

BOWRAL BRICKS – PROPOSED NEW BRICK FACTORY
416 & 524 Berrima Road, Moss Vale NSW 2577

LANDSCAPE DESIGN REPORT

Report Ref: **190722_SSD_RPT_LAN_LDR01**

Prepared for:



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Document Status

Issue	Issue	Signature	Date
A	FOR SSD SUBMISSION	BG	22.04.20

1.0 - The Project

This Landscape Design Report (LDR) relates to the proposed Bowral Brickmaking Facility at 416 & 524 Berrima Road, New Berrima, NSW. The brickmaking plant comprises of a main production building, stacks, main office, car parking, storage hardstand, road access and associated earthworks and landscaping.

The site has an area of approximately 51.68 hectares and is located within the Wingecarribee Shire Council Local Government Area. It contains pasture, scattered mature trees, a storage dam, tributaries of Stony Creek, an internal access road and minor agricultural structures supporting the current use of cattle farming. It is bound by agricultural lands and Carribee Road to the east, Berrima Road and rural land users to the west, the Blue Circle rail line and other agricultural uses to the south and a private road to the north owned by Austral Bricks.

The existing vegetation on the site has remnants of the Southern Highlands Shale Woodland (SHSW) with scattered groupings of trees. The site has a gradual rise in elevation from east to west and the watercourse 'Stony Creek' runs through the site which is classified as Riparian Land.

Retained existing vegetation, proposed riparian planting, site topography and additional scattered tree planting will help to screen or filter potential visual impacts generated by the development and integrate the site into the surrounding landscape character. Areas within the site have been identified by the Bushfire Consultant as being within an APZ, the design and management of planting within these areas will adhere to 'Planning for Bushfire Protection' guidelines by the NSW RFS.

This design report has been prepared as part of an SSD submission to the Department of Planning and is to be read alongside Geoscapes drawings LDA-00 to LDA-09 and Geoscapes Landscape and Visual Impact Assessment LVIA-01. It addresses the following requirement from the Minister's SEARs:

Visual

- landscaping to minimise visual impacts and/or offset any clearing. All species used for landscaping shall be listed within the 'Southern Highlands Shale Woodland' endangered ecological community.

2.0 - Overall Design Approach

2.1 Available Landscaping Areas

A total area of 82214m² (47.14% of site area) is available for landscape planting. The design proposes to retain existing pasture land not disturbed by the development and introduce new tree planting within them. Areas disturbed or created by earthworks will be fully revegetated with a native grassland mix.



2.2 Landscape Design Objectives

Landscaping aims to achieve the following outcomes:

- Preservation and retention of existing trees where possible.
- Screening and softening of the development from visual receivers with a mix of tall tree and shrub planting. Within the Riparian corridor, trees are to be planted at distance of 5.5m centres.
- Strengthen local character with the use of endemic and native species. These are to be selected predominantly from the Wingecarribee Shire Council species lists and recommendations from Cumberland Ecology.
- Manage stormwater by planting stormwater basins and swales with suitable native grass species.
- Hydromulch disturbed areas and new earthworks with a native grassland seed mix.
- Adhering to the Bushfire requirements as set out by NSW RFS 'Planning for Bushfire 2019' and the project bushfire consultant.
- Adhering to the VMP requirements as set out by Cumberland Ecology.

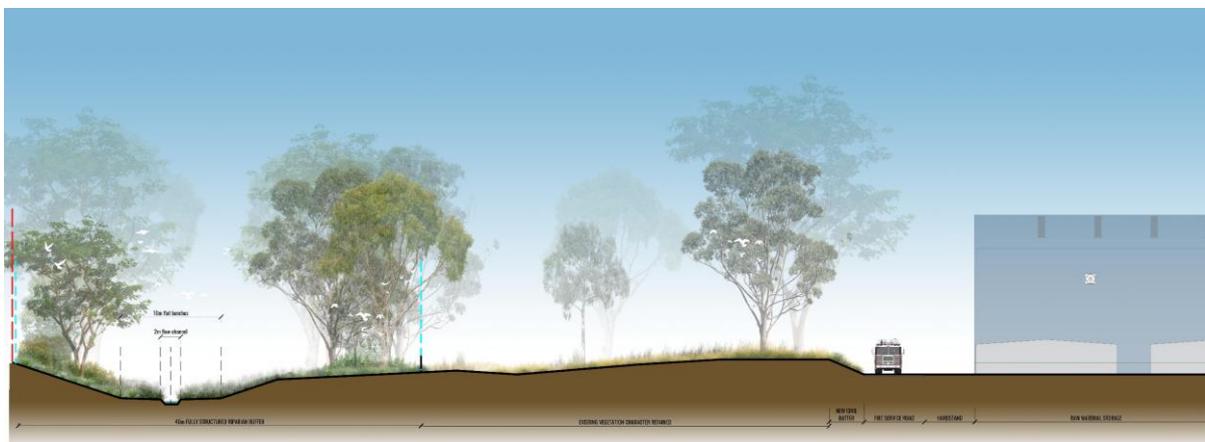
3.0 – Landscape Design Proposals

3.1 North

The proposed Brickworks entry is situated to the north of the site along an existing access road owned by Austral Bricks. The existing line of mature trees along the road is proposed to be retained and this will provide screening to visual receptors situated to the north of the site. Additional landscaping in the form of isolated tree groups is also proposed, along with native grassland to maintain the existing character of the area.

3.2 South

A 20m wide riparian corridor on either side of 'Stoney Creek' is proposed. This riparian corridor is fully structured with trees, shrubs and groundcovers. The riparian buffer will consist of approximately 800 large canopy and a sub canopy species which have been selected from the Southern Highlands Shale Woodland Endangered Ecological Community (EEC). These are to be supplemented with species found on the site including *Eucalyptus dives*, *Eucalyptus paucifera* and *Eucalyptus ovata*.



SECTION THROUGH RIPARIAN CORRIDOR



3.2 East

A hydromulched seed mix of native grasses is proposed to new earthworks to prevent soil erosion and enable regular slashing/mowing to a height of 100mm within APZ areas. Existing trees are retained where possible and additional planting is provided in the form of endemic scattered tree groupings.



East to West Section.

3.3 West

The existing pasture lands to the west of the proposed carpark are intended to be retained with new groups of endemic tree planting introduced. A native grassland mix will be used to revegetate areas of new earthworks and disturbed areas and are intended to be kept to a minimum of 100mm in height, in accordance with Bushfire requirements. A new storm water basin as part of the drainage infrastructure of the site is proposed and will include grass species suitable for conditions of temporary flood inundation.



Section through new stormwater basin



4.0 – Planting Species and Schedules

Endemic plant species found within the Southern Highlands Shale Woodland EEC have been selected together with additional native species in accordance with the VMP and recommendations from Cumberland Ecology.

PROPOSED PLANTING SCHEDULE								
CODE	BOTANICAL NAME	COMMON NAME	NATIVE	ENDEMIC	MATURE HEIGHT	SIZE	PLANTING DENSITY	QTY
SCATTERED TREE GROUPS								
ACA BIN	<i>Acacia binervata</i>	<i>Two-veined hickory</i>	✓	✓	16m	Forestry Tube	AS SHOWN	19
ACA DEC	<i>Acacia decurrens</i>	<i>black wattle</i>	✓	✓	15m	Forestry Tube	AS SHOWN	9
ACA IMP	<i>Acacia implexa</i>	<i>Hickory wattle</i>	✓	✓	12m	Forestry Tube	AS SHOWN	15
ACA LON	<i>Acacia longifolia</i>	<i>Sydney golden wattle</i>	✓	✓	6m	Forestry Tube	AS SHOWN	10
EUC DIV	<i>Eucalyptus dives</i>	<i>Broad-leaved Peppermint</i>	✓	✓	20m	Forestry Tube	AS SHOWN	7
EUC MAC	<i>Eucalyptus macarthurii</i>	<i>Camden Woollybutt</i>	✓	✓	35m	Forestry Tube	AS SHOWN	16
EUC MAN	<i>Eucalyptus mannifera</i>	<i>Brittle Gum</i>	✓	✓	20m	Forestry Tube	AS SHOWN	10
EUC OVA	<i>Eucalyptus ovata</i>	<i>Swamp Gum</i>	✓	✓	30m	Forestry Tube	AS SHOWN	10
EUC PAU	<i>Eucalyptus pauciflora</i>	<i>Snow Gum</i>	✓	✓	30m	Forestry Tube	AS SHOWN	10
EUC RAD	<i>Eucalyptus radiata sub. radiata</i>	<i>Narrow-leaved Peppermint</i>	✓	✓	35m	Forestry Tube	AS SHOWN	3
EUC VIM	<i>Eucalyptus viminalis</i>	<i>Manna Gum</i>	✓	✓	25m	Forestry Tube	AS SHOWN	7
MEL LIN	<i>Melaleuca linariifolia</i>	<i>Snow in Summer</i>	✓	✓	4m	Forestry Tube	AS SHOWN	8
NATIVE GRASSLAND MIX TO NEW EARTHWORKS AND DISTURBED AREAS - 9-12kg per ha								
ANT sca	<i>Anthosachne scabra</i>	Native Wheat Grass	✓		0.80m	Hydromulch	N/A	RATE
AUS big	<i>Austrostipa bigeniculata</i>	Kneed Spear grass	✓		1.0m	Hydromulch	N/A	RATE
MIC bur	<i>Microlaena stipoides var. Burra</i>	Burra Weeping grass	✓		0.25m	Hydromulch	N/A	RATE
RYT sp.	<i>Rytidosperma spp.</i>	Wallaby Grass	✓		0.80m	Hydromulch	N/A	RATE
THE tri	<i>Themeda triandra</i>	Kangaroo grass	✓	✓	0.50m	Hydromulch	N/A	RATE
RIPARIAN CORRIDOR PLANTING								
ZONE 1 PLANTING - GROUNDCOVERS 4-6 per 1m2								
GAR app	<i>Carex appressa</i>	<i>Tall Sedge</i>	✓		0.8m	Tubestock	As per VMP	As per VMP
JUN usi	<i>Juncus usitatus</i>	<i>Common Rush</i>	✓		0.8m	Tubestock	As per VMP	As per VMP
LAC fil	<i>Lachnagrostis filiformis</i>	<i>Blown Grass</i>	✓	✓	0.8m	Tubestock	As per VMP	As per VMP
OPL aem	<i>Oplismenus aemulus</i>	<i>Basket Grass</i>	✓	✓	1.0m	Tubestock	As per VMP	As per VMP
POA lab	<i>Poa labillardieri</i>	<i>River tussock grass</i>	✓	✓	0.80m	Tubestock	As per VMP	As per VMP
PHA aus	<i>Phragmites australis</i>	<i>Common Reed</i>	✓	✓	1.0m	Tubestock	As per VMP	As per VMP
VIO hed	<i>Viola hederacea</i>	<i>Native violet</i>	✓	✓	0.20m	Tubestock	As per VMP	As per VMP



ZONE 2 PLANTING								
TREES @ 1 units per 30m2								
ANG FLO	<i>Angophora floribunda</i>	<i>Rough-barked Apple</i>	✓		30m	Forestry Tube	As per VMP	As per VMP
EUC DIV	<i>Eucalyptus dives</i>	<i>Broad-leaved Peppermint</i>	✓	✓	20m	Forestry Tube	As per VMP	As per VMP
EUC MAC	<i>Eucalyptus macarthurii</i>	<i>Camden Woollybutt</i>	✓	✓	35m	Forestry Tube	As per VMP	As per VMP
EUC MAN	<i>Eucalyptus mannifera</i>	<i>Brittle Gum</i>	✓	✓	20m	Forestry Tube	As per VMP	As per VMP
EUC OVA	<i>Eucalyptus ovata</i>	<i>Swamp Gum</i>	✓	✓	30m	Forestry Tube	As per VMP	As per VMP
EUC PAU	<i>Eucalyptus pauciflora</i>	<i>Snow Gum</i>	✓	✓	30m	Forestry Tube	As per VMP	As per VMP
EUC RAD	<i>Eucalyptus radiata sub. radiata</i>	<i>Narrow-leaved Peppermint</i>	✓	✓	35m	Forestry Tube	As per VMP	As per VMP
EUC VIM	<i>Eucalyptus viminalis</i>	<i>Ribbon Gum</i>	✓	✓	25m	Forestry Tube	As per VMP	As per VMP
SHRUBS @ 2 units per 10m2								
BUR spi	<i>Bursaria spinosa subsp. spinosa</i>	<i>Blackthorn</i>	✓	✓	6m	Tubestock	As per VMP	As per VMP
DAV uli	<i>Daviesia ulicifolia</i>	<i>Gorse bitter-pea</i>	✓	✓	2m	Tubestock	As per VMP	As per VMP
IND aus	<i>Indigofera australis</i>	<i>Australian indigo</i>	✓	✓	1.2m	Tubestock	As per VMP	As per VMP
LEU jun	<i>Leucopogon juniperinus</i>	<i>Prickly Beard-heath</i>	✓	✓	1.0m	Tubestock	As per VMP	As per VMP
MEL thy	<i>Melaleuca thymifolia</i>	<i>Thyme Honey myrtle</i>	✓	✓	1.5m	Tubestock	As per VMP	As per VMP
OZO dio	<i>Ozothamnus diosmifolius</i>	<i>Rice flower,</i>	✓	✓	1.5m	Tubestock	As per VMP	As per VMP
OLE mic	<i>Olearia microphylla</i>	<i>Small-leaved Daisy Bush</i>	✓	✓	2.0m	Tubestock	As per VMP	As per VMP
GROUNDCOVER @ 4 units per 1m2								
AUS rac	<i>Austrodanthonia racemosa</i>	<i>Wallaby grass</i>	✓	✓	0.60m	Tubestock	As per VMP	As per VMP
AUS rud	<i>Austrostipa rudis</i>	<i>Veined Spear-grass</i>	✓		0.6m	Tubestock	As per VMP	As per VMP
DIC rep	<i>Dichondra repens</i>	<i>Kidney weed</i>	✓	✓	0.10m	Tubestock	As per VMP	As per VMP
HAR vio	<i>Hardenbergia violacea</i>	<i>Native lilac</i>	✓	✓	1.0m	Tubestock	As per VMP	As per VMP
LOM lon	<i>Lomandra longifolia</i>	<i>Spiny Mat rush</i>	✓	✓	0.60m	Tubestock	As per VMP	As per VMP
LOM mul	<i>Lomandra multiflora</i>	<i>Mat rush</i>	✓	✓	0.80m	Tubestock	As per VMP	As per VMP
MIC sti	<i>Microlaena stipoides var. stipoides</i>	<i>Weeping grass</i>	✓	✓	0.25m	Tubestock	As per VMP	As per VMP
POA sie	<i>Poa sieberiana</i>	<i>Snowgrass</i>	✓	✓	0.50m	Tubestock	As per VMP	As per VMP
THE aus	<i>Themeda australis</i>	<i>Kangaroo Grass</i>	✓		0.7m	Tubestock	As per VMP	As per VMP
VIO hed	<i>Viola hederacea</i>	<i>Native violet</i>	✓	✓	0.20m	Tubestock	As per VMP	As per VMP
STORM WATER BASIN PLANTING								
CAR app	<i>Carex appressa</i>	<i>Tall Sedge</i>	✓		0.8 m	Tubestock	6/m2	
DIA cae	<i>Dianella caerulea var. caerulea</i>	<i>Flax Lilly</i>	✓		.7 m	Tubestock	6/m2	
IMP cyl	<i>Imperata cylindrica var major</i>	<i>Blady Grass</i>	✓		1.2 m	Tubestock	6/m2	
ISO inu	<i>Isolepis inundata</i>	<i>Swamp Club Rush</i>	✓		5-30 cm	Tubestock	6/m2	
JUN usi	<i>Juncus usitatus</i>	<i>Common Rush</i>	✓		1 m	Tubestock	6/m2	



5.0 – Conclusion

The proposed landscape design aims to introduce new endemic and native planting to the development site that will be cohesive with the natural character found in the surrounding pasture lands and creeks. Following maturity, planting will also help to mitigate the development from visual receptors in the wider landscape, by filtering and softening views of the built forms.

Existing trees are retained where possible and additional planting is provided in the form of scattered trees and shrubs and groundcovers. This will be effective in helping to mitigate views for any visual receivers of the development, while still complying with bushfire and VMP requirements. All new planting proposed is either endemic or native low water use and this approach will be adopted across the entire site.

