GEOSCAPES
LANDSCAPE ARCHITECTS

Proposed Data Centre, Lane Cove West, NSW 2066
Section 4.55 Modification - SSD 9741

LANDSCAPE DESIGN REPORT – LDR01

Prepared for:

GREENBOX

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1.0 - The Project

The project at Lot 1 in DP1151370, known and referred to within documentation as 1 Sirius Road, comprises of a proposed data centre, including data halls A-F, main office, substation, plant equipment, car parking, road access and associated earthworks and landscaping. The applicant is GreenBox Architecture.

The site has an area of approximately 3.9 hectares and is located within the Lane Cove Council Local Government Area. It is bound by the Sirus Road to the east, Lane Cover River to the west, the M2 and Stringybark Creek to the north and Lane Cove River to the south. A 10m setback is required from the existing bushland which is present to the north, west and south. This setback and other deep soil areas allow for landscape buffer planting to help filter views of the development and integrate the site within its broader environment. As much of the site has been classified by the Bushfire Consultant as being an IPA, identified areas of planting must 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-07 and Geoscapes Report LVIA01 - Landscape and Visual Impact Assessment. It addresses the following:

Urban Design & Visual

- *proposed open space and landscaped areas for the overall development*
- *suitable landscaping incorporating locally indigenous species;*

2.0 - Overall Design Approach

2.1 Available Landscaping Areas and Controls

A total area of 14296m2 (36.24% of site area) is available for landscape planting.

Bushfire Controls provided by Travers Ecology:

<u>Within APZ zones</u>

Trees are to be maintained to ensure;

Canopy cover does not exceed 15%
Trees (at maturity) do not touch or overhang the building
Tree canopies (at maturity) should be well spread out and not form a continuous canopy

Lower limbs should be removed up to a height of 2m above ground
Preference should be given to smooth barked and evergreen trees.

Shrubs are to be maintained to ensure;

Large discontinuities or gaps in vegetation
Shrubs should not be located under trees
Shrubs should not form more than 10% of ground cover
Clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of vegetation.

Grass is to be maintained to ensure:

A height of 10cm or less
Leaves and debris is removed.

DCP Controls:

Part E Industrial Development E9
Part E Industrial Development – Locality 1 – Land Off Sirius Road E11 to E13
Part H Bushland Protection
Part J Landscaping

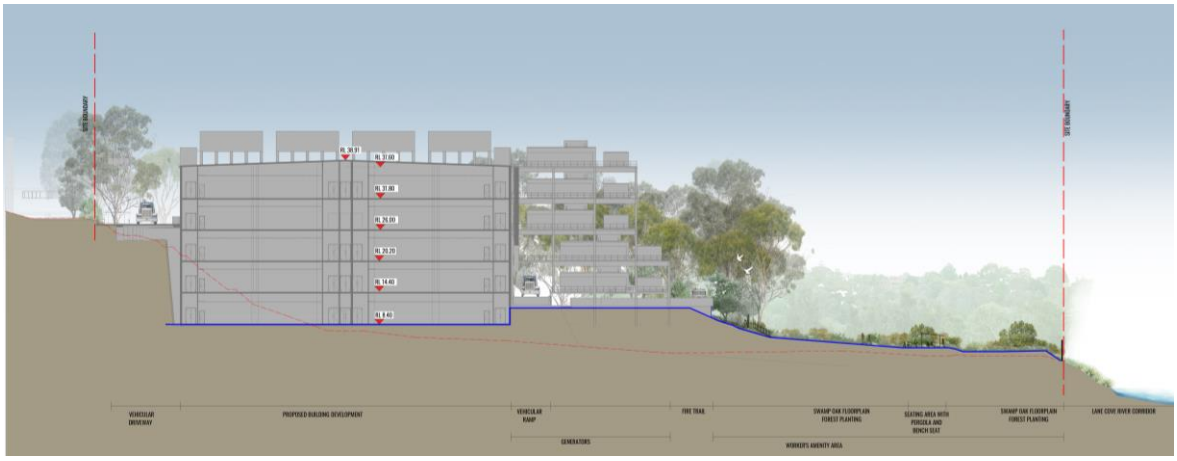
To comply with the DCP, bushfire requirements and VMP, landscaping design aims to provide the following:

- Adhering to the bushfire requirements as set out by Travers Ecology
- Adhering to the VMP requirements as set out by Travers Ecology
- Preservation and retention of existing trees where possible on the advice of the project Arborist
- Strengthen local character with the use of local indigenous species. These are to be selected predominantly from the appendix 1 of the Part J of the Lane Cove Council DCP
- Provision of 10% of the site for Landscape Amenity for workers
- Provision of 36% Landscape Area
- To help screen and filter views of the development for users of the adjacent bushland and visual receptors within the wider context with tree and shrub planting

3.0 – Proposals

3.1 North

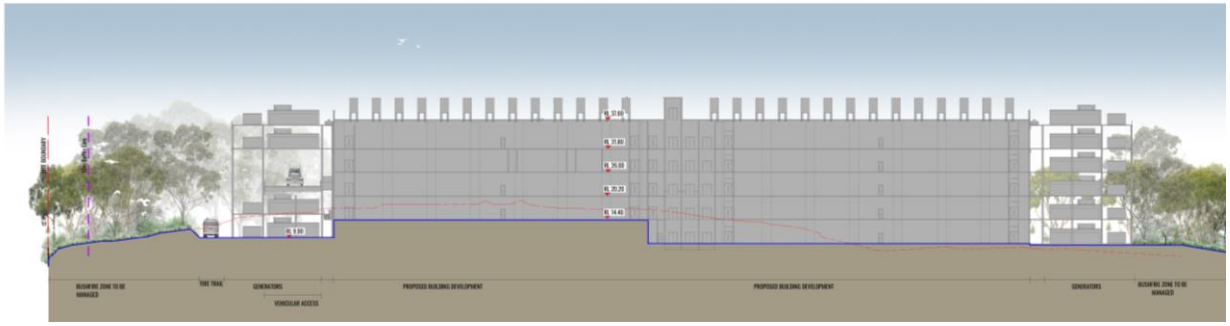
The 10% (4000m2) amenity for workers is proposed in this area. This is due to the existing topography being generally flatter than other parts of the site and the opportunity to enjoy the aspect and proximity to the Lane Cover River. Native grasses are intended to be kept to height of 100mm, and a path is provided leading to sheltered seating area. This seating area is included to provide shade amenity and passive relaxation. Planting of indigenous plant species are proposed as per the VMP to complement the existing backdrop of adjoining bushland. A 4m wide fire trail is required to comply with RFS requirements.



North South Section

3.2 East and West

An indigenous seed mix of local grasses is proposed to help prevent soil erosion and enable regular slashing/moving to a height of 100mm. Existing trees are retained where possible and additional planting is provided in the form of scattered trees and shrubs. Smooth barked species and evergreen trees and shrubs are preferred.



East to West Section.

3.3 Southern Boundary

This area contains the entry approach from Sirus Road. On the eastern side, existing landscaping associated with the Harley Davidson development is proposed to be retained. On the western side landscape areas exist along the verge and have also been incorporated between the proposed retaining wall and the adjoining development. Native trees, shrubs and mass planted groundcovers have been proposed in these areas.

4.0 – Planting and Schedules

Indigenous plant species for APZ and revegetation areas have been selected from the VMP. This is in response to the objectives for landscaping of new development contained within the Council DCP. All planting will be low water use.

PROPOSED GENERAL LANDSCAPE AND APZ PLANTING						
CODE	BOTANICAL NAME	COMMON NAME	MATURE HEIGHT	SIZE	PLANTING DENSITY	QTY*
	Canopy trees					
ANG COS	*Angophora costata*	*Sydney Red Gum*	20m	AS PER VMP	As Shown	6
COR GUM	*Corymbia gummifera*	*Red Bloodwood*	30m	AS PER VMP	As Shown	4
EUC RES	*Eucalyptus resinifera*	*Red Mahogany*	25m	AS PER VMP	As Shown	3
SYN GLO	*Syncarpia glomulifera*	*Turpentine tree*	25m	AS PER VMP	As Shown	4
	Sub-canopy trees					
ACA PAR	*Acacia parramattensis*	*Parramatta Wattle*	12m	AS PER VMP	As Shown	10
ALL LIT	*Allocasuarina littoralis*	*Black Sheoak*	10m	AS PER VMP	As Shown	10
MEL LIN	*Melaleuca linariifolia*	*Snow in Summer*	8m	AS PER VMP	As Shown	9
	Shrubs 1 per 30m2					
ACA flo	*Acacia floribunda*	*Sally Wattle*	6m	AS PER VMP	As Shown	51
BRE obl	*Breynia oblongifolia*	*Coffee Bush*	6m	AS PER VMP	As Shown	41
BUR spi	*Bursaria spinosa subsp. spinosa*	*Blackthorn*	6m	AS PER VMP	As Shown	42
DOD tri	*Dodonaea triquetra*	*Common Hop Bush*	2m	AS PER VMP	As Shown	38
KUN amb	*Kunzea ambigua*	*Tick Bush*	2m	AS PER VMP	As Shown	33
MEL thy	*Melaleuca thymifolia*	*Thyme Honey myrtle*	2m	AS PER VMP	As Shown	42
TRE tom	*Trema tomentosa*	*Native peach*	2m	AS PER VMP	As Shown	38
	Groundcovers 4 per 1m2					
CEN asi	*Centella asiatica*	*Asiatic pennywort*	0.2m	AS PER VMP	As per VMP	2005
COM cya	*Commelina cyanea*	*Scurvy weed*	1m	AS PER VMP	As per VMP	2005
DIA cae	*Dianella caerulea*	*Blue flax Lily*	0.5m	AS PER VMP	As per VMP	576
DIP var	*Dipodium variegatum*	*Blotched hyacinth orchid*	1m	AS PER VMP	As per VMP	2005
ECH cae	*Echinopogon caespitosus*	*Hedgehog Grass*	0.75m	AS PER VMP	As per VMP	2005
ENT mar	*Entolasia marginata*	*Panic Grass*	0.3m	AS PER VMP	As per VMP	2005
ENT str	*Entolasia stricta*	*Right angled grass*	0.8m	AS PER VMP	As per VMP	2005
IMP cyl	*Imperata cylindrica*	*Cogongrass*	0.6m	AS PER VMP	As per VMP	2005
JUN usi	*Juncus usitatus*	*Common Rush*	0.6m	AS PER VMP	As per VMP	2295
LOM lon	*Lomandra longifolia*	*Spiny Head mat rush*	0.8m	AS PER VMP	As per VMP	576
MIC sti	*Microlaena stipoides*	*Weeping Grass*	0.8m	AS PER VMP	As per VMP	2005
OPL aem	*Oplismenus aemulus*	*Basket grass*	0.3m	AS PER VMP	As per VMP	2005
OPL imb	*Oplismenus imbecillis*	*Basket grass*	0.3m	AS PER VMP	As per VMP	2005
THE tri	*Themeda triandra*	*Kangaroo Grass*	0.7m	AS PER VMP	As per VMP	2169

SMOOTH-BARKED APPLE - RED BLOODWOOD OPEN FOREST						
CODE	**BOTANICAL NAME**	**COMMON NAME**	**MATURE HEIGHT**	**SIZE**	**PLANTING DENSITY**	**QTY***
	Shrubs 1 per 5m2					
ACA lin	*Acacia linifolia*	*White Wattle*	5m	AS PER VMP	As Shown	26
ACA lon	*Acacia longifolia*	*Sydney golden wattle*	8m	AS PER VMP	As Shown	26
BRE obo	*Breynia oblongifolia*	*Coffee Bush*	6m	AS PER VMP	As Shown	26
DOD tri	*Dodonaea triquetra*	*Common Hop Bush*	2m	AS PER VMP	As Shown	26
GRE bux	*Grevillea buxifolia*	*Grey spider flower*	2m	AS PER VMP	As Shown	26
GRE ser	*Grevillea sericea*	*Silky Grevillea*	2m	AS PER VMP	As Shown	26
KUN amb	*Kunzea ambigua*	*Tick Bush*	3m	AS PER VMP	As Shown	26
LEP tri	*Leptospermum trinervium*	*Paperbark Teatree*	2m	AS PER VMP	As Shown	26
LEP pol	*Leptospermum polygalifolium*	*Tantoon*	3m	AS PER VMP	As Shown	26
OZO dio	*Ozothamnus diosmifolius*	*Rice flower*	2m	AS PER VMP	As Shown	26
PER pin	*Persoonia pinifolia*	*Pine leaved Geebung*	3m	AS PER VMP	As Shown	26
PER lin	*Persoonia linearis*	*Narrow leaved Geebung*	5m	AS PER VMP	As Shown	26
WOO pun	*Woollsia pungens*	*Snow Wreath*	2m	AS PER VMP	As Shown	26
ZIE pil	*Zieria pilosa*	*Hairy Zieria*	1.5m	AS PER VMP	As Shown	26
	Groundcovers 4 per 1m2					
ARI vag	*Aristida vagans*	*Threeawn speargrass*	0.80m	AS PER VMP	As per VMP	594
AUS pub	*Austrostipa pubescens*	*Speargrass*	1.0m	AS PER VMP	As per VMP	594
BLE car	*Blechnum cartilagineum*	*Gristle fern*	1.0m	AS PER VMP	As per VMP	594
CEN asi	*Centella asiatica*	*Asiatic pennywort*	0.2m	AS PER VMP	As per VMP	557
DIA cae	*Dianella caerulea*	*Blue flax Lily*	0.5m	AS PER VMP	As per VMP	594
DIP var	*Dipodium variegatum*	*Blotched hyacinth orchid*	1.0m	AS PER VMP	As per VMP	557
ENT str	*Entolasia stricta*	*Right angled grass*	0.8m	AS PER VMP	As per VMP	557
IMP cyl	*Imperata cylindrica*	*Cogongrass*	0.6m	AS PER VMP	As per VMP	557
LOM lon	*Lomandra longifolia*	*Spiny head Mat rush*	0.8m	AS PER VMP	As per VMP	594
MIC sti	*Microlaena stipoides*	*Weeping Grass*	0.8m	AS PER VMP	As per VMP	557
OPL aem	*Oplismenus aemulus*	*Basket grass*	0.3m	AS PER VMP	As per VMP	557
OPL imb	*Oplismenus imbecillis*	*Basket grass*	0.3m	AS PER VMP	As per VMP	557
THE tri	*Themeda triandra*	*Kangaroo Grass*	0.7m	AS PER VMP	As per VMP	594

SWAMP OAK FLOODPLAIN FOREST						
CODE	**BOTANICAL NAME**	**COMMON NAME**	**MATURE HEIGHT**	**SIZE**	**PLANTING DENSITY**	**QTY***
	Shrubs 1 per 3m2					
BRE obl	*Breynia oblongifolia*	*Coffee Bush*	6m	AS PER VMP	As Shown	226
BUR spi	*Bursaria spinosa subsp. spinosa*	*Native Blackthorn*	3m	AS PER VMP	As Shown	226
DOD tri	*Dodonaea triquetra*	*Common Hop Bush*	5m	AS PER VMP	As Shown	226
MEL thy	*Melaleuca thymifolia*	*Thyme Honey myrtle*	2m	AS PER VMP	As Shown	226
TRE tom	*Trema tomentosa*	*Native peach*	1.5m	AS PER VMP	As Shown	226
	Groundcovers 6 per 1m2					
ARI vag	*Aristida vagans*	*Threeawn speargrass*	0.80m	AS PER VMP	As per VMP	1358
AUS pub	*Austrostipa pubescens*	*Speargrass*	1.0m	AS PER VMP	As per VMP	1358
BLE ind	*Blechnum indicum*	*Swamp water fern*	1.0m	AS PER VMP	As per VMP	1358
CEN asi	*Centella asiatica*	*Asiatic pennywort*	0.2m	AS PER VMP	As per VMP	1358
COM cya	*Commelina cyanea*	*Scurvy weed*	1m	AS PER VMP	As per VMP	1358
DIA cae	*Dianella caerulea*	*Blue flax Lily*	0.5m	AS PER VMP	As per VMP	1358
ECH cae	*Echinopogon caespitosus*	*Hedgehog Grass*	0.8m	AS PER VMP	As per VMP	1358
ENT mar	*Entolasia marginata*	*Panic Grass*	0.6m	AS PER VMP	As per VMP	1358
FIC nod	*Ficinia nodosa*	*Knobby club rush*	0.8m	AS PER VMP	As per VMP	1358
GAH cla	*Gahnia clarkei*	*Tall Sawsedge*	0.8m	AS PER VMP	As per VMP	1358
IMP cyl	*Imperata cylindrica*	*Cogongrass*	0.6m	AS PER VMP	As per VMP	1358
JUN usi	*Juncus usitatus*	*Common Rush*	0.6m	AS PER VMP	As per VMP	1358
LOM lon	*Lomandra longifolia*	*Spiny head Mat rush*	0.8m	AS PER VMP	As per VMP	1358
MIC sti	*Microlaena stipoides*	*Weeping Grass*	0.8m	AS PER VMP	As per VMP	1358
OPL imb	*Oplismenus imbecillis*	*Basket grass*	0.3m	AS PER VMP	As per VMP	1358
THE tri	*Themeda triandra*	*Kangaroo Grass*	0.7m	AS PER VMP	As per VMP	1358

MACROPHYTE PLANTING						
CODE	**BOTANICAL NAME**	**COMMON NAME**	**MATURE HEIGHT**	**SIZE**	**PLANTING DENSITY**	**QTY***
	Groundcovers 5 per 1m2					
BAL tet	*Baloskion tetraphyllum*	*Tassel Cord Rush*	1.5m	As per VMP	As per VMP	177
CAR app	*Carex appressa*	*Tall Sedge*	1.2m	As per VMP	As per VMP	177
DIA cae	*Dianella caerulea*	*Blue flax Lily*	0.5m	As per VMP	As per VMP	177
FIC nod	*Ficinia nodosa*	*Knobby club rush*	0.8m	As per VMP	As per VMP	177
GAH sie	*Gahnia sieberiana*	*Red-fruit Saw-sedge*	1.5m	As per VMP	As per VMP	177
JUN kra	*Juncus krausii*	*Sea Rush*	1m	As per VMP	As per VMP	177
JUN usi	*Juncus usitatus*	*Common Rush*	0.6m	As per VMP	As per VMP	177
LOM flu	*Lomandra fluviatilis*	*Mat Rush*	0.6m	As per VMP	As per VMP	177
PHI lan	*Philydrum lanuginosum*	*Wooly Frogs Mouth*	0.7m	As per VMP	As per VMP	177

5.0 – Conclusion

The proposed landscape design will create an indigenous rich environment that will be cohesive with the natural character of the Lane Cove River corridor and bushland. It will also help to mitigate the development from visual receptors by filtering views through vegetation. This will be especially important for those receptors at proximity to the development, while still complying with bushfire and VMP requirements. A low maintenance and low water use philosophy is to be adopted across the design.

An amenity area for the enjoyment of the workers has been included and will provide seating and rest opportunities.