

1 Landscape Management Plan

1.1 Introduction

This Landscape Management Plan has been prepared by Fairvale High School, on behalf the of the NSW Department of Education (DoE). It accompanies the supporting documents prepared and submitted under State Significant Development SSD 8677 Condition of Consent D28 for the redevelopment of Fairvale High School at 1 Thorney Rd, Fairfield West NSW 2165 (the Site).

This Landscape Management Plan has been developed to manage the revegetation and landscaping works on-site. The Plan:

- a) details the species to be planted on-site; and
- b) describes the monitoring and maintenance measures to manage revegetation and landscaping works.

1.2 Species to be planted on-site

This Landscape Management Plan refers to the Landscape Plans and Planting Schedules developed by Space Architecture as part of the redevelopment's design development. The Landscape Plans are provided in Appendix 1 and the Planting schedule is provided in Appendix 2.

2 Monitoring and maintenance measures

2.1 Landscape Management Principles

The following landscape management principles have been identified as being consistent with the Landscape Plans;

- Minimise environmental impacts that may result from landscape management activities and utilise environmentally sustainable practices
- Preserve, enhance and improve the landscape character of the school
- For new and replacement plantings, the use of endemic plant species where appropriate
- Provide a safe environment, minimising potential risks to people, buildings and property
- Apply best practise landscape maintenance in landscape areas
- Target noxious weeds and feral animals through the use of integrated pest management approaches
- Maintain high quality outdoor spaces and streetscapes
- Maintain high quality passive recreation areas
- Appropriate fund, plan and manage landscape maintenance to provide a measurable improvement of the landscape appearance, safety and amenity.

Below is a summary of general maintenance and ongoing management requirements for revegetation and landscaping works.

2.2 Tree Protection

Avoid whipper-snipping grass at the base of trees as this can cause ring-barking and tree death. Clip around the base by hand where trees are planting into grass. Where trees are planted in paved areas, adjacent to the trunk use:

- Ground covers
- Gravel
- Permeable paving surrounds
- Tree grate

2.3 Fertilising, composting and mulching

To ensure the health and vigour of trees are maintained. All trees whether native or exotic will perform better when the soil conditions are healthy. Building healthy soils is the key to achieving the long-term maintenance goals of landscape areas. Soil health is primarily achieved with regular applications of organic soil conditioners such as animal manures, decomposed green waste or proprietary blends of compost.

Fertilising and composting are not critical maintenance activities except where there are obvious deficiencies but should be assessed on an annual basis by observation and leaf analysis. Maintain an adequate level of mulch in planter beds in order to maximise water conservation and suppress weeds.

Maintenance Action Required	Frequency
Where obvious deficiencies are evident 60 grams/plant (trees) controlled release fertiliser such as Nutricote or;	Only to be applied if the plant is noticeably under stress and the plant will benefit from the application of the fertiliser. Inspect annually; however apply in late spring if

	required.
3 x 20 grams slow release fertiliser tablet per plant N;P;K ratio – 18:3:10	Only to be applied if the plant is noticeably under stress and the plant will benefit from the application of the fertiliser. Inspect annually; however, apply in late spring if required.
Where soils are dry, hydrophobic and as a regular maintenance procedure, top up all gardens beds with 30-50mm depth of soil conditioner as composted animal manure, decomposed green waste or propriety blends such as 'Botany Humus' supplied by Australian Native Landscapes. For extreme cases use a soil-wetting agent.	Bi-annually, applied at any time of the year
Maintain mulch to a depth of 75mm by periodic applications. Use the same mulch as original specified in the Landscape Plan	As required, generally once per year

2.4 Pruning

All pruning shall be carried out by a qualified arborist AQF Level 3 and to be in accordance with AS 4373-2007 Pruning of Amenity Trees. Pruning will be an ongoing process, which will require the periodic removal of unsightly, dead wood, hazardous branches and view obstructing branches. Prune trees to maintain driver sight lines, remove dead wood from over hanging paths and carparks to maintain vegetation health and to remove branches that are likely to pose a risk to public safety.

Prune to an extent where this will not re-occur as a problem in the period to next routine maintenance without compromising overall form and growth potential of the tree.

Suitable timing for pruning should be determined by the arborist so as to maintain vegetation health, however all trees should be inspected regularly and especially after high winds to determine if any action is required.

Proposed avenue style tree planting will eventually require under pruning to accommodate seating under. This should be achieved over a period of time to lift the crown and provide a clear trunk to a height of 3 metres.

Dead limbs containing hollows should not be removed unless there is a risk to public safety; limbs with hollows that are pruned from trees should be left in a suitable location on the ground to provide habitat.

Removed timber and native vegetation, unless diseased, should be considered for re-use on-site either as habitat logs in bushland areas where appropriate, or mulched in garden beds.

2.5 Tree Replacement Plantings

To ensure that the density, species and design intent of established tree plantings is maintained. Any trees that die should be replaced immediately with the largest specimen that can be reasonably procured and practically handled into position. All trees supplied are to conform to the recommendations of AS 2303 and be true-to-species and type, and free of disease, fungal

infection and/or any other impediment to their future growth and that they have been fully acclimatised for the conditions of the site. Trees to be supplied from an accredited Plant Supplier.

Supply trees with the following properties:

- Free from injury.
- Self-supporting.
- With calliper at any given point on the stem greater than the calliper at any higher point on the stem.
- Health: Foliage size, texture and colour at time of delivery consistent with that of healthy specimens for the nominated species.
- Vigour: Extension growth consistent with that exhibited in vigorous specimens of the species nominated.
- Damage: Free from damage and from restricted habit due to growth in nursery rows.
- Stress: Free from stress resulting from inadequate watering, excessive shade or excessive sunlight experienced at any time during their development.
- Site environment: Grown and hardened off to suit anticipated site conditions at the time of delivery.
- Tree stock in containers less than 45 L: Self-supporting at dispatch.
- Indication of north: Trees in containers greater than 100 L or of Size Index greater than 140: Label the northerly aspect during growth in the nursery and maintain during transit.
- Root development: Grown in their final containers for the following periods:
 - Plants < 25 L size: More than 6 weeks.
 - Plants > 25 L size: More than 12 weeks.
- Pests and disease: Free from attack by pests or disease.
- Native species with a history of attack by native pests: Restrict plant supply to those with evidence of previous attack to less than 15% of the foliage and ensure absence of actively feeding insects.

Replacement Planting	Frequency
Replace failed or damaged plantings.	As required
Water replacement plantings for a minimum of 12 weeks after planting	As required to ensure survival

2.6 Tree surrounds and Stakes

Stakes and ties are used to support plants and avoid trampling. Developing plants exposed to high winds may require staking. Replace tree stakes when damaged and/or remove them when no longer required and the plant is self-supporting.

2.7 Planting Areas

In general mass planted beds are either planted with native species or exotic or combination of both. The key difference in the management of native plants are their requirements for low-phosphorous fertilisers and a lower fertiliser rate than exotic species generally.

Natives also have lower water requirements in comparison to exotics and are adapted to the harsher Australian conditions. Endemic native plants will tolerate site soils without amendment better than exotics, and if no fertilisers are added there may be a lesser invasion by exotic weeds. Therefore, for the long-term landscape management, endemic plant species should always be considered first for new gardens.

The edges of the beds will be defined by appropriate means. Beds shall be weed free and mulched annually to suppress weed growth and maintain moisture content within the soil. Where irrigation is not present, garden beds should be watered during dry spells to remove undue plant stress and the potential for die-back.

Pruning will be carried out on shrubs that require it according to species to remove the dead and damaged branches and to retain natural shape. Pruning will encourage good flowering to improve health and vigour. Where die-back is present, new plants are to be planted as soon as possible, using species originally specified or where there are no plants specified then replaced with endemic species where appropriate.

2.8 Pruning of planted areas

Ground covers and shrubs should be maintained as a maximum height of 0.5m along path edges. Remove dead or dying plants from mass planted areas as required. This may become necessary as plantings mature, after damage or adverse environmental conditions.

Pruning Mass Planted Areas	Frequency
For low shrub species as per appropriate type; Tip prune to encourage density to 50-100mm.	As required after flowering
For low shrub species as per appropriate type; Prune evenly to a height of 500mm above ground along path edges. Prune away from paths where required.	Every 4 years after flowering

2.9 Replacement Planting

Plants that have died or failed shall be replaced with the same species and variety as the closest commercially available size. This is to ensure that the density and species of the established plant material within mass planted areas is maintained.

Replacement Planting in Mass Planted Areas	Frequency
Replace failed or damaged plantings.	As required
Water replacement plantings for a minimum of 12 weeks after planting	As required to ensure survival

2.10 Planting conditions

Do not plant in unsuitable weather conditions such as extreme heat, cold, wind or rain. In other than sandy soils, suspend excavation when the soil is wet, or during frost periods.

Thoroughly water the plants before planting, immediately after planting, and as required to maintain growth rates free of stress.

Remove the plant from the container with minimum disturbance to the root ball. Make sure that the root ball is moist and place it in its final position, in the centre of the hole and plumb, and with the top soil level of the plant root ball level with the finished surface of the surrounding soil.

In planting beds and individual plantings, place fertiliser pellets around the plants at the time of planting. Application rate as per manufacturers details.

Backfill with topsoil mixture. Tamp lightly and water to eliminate air pockets. Make sure that topsoil is not placed over the top of the root ball, so the plant stem remains the same height

above ground as it was in the container.

2.11 Mulching

Place mulch to the required depth, clear of plant stems, and rake to an even surface flush with the surrounding finished levels. Spread and roll mulch so that after settling, or after rolling, it is smooth and evenly graded between design surface levels sloped towards the base of plant stems in plantation beds, and not closer to the stem than 50 mm in the case of gravel mulches.

- In mass planted areas: Place after the preparation of the planting bed but before planting and other work.
- In smaller areas (e.g. planter boxes): Place after the preparation of the planting bed, planting and other work.
- Extent: Provide mulch to 750 mm diameter, to surrounds of plants planted in riplines and grass areas. Depths: Spread organic mulch to a depth of 75 mm, and gravel mulch to a depth of 50 mm.

2.12 Weeds

It is important that weeds are not allowed to establish nor spread to other areas. Weeds are highly invasive species and have the potential to invade newly disturbed sites. A noxious weed is a plant declared to be noxious under the NSW Noxious Weeds Act 1993. Noxious weeds can be agricultural weeds, environmental weeds or have a direct impact on human health. Under the Biosecurity Act 2015, noxious weeds must be controlled. On private land, the responsibility lies with the owner/occupier of that land.

Environmental weeds are non-local plants that can invade and change natural areas and threaten the survival of native plants and animals. After land clearing, environmental weeds are considered to be the next greatest threat to our indigenous biological diversity.

Environmental weeds have the potential to readily invade garden beds and potentially impact on adjacent areas of bushland. In addition to the environmental hazards posed by weeds, weeds occurring in mass planted areas growing from the base of trees and pavements can be unsightly and presents an untidy appearance.

Weed monitoring and hand weeding will be required to be undertaken on a regular basis. The management and control will depend on the species of weeds present and the appropriate measures for mitigating any impacts caused by its management on native species. Generally, weed control measures will include;

- observation of landscape areas to check for weeds and hand weeding of any weeds identified
- development and implementation of an eradication plan applicable to the circumstances, which may include manual removal and spot spraying
- regular contact with neighbouring property owners to attempt to eradicate weeds species from the surrounding area
- regular mulching to help suppress weeds

Maintenance Action Required	Frequency
Prevent reproduction of weeds by destroying seedlings and established weeds before they set seed or other propagules form. Remove by hand where infestations are low. Ensure that the entire weed including all roots are removed. Dispose of the weeds off site.	As required

Remove by Herbicide any weeds that cannot be controlled by hand removal. Herbicide application must occur before weed has set seed. Non-targeted species and areas must be reinstated if damaged by herbicide application. Herbicide to be used in accordance with regulation rates and manufacturers recommendations and Safety Data Sheets. After spraying, lop and dead weeds flush with the ground surface and dispose of the cuttings. Use of bio-degradable herbicide is mandatory.	Any spraying is to occur on weekends or school holidays. Do not spray in windy conditions or if rain is forecasted within the next 24 hours.
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2.13 Lawn Areas

Significant areas of the site are surfaced with exotic lawn. These areas contribute to the character of the school and are important for open space and recreation areas. However, these areas have high demands for maintenance and require significant resources particularly in irrigation, fertilising and mowing. The level of maintenance required for particular lawn areas should be considered within the context of their intensity of use.

Maintenance and access for mowing of grass on grade is a potential occupational health and safety risk. Embankments steeper than 3:1 should be considered for planting. Restrict the provision of high quality, well maintained lawn to sports fields and premium passive use areas. Aim to reduce the amount of resources dedicated to maintaining lawn and grass areas. Clippings should remain where they fall under most circumstances and should not be raked up and removed. In low use areas, irrigation, fertilisation and maintenance should be reduced.

Mowing and trimming measures may include:

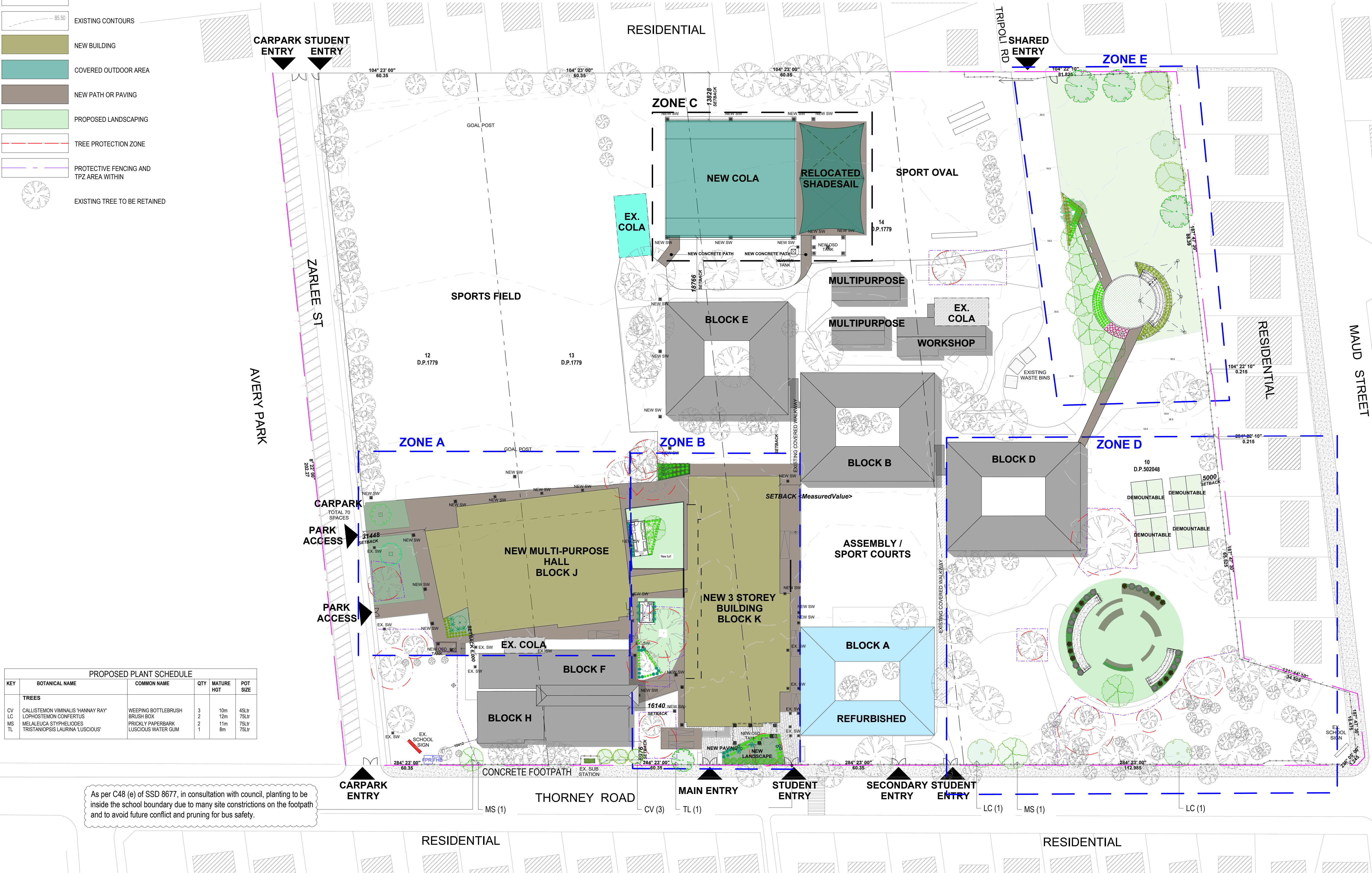
- Litter: Remove litter and fallen branches before mowing.
- Height: Consistent with the growth habit of the grass variety and maintained at 25 mm to 40 mm throughout the year.
- Program: Weekly during the mowing season, November to March, and at bi-weekly intervals during April to October. Do not mow under wet conditions.
- Raking: Once every month before mowing, during the mowing season, with a flexible rake. On alternate mowings, adopt a north-south and east-west pattern.
- Edges: At the same time as mowing, trim lawn edges to plant beds, pathways, base of trees and other obstacles. Ensure trees and shrubs are not damaged.
- Clippings distribution: To be used as compost where possible

Where compaction of turf areas cannot be managed through prevention, and the quality of turf is declining, special machines that remove cores of soil, make slits or grooves or spike holes must be used. Perform when turf is in active growth in summer but not when temperatures are extreme or very there are very drying winds.

Topdressing is applying a thin layer of growing media to the turf. Components are usually sand but it must always be more free-draining than the media under the turf and should always have the same consistency over consecutive applications. Topdressing properly applied will fill hollows and provide a smooth finish. The addition of free-draining sand will also improve drainage and infiltration and therefore improve turf health. Topdressing material for remediation of depressions or irregularities: Apply coarse or medium soil to AS 4419 suitable for application to turf or grass seeded areas.

LEGEND

- SITE BOUNDARY
- EXISTING CONTOURS
- NEW BUILDING
- COVERED OUTDOOR AREA
- NEW PATH OR PAVING
- PROPOSED LANDSCAPING
- TREE PROTECTION ZONE
- PROTECTIVE FENCING AND TPZ AREA WITHIN
- EXISTING TREE TO BE RETAINED



PROPOSED PLANT SCHEDULE					
KEY	BOTANICAL NAME	COMMON NAME	QTY	MATURE HGT	POT SIZE
TREES					
CV	CALLISTEMON VIMINALIS 'HANNAY RAY'	WEeping BOTTLEBRUSH	3	10m	45Ltr
LC	LOPHOSTEMON CONFERTUS	BRUSH BOX	2	12m	75Ltr
MS	MELALEUCA STYPHELOIDES	PRICKLY PAPERBARK	2	11m	75Ltr
TL	TRISTANIOPSIS LAURINA 'LUSCIOUS'	LUSCIOUS WATER GUM	1	8m	75Ltr

As per C48 (e) of SSD 8677, in consultation with council, planting to be inside the school boundary due to many site constrictions on the footpath and to avoid future conflict and pruning for bus safety.

NOTES:

Consultants to check and verify all dimensions and all levels on site prior to any works.
Any discrepancies should be immediately referred to Space Landscape Designs.
All work to comply with B.C.A. Statutory Authorities and relevant Australian Standards.
Designers designed over zoning. All measurements are in millimetres.

Rev.	Date	Issue
A	17/03/20	Construction Issue
B	02/04/20	Relocated A/C units
C	14/04/20	Condition C48
D	22/04/20	Revised seating
E	04/05/20	Add trees as per C48

Checked
AE
AE
AE

SPACE
LANDSCAPE DESIGNS

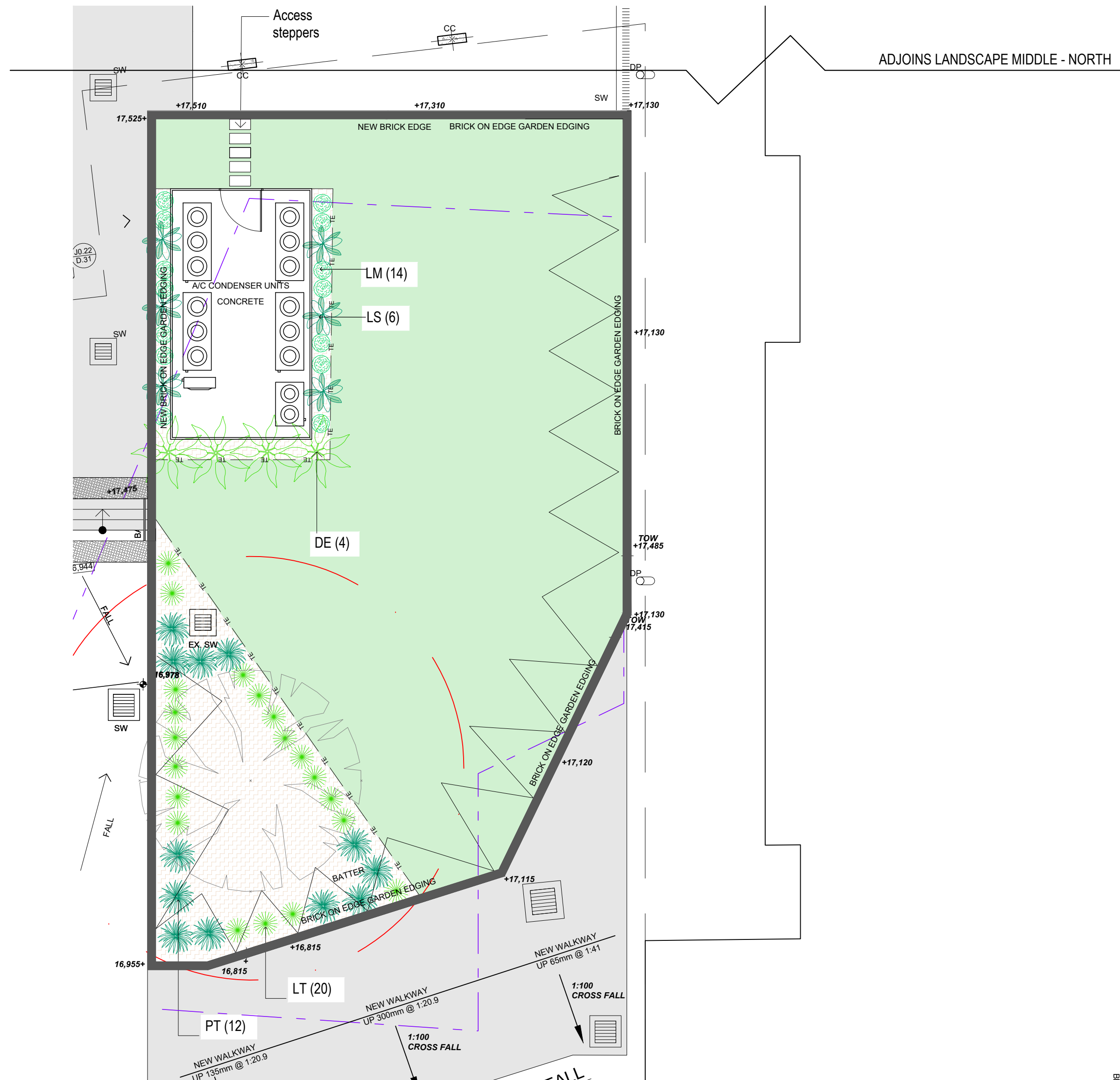
Space Landscape Designs Pty Ltd
ABN 60 799 663 674 ACN 139 316 251
info@spacedesigns.com.au
spacedesigns.com.au
P 02 9905 7870 F 02 9905 7657
Suite 138, 117 Old Pittwater Rd,
Brookvale NSW 2100

PROJECT
Fairvale High School
ADDRESS
Thorney Road
Fairfield West

DRN: C.Wallace (B.Lavch)
DATE: 17/03/2020
SCALE: 1:500@A1
PROJECT NO: 171443

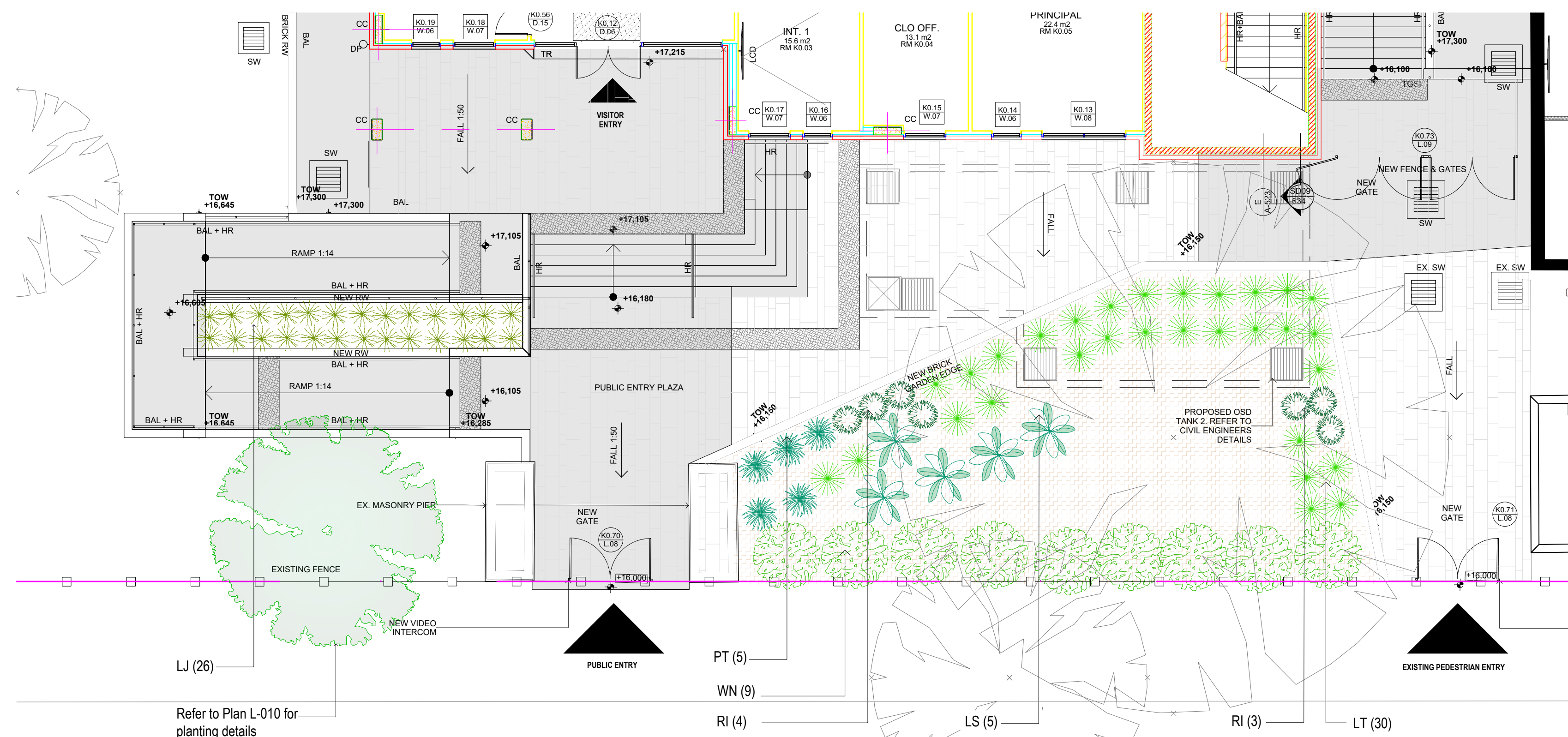


SITE LANDSCAPE PLAN
L-010
Rev E



LANDSCAPE MIDDLE
SCALE 1:100.

PROPOSED PLANT SCHEDULE					
KEY	BOTANICAL NAME	COMMON NAME	QTY	MATURE HT	POT SIZE
SHRUBS					
DE	DORYANTHES EXCELSA	GYMEA LILY	4	1.5m	250mm
RI	RHAPHIOLEPIS INDICA 'COSMIC PINK'	COSMIC PINK	7	0.7m	250mm
WN	WESTRINGIA NARINGA	NARINGA	9	2m	250mm
GRASSES / GROUND COVERS					
LJ	LIRIOPE MUSCARI 'JUST RIGHT'	JUST RIGHT	26	0.5m	200mm
LM	LIRIOPE MUSCARI 'ISABELLA'	ISABELLA	14	0.4m	200mm
LS	LOMANDRA HYSTRIX 'LUCKY STRIPE'	'LUCKY STRIPE'	11	0.8m	200mm
LT	LOMANDRA LONGIFOLIA 'TANIKA'	'TANIKA'	50	0.5m	200mm
PT	PHORMIUM TENAX 'SWEET MIST'	SWEET MIST	17	0.4m	200mm



LANDSCAPE MIDDLE - SOUTH
SCALE 1:100.

Rev **B**

RD ENTRY

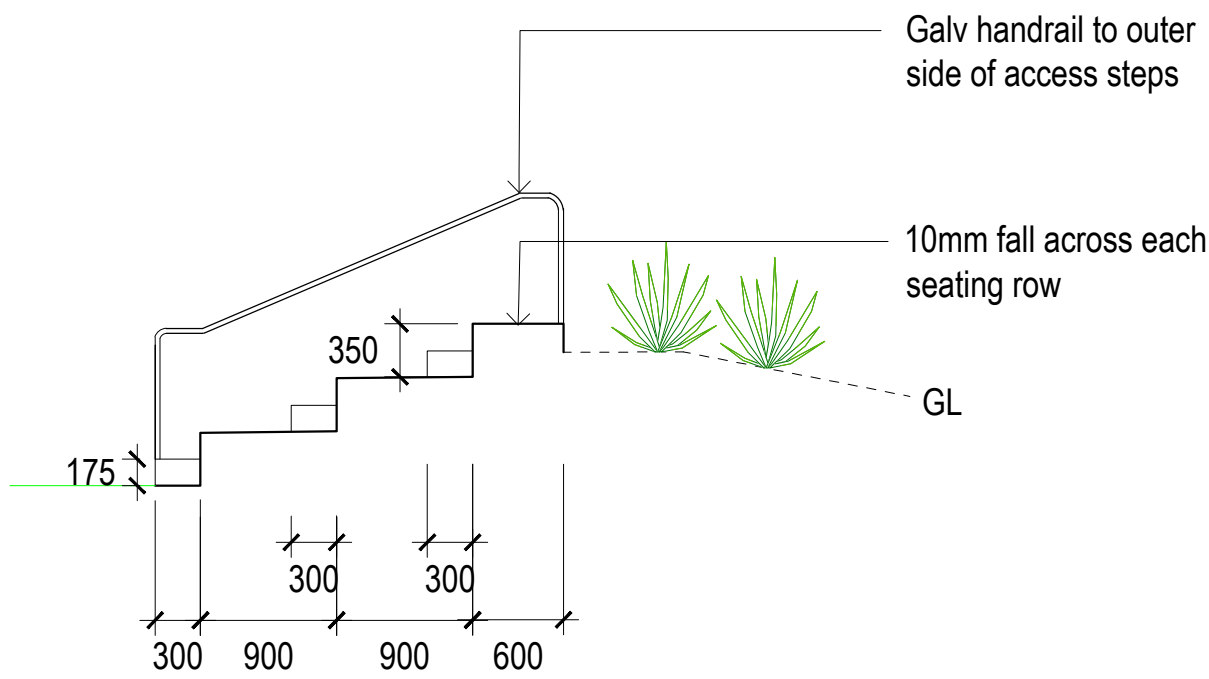
ZONE E

LEGEND

- SITE BOUNDARY
- EXISTING CONTOURS
- TIMBER GARDEN EDGE
- NEW PATH OR PAVING
- PROPOSED TURF
- PROPOSED ARTIFICIAL TURF
- MULCH
- TREE PROTECTION ZONE
- PROTECTIVE FENCING AND TPZ AREA WITHIN
- EXISTING TREE TO BE RETAINED

As per C48 (a) of SSD 8677, implementation of a landscape strategy for the northeast section of the site at the former demountable location that can include, but is not limited to:

- (i) new seating
- (ii) canopy trees
- (iii) public art
- (iv) shade structures
- (v) garden beds
- (vi) soft planting and
- (vii) planting schedule



SEATING STEPS - TYPICAL SECTION

SCALE 1:50

PROPOSED PLANT SCHEDULE						
KEY	BOTANICAL NAME	COMMON NAME	QTY	MATURE HGT	POT SIZE	
* AS CV GF * ML TL	TREES					
	ACMENA SMITHII	LILLY PILLY	3	12m	75Ltr	
	CALLISTEMON VIMINALIS 'HANNAY RAY'	WEeping BOTTLEBRUSH	1	10m	75Ltr	
	GLOCHIDION FERDINANDI	CHEESE TREE	2	10m	75Ltr	
	MELALEUCA LINARIFOLIA	SNOW IN SUMMER	1	10m	75Ltr	
ND	TRISTANOPSIS LAURINA 'LUSCIOUS'	LUSCIOUS WATER GUM	6	8m	75Ltr	
	SHRUBS					
LN LT	NANDINA DOMESTICA 'FLIRT'	FLIRT	17	0.3m	200mm	
	GRASSES / GROUND COVERS					
LN LT	LOMANDRA LONGIFOLIA 'NYALLA'	NYALLA	101	0.8m	200mm	
	LOMANDRA LONGIFOLIA 'TANIKA'	TANIKA	128	0.6m	200mm	

* Denotes locally endemic native trees

CV (1)

Mulched garden bed

LN (27)

LT (56)

Bench seating

Mulched garden bed

LT (72)

TL (6)

ND (17)

Location of future public art selected by school

EXISTING WASTE BINS

New path

As per C48 (d) of SSD 8677, Provision of at least an additional six mature shade providing canopy trees (locally endemic native species) have been provided

GF (1)

AS (2)

ML (1)

GF(1)

AS (1)

Stair handrail to outer side of access steps

New outdoor concrete seating steps to comply with DG 91.05. Seating step 350mm high, 900mm wide, intermediate access steps riser 175mm high.

Batter turf down to natural ground level

Shade structure over Garden bed 300mm below seat and graded evenly down to existing ground level

LN (74)

Mulched garden bed

RESIDENTIAL

MAUD STREET

104° 22' 10"

0.215

187° 47' 30"

88.39

Artificial turf

18.0

18.5

19.0

18.5

18.0

20.0

19.5

19.0

18.5

18.0

NOTES:

Contractors to check and verify all dimensions and all levels on site prior to any work.

Any discrepancies should be immediately referred to Space Landscape Designs.

All work to comply with B.C.A. Statutory Authorities and relevant Australian Standards.

Dimensions designed over existing. All measurements are in millimetres.

Rev.	Date	Issue
A	14/04/20	Construction Issue
B	22/04/20	Revised seating

Checked
AE
AE

SPACE LANDSCAPE DESIGNS

Space Landscape Designs Pty Ltd
ABN 60 799 663 674 ACN 139 316 251
info@spacedesigns.com.au
spacedesigns.com.au
P 02 9905 7870 F 02 9905 7657
Suite 138, 117 Old Pittwater Rd,
Brookvale NSW 2100

PROJECT
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ADDRESS
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NORTH

LANDSCAPE PLAN-ZONE E
L-050

Rev B



BANKSIA INTEGRIFOLIA



BACKHOUSIA MYRTIFOLIA



PYRUS USSURIENSIS



TRISTANIOPSIS LAURINA 'LUSCIOUS'



DORYANTHES EXCELSA



MICHELIA FIGO



RHAPHIOLEPIS INDICA 'COSMIC PINK'



WESTRINGIA FRUTICOSA 'NARINGA'



ASPENIUM AUSTRALASICUM



LIRIOPE MUSCARI 'JUST RIGHT'



LIRIOPE MUSCARI 'ISABELLA'



LOMANDRA HYSTRIX 'LUCKY STRIPE'



LOMANDRA LONGIFOLIA 'TANIKA'



PHORMIUM TENAX 'SWEET MIST'



ACMENA SMITHII



CALLISTEMON 'HANNAH RAY'



GLOCHIDION FERDINANDI



MELALEUCA LINEARIFOLIA



TRISTANIOPSIS LAURINA 'LUSCIOUS'



CALLISTEMON VIMINALIS 'BETTER JOHN'



WESTRINGIA FRUTICOSA 'GREY BOX'



LOMANDRA LONGIFOLIA 'NYALLA'



LOMANDRA LONGIFOLIA 'TANIKA'



PHORMIUM TENAX 'SWEET MIST'