

# LANDSCAPE ARCHITECTURE DESIGN REPORT - ADDENDUM 01

Centre of Excellence in Agricultural Education

Richmond, NSW

APPLICATION NO. SSD-1500146

## *Document Control*

Version	V-2.0
Author	Jon Kane
Last Revised	09/11/2021
Status	Final Draft for Approval
Approved By	JK
Location	NBRS Architecture\NBRS - PROJECTS\20\20417 HCOE\05_DOC\02_Reports\23_Schematic Design Report\Architectural Design Report - Addendum 1

Table of Contents

1	Executive Summary.....	3
2	Agency Recommendations and Responses.....	4
3	Landscape design changes .....	8

## 1 Executive Summary

This Landscape Design Report – Addendum 01 has been prepared in responding to agency recommendation to the SSDA and to highlight several design changes requiring endorsement from the various planning agencies & stakeholders.

This addendum must be read in conjunction to the Landscape Design Report dated May 2021 and the submissions received during the public exhibition, as follows:

- GANSW – 16.09.21
- Hawkesbury City Council – 27.09.21
- Public Authority – 16.09.21
- Public response
- Department Planning Industry & Environment – 21.09.21
- EPA – 27.09.21
- Planning Industry & Environment – 13.09.21
- Penrith City Council – 13.09.21
- NSW RFS – 14.09.21
- Sydney Water – 14.09.21
- DPIE – Biodiversity and Conservation – 15.09.21
- DPIE – Land Use Planner – 13.09.21
- Endeavour Energy – 14.09.21

## 2 Agency Recommendations and Responses

The following table sets out the relevant Agency Recommendations and the Project response

AGENCY	ISSUE	AGENCY RECOMMENDATIONS	REPONSES
GANSW	Masterplan & Landscape	<p>5. The addition of trees to partially define the western boundary and the southern edge of Block F is positive; although in general it does not appear that tree canopy has been maximised to define edges, and for shade and amenity:</p> <p>a. The Landscape drawings have not identified proposed tree species or sizes, and the proposed canopies appear small. It is recommended that this detail be provided.</p> <p>b. There are also zones that appear capable of supporting additional canopy, such as: the courtyard between blocks C and D, the carpark edges, the area south of Block F, the Entry, the 'Kick about lawn'. It is recommended that tree canopy be maximised throughout the site.</p>	<p>5. The current RFS Asset Protection Zones restriction specify plant species to be avoided/included and constricts the amount of tree canopy to 15% within the Inner Protection Area (IPA) i.e. 50m from the buildings. The current design is meeting these requirements.</p> <p>a. Planting zones, quantities and pot sizes have been developed. The species are under development, the intent is to provide species from the endemic plant communities and specific species relevant to indigenous stakeholders. The traditional fruit tree to the orchard space will be selected and installed by the school. Our scope is to provide the locations &amp; infrastructure to accommodate the trees.</p> <p>b. The areas nominated all occur within the IPA and are limited to 15% canopy coverage.</p>
		<p>6. It does not appear that permeable surfaces have been maximised, as a large proportion of the proposed surfaces appear to be impermeable. The Landscape Drawings do not identify a surface for the carpark. It is recommended that permeable surfaces be maximised throughout the site.</p>	<p>6. Permeable surface have been maximised across the site where possible. Landscape drawings show the extent of permeable surfaces.</p>
AGENCY	ISSUE	AGENCY RECOMMENDATIONS	REPONSES
RFS	Asset Protection Zones	<p>1. From the start of building works, the property around the proposed Building Blocks A, B, C, D, E and F must be managed as an inner protection area (IPA) for 50 metres in accordance with the requirements of Appendix 4 of Planning for Bush Fire Protection 2019. When establishing and maintaining an IPA the following requirements apply:</p> <ul style="list-style-type: none"> <li>• tree canopy cover should be less than 15% at maturity;</li> <li>• trees at maturity should not touch or overhang the building;</li> <li>• lower limbs should be removed up to a height of 2 metres above the ground;</li> <li>• tree canopies should be separated by 2 to 5 metres;</li> <li>• preference should be given to smooth barked and evergreen trees;</li> </ul>	<ul style="list-style-type: none"> <li>• Current design satisfies the 15% canopy coverage within the IPA and to a maximum of 30% outside the IPA.</li> <li>• Trees have been offset from buildings</li> <li>• Under pruning of all trees recommended and covered in the landscape specification.</li> <li>• Clusters/groups of trees with spaces between groups have been adopted</li> <li>• Where possible this will be undertaken</li> <li>• Clusters/groups of planting types with spaces between groups have been adopted</li> <li>• Where possible shrubs will be avoided under trees</li> </ul>

Controlled Document

		<ul style="list-style-type: none"> <li>• large discontinuities or gaps in vegetation should be provided to slow down or break the progress of fire towards buildings;</li> <li>• shrubs should not be located under trees;</li> <li>• shrubs should not form more than 10% ground cover;</li> <li>• clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation.</li> <li>• grass should be kept mown (as a guide grass should be kept to no more than 100mm in height); and</li> <li>• leaves and vegetation debris should be removed.</li> </ul>	<ul style="list-style-type: none"> <li>• Shrub coverage will be limited to 10% ground cover</li> <li>• Clusters/groups of shrubs with spaces between groups have been adopted</li> <li>• Native grasses have been selected across the design and will include a regular maintenance regime</li> <li>• All planted areas will receive regular maintenance.</li> </ul>
AGENCY	ISSUE	AGENCY RECOMMENDATIONS	REPONSES
	Landscaping	<p>8.Landscaping within the required asset protection zone must comply with Appendix 4 of Planning for Bush Fire Protection 2019. In this regard, the following principles are to be incorporated:</p> <ul style="list-style-type: none"> <li>A. A minimum 1 metre wide area, suitable for pedestrian traffic, must be provided around the immediate curtilage of the building;</li> <li>B. Planting is limited in the immediate vicinity of the building;</li> <li>C. Planting does not provide a continuous canopy to the building (i.e. trees or shrubs are isolated or located in small clusters);</li> <li>D. Landscape species are chosen to ensure tree canopy cover is less than 15% (IPA), and less than 30% (OPA) at maturity and trees do no touch or overhang buildings;</li> <li>E. Avoid species with rough fibrous bark, or which retain/shed bark in long strips or retain dead material in their canopies;</li> <li>F. Use smooth bark species of trees species which generally do not carry a fire up the bark into the crown;</li> <li>G. Avoid planting of deciduous species that may increase fuel at surface/ ground level (i.e. leaf litter);</li> <li>H. Avoid climbing species to walls and pergolas;</li> <li>I. Locate combustible materials such as woodchips/mulch, flammable fuel stores away from the building;</li> <li>J. Locate combustible structures such as garden sheds, pergolas and materials such as timber garden furniture away from the building; and</li> <li>K. Low flammability vegetation species are used.</li> </ul>	<ul style="list-style-type: none"> <li>A. Design to comply</li> <li>B. Design to comply</li> <li>C. Design to comply</li> <li>D. Design to comply</li> <li>E. Where possible design to comply in conjunction with regular maintenance regime</li> <li>F. Where possible design to comply. Regular maintenance regime to control</li> <li>G. The school is an agricultural school and as such has several productive areas which include deciduous species in an orchard environment. Outside of the area above deciduous species have been limited in use.</li> <li>H. The school is an agricultural school and as such has several productive areas which include deciduous species in a vineyard environment. Outside of the area above deciduous species have been limited in use.</li> <li>I. Bulk storage spaces have been in designated areas away from buildings</li> <li>J. Design complies</li> <li>K. Where possible design complies</li> </ul>

AGENCY	ISSUE	AGENCY RECOMMENDATIONS	REPONSES
EES	Identification of vegetation communities	Table 1 of the BDAR states there is no PCT 849 on site because this PCT occurs on shale, and the subject land is located on alluvial soils. However, there is a patch of PCT 849 within 170m of the site and both the site and the PCT 849 patch are on the same soil type (Berkshire Park). While EES acknowledges the vegetation on site is very degraded, which makes choosing the appropriate PCT difficult, further justification is needed in this case to demonstrate why vegetation on site does not accord with PCT 849.	Existing site plant communities will be incorporated into the proposed plant list.
	Seed collection from native plants to be removed	EES recommends that prior to the removal of any native vegetation: <ul style="list-style-type: none"> <li>• seed from the native plants including trees, shrubs, and groundcover species approved for removal are collected and propagated and used in the SSD plantings</li> <li>• a new mitigation measure is included for a native vegetation seed collection program to be developed.</li> </ul>	Seed collection will be dependent on the season / seed availability. Existing species to be recorded and included in the design (subject to availability).
	Translocation of juvenile plants	EES recommends that any juvenile native plants to be removed by the SSD should be replanted in the landscaped planting areas. The juvenile plants must be translocated prior to any earthworks and clearing of native vegetation commencing. The plants should be relocated when plant growth conditions are ideal to give the native plants the best possible opportunity to survive and should be maintained until established.	In general, there is limited success with transplanting native species. With success being dependant on the time of year and weather conditions and having suitable locations to store plants for re-use. Seed collection (as above) or replacement of species is preferred. The team intends to transplant 4 existing Crepe myrtles along Vines Drive.
	Tree replacement ratio	EES recommends any trees removed are replaced at a ratio greater than 1:1 (for trees not covered by a biodiversity offset strategy) and considers that a tree replacement ratio of 2:1 is preferable to 1:1 to mitigate the urban heat island effect and enhance habitat particularly as a number of threatened species have been assumed present within the subject land.	Total number of tree coverage will be determined by RFS requirements. Where possible a 2:1 ratio will be implemented.
	Use of local native provenance species	EES supports the inclusion of the mitigation measure in the EIS and the BDAR for landscaping works across the site to use where possible native vegetation representative of the River-flat Eucalypt Forest Endangered Ecological Community for site landscaping to provide increased habitat features across the site (section 7.12.4, page 89 of EIS). The EIS also states that the planting design for the site combines deciduous and native species (section 7.3.3, page 60).	The landscape design will use plant species from the nominate plant communities.

*Controlled Document*

		EES recommends the landscape planting uses a diversity of local provenance native species from the relevant native vegetation community (or communities) that occur, or once occurred on the site (rather than use exotic species or non-local native species)	The landscape design will use plant species from a diverse range of local and endemic plant communities.
		The EIS indicates the proposed trees will include species of the Cumberland Plain Woodland characterised by the following: <i>Eucalyptus tereticornis</i> and <i>Eucalyptus moluccana</i> . (section 6.3.15, page 51). Section 7.3.3 of the EIS notes 14 new <i>Eucalyptus tereticornis</i> trees are to be planted along the eastern boundary of the site entrance and <i>Eucalyptus</i> saplings will be planted heavily in the western corner of the site and the far south eastern corner outside of the accommodation area (page 60) but these native planting areas are not identified on Figure 10. It is recommended the proposed landscaping plan is amended and where possible the area of native plantings is increased.	The landscape design will use plant species from the nominate plant communities.
		<p>EES recommends the following conditions of consent are included:</p> <ul style="list-style-type: none"> <li>Any planting/ landscaping, rehabilitation associated with the project shall use a diversity of local provenance native trees, shrubs and groundcover species (rather than exotic species or non-local native species) from the relevant native vegetation community (or communities) that occur or once occurred along the rail alignment / local area where agricultural plantings are not required.</li> <li>Tree planting shall use advanced and established local native trees with a minimum plant container pot size of 100 litres, or greater for local native tree species which are commercially available. Other local native tree species which are not commercially available may be sourced as juvenile sized trees or pre-grown from provenance seed.</li> <li>Enough area/space is provided to allow the trees to grow to maturity.</li> <li>A Landscape Plan is to be prepared and implemented by an appropriately qualified bush regenerator and include details on: <ul style="list-style-type: none"> <li>a. seed collection – the location of all native seed sources should be identified</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- Landscape design to adopt recommendations</li> <li>- 100ltr pot size will be used for tree planting in high priority areas. A mix of smaller pot sizes will be used in lower priority areas (subject to availability).</li> <li>-Landscape design to adopt recommendations</li> <li>- Landscape plans &amp; specification will cover each item. Species selections will include species from the identified plant communities and will be used where possible</li> </ul>

		b. the type, species, size, quantity, and location of replacement trees c. the species, quantity and location of shrubs and groundcover plantings d. the plan demonstrates replacement trees plantings will deliver a net increase in trees for trees that are not covered by a biodiversity offset strategy e. the native vegetation community (or communities) that once occurred in this area are to be planted and the plan demonstrates that the plant species consist of local provenance f. a list of local provenance species to be used g. the quantity and location of plantings h. the pot size of the trees to be planted i. the area/space required to allow the planted trees to grow to maturity j. plant maintenance regime. The planted vegetation must be regularly maintained and watered for 12 months following planting. Should any plant loss occur during the maintenance period the plants should be replaced by the same plant species.	
--	--	---	--

In conclusion, the landscape design endeavours to maintain the integrity of the design whilst meeting the specific requirement of an agricultural focused school. The items raised in the above comments have been adopted and implemented where suitable where it aligns with the landscape design intent and meets the projects objective as a centre of excellence in Agricultural Education.

### 3 Landscape design changes

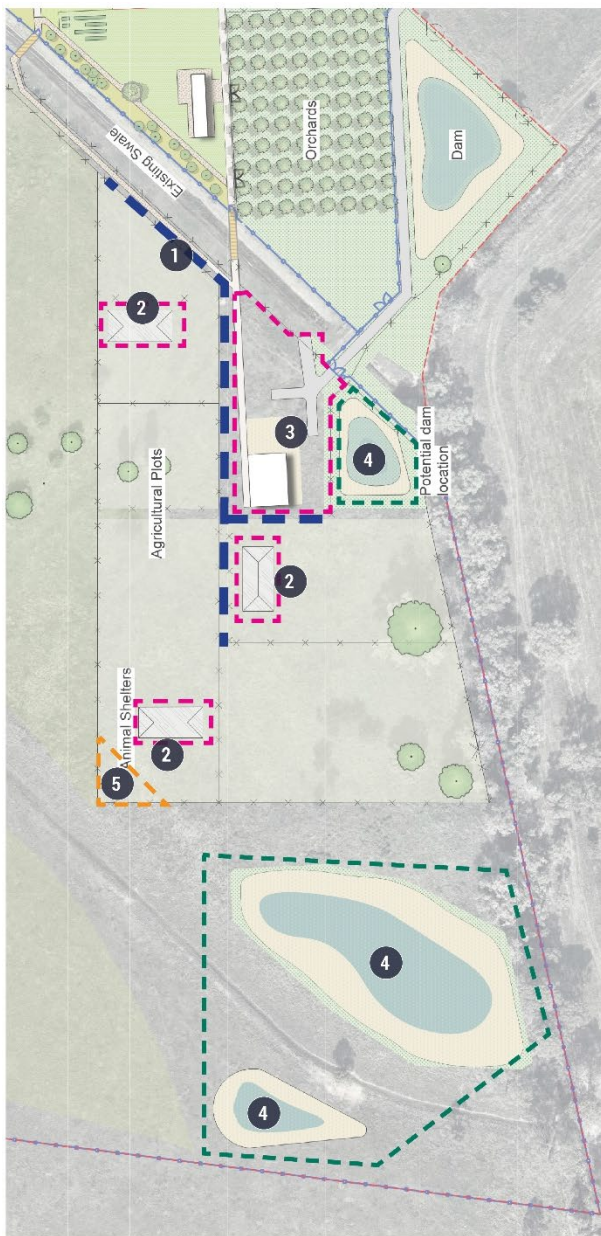
The project has progressed in Detailed Design since the SSDA was submitted. The overall design philosophy, general planning & aesthetic have been maintained throughout the design stages.

Understandably at this point of the projects, further design has been developed with more details and early input on constructability from the contractor, Richard Crookes Construction. Recent design development & ongoing consultation result in the following minor design changes.

#### Agricultural yards.

The areas highlighted on the following plans illustrate the extent of change to the agricultural area (refer to page 9 for listed items, to be read in conjunction with the plans). These changes have been the result of several stakeholder meetings to rationalise and make efficiencies in the agricultural layout.





*Agriculture Yard Plan Superseded (NTS)*



*Agriculture Yard Plan Current (NTS)*

1. Laneway access included to serve agricultural plot layout and livestock movement.
2. Livestock Shelter size rationalised and locations revised.
3. Stock yard
  - Hard paved surface increased to allow for delivery and loading of material, vehicle turnaround and Fire truck access.
  - Rationalised block location to suit access requirement.
  - livestock ramp included.
  - Bulk storage bays included.
4. Consolidated locations of Dams and increased in size.
  - (North of Swale) for Stormwater/Bioretention.
  - (South of Swale) Service the irrigation of site.
5. Revised extent of agricultural plots