

Date 5 June 2020

Our ref: 18SYD-11012

Architectus
Level 18, MLC Centre, 19 Martin Place
Sydney NSW 2000

Attention: Angela Collings

Dear Angela,

RE: Response to Department of Planning, Industry and Environment comments

Eco Logical Australia Pty Ltd (ELA) has been asked by Architectus on behalf of the Department of Education to provide an explanation regarding the comments provided by the Environment, Energy and Science Group (EES) in the Department of Planning, Industry and Environment (DPIE) following their review of the Biodiversity Development Assessment Report (BDAR) version 4 prepared by ELA (last updated on 10 March 2020) for the Chatswood Education Precinct State Significant Development (SSD) application (SSD 9483).

ELA has provided a table below containing the comments provided by DPIE and ELA's response to the comments. ELA has also provided a list of actions required to finalise the Chatswood Education Precinct SSD application, also provided below.

Regards,



Belinda Failes
Ecologist/ BAM accredited assessor (BAAS 18159)

EES Comments	ELA explanation	Actions
Finalisation of report		
Status of biodiversity development assessment report (BDAR) dated 10 March 2020 is stated to be 'Final', however the biodiversity assessment method (BAM) Calculator output in Appendix D of BDAR shows "To be finalised".	<p>The Chatswood Education Redevelopment BDAR version 4 (dated 10 March 2020) 'final' version was submitted to Architectus following the finalisation of the draft report that was submitted to the client for comments.</p> <p>ELA was notified on 19 May 2020 by Architectus that the Environmental Impact Statement (EIS) had been submitted and was requested to respond to DPIE's letter (dated 12 May 2020). ELA understands the BAM Calculator (BAMC) requires finalisation.</p>	ELA will finalise the BDAR (version 5) in the BAMC for EES review.
Further, Appendix D contains output from two different revisions (0 and 4) of the BAM Calculator assessment (with different BOAMS assessment ids, 00014503/BAAS18159/20/00014647 and 0014503/BAAS18159/20/00014640 respectively). Further, this is reflected in biodiversity offset and agreements management system (BOAMS) in which two separate cases exist, both not finalised. In both cases the minimum information (landholder and property details) are either missing or incomplete. EES recommends that the assessor finalise and submit one of the cases, or both, if both are intended to apply. If the latter is the case it needs to be explained in the BDAR. The BAM Calculator output included in the BDAR should be from the finalised assessment calculation, prior to an approval being granted	<p>ELA has submitted two development cases in the BAMC for the same development to assess impacts on Plant Community Type (PCT) listed as part of a threatened ecological community (TEC) and assessment of non-TEC (i.e. planted) PCTs.</p> <p>The current version of the BAMC does not allow for vegetation zones of the same PCT to be entered as a TEC and as a non-TEC. ELA understands that the new version of the BAMC (yet to be gazetted) will provide a suitable PCT for planted vegetation. However, the BDAR will be submitted prior to the new version of the BAMC, as such two development cases were prepared, as per advice provided from DPIE.</p> <p>ELA also acknowledges that a different PCT can be selected for the development site to represent the difference between planted PCTs and TECs PCTs. ELA chose not to select a different PCT for vegetation zone (planted) as the selection of PCT was based on the what the vegetation would have historically represented in the development site. Justification on the selection of PCTs is provided in Section 1.4.2.2 of the BDAR (ELA 2020).</p>	<p>ELA has updated version 5 of the BDAR to provide an explanation regarding the use of two cases in the BAMC.</p> <p>ELA has updated the landholder and property details and can finalise the BDAR in the BAMC.</p>

EES Comments	ELA explanation	Actions
	<p>Instead ELA's assessor entered two cases for the same development. DPIE does not appear to dispute this methodology, instead, DPIE has requested that justification of the methodology and explanation in-text be provided in the BDAR and that both cases are submitted for finalisation simultaneously.</p> <p>ELA has received contact details from the client and has since updated the BAMC (on 22 May 2020) to include landholder and property details. The BAMC can be finalised pending response to this letter.</p>	
Spatial data was not provided, therefore consistency of it with the BAM Calculator case or BDAR could not be confirmed. EES recommends that all spatial data be provided.	ELA was notified on 19 May 2020 that the EIS had been submitted and the BAMC requires finalisation. ELA will collate all the spatial data, maps and reports to upload directly into the BAMC for review.	ELA has finalised the BDAR in the BAMC and provided spatial data for EES review.
BDAR certified as BAM compliant with 14 days of submission date		
The BDAR is unsigned, and there is no certification that the report has been prepared based on the requirements of BAM as at a specified date, as required by Section 6.15 of the BC Act. It is unknown when the BDAR was submitted, however the date of the BAR is not within 14 days of the date shown on the relevant finalised credit report generated using the BAM Calculator in Appendix D, this date being 26 November 2011.	<p>The BDAR version 4 was submitted to the client on 20 March 2020 as per the Document Tracking information provided on page 2 of the BDAR. ELA can certify the amended version of the BDAR pending this letter and submit into the BAMC.</p> <p>Section 6.15 of the BC Act requires certification which can be interpreted as a signature. ELA will provide a date and signature of the updated BDAR.</p> <p>ELA can confirm that the date of the last updated case of the BDAR in the BAMC was 26 November 2019 and not 2011 as stated by DPIE, which appears to be a typing error.</p>	ELA has amended the BDAR with a valid date and certification by the assessor Tracking Document at the start of the report. ELA has finalised the BDAR report status in the BAMC.
Introduction to the biodiversity assessment		
No reference is made to more detailed information contained within the EIS, or to which version of plans were relied on for the biodiversity assessment.	ELA has not received a copy of the EIS to include into our BDAR. Spatial information has been provided by Architectus and was verified as correct at the time of	ELA has reviewed the EIS as part of our literature review and reference

EES Comments	ELA explanation	Actions
	assessment in March 2020. ELA requests a copy of the Biodiversity Chapter of EIS for review.	the version of the EIS in the updated BDAR.
<p>The “development site footprint” (bounded in red on Figure 1 in section 1.1.2) appears to encompass only the operational footprint, or part thereof, and it is not clear how some features of the proposed development will impact biodiversity values.</p> <p>These features include:</p> <ul style="list-style-type: none"> • the construction footprint; areas required for cut and fill excavations, as shown in ‘Bulk Earthworks Plan - Centennial Avenue’ Dwg. CI-100-001 (in App.1 of Stormwater Management Plan) • concrete paving (code PV-01) extending 2.5-3.5 metres on the western side of building S (see Landscape plan SD-AX-L1001 Issue P2) and • the “ancillary facilities” referred to in Table 14. 	<p>ELA requires confirmation from Architectus regarding the development footprint. The development footprint was reviewed by Architectus during review of the draft BDAR as correct. If the footprint is incorrect, the BDAR will require updates to the maps, report and calculations.</p>	<p>ELA has updated the BDAR (V5) to include additional landscaping areas (including the sensory garden) and bulk earthworks which was not captured in version 4 of the BDAR. ELA has amended the project description to include the description of the proposed works in accordance with the EIS.</p> <p>Updates to the development footprint has resulted in a larger development footprint area and requirement for an additional 3 ecosystem credits for the proposed works.</p> <p>ELA has subsequently update the BDAR and BAMC according to the correct development footprint.</p>
<p>Furthermore, section 1.1.2 states “The proposed redevelopment of Building R (shown in grey in Figure 1) within the eastern portion of Site 1, has been assessed under a separate development application and impacts of Building R are not included in this SSD assessment”.</p> <p>Contrary to this statement, the landscape plan SD-AX-L1002 Issue P2 (for SSD 9483) shows numerous elements to be constructed immediately adjoining the northern side of building R and existing building M. This includes a sensory garden and pathways of synthetic, rubber and bark materials, and areas of plantings, all of which will impact an area identified in the BDAR as “planted native vegetation” and attributed to PCT 1237.</p>	<p>ELA has provided a Flora and Fauna Assessment (FFA) report (dated 4 September 2019) for the proposed development application under Part 4 of the <i>Environmental Planning and Assessment Act 1979</i> (EP&A Act) for the demolition of the existing building and removal of 0.033 ha of planted native vegetation and indirect impacts of 0.097 ha of planted native vegetation. As the DA did not trigger entry into the Biodiversity Offset Scheme, a FFA is sufficient and a BDAR is not required for the DA.</p> <p>Under the BAM all vegetation native to NSW requires assessment under the BC Act and must be assigned to the ‘best-fit’ PCT. The removal of vegetation which the area</p>	<p>ELA has updated the construction footprint to include development of the sensory gardens or other items as required in the BDAR v5.</p>

EES Comments	ELA explanation	Actions
	<p>shown as part of the proposed redevelopment of Building R, is not part of the SSD application and as such the calculation of impacts was not conducted as part of the BDAR. Instead the vegetation was assessed as part of the FFA.</p> <p>ELA understands that the DA will occur prior to the SSD and as such there will be no planted native vegetation within the SSD area to be included in the BDAR. ELA can update the footprint to include the location of the sensory gardens etc, however, this will not impact upon the calculation of vegetation zones or credit requirements.</p>	

Identification of landscape features at the development site

Section 1.3.2 states that “The development site falls within the Pennant Hills Ridges and Port Jackson Basin Mitchell Landscapes The Pennant Hills Ridge Mitchell Landscape has been mapped over site 2 and a portion of site 1 (Figure 2). The majority of site 1 is represented by Port Jackson Basin Mitchell Landscapes. The Port Jackson landscape has been used in the BAM Calculator for both cases.” However, EES considers that the Pennant Hills Ridges is the more appropriate NSW Landscape that should be selected, considering:

- the documented limitations in spatial accuracy of mapped boundaries of NSW Landscapes (Eco Logical 2008; Mitchell 2009)
- comparison with the boundaries of the soil landscapes in the higher resolution mapping of the Sydney 1:100,000 map sheet (Chapman et al. 1989) and its description of the Glenorie (gn) soil landscape, which is the soil landscape acknowledged in section 1.4.2.1 of the BDAR that applies to the entire subject site and is used as one of the rationales for determining PCT 1237 to be present across both sites 1 and 2, and
- distribution of PCT 1237, as mapped in the Sydney Metropolitan vegetation mapping (v.3, OEH 2016) as vegetation community S_WSF01 Blue Gum High Forest, predominantly on the Glenorie soil landscape.

As such, EES recommends the BAM assessment(s) be amended accordingly as this may alter the number of biodiversity credits required to offset unavoided impacts.

ELA included Port Jackson Basin Mitchell Landscape as the most appropriate based on the larger extent of the site covered by this landscape as per the BAM operation manual Stage 1. Which states: “if the subject land is located within more than one BioNet NSW Landscape, the assessor should select the BioNet NSW landscape in which the largest proportion of impact will occur.”

ELA also understands that the Operational Manual also states that if an adjacent landscape more accurately reflects the landscape based on field observation then it should be chosen, and justifications provided in the BDAR.

The landscape is currently in a highly urbanised environment in Chatswood. A small patch of remnant vegetation is located in the southern and western portion of development site however, this portion of the site was not included in the area to be impacted. The remaining areas were subject to substantial alternation of the soil profile and planted native vegetation.

ELA has updated the assessment based on Pennant Hills Ridge Mitchell Landscape in both of the development cases.

EES Comments	ELA explanation	Actions
	<p>ELA understands EES' rational to amend the change to the Mitchell Landscape. ELA also understands that this will not impact on the credit calculations.</p> <p>It should also be noted that Site 2 contains planted native vegetation which was included into PCT 1237 as there are currently no alternative PCT for planted native vegetation.</p>	
<p>Native vegetation cover</p> <p>BDAR section 1.3.7.2 states “percent native vegetation cover in the landscape was assessed in a Geographic Information System (GIS) using aerial imagery sourced from SIX Maps using increments of 5% ... within the 1,500 m buffer area (916.6ha) [this] is 20% (176 ha).” Although not referred to as such, presumably this is the same as the ‘Native Vegetation Extent’ shown on Figure. 2, but no shape file was provided to verify this or show how the 176ha area figure was derived. This is not consistent with EES calculations of Sydney Metro native vegetation mapped within the 917ha 1500m buffer area:</p> <ul style="list-style-type: none"> - all native vegetation including ‘urban native/exotic’ = 341.5 ha (37%) - native vegetation not including ‘urban native/exotic’ = 124.4 ha (14%) - urban native/exotic = 217.18 ha - weeds and exotics = 7.50 ha. 		
	<p>ELA has confirmed with our GIS analyst regarding the native vegetation cover. ELA has utilised OEH 2016 vegetation dataset. The following calculations are based on the OEH 2016 data:</p> <ul style="list-style-type: none"> • Assessment area is 917 ha • All vegetation (including exotics and weeds) - 307 ha • Urban exotic/native (NOT native/exotic) – 202.45 ha • Native vegetation (with urban native /exotic) – 97.29 ha • Weeds and exotics – 7.27 ha <p>ELA generally does not consider urban exotic/native as part of native vegetation cover unless the aerial photography interpretation identifies that this could be native. ELA's GIS analysis has examined the vegetation at a scale of 1:5,000 and deemed some of the urban exotic/native to be native and has included this in native vegetation cover. ELA therefore identified that the native vegetation cover with native PCTs, Urban Native/Exotic plus some additional areas of Urban Exotic/Native vegetation which appear to be native = 176 ha.</p> <p>ELA will provide the spatial data once the BDAR has been finalised and uploaded into the BAMC.</p>	<p>ELA has finalised the BDAR and will upload all spatial files for EES review.</p>

EES Comments	ELA explanation	Actions
BDAR 1.3.5 Connectivity features – Table 3 recognises certain connectivity features, Ferndale Park, Swaines Creek riparian corridor, and Lane Cove National Park and states that they are shown on Figure 2, but they are not.	<p>The connectivity features are limited to highly mobile species. ELA did not show these features in case they might be misrepresented as intact landscape features within the assessment area. Section 1.3.5 states that the site contains limited connectivity features for some bird and bat species only.</p> <p>ELA can update Figure 2 to show connectivity features for highly mobile species and in the BAM calculator.</p>	ELA has updated landscape features in calculator and in Figure 2 of the BDAR.
There is no mention that part of the Blue Gum High Forest (BGHF) on the site is a Council Bushcare site.	<p>The reference to council bushcare sites does not appear to be a requirement under the BAM.</p> <p>The location of the bushcare site does not include vegetation within the development footprint.</p>	ELA has updated Section 1.1.1 of the BDAR noting two bushcare groups operating on site and displayed in Figure 1 of the BDARV5.
The feature that makes a difference (native vegetation cover) has been entered in accordance with the BAM, however the connectivity features identified in Table 3-5 have not been listed as landscape features in the BAM Calculator.	As per above section ELA can provide these in the BAMC but it should be noted the connectivity features are limited to highly mobile species only, as described in the BDAR.	ELA has updated landscape features in calculator and in Figure 2 of the BDAR.
Description of PCTs		
BDAR Section 1.4.2 identifies one PCT represented in the development site, being PCT 1237 Sydney Blue Gum - Blackbutt - Smooth-barked Apple moist shrubby open forest on shale ridges of the Hornsby Plateau, Sydney Basin Bioregion. The information provided in section 1.4.2.1 to justify the selection of PCT 1237 is accepted and considered sufficient.	No action required.	No action required
BDAR makes the statement that “[c]omponents of this PCT are listed as a threatened ecological community (TEC) under the BC and EPBC Act”. The TEC only later being identified as ‘Blue Gum High Forest’. This statement is not correct in relation to the determination of this TEC under the Biodiversity Conservation Act 2016 by the NSW Threatened Species Scientific Committee (TSSC), but only in relation to its determination under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). Under the BC Act determination there is no minimum patch size threshold or condition criteria for this community, and in fact, paragraph 9 of the determination explicitly states that “[h]ighly modified relics of the community also persist as small clumps of trees without a native understorey.”	ELA understands that Blue Gum High Forest (BGHF) TEC under the BC Act may occur as highly modified versions and may persist as a single remnant tree with or without native understorey. ELA also understands from previous correspondence with DIPE that revegetation of BGHF as part of restoration works may also be considered as part of BGHF under the BC Act.	ELA has provided additional justification in Section 1.4.2.1, Table 8 and Section 1.4.3.1 and photos (Photo 3 and 6) regarding why planted native vegetation did not satisfy listing under the BC Act and EPBC Act.

EES Comments	ELA explanation	Actions
	<p>Table 7 of the BDAR (version 4) clearly identifies that the vegetation within the development site contains Blue Gum High Forest listed under the BC Act and EPBC Act.</p> <p>However, ELA disputes that the planted native vegetation represented within Site 1 and 2 forms part of the BGHF under the BC Act. Previous vegetation mapping by OEH 2016 has mapped the vegetation within Site 1 and 2 as Urban Exotic/Natives and a patch of BGHF is located along the southern and western boundary of Site 1. ELA validated the vegetation and confirmed that the mapping by OEH 2016 was consistent with the vegetation within the development site.</p> <p>ELA also confirmed that vegetation previously mapped by OEH (2016) as Urban Exotic/Natives contains planted native vegetation and does not contain remnant or regrowth remnant BGHF. The planted vegetation is located within a highly modified state but does contain planted canopy representative species of the BGHF. The vegetation exists as neat rows of a mix of native canopy species and lacks native understorey species. The vegetation lacks evidence of regeneration of native species. See photos Photo 1 and Photo 2 of typical planted native vegetation mapped as part of PCT 1237_planted.</p>	
<p>VZs 1 and 2 were considered to satisfy “the criteria for listing under the BC Act and EPBC Act”, on the grounds that they satisfy the minimum patch size and canopy cover criteria of the Commonwealth EPBC Act determination. “DotEE 2018” is cited, but not referenced. Presumably this is meant to refer to the determination of the National TSSC determination under the EPBC Act. As discussed above, this is not relevant to the TEC under the BC Act.</p>	<p>Section 1.4.2.2 ELA states that the PCT 1237 corresponds with BGHF under the BC Act and quality patches may also satisfy listing under the EPBC Act if they meet the requirements of the EPBC Act criteria for listing. ELA has listed VZ 1 and 2 as part of BGHF under the BC Act. ELA can provide additional information regarding the listing under BC Act if required.</p>	<p>ELA has provided additional information as to why the VZ1 and 2 satisfy listing under the BC Act in Section 1.4.3.1.</p>

EES Comments	ELA explanation	Actions
<p>VZ 3 PCT 1237_Planted native was described as “Scattered patches of planted native vegetation within the higher elevations of Site 1 and 2 on the same soil landscape were also mapped as part of this PCT 1237, however, they were not considered part of the TEC” and “does not satisfy the listing criteria under the BC and EPBC Act” on the basis that, “The vegetation exists as a mix of planted eucalypt and exotic canopy species, the soil profile was disturbed, regeneration of native species was not observed, and it was considered that limited opportunity for pollination and exchange of genetic material was available. Therefore, it is not considered that this vegetation zone forms part of the Blue Gum High Forest TEC listings under the BC or EPBC Acts.”</p> <p>The data from the vegetation plot 1 sampling VZ 3 provided in Appendix B does not adequately support this, since the actual species that occurred in plot 1 or the VZ, have not been identified, however the number of native plants species identified in the plot 1 is only one less than in plot 2 for VZ 2 which was considered to the TEC and a vegetation integrity (VI) score of 25 was determined. There is also no discussion on the purpose of the plantings. EES understands bush regeneration, guided by Willoughby Council, has been carried out on the grounds for several years and it should be clarified if VZ 3 is part of the area regenerated.</p>	<p>As per the above, in Section 1.4.2.2 ELA then goes to state that the VZ 3 (planted vegetation) does not satisfy listing under the BC Act or the EPBC Act as the vegetation contains planted native species (such as <i>Lophostemon confertus</i> (Brush Box), <i>Eucalyptus microcorys</i> (Tallowwood) and <i>E. saligna</i> (Sydney Blue Gum)) in a disturbed soil profile (more details are provided in Section 1.4.2.2). Please refer to Photos 1 and 2 provided below for example of the vegetation within VZ 3. Photos are provided in the BDAR in Appendix B which shows a sample of each vegetation zone.</p> <p>ELA acknowledges that the vegetation within the VZ 3 contains a high composition of native species within the ground layer in the location of the plot. There is potential that this plot over represents the composition of native species within this VZ 3 as it has included a small portion of native landscaping garden. The selected location of the plot was limited to large patches of VZ 3. Smaller patches of VZ 3 contained concrete surfaces or did not contain sufficient size patch for a vegetation integrity plot.</p> <p>ELA wants to clarify that Willoughby Council conduct bush regeneration in area of mapped BGHF bushland with the southern boundary of the development site. This does not include playground of Site 1 and Site 2 which includes mapped VZ 3.</p>	<p>ELA has updated Figure 1 the site map to show the location of the bushcare works in the BDAR.</p> <p>ELA has provided additional information justifying the non-TEC vegetation in VZ3 as per the previous comments.</p>
<p>Mapped location of plot 2 (for VZ 2) appears to include land not within subject site.</p>	<p>The mapped location Plot 2 is displayed in Figure 4 of the BDAR. ELA can confirm that the entire vegetation integrity plot was conducted within the subject site during field surveys. The plot location within the Figure 4 does appear to include a slight overlap with the adjacent land to the west. This appear to be a very minor GIS error and will be updated on the amended BDAR.</p>	<p>ELA has adjusted the location of Plot 2 on Figure 4 to include wholly within the subject site.</p>

EES Comments	ELA explanation	Actions
Contrary to BAM Appendix 10 minimum requirements, neither plot field data sheets nor Excel spreadsheet of data were supplied, and location co-ordinates of plots was not supplied. While in section 1.4.1 it is stated that “All field data collected at full-floristic and vegetation integrity plots is included in Appendix B”, the only floristics data provided (as part of Table 34, Appendix B) was species occurrence within the whole subject site – occurrence of species by plot, cover or abundance were not provided	ELA will submit the field data sheets into the BAMC. EES is incorrect, the location of the vegetation integrity plots and bearing is provided in Table 34 of the BDAR. ELA will update the floristic species list in Appendix B.	ELA has provided the field data in Appendix B of the BDAR v5 and submitted into the BAMC.
Vegetation Integrity Assessment		
Three vegetation zones (VZs) are identified and defined (Table 4). VZ 1 was not sampled at all by a plot for floristics and vegetation integrity data, with the reasoning that, “Although this vegetation zone was recorded within the subject site (site 1), the proposed development footprint will not impact upon this vegetation zone (i.e. this vegetation zone was not located within the development footprint)”. The other two VZs were sampled by plots outside the ‘development site’ boundary, since the areas of impact within the development site are small. Photo 3 (in Appendix B) incorrectly attributed to VZ 2, when it appears to be of VZ 3. The 53 metres of fallen logs greater than 10cm in diameter recorded for plot 2 (VZ 2) seems extraordinarily high, especially for a patch of vegetation immediately adjacent to school buildings. EES recommends that this is clarified. Patch size – Section 1.3.7.3 states “Patch size was calculated using available vegetation mapping for all patches of <i>intact native vegetation</i> [my emphasis] on and adjoining the development site ... [as] 101 hectares.” However, as was the case with native vegetation cover (NVC), there is no explanation, map or spatial data to support how this was derived.	ELA will amend the minor mistake of labelling Vegetation zone photos. ELA can confirm that there were several fallen trees and piles of logs within plot 2. 53 m is correct. ELA understands that disconnected patches of vegetation of the same zones may have different patch sizes. It was determined that Site 2 was connected to Site 1 via street trees. Therefore, they are considered to be part of the same patch. The vegetation in Site 1 connects with Lane Cove National Park and as such the patch size is > 100 ha.	ELA has amended the label for Photo 6 to VZ 3. ELA has provided additional justification regarding the patch size in Section 1.3.7.3 of BDAR v5.
Ecosystem credits species and species credit species		
Information was provided in Table 10, but most predicted species were excluded from further assessment with only superficial explanation, and no reference to database records.	ELA has conducted a habitat assessment and utilised BioNet records (as stated in our literature review) to identify potential candidate species in Table 10. ELA has provided a justification of the likelihood of predicted species to occur within the development site	ELA has included reference of the number of BioNet records for species in Table 11 and 12 of BDAR V5 as requested by EES.

EES Comments	ELA explanation	Actions
	based on habitat assessment, presence of habitat features and BioNet records. The BDAR does not require the number of BioNet database records, although, this may be used if relevant for predicting or excluding a species from assessment. ELA will provide the number of BioNet records for ecosystem and species credit species.	
Syzygium paniculatum		
<p>The BDAR states that “<i>Syzygium paniculatum</i> (Magenta Lilly Pilly) was recorded from BioNet database record and validated within the Site 1” and it is presumed that this means it was observed on the site. However, the location(s) is not identified/mapped and no plot field data for any of the vegetation plots were provided. As such, it is difficult to agree with the assertion that it “will not be impacted by the proposed development”. Furthermore, the BDAR states “these species have been clearly planted due to the landscaped setting” and “<i>Syzygium paniculatum</i> is located outside of its natural habitat”, being that “the species natural distribution is in littoral coastal rainforest areas along NSW from Upper Lansdowne to Conjola State Forest.” However, the Bionet TBDC lists PCT 1237 as being associated with this threatened species.</p> <p>As such, EES recommends that more information is provided to clearly show how this species will not be impacted by the proposed development, and that, as per Table 25 of the BAM, all plot field data and plot field data sheets (for all vegetation zones) are supplied with the BDAR.</p>	<p>ELA acknowledges that PCT 1237 lists <i>Syzygium paniculatum</i> as an associated threatened species. ELA also notes this species is a popular horticultural variety which is readily available at local garden nursery stores and does not represent a threatened species due to its horticultural variation. ELA can provide additional information in the BDAR regarding this species.</p>	<p>ELA has reviewed the arborist report and the updated landscaped plans and identified that one species previously listed as <i>Eucalyptus saligna</i> by previous arborist reports was actually <i>S. paniculatum</i>. This has been documented and amended in ELA 2020 Arboricultural Impact Assessment report.</p> <p>As such, there are two specimens (tree 94 and 161) located within the development site. The mis-labelled specimen has been identified for removal.</p> <p>ELA has included a Species Polygon map (Figure 7) and calculated that two species credits are required to offset the removal of tree 94.</p>
Chalinolobus dwyeri		
<p>In the BDAR, the rationale for excluding this species is “Habitat features associated with this species are not present on the development site. There is no suitable breeding habitat such as caves, overhangs, mines or culverts present for the species to utilise the site.” However, the habitat constraint in the TBDC for this species is “within two kilometres of rocky areas containing caves,</p>	<p>ELA acknowledges that Lane Cove River is located within 2 km of the development site. However, ELA does not believe that this species is likely to utilise the development site for foraging habitat. No breeding or roosting habitat is present in the development site. ELA</p>	<p>ELA has excluded this species as a potential candidate species credit species and does not believe it requires further justification.</p>

EES Comments	ELA explanation	Actions
<p>overhangs, escarpments, outcrops, or crevices, or within two kilometres of old mines or tunnels.”</p> <p>As such, EES recommends reviewing the exclusion of this species because it is likely that such habitat does occur within 2km of the site since, within a short distance to the west, the land falls into tributaries of the Lane Cove River.</p>	<p>has conducted a literature review and identified there are records for this species within a 5 km radius of the development site. Additionally, a review of the topography around the Lane Cove River and surrounding 2 km radius of the development site (Figure 1), did not identify rocky area containing caves, overhangs or crevices. ELA has provided a snippet of a topographic map which shows that the land does not fall away into a tributary of the Lane Cove River but instead it gently slopes. The topographic map does not indicate suitable caves, overhangs or old mines and tunnels suitable for this species. There is evidence of suitable no breeding habitat for this species within 2 km of the development site. Therefore, ELA has excluded this species based on the habitat assessment and literature and database review and does not believe this species is a candidate species.</p>	

Table of habitat or habitat components and their sensitivity class

Tables 10 and 11 provide Sensitivity to gain class, but not biodiversity risk weighting	<p>The biodiversity risk weighting is applied by the BAMC.</p> <p>The biodiversity risk weighting is required for species within the development site as described in Section 6.6.</p> <p>This is used in the species credit calculations – see Section 6.6.1.4 of the BAM. A list of requirements for the BDAR is provide in Appendix 10. It states that the where species credit species occur in the development site the biodiversity risk weighting for the species is required.</p> <p>ELA has not included species credits calculations.</p>	No action required.
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Hollow Bearing Trees (HBT)s

Tables 12 and 13 in Section 2.1.1 outline the ways in which impacts to biodiversity values have been avoided and minimised and includes reference to the retention of 13 HBTs, with one HBT to	HBT have been displayed in Figure 3 and Figure 4 of the BDAR.	ELA has provided a new figure (Figure 6) which includes survey effort and include HBTs. ELA has provided a summary of survey
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EES Comments	ELA explanation	Actions
be impacted. However, no data or information has been provided on HBTs in earlier sections of the BDAR and EES recommends this is addressed including a map of where they occur.		effort in Section 1.5.4 of the BDAR V5.
Demonstration of effort to avoid and minimise impacts		
It has not been explained why proposed building T cannot be oriented so that it completely avoids impacting the Blue Gum High Forest. For example, is the same orientation as the existing buildings possible (see civil engineering drawing CI-070-002 Rev. F)? EES recommends clarification on this matter.	<p>The client has demonstrated effort to avoid and minimise impacts. The proposed development will impact upon 0.032 ha of low quality weedy BGHF. The development will retain the remaining 0.75 ha of weedy BGHF and retain all of the 0.58 ha of BGHF good condition. ELA believes that the client has demonstrated effort to avoid and minimise impacts.</p> <p>The client will provide revegetation works in weedy BGHF.</p> <p>ELA will consult with the client to determine whether this is an option.</p>	ELA will consult with the client to determine if impacts can be avoided through a redesign.
Assessment of indirect impacts		
<p>No consideration has been given to:</p> <ul style="list-style-type: none"> overshadowing, even though proposed building S is 4-5 storeys high and immediately adjacent to native vegetation classified as a CEEC BGHF and an increase in human use, traffic, lighting, etc. in the operational phase, as a result of increased student numbers in the enlarged educational facilities, affecting vertebrate and invertebrate fauna that are part of the BGHF CEEC. <p>EES recommends this is addressed.</p>	ELA can add overshadowing and lighting indirect impacts to Table 20 indirect impacts and additional mitigation measures. However, ELA believes these indirect impacts are marginal.	ELA has updated Table 21 and Table 23 in the BDAR V5.
Assessment of impacts on prescribed biodiversity values		
Section 2.2.4/Table 21 identifies permanent impacts “potential roosting habitat for a number of threatened microbat species ... known to occasionally roost in buildings” as a result of demolition of buildings. Species nominated are: <i>Saccolaimus flaviventris</i> (Yellow-bellied Sheath-tail Bat) and <i>Falsistrellus tasmaniensis</i> (Eastern False Pipistrelle), <i>Miniopterus australis</i> (Little Bentwing-bat) and <i>Miniopterus orianae oceanensis</i> (Large Bent Winged Bat). But also states that “The habitat within the subject site is unlikely to be important for any of these microbat species.” Confusingly, the buildings are variously referred to as “existing educational	<p>ELA will remove any reference to residential dwelling in Table 21 the BDAR.</p> <p>ELA did not detect potential gaps in the roof cavity suitable for microbat use.</p>	<p>ELA will update Table 22.</p> <p>ELA suggests that the client consults with DPIE regarding the pre-demolition searches.</p>

EES Comments	ELA explanation	Actions
<p>buildings”, “the residential dwelling” and “several multistorey education facilities” in different paragraphs. This needs clarification. It is stated that the removal/demolition is to be approved under a separate development approval pathway and that no habitat assessment of buildings have been done apart from brief mention in section 1.5.2 of inspection from ground using binoculars of building roof cavities for possible entrance for microbats, but there is no further information on location or effort.</p> <p>EES recommends that approval conditions require pre-demolition physical microbat searches in conjunction with and ultrasonic call detection surveys.</p>		
Measures to mitigate impacts		
<p>Measures proposed to mitigate and manage impacts at the development site before, during and after construction outlined in section 2.2.5 / Table 22 and should be translated into conditions of approval, following clarification of matters raised elsewhere in review.</p> <p>Recommend inclusion of clearing protocols for demolition of existing buildings, including: the presence of a trained ecological or licensed wildlife handler during clearing events; pre-clearing inspections and survey by qualified persons for microbats including identification of any potential habitat; and staged clearing.</p>	<p>Section 2.2.5 Table 22 states that a qualified ecologist/ licensed wildlife handler conducts a pre-clearance survey and is present during tree removal.</p> <p>ELA conducted a field survey and did not record potential cavities within the buildings to indicate the presence of microbats. The buildings are relatively new and multistorey buildings with flat corrugated rooves which do not provide suitable roof cavities for microbats.</p> <p>However, as targeted surveys were not conducted, ELA can conduct a pre-demolition survey prior to building removal.</p>	<p>ELA suggests the client consults with DPIE regarding microbats in roof cavities.</p> <p>Alternatively, an ecologist should conduct a pre-clearance survey prior to demolition of buildings.</p>
Serious and Irreversible Impacts		
<p>Clearing of 0.006 ha of Blue Gum High Forest CEEC is assessed as candidate SAIL entity in section 2.2.6 / Table 23; mapped in Figure. 7. However, the BDAR answers ‘no’ to the following question: Principle 2: Does the proposal impact on a species that is a candidate entity because it has been identified as having a very small population size? This question does not just relate to species and EES questions why the response was not ‘yes’.</p> <p>In response to question 4c (under Principle 4) BDAR states that “The development proposal has potential to assist in the spread of invasive species into the patch of BGHF that will be retained within the development site. These potential impacts will be controlled during the construction phase and long-term maintenance of the development site. These works will retain better quality BGHF within the development site.”</p>	<p>ELA acknowledges that the response to Principle 2 applies to TECs listed as critically endangered under the BC Act in accordance with the Guidelines to assist a decision-maker to determine a serious and irreversible impact published in September 2019. ELA prepared the original BDAR prior to the release of this resource and has since amended the more recent BDAR version 4 in 2020. ELA can amend the response in Table 24.</p> <p>In response to question 4c, ELA understands the BGHF within the development site (including the weedy VZ 2) will be subject to ongoing weed control prior to the</p>	<p>ELA to amend Principle 2 in Table 24 of the BDAR.</p> <p>ELA will provide more detail on weed control within the BDAR.</p>

EES Comments	ELA explanation	Actions
EES seeks clarification as to how these impacts “will be controlled”, and how “these works will retain better quality BGHF within the development site.”	completion of the redevelopment. VZ 2 is currently in poor condition with very high weed infestation and will benefit from weed control.	
Impact Summary		
Current VI score and change in VI score for VZ 3, stated to be 23 is incorrect, should be 25.	ELA will confirm and amend Table 9 with the correct VI score.	ELA to amend VI score in Table 9.
Biodiversity Credit Report		
<p>The following have not been provided:</p> <ul style="list-style-type: none"> • table of credit class and matching credit profile • credit classes for ecosystem credits and species credits at the development site. <p>EES recommends that these be provided</p>	ELA will provide the credits and trading group for each PCT and vegetation zone in the updated BDAR.	ELA has provided an updated credit profile in BDAR including Trading group in Table 34 and 35.



Photo 1: Example of PCT 1237_planted vegetation in Site 2 which does not satisfy listing as part of BGHF under the BC Act



Photo 2: Example of PCT 1237_planted in Site 1 which shows planted canopy and lacks ground layer

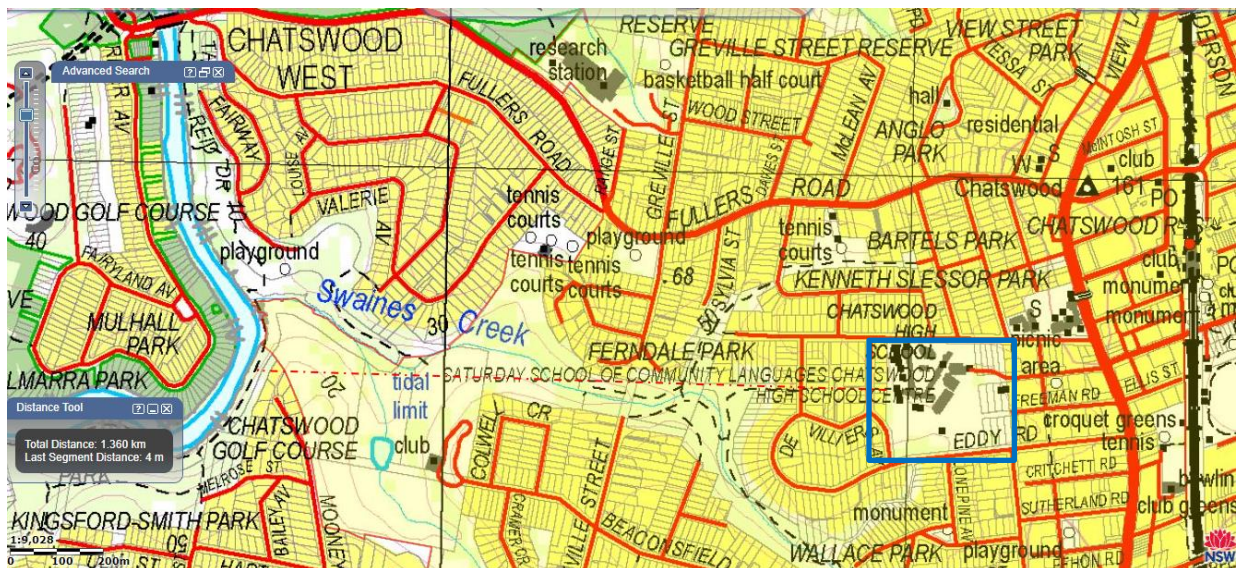


Figure 1: Snippet of Six Maps topographic map baselayer showing development site in blue square