square metres in area of non-friable asbestos, or if any type of friable asbestos in strict accordance with SafeWork NSW requirements (_____).

102 **Asbestos Waste Collection, Transportation and Disposal**
Asbestos waste must be prepared, contained, transported and disposed of in accordance with SafeWork NSW and NSW Environment Protection Authority requirements. Asbestos waste must only be disposed of at a landfill site that can lawfully receive this this type of waste. A receipt must be retained and submitted to the Principal Certifying Authority, and a copy submitted to Council (in the event that Council is not the Principal Certifying Authority), prior to commencement of the construction works.

103 **Lead Based Paint**
To prevent contamination of the soil and human health risks associated with lead dust, safeguards must be used when removing flaking paint or sanding paint surfaces that are suspected to contain lead.

104 **Provision of Waste Receptacle**
The developer must provide an adequate receptacle to store all waste generated by the development, pending disposal. The receptacle must be regularly emptied and waste must not be allowed to lie or accumulate on the property other than in the receptacle. Consideration should be given to the source separation of recyclable and re-usable materials.

105 **BASIX**
All the commitments listed in each relevant BASIX Certificate for the development must be fulfilled in accordance with Clause 97A(2) of the Environmental Planning & Assessment Regulation 2000.

A relevant BASIX Certificate means:

- A BASIX Certificate that was applicable to the development when this development consent was granted (or, if the development consent is modified under section 4.55 of the Environmental Planning & Assessment Act 1979, a BASIX Certificate that is applicable to the development when this development consent is modified); or
- if a replacement BASIX Certificate accompanies any subsequent application for a construction certificate, the replacement BASIX Certificate; and
- BASIX Certificate has the meaning given to that term in the Environmental Planning & Assessment Regulation 2000."

106 **Excess Excavated Material – Disposal**
Excess excavated material shall be classified according to the NSW Environment Protection Authority's Waste Classification Guidelines – Part 1: Classifying Waste (2014) prior to being transported from the site and shall be disposed of only at a location that may lawfully receive that waste.

107 **Access**
Fire trails shall comply with section 4.1.3(3) of 'Planning for Bush Fire Protection 2006' and internal roads shall comply with section 4.2.7 of 'Planning for Bush Fire Protection 2006'.

108 **Water and Utilities**
Water, electricity and gas are to comply with section 4.1.3 and 4.2.7 of 'Planning for Bush Fire Protection 2006'.

109 **Provision of Taps/Irrigation System**
The provision of common taps and/or an irrigation system is required to guarantee that all landscape works are adequately watered. The location of common taps and/or irrigation system must be implemented in accordance with the approved Landscape Plan.

110 **Podium Planting**
All podium planting areas are to have a waterproofing membrane that can provide a minimum 10 year warranty on product. Protective boarding is to be installed to protect membrane from damage.

All podium planting areas to be provided with an adequate drainage system connected to the stormwater drainage system. The planter box is to be backfilled with free draining planter box soil mix.

If selected mulch is decorative pebbles/gravel, the maximum gravel pebble size is 10mm diameter.

Prior to the Issue of the Occupation Certificate

111 **Positive Covenant – Vegetation Management Plan**
A positive covenant shall be created under the Conveyancing Act 1919 requiring the property owner(s) to carry out works described in the Vegetation Management Plan prepared by Ecoplanning dated 28 February 2019.

The 88E Instrument shall contain a provision that this clause may not be altered, modified or extinguished, except with the written consent of Wollongong City Council.

The instrument showing the positive covenant must be submitted to the Principal Certifying Authority for endorsement prior to the issue of the Construction Certificate.

112 **Building Exclusion Zone – Protection of Existing Vegetation**
The submission of a Section 88B Instrument with the Occupation Certificate application, which incorporates the following restriction-as-to-use on the subject site/lot:

Building Exclusion Zone
No excavation or compaction, no building or other structure and no filling material shall be erected, placed or be permitted to remain within that part of the land marked on the plan and shown as "VMP subject site" in Figure 1.1 on page 7 in the Vegetation Management Plan dated 28 February 2019 prepared by Ecoplanning. A plan of the VMP subject site is attached to this development consent at Attachment 3.

The 88B Instrument shall also contain a provision that it may not be altered, modified or extinguished without the written consent of Wollongong City Council. The 88B Instrument shall be submitted to the Principal Certifying Authority, prior to the release of the Construction Certificate.

113 **Fire Engineering Certification**
Prior to the issue of an Occupation Certificate, provide a clearing certificate from the Accredited C10 Fire Engineer certifying that all of the building solutions detailed within the Fire Engineering Report approved with the Construction Certificate have been implemented/installed/constructed within the building to the their satisfaction.

114 **Fire Safety Upgrade**
Prior to the issue of an Occupation Certificate, the building must be upgraded to comply with the recommendations contained in the Building Code of Australia Report submitted and considered by the accredited certifier at Construction Certificate Stage.

115 **Post Development CCTV/Dilapidation Report**
All stormwater pipes within existing easement and in the area of proposed works must be inspected by CCTV following the completion of all construction works within the easement. A copy of the CCTV inspection (report and CCTV video's) must be submitted to Councils Development Engineering Manager for assessment prior to the issue of the Occupation Certificate. A comparison must be undertaken against the pre development CCTV report where defects are identified. Defects as a result of the development must either be replaced or repaired to Councils satisfaction prior to the issuing of the Occupation Certificate.

116 **Acoustic Compliance Report**
The developer shall submit to the Principal Certifying Authority an acoustic compliance report prepared by an acoustic consultant who is a member of the Australian Acoustic Society (AAS) or the Association of Australian Acoustic Consultants (AAAC) in stating that the building internal noise levels comply with the noise criteria of Clause 87(3) of State Environmental Planning Policy (Infrastructure) 2007.

117 **Design, Construction and Fit Out of Kitchen and Café Areas**
The design, construction and fit out of the kitchen and café portions of the development must comply with AS4674-2004: Design, construction and fit out of food premises and the construction certificate plans for the development prior to the issue of the occupation certificate.

118 **SEPP (Housing for Seniors or People with a Disability) 2004**
The accommodation component of the development may only be occupied by the kinds of people referred to in subclause (1) of Clause 18 of the SEPP. In accordance with Clause 18(2) of the SEPP, restriction as to user must be registered against the title of the property in accordance with section 88E of the *Conveyancing Act 1919.* Evidence of the restriction must be forwarded to the Principal Certifying Authority prior to the issue of the Occupation Certificate.

119 **Restriction on Use – Asset Protection Zone**
The applicant must create a restriction on title under section 88 of the Conveyancing Act 1919 that requires land 40 metres from the existing buildings (as approved in DA-2008/1470) to be managed as an inner protection area (IPA) as outlined within section 4.1.3 and Appendix 5 of Planning for Bush Fire Protection 2006 and the NSW Rural Fire Service's document Standards for asset protection zones.

Name of the authority having the power to release, vary or modify the restriction referred to is Wollongong City Council.

The instrument, showing the restriction, must be submitted to the Principal Certifying Authority for endorsement prior to the issue of the final Occupation Certificate and the use of the development.

120 A Section 73 Certificate must be submitted to the Principal Certifying Authority prior to occupation of the development/release of the plan of subdivision.

121 **Fire Safety Certificate**
A Fire Safety Certificate must be issued for the building prior to the issue of an Occupation Certificate. As soon as practicable after a Fire Safety Certificate is issued, the owner of the building to which it relates:

a Must cause a copy of the certificate (together with a copy of the current fire safety schedule) to be given to the Commissioner of New South Wales Fire Brigades, and
b must cause a further copy of the certificate (together with a copy of the current fire safety schedule) to be prominently displayed in the building.

122 **Drainage**
The developer must obtain a certificate of Hydraulic Compliance (using Council's M19 form) from a suitably qualified civil engineer, to confirm that all stormwater drainage and on-site detention works have been constructed in accordance with the approved plans. In addition, full works-as-executed plans, prepared and signed by a Registered Surveyor must be submitted. These plans and certification must satisfy all the stormwater requirements stated in Chapter E14 of the Wollongong DCP2009. This information must be submitted to the Principal Certifying Authority prior to the issue of the final Occupation Certificate.

123 **Restriction on Use – On-site Detention System**
The applicant must create a restriction on use under the Conveyancing Act 1919 over the on-site detention system. The following terms must be included in an appropriate instrument created under the Conveyancing Act 1919 for approval of Council:

"The registered proprietor of the lot burdened must not make or permit or suffer the making of any alterations to any on-site stormwater detention system on the lot(s) burdened without the

prior consent in writing of the authority benefited. The expression 'on-site stormwater detention system' shall include all ancillary gutters, pipes, drains, walls, kerbs, pits, grates, tanks, chambers, basins and surfaces designed to temporarily detain stormwater as well as all surfaces graded to direct stormwater to those structures.

Name of the authority having the power to release, vary or modify the restriction referred to is Wollongong City Council."

The instrument, showing the restriction, must be submitted to the Principal Certifying Authority for endorsement prior to the issue of the final Occupation Certificate and the use of the development.

124 **Access Certification**
Prior to the occupation of the building, the Principal Certifying Authority must ensure that a certificate from an "accredited access consultant" has been issued certifying that the development complies with the requirements of the Statement of Compliance Access for People with a Disability prepared by Accessible Building Solutions dated 23 April 2018.

125 **Retaining Wall Certification**
The submission of a certificate from a suitably qualified and experienced structural engineer or civil engineer to the Principal Certifying Authority is required, prior to the issue of the Occupation Certificate or commencement of the use. This certification is required to verify the structural adequacy of the retaining walls and that the retaining walls have been constructed in accordance with plans approved by the Principal Certifying Authority.

126 **Waste Inventory**
A copy of the Waste Inventory which was maintained on-site during the demolition work and copies of relevant receipts of waste material being deposited at a waste disposal facility shall be forwarded to the Principal Certifying Authority and Council's Regulation and Enforcement Division (in the event that Council is not the Principal Certifying Authority), prior to the issue of the Occupation Certificate or commencement of the use.

127 **Hairdressing**
The Hairdressing Salon/Barber Shop shall comply with the Local Government (Orders) Regulation.

128 **Clinical Waste**
Clinical waste, waste containers and storage areas must be managed to comply with the NSW "Waste Minimisation Act and Management Act" and the NSW Health Department "Waste Management Guidelines for Health Care Facilities".

129 The developer must make compensatory provision for the trees required to be removed as a result of the development. In this regard, twenty 100 litre container mature plant stock shall be placed adjacent to the new building within the property boundary of the site. The suggested species are Illawarra escarpment species.

130 **BASIX**
A final occupation certificate must not be issued unless accompanied by the BASIX Certificate applicable to the development. The Principal Certifying Authority must not issue the final occupation certificate unless satisfied that selected commitments have been complied with as specified in the relevant BASIX Certificate. NOTE: Clause 154B of the Environmental Planning and Assessment Regulation 2000 provides for independent verification of compliance in relation to certain BASIX commitments.

131 **Positive Covenant – On-Site Detention Maintenance Schedule**
A positive covenant shall be created under the Conveyancing Act 1919, requiring the property owner(s) to undertake maintenance in accordance with the Construction Certificate approved On-Site Stormwater Detention System and Maintenance Schedule (application number to be referenced).

The instrument, showing the positive covenant must be submitted to the Principal Certifying Authority for endorsement prior to the issue of the final Occupation Certificate and the use of the development.

132 **On-Site Detention – Structural Certification**
The submission of a certificate from a suitably qualified practising civil and/or structural engineer to the Principal Certifying Authority is required prior to the issue of the final Occupation Certificate. This certification is required to verify the structural adequacy of the on-site detention facility and that the facility has been constructed in accordance with the approved Construction Certificate plans.

133 **Registration**
The food business is required to be registered with Council's Regulation and Enforcement Division. An application must be made submitting the appropriate form prior to business operations commencing. Form can be found on Councils' web page http://www.wollongong.nsw.gov.au/council/formsandfactsheets.asp. then navigate to Health/Application for Licence

134 **Food Business Notification Requirement**
The proprietor of the premises is required to notify their business details to the NSW Food Authority prior to operations commencing. An application can be made via www.foodnotify.nsw.gov.au, or by submitting a notification form and fee to Council or NSW Food Authority.

135 **Bushfire – Compliance Certificate**
A Compliance Certificate shall accompany any Occupation Certificate for Bushfire construction works as have been completed, verifying that the development has been constructed in accordance with the relevant Bushfire Attack Level (BAL) requirements of the Development Consent and Construction Certificate.

136 **Completion of Landscape Works**
The completion of the landscaping works as per the final approved Landscape Plan is required prior to the issue of Occupation Certificate.

137 **Height of Residential Care Facility Building**
A Survey Report must be submitted to the Principal Certifying Authority verifying the residential care facility building does not exceed the maximum height of 12.12 metres AHD from the natural ground level (inclusive of the lift tower and any air conditioning plant).

Operational Phases of the Development/Use of the Site

138 **Monitoring of Stormwater Quality**
Within one (1) year after the water sensitive urban design treatment system has been established, the proponent shall undertake water sampling and analysis to prove statistically the water sensitive urban design treatment train is functional and achieving the targeted improvements in water quality. The report must be sent to Wollongong City Council's Strategy Division.

139 **Vegetation Management Plan Reporting**
Three (3) monthly reports on the progress of the implementation of the Vegetation Management Plan prepared by Ecoplanning dated 28 February 2019 and annual reports summarising activity for the year shall be submitted to Wollongong City Council's City Strategy Division at least until the end of the three year maintenance period and until the performance criteria have been met.

140 **Operation of the Mini Bus**
The mini bus shall be available both to and from the proposed development during daylight hours at least once each day from Monday to Friday (inclusive). The bus shall take the residents to nearby centres and is to park at a distance of not more than 400 metres from the facilities and services referred to below:

a shops, bank service providers and other retail and commercial services;
b community services and recreation facilities; and
c the practice of a general medical practitioner.

141 **Restricted Delivery Hours**

The delivery of service trucks shall be limited to 6.30 am to 9.00 pm daily, Mondays to Fridays and 8.00 am to 5.00 pm Saturdays only. Any alteration to the approved delivery hours will require the separate approval of Council.

142 **Loading/Unloading Operations/Activities**

All loading/unloading operations are to take place at all times wholly within the confines of the site or within the road reserve under an approved traffic control plan.

Attachment 1

All communications to be addressed to:

Headquarters
15 Carter Street
Lidcombe NSW 2141

Telephone: 1300 NSW RFS
e-mail: records@rfs.nsw.gov.au

Headquarters
Locked Bag 17
Granville NSW 2142

Facsimile: 8741 5433

The General Manager
Wollongong City Council
Locked Bag 8821
WOLLONGONG DC NSW 2500

Your Ref: DA-2018/557
Our Ref: D18/5612
DA18052413213 DD

ATTENTION: Vivian Lee

22 June 2018

Dear Sir / Madam

Integrated Development Application - 4 Lindsay Evans Place Dapto 2530

I refer to your correspondence dated 14 May 2018 seeking general terms of approval for the above Integrated Development Application.

The New South Wales Rural Fire Service (NSW RFS) has considered the information submitted. General Terms of Approval, under Division 4.8 of the 'Environmental Planning and Assessment Act 1979', and a Bush Fire Safety Authority, under Section 100B of the 'Rural Fires Act 1997', are now issued subject to the following conditions:

Asset Protection Zones

The intent of measures is to provide sufficient space and maintain reduced fuel loads so as to ensure radiant heat levels of buildings are below critical limits and to prevent direct flame contact with a building. To achieve this, the following conditions shall apply:

1. At the commencement of building works and in perpetuity the existing 40m Asset Protection Zone, shall continue to be maintained as an inner protection area (IPA) as outlined within section 4.1.3 and Appendix 5 of 'Planning for Bush Fire Protection 2006' and the NSW Rural Fire Service's document 'Standards for asset protection zones'.

Water and Utilities

The intent of measures is to provide adequate services of water for the protection of buildings during and after the passage of a bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building. To achieve this, the following conditions shall apply:

2. Water, electricity and gas are to comply with sections 4.1.3 and 4.2.7 of 'Planning for Bush Fire Protection 2006'.

Access

The intent of measures for fire trails is to provide suitable access for fire management purposes and maintenance of APZs. To achieve this, the following conditions shall apply:

3. Fire trails shall comply with section 4.1.3 (3) of 'Planning for Bush Fire Protection 2006'.

The intent of measures for internal roads is to provide safe operational access for emergency services personnel in suppressing a bush fire, while residents are accessing or egressing an area. To achieve this, the following conditions shall apply:

4. Internal roads shall comply with section 4.2.7 of 'Planning for Bush Fire Protection 2006'.

Evacuation and Emergency Management

The intent of measures is to provide suitable emergency and evacuation (and relocation) arrangements for occupants of special fire protection purpose developments. To achieve this, the following conditions shall apply:

5. Arrangements for emergency and evacuation are to comply with section 4.2.7 of 'Planning for Bush Fire Protection 2006'.

Design and Construction

The intent of measures is that buildings are designed and constructed to withstand the potential impacts of bush fire attack. To achieve this, the following conditions shall apply:

6. New construction for the Residential Aged Care building shall comply with Sections 3 and 5 (BAL 12.5) Australian Standard AS3959-2009 'Construction of buildings in bush fire-prone areas' or NASH Standard (1.7.14 updated) 'National Standard Steel Framed Construction in Bushfire Areas – 2014' as appropriate and section A3.7 Addendum Appendix 3 of 'Planning for Bush Fire Protection 2006'.

7. The existing hostel building to be refurbished to a Community Centre and 1 Bed Independent Living Units is required to be upgraded to improve ember protection. This is to be achieved by enclosing all openings (excluding roof tile spaces) or covering openings with a non-corrosive metal screen mesh with a maximum aperture of 2mm. Where applicable, this includes any sub floor areas, openable windows, vents, weepholes and eaves. External doors are to be fitted with draft excluders.

Landscaping

8. Landscaping to the site is to comply with the principles of Appendix 5 of 'Planning for Bush Fire Protection 2006'.

Should you wish to discuss this matter please contact Deborah Dawson on 1300 NSW RFS.

Yours sincerely

Martha Dotter
A/Team Leader Development Assessment & Planning

For general information on bush fire protection please visit www.rfs.nsw.gov.au

Attachment 2

Transport Sydney Trains

20 December 2018

The General Manager
Wollongong City Council
Locked Bag 8821
Wollongong DC NSW 2500

ATTENTION: VIVIAN LEE

Dear Sir/Madam,

STATE ENVIRONMENTAL PLANNING POLICY (INFRASTRUCTURE) 2007
DEVELOPMENT APPLICATION – DA-2018/557
Lot 1 DP 1082602
4 Lindsay Evans Place, Dapto

I refer to Council's letter requesting RailCorp's concurrence for the above development application in accordance with clause 86(1) of the above SEPP.

Sydney Trains has been delegated to act as the rail authority for development applications captured by State Environmental Planning Policy (Infrastructure) 2007 and has also been delegated to act as agent for RailCorp, the land owner of rail land.

As such, Sydney Trains now advises that the proposed development is being assessed in accordance with the requirements of Clause 86(4) being:

a) the potential effects of the development (whether alone or cumulatively with other development or proposed development) on:

   i) the safety or structural integrity of existing or proposed rail infrastructure facilities in the rail corridor, and

   ii) the safe and effective operation of existing or proposed rail infrastructure facilities in the rail corridor, and

b) what measures are proposed, or could reasonably be taken, to avoid or minimise those potential effects.

In this regard, Sydney Trains has taken the above matters into consideration and has decided to grant its concurrence to the development proposed in development application **DA-2018/557** subject to Council imposing the operational conditions listed in Attachment A that will need to be complied with.

Sydney Trains is a NSW Government agency
Ground Floor - East, 36-46 George Street, Burwood NSW 2134 - PO Box 459 Burwood NSW 1805
Phone 8575 0780 **Email** DA_sydneytrains@transport.nsw.gov.au
www.transport.nsw.gov.au/sydneytrains **ABN** 38 284 779 682

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Sydney Trains

Should Council choose not to impose the operational conditions provided in Attachment A (as written), then concurrence from Sydney Trains has not been granted to the proposed development.

In the event that this development proposal is the subject of a Land and Environment Court appeal, Council's attention is drawn to Section 8.12 of the Environmental Planning and Assessment Act 1979 which requires Council to give notice of that appeal to a concurrence authority. Sydney Trains therefore requests that Council comply with this requirements should such an event occur.

Please contact Miss Sarah Anderson on 8575 0237 should you wish to discuss this matter. Finally, Sydney Trains requests that a copy of the Notice of Determination and conditions of consent be forwarded to Sydney Trains.

Yours sincerely,

John Camarda
Executive Manager
Commercial Property

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Ground Floor - East, 36-46 George Street, Burwood NSW 2134 - PO Box 459 Burwood NSW 1805
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Attachment A

- *Copies of any certificates, drawings, approvals/certification or documents endorsed by, given to or issued by Sydney Trains must be submitted to Council for its records prior to the issuing of a Construction Certificate.*

- *Where a condition of consent requires Sydney Trains or Transport for NSW endorsement the Principal Certifying Authority is not to issue a Construction Certificate or Occupancy Certificate, as the case may be, until written confirmation has been received from those entities that the particular condition has been complied with. The issuing of staged Construction Certificates dealing with specific works and compliance conditions can be issued subject to written agreement from those entities to which the relevant conditions applies.*

- *Any conditions issued as part of Sydney Trains approval/certification of any documentation for compliance with the Sydney Trains conditions of consent, those approval/certification conditions will also form part of the consent conditions that the Applicant is required to comply with.*

- *Sydney Trains or Transport for NSW (TfNSW), and persons authorised by those entities for the purpose of this condition, are entitled to inspect the site of the development and all structures to enable it to consider whether those structures have been or are being constructed and maintained in accordance with the approved plans and these conditions of consent, on giving reasonable notice to the principal contractor for the development or the owner or occupier of the part of the site to which access is sought.*

- *Prior to the commencement of works the Applicant shall peg-out the common property boundary with RailCorp's land. This work is to be undertaken by a registered surveyor.*

- *If required by Sydney Trains, prior to the commencement of works, prior to the issue of the Occupation Certificate, or at any time during the excavation and construction period deemed necessary by Sydney Trains, a joint inspection of the rail infrastructure and property in the vicinity of the project is to be carried out by representatives from Sydney Trains and the Applicant. These dilapidation surveys will establish the extent of any existing damage and enable any deterioration during construction to be observed. The submission of a detailed dilapidation report will be required unless otherwise notified by Sydney Trains.*

- *An acoustic assessment is to be submitted to Council prior to the issue of a construction certificate demonstrating how the proposed development will comply with the Department of Planning's document titled "Development Near Rail Corridors and Busy Roads- Interim Guidelines".*

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www.transport.nsw.gov.au/sydneytrains ABN 38 284 779 682

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- *Prior to the issue of a Construction Certificate the Applicant is to engage an Electrolysis Expert to prepare a report on the Electrolysis Risk to the development from stray currents. The Applicant must incorporate in the development all the measures recommended in the report to control that risk. A copy of the report is to be provided to the Principal Certifying Authority with the application for a Construction Certificate.*

- *Prior to the issue of a Construction Certificate, the Applicant shall provide certification from a qualified Geotechnical and Structural Engineers stating that the proposed works are to have no negative impact on the rail corridor and associated rail infrastructure.*

- *Unless advised by Sydney Trains in writing, all excavation, shoring and piling works within 25m of the rail corridor are to be supervised by a geotechnical engineer experienced with such excavation projects.*

- *No rock anchors/bolts are to be installed into Sydney Trains property or easements.*

- *During all stages of the development, environmental legislation and regulations will be complied with.*

- *During all stages of the development extreme care shall be taken to prevent environmental harm within the railway corridor. Any form of environmental harm to areas within the railway corridor or legislative non-compliance that arises as a consequence of the development activities shall remain the full responsibility of the Applicant.*

- *During all stages of the development, extreme care shall be taken to prevent any form of pollution (including dust) entering the railway corridor. Any form of pollution that arises as a consequence of the development activities shall remain the full responsibility of the Applicant.*

- *Excess soil is not allowed to enter, be spread or stockpiled within the rail corridor (and its easements) and must be adequately managed/ disposed of.*

- *The design, installation and use of lights, signs and reflective materials, whether permanent or temporary, which are (or from which reflected light might be) visible from the rail corridor must limit glare and reflectivity to the satisfaction of Sydney Trains. The Principal Certifying Authority is not to issue the Construction Certificate until written confirmation has been received from Sydney Trains confirming that this condition has been satisfied.*

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Sydney Trains

- *Prior to the issue of a Construction Certificate a Risk Assessment/Management Plan regarding any potential risk to or from the rail corridor and assets, and detailed Safe Work Method Statements (SWMS) for the proposed works are to be submitted to Sydney Trains for review and comment on the impacts on the rail corridor. The Principal Certifying Authority shall not issue the Construction Certificate until written confirmation has been received from Sydney Trains confirming that this condition has been satisfied.*

- *If required by Sydney Trains, a track monitoring plan (including instrumentation and the monitoring regime during excavation and construction phases) is to be submitted to Sydney Trains for review and endorsement prior to the issuing of a Construction Certificate. The Principal Certifying Authority is not to issue a Construction Certificate until written confirmation has been received from Sydney Trains advising of the need to undertake the track monitoring plan, and if required, that it has been endorsed.*

- *Prior to the issuing of a Construction Certificate the Applicant is to submit to Sydney Trains a plan showing all craneage and other aerial operations for the development and must comply with all Sydney Trains requirements. If required by Sydney Trains, the Applicant must amend the plan showing all craneage and other aerial operations to comply with all Sydney Trains requirements. The Principal Certifying Authority is not to issue the Construction Certificate until written confirmation has been received from the Sydney Trains confirming that this condition has been satisfied.*

- *Given the development site's location next to the rail corridor, drainage from the development must be adequately managed/ disposed of and not allowed to be discharged into the corridor (and its easements) unless an Agreement has been entered into with Sydney Trains. The Principal Certifying Authority shall not issue a Construction Certificate until written confirmation has been received from Sydney Trains confirming that either there is no drainage to the Rail Corridor or an approval that an Agreement has been granted.*

- *The Applicant shall provide details of any intended encroachment into RailCorp's easement or RailCorp owned lands, for review and approval by Sydney Trains.*

- *No work is permitted within the rail corridor, or its easements, at any time unless prior approval or an Agreement has been entered into with Sydney Trains. Where the Applicant proposes to enter the rail corridor, the Principal Certifying Authority shall not issue a Construction Certificate until written confirmation has been received from Sydney Trains confirming that its approval has been granted.*

- *Prior to the commencement of works appropriate fencing is to be in place along the rail corridor to prevent unauthorised access to the rail corridor during construction. Details of the type of fencing and the method of erection are to be to the satisfaction of Sydney Trains prior to the fencing work being undertaken.*

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Sydney Trains

- *The development shall have appropriate fencing fit for the future usage of the development site to prevent unauthorised access to the rail corridor by future occupants of the development. Prior to the issuing of an Occupation Certificate the Applicant shall liaise with Sydney Trains regarding the adequacy of any existing fencing along the rail corridor boundary. Details of the type of new fencing to be installed and the method of erection are to be to the satisfaction of Sydney Trains prior to the fencing work being undertaken.*

- *Sydney Trains advises they have a 33kV H/V aerial transmission line near to this site and any works, scaffolding and crane movements within 6 metres of the nearest transmission line conductor must be discussed and approved by Sydney Trains beforehand.*

- *In addition, all works within 6 metres of the nearest transmission line conductor must comply with:*
  - *ISSC 20 – Guideline for the Management of Activities within Electricity Easements and Close to Electricity Infrastructure.*
  - *The Safe Approach Distances (SADs) in the Sydney Trains Document titled "SMS-06-GD-0268 – Working Around Electrical Equipment".*

- *If required, prior to the issue of a Construction Certificate the Applicant is to contact Sydney Trains Engineering Management Interfaces to determine the need for public liability insurance cover. If insurance cover is deemed necessary this insurance be for sum as determined by Sydney Trains and shall not contain any exclusion in relation to works on or near the rail corridor, rail infrastructure. The Applicant is to contact Sydney Trains Engineering Management Interfaces to obtain the level of insurance required for this particular proposal. Prior to issuing the Construction Certificate the Principal Certifying Authority must witness written proof of this insurance in conjunction with Sydney Trains written advice to the Applicant on the level of insurance required.*

- *If required, prior to the issue of a Construction Certificate the Applicant is to contact Sydney Trains Engineering Management Interfaces to determine the need for the lodgement of a Bond or Bank Guarantee for the duration of the works. The Bond/Bank Guarantee shall be for the sum determined by Sydney Trains. Prior to issuing the Construction Certificate the Principal Certifying Authority must witness written advice from Sydney Trains confirming the lodgement of this Bond/Bank Guarantee.*

- *Prior to the issuing of an Occupation Certificate the Applicant is to submit as-built drawings to Sydney Trains and Council. The as-built drawings are to be endorsed by a Registered Surveyor confirming that there has been no encroachment into Sydney Trains property or easements, unless agreed to be these authorities. The Principal Certifying Authority is not to issue the final Occupation Certificate until written confirmation has been received from Sydney Trains confirming that this condition has been satisfied.*

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Attachment 3 – Vegetation Management Plan (VMP) subject site

Figure 1.1: The study area, BDAR subject land and VMP subject site.